



Indian River County Purchasing Division

1800 27th Street

Vero Beach, FL 32960

Phone (772) 226-1416

BID SET

INVITATION TO BID

Project Name: ***NORTH COUNTY REGIONAL PARK AQUATIC FACILITY ROOF REPLACEMENT (IRC-1826)***

Bid #: ***2019074***

Bid Security Required: ***5%***

Public Construction Bond Required: ***YES, for contracts over \$100,000***

Pre-Bid Meeting: ***Wednesday, October 2, 2019, 10:00 A.M.***
*Indian River County Administration Building
1801 27th Street – Conference Room A1-303
Vero Beach, Florida 32960*

Bid Opening Date: ***Wednesday, October 16, 2019***

Bid Opening Time: ***2:00 P.M.***

All bids must be received by the Purchasing Division, 1800 27th Street, Vero Beach, Florida 32960 prior to the date and time shown above. Late bids will not be accepted or considered.

PLEASE SUBMIT ONE (1) MARKED ORIGINAL AND ONE (1) COPY OF YOUR BID, PLUS ONE (1) THUMB DRIVE OR CD CONTAINING A FULL PDF OF YOUR SUBMITTAL.

Refer All Questions to:

Email: purchasing@ircgov.com

ADVERTISEMENT FOR BID

Notice is hereby given that the Indian River County Board of County Commissioners is calling for and requesting bids for the following:

Indian River County Bid # 2019074
NORTH COUNTY REGIONAL PARK AQUATIC FACILITY ROOF REPLACEMENT
(IRC-1826)

Project Description: *The project involves the replacement of the low slope roofing assemblies of the Indian River County, North County Regional Park Aquatic Facility, located at 9450 County Road 512, Sebastian, FL. 34958. The existing low slope roofing assemblies will be replaced with a new modified bitumen roofing assembly. The existing clerestory stucco wall assemblies will be waterproofed.*

All material and equipment furnished and all work performed shall be in strict accordance with the plans, specifications, and contract documents pertaining thereto. Detailed specifications are available at: www.demandstar.com or by selecting "Current Solicitations" at <http://www.ircgov.com/Departments/Budget/Purchasing>. All communications concerning this bid shall be directed to IRC Purchasing Division at purchasing@ircgov.com.

Deadline for receipt of bids has been set for **2:00 P.M., on WEDNESDAY, October 16, 2019**. Only bids received on or before the time and date listed will be considered. Bids should be addressed to Purchasing Division, Room B1-301, 1800 27th Street, Vero Beach, Florida 32960. All bids will be opened publicly and read aloud at 2:00 PM. Bids submitted after 2:00 PM on the day specified above will not be accepted or considered.

A pre-bid conference will be held at **10:00 A.M., on WEDNESDAY, October 2, 2019**, in the Public Works conference room A1-303 of the Indian River County Administration Building located at 1801 27th Street, Vero Beach, Florida, 32960.

BID SECURITY in the sum of not less than five percent (5%) of the total bid must accompany each bid over \$35,000.

The Board of County Commissioners reserves the right to accept or reject any and all bids in whole or in part and to waive any technicality or irregularity.

PURCHASING MANAGER
INDIAN RIVER COUNTY

Publish: For Publication in the Indian River Press Journal

Date: Sunday, September 22, 2019 and Sunday, September 29, 2019

Please furnish Tear Sheet, Affidavit of Publication, and Invoice to:

Indian River County
Purchasing Division
1800 27th Street
Vero Beach, FL 32960

STATEMENT OF NO BID

Should you elect not to bid, please complete and send this page by email (purchasing@ircgov.com), fax (772-770-5140) or by mail to Indian River County Purchasing, 1800 27th Street, Vero Beach, FL 32960.

Please select all of the following that apply. Our decision not to bid on the subject project was based on:

- Project is located too far from our base of operations
- Project value too low
- Project specifications unclear (please explain below)
- Material availability may be a challenge
- Our current schedule will not allow us to perform
- Unable to meet insurance requirements
- Other:
- Other:

General comments regarding the bid and/or plans and specifications:

TABLE OF CONTENTS

INVITATION TO BID 1

ADVERTISEMENT FOR BID 2

STATEMENT OF NO BID 3

TABLE OF CONTENTS 4

INSTRUCTIONS TO BIDDERS..... 5
 GENERAL TERMS AND CONDITIONS 5

TECHNICAL SPECIFICATIONS 12
 SCOPE 12

BID FORM 13

BID SCHEDULE 14

AIA DOCUMENT A310 BID BOND 16

DRUG-FREE WORKPLACE CERTIFICATION 17

SWORN STATEMENT UNDER SECTION 105.08, INDIAN RIVER COUNTY CODE, ON DISCLOSURE OF RELATIONSHIPS..... 18

BIDDERS QUALIFICATIONS QUESTIONNAIRE 20

SWORN STATEMENT UNDER THE FLORIDA TRENCH SAFETY ACT 24

LIST OF SUBCONTRACTORS..... 26

CERTIFICATION REGARDING PROHIBITION AGAINST CONTRACTING WITH SCRUTINIZED COMPANIES ... 27

SAMPLE AGREEMENT 28

PUBLIC CONSTRUCTION BOND 38
 PUBLIC CONSTRUCTION BOND..... 40

SAMPLE CERTIFICATE OF LIABILITY INSURANCE 41

NOTICE TO PROCEED 42

INSTRUCTIONS TO BIDDERS

GENERAL TERMS AND CONDITIONS

Cone of Silence. Potential bidders/respondents and their agents must not communicate in any way with the Board of Commissioners, County Administrator or any County staff other than Purchasing personnel in reference or relation to this solicitation. This restriction is effective from the time of bid advertisement until the Board of County Commissioners meets to authorize award. Such communication may result in disqualification.

Sealed Bids and Envelope Markings: All bids must be submitted in a sealed opaque envelope. The outside of the envelope must be clearly marked with the Sealed Bid #, Title of the Bid, Date of the Bid opening, and Time of the Bid Opening and name of firm submitting.

Opening Location: It will be the sole responsibility of the Bidder to deliver personally or by mail or other delivery service, their proposal to the office of the Indian River County Purchasing Division. Bids should be delivered to 1800 27th Street, Vero Beach, FL 32960, on or before the closing hour and date shown for receipt of bids. Bids received in person or by mail after the stated time and date will not be considered.

Bid Submission: All bids must be signed with the legal Firm name and by an Officer or employee having authority to bind the company or firm by his / her signature. Bids must be submitted on forms provided by Indian River County. **Bids not submitted on the attached form(s) shall be rejected.** Submittal of one marked original bid, one copy plus a thumb drive or CD containing a full pdf of your submittal is required.

Bid Security and Public Construction Bond: Bid security must accompany each Bid over \$35,000, and must be in the form of an AIA Document A310 Bid Bond, properly executed by the Bidder and by a qualified surety, or a certified check or a cashier's check, drawn on any bank authorized to do business in the State of Florida. Bid Security for bids over \$35,000 must be in the sum of not less than five percent (5%) of the total amount of the bid, made payable to Indian River County Board of County Commissioners. In the event the Contract is awarded to the Bidder, Bidder will enter into a Contract with the County and furnish the required 100% Public Construction Bond within the timeframe set by the County. If Bidder fails to do so, the Bid Security will be retained by the County as liquidated damages and not as a penalty. If bid does not exceed \$100,000, no Public Construction Bond will be required. Bid Security of other Bidders whom OWNER believes do not have a reasonable chance of receiving the award will be returned within seven days after the Bid opening.

Withdrawal of Bids: A bid may be modified or withdrawn by an appropriate document duly executed in the manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time of opening of bids. If, within 24 hours after Bids are opened, any bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, that bidder may withdraw its bid and bid security will be returned. Thereafter, if the work is rebid, that bidder may be disqualified from further bidding on the work.

Direct Purchase: Indian River County reserves the option to purchase certain tangible materials necessary for the performance of the Contract, and thereby save the amount of the sales tax thereon by virtue of the Owner's status as a Tax-Exempt Institution. For the purpose of these procedures, the CONTRACTOR will assign to the County any rights the CONTRACTOR may have under quotes, contracts or commitments received from the particular vendor or supplier for the materials described in the requisition. The invoiced amount of County Purchased Materials and applicable sales tax, had the purchases not been tax exempt, once finalized through the Owner's Purchase Order and after confirmation of completed delivery and acceptance, will be deducted from the CONTRACTOR's Contract price via Change Order.

Taxes: Indian River County is exempt from any taxes imposed by State and / or Federal Government. Exemption Certificates, if required, are to be furnished by the successful bidder and will be filled out by the County.

Delivery and Completion Dates: Indicate delivery and completion dates. This may be a determining factor in the award of the bid. The County may, at its option, grant additional time for any delay or failure to perform hereunder if the delay will not adversely affect the best interests of the County and is due to causes beyond the control of the Bidder. Such grant must be in writing and made part of the resulting Agreement.

Irrevocable Offer: Bidder warrants by virtue of bidding that the prices quoted in this bid will remain firm and be considered an irrevocable offer for a period of sixty (60) days, during which time one or more of the bids received may be accepted by Indian River County.

Assignment/Delegation: No right, obligation or interest in an awarded Agreement may be assigned or delegated by the Bidder without prior written consent of the County, without prejudice to County's other rights and remedies.

Consideration of Bids: Verbal, emailed or faxed bids will not be considered.

Indemnification: The successful Bidder shall indemnify and hold harmless the County, and its commissioners, officers and employees, from liabilities, damages, losses and costs, including, but not limited to, reasonable attorney's fees, to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of the CONTRACTOR and persons employed or utilized by the CONTRACTOR in the performance of the construction contract.

Public Access: The Bidder shall allow public access to all documents and materials in accordance with the provisions of Chapter 119, Florida Statutes. If this project is federally-funded, the Department of Homeland Security (DHS) seal(s), logos, crests, or reproductions of flags or likenesses of DHS agency officials shall not be used by the Bidder without specific FEMA pre-approval.

Records/Audit: The Bidder shall maintain books, records and documents pertinent to performance under this Invitation and any resulting Agreement in accordance with generally accepted accounting principles consistently applied. The County and the Florida Office of the Inspector General shall have inspection and audit rights to such records for audit purposes during the term of the contract and for three years following the termination of obligations hereunder. Records which relate to any litigation, appeals or settlements of claims arising from performance under this work or purchase shall be made available until a final disposition has been made of such litigation, appeals, or claims.

Acceptance: Receipt of an item shall not be an indication that the items are acceptable. Final acceptance and authorization of payment shall be given after a thorough inspection indicates that the item is delivered in accordance with the Bid Specifications. Suppliers are advised that in the event the delivered item does not meet specifications, payment will be withheld until such time the supplier takes necessary corrective action.

Permits, Impact and Inspection Fees. In accordance with Florida Statutes Section 218.80, the "Public Bid Disclosure Act", Indian River County as OWNER is obligated to disclose all license, permit, impact, or inspection fees that are payable to Indian River County in connection with the construction of the Work by the accepted bidder. All permit, impact, or inspection fees payable to Indian River County in connection with the work on this County project will be paid by Indian River County, with the exception of re-inspection fees. The Bidder shall not include ANY PERMIT, IMPACT, NOR INSPECTION FEES payable to **Indian River County** in the bid.

Descriptive Information: Descriptive literature including Specifications must accompany your bid. Manufacturer's name and model numbers are used herein solely for the purpose of establishing a standard of design, quality, and use of the merchandise required. Products of other manufacturers will be acceptable if they meet or exceed established standards with the exception of those items specified "NO SUBSTITUTION".

Variations to Specifications: For purposes of evaluation, *Bidder must indicate any variances from the specifications and / or conditions on the form provided with this Invitation to Bid.* Otherwise, it will be assumed that the product or service fully complies with the specifications. Items specifically described, as alternates shall be reviewed as an alternative bid to be considered by the County, in lieu of the primarily specified item(s). However, item(s) varying from the published specifications shall be considered substitutes, and the County reserves the right to consider or not to consider substitute bids. Substitutes shall be subject to disqualification if the County does not approve the substitution.

Interpretations: No oral interpretations will be made to any Bidder as to the meaning of the Specifications. Every request for such an interpretation shall be made in writing, addressed and forwarded to Indian River County (purchasing@ircgov.com) ten (10) or more days before the date fixed for opening of the bids. The County shall not be responsible for oral interpretations given by any County employee. Every interpretation made to bidder will be in the form of an Addendum to the specifications, which if issued, will be sent promptly as is practical to all persons to whom specifications have been issued. All such Addenda shall become part of the specifications. Further, it shall be the responsibility of each bidder, prior to submitting their bid, to contact Indian River County's Purchasing Division at (772) 226-1416 to determine if addenda were issued and to make such addenda a part of their bid.

Default Provision: In case of default by the Bidder, Indian River County may procure the articles or services from other sources and hold the Bidder responsible for excess costs incurred thereby, and may take such action, as it deems appropriate, including legal action for Damages or Specific Performance.

Signed Bid Considered an Offer: This signed bid shall be considered an offer on the part of the Bidder. Indian River County Board of County Commissioners shall deem the offer accepted upon approval.

Non-Collusion: By signing and submitting the Bid Form, the Bidder certifies that,

- This bid has been arrived at by the Bidder independently and has been submitted without collusion, and without any agreement, understanding, or planned common course, or action with, any vendor of materials, supplies, equipment, or services described in the invitation to bid, designed to limit independent bidding or competition, and
- The contents of the bid have not been communicated by the Bidder or its employees or agents to any person not an employee or an agent of the bidder or its surety on any bond furnished with the bid, and will not be communicated to any such person prior to the official opening of the bid.
- No attempt has been made or will be made by the Bidder to induce any other person(s) or firm(s) to submit or not to submit a bid for the purpose of restricting competition.

Public Entity Crimes: Pursuant to Florida Statutes Section 287.133(2)(a), all Bidders are hereby notified that a person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid, proposal, or reply on a contract to provide any goods or services to a public entity (defined as the State of Florida, any of its departments or agencies, or any political subdivision); may not submit a bid, proposal, or reply on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a CONTRACTOR, supplier, subcontractor, or consultant under a contract with any

public entity; and may not transact business with any public entity in excess of the threshold amount provided in Florida Statutes Section 287.017 for CATEGORY TWO [currently \$35,000] for a period of 36 months from the date of being placed on the convicted vendor list. A "public entity crime" means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or with the United States, including, but not limited to, any bid, proposal, reply, or contract for goods or services, any lease for real property, or any contract for the construction or repair of a public building or public work, involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.

Suspension and Debarment: Indian River County will not make award to parties listed on the government-wide exclusions in the System for Award Management (SAM). The bidder agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

Scrutinized Companies Lists: The bidder certifies that it and its related entities as defined by Florida law are not on the Scrutinized Companies that Boycott Israel List, created pursuant to s. 215.4725 of the Florida Statutes, and are not engaged in a boycott of Israel. In addition, if this agreement is for goods or services of one million dollars or more, CONTRACTOR certifies that it and its related entities as defined by Florida law are not on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, created pursuant to Section 215.473 of the Florida Statutes and are not engaged in business operations in Cuba or Syria. The County may terminate this Contract if CONTRACTOR is found to have submitted a false certification as provided under section 287.135(5), Florida Statutes, been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or been engaged in business operations in Cuba or Syria, as defined by section 287.135, Florida Statutes. County may terminate this Contract if CONTRACTOR, including all wholly owned subsidiaries, majority-owned subsidiaries, and parent companies that exist for the purpose of making profit, is found to have been placed on the Scrutinized Companies that Boycott Israel List or is engaged in a boycott of Israel as set forth in section 215.4725, Florida Statutes.

Accordingly, firms responding to this solicitation shall return with their response an executed copy of the attached "Certification Regarding Prohibition Against Contracting With Scrutinized Companies." Failure to return this executed form with submitted bid/proposal/statement of qualifications will result in the response being deemed non-responsive and eliminated from consideration.

Non-Discrimination: Indian River County will not knowingly do business with vendors or CONTRACTOR's who discriminate on the basis of race, color or national origin, sex, sexual orientation, gender identity, age and/or disability. Through the course of providing services to the County, CONTRACTOR's shall affirmatively comply with all applicable provisions of Title VI of the Civil Rights Act of 1964, the Civil Rights Restoration Act of 1987 and the Florida Civil Rights Act of 1992, as well as all other applicable regulations, guidelines and standards. Any person who believes their rights have been violated should report such discrimination to the County's Title VI/Nondiscrimination Coordinator through the office of the County Attorney.

Local Preference: Indian River County has no local ordinance or preferences, as described in Florida Statutes section 255.0991(2) in place, therefore no preference prohibited by that section will be considered in the acceptance, review or award of this bid.

Energy Policy and Conservation Act – The CONTRACTOR agrees to comply with mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act.

Regulations: It shall be the responsibility of the bidder to assure compliance with any OSHA, EPA and / or other Federal or State of Florida rules, regulations, or other requirements, as each may apply.

Applicable Law and Venue: The resulting Agreement and all rights and duties of the parties hereto shall be governed by the laws of the State of Florida, including but not limited to the provisions of the Florida Uniform Commercial Code Chapters 671-679 F.S., for any terms and conditions not specifically stated within. Venue for any lawsuit brought by either party against the other party or otherwise arising out of this Contract shall be in Indian River County, Florida, or, in the event of a federal jurisdiction, in the United States District Court for the Southern District of Florida.

