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CONSTRUCTION DRAWINGS are bound separately as “Construction Drawings, “TBD”. Refer to the Drawing Schedule on the Cover Sheet.

ADDENDA shall be issued as necessary.

ADDENDUM ONE, 11/22/2021
ADDENUM TWO, 11/29/2021

ADVERTISEMENT FOR BIDS

The **Al Salam Foundation** announces that sealed **LUMP SUM BID PROPOSALS** for furnishing all materials and performing all work necessary to complete:

Islamic Life Center
14138 Shelborne Road
Carmel, Indiana 46074

will be accepted for Invited General Contractors, by **Ashhar Madni** at:

Al Salam Foundation
9551 Valparaiso Court
Indianapolis, IN 46268

PRE-BID MEETING: Tuesday, November 9th at 3:00 pm.
The pre-bid meeting will be held at the project site with representatives from the Owner and Design Team present. Invited contractors are encouraged to attend. This pre-bid meeting is not mandatory.

BID ACCEPTANCE DATE/TIME: Tuesday, December 7th at 2:00 pm.
Bids shall be submitted in PDF format via email to the Owner: **islamiclifecenter@gmail.com**
Please copy the architect: **chris@mccoyarchitects.com**

Faxed bids will not be accepted.

PROJECT DESCRIPTION
The Work consists of **a new single story (with partial basement), religious assembly building**, as shown on Contract Documents prepared by McCoy Architects LLC, **Titled: Construction Drawings, Dated: 3/17/2021 with TAC Responses 9/21/2021 (and revisions prior) and Project Manual dated 9/21/2021.**

Construction time shall be **as proposed on the bid form**.

BIDDER'S QUALIFICATIONS
Bidder's Qualifications are required by the Owner for all General Contractors to be submitted by the low bidder and at the same time any bidder as requested by the Owner, and as set forth herein:

The Contractor shall be properly licensed and maintains a permanent place of business, in the state of Indiana, City of Carmel, and has adequate plant and equipment to perform the work properly and expeditiously.

CONSTRUCTION DOCUMENTS MAY BE VIEWED AT THE LOCATIONS LISTED:

Al Salam Foundation (Existing House on property): 14138 Shelborne Road, Carmel IN 46074
Al Salam Foundation (Existing Mosque Location): 9551 Valparaiso Court, Indianapolis IN 46268
McCoy Architects LLC: 524 East High Street, Lexington KY 40502, tel (859) 233-1884

PERFORMANCE AND LABOR AND MATERIALS PAYMENT BONDS
Performance and Labor and Materials payment Bonds, AIA document A311, shall be included as provided herein, and executed at the award of the Contract.

BID BOND
Shall be provided in accordance with Section 4.2 of the Instructions to Bidders (AIA A701).

EXECUTION OF THE CONTRACT

- □ Lump sum Bid for Entire Work.
- □ No Bidder may withdraw, modify or cancel his Bid within (60) days after the actual date of the Bid opening.
- □ Telegraphic (fax) bids will not be accepted.
- □ Bids received after the scheduled closing time will be returned unopened to the bidder.
- □ By submission of a bid the Contractor agrees to commence construction no later than [5] calendar days after the execution of the contract or notice to proceed, whichever happens first.
- □ Rights to waive any informality or irregularity in any Bids and to reject any and all bids are reserved by the Owner.
- □ Contract will be awarded on the basis of the terms deemed most acceptable to the Owner, and as determined solely by the Owner.
- □ Competency and responsibility of Bidder and of their proposed subcontractors will be considered in making the award. Ability of the Bidder to obtain a performance bond will not necessarily be regarded as sole test of such Bidder's competency or responsibility.
- □ The Owner reserves the right to purchase certain materials for and on its own account for incorporation in the Work as shall be determined by the Owner, and that all other materials shall be purchased by the Contractor for incorporation in the work.

SUBMITTALS

Submittals pursuant to Paragraph 6.3.1 of the "Instructions to Bidders" shall be furnished in accordance with the following:

Submitted With the Bid Proposal. [submit one original only]

- □ List of Subcontractors

Submitted Within 48 hours of bid opening. [submit one original only]

- □ Schedule of Values
- □ List of Materials and Equipment
- □ Unit Price Schedule

Submitted for the execution of the Contract. [submit three original copies]

- □ Performance Bond and Labor and Materials Payment Bond: AIA document A311
- □ Proof of Insurance, including Builder's Risk Insurance, with Certificate indicating the appropriate limits in accordance with the Contract Documents.
- □ Schedule of Values for Construction as indicated in the specifications.

END OF ADVERTISEMENT FOR BIDS

SECTION 086225 - TUBULAR DAYLIGHTING DEVICES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Tubular daylighting devices and accessories.

1.2 REFERENCES

A. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

B. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

C. ASTM A 463/A 463M - Standard Specification for Steel Sheet, Aluminum Coated, by the Hot Dip Process.

D. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc Coated (Galvanized), by the Hot Dip Process.

E. ASTM A 792/A 792M - Standard Specification for Steel Sheet, 55 percent Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.

