

REQUEST FOR QUOTATION

Quotations will be received until **5PM AKST 9 October 2024**.

RFQ No.: AAC-24-016 REV 01



Page 1 of 11 Date: 26 September 2024

VENDOR NOTICE (This is NOT a Purchase Order)

This is an informal quotation that will not be read at public opening. The information may be publicly reviewed after award. The terms and conditions should be reviewed and understood before preparing a quotation. The quotation shall be the best net price, FOB destination, to include all delivery charges, but exclude applicable taxes. Delivery schedule and discount for early payment shall be indicated in the spaces provided below. Return the quotation by the above time and date to the following email address: Maggie.Minton@akaerospace.com. Please reference the Buyer's name and the RFQ number on the outside of the return envelope.

DELIVERY LOCATION:

Pacific Spaceport Complex-Alaska (PSCA)
Milepost 13 Pasagshak Road, Kodiak, AK 99615

BUYER:

Maggie Minton, Maggie.Minton@akaerospace.com

VENDOR QUOTATION

Item	Description of Supply or Service	Qty	Unit	Unit Price	Extended Price
01	PRE-ENGINEERED FABRIC MEMBRANE STRUCTURE (Design, engineering, fabrication, and Delivery)	1	LOT		
02	FIELD VERIFICATION, ACCEPTANCE TESTING, AND INSTALLATION	1	LOT		
03	EXTRA MATERIALS-MANUFACTURER'S RECOMMENDED MAINTENANCE KIT	1	LOT		
04	WARRANTIES AS REQUIRED (Sec 1.6) Prevailing Wage Rates and Certified Payroll required. In addition to this quote sheet, vendors must provide proof that they meet the manufacturer qualifications as outlined in Statement of Work, Section 1.4a (Offeror format is acceptable) and specifications package for the structure being proposed.	1	LOT		
				TOTAL PRICE	

THIS SECTION MUST BE COMPLETED BY VENDOR

Delivery shall be made _____ calendar days after receipt of order.

Payment Terms: _____

Company Name	Address	City	State	ZIP Code	Phone Number
Alaska Business License No.	Vendor Tax I.D. No.	Are you considered a Small Business IAW FAR 52.129-9?			
_____		<input type="checkbox"/> Small Business <input type="checkbox"/> Women-Owned <input type="checkbox"/> HBCU & MI <input type="checkbox"/> Small Disadvantaged Business <input type="checkbox"/> HUBZone <input type="checkbox"/> Service-Disabled Veteran Owned <input type="checkbox"/> Veteran Owned			
Typed Name		Title			
_____		_____			
Signature		Date			
_____		_____			

**INSTRUCTIONS TO BIDDERS
TERMS AND CONDITIONS**

1. REQUEST FOR QUOTATION (RFQ) REVIEW: Offerors shall carefully review this RFQ for defects and questionable or objectionable material. Offerors' comments concerning defects and questionable or objectionable material in the RFQ must be made in writing and received by the purchasing authority before the date and time set for receipt of quotes. This will allow time for an amendment to be issued if one is required. It will also help prevent the opening of a defective quote, upon which award cannot be made, and the resultant exposure of offerors' prices. Offerors' original comments should be sent to the purchasing authority listed on the front of this RFQ.

2. QUOTATION FORMS: Offerors shall use this and attached forms in submitting quotes. A photocopied quote may be submitted.

3. SUBMISSION: Quotations shall be signed where applicable and received at the designated Purchasing Office no later than as indicated.

4. QUOTE REJECTION: The State reserves the right to reject any or all quotes, combinations of items, or lot(s), and to waive defects or minor informalities.

5. EXTENSION OF PRICES: In case of error in the extension of prices in the quote, the unit prices will govern; in a lot bid, the lot prices will govern. Negligence by the vendor in preparing the quotation confers no right for the withdrawal of the quotation after it has been opened.