Conflict of Interest: Any entity submitting a bid or proposal or entering into a contract with the County shall disclose any relationship that may exist between the contracting entity and a County Commissioner or a County Employee. The relationship with a County Commissioner or a County Employee that must be disclosed is as follows: *father, mother, son, daughter, brother, sister, uncle, aunt, first cousin, nephew, niece, husband, wife, father-in-law, mother-in-law, daughter-in-law, son-in-law, brother-in-law, sister-in-law, stepfather, stepmother, stepson, stepdaughter, stepbrother, stepsister, half brother, half sister, grandparent, or grandchild*. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of the entity. The disclosure of relationships shall be a sworn statement made on a County approved form. Failure to submit the form may be cause for rejection of the bid or proposal.

Cancellation: It is the intention of Indian River County to purchase material and / or services from sources of supply that will provide prompt and convenient shipment and service. Any failure of the supplier to satisfy the requirements of the County shall be reason for termination of the award.

Errors: When an error is made in the bid extension of generating total bid prices or in any other process of completing the bid, the original unit prices submitted will govern. Carelessness in quoting prices, or in preparation of the bid otherwise, will not relieve the bidder from performance.

Bid Rejection: Failure to comply with all the above instructions *may* result in rejection of the bid.

Bid Protest: Any actual or prospective bidder or proposer who is aggrieved in connection with a competitive selection process may protest to the Purchasing Manager. The protest shall be submitted to the Purchasing Manager in writing within seven (7) calendar days after the bidder or proposer knows or should have known of the facts giving rise to the protest. If the protest is not resolved by mutual agreement, the Purchasing Manager shall promptly issue a decision in writing, after consulting the Department and the Office of the County Attorney.

Supplemental Information: The County reserves the right to conduct such investigations as it deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications and financial ability of Bidders, proposed subcontractors, suppliers, and other relevant parties to perform and furnish the work. To demonstrate qualifications to perform the work, each Bidder must be prepared to submit, within 5 days of Owner's request, written evidence, such as financial data, previous experience, present commitments, and other such data as may be necessary to prove to the satisfaction of the Owner that the Bidder is qualified by experience to do the work and is prepared to complete the work within the stated time period. Failure to provide any requested information may result in the determination of the Bidder as non-responsible.

Awards: The County reserves the right to cancel the bid, reject any and all bids or waive any irregularity or technicality in bids received. When it is determined there is no competition to the lowest responsive, responsible Bidder, evaluation of other bids is not required. Bidders are cautioned to make no assumptions unless their bid has been evaluated as being responsive. The County reserves the right to not make any award(s) under this bid.

Termination by the County: The County reserves the right to terminate a contract by giving thirty (30) day notice, in writing, of the intention to terminate, if at any time the CONTRACTOR fails to abide by or fulfill any of the terms and conditions of the contract. The County also reserves the right to terminate this contract for convenience of the County and / or with or without cause.

Compliance with Laws and Regulations: Bidder agrees that they will comply with all Federal, State, and Local Laws and Regulations applicable to the production, sale, and delivery of the goods or the furnishing of any labor or services called for by the resulting Agreement, and any provisions required thereby to be included herein shall be deemed to be incorporated herein by reference. Noncompliance may be considered grounds for termination of contracts.

Public Record Law: Correspondence, materials, and documents received pursuant to this Invitation for Bid become public records subject to the provisions of Chapter 119, Florida Statutes. Should the Bidder assert any exemptions to the requirements of Chapter 119, Florida Statutes, and related statutes, the burden of establishing such exemption, by the way of injunctive or other relief as provided by law, shall be upon the Bidder.

Licensure: Bidder must possess State of Florida General Contractor’s license.

Insurance:

- **Owners and Subcontractors Insurance:** The CONTRACTOR shall not commence work until they have obtained all the insurance required under this section, and until such insurance has been approved by the owner, nor shall the CONTRACTOR allow any subcontractor to commence work until the subcontractor has obtained the insurance required for a CONTRACTOR herein and such insurance has been approved unless the subcontractor’s work is covered by the protections afforded by the CONTRACTOR’s insurance.
- **Worker’s Compensation Insurance:** The CONTRACTOR shall procure and maintain worker’s compensation insurance to the extent required by law for all their employees to be engaged in work under this contract. In case any employees are to be engaged in hazardous work under this contract and are not protected under the worker’s compensation statute, the CONTRACTOR shall provide adequate coverage for the protection of such employees.
- **Public Liability Insurance:** The CONTRACTOR shall procure and maintain broad form commercial general liability insurance (including contractual coverage) and commercial automobile liability insurance in amounts not less than shown below. The owner shall be an additional named insured on this insurance on this insurance with respect to all claims arising out of the operations or work to be performed.

Commercial General (Public) Liability, other than Automobile \$1,000,000.00 Combined single limit for Bodily Injury and Property Damage	Commercial General A. Premises / Operations B. Independent contractors C. Products / Completed Operations D. Personal Injury E. Contractual Liability F. Explosion, Collapse, and Underground Property Damage
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Automobile \$1,000,000.00 Combined single limit Bodily Injury and Damage Liability	A. Owner Leased Automobiles B. Non-Owned Automobiles C. Hired Automobiles D. Owned Automobiles
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- **Proof of Insurance:** The CONTRACTOR shall furnish the owner a certificate of insurance in a form acceptable to the owner for the insurance required. Such certificate or an endorsement provided by the

CONTRACTOR must state that the owner will be given thirty (30) days written notice prior to cancellation or material change in coverage. Copies of an endorsement-naming owner as Additional Insured must accompany the Certificate of Insurance.

Indian River County reserves the right to accept or reject any or all bids in whole or in part and waive all any technicality or irregularity.

Note: Any and all special conditions attached hereto, which may vary from these General Conditions, shall have precedence.

End of General Terms and Conditions

TECHNICAL SPECIFICATIONS

SCOPE

The project involves the replacement of the low slope roofing assemblies of the Indian River County, North County Regional Park Aquatic Facility, located at 9450 County Road 512 Sebastian, FL. The existing low slope roofing assemblies will be replaced with a new modified bitumen roofing assembly. The existing clerestory stucco wall assemblies will be waterproofed.

A Pre-Bid Conference will be held at **10:00 A.M., on Wednesday, October 2, 2019**, in the first-floor Conference Room No. A1-303 of the Indian River County Administration Building located at 1801 27th Street, Vero Beach, Florida, 32960. **ATTENDANCE AT THIS CONFERENCE IS HIGHLY ENCOURAGED.**

Plan set as follows: Sheets **A0.1** through **A7.2** with each sheet bearing the general title **INDIAN RIVER COUNTY AQUATIC FACILITY ROOFING REPLACEMENT.**

Project Manual Prepared by Jay Ammon Architect, Inc.

Regular working hours are defined as Monday through Friday, excluding Indian River County Holidays, from 7 a.m. to 5 p.m. All costs of inspection and testing performed during overtime work by the CONTRACTOR, which is allowed solely for the convenience of the CONTRACTOR, shall be borne by the CONTRACTOR.

End of Technical Specifications

Indian River County Purchasing Division

1800 27th Street
Vero Beach, FL 32960
Phone (772) 226-1416

BID FORM

**PROJECT NAME: NORTH COUNTY REGIONAL PARK AQUATIC FACILITY ROOF
REPLACEMENT
(IRC-1826)**

Bid #: 2019074
Bid Opening Date and Time: Wednesday, October 16, 2019 2:00 P.M.
Bid Opening Location: Purchasing Division
1800 27th Street
Vero Beach, FL 32960

Project completion time after receipt of "Notice to Proceed": 120 DAYS

The following documents must be submitted and made a condition of this Bid:

- A. Bid Form & Itemized Bid Schedule (pages 13 to 15, inclusive);
- B. Required Bid security in the form of _____;
- C. Drug-Free Workplace Certification (page 17);
- D. Sworn Statement under Section 105.08, Indian River Code, on Disclosure of Relationships (pages 18 to 19, inclusive);
- E. Bidders Qualifications Questionnaire (pages 20 to 23, inclusive);
- F. Sworn Statement Under the Florida Trench Safety Act (pages 24 to 25, inclusive);
- G. List of Subcontractors (page 26);
- H. Certification Regarding Prohibition Against Contracting with Scrutinized Companies (page 27)

Indian River County Purchasing Division

1800 27th Street
 Vero Beach, FL 32960
 Phone (772) 226-1416

BID SCHEDULE

**PROJECT NAME: IRC NORTH COUNTY REGIONAL PARK AQUATIC
 FACILITY ROOF REPLACEMENT**

PROJECT NO. IRC-1826 BID NO. 2019074

BIDDER'S NAME: _____

Item No.	Description	Unit	Unit Price	Quantity	Total
001	REMOVE AND REPLACE EXISTING ROOF SYSTEM (APPROXIMATELY 5,350 SF) PER SECTION 024119 OF THE PROJECT MANUAL	LS		1	
002	LIGHTNING PROTECTION/GROUNDING SYSTEM. TO BE REMOVED PRIOR TO COMMENCEMENT OF ROOF WORK AND REPLACED UPON COMPLETION OF FLASHING AND SHEET METAL INSTALLATION	LS		1	
003	2"X6" DETERIORATED WOOD BLOCKING REPLACEMENT	LF		30	
004	WET AND DAMAGED LIGHTWEIGHT INSULATED CONCRETE REPLACEMENT AT RECOVERED ROOF LOCATIONS. INSTALL POLYISOCYANURATE AND COVERBOARD PRIOR TO ROOFING APPLICATION. ENSURE NO PONDING WATER	SF		200	
005	2" THICK PATCH WITH ZONO-PATCH PATCHING COMPOUND AT DAMAGED LIGHTWEIGHT INSULATED CONCRETE	SF		500	
FORCE ACCOUNT					35,000.00
TOTAL BID AMOUNT (INCLUDING FORCE ACCOUNT)					

TOTAL PROJECT BID AMOUNT IN WORDS _____

NOTE: IF THERE IS A DISCREPANCY BETWEEN THE PLANS (SUMMARY OF PAY ITEMS) AND THE ITEMIZED BID SCHEDULE, THE BID DOCUMENTS WILL GOVERN.

LS = LUMP SUM LF = LINEAR FOOT SF = SQUARE FOOT

Indian River County Purchasing Division

1800 27th Street
Vero Beach, FL 32960
Phone (772) 226-1416

The undersigned hereby certifies that they have read and understand the contents of this solicitation and agree to furnish at the prices shown any or all of the items above, subject to all instructions, conditions, specifications, and attachments hereto. Failure to have read all the provisions of this solicitation shall not be cause to alter any resulting contract or request additional compensation.

Company Name: _____

Company Address: _____

City, State _____ Zip Code _____

Telephone: _____ Fax: _____

E-mail: _____

Business Tax Receipt Number: _____ FEIN Number: _____

Authorized Signature: _____ **Date:** _____

Name: _____ Title: _____
(Type / Printed)

AIA DOCUMENT A310 BID BOND

The CONTRACTOR shall use the document form entitled “AIA Document A310 Bid Bond.”

DRUG-FREE WORKPLACE CERTIFICATION

(Please include this form with your bid)

The undersigned vendor in accordance with Florida Statute 287.087 hereby certifies that _____ does:

(Name of Business)

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.
2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.
3. Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection (1).
4. In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than 5 days after such conviction.
5. Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community by, any employee who is so convicted.
6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of Section 287.087.

As the person authorized to sign the statement, I certify that this firm complies fully with the above requirements.

Company Name

Bidder's Signature

Date: _____

**SWORN STATEMENT UNDER SECTION 105.08, INDIAN RIVER COUNTY CODE,
ON DISCLOSURE OF RELATIONSHIPS**

THIS FORM MUST BE SIGNED IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICER AUTHORIZED TO ADMINISTER OATHS.

1. This sworn statement **MUST** be submitted with Bid, Proposal or Contract No. 2019074 for **NORTH COUNTY REGIONAL PARK AQUATIC FACILITY ROOF REPLACEMENT (IRC-1826)**

2. This sworn statement is submitted by: _____

(Name of entity submitting Statement)

whose business address is:

and its Federal Employer Identification Number (FEIN) is _____

3. My name is _____
(Please print name of individual signing)

and my relationship to the entity named above is _____

4. I understand that an "affiliate" as defined in Section 105.08, Indian River County Code, means:

The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of the entity.

5. I understand that the relationship with a County Commissioner or County employee that must be disclosed as follows:

Father, mother, son, daughter, brother, sister, uncle, aunt, first cousin, nephew, niece, husband, wife, father-in-law, mother-in-law, daughter-in-law, son-in-law, brother-in-law, sister-in-law, stepfather, stepmother, stepson, stepdaughter, stepbrother, stepsister, half-brother, half-sister, grandparent, or grandchild.

6. Based on information and belief, the statement, which I have marked below, is true in relation to the entity submitting this sworn statement. [Please indicate which statement applies.]

_____ Neither the entity submitting this sworn statement, nor any officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, have any relationships as defined in section 105.08, Indian River County Code, with any County Commissioner or County employee.

_____ The entity submitting this sworn statement, or one or more of the officers, directors, executives, partners, shareholders, employees, members, or agents, who are active in management of the entity have the following relationships with a County Commissioner or County employee:

Name of Affiliate or entity	Name of County Commissioner or employee	Relationship
_____	_____	_____
_____	_____	_____
_____	_____	_____

(Signature)

(Date)

STATE OF _____

COUNTY OF _____

The foregoing instrument was acknowledged before me this _____ day of _____, 20____, by _____, who is personally known to me or who has produced _____ as identification.

NOTARY PUBLIC

SIGN: _____

PRINT: _____

Notary Public, State at large
My Commission Expires:

(Seal)

BIDDERS QUALIFICATIONS QUESTIONNAIRE

NOTICE: THE OWNER RETAINS THE DISCRETION TO REJECT THE BIDS OF NON-RESPONSIBLE BIDDERS.

Documentation Submitted with Project No: IRC-1826

Project Name: NORTH COUNTY REGIONAL PARK AQUATIC FACILITY ROOF REPLACEMENT

1. Bidder's Name / Address: _____

2. Bidder's Telephone & FAX Numbers: _____

3. Licensing and Corporate Status:
 - a. Is CONTRACTOR License current? _____
 - b. Bidder's CONTRACTOR License No: _____ [Attach a copy of CONTRACTOR's License to the bid]
 - c. Attach documentation from the State of Florida Division of Corporations that indicates the business entity's status is active and that lists the names and titles of all officers.
4. Number of years the firm has performed business as a CONTRACTOR in construction work of the type involved in this contract: _____
5. What is the last project OF THIS NATURE that the firm has completed?

6. Has the firm ever failed to complete work awarded to you? _____

[If your answer is "yes", then attach a separate page to this questionnaire that explains the circumstances and list the project name, Owner, and the Owner's telephone number for each project in which the firm failed to complete the work.]
7. Has the firm ever been assessed liquidated damages? _____

[If your answer is "yes", then attach a separate page to this questionnaire that explains the circumstances and list the project name, Owner, and the Owner's telephone number for each project in which liquidated damages have been assessed.]
8. Has the firm ever been charged by OSHA for violating any OSHA regulations? _____
[If your answer is "yes", then attach a separate page to this questionnaire that explains the circumstances and list the project name, Owner, and the Owner's telephone number for each project in which OSHA violations were alleged.]

9. Has the firm implemented a drug-free workplace program in compliance with Florida Statute 287.087? _____

(In the case of a tie, preference will be given to businesses with drug-free workplace programs)

10. Has the firm ever been charged with noncompliance of any public policy or rules? _____

[If your answer is "yes", then attach a separate page to this questionnaire that explains the circumstances and list the project name, Owner, and the Owner's telephone number for each project.]

11. Attach to this questionnaire, a notarized financial statement and other information that documents the firm's financial strength and history.

12. Has the firm ever defaulted on any of its projects? _____

[If your answer is "yes", then attach a separate page to this questionnaire that explains the circumstances and list the project name, Owner, and the Owner's telephone number for each project in which a default occurred.]

13. Attach a separate page to this questionnaire that summarizes the firm's current workload and that demonstrates its ability to meet the project schedule.

14. Name of person who inspected the site of the proposed work for the firm:

Name: _____ Date of Inspections: _____

15. Name of on-site Project Foreman: _____

Number of years of experience with similar projects as a Project Foreman: _____

16. Name of Project Manager: _____

Number of years of experience with similar projects as a Project Manager: _____

17. State your total bonding capacity: _____

18. State your bonding capacity per job: _____

19. Please provide name, address, telephone number, and contact person of your

bonding company: _____

19. Complete the following table for SIMILAR projects:

Name of Project	Date Completed	Owner	Contact Person: Name/ Email Address/Phone	Original Contract Amount	Final Contract Amount

[NOTE: If requested by the County, the Bidder shall furnish references, and other information, sufficiently comprehensive to permit an appraisal of its abilities as a CONTRACTOR.]