F. ASTM E 108 - Standard Test Methods for Fire Tests of Roof Coverings.

G. ASTM E 283 - Test Method for Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.

H. ASTM E 308 - Standard Practice for Computing the Colors of Objects by Using the CIE System.

I. ASTM E 330 - Structural Performance of Exterior Windows, Curtain Walls and Doors.

J. ASTM E 547 - Test Method for Water Penetration of Exterior Windows, Skylights, Doors and Curtain walls by Cyclic Air Pressure Difference.

K. ASTM E 1886 - Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials.

L. ASTM E 1996 - Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricane.

M. ASTM D 635 - Test Method for Rate of Burning and/or Extent of Time of Burning of Self-Supporting Plastics in a Horizontal Position.

N. ASTM D 1929 - Test Method for Ignition Properties of Plastics.

O. ASTM D 2843 - Standard Test Method for Density of Smoke from the Burning or Decomposition of Plastics.

P. ASTM F 1642 - Standard Test Method for Glazing and Glazing Systems Subject to Airblast Loading.

Q. ASTM F 2912 - Standard Specification for Glazing and Glazing Systems Subject to Airblast Loading.

R. AAMA/WDMA/CSA 101/I.S.2/A440 - Standard/Specification for Windows, Doors, and Unit Skylights; 2011.

S. UL 2108 - Low Voltage Lighting Systems.

T. CFR 47 - Code of Federal Regulations (CFR) Rules & Regulations for FCC, FCC Part 15 - Radio Frequency Devices, Subpart B - Unintentional Radiators, Section 15.107 - Conducted Limits, and 15.109 - Radiated Emission Limits

U. ANSI C63.4-2014 - American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

V. GSA-TS01-2003: Standard Test Method for Glazing and Window Systems Subject to Dynamic Overpressure Loadings.

W. ICC-ES AC-16 - Acceptance Criteria for Plastic Skylights; 2008.

X. IBC Section 1710 - Load Test Procedure for Wind Load Testing on Rooftop Daylight Collecting System - Structural Performance Testing - Devised by ATI PE); 2012.

Y. IBC Section 2606.7.2 - Installation - Diffuser Fall Out Test (Devised by PE); 2012.

Z. OSHA 29 CFR - 1910.23 (e)(8) (Guarding Requirements for Skylights); 1926 Subpart M (Fall Protection); 1926.501(b)(4)(i); 1926.501(i)(2); 1926.501(b)(4)(ii).

AA. EN 60598-1:2015+A1:2018 - Luminaires. General requirements and tests

BB. EN 60598-2-2:2012 - Luminaires -- Part 2-2: Particular requirements - Recessed luminaires

CC. EN 55015:2013+A1:2015 - Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment

DD. EN 61000-3-2:2014 - Electromagnetic compatibility (EMC). Limits. Limits for harmonic current emissions (equipment input current = 16 A per phase)

EE. EN 61000-3-3:2013 - Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current =16 A per phase and not subject to conditional connection

FF. EN 61547:2009 - Equipment for general lighting purposes. EMC immunity requirements

1.3 PERFORMANCE REQUIREMENTS

A. SOLAMASTER 750 DS-O / 750 DS-C (OPEN/CLOSED CEILING)
   1. AAMA/WDMA/CSA 101/IS2/A440, Class CW-PG70, size tested 21 inch (530 mm) diameter, Type TDDOC and Type TDDCC.
      a. Air Infiltration Test:
         1) Air infiltration will not exceed 0.30 cfm/sf aperture with a pressure delta of 1.57 psf across the tube when tested in accordance with ASTM E 283.
      b. Water Resistance Test:

1) Passes water resistance; no uncontrolled water leakage with a pressure differential of 10.7 psf (512 Pa) or 15 percent of the design load (whichever is greater) and a water spray rate of 5 gallons/hour/sf for 24 minutes when tested in accordance with ASTM E 547 and ASTM E 331.

c. Uniform Load Test: All units tested with a safety factor of (3) for positive pressure and (2) for negative pressure, acting normal to plane of roof in accordance with ASTM E 330.

1) No breakage, permanent damage to fasteners, hardware parts, or damage to make daylighting system inoperable or cause excessive permanent deflection of any section when tested at a Positive Load of 150 psf (7.18 kPa) or Negative Load of 70 psf (3.35 kPa).

2. Fire Testing:

a. Fire Rated Roof Assemblies:

1) When used with the Dome Edge Protection Band, all domes meet fire rating requirements as described in the International Building Code for Class A, B, and C roof assemblies.

b. When used with the Dome Edge Protection Band, all domes meet fire rating requirements as described in the International Building Code.

c. Self-Ignition Temperature - Greater than 650 degrees F per ASTM D-1929.

d. Smoke Density: Rating no greater than 450 per ASTM E 84 in way intended for use. Classification C.

e. Rate of Burn and/or Extent: Maximum Burning Rate: 2.5 inches/min (62 mm/min) Classification CC-2 per ASTM D 635.

f. Rate of Burn and/or Extent: Maximum Burn Extent: 1 inch (25 mm) Classification CC-1 per ASTM D 635.

3. Fall Protection Performance:

a. Passes fall protection test: No penetration of dome or curb cap when subject to 400 lb (160 Kg)/42 inch (1066 mm) impact drop test when tested in accordance with OSHA 29 CFR 1926.506(c) Safety Net Systems.