6. PRICES: The offeror shall state prices in the units of issue on this RFQ. Prices quoted for commodities must be in U.S. funds and include applicable federal duty, brokerage fees, packaging, and transportation cost to the FOB point so that upon transfer of title the commodity can be utilized without further cost. Prices quoted for services must be quoted in U.S. funds and include applicable federal duty, brokerage fee, packaging, and transportation cost so that the services can be provided without further cost. Prices quoted must be exclusive of federal, state, and local taxes. If the offeror believes that certain taxes are payable by the State, the offeror may list such taxes separately, directly below the bid price for the affected item. The State is exempt from Federal Excise Tax except the following:

- Coal - Internal Revenue Code of 1986 (IRC), Section 4121 - on the purchase of coal;
- "Gas Guzzler" - IRC, Section 4064 - on the purchase of low m.p.g. automobiles, except that police and other emergency type vehicles are not subject to the tax;
- Air Cargo - IRC, Section 4271 - on the purchase of property transportation services by air;
- Air Passenger - IRC, Section 4261 - on the purchase of passenger transportation services by air carriers;
- Leaking Underground Storage Tank Trust Fund Tax (LUST) - IRC, Section 4081 - on the purchase of Aviation gasoline, Diesel Fuel, Gasoline, and Kerosene.

7. PAYMENT FOR STATE PURCHASES: Payment for agreements under \$500,000 for the undisputed purchase of goods or services provided to a State agency, will be made within 30 days of the receipt of a proper billing or the delivery of the goods or services to the location(s) specified in the agreement, whichever is later. A late payment is subject to 1.5% interest per month on the unpaid balance. Interest will not be paid if there is a dispute or if there is an agreement which establishes a lower interest rate or precludes the charging of interest.

8. PAYMENT DISCOUNT: Discounts for prompt payment will not be considered in evaluating the price you quote. However, the State shall be entitled to take advantage of any payment discount(s) offered by the vendor provided payment is made within the discount period. Payment discount periods will be computed from the date of receipt of the commodities or services and/or a correct invoice, whichever is later. Unless freight and other charges are itemized, any discount provided will be taken on full amount of invoice.

9. VENDOR TAX ID NUMBER: If goods or services procured through this RFQ are of a type that is required to be included on a Miscellaneous Tax Statement, as described in the Internal Revenue Code, a valid tax identification number must be provided to the State of Alaska before payment will be made.

**INSTRUCTIONS TO BIDDERS
TERMS AND CONDITIONS**

10. INDEMNIFICATION: The Contractor shall indemnify, hold harmless, and defend the contracting agency from and against any claim of, or liability for error, omission or negligent act of the Contractor under this agreement. The Contractor shall not be required to indemnify the contracting agency for a claim of, or liability for, the independent negligence of the contracting agency. If there is a claim of, or liability for, the joint negligent error or omission of the Contractor and the independent negligence of the Contracting agency, the indemnification and hold harmless obligation shall be apportioned on a comparative fault basis. "Contractor" and "Contracting agency", as used within this and the following article, include the employees, agents and other contractors who are directly responsible, respectively, to each. The term "independent negligence" is negligence other than in the Contracting agency's selection, administration, monitoring, or controlling of the Contractor and in approving or accepting the Contractor's work.

11. SEVERABILITY: If any provision of this contract is declared by a court to be illegal or in conflict with any law, the validity of the remaining terms and provisions shall not be affected; and the rights and obligations of the parties shall be construed and enforced as if the contract did not contain the particular provision held to be invalid.

12. TITLE: Title passes to the State for each item at FOB destination.

13. FILING A PROTEST: An offeror shall attempt to informally resolve a dispute with the procurement officer regarding a small procurement. If the attempt is unsuccessful, the vendor may protest the solicitation or the award of a small procurement contract under AS 36.30.320. The protest must be filed in writing with the commissioner of the purchasing agency or the commissioner's designee and include the following information: (1) the name, address, and telephone number of the protester; (2) the signature of the protester or the protester's representative; (3) identification of the contracting agency and the solicitation or contract at issue; (4) a detailed statement of the legal and factual grounds of the protest, including copies of relevant documents; and (5) the form of relief requested. The protester must file a copy of the protest with the procurement officer for the purchasing agency. Protests will be treated in accordance with AS 36.30.550 and 2 AAC 12.695.

14. COMPLIANCE: In the performance of a contract that results from this RFQ, the contractor must comply with all applicable federal, state, and borough regulations, codes, and laws; and be liable for all required insurance, licenses, permits and bonds; and pay all applicable federal, state, and borough taxes.

15. SUITABLE MATERIALS, ETC.: Unless otherwise specified, all materials, supplies or equipment offered by an offeror shall be new, unused, and of the latest edition, version, model or crop and of recent manufacture.