By: _____
(Signature)

(Position or Title)

(Date)

[END OF BIDDERS QUALIFICATIONS QUESTIONNAIRE]

SWORN STATEMENT UNDER THE FLORIDA TRENCH SAFETY ACT

THIS FORM MUST BE SIGNED BY THE BIDDER WHO WILL BE RESPONSIBLE FOR THE EXCAVATION WORK ("BIDDER"), OR ITS AUTHORIZED REPRESENTATIVE, IN THE PRESENCE OF A NOTARY PUBLIC AUTHORIZED TO ADMINISTER OATHS.

1. This Sworn Statement is submitted with Project No. IRC-1826 for

NORTH COUNTY REGIONAL PARK AQUATIC FACILITY ROOF REPLACEMENT

2. This Sworn Statement is submitted by _____
(Legal Name of Entity Submitting Sworn Statement), hereinafter
"BIDDER". The BIDDER's address is _____
BIDDER's Federal Employer Identification Number (FEIN) is _____.

3. My name is _____ and my relationship to the BIDDER
(Print Name of Individual Signing)
is _____
(Position or Title)

I certify, through my signature at the end of this Sworn Statement, that I am an authorized representative of the BIDDER.

4. The Trench Safety Standards that will be in effect during the construction of this Project are contained within the Trench Safety Act, Section 553.60 et.seq. Florida Statutes and refer to the applicable Florida Statute(s) and/or OSHA Regulation(s) and include the "effective date" in the citation(s). Reference to and compliance with the applicable Florida Statute(s) and OSHA Regulation(s) is the complete and sole responsibility of the BIDDER. Such reference will not be checked by OWNER or ENGINEER and they shall have no responsibility to review or check the BIDDER's compliance with the Trench Safety Standards.

5. The BIDDER assures the OWNER that it will comply with the applicable Trench Safety Standards.

6. The BIDDER has allocated and included in its bid the total amount of \$_____, based on the linear feet of trench to be excavated over five (5) feet deep, for compliance with the applicable Trench Safety Standards, and intends to comply with said standards by instituting the following specific method(s) of compliance on this Project: _____

The determination of the appropriate method(s) of compliance is the complete and sole responsibility of the BIDDER. Such methods will not be checked by the OWNER or ENGINEER for accuracy, completeness, or any other purpose. The OWNER and ENGINEER shall have no responsibility to review or check the BIDDER's compliance with the Trench Safety Standards.

- 7. The BIDDER has allocated and included in its bid the total amount of \$_____ based on the square feet of shoring to be used for compliance with shoring safety requirements and intends to comply with said shoring requirements by instituting the following specific method(s) of compliance on this Project: _____

The determination of the appropriate method(s) of compliance is the complete and sole responsibility of the BIDDER. Such methods will not be checked by the OWNER or ENGINEER for accuracy, completeness or any other purpose. The OWNER and ENGINEER shall have no responsibility to review or check the BIDDER's compliance with the Trench Safety Standards.

- 8. The BIDDER, in submitting this bid, represents that it has obtained and considered all available geotechnical information, has utilized said geotechnical information and that, based on such information and the BIDDER's own information, the BIDDER has sufficient knowledge of the Project's surface and subsurface site conditions and characteristics to assure BIDDER's compliance with the applicable Trench Safety Standards in designing the trench safety system(s) for the Project.

BIDDER: _____

By: _____

Position or Title: _____

Date: _____

STATE OF _____
 COUNTY OF _____

Personally appeared before me, the undersigned authority, _____ who after first being sworn by me, affixed his/her signature in the space provided above on this _____ day of _____, 20____.

 Notary Public, State at large
 My Commission Expires:

LIST OF SUBCONTRACTORS

The Bidder **MUST** list below the name and address of each Subcontractor who will perform work under this Contract in excess of one-half percent of the total bid price, and shall also list the portion of the work which will be done by such Subcontractor. After the opening of Bids, additions, changes or substitutions will not be allowed unless approved by Indian River County after a request for such a change has been submitted in writing by the CONTRACTOR, which shall include reasons for such request. Subcontractors must be properly licensed and hold a valid Certificate of Competency.

Documentation Submitted with Project No. IRC-1826 for **NORTH COUNTY REGIONAL PARK AQUATIC FACILITY ROOF REPLACEMENT**

	<u>Work to be Performed</u>	<u>Subcontractor's Name/Address</u>	<u>Portion of Work (%)</u>
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

Note: Attach additional sheets if required.

**CERTIFICATION REGARDING PROHIBITION AGAINST CONTRACTING WITH
SCRUTINIZED COMPANIES**

I hereby certify that neither the undersigned entity, nor any of its wholly owned subsidiaries, majority-owned subsidiaries, parent companies, or affiliates of such entities or business associations, that exists for the purpose of making profit have been placed on the Scrutinized Companies that Boycott Israel List created pursuant to s. 215.4725 of the Florida Statutes, or are engaged in a boycott of Israel.

In addition, if this solicitation is for a contract for goods or services of one million dollars or more, I hereby certify that neither the undersigned entity, nor any of its wholly owned subsidiaries, majority-owned subsidiaries, parent companies, or affiliates of such entities or business associations, that exists for the purpose of making profit are on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, created pursuant to s. 215.473 of the Florida Statutes, or are engaged in business operations in Cuba or Syria as defined in said statute.

I understand and agree that the County may immediately terminate any contract resulting from this solicitation upon written notice if the undersigned entity (or any of those related entities of respondent as defined above by Florida law) are found to have submitted a false certification or any of the following occur with respect to the company or a related entity: (i) it has been placed on the Scrutinized Companies that Boycott Israel List, or is engaged in a boycott of Israel, or (ii) for any contract for goods or services of one million dollars or more, it has been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or it is found to have been engaged in business operations in Cuba or Syria.

Name of Respondent: _____

By: _____
(Authorized Signature)

Title: _____

Date: _____

SAMPLE AGREEMENT

THIS AGREEMENT is by and between INDIAN RIVER COUNTY, a Political Subdivision of the State of Florida organized and existing under the Laws of the State of Florida, (hereinafter called OWNER)

and _____
(hereinafter called CONTRACTOR). OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1 - WORK

CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

PROJECT DESCRIPTION: The project involves the replacement of the low slope roofing assemblies of the Indian River County, North County Regional Park Aquatic Facility, located at 9450 County Road 512, Sebastian, FL. 32958. The existing low slope roofing assemblies will be replaced with a new modified bitumen roofing assembly. The existing clerestory stucco wall assemblies will be waterproofed.

ARTICLE 2 - THE PROJECT

The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

Project Name: **NORTH COUNTY REGIONAL PARK AQUATIC FACILITY ROOF
REPLACEMENT (IRC-1826)**
Bid Number: **2019074**
Project Address: **9450 COUNTY ROAD 512, SEBASTIAN, FLORIDA 32958**

ARTICLE 3 - CONTRACT TIMES

3.01 *Time of the Essence*

- A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the specifications are of the essence of the Agreement.

3.02 *Days to Achieve Substantial Completion, Final Completion and Final Payment*

- A. The Work will be substantially completed on or before the **90th** calendar day after the date when the Contract Times commence to run as provided in the Notice to Proceed and completed and ready for final payment in accordance with the Notice to Proceed on or before the **120th** calendar day after the date when the Contract Times commence to run.

3.03 *Liquidated Damages*

- A. CONTRACTOR and OWNER recognize that time is of the essence of this Agreement and that OWNER will suffer financial loss if the Work is not completed within the times specified in paragraph 3.02 above, plus any extensions thereof allowed in writing as a change order to this Agreement. Liquidated damages will commence for this portion of work. The parties also recognize the delays, expense, and difficulties involved in proving in a legal proceeding the actual loss suffered by OWNER if the Work is not completed on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty), CONTRACTOR shall pay OWNER **\$964.00** for each calendar day that expires after the time specified in paragraph 3.02 for completion and readiness for final payment until the Work is completed and ready for final payment.

ARTICLE 4 - CONTRACT PRICE

4.01 OWNER shall pay CONTRACTOR for completion of the Work an amount in current funds equal to the sum of the amounts determined pursuant to paragraph 4.01.A and summarized in paragraph 4.01.B, below:

- A. For all Work, at the prices stated in CONTRACTOR’s Bid, attached hereto as an exhibit.
- B. THE CONTRACT SUM subject to additions and deductions provided in the Contract Documents:

Numerical Amount: \$_____

Written Amount: _____

ARTICLE 5 - PAYMENT PROCEDURES

5.01 *Progress Payments.*

- A. The OWNER shall make progress payments to the CONTRACTOR on the basis of the approved partial payment request as recommended by ENGINEER in accordance with the provisions of the Local Government Prompt Payment Act, Florida Statutes section 218.70 et. seq. The OWNER shall retain ten percent (10%) of the payment amounts due to the CONTRACTOR until fifty percent (50%) completion of the work. After fifty percent (50%) completion of the work is attained as certified to OWNER by ENGINEER in writing, OWNER shall retain five percent (5%) of the payment amount due to CONTRACTOR until final completion and acceptance of all work to be performed by CONTRACTOR under the Contract Documents. Pursuant to Florida Statutes section 218.735(8)(b), fifty percent (50%) completion means the point at which the County as OWNER has expended fifty percent (50%) of the total cost of the construction services work purchased under the Bid and Specification Documents, together with all costs associated with existing change orders and other additions or modifications to the construction services work provided under the Contract Documents.

5.02 *Pay Requests.*

- A. On a form provided by the OWNER, each request for a progress payment shall contain the CONTRACTOR'S certification. All progress payments will be on the basis of progress of the work measured by the schedule of values established, or in the case of unit price work based on the number of units completed. After fifty percent (50%) completion, and pursuant to Florida Statutes section 218.735(8)(d), the CONTRACTOR may submit a pay request to the County as OWNER for up to one half (1/2) of the retainage held by the County as OWNER, and the County as OWNER shall promptly make payment to the CONTRACTOR unless such amounts are the subject of a good faith dispute; the subject of a claim pursuant to Florida Statutes section 255.05(2005); or otherwise the subject of a claim or demand by the County as OWNER or the CONTRACTOR. The CONTRACTOR acknowledges that where such retainage is attributable to the labor, services, or materials supplied by one or more subcontractors or suppliers, the CONTRACTOR shall timely remit payment of such retainage to those subcontractors and suppliers. Pursuant to Florida Statutes section 218.735(8)(c)(2005), CONTRACTOR further acknowledges and agrees that: 1) the County as OWNER shall receive immediate written notice of all decisions made by CONTRACTOR to withhold retainage on any subcontractor at greater than five percent (5%) after fifty percent (50%) completion; and 2) CONTRACTOR will not seek release from the County as OWNER of the withheld retainage until the final pay request.

5.03 Paragraphs 5.01 and 5.02 do not apply to construction services work purchased by the County as OWNER which are paid for, in whole or in part, with federal funds and are subject to federal grantor laws and regulations or requirements that are contrary to any provision of the Local Government Prompt Payment Act. In such event, payment and retainage provisions shall be governed by the applicable grant requirements and guidelines.

5.04 *Acceptance of Final Payment as Release.*

- A. The acceptance by the CONTRACTOR of final payment shall be and shall operate as a release to the OWNER from all claims and all liability to the CONTRACTOR other than claims in stated amounts as may be specifically excepted by the CONTRACTOR for all things done or furnished in connection with the work under this Agreement and for every act and neglect of the OWNER and others relating to or arising out of the work. Any payment, however, final or otherwise, shall not release the CONTRACTOR or its sureties from any obligations under this Agreement, the Invitation to Bid or the Public Construction Bond.

ARTICLE 6 – PUBLIC CONSTRUCTION BOND

6.01 Within fifteen (15) days of receipt of the Contract Documents for execution, the CONTRACTOR shall furnish a Public Construction Bond in an amount equal to 100% of the Contract Price. If bid does not exceed \$100,000, no Public Construction Bond will be required.

- A. In lieu of the Public Construction Bond, the CONTRACTOR may furnish an alternative form of security in the form of cash, money order, certified check, cashier's check, irrevocable letter of credit or a security as listed in Part II of F.S. Chapter 625. Any such alternative form of security

shall be for the same purpose, and be for the same amount and subject to the same conditions as those applicable to the bond otherwise required. The determination of the value of an alternative form of security shall be made by the OWNER.

- B. Such Bond shall continue in effect for one (1) year after acceptance of the Work by the OWNER.
- C. The OWNER shall record the Public Construction Bond with the Public Record Section of the Indian River County Courthouse located at 2000 16th Avenue, Vero Beach, Florida 32960.

ARTICLE 7 - INDEMNIFICATION

7.01 CONTRACTOR shall indemnify and hold harmless the OWNER, and its commissioners, officers, employees, and agents, from liabilities, damages, losses and costs, including, but not limited to, reasonable attorney's fees, to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of the CONTRACTOR and persons employed or utilized by the CONTRACTOR in the performance of the Work.

ARTICLE 8 - CONTRACTOR'S REPRESENTATIONS

8.01 In order to induce OWNER to enter into this Agreement CONTRACTOR makes the following representations:

- A. CONTRACTOR has examined and carefully studied the Contract Documents and the other related data identified in the Invitation to Bid documents.
- B. CONTRACTOR has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. CONTRACTOR is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. CONTRACTOR has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by CONTRACTOR, including applying the specific means, methods, techniques, sequences, and procedures of construction, if any, expressly required by the Contract Documents to be employed by CONTRACTOR, and safety precautions and programs incident thereto.
- E. CONTRACTOR does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.
- F. CONTRACTOR is aware of the general nature of work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Contract Documents.

- G. CONTRACTOR has correlated the information known to CONTRACTOR, information and observations obtained from visits to the Site, reports and drawings identified in the Contract Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.
- H. CONTRACTOR has given OWNER written notice of all conflicts, errors, ambiguities, or discrepancies that CONTRACTOR has discovered in the Contract Documents, and the written resolution thereof by OWNER is acceptable to CONTRACTOR.
- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 9 - CONTRACT DOCUMENTS

9.01 *Contents*

A. The Contract Documents consist of the following:

- (1) Invitation to Bid **2019074**;
- (2) CONTRACTOR'S Bid Form (pages **13** to **15**, inclusive);
- (3) Bid Bond (page **16**);
- (4) Drug Free Workplace Form (page **17**);
- (5) Sworn Statement Under Section 105.08, Indian River County Code, on Disclosure of Relationships (pages **18** to **19**, inclusive);
- (6) Bidders Qualifications Questionnaire (pages **20** to **23**, inclusive);
- (7) Sworn Statement Under the Florida Trench Safety Act (pages **24** to **25**, inclusive);
- (8) List of Subcontractors (page **26**);
- (9) Certification Regarding Prohibition Against Contracting With Scrutinized Companies (page **27**);
- (10) Plan set as follows: ***Sheets A0.1 through A7.2 with each sheet bearing the general title INDIAN RIVER COUNTY AQUATIC FACILITY ROOFING REPLACEMENT AND REPAIR PROJECT.***
- (11) This Agreement (pages **28** to **37**, inclusive);
- (12) Public Construction Bond (if applicable) (pages **38** to **40**, inclusive);
- (13) Certificate of Liability Insurance (page **41**);

- (14) Notice to Proceed (page 42);
- (15) Addenda (if applicable) ____ to ____;
- (16) The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
 - a) Written Amendments;
 - b) Work Change Directives;
 - c) Change Order(s)

ARTICLE 10 - MISCELLANEOUS

10.01 *Terms*

- A. Terms used in this Agreement will have the meanings indicated in the Invitation to Bid.

10.02 *Assignment of Contract*

- A. No assignment by a party hereto of any rights under or interests in the Agreement will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.03 *Successors and Assigns*

- A. OWNER and CONTRACTOR each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.04 *Severability*

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon OWNER and CONTRACTOR, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

10.05 *Venue*

- A. This Agreement shall be governed by the laws of the State of Florida. Venue for any lawsuit brought by either party against the other party or otherwise arising out of this Agreement shall be

in Indian River County, Florida, or, in the event of a federal jurisdiction, in the United States District Court for the Southern District of Florida.

10.06 *Public Records Compliance*

A. Indian River County is a public agency subject to Chapter 119, Florida Statutes. The CONTRACTOR shall comply with Florida's Public Records Law. Specifically, the CONTRACTOR shall:

- (1) Keep and maintain public records required by the County to perform the service.
- (2) Upon request from the County's Custodian of Public Records, provide the County with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119 or as otherwise provided by law.
- (3) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the CONTRACTOR does not transfer the records to the County.
- (4) Upon completion of the contract, transfer, at no cost, to the County all public records in possession of the CONTRACTOR or keep and maintain public records required by the County to perform the service. If the CONTRACTOR transfers all public records to the County upon completion of the contract, the CONTRACTOR shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the CONTRACTOR keeps and maintains public records upon completion of the contract, the CONTRACTOR shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the County, upon request from the Custodian of Public Records, in a format that is compatible with the information technology systems of the County.