1.4 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Manufacturer's data sheets on each product to be used, including:

1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Data sheets showing roof dome assembly, flashing base, reflective tubes, diffuser assembly, and accessories.
4. Installation requirements.

C. Shop Drawings. Submit shop drawings showing layout, profiles and product components, including rough opening and framing dimensions, anchorage, roof flashings and accessories.

D. Verification Samples: As requested by Architect.

E. Test Reports: Independent testing agency or evaluation service reports verifying compliance with specified performance requirements.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: All primary products specified in this section will be supplied

by a single manufacturer with a minimum of twenty years experience in the top lighting industry. Secondary products shall be acceptable to the primary manufacturer.

B. Installer Qualifications: All products shall be installed by a single installer with a minimum of five years demonstrated experience, with adequate equipment, skilled workers, and practical experience to meet the project schedule.

C. Skylights shall conform with authorities having jurisdiction and be designed to meet design criteria of the project location and the following:
   1. Skylights must be certified by NFRC.
   2. Skylights must be Tested and labeled in accordance with AAMA/WDMA/CSA 101/I.S.2/A440.
   3. Meet or exceed OSHA 200 pound (90 kg) Drop Tests expressed in 29 CFR 1910.23(e)(8)
   4. Skylights shall provide minimum 69 psf (3.30 kPa) design load.

D. Pre-Installation Meeting: Contractor shall convene a pre-installation meeting on the project site minimum one week before beginning work of this Section. The meeting shall include the Architect or Owner's Representative and representatives of all related trades to:
   1. Coordinate between the at least the following trades.
      a. Roofing to install the flashing, skylight, and LED Light Kit (when specified)
      b. Electrical to wire components and program lighting controls.
   2. Verify project requirements and site logistics.
   3. Assess integrity of the roofing system and building structure.
   4. Review manufacturer's installation instructions and warranty requirements.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver products in manufacturer's original containers, dry, undamaged, seals and labels intact.

B. Store products in manufacturer's unopened packaging until ready for installation.

1.7 PROJECT CONDITIONS

A. Coordinate delivery schedule with the Contractor and project schedule to minimize on site storage.

B. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

C. Store materials in a dry area, protected from freezing, staining, contamination or damage.

1.8 WARRANTY

A. Daylighting Device: Manufacturer's standard warranty for 10 years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Solatube International, Inc.,

B. Requests for substitutions will be considered by the Architect.

2.2 TUBULAR DAYLIGHTING DEVICES

A. Tubular Daylighting Devices General: Transparent roof-mounted skylight dome and self-flashing curb, reflective tube, and ceiling level diffuser assembly, transferring sunlight to interior spaces; complying with ICC AC-16.

B. Basis of Design: SolaMaster Series: Solatube Model 750 DS, 21 inch (530 mm) Daylighting System:
   1. Model:
      a. Solatube Model 750 DS-C Closed (Penetrating) Ceiling. AAMA Type TDDCC.
   2. Capture Zone:
      a. Roof Dome Assembly: Transparent, UV and impact resistant dome with flashing base supporting dome and top of tube.
         1) Outer Dome Glazing: Type DA, 0.125 inch (3.2 mm) minimum thickness injection molded acrylic classified as CC2 material; UV inhibiting (100 percent UV C, 100 percent UV B and 98.5 percent UV A), impact modified acrylic blend.
            a) Raybender 3000: Variable prism optic molded into outer dome to capture low angle sunlight and limit high angle sunlight.
      b. Tube Ring: 0.090 inch (2.3 mm) nominal thickness injection molded high impact PVC. Prevents thermal bridging between base flashing and tubing and channel condensed moisture. Attached to base of dome ring with butyl glazing rope 0.24 inch (6 mm) diameter; to minimize air infiltration.
      c. Dome Seal: Adhesive backed weatherstrip, 0.63 inch (16 mm) tall by 0.28 inch (7 mm) wide.
   3. Dome Options:
      a. Security Bar: Type B Security Bar 0.375 inch (95 mm) stainless steel bar across flashing diameter opening.
   4. Flashings:
      a. Roof Flashing Base:
         1) One Piece: One piece, seamless, leak-proof flashing functioning as base support for dome and top of tube. Sheet steel, corrosion resistant conforming to ASTM A 653/A 653M or ASTM A 463/A 463M or ASTM A792/A 792M, 0.028 inch (0.7 mm) plus or minus .006 inch (.015 mm) thick.
            a) Base Style: Type FC, Curb cap, with inside dimensions of 27 inches by 27 inches (685 mm by 685 mm) to cover curb as specified in Section 07600.
      b. Flashing Options:
         1) Curb Insulator: Curb Insulator, Type CI, Thermal isolation material is for use under flashing Type FC.
   5. Transfer Zone:
      a. Extension Tubes: Aluminum sheet, thickness 0.018 inch (0.5 mm) conforming to ASTM B 209.
         1) Reflective Tubes:
            a) Reflective extension tube, Type EXX and Type EL with total length of run as indicated on the Drawings.
            b) Interior Finish: Spectralight Infinity with INFRAREDuction

Technology combining ultra-high Visible Light reflectance with Ultra-low Infrared (IR) reflectance.