16. SPECIFICATIONS: Unless otherwise specified in the RFQ, product brand names or model numbers are examples of the type and quality of product required, and are not statements of preference. If the specifications describing an item conflict with a brand name or model number describing the item, the specifications govern. Reference to brand name or number does not preclude an offer of a comparable or better product, if full specifications and descriptive literature are provided for the product. Failure to provide such specifications and descriptive literature may be cause for rejection of the offer.

17. FIRM OFFER: For the purpose of award, offers made in accordance with this RFQ must be good and firm for a period of ninety (90) days from the date of quote opening.

18. QUOTE PREPARATION COSTS: The State is not liable for any costs incurred by the offeror in quote preparation.

19. CONSOLIDATION OF AWARDS: Due to high administrative costs associated with processing of purchase orders, a single low quote of \$50 or less may, at the discretion of the State, be awarded to the next low offeror receiving other awards for consolidation purposes. This paragraph is not subject to the protest terms enumerated in "FILING A PROTEST" above.

20. CONTRACT FUNDING: Offerors are advised that funds are available for the initial purchase and/or the first term of the contract. Payment and performance obligations for succeeding purchases and/or additional terms of the contract are subject to the availability and appropriation of funds.

**INSTRUCTIONS TO BIDDERS
TERMS AND CONDITIONS**

21. CONFLICT OF INTEREST: An officer or employee of the State of Alaska may not seek to acquire, be a party to, or possess a financial interest in, this contract if (1) the officer or employee is an employee of the administrative unit that supervises the award of this contract; or (2) the officer or employee has the power to take or withhold official action so as to affect the award or execution of the contract.

22. ASSIGNMENT(S): Assignment of rights, duties, or payments under a contract resulting from this RFQ is not permitted unless authorized in writing by the procurement officer of the contracting agency. Quotes that are conditioned upon the State's approval of an assignment will be rejected as nonresponsive.

23. SUBCONTRACTOR(S): Within five (5) working days of notice from the state, the apparent low bidder must submit a list of the subcontractors that will be used in the performance of the contract. The list must include the name of each subcontractor and the location of the place of business for each subcontractor and evidence of each subcontractor's valid Alaska business license.

24. FORCE MAJEURE (Impossibility to perform): The parties to a contract resulting from this RFQ are not liable for the consequences of any failure to perform, or default in performing, any of its obligations under the contract, if that failure or default is caused by any unforeseeable Force Majeure, beyond the control of, and without the fault or negligence of, the respective party. For the purposes of this Agreement, Force Majeure will mean war (whether declared or not); revolution; invasion; insurrection; riot; civil commotion; sabotage; military or usurped power; lightning; explosion; fire; storm; drought; flood; earthquake; epidemic; quarantine; strikes; acts or restraints of governmental authorities affecting the project or directly or indirectly prohibiting or restricting the furnishing or use of materials or labor required; inability to secure materials, machinery, equipment or labor because of priority, allocation or other regulations of any governmental authorities.

25. LATE QUOTES: Late quotes are quotes received after the time and date set for receipt of the quotes. Late quotes will not be accepted.

26. CONTRACT EXTENSION: Unless otherwise provided in this RFQ, the State and the successful offeror/contractor agree: (1) that any holding over of the contract excluding any exercised renewal options, will be considered as a month-to-month extension, and all other terms and conditions shall remain in full force and effect and (2) to provide written notice to the other party of the intent to cancel such month-to-month extension at least thirty (30) days before the desired date of cancellation.

27. DEFAULT: In case of default by the contractor, for any reason whatsoever, the State of Alaska may procure the goods or services from another source and hold the contractor responsible for any resulting excess cost and may seek other remedies under law or equity.

28. DISPUTES: If a contractor has a claim arising in connection with a contract resulting from this RFQ that it cannot resolve with the State by mutual agreement, it shall pursue a claim, if at all, in accordance with the provisions of AS 36.30.620 – 632.

29. GOVERNING LAW; FORUM SELECTION: A contract resulting from this RFQ is governed by the laws of the State of Alaska. To the extent not otherwise governed by section 29 of these Standard Terms and Conditions, any claim concerning the contract shall be brought only in the Superior Court of the State of Alaska and not elsewhere.