B. **IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:**

(772) 226-1424

publicrecords@ircgov.com

Indian River County Office of the County Attorney

1801 27th Street

Vero Beach, FL 32960

B. Failure of the CONTRACTOR to comply with these requirements shall be a material breach of this Agreement.

ARTICLE 11 - TERMINATION OF CONTRACT

- A. The occurrence of any of the following shall constitute a default by CONTRACTOR and shall provide the OWNER with a right to terminate this Contract in accordance with this Article, in addition to pursuing any other remedies which the OWNER may have under this Contract or under law:
- (1) if in the OWNER's opinion CONTRACTOR is improperly performing work or violating any provision(s) of the Contract Documents;
 - (2) if CONTRACTOR neglects or refuses to correct defective work or replace defective parts or equipment, as directed by the Engineer pursuant to an inspection;
 - (3) if in the OWNER's opinion CONTRACTOR's work is being unnecessarily delayed and will not be finished within the prescribed time;
 - (4) if CONTRACTOR assigns this Contract or any money accruing thereon or approved thereon; or
 - (5) if CONTRACTOR abandons the work, is adjudged bankrupt, or if he makes a general assignment for the benefit of his creditors, or if a trustee or receiver is appointed for CONTRACTOR or for any of his property.
 - (6) if CONTRACTOR fails to pay subcontractors, materialmen and/or suppliers on a timely basis.
- B. OWNER shall, before terminating the Contract for any of the foregoing reasons, notify CONTRACTOR in writing of the grounds for termination and provide CONTRACTOR with ten (10) calendar days to cure the default to the reasonable satisfaction of the OWNER.
- C. If the CONTRACTOR fails to correct or cure within the time provided in the preceding Sub-Article B, OWNER may terminate this Contract by notifying CONTRACTOR in writing. Upon receiving such notification, CONTRACTOR shall immediately cease all work hereunder and shall forfeit any further right to possess or occupy the site or any materials thereon; provided, however, that the OWNER may authorize CONTRACTOR to restore any work sites.
- D. The CONTRACTOR shall be liable for:
- (1) any new cost incurred by the OWNER in soliciting bids or proposals for and letting a new contract; and
 - (2) the difference between the cost of completing the new contract and the cost of completing this Contract;
 - (3) any court costs and attorney's fees associated with any lawsuit undertaken by OWNER to enforce its rights herein.
- E. TERMINATION FOR CONVENIENCE: OWNER may at any time and for any reason terminate CONTRACTOR's services and work for OWNER's convenience. Upon receipt of notice of such termination CONTRACTOR shall, unless the notice directs otherwise, immediately discontinue the work and immediately cease ordering of any materials, labor, equipment, facilities, or supplies in connection with the performance of this Contract. Upon such termination CONTRACTOR shall be entitled to payment only as follows:
- (1) the actual cost of the work completed in conformity with this Contract and the specifications; plus,
 - (2) such other costs actually incurred by CONTRACTOR as are permitted by the prime contract and approved by the OWNER.
- CONTRACTOR shall not be entitled to any other claim for compensation or damages against the County in the event of such termination.
- F. TERMINATION IN REGARDS TO F.S. 287.135: TERMINATION IN REGARDS TO F.S. 287.135: CONTRACTOR certifies that it and its related entities of CONTRACTOR as defined by Florida law are

not on the Scrutinized Companies that Boycott Israel List, created pursuant to s. 215.4725 of the Florida Statutes, and are not engaged in a boycott of Israel. In addition, if this agreement is for goods or services of one million dollars or more, CONTRACTOR certifies that it and its related entities of CONTRACTOR as defined by Florida law are not on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, created pursuant to Section 215.473 of the Florida Statutes and are not engaged in business operations in Cuba or Syria.

OWNER may terminate this Contract if CONTRACTOR is found to have submitted a false certification as provided under section 287.135(5), Florida Statutes, been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or been engaged in business operations in Cuba or Syria, as defined by section 287.135, Florida Statutes.

OWNER may terminate this Contract if CONTRACTOR, including all wholly owned subsidiaries, majority-owned subsidiaries, and parent companies that exist for the purpose of making profit, is found to have been placed on the Scrutinized Companies that Boycott Israel List or is engaged in a boycott of Israel as set forth in section 215.4725, Florida Statutes.

[The remainder of this page was left blank intentionally]

IN WITNESS WHEREOF, OWNER and CONTRACTOR have signed this Agreement in duplicate. One counterpart each has been delivered to OWNER and CONTRACTOR. All portions of the Contract Documents have been signed or identified by OWNER and CONTRACTOR or on their behalf.

This Agreement will be effective on _____, 20__ (the date the Agreement is approved by the Indian River County Board of County Commissioners, which is the Effective Date of the Agreement).

OWNER:

CONTRACTOR:

INDIAN RIVER COUNTY _____

By: _____
Bob Solari, Chairman

By: _____
(CONTRACTOR)

By: _____
Jason E. Brown, County Administrator

(CORPORATE SEAL)

Attest _____

APPROVED AS TO FORM AND LEGAL SUFFICIENCY:

By: _____
Dylan Reingold, County Attorney

Address for giving notices:

Jeffrey R. Smith, Clerk of Court and Comptroller

License No. _____
(Where applicable)

Attest: _____
Deputy Clerk
(SEAL)

Agent for service of process: _____

Designated Representative:
Name: James W. Ennis, P.E., PMP
Title: Assistant Public Works Director
Address: 1801 27th Street. Vero Beach, FL 32960
Phone: (772) 226-1221
Email: jennis@ircgov.com

Designated Representative:
Name: _____
Title: _____
Address: _____

Phone: _____
Email: _____

(If CONTRACTOR is a corporation or a partnership, attach evidence of authority to sign.)

PUBLIC CONSTRUCTION BOND

INSTRUCTION FOR PUBLIC CONSTRUCTION BOND

The front or cover page to the required public construction bond shall contain the information required by Fla. Stat. 255.05(1)(a), and be substantially in the format shown on the first page following this instruction.

The Public Construction Bond shall be in the form suggested by Fla. Stat. 255.05(3) as shown on the second page following this instruction.

A Power of Attorney from a surety insurer authorized to do business in Florida, authorizing the signature of the Attorney in Fact who executes the Public Construction Bond shall accompany that Bond.

**Public Work
F.S. Chapter 255.05 (1)(a)
Cover Page**

THIS BOND IS GIVEN TO COMPLY WITH SECTION 255.05 OR SECTION 713.23 FLORIDA STATUTES, AND ANY ACTION INSTITUTED BY A CLAIMANT UNDER THIS BOND FOR PAYMENT MUST BE IN ACCORDANCE WITH THE NOTICE AND TIME LIMITATION PROVISIONS IN SECTION 255.05(2) OR SECTION 713.23 FLORIDA STATUTES.

BOND NO: _____

CONTRACTOR NAME: _____

CONTRACTOR ADDRESS: _____

CONTRACTOR PHONE NO: _____

SURETY COMPANY NAME: _____

SURETY PRINCIPAL

BUSINESS ADDRESS: _____

SURETY PHONE NO: _____

OWNER NAME: _____

OWNER ADDRESS: _____

OWNER PHONE NO: _____

OBLIGEE NAME: _____

(If contracting entity is different from the owner, the contracting public entity)

OBLIGEE ADDRESS: _____

OBLIGEE PHONE NO: _____

BOND AMOUNT: _____

CONTRACT NO: _____

(If applicable)

DESCRIPTION OF WORK: _____

PROJECT LOCATION: _____

LEGAL DESCRIPTION: _____

(If applicable)

FRONT PAGE

All other bond page(s) are deemed subsequent to this page regardless of any page number(s) that may be printed thereon.

PUBLIC CONSTRUCTION BOND

Bond No. _____
(enter bond number)

BY THIS BOND, We _____, as Principal and _____, _____ a corporation, as Surety, are bound to _____, herein called Owner, in the sum of \$ _____, for payment of which we bind ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally.

THE CONDITION OF THIS BOND is that if Principal:

1. Performs the contract dated _____, _____, between Principal and Owner for construction of _____, the contract being made a part of this bond by reference, at the times and in the manner prescribed in the contract; and
2. Promptly makes payments to all claimants, as defined in Section 255.05(1), Florida Statutes, supplying Principal with labor, materials, or supplies, used directly or indirectly by Principal in the prosecution of the work provided for in the contract; and
3. Pays Owner all losses, damages, expenses, costs, and attorney's fees, including appellate proceedings, that Owner sustains because of a default by Principal under the contract; and
4. Performs the guarantee of all work and materials furnished under the contract for the time specified in the contract, then this bond is void; otherwise it remains in full force.

Any action instituted by a claimant under this bond for payment must be in accordance with the notice and time limitation provisions in Section 255.05(2), Florida Statutes.

Any changes in or under the contract documents and compliance or noncompliance with any formalities connected with the contract or the changes does not affect Surety's obligation under this bond.

DATED ON _____,

(Name of Principal)

By _____
(As Attorney in Fact)

(Name of Surety)

SAMPLE CERTIFICATE OF LIABILITY INSURANCE

CERTIFICATE OF LIABILITY INSURANCE	
PRODUCER	<p>THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.</p> <p style="text-align: center;">COMPANIES AFFORDING COVERAGE</p>
INSURED	<p>COMPANY A -</p> <p>COMPANY B -</p> <p>COMPANY C -</p> <p>COMPANY D -</p> <p>COMPANY E -</p>

COVERAGES

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED NOTWITHSTANDING ANY REQUIREMENT TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN THE INSURANCE ACCORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INS R LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/D/YY)	LIMITS	
A	GENERAL LIABILITY <input type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE - <input type="checkbox"/> OCCUR <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>				EACH OCCURRENCE	\$ 1,000,000
					FIRE DAMAGE (Any One Fire)	\$ 50,000
					MED. EXP. (Any One Person)	\$ 5,000
					PERSONAL & ADV INJURY	\$ 1,000,000
					GENERAL AGGREGATE	\$ 1,000,000
					PRODUCTS – COMP/OP AGG.	\$ 1,000,000
						\$
A	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS <input type="checkbox"/> <input type="checkbox"/>				COMBINED SINGLE LIMIT (Ea. Occurrence)	\$ 1,000,000
					BODILY INJURY (Per Person)	\$
					BODILY INJURY (Per Accident)	\$
					PROPERTY DAMAGE	\$
	GARAGE LIABILITY <input type="checkbox"/> <input type="checkbox"/>				AUTO ONLY – EA ACCIDENT	\$
					OTHER THAN	EA ACC \$
					AUTO ONLY	AGG \$
A	EXCESS LIABILITY <input type="checkbox"/> CLAIMS MADE <input type="checkbox"/> DEDUCTIBLE <input type="checkbox"/> RETENTION \$				EACH OCCURRENCE	\$
						\$
					AGGREGATE	\$
						\$
A	WORKER'S COMPENSATION AND EMPLOYER'S LIABILITY THE PROPRIETOR/PARTNERS/ EXECUTIVE OFFICERS ARE: <input type="checkbox"/> INCL <input type="checkbox"/> EXCL OTHER: <input type="checkbox"/> BUILDER'S RISK				<input type="checkbox"/> WC STATUTORY LIMITS	
					E.L. EACH ACCIDENT	\$ 100,000
					E.L. DISEASE – EA	\$ 500,000
					E.L. DISEASE-POLICY LIMIT	\$ 100,000
					FULL REPLACEMENT COST OF THE WORK	

DESCRIPTION OF OPERATIONS/LOCATIONS VEHICLES/SPECIAL ITEMS

CERTIFICATE HOLDER	ADDITIONAL INSURED; INSURER LETTER:	CANCELLATION
ADDITIONAL INSURED: INDIAN RIVER COUNTY 1801 27 TH STREET, VEROBEACH, FL 32960-3388		SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT. FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.
		AUTHORIZED REPRESENTATIVE

NOTICE TO PROCEED

Dated _____

TO:

(BIDDER)

ADDRESS:

Contract For:

NORTH COUNTY REGIONAL PARK AQUATIC FACILITY ROOF REPLACEMENT

Project No: **IRC1826**

IRC Bid No. **2019074**

You are notified that the Contract Times under the above contract will commence to run on _____. By that date, you are to start performing your obligations under the Contract Documents. The contract has allocated **90** calendar days for Substantial Completion of this project and **120** calendar days for Final Completion. In accordance with Article 3.2 of the Agreement the date of Substantial Completion is _____ and the date of readiness for final payment is _____.

CONTRACTOR shall not commence work under this Contract until he has obtained all insurance required under "Instructions to Bidder, General Terms and Conditions" and such insurance has been delivered to the OWNER and approved by the OWNER, nor shall the CONTRACTOR allow any Subcontractor to commence work on his subcontract until all similar insurance required of the Subcontractor has been so obtained and approved. All such insurance shall remain in effect until final payment and at all times thereafter when CONTRACTOR may be correcting, removing or replacing defective Work in accordance with Article 6 of the Agreement.

Also, before you may start any Work at the Site, you must:
(add other requirements, if applicable)

INDIAN RIVER COUNTY
(Owner)

(Authorized Signature)

(Title)

TECHNICAL SPECIFICATIONS

FOR THE

INDIAN RIVER COUNTY NORTH COUNTY REGIONAL PARK AQUATIC FACILITY ROOFING REPLACEMENT

IRC - 1826

June 7, 2019

PREPARED FOR:



INDIAN RIVER COUNTY, FLORIDA

PREPARED BY:



JAY AMMON ARCHITECT, INC.

3246 LAKEVIEW OAKS DRIVE • LONGWOOD, FLORIDA 32779 • FAX (407) 333-4686 • OFFICE (407) 333-1977

INDEX TO PROJECT MANUAL

THE CONTRACTOR IS REQUIRED TO COMPARE THIS PROJECT MANUAL WITH THE INDEX BELOW FOR COMPLETENESS. IF ANY PAGES ARE MISSING OR ILLEGIBLE IT IS THEIR RESPONSIBILITY TO REQUEST REPLACEMENTS FROM THE ARCHITECT.

DIVISION 0 - BIDDING AND CONTRACT REQUIREMENTS

SECTION 00001 TABLE OF CONTENTS
SECTION 00002 DRAWING LIST
SECTION 00005 A/E'S OF RESPONSIBILITY

DIVISION 1 - GENERAL REQUIREMENTS (See Volume 1 Project Manual for Owner Provided Division 1 Requirements)

DIVISION 2 - SITE WORK

SECTION 024119 SELECTIVE DEMOLITION

DIVISION 3 - NOT USED

DIVISION 4 - NOT USED

DIVISION 5 - NOT USED

DIVISION 6 - WOOD AND PLASTICS

SECTION 061000 ROUGH CARPENTRY

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

SECTION 074210 METAL WALL PANELS
SECTION 075216 MODIFIED BITUMINOUS MEMBRANE ROOFING
SECTION 076200 SHEET METAL FLASHING AND TRIM
SECTION 079200 JOINT SEALANTS

DIVISION 8 - NOT USED

DIVISION 9 - FINISHES

SECTION 092513 ACRYLIC PLASTER FINISH

DIVISION 10 - 25 - NOT USED

DIVISION 26 – ELECTRICAL

SECTION 264100 LIGHTNING PROTECTION SYSTEM

DIVISION 27 - 32 - NOT USED

CONTRACT
DRAWINGS:

SHEET

<u>NUMBER:</u>	<u>SHEET TITLE:</u>	<u>REVISION:</u>	<u>ISSUE DATE:</u>
A0.1	COVER SHEET	0	7 JUN 2019
A1.1	SYMBOLS, ABBREVIATIONS AND CODE INFORMATION	0 0	7 JUN 2019 7 JUN 2019
A1.2	GENERAL NOTES	0	7 JUN 2019
A1.3	SITE PLAN	0	7 JUN 2019
A2.1	EXISTING CONDITIONS ROOF PLAN	0	7 JUN 2019
A2.2	PROPOSED ROOF PLAN	0	7 JUN 2019
A2.3	WIND UPLIFT PRESSURE PLAN	0	7 JUN 2019
A2.4	CANOPY REFLECTIVE CEILING PLAN	0	7 JUN 2019
A3.1	EXISTING AND PROPOSED NORTH ELEVATIONS	0	7 JUN 2019
A3.2	EXISTING AND PROPOSED EAST ELEVATIONS	0	7 JUN 2019
A3.3	EXISTING AND PROPOSED SOUTH ELEVATIONS	0	7 JUN 2019
A4.1	EXISTING SECTIONS	0	7 JUN 2019
A5.1	ROOFING REPLACEMENT DETAILS	0	7 JUN 2019
A5.2	ROOFING REPLACEMENT DETAILS	0	7 JUN 2019
A5.3	ROOFING REPLACEMENT DETAILS	0	7 JUN 2019
A5.4	ROOFING REPLACEMENT DETAILS	0	7 JUN 2019
A5.5	ROOFING REPLACEMENT DETAILS	0	7 JUN 2019
A7.1	PHOTOGRAPHS	0	7 JUN 2019
A7.2	PHOTOGRAPHS	0	7 JUN 2019

Contract drawings will be attached at the end of the project manual.

ARCHITECT OF RECORD: **JAY AMMON AIA**
Company: Jay Ammon Architect, Inc.
Telephone No: 407-333-1977

LANDSCAPE ARCHITECT OF RECORD: N/A
Company:
Telephone No:

STRUCTURAL ENGINEER OF RECORD: N/A
Company:
Telephone No:

CIVIL ENGINEER OF RECORD: N/A
Company:
Telephone No:

MECHANICAL ENGINEER OF RECORD: N/A
Company:
Telephone No:

ELECTRICAL ENGINEER OF RECORD: N/A
Company:
Telephone No:

AM&CS ENGINEER OF RECORD: N/A
Company:
Telephone No:

PROJECT MANAGER: **James W. Ennis P.E.**
Owner: INDIAN RIVER COUNTY – ASSISTANT PUBLIC WORKS
DIRECTOR
Telephone No: 772-226-1380

END OF SECTION

DIVISION 2 – SITE WORK

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

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

1.2 DEFINITIONS

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

1.3 INFORMATIONAL SUBMITTALS

- A. A pre-construction video and photos shall be submitted prior to mobilization or work commencing on the jobsite.