2) Tube Options
   a) Top Tube Angle Adapter and Bottom Tube Angle Adapter Kit: Type AK, Reflective 45 degree adjustable top and bottom angle adapters (one each), 16 inches (406 mm) long
   b) Reflective extension tube, Type EL: 48 inches (1220 mm) long, replaces two normal 24-inch (610 mm) extension tubes when long tube runs are required.

6. Delivery Zone:
   a. Diffuser Assemblies for Tubes Penetrating Ceilings: Solatube Model 750 DS-C. Ceiling mounted box transitioning from round tube to square ceiling assembly, supporting light transmitting surface at bottom termination of tube; 23.8 inches by 23.8 inches (605 mm by 605 mm) square frame to fit standard suspended ceiling grids or hard ceilings.
      1) Polymeric Transition Box: Type TP, round-to-square transition box made of opaque polymeric material, classified as CC2, Class C, 0.110 inch (2.8 mm) thick.
      2) Lens: Type L1, OptiView Fresnel lens design to maximize light output and diffusion with extruded aluminum frame and EPDM foam seal to minimize condensation and bug, dirt and air infiltration per ASTM E 283. Visible Light Transmission shall be greater than 90 percent at 0.022 inch (0.6 mm) thick. Classified as CC2.
7. Catalog Number: S750DS-C-DA-B-FC-CI-AK-EXX-EL-TP-L1-D1-TR20-S1

2.3 ACCESSORIES

A. Fasteners: Same material as metals being fastened, non-magnetic steel, non-corrosive metal of type recommended by manufacturer, or injection molded nylon.

B. Suspension Wire: Steel, annealed, galvanized finish, size and type for application and ceiling system requirement.

C. Sealant: Polyurethane or copolymer based elastomeric sealant as provided or recommended by manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. Examine openings, substrates, structural support, anchorage, and conditions for compliance with requirements for installation tolerances and other conditions.

C. If substrate and rough opening preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Coordinate requirements for power supply, conduit and wiring.

C. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

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

B. Coordinate installation with substrates, air and vapor retarders, roof insulation, roofing membrane, and flashing to ensure that each element of the Work performs properly and that finished installation is weather tight.
   1. Install flashing to produce weatherproof seal with curb and overlap with roofing system termination at top of curb.
   2. Provide thermal isolation when components penetrate or disrupt building insulation. Pack fibrous insulation in rough opening to maintain continuity of thermal barriers.
   3. Coordinate attachment and seal of perimeter air and vapor barrier material.

C. Where metal surfaces of tubular unit skylights will contact incompatible metal or corrosive substrates, including preservative-treated wood, provide permanent separation as recommended by manufacturer

D. Align device free of warp or twist, maintain dimensional tolerances.

E. After installation of first unit, field test to determine adequacy of installation. Conduct water test in presence of Owner, Architect, or Contractor, or their designated representative. Correct if needed before proceeding with installation of subsequent units.

F. Inspect installation to verify secure and proper mounting. Test each fixture to verify operation, control functions, and performance. Correct deficiencies.

3.4 CLEANING

A. Clean exposed surfaces according to manufacturer's written instructions. Touch up damaged metal coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.

3.5 PROTECTION

A. Protect installed products until completion of project.

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

END OF SECTION

SECTION 088000 - GLAZING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes glazing for the following products and applications, including those specified in other Sections where glazing requirements are specified by reference to this Section:

1. Fixed aluminum windows.

2. Aluminum entrance doors.

1.2 SUBMITTALS

A. Product Data: For each glass product and glazing material indicated.

B. Preconstruction adhesion and compatibility test report.

1.3 WARRANTY

A. Manufacturer's Special Warranty on Insulating Glass: Manufacturer's standard form in which insulating-glass manufacturer agrees to replace insulating-glass units that deteriorate within specified warranty period. Deterioration of insulating glass is defined as failure of hermetic seal under normal use that is not attributed to glass breakage or to maintaining and cleaning insulating glass contrary to manufacturer's written instructions. Evidence of failure is the obstruction of vision by dust, moisture, or film on interior surfaces of glass.

1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 GLASS PRODUCTS

A. Float Glass: ASTM C 1036, Type I, Quality-Q3, Class I (clear) unless otherwise indicated.

2.2 INSULATING GLASS

A. Insulating-Glass Units: Factory-assembled units consisting of sealed lites of glass separated by a dehydrated interspace, qualified according to ASTM E 2190, and complying with other requirements specified.

1. Sealing System: Dual seal.

2. Spacer: Manufacturer's standard spacer material and construction in color and finish selected by architect from manufacturer’s full range.

2.3 GLAZING GASKETS

A. Dense Compression Gaskets: Molded or extruded gaskets of profile and hardness required to maintain watertight seal, made from one of the following:

1. Neoprene complying with ASTM C 864.
2. EPDM complying with ASTM C 864.
3. Silicone complying with ASTM C 1115.
4. Thermoplastic polyolefin rubber complying with ASTM C 1115.