30. CONSUMER ELECTRICAL PRODUCT: AS 45.45.910 requires that "...a person may not sell, offer to sell, or otherwise transfer in the course of the person's business a consumer electrical product that is manufactured after August 14, 1990, unless the product is clearly marked as being listed by an approved third party certification program." Electrical consumer products manufactured before August 14, 1990, must either be clearly marked as being third party certified or be marked with a warning label that complies with AS 45.45.910(e). Even exempted electrical products must be marked with the warning label. By signature on this quote the offeror certifies that the product offered is in compliance with the law. A list of approved third party certifiers, warning labels and additional information is available from: Department of Labor, Labor

**INSTRUCTIONS TO BIDDERS
TERMS AND CONDITIONS**

Standards & Safety Division, Mechanical Inspection Section, P.O. Box 107020, Anchorage, Alaska 99510-7020, (907)269-4925.

31. CONTINUING OBLIGATION OF CONTRACTOR: Notwithstanding the expiration date of a contract resulting from this RFQ, the contractor is obligated to fulfill its responsibilities until warranty, guarantee, maintenance and parts availability requirements have completely expired.

32. ORDER DOCUMENTS: Except as specifically allowed under this RFQ, an ordering agency will not sign any vendor contract. The State is not bound by a vendor contract signed by a person who is not specifically authorized to sign for the State under this RFQ. The State of Alaska Purchase Order, Contract Award and Delivery Order are the only order documents that may be used to place orders against the contract(s) resulting from this RFQ.

33. BILLING INSTRUCTIONS: Invoices must be billed to the ordering agency's address shown on the individual Purchase Order, Contract Award or Delivery Order. The ordering agency will make payment after it receives the merchandise or service and the invoice. Questions concerning payment must be addressed to the ordering agency.

34. OFFERORS WITH DISABILITIES: The State of Alaska complies with Title II of the Americans with Disabilities Act of 1990. Individuals with disabilities who may need auxiliary aids, services, and/or special modifications to participate in this procurement should contact the procurement officer named on the cover page of this RFQ as soon as possible, but no later than the date and time quotations are due to make any necessary arrangements.

35. COMPLIANCE WITH ADA: By signature of their quote the bidder certifies that they comply with the Americans with Disabilities Act of 1990 and the regulations issued thereunder by the federal government. Services or activities furnished to the general public on behalf of the State must be fully accessible. This is intended to ensure that agencies are in accordance with 28 CFR Part 35 Section 35.130 and that services, programs or activities furnished to the public through a contract do not subject qualified individuals with a disability to discrimination based on the disability.

1. PART 1 - GENERAL

1.1.SUMMARY

- a) Section includes the design, engineering, fabrication and erection assistance for a frame-supported, tensile-membrane structure complete with entrance and exit doors and associated hardware and all components necessary for a weather-tight enclosure. Work includes, but is not necessarily limited to, the following:
 - 1. Field verification and acceptance of existing conditions as suitable for installation.
 - 2. Coordination with the design team through preparation of drawings for approval and/or permit submittal.
 - 3. Preparation of documentation and engineering support for the design of foundation system.
 - 4. Submitting stamped/signed engineered drawings for permits and/or approvals.
 - 5. Coordination of submittals, installation, etc. with owner.
- b) Applicable Codes
 - 1. Building design shall comply with the applicable provisions of the 2009 edition of the International Building Code (IBC) and by reference, the American Society of Civil Engineers, Minimum Design Loads for Buildings and Other Structures (ASCE7-02).
 - 2. Americans with Disabilities Act, Standards for Accessible Design.
 - 3. National Fire Protection Association, (NFPA) 701.