1.4 CLOSEOUT SUBMITTALS

- A. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.5 FIELD CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

1.6 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

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

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.
- D. Engage a professional engineer to perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.
- E. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs or preconstruction videotapes.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
 - 1. Comply with requirements for existing services/systems interruptions specified in the Division 1 Documents.

- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
 - 1. Arrange to shut off indicated utilities with utility companies.
 - 2. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
 - 3. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated to be removed.
 - a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
 - b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material.
 - c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
 - d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
 - e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
 - f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
 - g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material.

3.3 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 - 1. Comply with requirements for access and protection specified in Owner provided Division 1 documents.

- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

- C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of

construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

3.4 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
4. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
5. Dispose of demolished items and materials promptly.

B. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse.
2. Protect items from damage during transport and storage.
3. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

C. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.6 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION

DIVISION 6 – WOOD AND PLASTICS

SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Wood blocking and nailers.
 - 2. Plywood

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product.
 - 1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements

1.3 INFORMATIONAL SUBMITTALS

- A. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.
- B. Evaluation Reports: For the following, from ICC-ES:
 - 1. Wood-preservative-treated wood.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
 - 1. Factory mark each piece of lumber with grade stamp of grading agency.

- B. Maximum Moisture Content of Lumber: 15 percent for 2-inch nominal (38-mm actual) thickness or less, 19 percent for more than 2-inch nominal (38-mm actual) thickness unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED LUMBER

- A. Preservative Treatment by Pressure Process: AWWA U1; Use Category UC2 for interior construction not in contact with the ground, Use Category UC3b for exterior construction not in contact with the ground, and Use Category UC4a for items in contact with the ground.
 - 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.
- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
- D. Application: Treat all rough carpentry unless otherwise indicated.
- E. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
 - 1. Blocking.
 - 2. Nailers.
- F. For items of dimension lumber size, provide Construction or No. 2 grade lumber of any species.
- G. For concealed boards, provide lumber with 15 percent maximum moisture content and any of the following species and grades:
 - 1. Mixed southern pine; No. 2 grade; SPIB.
 - 2. Eastern softwoods; No. 2 Common grade; NeLMA.
 - 3. Northern species; No. 2 Common grade; NLGA.
 - 4. Western woods; Construction or No. 2 Common grade; WCLIB or WWPA.

2.3 PLYWOOD

- A. Equipment Backing Panels: Plywood, DOC PS 1, Exterior, A-C in thickness indicated or, if not indicated. Match existing thickness.

2.4 FASTENERS

- A. General: Provide fasteners of size and type indicated.

1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners of Type 304 stainless steel.
- B. Power-Driven Fasteners: NES NER-272.
- C. Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- B. Do not splice structural members between supports unless otherwise indicated.
- C. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.

3.2 PROTECTION

- A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.
- B. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes sufficiently wet that moisture content exceeds that specified, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

SECTION 074210 - METAL WALL PANELS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Concealed-fastener, lap-seam metal wall panels.
- B. Related Sections:
 - 1. Section 076200 "Sheet Metal Flashing and Trim" for flashing and other sheet metal work that is not part of metal wall panel assemblies.

1.3 DEFINITION

- A. Metal Wall Panel Assembly: Metal wall panels, attachment system components, miscellaneous metal framing, thermal insulation, and accessories necessary for a complete weathertight wall system.

1.4 PERFORMANCE REQUIREMENTS

- A. General Performance: Metal wall panel assemblies shall comply with performance requirements without failure due to defective manufacture, fabrication, installation, or other defects in construction.
- B. Delegated Design: Design metal wall panel assembly, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- C. Water Penetration under Static Pressure: No water penetration when tested according to ASTM E 331 at the following test-pressure difference:
 - 1. Test-Pressure Difference: 6.24 lbf/sq. ft. (300 Pa).
- D. Structural Performance: Provide metal wall panel assemblies capable of withstanding the effects the following loads and stresses within limits and under conditions indicated, based on testing according to ASTM E 1592:
 - 1. Wind Loads: Determine loads based on ASCE 7-10:

2. Deflection Limits: Metal wall panel assemblies shall withstand wind loads with horizontal deflections no greater than 1/180 of the span.
- E. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
1. Temperature Change (Range): 180 degrees Fahrenheit.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of wall panel and accessory.
- B. Shop Drawings: Show fabrication and installation layouts of metal wall panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details. Distinguish between factory-, shop- and field-assembled work.
1. Accessories: Include details of the following items, at a scale of not less than 1-1/2 inches per 12 inches (1:10):
 - a. Flashing and trim.
 - b. Anchorage systems.
- C. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below.
1. Metal Soffit Panels: 12 inches (305 mm) long by actual panel width. Include fasteners, closures, and other metal wall panel accessories.
 2. Trim and Closures: 12 inches (305 mm) long. Include fasteners and other exposed accessories.
 3. Accessories: 12-inch- (305-mm-) long Samples for each type of accessory.
- D. Delegated-Design Submittal: For metal wall panel assembly indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.6 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Exterior elevations drawn to scale and coordinating penetrations and wall-mounted items. Show the following:
1. Wall panels and attachments.
 2. Wall-mounted items including doors, windows, louvers, and lighting fixtures.
 3. Penetrations of wall by pipes and utilities.
- B. Qualification Data: For Installer.

- C. Material Certificates: For thermal insulation signed by manufacturers.
- D. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for each product.
- E. Field quality-control reports.
- F. Warranties: Sample of special warranties.

1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For metal wall panels to include in maintenance manuals.

1.8 QUALITY ASSURANCE

- A. Installer Qualifications: An employer of workers trained and approved by manufacturer.
- B. Source Limitations: Obtain each type of metal wall panel and the roof panels described in Section 07411 from single source from single manufacturer.
- C. Fire-Resistance Ratings: Provide metal wall panels identical to those of assemblies tested for fire resistance per ASTM E 119 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - 1. Indicate design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency. - UL Class A.
- D. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.
 - 1. Build mockup of typical wall corner panel, including soffit, as shown on Drawings; approximately one bay wide by one story high by full thickness, including insulation, supports, attachments, and accessories.
 - 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
 - 3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- E. Preinstallation Conference: Conduct conference at Project site.
 - 1. Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative, metal wall panel Installer, metal wall panel manufacturer's representative, structural-support Installer, and installers whose work interfaces with or affects metal wall panels, including installers of doors, windows, and louvers.
 - 2. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 3. Review methods and procedures related to metal wall panel installation, including manufacturer's written instructions.

4. Examine support conditions for compliance with requirements, including alignment between and attachment to structural members.
5. Review flashings, special siding details, wall penetrations, openings, and condition of other construction that will affect metal wall panels.
6. Review governing regulations and requirements for insurance, certificates, and tests and inspections if applicable.
7. Review temporary protection requirements for metal wall panel assembly during and after installation.
8. Review wall panel observation and repair procedures after metal wall panel installation.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver components, sheets, metal wall panels, and other manufactured items so as not to be damaged or deformed. Package metal wall panels for protection during transportation and handling.
- B. Unload, store, and erect metal wall panels in a manner to prevent bending, warping, twisting, and surface damage.
- C. Stack metal wall panels horizontally on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal wall panels to ensure dryness, with positive slope for drainage of water. Do not store metal wall panels in contact with other materials that might cause staining, denting, or other surface damage.
- D. Retain strippable protective covering on metal wall panel for period of metal wall panel installation.
- E. Protect foam-plastic insulation as follows:
 1. Do not expose to sunlight, except to extent necessary for period of installation and concealment.
 2. Protect against ignition at all times. Do not deliver foam-plastic insulation materials to Project site before installation time.
 3. Complete installation and concealment of plastic materials as rapidly as possible in each area of construction.

1.10 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of metal wall panels to be performed according to manufacturers' written instructions and warranty requirements.
- B. Field Measurements: Verify locations of structural members and wall opening dimensions by field measurements before metal wall panel fabrication, and indicate measurements on Shop Drawings.

1.11 COORDINATION

- A. Coordinate metal wall panel assemblies with rain drainage work, flashing, trim, and construction of studs, soffits, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.12 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of metal wall panel assemblies that fail in materials or workmanship within specified warranty period.

- 1. Failures include, but are not limited to, the following:

- a. Structural failures including rupturing, cracking, or puncturing.
- b. Deterioration of metals and other materials beyond normal weathering.
- c. Water intrusion through the metal wall assembly.

- 2. Warranty Period: 20 years from date of Substantial Completion.

- B. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal wall panels that show evidence of deterioration of factory-applied finishes within specified warranty period.

- 1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:

- a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
- b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
- c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

- 2. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PANEL MATERIALS

- A. Aluminum Sheet: Coil-coated sheet, ASTM B 209 (ASTM B 209M), alloy as standard with manufacturer, with temper as required to suit forming operations and structural performance required.

- 1. Surface: Smooth, flat finish.

- a. 2-Coat Fluoropolymer: AAMA 620. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

2. Concealed Finish: Apply pretreatment and manufacturer's standard white or light-colored acrylic or polyester backer finish consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil (0.013 mm).

B. Panel Sealants:

1. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch (13 mm) wide and 1/8 inch (3 mm) thick.
2. Joint Sealant: ASTM C 920; elastomeric polyurethane, polysulfide, or silicone sealant; of type, grade, class, and use classifications required to seal joints in metal wall panels and remain weathertight; and as recommended in writing by metal wall panel manufacturer.
3. Butyl-Rubber-Based, Solvent-Release Sealant: ASTM C 1311.

2.2 CONCEALED-FASTENER, LAP-SEAM METAL WALL PANELS

- A. General: Provide factory-formed metal wall panels designed to be field assembled by lapping and interconnecting side edges of adjacent panels and mechanically attaching through panel to supports using concealed fasteners and factory-applied sealant in side laps. Include accessories required for weathertight installation.

- B. Standing Seam Profile, Concealed-Fastener Metal Wall Panels: Formed with vertical panel edges and intermediate stiffening ribs symmetrically spaced between panel edges.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
2. Basis-of-Design Product: Subject to compliance with requirements, provide IMETCO or comparable product by one of the following:
 - a. PAC-CLAD Petersen Aluminum Corporation.
 - b. Englert, Inc.
3. Material: Aluminum sheet, 0.040 inch (1.02 mm) thick.
 - a. Exterior Finish: 2-coat fluoropolymer.
 - b. Color: Custom color to match upper metal roofing assembly.
4. Panel Coverage: 12 inches (305 mm).
5. Panel Height: 1.0 inch (25 mm).

2.3 ACCESSORIES

- A. Wall Panel Accessories: Provide components required for a complete metal wall panel assembly including trim, copings, fasciae, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal wall panels, unless otherwise indicated.

1. Closures: Provide closures at eaves and rakes, fabricated of same metal as metal wall panels.
2. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.

- B. Flashing and Trim: Patch wall panel material.

2.4 FABRICATION

- A. General: Fabricate and finish metal wall panels and accessories at the factory to greatest extent possible, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.
- B. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.
- C. Fabricate metal wall panel joints with factory-installed captive gaskets or separator strips that provide a tight seal and prevent metal-to-metal contact, and that will minimize noise from movements within panel assembly.
- D. Sheet Metal Accessories: Fabricate flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of item indicated.
 - 1. Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.
 - 2. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
 - 3. Seams for Other Than Aluminum: Fabricate nonmoving seams in accessories with flat-lock seams. Tin edges to be seamed, form seams, and solder.
 - 4. Sealed Joints: Form nonexpansion but movable joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.
 - 5. Conceal expansion provisions where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.
 - 6. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal recommended by metal wall panel manufacturer.
 - a. Size: As recommended by SMACNA's "Architectural Sheet Metal Manual" or metal wall panel manufacturer for application but not less than thickness of metal being secured.

2.5 GENERAL FINISH REQUIREMENTS

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable

if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, metal wall panel supports, and other conditions affecting performance of work.
 - 1. Examine wall sheathing to verify that sheathing joints are supported by framing or blocking and that installation is within flatness tolerances required by metal wall panel manufacturer.
 - 2. Verify that weather-resistant sheathing paper has been installed over sheathing or backing substrate to prevent air infiltration or water penetration.
 - 3. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of work.
- B. Examine roughing-in for components and systems penetrating metal wall panels to verify actual locations of penetrations relative to seam locations of metal wall panels before metal wall panel installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Prepare surface to receive underlayment. Prime all surfaces.

3.3 UNDERLAYMENT INSTALLATION

- A. Self-Adhering Sheet Underlayment: Apply primer. Comply with temperature restrictions of underlayment manufacturer for installation. Apply at locations indicated on Drawings, wrinkle free, in shingle fashion to shed water, and with end laps of not less than 6 inches (150 mm) staggered 24 inches (600 mm) between courses. Overlap side edges not less than 3-1/2 inches (90 mm). Roll laps with roller. Cover underlayment within 14 days.

3.4 Lap-Seam Metal Wall Panels: Fasten metal wall panels to supports with fasteners at each lapped joint at location and spacing recommended by manufacturer.

- A. Lap ribbed or fluted sheets one full rib corrugation. Apply panels and associated items for neat and weathertight enclosure. Avoid "panel creep" or application not true to line.
- B. Lap ribbed or fluted sheets one full rib corrugation. Apply panels and associated items for neat and weathertight enclosure. Avoid "panel creep" or application not true to line.
- C. Provide metal-backed washers under heads of exposed fasteners bearing on weather side of metal wall panels

- D. Locate and space exposed fasteners in uniform vertical and horizontal alignment. Use proper tools to obtain controlled uniform compression for positive seal without rupture of washer.
- E. Install screw fasteners with power tools having controlled torque adjusted to compress washer tightly without damage to washer, screw threads, or panels. Install screws in predrilled holes.
- F. Provide sealant tape at lapped joints of metal wall panels and between panels and protruding equipment, vents, and accessories.
- G. Apply a continuous ribbon of sealant tape to weather-side surface of fastenings on end laps; on side laps of nesting-type panels; on side laps of corrugated nesting-type, ribbed, or fluted panels; and elsewhere as needed to make panels weathertight.

3.5 ACCESSORY INSTALLATION

- A. General: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.
 - 1. Install components required for a complete metal wall panel assembly including trim, corners, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items.
- B. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed 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 weather resistant.
 - 1. Install exposed flashing and trim 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 flashing and trim to fit substrates and to result in waterproof and weather-resistant performance.
 - 2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet (3 m) with no joints allowed within 24 inches (605 mm) of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently weather resistant and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with mastic sealant (concealed within joints).

3.6 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect and test completed metal wall panel installation, including accessories.
- B. Remove and replace metal wall panels where tests and inspections indicate that they do not comply with specified requirements.

3.7 CLEANING AND PROTECTION

- A. Remove temporary protective coverings and strippable films, if any, as metal wall panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On

completion of metal wall panel installation, clean finished surfaces as recommended by metal wall panel manufacturer. Maintain in a clean condition during construction.

- B. After metal wall panel installation, clear weep holes and drainage channels of obstructions, dirt, and sealant.
- C. Replace metal wall panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 074210

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

SECTION 075216 – STYRENE BUTADIENE-STYRENE (SBS) MODIFIED BITUMINOUS MEMBRANE ROOFING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes: Roofing system consisting of a two-ply, SBS modified bitumen membrane system over existing lightweight insulating concrete, base sheet, base flashing and accessories.

1.3 RELATED WORK SPECIFIED ELSEWHERE

- A. Division 061000: Rough Carpentry
- B. Division 076200: Sheet Metal and Flashing
- C. Division 079200: Joint Sealants

1.4 REFERENCE STANDARDS

- A. Factory Mutual (FM Global)
- B. American Society for Testing and Materials (ASTM)
- C. National Waterproofing Contractors Association (NRCA)
- D. American Society of Civil Engineers (ASCE)
- E. Certified Roof Torch Applicator (CERTA)
- F. Occupational Health and Safety Administration (OSHA)
- G. Sheet Metal & Air Conditioning Contractors National Association (SMACNA)
- H. Underwriters Laboratory (UL)

1.5 DEFINITIONS

- A. Waterproofing Terminology: Refer to ASTM D1079 and the glossary of the National Roofing Contractors Association (NRCA) Roofing and Waterproofing Manual for definitions of waterproofing terms related to this section.

1.6 DESCRIPTION OF WORK

A. System Description:

1. Siplast: (Basis of Design)

- a. Project Type: Tear-off
- b. Deck: Existing LWIC
- c. Slope: > 1/8th inch
- d. Base Sheet: Nailable modified asphalt G2 base sheet with Polyolefin film backing
- e. Inner Ply: SBS modified bitumen inner ply, torch applied
- f. Cap Ply: SBS modified bitumen cap sheet, torch applied
- g. Flashing Membrane: Aluminum metal clad flashing
- h. Supplemental Flashing: PMMA flashing system.