B. Soft Compression Gaskets: Extruded or molded, closed-cell, integral-skinned neoprene, EPDM, silicone, or thermoplastic polyolefin rubber gaskets complying with ASTM C 509, Type II, black; of profile and hardness required to maintain watertight seal.

1. Application: Use where soft compression gaskets will be compressed by inserting dense compression gaskets on opposite side of glazing or pressure applied by means of pressure-glazing stops on opposite side of glazing.

2.4 GLAZING SEALANTS

A. General:

1. Compatibility: Provide glazing sealants that are compatible with one another and with other materials they will contact, including glass products, seals of insulating-glass units, and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
2. Suitability: Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation.
3. VOC Content: For sealants used inside of the weatherproofing system, not more than 250 g/L when calculated according to 40 CFR 59, Subpart D.
4. Colors of Exposed Glazing Sealants: As selected by Architect from manufacturer's full range.

B. Glazing Sealant: Neutral-curing silicone glazing sealant complying with ASTM C 920, Type S, Grade NS, Class 100/50, Use NT.

1. Applications: Insulated glazing units for aluminum windows.

2.5 MISCELLANEOUS GLAZING MATERIALS

A. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.

B. Setting Blocks: Elastomeric material with a Shore, Type A durometer hardness of 85, plus or minus 5.

C. Spacers: Elastomeric blocks or continuous extrusions of hardness required by glass manufacturer to maintain glass lites in place for installation indicated.

D. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).

E. Cylindrical Glazing Sealant Backing: ASTM C 1330, Type O (open-cell material), of size and density to control glazing sealant depth and otherwise produce optimum glazing sealant performance.

2.6 INSULATING GLASS SCHEDULE

A. Glass Type: “Insulating” Low-e-coated, clear, insulating glass.

1. Overall Unit Thickness: 1” inch.
2. Thickness of Each Glass Lite: 6.0 mm.
3. Outdoor Lite: Float glass.
4. Interspace Content: Argon.
5. Indoor Lite: Float glass.

6. Low-E Coating: Pyrolytic on second surface.
7. Visible Light Transmittance: 42 percent minimum.
8. Winter Nighttime U-Factor: .33 maximum.
9. Summer Daytime U-Factor: .37 maximum.
10. Solar Heat Gain Coefficient: .44 maximum.

B. Glass Type: “Safety” (at entrance doors & where required by code) Low-e-coated, clear, insulating tempered glass.

1. Overall Unit Thickness: 3/4” inch.
2. Thickness of Each Glass Lite: 4.0 mm.
3. Outdoor Lite: Fully tempered float glass.
4. Interspace Content: Argon.
5. Indoor Lite: Fully tempered float glass.
6. Low-E Coating: Pyrolytic on second surface.
7. Visible Light Transmittance: 42 percent minimum.
8. Winter Nighttime U-Factor: .33 maximum.
9. Summer Daytime U-Factor: .37 maximum.
10. Solar Heat Gain Coefficient: .44 maximum.
11. Provide safety glazing labeling.

C. Glass Type: “Bullet-Resistant”: **School Guard Glass SG4 IGU (Add Alternate #4 only)**

1. 1-1/16” Insulated Glass Unit with ¼” tempered and SN-68-LowE #2.

PART 3 - EXECUTION

3.1 GLAZING, GENERAL

A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.

B. Adjust glazing channel dimensions as required by Project conditions during installation to provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances.

C. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass is glass with edge damage or other imperfections that, when installed, could weaken glass and impair performance and appearance.

D. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction testing.

E. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.

F. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.

G. Provide spacers for glass lites where length plus width is larger than 50 inches.

H. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.

3.2 GASKET GLAZING (DRY)

A. Cut compression gaskets to lengths recommended by gasket manufacturer to fit openings exactly, with allowance for stretch during installation. Install at locations indicated on drawings to replace existing neoprene gaskets.

3.3 SEALANT GLAZING (WET)

A. Install continuous spacers, or spacers combined with cylindrical sealant backing, between glass lites and glazing stops to maintain glass face clearances and to prevent sealant from extruding into glass channel and blocking weep systems until sealants cure. Secure spacers or spacers and backings in place and in position to control depth of installed sealant relative to edge clearance for optimum sealant performance.

B. Force sealants into glazing channels to eliminate voids and to ensure complete wetting or bond of sealant to glass and channel surfaces.

C. Tool exposed surfaces of sealants to provide a substantial wash away from glass.

3.4 TAPE GLAZING

A. Position tapes on fixed stops so that, when compressed by glass, their exposed edges are flush with or protrude slightly above sightline of stops.

B. Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make them fit opening.

C. Cover vertical framing joints by applying tapes to heads and sills first and then to jambs. Cover horizontal framing joints by applying tapes to jambs and then to heads and sills.

D. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant approved by tape manufacturer.

E. Apply heel bead of elastomeric sealant.

F. Center glass lites in openings on setting blocks and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.

G. Apply cap bead of elastomeric sealant over exposed edge of tape.

3.5 CLEANING AND PROTECTION

A. Protect exterior glass from damage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surface. Remove nonpermanent labels and clean surfaces.