1.2.SYSTEM DESCRIPTION

- a) Frame Supported, Tensile Membrane Structure shall be a pre-engineered system of standard metal framing components and membrane enclosure designed to provide 4,000 gross square feet (50' wide x 80' long x 30' high) of fully enclosed space and shall include the following:
 - 1. Flat gable ends to maximize interior dimensions.
 - 2. The side and end wall construction shall accept passage and exit doors.
 - 3. Exterior membrane shall run continuous from eave to eave or base of structure to base of structure.
 - 4. Exterior membrane will be fabricated for post-installation tensioning in both primary grid directions; draped or loose-laid membrane installation is not acceptable.
 - 5. Exterior membrane will be colors selected by the Owner from Manufacturers' standard line.
 - 6. Exterior membrane shall, upon completion, provide a continuous weather-tight enclosure.
 - 7. Upon installation and tensioning of the exterior membrane it will be smooth and wrinkle-free and shall remain so under anticipated thermal and live-load conditions.
 - 8. Membrane shall be repairable without the need to dismantle any portion of the structural framing.
 - 9. Membrane shall be attached to framing that allows for ventilation fans or HVAC duct penetrations.
 - 10. Complete R25 Insulation System
- b) Design Requirements
 - 1. Design the structure to be clear span, with no visible poles or columns inboard of the perimeter framing.
 - 2. Design the structure to be clear span, with no guy-ropes or cables extending or attaching perpendicular or at angles to the perimeter walls.
 - 3. Design the structure so that there are no structural purlins, cables or other obstructions to flow of water or sliding snow on the exterior membrane.
 - 4. Steel truss system and exposed steel components shall be galvanized to resist corrosion.
 - 5. Design the structure to accept personnel doors at the locations indicated in the contract drawings.
 - 6. All doors and other penetrations shall have a separate frame to which the fabric membrane is attached. This frame shall be designed to support the prestress and maximum working loads of the fabric. These frames shall be designed in such a way that doors or other equipment inside them can be replaced without affecting the membrane tension.

STATEMENT OF WORK
PRE-ENGINEERED FABRIC MEMBRANE STRUCTURE

7. All column bases shall be designed as pin connected and shall not rely on moment capacity of the foundation for support.
- c) Structural Performance Requirements. Design the anchoring system, framing components, connections and composite structure following the applicable codes noted in Section 1.1.B and the requirements of the authorities having jurisdiction.
1. Design Codes
 - i. American Society of Civil Engineers (ASCE), Minimum Design Loads for Buildings and Other Structures, ASCE 7-02 Edition
 - ii. America Institute of Steel Construction (AISC), Manual of Steel Construction, Allowable Stress Design, 9th Edition.
 - iii. America Institute of Steel Construction (AISC), Manual of Steel Construction, Load and Resistance Factor Design, 2nd Edition, Volumes I and II.
 - iv. American Welding Society (AWS), 1996 Structural Welding Code, Steel.
 - v. American Concrete Institute (ACI) ACI-318-95, Building Code Requirements for Reinforced Concrete.
 - vi. American Iron and Steel Institute (AISI), Specification for the Design of Cold- Formed Steel Structural Members.
 - vii. The Aluminum Association Aluminum Design Manual, Specifications and Guidelines for Aluminum Structures, edition 2005.
 2. Soils Report to be provided by Owner.
 3. Design Criteria
 - i. Basic Wind Speed; 140mph – 3 second gust. (Can be adjusted to any other requirements)
 - ii. Wind Exposure; D
 - iii. Wind Importance Factor; 1.0
 - iv. Roof Snow Load; 40 pounds per square foot
 - v. Snow Importance Factor; 1.0
 - vi. Seismic Category E .
 4. Design and engineer the structure so that no life-safety threat is created by the loss of any portion of either the interior or exterior membrane. The structural framing shall not rely on the tensioning of the exterior membrane for its stability or rigidity.
 5. Membrane shall be designed such that it meets the same load requirements as the structural frame. The developed membrane stresses must be applied to the structural frame. Minimum membrane safety factors shall be, for Allowable Stress Design (ASD):
 - i. 4, for Wind Load
 - ii. 5, for Snow Load
 - iii. 8, for Prestress + Dead Load

1.3.SUBMITTALS

- a) Submit for the Owner's review.
 1. Product Data and samples for each prefabricated and commodity component.
 2. Erection Drawings by the Manufacturer's engineers, for components and erection of the structure.
 3. Show piece marks that will be used on components delivered to the Site.
 4. Structural erection drawings, and calculations if applicable, shall be signed and sealed by a qualified structural engineer, registered in the State of Alaska_.
 5. Color Selection Samples for the following: fabric samples shall be at least twelve inches square. Furnish three sets of samples plus the number desired to be returned.
 6. Exterior membrane(s)
 7. Interior liner membrane(s)

STATEMENT OF WORK
PRE-ENGINEERED FABRIC MEMBRANE STRUCTURE

8. Framing member finishes (exterior and/or interior).
- b) Submit for the Owner's use / records.
1. Certificates of Compliance regarding Fire Resistance Classifications of Materials.
 2. Extra Materials
 3. Executed Warranties
 4. Mill certificates for structural steel