1.7 ACTION SUBMITTALS

A. Product and material safety data sheets for each product proposed for use.

B. Samples for Verification

1. Two 8 ½ inch x 11 inch samples of the primary roofing and flashing materials, of color required.

C. Shop Drawings

1. Base flashings and membrane terminations
2. Tapered insulation, including slopes
3. Crickets, saddles, and tapered edge strips, including slopes
4. Insulation fastening patterns for corner, perimeter, and field

1.8 INFORMATIONAL SUBMITTALS

A. Letter from the roofing manufacturer that the roofing contractor is certified to install the specified products.

B. Latest edition of the roofing system manufacturer's specifications and installation instructions.

- C. Evidence of Factory Mutual testing.
- D. Evidence of Underwriters' Laboratories Class A acceptance of the proposed roofing system.
- E. Evidence and description of manufacturers' quality control/quality assurance program for the primary roofing products supplied. The quality assurance program description shall include all methods of testing for physical and mechanical property values.
- F. Evidence the roof system has passed 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.
- G. Evidence the roof system has passed 200 cycles of ASTM D 5849 after heat conditioning performed in accordance with ASTM D 5147.
- H. Letter from the roofing manufacturer confirming that the membrane manufacturer has been producing SBS products in the United States for a minimum of 10 years without a change in the basic product design or SBS modified blend, e.g. no substantive changes to the product composition, polymer specification, asphalt and filler formulation.
- I. Letter from the proposed primary roofing manufacturer confirming the number of years it has directly manufactured the proposed primary roofing system under the trade name and/or trademarks as proposed.
- J. Letter from the proposed primary roofing manufacturer confirming that a phased roof application, with only the modified bitumen base ply in place for a period of up to 10 weeks is acceptable and approved for this project.
- K. Letter from the proposed primary roofing manufacturer confirming that the filler content in the elastomeric blend of the proposed roof membrane and flashing components does not exceed 35% in weight.
- L. Letter from the proposed primary roofing manufacturer confirming that the proposed roof membrane and flashing components meet or exceed the physical and mechanical requirements listed in Part 2 of this specification.
- M. Letter from the proposed primary roofing manufacturer confirming that a Certificate of Analysis confirming the physical and mechanical properties of the roofing membrane components will be provided, for each production run of products, at the conclusion of the project.

- N. Complete list of material physical and mechanical properties for each sheet including: weights and thicknesses; low temperature flexibility; maximum load; elongation @ 5% maximum load; breaking load; dimensional stability; high temperature stability; and compound stability.
- O. Sample copy of the specified guarantee.

1.9 CLOSE-OUT SUBMITTALS

- A. Certificate Of Analysis from the testing laboratory of the primary waterproofing 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 7051 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:

1. Material type
2. Lot number
3. Production date
4. Dimensions and Mass (indicate the lowest values recorded during the production run)
5. Roll length
6. Roll width
7. Selvage width
8. Total thickness
9. Thickness at Selvedge (coating thickness)
10. Weight
11. Physical and Mechanical Properties
12. Low temperature flexibility
13. Peak Load
14. Ultimate Elongation
15. Dimensional stability
16. Compound Stability

17. Granule Embedment

- B. Repair and Maintenance guide outlining roofing care and maintenance required in order to maintain the guarantee.
- C. Guarantee, as specified herein.

1.10 QUALITY ASSURANCE

- A. Acceptable Products: Provide primary roofing products, including each type of sheet, all manufactured in the United States, supplied by a single manufacturer which has been successfully producing the specified types of primary products for not less than 10 years. Provide secondary or accessory products which are acceptable to the manufacturer of the primary roofing products.
- B. Agency Approvals: The proposed roofing 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.
 - 2. Florida Product Approval: The roofing system shall meet or exceed all requirements listed in FL10432-R12 System LS-M-1.
- C. Project Acceptance: Submit a completed manufacturer's application for guarantee form along with shop drawings of the areas to be roofed showing all dimensions, penetrations, and details. The form shall contain all the technical information applicable to the project including deck types, slopes, and manufacturer's membrane assembly proposed for installation. The form shall also contain accurate and complete information requested including proper names, addresses, zip codes and telephone numbers. The project must receive approval, through this process, prior to shipment of materials to the project site.
- D. 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 Contractor's Association, amended to include the acceptance of a phased roof system installation.
- E. Local Regulations: Conform to regulations of public agencies, including any specific requirements of the city and/or state of jurisdiction.

- F. **Manufacturer Requirements:** The primary roofing materials manufacturer shall provide direct trained company personnel to attend necessary job meetings, perform periodic inspections as necessary, and conduct a final inspection upon successful completion of the project.
- G. **Single Source Requirements:** Products and materials required to complete system shall be either produced directly by manufacturer or approved in writing by primary manufacturer for intended purpose.
- H. **Regulatory Requirements:** Comply with applicable Volatile Organic Compounds (VOCs) regulations
- I. **System Assembly Letter:** Manufacturer's certification as follows:
 - 1. List information specific to this project, including owner, contractor, building, and location.
 - 2. List each material required for roofing system.
 - 3. Certification of single source responsibility.
 - 4. Certification of acceptance of secondary products manufactured by others.
 - 5. Certification of acceptance of products specified elsewhere which are installed within or in contact with roofing system.
 - 6. Certification that products and materials comprising roofing system are compatible with each other and with adjacent materials they may contact.
 - 7. Certification that roof systems comply with specified UL and FM requirements.
 - 8. Certification that roof system is eligible for indicated guarantee.

1.11 DELIVERY, HANDLING, STORAGE & DISPOSAL

- A. Deliver materials in original unopened containers or packaging clearly labeled with manufacturer's name, brand name, instructions for storage, handling and use, all identifying numbers and labels.
- B. Store materials on pallets or other similar raised platform and protected from weather.
- C. Do not overload structure by storing large amounts of material in one (1) area.
- D. Store materials out of direct exposure to the elements. Store roll goods on a clean, flat and dry surface. All material stored overnight shall be stored on pallets. Rolls of waterproofing must be stored on ends. Store materials 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.

- E. Store all pail goods in their original undamaged containers in a clean, dry location, between 60 degrees F and 80 degrees F.
- F. Do not store catalyst in direct sunlight or in temperatures below 32 or above 77 degrees F. Always store in a cool, dry location.
- G. All combustible materials including, but not limited to catalyst, propane tanks, and cleaning solvents must be removed from the work areas every day. Store per manufacturer's instructions.
- H. Do not expose materials to moisture in any form before, during, or after delivery to the site. Reject delivery of materials that show evidence of contact with moisture.
- I. 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.
- J. 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.
- K. 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.
- L. All equipment, including rags, which may have been used to apply solvents, cleaners and other flammable material must be disposed of in a fire-safe container that meets OSHA guidelines and is certified by FM Global and UL.

1.12 PROJECT CONDITIONS

- A. 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 materials, applied roofing, and building interiors are protected from possible moisture damage or contamination.

1.13 SEQUENCING

- A. Coordinate work to minimize construction traffic required over complete roofing system.

- B. Construct and stage the project so that a phased application may be achieved. Phased application maintains a water tight condition with the base ply and reinforcing plies to vertical surfaces without the installation of the cap sheet. The base ply may stay exposed to the elements for a maximum of 120 days. When roof top equipment and trades have finished, the application of the cap sheet may begin. The manufacturer shall conduct an inspection of the base sheet prior to the installation of the cap sheet. The contractor must notify the manufacturer five (5) days in advance to schedule this inspection. Provide manufacturer's written certification that a phased application is acceptable.

1.14 WARRANTY

- A. Assembly Letter: Submit an assembly letter executed by an authorized representative of the roof membrane system manufacturer, indicating that the manufacturer has reviewed drawings and specifications, conditions affecting work and relationship of roof membrane system with related work, and that manufacturer proposes to provide warranty as referenced herein without further stipulation.
- B. Manufacturer's Warranty:
 - 1. Roof Guarantee: Upon successful completion of the project, and after all post installation procedures have been completed, furnish the owner with the manufacturer's twenty (20), year roof membrane labor and materials guarantee. 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.
- C. Owner's Instructions
 - 1. Care and Maintenance: Provide manufacturer's written Roof and Maintenance Guide for maintenance of roof system including, inspection schedules, trouble shooting, early signs of a potential problem and temporary emergency repairs.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Subject to compliance with specified criteria, provide primary membrane system components and accessories as listed below:
 - 1. Siplast, Basis of Design
 - 2. Johns Manville
 - 3. Soprema

2.2 PERFORMANCE REQUIREMENTS

- A. Roofing System Design: Tested by a qualified agency to resist the following uplift pressures:
1. Corner Uplift Pressure: 106.9 lbf/sq. ft. (kPa/sq. m)
 2. Perimeter Uplift Pressure: 71.0 lbf/sq. ft. (kPa/sq. m)
 3. Field of Roof Uplift Pressure: 42.3 lbf/sq. ft. (kPa/sq. m)
- B. Provide 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 and coated one side with a torch grade SBS bitumen blend adhesive layer. The cross sectional area of the sheet material shall contain no oxidized or non-SBS modified bitumen. The adhesive layer shall be manufactured using a process that embosses the surface with a grooved pattern to provide optimum burn-off of the plastic film and to maximize application rates. 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.
- C. Roofing manufacturer shall select all products and installation techniques to conform with all requirements herein. Thicknesses and material descriptions included herein are minimums. Provide thicker materials or materials with higher performance values if required by roofing manufacturer to comply with indicated performance requirements. When a manufacturer offers multiple product grades (eg. basic, optimal, heavy duty) only the top tier of products will be considered for acceptance.
- D. The owner and/or the architect reserve the right to have all submissions tested by an independent laboratory to confirm/dispute manufacturer's claim.

2.3 MATERIALS

- A. Use primers, adhesives, paints, coatings and sealants that comply with all applicable, and relevant and appropriate VOC limits.
- B. Lightweight Insulating Concrete Patch
 - 1. A unique mixture of cementitious binders, low density fine aggregates and proprietary additives specifically designed for repair of lightweight insulating concrete roof deck surfaces.
 - a. Zono-Patch by Siplast
- C. Base Sheet Fasteners
 - 1. Lightweight Insulating Concrete: A one-piece, split wedge fastener made of specially coated galvanized steel with a corrosion resistant Galvalume stress distribution plate designed to secure base sheets to lightweight insulating concrete substrates.
 - a. Zono-Tite Fastener by Siplast
- D. Base Sheet:
 - 1. Base Sheet: A fiberglass reinforced, asphalt coated sheet with a polyolefin film backing, having a minimum weight of 20 lb/sq. The sheet shall conform to ASTM D 4601, Type II requirements.
 - a. Siplast Parabase FS
- E. Modified Bituminous Sheets:
 - 1. Torch Grade Modified Bitumen Base and Stripping Ply
 - a. Torch Grade, Modified Bitumen Base And Stripping Ply
 - b. Thickness (avg): 114 mils (2.9 mm) (ASTM D 5147)
 - c. Thickness (min): 110 mils (2.8 mm) (ASTM D 5147)
 - d. Weight (min per 100 ft² of coverage): 76 lb (3.7 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): 50% (ASTM D 5147)
 - j. Dimensional Stability (max): 0.1% (ASTM D 5147)
 - k. Compound Stability (min): 250°F (121°C) (ASTM D 5147)
 - l. Approvals: UL Class listed, FM Approved (products shall bear seals of approval)
 - m. Reinforcement: Fiberglass mat or other meeting the performance and dimensional stability criteria
 - 1) Paradiene 20 TG by Siplast

2. Torch Grade, Modified Bitumen Cap Sheet

- 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. Approvals: UL Class listed (product shall bear seals of approval)
- m. Reinforcement: Fiberglass mat or other meeting the performance and dimensional stability criteria
- n. Surfacing: Ceramic Granules
 - 1) Siplast Paradiene 30 FR TG

3. Metal-Clad Modified Bitumen Flashing Sheet

- a. Thickness (avg): 150 mils (3.8 mm) (ASTM D 5147)
- b. Thickness (min): 146 mils (3.7 mm) (ASTM D 5147)
- c. Weight (min per 100 ft² of coverage): 96 lb (4.6 kg/m²)
- d. Coating Thickness – back surface (min): 40 mils (1 mm) (ASTM D 5147)
- e. Maximum filler content in elastomeric blend: 35% by weight
- f. Low temperature flexibility @ 0° F (-18° C): PASS (ASTM D 5147)
- g. Peak Load (avg) @ 73°F (23°C): 85 lbf/inch (15 kN/m) (ASTM D 5147)
- h. Peak Load (avg) @ 0°F (-18°C): 180 lbf/inch (31.7 kN/m) (ASTM D 5147)
- i. Ultimate Elongation @ 73°F (23°C): 45% (ASTM D 5147)
- j. Tear-Strength (avg): 120 lbf (0.54 kN) (ASTM D 5147)
- k. Dimensional Stability (max): 0.2% (ASTM D 5147)
- l. Compound Stability (min): 225°F (107°C) (ASTM D 5147)
- m. Cyclic Thermal Shock Stability (maximum): 0.2% (ASTM D 6298)
- n. Approvals: UL Approved, FM Approved (products shall bear seals of approval)
- o. Reinforcement: Fiberglass scrim mat or other meeting the performance and dimensional stability criteria
- p. Surfacing: aluminum metal foil
 - 1) Siplast Veral Aluminum

F. Catalyzed PMMA Resin Flashing System

1. A specialty flashing system consisting of a liquid-applied, fully reinforced, multi-component acrylic membrane installed over a prepared or primed substrate. The flashing system consists of a catalyzed polymethyl methacrylate (PMMA) primer, basecoat and topcoat, combined with a non-woven polyester fleece. The use of the

specialty flashing system shall be specifically approved in advance by the membrane manufacturer for each application.

- a. Parapro 123 Flashing System by Siplast

G. Primers & Mastics:

1. Primer: A high flash, quick drying, asphalt solvent blend which meets or exceeds ASTM D 41 requirements.

- a. Siplast PA-1125 Asphalt Primer by Siplast

2. Mastic: 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

H. Membrane Adhesives & Flashing Cements

1. Flashing Membrane Cement: A non-asbestos containing, refined asphalt flashing cement for use as a roofing membrane base flashing cement for granulated surfaced flashing sheets. Not to be used with foil-faced flashing sheets.

- a. PA 828 Flashing Cement by Siplast

I. 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 by Siplast

J. Accessory Products:

1. Accessory materials shall be as recommended in writing by membrane manufacturer, as required to comply with specified criteria.

2. Ceramic Granules: No. 11 grade specification ceramic granules of color scheme matching the granule surfacing of the finish ply.

3. Walktread: A prefabricated, puncture resistant polyester core reinforced, polymer modified bitumen sheet material topped with a ceramic-coated granule wearing surface.

- a. Thickness: 0.217 in (5.5 mm)
- b. Weight: 1.8 lb/ft² (8.8 kg/m²)
- c. Width: 30 in (76.2 cm)

- 1) Paratread Roof Protection Material by Siplast

PART 3 EXECUTION

3.1 EXAMINATION

3.1 LIGHTWEIGHT INSULATING CONCRETE EXAMINATION & PREPARATION

- A. Verify deck is clean and smooth, free of depressions, waves, or projections, properly sloped to drains.
- B. Perform and document fastener withdrawal tests confirming the ability of the approved fasteners to achieve the minimum pull out strength require by the roofing manufacturer to achieve the specified wind uplift pressures.
- C. Saw cut and remove damaged and friable lightweight insulating concrete down to sound substrate.
- D. Patch substrate with approved lightweight insulating concrete patch in accordance with manufacturer's instructions.

3.2 BASE SHEET SECUREMENT TO PREPARED SUBSTRATE

- A. Lay the base sheet over entire area to be roofed, lapping sides 3 inches and ends 6 inches. Using the specified fasteners, fasten each sheet every 7 inches through laps and stagger fasten the remainder of the sheet in 3 rows on nominal 10 inch centers with fasteners in each row on 7 inch centers. Increase the fastening pattern by 70% at the perimeter of the roof and 160% at the corners.

3.3 SUBSTRATE EXAMINATION

- A. Examine substrate surfaces to receive modified bitumen sheet roofing system and associated work and conditions under which roofing will be installed.
 - 1. Verify roof openings, pipes, conduit, sleeves, ducts, and vents through roof are solidly set.
 - 2. Verify that curbs, rails, pipe curb assemblies, rooftop mechanical equipment and other roof-mounted elements specified elsewhere are in place and properly anchored.
- B. Report defects or deficiencies in writing to contractor, design professional and owner's representatives.
- C. Do not proceed with roofing work until defects or deficiencies have been corrected.
- D. Acceptance: Commencement of roofing work constitutes acceptance of substrate as dry and meeting criteria for proper installation. Removal and replacement of roofing required

for or caused by defects or deficiencies in substrate shall be performed at no additional cost.

3.4 PREPARATION

- A. Protect adjacent surfaces from staining or soiling caused by roofing application. Prevent liquid materials from entering or clogging drains, pipes, conduits or conductors. Prevent foreign materials from entering or clogging roof drains, stoppers or downspouts.
- B. Apply primer to concrete and masonry substrates per manufacturer's written instructions.
- C. Prime all sheet metal to be embedded in roofing system including, but not limited to, gravel stops, scuppers, edge trim and lead drain flashing with cut-back asphalt.

