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## SPORTSFLEX AIR-SUPPORTED STRUCTURE

### PART 1

#### 1 - GENERAL

##### 1.1 WORK INCLUDED

A. Furnish complete with all appropriate equipment and hardware for air structure building as indicated on the drawings and as specified.

##### 1.2 RELATED WORK

A. Examine contract documents for requirements that affect work of this Section. Other specification sections that directly relate to work of this section include but are not limited to:

1. Section 03300 - Cast in Place Concrete
2. Section 11061 - Indoor Tennis Court Equipment
3. Section 15510 - Air Structure Heating and Inflation System
4. Section 16523 - Air Structure Court Lighting

##### 1.3 SUBMITTALS

A. Provide large scale shop drawings for fabrication, installation and erection of all parts of work as required. Provide plans, elevations and details of anchorages, connections and accessory items. Provide installation templates for work installed by others. Show interfaces and relationships to work of other trades.

B. Provide stamped and sealed engineer's drawings and calculations for grade beam and stress relief anchor system design to be used by the concrete contractor during the construction of the perimeter grade beam and retaining walls.

##### 1.4 COORDINATION

**A. Coordinate grade beam and stress relief system design with air structure building manufacturer.**

**Air Structure Building and Appurtenances 13010 -1**

**1.5 WARRANTY**

**A. Provide manufacturer's standard written warranty for each item supplied.**

**PART 2**

**2 - PRODUCTS**

**A. Air structure building and appurtenances shall be supplied by:**

**1. Indoor Courts of America  
1280 N. Winchester  
Olathe, Ks 6061  
800-373-4262**

**2.2 BUILDING COMPONENTS**

**A. Exterior Weather Membrane - 28 oz. white, opaque with urethane Top Coating (TF 116/117).**

**B. Thermal Liner -white vinyl interior finish including relief vents.**

**C. Sectionalizing Air structure shall be delivered in sections no larger than one tennis court per section unless otherwise specified. Sections shall be joined using aluminum clamp plates with stainless steel bolts and nuts.**

**D. Perimeter Anchorage - extruded vinyl channel type.**

**E. Stress Relief Anchors - threaded J bolts with hexagonal nut and eye (if required by air structure manufacturer) to be installed at all doors. Air Structure Building and Appurtenances 13010-2.**

**F. Access Equipment**  
**1. All access equipment shall be manufactured specifically for use with an air supported structure by Kirk and Blum Mfg Co., Cincinnati, Ohio (513) 351-1400 or approved equivalent.**  
**a. Revolving door - aluminum construction with fabric clamping system, plexiglass windows, roller bearing pivots, dead bolt key.**  
**b. Exit door - Aluminum construction with fabric clamping system, center pivot pressure release design, spring return hinge, plexiglass windows, panel push bar (interior), thumb latch handle with key lock (exterior), control pivot and bronze hangar bearing.**  
**c. Personnel air lock - double door (ADA) two standard exit doors, peaked roof, coated cables, fabric clamps, steel pipe frames, bottom clamp angle.**

**G. Stress Relief - As required and designed by air structure manufacturer to distribute excess stress on air structure.**

## **PART 3**

### **3- EXECUTION**

#### **3.1 AIR STRUCTURE CHANNEL**

A. The air structure channel shall be installed true to line and grade, and location to exacting to insure a fit to the air structure. Sections of the channel shall be carefully aligned to insure a smooth, straight channel anchoring system. The channel shall be filled with a 2 x 4 wood filler plus an approximate 1/8" filler piece to approximate the air structure fabric thickness to insure adequate space in the channel for both the 2 x 4 and the fabric during the installation process.

**Air Structure Building and Appurtenances 13010-3.**

#### **3.2 AIR STRUCTURE**

A. The air structure shall be erected under the supervision of a representative of the air structure manufacturer. Care shall be exercised to insure a firm fit to the channel and that all cable anchors at doors are properly stressed to carry their apportioned load.

#### **3.3 INSTALLATION**

A. All foundation and installations shall be performed in accordance with the applicable requirements of ASI-77.

## **END OF SECTION**

**Air Structure Building and Appurtenances 13010-4**

## **SECTION 15510**

### **AIR STRUCTURE HEATING AND INFLATION SYSTEM**

## **PART 1**

### **1 - GENERAL**

#### **1.1 WORK INCLUDED**

A. Furnish complete with all appropriate equipment and hardware for air structure building heating and inflation systems as indicated on the drawings and as specified.