1.4.QUALITY ASSURANCE

- a) Manufacturer's Qualifications
1. Company with at least ten years' experience in design, engineering, production and erection of fabric structures.
 2. Manufacturer shall employ at least one qualified engineer to produce or supervise the production of Shop and Erection Drawings.
 3. Manufacturer shall have completed at least ten projects of which at least five are now more than three years old; submit list with the names and telephone numbers of knowledgeable client contacts.
 4. Site Representative, assigned to this Project, shall have supervised at least five projects within the past three years that are similar in scale and complexity to those required for this Project.
 5. Manufacturer shall have a current and comprehensive quality management system, encompassing at a minimum, the design, procurement, contracting, project management, and quality inspection functions. ISO 9001: 2000 is preferred, similar considered.
 6. If the Manufacturer's installation services are not required, the Manufacturer shall provide site supervision and basic training.
 7. Manufacturer shall have a consultant or technician employed by the Manufacturer to provide the on-site observation and technical services required to assure proper installation of this work and, if needed, to validate its warranty.
- b) Manufacturer's Engineers:
1. Professional Engineers must be duly registered to practice their specialties in the State of Alaska with demonstrated experience designing and detailing systems for frame supported tensile-membrane structures.
- c) Material Qualifications
1. Membrane shall have a minimum five-year history as a successful commercial building enclosure system.
 - i. A failure is an alleged defect that prompts the Owner to seek remedy under the Manufacturer's Warranty (See Section 1.6.B).
 2. Membranes shall be UL- or NFPA-rated flame-resistant materials; submit copies of test reports from independent testing agency.
- d) Single Source Responsibility. Furnish complete assembly by or as recommended by a single company.

1.5.DELIVERY, STORAGE, AND HANDLING

- a) Packing and Shipping. Deliver products in suitable packaging with legible identification.
- b) Storage and Protection
1. Manufacturers' field representative or designee shall be present on-site to receive, off- load, and store safely/securely all supplied materials.
 2. Follow the manufacturer's recommendations.

1.6. WARRANTIES

- a) Fabric Structure Warranty - The manufacturer shall provide a twelve-year limited warranty, prorated based on the purchase price, for the membrane and a twenty-five-year limited warranty on the frame against defects in material and workmanship under normal use and services.
- b) Accessory Warranty. The Manufacturer and/or Installer shall jointly warrant all provided accessories (including, but not limited to, ventilation system, doors, etc.) for a period of time equal to the published manufacturer's product warranty. Terms are to be "back-to-back" with this warranty.

1.7. MAINTENANCE

- a) Extra Materials. Provide, as Extra Materials, a manufacturer's recommended maintenance kit. Kit shall contain membrane patches, roll-stock membrane accessories, sealing and bonding agents, and basic membrane specialty tools required to perform the emergency repairs demonstrated to the Owner's personnel.
 - 1. Patching materials for membranes shall be from the same production run as materials installed.
 - 2. Deliver Extra Materials as directed by the Owner.

2. PART 2 - PRODUCTS

2.1. MATERIALS

- a) Manufacturers' standard system components, including membrane, aluminum or steel support structure, pedestrian doors, and all associated accessories and finishes necessary for a complete weather-tight building.
- b) Exterior Membrane: PVC-coated polyester scrim. Exterior membrane shall be fabricated of one type of translucent and/or opaque membrane, as indicated by the Owner.
 - 1. Colors: Multiple colors may be utilized; to be selected by the Owner from the manufacturers' line of available colors.
 - 2. Exterior membrane to have self-cleaning properties
 - 3. Minimum weight of exterior membrane:
 - i. Translucent Fabric ± 22 oz/yd²
 - ii. Opaque ± 24 oz/yd²
- c) Structural Steel
 - 1. Steel employed for exterior use is to be hot-dip galvanized or pre-galvanized and painted. Pre-galvanized material without full secondary protection is unacceptable for exterior use.
 - 2. Steel employed for interior use is to be hot-dip galvanized or pre-galvanized and painted. Pre-galvanized material without full secondary protection is unacceptable for interior use.
 - 3. Steel parts used as connectors in contact with aluminum shall be hot-dip galvanized.
 - 4. Other steel parts shall be either hot-dip galvanized, or pre-galvanized and painted.
 - 5. Truss shall be solid steel angle cranked design. Tube steel is not acceptable.
- d) Cables: ASTM A603 wire rope or A586 structural strand cables; use only one type with one modulus of elasticity throughout the structure. Where used in contact with membrane, use PVC coated cables. Furnish with fittings designed to provide at least 90% of the full breaking strength of the cables.
- e) Steel: minimum per the standard below, or as needed per the structural design:
 - 1. Structural Steel Shapes, Plates, etc. ASTM A36 or A992
 - 2. High Strength Bolts ASTM A325
 - 3. Anchor Bolts ASTM A307 or A325
 - 4. Hollow Structural Sections ASTM A500, Grade B, Fy = 46 ksi or equiv.
 - 5. Pipe ASTM A53, Fy = 35 ksi
 - 6. Reinforcing Steel ASTM A615, Fy = 60 ksi
 - 7. Pins ASTM A36 or A500