D. ROOF MEMBRANE INSTALLATION

1. Apply two ply membrane system.

2. Torching:

- a. 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 Contractor's 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. Submit CERTA certificates to Owner prior to construction.
- b. Uniformly heat lower surface and preheat substrate to provide for an even, continuously flow of melted bitumen under sheet. A small bead of bitumen should be visible along both seams and under leading edge as membrane is unrolled.
- c. Do not allow torch to contact flammable materials.
- d. Use extreme caution when working around gas lines, electrical services and mechanical units.
- e. Never place the hot torching device onto in-place membrane.
- f. Provide fire extinguishers on roof during torching. Comply with applicable fire and safety regulations.
- g. Provide inspection of the roofing for one (1) hour after termination of torching to check for smoldering or hot materials.

3. Apply layers of roofing free of wrinkles, creases or fishmouths. Exert sufficient pressure on roll during application to ensure prevention of air pockets.

- a. For slopes less than 2 1/2 in 12, apply sheets straight, perpendicular to slope and shingled in direction of flow starting from low points.

4. Apply base ply to the prepared substrate utilizing minimum 3 inch side and end laps. Apply each sheet directly behind torch or adhesive applicator. Stagger end laps minimum 3 feet.
5. Fully bond the cap sheets to base ply utilizing minimum 3 inch side and end laps. Apply each sheet directly behind torch or adhesive applicator. Stagger side laps in finish ply minimum 12 inches from side laps in underlying base ply. Stagger end laps in cap sheet minimum 3 feet from end laps in underlying base plies.
6. Broadcast granules over all torched bitumen or adhesive overruns and squeeze out on finish ply surface while torched bitumen is hot or adhesive still wet to ensure a monolithic surface.

7. PMMA FLASHING INSTALLATION

- a. 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.
 - b. Pre-cut fleece to ensure a proper fit at transitions and corners prior to membrane application.
 - c. 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.
8. Miscellaneous Roof Penetrations: Treat as described above for vertical termination or PMMA flashing membrane, prefabricated flashing boot or formed lead flashing. No pitch pockets allowed.

3.5 FIELD QUALITY CONTROL

- A. Manufacturer's Representative: Manufacturer's Field Technical Representative shall inspect construction activities, at start of work, minimum two (2) hours per week during work and at completion of each area of work. Representative shall attend meetings concerning roofing when indicated or as scheduled to coordinate work. Representative shall submit a written report after each inspection noting as a minimum weather conditions, condition of stored materials, work in progress, condition of substrates,

number of workers and which workers have completed manufacturers' training programs, temperature of liquid membrane in kettle (if applicable) and at point of application and all other pertinent data. Services of manufacturer's field representative are not intended to supersede manufacturer's written requirements for inspection and testing to issue warranty.

3.6 CLEANING

- A. Clean roof areas of all roofing tools and unused materials.
- B. Clean spilled membrane or other materials from exposed surfaces which were not to receive roofing.

3.7 PROTECTION

- A. Protect roof system from construction traffic. Utilize temporary protection of roof system if extensive roof traffic is required.

3.8 SAMPLE ROOFING INSTALLER'S WARRANTY

- A. WHEREAS _____ of _____, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:

- 1. Owner: _____
- 2. Address: _____
- 3. Building Name/Type: _____
- 4. Address: _____
- 5. Area of Work: _____
- 6. Acceptance Date: _____
- 7. Warranty Period: _____
- 8. Expiration Date: _____

- B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,
- C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period he will, at his own cost and expense, make

or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.

D. This Warranty is made subject to the following terms and conditions:

1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
 - a. lightning;
 - b. peak gust wind speed exceeding Insert mph (m/s);
 - c. fire;
 - d. failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
 - e. faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
 - f. vapor condensation on bottom of roofing; and
 - g. activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.
2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
3. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
4. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.
5. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or

deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.

6. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.
7. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.
8. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed this _____ day of _____, _____.

1. Authorized Signature: _____
2. Name: _____
3. Title: _____

END OF SECTION 075216

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Formed roof-drainage sheet metal fabrications.
2. Formed low-slope roof sheet metal fabrications.

1.2 PREINSTALLATION MEETINGS

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

1.3 ACTION SUBMITTALS

A. Product Data: For each of the following

1. Underlayment materials.
2. Elastomeric sealant.
3. Butyl sealant.

B. Shop Drawings: For sheet metal flashing and trim.

1. Include plans, elevations, sections, and attachment details.
2. Detail fabrication and installation layouts, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled Work.
3. Include identification of material, thickness, weight, and finish for each item and location in Project.
4. Include details for forming, including profiles, shapes, seams, and dimensions.
5. Include details for joining, supporting, and securing, including layout and spacing of fasteners, cleats, clips, and other attachments. Include pattern of seams.
6. Include details of termination points and assemblies.
7. Include details of expansion joints and expansion-joint covers, including showing direction of expansion and contraction from fixed points.
8. Include details of roof-penetration flashing.
9. Include details of edge conditions.
10. Include details of special conditions.
11. Include details of connections to adjoining work.

1.4 INFORMATIONAL SUBMITTALS

- ###### A. Product Certificates: For each type of coping and roof edge flashing that is ANSI/SPRI/FM 4435/ES-1 tested.

- B. Sample warranty.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance data.
- B. Special warranty.

1.6 QUALITY ASSURANCE

- A. Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.

1.7 WARRANTY

- A. Special Warranty on Finishes: Manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.
 - a. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
- 2. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. General: Sheet metal flashing and trim assemblies, including cleats, anchors, and fasteners, shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.
- B. Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual: Architectural Metal Flashing, Condensation and Air Leakage Control, and Reroofing" and SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.
- C. SPRI Wind Design Standard: Manufacture and install copings and roof edge flashings tested in accordance with ANSI/SPRI/FM 4435/ES-1 and capable of resisting the following design pressure:
 - 1. Design Pressure: As indicated on Drawings.
- D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of

components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

2.2 SHEET METALS

- A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.
- B. Stainless Steel Sheet: ASTM A240/A240M, Type 304, dead soft, fully annealed; with smooth, flat surface.
 1. Finish: ASTM A480/A480M, No. 2D (dull, cold rolled) or shop pre-coated with PVDF coating; color to match roof and wall panels.
- C. Aluminum Sheet: ASTM B 209 (ASTM B 209M), alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required; with smooth surface.
 1. Finish: Shop pre-coated with PVDF coating; custom color to match roof and wall panels.
- D. Sheet metal fastenings:
 1. Rivets, nails, sheet metal screws, machine screws, self-tapping screws, and stove bolts, of the types and size best adapted to conditions of use.
 - a. Stainless steel: Use Type 302 stainless steel or other type to match stainless steel being fastened.
 2. Pop rivets, by United Shoe Machinery Corp., may be used for metal-to-metal connections when future disassembly is not required. Open-end type may be used for all applications except where watertight connections are required, in which case use closed-end type. Use pop rivets made from same type material as metals to be fastened.

2.3 UNDERLAYMENT MATERIALS

- A. Self-Adhering, High-Temperature Sheet Underlayment: Minimum 30 mils (0.76 mm) thick, consisting of a slip-resistant polyethylene- or polypropylene-film top surface laminated to a layer of butyl- adhesive, with release-paper backing; specifically designed to withstand high metal temperatures beneath metal roofing. Provide primer in accordance with underlayment manufacturer's written instructions.
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. GCP Applied Technologies Inc.
 - b. Henry Company.

2. Low-Temperature Flexibility: ASTM D1970/D1970M; passes after testing at minus 20 deg F (29 deg C) or lower.
3. Standard Testing method for linear dimensional changes of nonrigid thermoplastic sheeting or film at elevated temperature: ASTM D1204 – above 280 degrees F service temp.

2.4 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, solder, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.
- B. Fasteners: Self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufactured item.
 1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.
 2. Fasteners for Stainless Steel Sheet: Series 300 stainless steel.
 3. Fasteners for Steel Sheet: Series 300 stainless steel
- C. Solder:
 1. For Stainless Steel: ASTM B32, Grade Sn60, with acid flux of type recommended by stainless steel sheet manufacturer.
 2. For Zinc-Coated (Galvanized) Steel: ASTM B32, Grade Sn50, 50 percent tin and 50 percent lead or Grade Sn60, 60 percent tin and 40 percent lead.
- D. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch (13 mm) wide and 1/8 inch (3 mm) thick.
- E. Elastomeric Sealant: ASTM C920, elastomeric polyurethane polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.
- F. Butyl Sealant: ASTM C1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.

2.5 FABRICATION, GENERAL

- A. Custom fabricate sheet metal flashing and trim to comply with details indicated and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required.
 1. Fabricate sheet metal flashing and trim in shop to greatest extent possible.

2. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
3. Verify shapes and dimensions of surfaces to be covered and obtain field measurements for accurate fit before shop fabrication.
4. Form sheet metal flashing and trim to fit substrates without excessive oil-canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
5. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.

B. Fabrication Tolerances:

1. Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines indicated on Drawings and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.
2. Fabricate sheet metal flashing and trim that is capable of installation to tolerances specified.

C. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.

1. Use lapped expansion joints only where indicated on Drawings.

D. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal in accordance with cited sheet metal standard to provide for proper installation of elastomeric sealant.

E. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.

F. Fabricate cleats and attachment devices of sizes as recommended by cited sheet metal standard for application, but not less than thickness of metal being secured.

G. Seams:

1. Tin edges to be seamed, form seams, and solder.

2.6 ROOF-DRAINAGE SHEET METAL FABRICATIONS

A. Hanging Gutters:

1. Fabricate to cross section required, complete with end pieces, outlet tubes, and other accessories as required.
2. Fabricate in minimum 96-inch- (2400-mm-) long sections.
3. Fabricate expansion joints, expansion-joint covers, gutter bead reinforcing bars, and gutter accessories from same metal as gutters. Shop fabricate interior and exterior corners.

B. Downspouts: .050 Aluminum, .060 Aluminum at bottom 6', primed and painted to match the wall color.

- C. Downspout Strap: .050 Aluminum, ASTM B209.
- D. Gutter: .050 Aluminum, ASTM B209.
- E. Gutter Bracket: 1/8" x 1" Aluminum, ASTM B209.
- F. Gutter Strap: .050 Aluminum, ASTM B209.
- G. Gutter Throat: .050 Aluminum, ASTM B209.
- H. Metal Cleat: 20 Gauge Stainless Steel, Type 316
- I. Metal Counter-flashing Type 1: 22 Gauge Stainless Steel, Type 316.
- J. Metal Counter-flashing Type 2: .040 Aluminum, ASTM B209.
- K. Metal Edge: .050 Aluminum, ASTM B209.
- L. Metal Receiver Flashing: .040 Aluminum, ASTM B209.
- M. Metal Skirt Flashing: 22 Gauge Stainless Steel, Type 316.
- N. Metal Trim Flashing: .050 Aluminum, ASTM B209.
- O. One-Piece Transition Flashing: .040 Aluminum, ASTM B209.
- P. Termination Bar: 1/8" x 1" Stainless Steel, Type 304.

2.7 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Roof Edge Flashing: Fabricate in minimum 96-inch- (2400-mm-) long, but not exceeding 12-foot- (3.6-m-) long sections. Furnish with 6-inch- (150-mm-) wide, joint cover plates. Shop fabricate interior and exterior corners.
 - 1. Fabricate from the following materials:
 - a. Stainless Steel:

PART 3 - EXECUTION

3.1 INSTALLATION OF UNDERLAYMENT

- A. Felt Underlayment: Install felt underlayment, wrinkle free, using adhesive to minimize use of mechanical fasteners under sheet metal flashing and trim.
 - 1. Install in shingle fashion to shed water.
 - 2. Lap joints not less than 2 inches (50 mm).
- B. Self-Adhering, High-Temperature Sheet Underlayment:

1. Install self-adhering, high-temperature sheet underlayment; wrinkle free.
2. Prime substrate if recommended by underlayment manufacturer.
3. Comply with temperature restrictions of underlayment manufacturer for installation; use primer for installing underlayment at low temperatures.
4. Apply in shingle fashion to shed water, with end laps of not less than 6 inches (150 mm) staggered 24 inches (600 mm) between courses.
5. Overlap side edges not less than 3-1/2 inches (90 mm). Roll laps and edges with roller.
6. Roll laps and edges with roller.
7. Cover underlayment within 14 days.

3.2 INSTALLATION, GENERAL

- A. Install sheet metal flashing and trim to comply with details indicated and recommendations of cited sheet metal standard that apply to installation characteristics required unless otherwise indicated on Drawings.
1. Install fasteners, solder, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
 2. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of solder and sealant.
 3. Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement.
 4. Install sheet metal flashing and trim to fit substrates and to result in watertight performance.
 5. Install continuous cleats with fasteners spaced not more than 12 inches (300 mm) o.c.
 6. Install exposed sheet metal flashing and trim with limited oil-canning, and free of buckling and tool marks.
 7. Do not field cut sheet metal flashing and trim by torch.
- B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.
1. Coat concealed side of stainless steel sheet metal flashing and trim with bituminous coating where flashing and trim contact wood, ferrous metal, or cementitious construction.
 2. Underlayment: Where installing sheet metal flashing and trim directly on cementitious or wood substrates, install underlayment and cover with slip sheet.
- C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim.
1. Space movement joints at maximum of 10 feet (3 m) with no joints within 24 inches (600 mm) of corner or intersection.
 2. Use lapped expansion joints only where indicated on Drawings.

- D. Fasteners: Use fastener sizes that penetrate substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.
- E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.
- F. Seal joints as required for watertight construction.
 - 1. Use sealant-filled joints unless otherwise indicated.
 - a. Form joints to completely conceal sealant.
 - b. When ambient temperature at time of installation is between 40 and 70 deg F (4 and 21 deg C), set joint members for 50 percent movement each way.
 - c. Adjust setting proportionately for installation at higher ambient temperatures.
 - 1) Do not install sealant-type joints at temperatures below 40 deg F (4 deg C).
 - 2. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."
- G. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter.
 - 1. Pre-tin edges of sheets with solder to width of 1-1/2 inches (38 mm); however, reduce pre-tinning where pre-tinned surface would show in completed Work.
 - 2. Do not use torches for soldering.
 - 3. Heat surfaces to receive solder, and flow solder into joint.
 - a. Fill joint completely.
 - b. Completely remove flux and spatter from exposed surfaces.
 - 4. Stainless Steel Soldering:
 - a. Tin edges of uncoated sheets, using solder for stainless steel and acid flux.
 - b. Promptly remove acid-flux residue from metal after tinning and soldering.
 - c. Comply with solder manufacturer's recommended methods for cleaning and neutralization.

3.3 INSTALLATION OF ROOF-DRAINAGE SYSTEM

- A. Install sheet metal roof-drainage items to produce complete roof-drainage system in accordance with cited sheet metal standard unless otherwise indicated. Coordinate installation of roof perimeter flashing with installation of roof-drainage system.
- B. Hanging Gutters:
 - 1. Join sections with riveted and soldered joints.
 - 2. Provide for thermal expansion.

3. Attach gutters at eave or fascia to firmly anchor them in position.
4. Provide soldered end closures.
5. Slope to downspouts.
6. Install gutter with expansion joints at locations indicated on Drawings, but not exceeding, 40 feet (15.2 m) apart. Install expansion-joint caps.

3.4 INSTALLATION OF ROOF FLASHINGS

- A. Install sheet metal flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and cited sheet metal standard.
 1. Provide concealed fasteners where possible, and set units true to line, levels, and slopes.
 2. Install work with laps, joints, and seams that are permanently watertight and weather resistant.
- B. Roof Edge Flashing:
 1. Install roof edge flashings in accordance with ANSI/SPRI/FM 4435/ES-1.
 2. Anchor to resist uplift and outward forces in accordance with recommendations in cited sheet metal standard unless otherwise indicated. Interlock bottom edge of roof edge flashing with continuous cleat anchored to substrate at staggered 3-inch (75-mm) centers.
- C. Copings: See Section 07 71 00.

3.5 INSTALLATION TOLERANCES

- A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines indicated on Drawings and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

3.6 CLEANING

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder.
- C. Clean off excess sealants.

3.7 PROTECTION

- A. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions.

- B. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures, as determined by Architect.

END OF SECTION 076200

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Silicone joint sealants.
 - 2. Urethane joint sealants.
 - 3. Butyl joint sealants

1.2 SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Samples: For each kind and color of joint sealant required.
- C. Product test reports.
- D. Warranties.

1.3 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Qualified according to ASTM C 1021 to conduct the testing indicated.

1.4 WARRANTY

- A. Special Installer's Warranty: Manufacturer's standard form in which Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: Five years from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer's standard form in which joint-sealant manufacturer agrees to furnish joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: Ten years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

2.2 SILICONE JOINT SEALANTS

A. Mildew-Resistant Neutral-Curing Acid-Curing Silicone Joint Sealant: ASTM C 920.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. BASF Building Systems.
 - b. Dow Corning Corporation.
2. Type: Single component (S).
3. Grade: nonsag (NS).
4. Class: 100/50.
5. Uses Related to Exposure: Nontraffic (NT).