B. Protect glass from contact with contaminating substances resulting from construction operations. If, despite such protection, contaminating substances do come into contact with glass, remove substances immediately as recommended in writing by glass manufacturer.

C. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits, or stains; remove as recommended in writing by glass manufacturer.

D. Remove and replace glass that is broken, chipped, cracked, or abraded or that is damaged from natural causes, accidents, and vandalism, during construction period.

END OF SECTION 088000

SECTION 098433 - SOUND-ABSORBING WALL UNITS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes shop-fabricated, sound-absorbing acoustical panel units tested for acoustical performance.

B. Section includes site-fabricated, stretched acoustic fabric.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at **Project site**.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For unit assembly and installation.

C. Samples: For each exposed product and for each color and texture specified.

1.4 INFORMATIONAL SUBMITTALS

A. Product certificates.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance data.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics: Units shall comply with "Surface-Burning Characteristics" or "Fire Growth Contribution" Subparagraph below, or both, as determined by testing identical products by UL or another testing and inspecting agency acceptable to authorities having jurisdiction:

1. Surface-Burning Characteristics: Comply with ASTM E 84 or UL 723; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

a. Flame-Spread Index: 25 or less.
b. Smoke-Developed Index: **450** or less.

2. Fire Growth Contribution: Comply with acceptance criteria of local code and authorities having jurisdiction when tested according to NFPA 265 Method B Protocol or NFPA 286.

2.2 SOUND-ABSORBING WALL UNITS

A. Sound-Absorbing Wall Panel: Manufacturer's standard panel construction consisting of facing material **stretched over front face of edge-framed core and bonded or attached to edges and back of frame.**

B. **Basis of Design: Acoustical Solutions AlphaSorb Panels**.

1. Mounting: Back mounted with manufacturer's standard **impaling clips**, secured to substrate.
2. Core: **Glass-fiber board**
   a. Core-Face Layer: Manufacturer's standard, **impact-resistant, high-density board**.
3. Edge Profile: **Square**.
4. Corner Detail in Elevation: **Square** with continuous edge profile indicated.
5. Reveals between Panels: **Flush**.
6. Facing Material: **Polyester Fabric**.
7. Acoustical Performance: Sound absorption **NRC of 0.80** minimum according to ASTM C 423.
8. Nominal **Overall Panel** Thickness: **1 inch (25 mm)**.

2.3 MATERIALS

A. Core Materials: **Manufacturer's standard.**

1. Glass-Fiber Board: ASTM C 612; of type standard with manufacturer, unfaced, and dimensionally stable, molded rigid board; and with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.
2. Impact-Resistant, Acoustically Transparent, Copolymer Sheet for Face Layer: 1/16- to 1/8-inch- (1.6- to 3.2-mm-) thick layer of perforated, noncombustible, copolymer sheet laminated to face of core.

B. Facing Material: Fabric from same dye lot; color and pattern **as selected by Architect from manufacturer's full range**.

C. Mounting Devices: Concealed on back of unit, recommended by manufacturer to support weight of unit, and as follows:

2.4 FABRICATION

A. Standard Construction: Use manufacturer's standard construction unless otherwise indicated; with facing material applied to face, edges, and back border of dimensionally stable core; and with rigid edges to reinforce panel perimeter against warpage and damage.

B. Core-Face Layer: Evenly stretched over core face and edges and securely attached to core; free from puckers, ripples, wrinkles, or sags.

C. Facing Material: Apply fabric facing fully covering visible surfaces of unit; with material stretched straight, on the grain, tight, square, and free from puckers, ripples, wrinkles, sags, blisters, seams, adhesive, or other visible distortions or foreign matter.

1. Fabrics with Directional or Repeating Patterns or Directional Weave: Mark fabric top and attach fabric in same direction so pattern or weave matches in adjacent units.

D. Dimensional Tolerances of Finished Units: Plus or minus 1/16 inch (1.6 mm).

2.5 STRETCHED-FABRIC WALL SYSTEM

A. Basis of Design: Acoustical Solutions LLC’s CrossPoint Sound Absorbing Fabric (Needlebond)

B. Stretched Fabric Wall System: 3/16” nominal thicknes in rolls 54” wide, 30 oz. linear yard attached with heavy duty adhesive (approved by manufacturer)

C. Pattern: Single Rib

D. Fire Resistance: Class 1 per ASTM E84, Passes Corner Burn NFPA-265, UBC 8-2 Tunnel Test

E. NRC: 0.20 minimum

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install units in locations indicated. Unless otherwise indicated, install units with vertical surfaces and edges plumb, top edges level and in alignment with other units, faces flush, and scribed to fit adjoining work accurately at borders and at penetrations.

B. Comply with manufacturer's written instructions for installation of units using type of mounting devices indicated. Mount units securely to supporting substrate.

C. Align fabric pattern and grain with adjacent units.

3.2 CLEANING

A. Clip loose threads; remove pills and extraneous materials.

B. Clean panels on completion of installation to remove dust and other foreign materials according to manufacturer's written instructions.

END OF SECTION 098433

SECTION 098436 - SOUND-ABSORBING CEILING UNITS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes shop-fabricated, sound-absorbing acoustical panel units tested for acoustical performance.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at **Project site**.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For unit assembly and installation.