2.2.ACCESSORIES

- a) Fasteners, Bolts, Nuts: ASTM A123, G90 galvanized or zinc plated. Fasteners permanently exposed to outside environment shall be hot dip galvanized or stainless steel
- b) Hollow Metal exit Passage Doors 3'0" x 7'0" (2 each) : Manufacturer's Standard with code-compliant panic hardware. All doors are to have separate sub-frames (See Section 1.2 B.5) One exit door located at each gable end.
- c) Lighting System: Provide system best suited to meet requirements for facility usage. Final requirements will be determined during final design phase after award of contract.
- d) Exterior Doors: Acceptable structure will allow single gable installation of one (1) 16'W clear x18'H clear steel roll-up cargo doors with 43 psf wind load design.

2.3.FABRICATION

- a) General. Components, upon completion, shall be true to line, free of twists, bends, misalignments and with neatly finished welds.
 - 1. All welds that will be exposed to view shall be ground to a smooth aesthetic finish.
 - 2. Mark materials with the piece shown in the accepted Erection Drawings; locate marks so that they will be readily observable for delivery and installation inspections but concealed in the completed work. Loss or obscuring of piece marks prior to acceptance of their installation may be grounds for rejecting the related work.
 - 3. Overlap welds in the membrane that are perpendicular to the slope shall be tiled with the upper panel on top of the lower panel.
 - 4. Fabricate joints (seams and splices) in the membrane to develop at least 90% of the membrane's tensile strength. Use thermally fused (heat welded), or other methods recommended by the membrane manufacturer. Welded seams are to be tested at elevated temperatures prior to installation/erection.
 - 5. Membrane welding in the shop shall be subject to a quality procedure to ensure the quality of the welds, and the associated records shall be maintained for the project for a minimum period of five years.

3. PART 3 - EXECUTION

3.1.EXAMINATION

- a) Verify Conditions
 - 1. Examine areas and conditions, under which Work is to be performed, and identify conditions detrimental to proper or timely completion.
 - 2. Review preparatory work of others including the layout and anchor embedment locations if used.
 - 3. Do not proceed until unsatisfactory conditions have been corrected.

3.2.INSTALLATION / ERECTION

- a) Follow the manufacturer's accepted Erection Drawings and the documentation.
 - 1. Erect the structural frame, secure the exterior membrane and tension carefully following the manufacturer's instructions. Obtain minimum tension prestress values in membrane, and resultant stress values in the structural framing, and as required in order to maintain the profile of the structure under anticipated wind loads.
 - 2. Seal the exterior membrane, around door frames, ductwork and similar penetrations.
 - 3. Seal the exterior membrane around the structure perimeter.
 - 4. Install the liner membrane; coordinate with mechanical and electrical installations.
 - 5. Install doors and closures to maintain both the horizontal and vertical tension of the membrane.
- b) Erection Tolerances: as specified in the AISC Code of Standard Practice for Steel Buildings and Bridges

3.3.FIELD QUALITY CONTROL

- a) Manufacturer's Field Services. Manufacturer's Technical Representative shall provide the field observation and technical services during installation required to validate the specified warranties to include at least the following:
1. Perform pre-installation examination and acceptance of preparatory work for each stage.
 2. Be present for each process. Confirm construction sequence and techniques.
 3. Upon completion, issue a final statement indicating manufacturer's acceptance of installed system together with a fully executed warranty.

3.4.DEMONSTRATIONS

- a) At a time near Substantial Completion, and as mutually agreed, demonstrate the manufacturer's recommended routine inspection and emergency repair procedures to the Owner's personnel. Use materials and methods recommended by the structure manufacturer. Demonstrate uses and proper techniques for installing materials provided in the Maintenance and Repair Kit.