2.3 URETHANE JOINT SEALANTS

A. Urethane Joint Sealant: ASTM C 920.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Sika Corporation; Construction Products Division.
2. Type: Single component (S).
3. Grade: nonsag (NS).
4. Class: 100/50.
5. Uses Related to Exposure: Nontraffic (NT).

2.4 SOLVENT-RELEASE-CURING JOINT SEALANTS (Butyl)

A. Butyl-Rubber-Based Joint Sealant: ASTM C 1311.

1. Products: Subject to compliance with requirements, provide the following:
 - a. Bostik, Inc.; Chem-Calk 300.
 - b. Pecora Corporation; BC-158.
 - c. Tremco Incorporated; Tremco Butyl Sealant.

2.5 JOINT SEALANT BACKING

- A. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin), and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
- B. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer.

2.6 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions.
 - 1. Remove laitance and form-release agents from concrete.
 - 2. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.
- B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.2 INSTALLATION

- A. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- B. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 - 1. Do not leave gaps between ends of sealant backings.
 - 2. Do not stretch, twist, puncture, or tear sealant backings.
 - 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
 - 1. Place sealants so they directly contact and fully wet joint substrates.
 - 2. Completely fill recesses in each joint configuration.
 - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
 - 1. Remove excess sealant from surfaces adjacent to joints.
 - 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 - 3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.
- F. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.3 FIELD QUALITY CONTROL

- A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:
 - 1. Extent of Testing: Test completed and cured sealant joints as follows:

- a. Perform 3 tests for each type of adhesive and at each material type.
 2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.
- B. Evaluation of Field-Adhesion Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.4 JOINT-SEALANT SCHEDULE

- A. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal nontraffic surfaces.
1. Joint Locations:
 - a. All non-painted joints which are exposed to weather elements:
 2. Joint Sealant: Silicone.
 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.
- B. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal nontraffic surfaces.
1. Joint Locations:
 - a. At all painted joints which are exposed to weather elements.
 2. Joint Sealant: Urethane.
 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.
- C. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal nontraffic surfaces.
1. Joint Sealant Location:
 - a. At all joints which are concealed and not directly exposed to weather elements.
 2. Joint Sealant: Butyl.
 3. Joint-Sealant Color: Black.

END OF SECTION

DIVISION 9 – FINISHES

SECTION 092513 – ACRYLIC PLASTER FINISH

PART 1.00 - GENERAL

1.01 SECTION INCLUDES

- A. Textured finish system for exterior cement board soffit surfaces.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Sealants: Section 079200.

1.03 QUALITY ASSURANCE

- A. Comply with requirements of regulatory agencies.
 - 1. In addition to complying with other legal requirements, comply with fire-resistive ratings of UL tested and listed assemblies for classification of construction required.
- B. Reference specifications and standards:
 - 1. ASTM B 117 (Federal Test Standard 141A Method 6061) Test Method of Salt Spray (Fog) Testing.
 - 2. ASTM C 67 Test Method for Sampling and Testing Brick and Structural Tile.
 - 3. ASTM C 150 Specification for Portland Cement.
 - 4. ASTM C 297 Test Method for Tensile Strength of Flat Sandwich Constructions in Flatwise Plane.
 - 5. ASTM C 1177 Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing
 - 6. ASTM C 1396 (formerly C 79) Standard Specification for Gypsum Board
 - 7. ASTM D 968 (Federal Test Standard 141A Method 6191) Test Method for Abrasion Resistance of Organic Coatings by Falling Abrasive.
 - 8. ASTM D 3273 Test Method for Resistance to Growth of Mold on Surfaces.
 - 9. ASTM E 84 Test Method for Surface Burning Characteristics of Building Materials.
 - 10. ASTM E 96 Test Methods for Water Vapor Transmission of Materials.
 - 11. ASTM E 331 Test Method for Water Penetration of Exterior Windows, Skylights, Doors and Curtain Walls by Uniform Static Air Pressure Difference.
 - 12. ASTM G 23 (Federal Test Standard 141A Method 6151) Recommended Practice for Operating Exposure Apparatus.
- C. Manufacturer's Qualifications: The textured finish system manufacturer shall be a company with at least twenty years of experience in manufacturing specialty finishes and regularly engaged in the manufacture and marketing of products specified

herein. The manufacturer shall have an ISO 9001:2008 certified quality system and ISO 14001:2004 certified environmental management system.

- D. Installer's Qualifications: The contractor shall be qualified to perform the work specified by reason of experience. Contractor shall have at least 5 years of experience in commercial textured finish application, and shall have completed at least 3 projects of similar size and complexity. Contractor shall provide proof before commencement of work that he/she will maintain and supervise a qualified crew of applicators through the duration of the work. When requested Contractor shall provide a list of the last three comparable jobs including the name, location, and start and finish dates for the work.
- E. Mock-ups: The contractor shall install a 4 ft. x 8 ft mock-up of the system for evaluation and approval by the design professional, building owner, or owner's representative/quality assurance agent.
- F. Testing: Testing shall be conducted as directed by the design professional, building owner, or owner's representative/quality assurance agent to verify soffit/ceiling assembly performance and adhesion to prepared substrates.

1.04 SUBMITTALS

- A. Procedure: In accord with Section 01010.
- B. Certificates: Manufacturer's certification that materials conform to Specifications requirements.
- C. Product data: Manufacturer's written recommendations for mix proportions and application for factory-prepared finish materials.
- D. Samples: The Contractor shall submit to the owner/architect two samples of each finish, texture and color to be used on the project. The same tools and techniques proposed for the actual installation shall be used to prepare the samples. Samples shall be 24 in. square panel to accurately represent each color and texture to be utilized on the project

1.05 PRODUCT HANDLING

- A. Procedures: In accord with Section 01010.
- B. Immediately remove from site all materials which have been delivered in broken, damaged, or unlabeled condition.
- C. Protect materials from dampness.
- D. Store materials indoors, off floor.
- E. Deliver products in original packaging, labeled with product identification, manufacturer and batch number.
- F. Store projects in a dry area with temperature maintained between 50 and 85 degrees F. Protect from direct sunlight. Protect from freezing. Protect from extreme heat above 90 degrees F.

1.06 WARRANTY

- A. Provide manufacturer's standard limited warranty.

PART 2.00 - PRODUCTS

2.01 MATERIALS

- A. Textured Finish: High performance decorative and protective acrylic-based textyred wall finish with integral color, complies with SCAQMD Rule 1113 for acthirectural finishes.
Basis of Design: Sto Essence DPR by Sto Corp.
- B. Primer: Acrylic-based saneded primer, complies with SCAQMD Rule 1113 for primers.
Basis of Design: StoPrime by Sto Corp.
- C. Base Coat: One component polymer modified Portland cement high build base coat.
Basis of Design: Sto BTS Plus by Sto Corp.
- D. Surface Reinforcement: maximum nominal 4.5 glass fiber reinforcing mesh by approved manufacturer.
Basis of Design: Sto Mesh by Sto Corp.
- E. Coverboard: USG Securock or approved equal.

2.02 ACCESSORIES

- A. General: Comply with ASTM C 1063 and coordinate depth of trim and accessories with thicknesses and number of plaster coats required.
- B. Plastic Accessories:
 - 1. Casing Beads: With perforated flanges in depth required to suit plaster bases indicated and flange length to suit application indicated.
 - a. Square-edge style; use unless otherwise indicated.
 - 2. Control Joints: One-piece-type, folded pair of unperforated screeds in M-shaped configuration; with perforated flanges and removable protective tape on plaster face of control joint.
 - 3. Expansion Joints: Two-piece type, formed to produce slip-joint and square edges sized to match existing, with perforate concealed flanges.

PART 3.00 - EXECUTION

3.01 EXAMINATION

- A. Examine surfaces for conditions that will adversely affect execution, permanence, and quality of work.
- B. Do not proceed with work until unsatisfactory conditions have been corrected.
- C. Verify that surfaces to be plastered are free of dust, loose particles, oil, and foreign matter which would affect bond of plaster coats.
- D. Examine framing, grounds, and accessories to ensure that finished plaster surfaces will be true to line, level and plumb, without requiring additional thicknesses of plaster. Soffit board surface shall not have irregularities in excess of 1/16".

3.02 PREPARATION

- A. Cover or otherwise protect finish materials subject to damage by plaster.
- B. Cover and protect all adjacent surfaces from plaster stains, including surfaces which will be covered by other finish materials.

3.03 MIXING

- A. Mix products in accordance with manufacturer's published literature. Refer to applicable product bulletins for specific information on use, handling, application, precautions and limitations of specific products.

3.04 APPLICATION

- A. General:
 - 1. Install corrosion proof termination accessories per ASTM D1784 (PVC) with perforated flanges for keying of the base coat at junctures with penetrations such as soffit vents, electrical fixtures, and with abutting walls and columns. Install corrosion proof control joints per ASTM D1784 (PVC) with perforated flanges for keying of the base coat at intervals as required by the soffit board manufacturer.
 - 2. Reinforce perforated flanges of accessories with minimum 4 inch (102 mm) wide strips mesh embedded in base coat. Where cement board is used tape joints between boards with minimum 4 inch (102 mm) wide mesh and skim with base coat. Alternatively tape joints with minimum 4 inch (1023 mm) wide mesh embedded in base coat. Allow base coat to dry.
 - 3. Install nominal 1/8-inch (3 mm) base coat by trowel to the soffit/ceiling board surface. Work horizontally or vertically in strips of 40 inches (1016 mm), and immediately embed the mesh into the wet base coat by troweling from the center to the edge of the mesh. Overlap mesh installed at perforated accessory flanges by installing mesh up to the termination bead of the accessory. Overlap mesh not less than 2-½ inches (64 mm) at mesh seams and feather at seams. Double wrap all inside and outside corners with

minimum 8-inch (203 mm) overlap in each direction (except where corner bead is used at outside corners lap mesh over perforated flange of accessory). Avoid wrinkles in the mesh. The mesh must be fully embedded so that no mesh color shows through the base coat when it is dry. Re-skim with additional base coat if mesh color is visible. Do not install base coat and mesh onto solid (unperforated) portions of accessories.

4. When the base coat application is dry apply the primer by brush or roller to the entire base coat surface.
5. When the primer application is dry apply the textured finish by trowel. Apply finish in a continuous application, and work to a wet edge. Float the finish to achieve the desired texture.
6. Control joints shall be installed to match existing, not exceeding more than 20 linear feet or soffit areas which exceed 200 square feet. Expansion joints shall be installed at existing locations.

D. Cleaning:

1. All excess materials shall be removed from the job site by the Contractor in accordance with contract provisions.
2. All surrounding areas, where acrylic plaster finish system was installed, shall be left free of debris and foreign substances resulting from the Contractor's work.

E. Protection: Provide protect of the installed material from water infiltration into or behind them during and after construction. Provide protection of installed materials from dust, dirt, precipitation, freezing and continuous high humidity until they are fully dry. Seal penetrations through the finished surface with backer rod and sealant or other appropriate means.

END OF SECTION

DIVISION 26 – ELECTRICAL

SECTION 264100

PART 1.00 - GENERAL

1.01 SECTION INCLUDES

- A. Structural lightning protection system; including air terminals, down conductors and fittings.
- B. Transient voltage surge suppressers (TVSS).

1.02 QUALITY ASSURANCE

- A. Installer qualifications: At least 5 yr. of experience installing lightning protection systems.
- B. Reference standards: NFPA780.

1.03 SUBMITTALS

- A. In accord with Section 010100.

PART 2.00 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Structural lightning protection.
 - 1. Capital Lightning Protection Co.
 - 2. Independent Protection Co., Inc.
 - 3. Thompson Lightning Protection, Inc.
 - 4. Robbins Lightning Protection Co.
 - 5. Florida Lightning Rod, Inc.
 - 6. Harger.
- B. TVSS:
 - 1. Atlantic Scientific Corporation, West Melbourne, FL. Tel: (407) 725-8000, or (800) 544-4737.
 - 2. Edco Incorporated of Florida, Ocala, FL. Tel: (904) 732-3029.
 - 3. MCG Electronics, Inc., Deer Park, NY. Tel: (516) 586-5125.
 - 4. General Electric Company, Capacitor & Power Protection Operation, 381 Upper Broadway, Fort Edward, NY 12828. Tel: (518) 746-5413.
 - 5. Control Concepts Liebert, 328 Water Street., P.O. Box 1380, Binghamton, NY 13902-1380. Tel: (607) 724-2484.

2.02 MATERIAL AND FABRICATION

A. Structural lightning protection:

1. Bare copper conductors.
 - a. 57,400 cm cross-sectional area, 187 lb./M, mini-strand size - AWG No. 17 (Class 1, main conductor, NFPA 780).
 - b. 26,240 cm cross-sectional area, mini-strand size - AWG No. 17 (Class 1, bonding conductor, NFPA 780).
2. Air terminals: 5/8 in. dia. tubular or 3/8 in. dia. solid, 10 in. high (20 ft. spacing) or 24 in. high (25 ft. spacing) round tapered copper point, complete with base adapters, brackets and mounting hardware.
3. Fittings: Cast parallel clamps, straight splicers, tee clamps, cross run clamps and bonding plates as required. No finger cable clamps are acceptable.
4. Roof penetrations: Threaded stem through-roof connectors, with galvanized steel pitch box.
5. Cable clamps: Devices of the appropriate size for the application using either mechanical or adhesive fastening means.

B. TVSS:

1. General requirements: TVSSs shall be rated for the class of service necessary for the application. Protection shall be provided L-G only for service entrance applications. Protection shall be provided L-G, and N-G for subpanel applications.
2. TVSSs shall be designed for AC power systems with a minimum of AC follow current after operation. The surge current rating must be sufficient to meet the requirement of the application at clamp levels below the damage level of the equipment installed.
3. Electrical performance characteristics:

a. Service ratings:

120/240V	Single-phase	4-wire	
208/120V	Three-phase	4-wire	Wye
208V	Three-phase	3-wire	Delta
480/277V	Three-phase	4-wire	Wye
480V	Three-phase	3-wire	Delta

b. MCOV levels:

Nominal System Voltage (VRMS)	MCOV (VRMS)
120	135
208	240
240	275
277	315
480	550

- c. UL listing: The TVSS may be UL listed under 1449, or test reports may be submitted substantiating the performance of the devices.

4. TVSS ratings: TVSSs supplied shall meet or exceed the capabilities listed below:

Nominal System Voltage (VRMS)	Maximum* Clamping Voltage (VRMS)	Peak Surge Current	
		Service Entrances (kA)	Subpanels (kA)
120	400	100	50
208	650	100	50
240	800	100	50
277	950	100	50
480	1600	100	50
575	1900	100	50

* Measured at 10 kA 8 x 20 surge current

Multiple pulse: 5kA (8 x 20 micro-sec.)
10 pulses in 2 sec.

5. Fusing:
- a. Surge protective devices shall contain both accurate thermal and short circuit safety fusing within each replaceable protection module.
 - b. The fusing mechanisms employed must effectively coordinate their performance in conjunction with the full surge handling capabilities of the suppresser.
 - c. Surge protective devices shall provide on-board visual status of their operational readiness by indication and dry contact for remote alarming.
6. Maintenance: TVSSs shall require no routine maintenance. TVSSs are considered non-repairable items.

PART 3.00 - EXECUTION

3.01 INSTALLATION

A. Structural lightning protection:

- 1. Install down conductors in an inconspicuous manner or build into the building during construction for concealment.
- 2. Make down conductors, side bonding conductors and jumpers as short and direct as possible. No unnecessary loops will be allowed.
- 3. Provide adhesive cable clamps every 3 ft. o.c., for exposed down conductors on roof.
- 4. Fasten air terminal bases to metal roofing using a minimum of three No. 14 self-tapping stainless steel sheet metal screws. Alternate fastening may consist of two 1/4-in. bolts with nuts, washers, and lock washers on the interior of the roof or silver solder brazed to the roof metal directly. Seal base and holes with waterproof sealant such as RTV silicon rubber.

B. TVSS:

1. Surge protective devices shall be installed at the first switchboard, panelboard, transfer switch, or other location (service entrance), that the service encounters as it enters the facility and/or as indicated on Contract Drawings. The surge protection device is connected on the supply side of the electrical service it is protecting.

NOTE: TVSS marked L1, L2, L3, N, and GND (as applicable) must be connected, respectively, to phase(s), neutral, and ground.

2. TVSSs shall be mounted next to or in the main/sub-panel that is to be protected. The location of the TVSS shall be chosen to minimize the lead lengths between the TVSS and the circuit breaker to which it is connected. If the TVSS must be mounted external to the panel box, the leads must be routed within a metal conduit as necessary, and kept as short as possible. Wire size for leads shall be as specified by manufacturer (minimum of No. 8 AWG, maximum of No. 4 AWG).
3. Surge protective devices shall be installed neatly. Lead dress shall be as short and as straight as possible. Bind the phase, neutral, and ground conductors tightly, over the entire run, from the suppresser to the service panel, and always use the shortest length of connecting cable possible.
 - a. When installing a series connected TVSS, bind the supply side conductors separately from the load side conductors.
4. Install surge protectors in light pole bases and connect in accord with manufacturer's instructions.
5. Connect surge protector to the basic grounding system.

END OF SECTION