C. Samples: For each exposed product and for each color and texture specified.

1.4 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Reflected ceiling plans and other details, drawn to scale and coordinated with each other, using input from installers of the items involved.

B. Product certificates.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance data.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics: Units shall comply with "Surface-Burning Characteristics" or "Fire Growth Contribution" Subparagraph below, or both, as determined by testing identical products by UL or another testing and inspecting agency acceptable to authorities having jurisdiction:

1. Surface-Burning Characteristics: Comply with ASTM E 84 or UL 723; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

    a. Flame-Spread Index: 25 or less.
    b. Smoke-Developed Index: **450** or less.

2. Fire Growth Contribution: Comply with acceptance criteria of local code and authorities having jurisdiction when tested according to NFPA 286.

2.2 SOUND-ABSORBING CEILING UNITS

A. Sound-Absorbing Ceiling Panel: Manufacturer's standard panel construction consisting of facing material **laminated to front face, edges, and back edge border of core**

1. **Basis of Design: Acoustical Solutions LLC' AlphaSorb Sound-Absorbing Ceiling Units**
2. Mounting: Back mounted with manufacturer's standard **suspension system with stiffening, back-support angles**, secured to substrate.
3. Core: **Glass-fiber board**
4. Edge Construction: Manufacturer's standard **chemically hardened core with no frame**.
5. Edge Profile: **Square**.
6. Facing Material: **Polyester Fabric**.
7. Acoustical Performance: Sound absorption **NRC not less than 1.00** according to ASTM C 423 for [**Type A**] [**Type J**] mounting according to ASTM E 795.
8. Nominal: **Overall Panel** Thickness: **2 inches (51 mm)**

2.3 MATERIALS

A. Core Materials: **Manufacturer's standard.**

1. Glass-Fiber Board: ASTM C 612; of type standard with manufacturer, unfaced, and dimensionally stable, molded rigid board; and with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.

B. Facing Material: Fabric from same dye lot; color and pattern **as selected by Architect from manufacturer's full range**.

C. Mounting Devices: Concealed on back or top edge of unit, recommended by manufacturer to support weight of unit.

2.4 FABRICATION

A. Standard Construction: Use manufacturer's standard construction unless otherwise indicated, with facing material applied to face, edges, and back border of dimensionally stable core and with rigid edges to reinforce panel perimeter against warpage and damage.

B. Measure each area and establish layout of panels and joints of sizes indicated on Drawings within a given area.

C. Facing Material: Apply fabric facing fully covering visible surfaces of unit; with material stretched straight, on the grain, tight, square, and free from puckers, ripples, wrinkles, sags, blisters, seams, adhesive, or other visible distortions or foreign matter.

1. Fabrics with Directional or Repeating Patterns or Directional Weave: Mark fabric top and attach fabric in same direction so pattern or weave matches adjacent units.

D. Dimensional Tolerances of Finished Units: Plus or minus 1/16 inch (1.6 mm).

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install units in locations indicated. Unless otherwise indicated, install units with edges in alignment with walls and other units, faces flush, and scribed to fit adjoining work accurately at borders and at penetrations.

B. Comply with manufacturer's written instructions for installation of units using type of mounting devices indicated. Mount units securely to supporting substrate.

C. Align fabric pattern and grain with adjacent units.

3.2 CLEANING

A. Clip loose threads; remove pills and extraneous materials.

B. Clean panels on completion of installation to remove dust and other foreign materials according to manufacturer's written instructions.

END OF SECTION 098436

SECTION 116623 - GYMNASIUM EQUIPMENT

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Basketball equipment.
2. Safety pads.
3. Roll Fold Gym Divider.
4. Scoreboards.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at **Project site**.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For gymnasium equipment.

1. Include plans, elevations, sections, and attachment details.
2. Include diagrams for power, signal, and control wiring.

1.4 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Court layout plans, reflected ceiling plans, and other details, drawn to scale, and coordinated with ceiling-suspended gymnasium equipment, floor inserts, game lines, and markers applied to finished flooring, and coordinated with each other, using input from installers of the items involved.

B. Product Certificates: For each type of gymnasium equipment.

C. Sample warranty.

1.5 CLOSEOUT SUBMITTALS

A. Operation and maintenance data.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: **An entity that employs installers and supervisors who are trained and approved by manufacturer**.

1.7 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of gymnasium equipment that fail in materials or workmanship within specified warranty period.

1. Warranty Period: **Five** years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 BASKETBALL EQUIPMENT

A. Basis of Design: **Porter 90949000 Forward Fold Backstop**

B. Connections: Manufacturer's standard connections or connections recommended in writing by manufacturer and complying with Section 055000 "Metal Fabrications" of size and type required to transfer loads to building structure.

C. Overhead-Supported Backstops:

1. Folding Type: Manufacturer's standard assembly for **forward-folding, front-braced** backstop, with hardware and fittings to permit folding.
2. Goal Height Adjuster: Adjustable from 8 to 10 feet (2.40 to 3.05 m) to top of ring with gear-drive mechanism, locking in any position within adjustment range, with visible height scale attached to side of framing.

a. Operation: Manual with detachable crank handle.