#### **1.2 RELATED WORK**

**A. Examine contract documents for requirements that affect work of this Section. Other specification sections that directly relate to work of this section include but are not limited to:**

- 1. Section 03300 - Cast In Place Concrete**
- 2. Section 11061 - Indoor Tennis Court Equipment**
- 3. Section 16523 - Air Structure Court Lighting**

### **1.3 SUBMITTALS**

**A. Provide large scale shop drawings for fabrication, installation and erection of all parts of work as required. Provide plans, elevations and details of anchorages, connections, air ducts and accessory items. Provide installation templates for work installed by others. Show interfaces and relationships to work of other trades.**

**B. Provide stamped and sealed engineer's drawings and calculations for grade beam and stress relief anchor system design to be used by the concrete contractor during the construction of the perimeter grade beam and utility support pads.**

#### **Air Structure Heating and Inflation System 15510-1**

### **1.4 COORDINATION**

**A. Coordinate grade beam and stress relief system design with air structure building manufacturer.**

### **1.5 WARRANTY**

**A. Provide manufacturer's standard written warranty for each item supplied.**

## **PART 2**

### **2- PRODUCTS**

#### **2.1 MANUFACTURER**

**A. Heating and inflation system shall be supplied by:**

- 1. Indoor Courts of America  
1280 N. Winchester  
Olathe, Kansas 66061  
(800) 373-4262**

#### **2.2 HEATING AND INFLATION SYSTEM COMPONENTS**

**A. Furnace**

- 1. Recirculating type indirect fired, gas furnace, thermostatically controlled, weather housed, high industrial quality. System shall be designed for 60 degree delta T.**

## **B. Inflation System**

1. Each air structure to be equipped with two (2) electrically operated blowers with automatic controls. Each blower shall be capable of delivering sufficient CFM of air at 1 ¼" water static pressure. Normal operation on one blower and second blower on stand-by which shall be automatically activated if a mechanical or electrical failure should occur in the primary unit. The emergency blower shall be automatically activated to supply inflation air. The stand-by blower shall continue to operate until normal pressure returns at which time it will automatically shut down. Blower to be non-overloading centrifugal type with backward inclined impeller blades.

## **C. Emergency Generator**

1. One 10 HP gasoline engine operating two blowers, one for each air structure, to be run in the event of a power failure to the facility complete with transfer switch, panel, battery, trickle charger and manual exerciser. Engine to be sized to power backup blowers in the event of power failure. Engine and blower to be enclosed in weather protected enclosures. All Equipment shall be capable of being monitored from a remote location. If specified, the monitoring system shall be connected to an electrical device that will initiate a telephone connection to a location designated by the Owner.

# **PART 3**

## **3 - EXECUTION**

### **3.1 INSTALLATION**

A. The Contractor shall install all equipment required to provide the Owner with an operating system in every respect. All equipment shall be installed in a workmanlike manner in accordance with the best practices of the labor and in accordance with the applicable requirements of ASI-77.

Air Structure Heating and Inflation System 15510-3

### **3.2 TESTING AND DEMONSTRATION**

A. All components shall be tested and demonstrated to the Owner as being complete and operable in accordance with the intent of the Construction Documents.

## **END OF SECTION**

## **SECTION 16500**

### **ELITE INDOOR TENNIS COURT LIGHTING**

#### **PART 1**

##### **1 – GENERAL**

###### **1.1 WORK INCLUDED**

1. Provide all equipment and materials and do all work necessary to furnish and install an indoor tennis court lighting system tested and complete, as indicated on the drawings and as specified.

## 1.2 RELATED WORK

- A. Examine contract documents for requirements that affect work of this section. Other specification sections that directly relate to work of this section include but are not limited to:

## 1.3 SUBMITTALS

- A. **Product Data:** Submit manufacturer's printed product data and specifications for each product used, including details of construction relative to materials, dimensions, gauges, profiles, method of mounting, specified options, and finishes.
- B. **Shop Drawings:** Provide large scale shop drawings for fabrication, installation and erection of all parts of work as required. Provide plans, elevations and details of anchorages, connections and accessory items. Provide installation templates for work installed by others. Show interfaces and relationships to work of other trades.

## 1.4 COORDINATION

- A. Install lighting system after structure has been erected and is weather-tight.

## 1.5 QUALITY ASSURANCE

- A. All lighting assemblies shall comply with the applicable standards of NEMA and shall have a UL label.

## 1.6 WARRANTY

- A. Provide manufacturer's standard written warranty for each item incorporated into the work.

## PART 2

## **2 – PRODUCTS**

### **2.1 MANUFACTURER**

**A. Tennis court lighting system shall be supplied by:**

- 1. Indoor Courts of America, Inc.  
1280 N. Winchester  
Olathe Ks 66061  
U.S.A.  
(800) 373-4262**

### **2.2 LUMINAIRE PERFORMANCE**

**A. The quantity per court and location of the luminaries as indicated on the drawings is based on the recommended design data of a particular manufacturer. Other manufacturers of similar type systems may recommend different locations and quantities to achieve the same lighting levels. If a system other than that set forth in this specification is proposed by the contractor, the contractor shall be responsible for the coordination of all sub-assemblies required to produce the substitute system including mounting and spacing of the substitute system to achieve the specified lighting levels and distribution.**

**B. The manufacturer of the lighting system shall furnish lighting equipment and sub assemblies to meet or exceed the following performance specifications:**