D. Backstop Safety Device: Designed to limit free fall if support cable, chains, pulleys, fittings, winch, or related components fail.

E. Winch: Hoist consisting of heavy-duty, fully enclosed worm-gear; brake; cable drum; cable; and fittings, for mounting on **wall with equipment-mounting board**; designed to move and hold backboard in any raised or lowered position.

F. Backstop Electric Operator: Provide operating machine of size and capacity recommended in writing by manufacturer for equipment specified, with electric motor and factory-prewired motor controls, starter, gear-reduction unit, and remote controls. Coordinate wiring requirements and electrical characteristics with building electrical system.

1. Electrical Components, Devices, and Accessories: Listed and labeled according to NFPA 70, by a qualified testing agency, and marked for intended location and application.
2. Motor Electrical Characteristics:

a. Horsepower: [**1/2**] [**3/4**] [**1**] <**Insert number**> hp.
b. Voltage: 115 V ac, single phase, 60 hertz.

3. Remote-Control Station(s): NEMA ICS 6, Type 1 enclosure for **recessed or flush** mounting and momentary-contact, three-position, switch-operated control with up, down, and off functions.

a. Keys: Provide **two keys** per station.

4. Limit Switches: Adjustable switches at each backstop, interlocked with motor controls and set to automatically stop backstop at fully retracted and fully lowered positions.

G. Basketball Backboards:

1. Shape and Size:

a. Rectangular, **72 by 48 inches (1830 by 1220 mm)** width by height**, with rounded corners**.

2. Backboard Material: Provide with predrilled holes or preset inserts for mounting goals, and as follows:

a. Fiberglass: Minimum 1-1/2-inch- (38-mm-) thick.

3. Target Area and Border Markings: Permanently etched in white color, marked in **manufacturer's standard pattern and stripe width**.
4. Finish: Manufacturer's standard factory-applied, white background.

H. Goal-Mounting Assembly: Compatible with goal, backboard, and backstop.

I. Basketball Goals: Basket ring complete with flanges, braces, attachment plate, and evenly spaced loops welded around underside of ring.
1. Type: Movable, pressure-release design with manufacturer's standard breakaway mechanism and rebound characteristics identical to those of fixed, nonmovable ring.
2. Finish: **Manufacturer's standard** finish.

J. Basketball Nets: 12-loop-mesh net, between 15 and 18 inches (380 to 460 mm) long, sized to fit ring diameter, and as follows:

1. Cord: Made from white **nylon**.

K. Backboard Safety Pads: Designed for backboard thickness and extending continuously along bottom and up sides of backboard and over backstop **according to manufacturer's standard design**.

1. Color: **As selected by Architect from manufacturer's full range**.

2.2 SAFETY PADS

A. Basis of Design: Porter No. 560 Durasafe Wall Pad

B. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Flame-Spread Index: **25** or less.

C. Pad Coverings: Provide safety pad fabric covering that is fabricated from puncture- and tear-resistant, PVC-coated polyester or nylon-reinforced PVC fabric, minimum 14-oz./sq. yd. (475-g/sq. m) and treated with fungicide for mildew resistance; with surface-burning characteristics indicated.

D. Wall Safety Pads: Padded wall wainscot panels designed to be attached in a continuous row; each panel section consisting of fill laminated to backer board, with visible surfaces fully covered by seamless fabric covering, free of sag and wrinkles and firmly attached to back of backer board.

1. Backer Board: Minimum 3/8-inch- (9.5-mm-) thick **plywood, mat formed, or composite panel**
2. Fill: Multiple-impact-resistant foam, minimum **2-inch- (50-mm-) thick polyurethane, 3.5-lb/cu. ft. (56-kg/cu. m) density**.
3. Size: Each panel section **24" wide by height indicated on Drawings**.
4. Number of Modular Panel Sections: **As indicated on Drawings**.
5. Installation Method: Manufacturer's standard.
6. Fabric Covering Color(s): **As selected by Architect from manufacturer's full range** for **one** color.

E. Cutout Trim: Manufacturer's standard flanged cutout trim kits for fitting pads around switches, receptacles, and other obstructions.

1. Color: **Gray**.

2.3 ROLL FOLD GYM DIVIDER

A. Basis of Design: Porter 90670000 Roll Fold Gymnasium Divider Curtain (size indicated on drawings)

2.4 SCOREBOARD

A. Basis of Design: Nevco 2700

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with manufacturer's written installation instructions **and competition rules for each type of gymnasium equipment**.

B. Permanently Placed Gymnasium Equipment and Components: Install rigid, level, plumb, square, and true; anchored securely to supporting structure; positioned at locations and

elevations indicated; in proper relationship to adjacent construction; and aligned with court layout.

C. Connections: Connect electric operators to building electrical system.

D. Adjust movable components of gymnasium equipment to operate safely, smoothly, easily, and quietly; free from binding, warp, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range; and lubricate as recommended in writing by manufacturer.

3.2 DEMONSTRATION

A. Train Owner's maintenance personnel to adjust, operate, and maintain gymnasium equipment.

END OF SECTION 116623