- 1. Horizontal lighting levels in principal playing area:
  - a. Measured 3' (1 m) above playing surface**
  - b. Average maintained footcandles: 70 min. within the playing lines**
  - c. Specified lighting levels shall be achieved with an equivalent number or less fixtures as indicated on the drawings. A greater number of fixtures will not be acceptable.****

### **2.3 MANUFACTURERS RESPONSIBILITY**

**A. Manufacturer of the luminaries shall provide a computer generated layout indicating the foot candle readings for the proposed system. The layout shall indicate the laboratory that generated the lighting performance data.**

- B. The manufacturer shall also set forth the power demand to operate the system proposed in KW per hour.
- C. Manufacturer shall provide a written guarantee stating that the proposed system conforms to the data submitted.

#### 2.4

- A. The luminaries shall be ISL2-1000 watt Elite, Cat No. ISL2-EL-1000-MHST-MT-STM4-0.
- B. The luminaries shall consist of the following:
  - 1. **Housing:** Seamless impact resistant, 18 gauge spun steel with high temperature white polyester powdercoat finish.
  - 2. **Reflector:** Fabricated, conical shaped, six sided anodized specular aluminum (020) with minimum 86% reflectivity.
  - 3. **Wire Guard:** One piece, conical shaped, steel wire guard with 8 gauge spokes and 10 gauge circumferential rings. Wire guard finished in a flat black powdercoat finish.
  - 4. **Socket:** Porcelain mogul base, pulse rated open rated socket.
  - 5. **Lamp:** 1000-watt Metal Halide Protected lamp. Clear lamps supplied as standard. *The fixture complies with NFPA's (National Fire Protection Association) National Electric Code 2005 Article 410.73.F.5 in regards to metal halide containment requirements.*
  - 6. **Mounting:** The luminaire hangs from a white  $\frac{3}{4}$ " rigid aluminum stem. Upper connection utilizes a zinc-plated steel ball aligner with  $\frac{3}{4}$ " inch NPT swivel to mount to a standard 4-square electrical junction box. Ball aligner allows fixture to hang plumb at 45degrees.
  - 8. **Servicing:** Lamp changing and fixture cleaning is accomplished without tools by swing down action of housing away from stationary wire guard. Latching mechanism is integral to wire guard. Cable strap is included for safety purposes.

9. **Ballasts:** Remote ballast is designed for indoor or protected locations. Ballast is class H, high power factor, core and coil design to operate a 1000 watt metal halide lamp. Total wattage consumption of ballast is 1080 watts. Ballast is available in multi-tap (120, 208, 240, 277) or 480 versions. Ballast enclosure is constructed of and finished in heavy gauge pre-galvanized steel. Ballast is UL listed for damp locations.
10. **Performance:** Fixture shall be 100% indirect, symmetrical distribution, with maximum candlepower at 42 degrees from vertical. Photometric test should be produced by an independent laboratory.

C. Color of luminaries shall be white.

## **2.5 LIGHTING CONTROLS**

- A. All tennis court lighting shall be controlled from a remote location in the Clubhouse where designed by the Owner. A control panel shall be provided by others with switches and indicator lights to indicate the status

## **PART 3**

### **3 – EXECUTION**

#### **3.1 BRACKET AND LUMINAIRE INSTALLATION**

- A. All materials and equipment specified herein shall be installed in accordance with the manufacturer's recommendations to conform to the contract documents. All installation shall be performed by skilled workers experienced in the type of work being performed.
- B. The drawings indicate the general location and arrangement of equipment, conduit and wiring. The contractor shall field locate equipment so as to not interfere with the work of other trades and to be readily accessible. Changes in spacing and location of lighting fixtures, panel boards, cabinets, receptacles and other equipment may be made to satisfy site conditions provided that such changes do not alter the design or performance of the items being relocated. All such changes shall be approved by the architect and tennis

**consultant.**

- C. Any damage to finishes shall be repaired and finished as appropriate prior to erection.**
- D. The Owner's Electrical Contractor shall connect the power from the power distribution both in the court pavement to the electrical panel and at the mechanical support slab. The ballasts shall be supplied by the lighting fixture manufacturer for installation by the owners electrical contractor.**

### **3.2 TESTING**

- A. All testing required by local governing authorities shall be scheduled and performed by the appropriate authorities prior to substantial completion of the project.**

### **3.3 BURN IN**

- A. After the system has been connected to the electrical system and is deemed to be operative, the luminaries shall have a minimum burn in period of 100 hours prior to the recording of the lighting levels on the court.**

### **3.4 LIGHT LEVEL READINGS**

- A. After the initial burn in period, light level readings shall be taken and compared to the manufacturers data and the requirements of the specifications. Major deviation (10% max) shall be corrected prior to final completion of the project.**
- B. A copy of the light levels taken after initial burn in shall be submitted to the Owner within 24 hours of recording.**

**END OF SECTION**

