

Date: March 28, 2018

Addendum No. 4

Project: Caesar Rodney High School Sitework and Athletic Fields Contract N. SRS-18003-CRHSsitework

The work herein shall be considered part of the bid documents for the referenced project and carried out in accordance with the following supplemental instructions issued in accordance with the Contract Documents without change in Contract Sum or Contract Time. Acknowledge receipt of addendum on the bid form as indicated.

#### **RFI Responses**

- Question: What docs to you want with the bid? Answer: Please reference specification section 002113 – Instructions to Bidders for a list of requirements. If you are simply bidding as a subcontractor, provide additional information found in the specification which applies to your scope of work to the General contractor bidding on the project. For example, Spec section 321814 – Synthetic Turf surfacing has additional requirements for quality assurance. See section 1.6.
- Question: Can the turf company bring one set of samples for the GC's to bid. This will save space at your or school's bid room.
   Answer: Spec section 321814 requires that samples are submitted only after bid award and prior to construction. See section 1.7.
- 3. **Question:** Is there a specific company that carries the removable bollards specified? Multiple companies were unable to provide us with this type of bollard.

**Answer:** See specification section 12 93 00. FairWeather Site Furnishings, <u>www.fairweathersf.com</u>.

#### Clarifications

 Contractor shall provide emergency egress at four locations identified on sketch SK-A.08. Egress path may shift throughout the construction period as required to phase and complete work in the area. Emergency means of egress shall be level, free of hazard and clearly marked. Where paving is not present, contractor shall provide crushed stone and stone fines, compacted to provide accessible pathway. Lawn areas shall be restored when pathway is no longer required. See attached sketch SK-A.08.



### **Changes to Drawings**

- C-501, C-502, C-503, C-504
   Clarification: Call-outs for 'Temporary Team Trailers' are to designate location and approximate configuration only. Trailer sizes shall be as indicated in specification section 13 34 10 PREFABRICATED MODULAR BUILDINGS.
- A2.1 SITE DEMOLITION PHOTOS
   Revised scope at photo SD-06 to include the following:
   Remove scoreboard at Field Hockey. Remove steel posts and concrete footings, remove electric service components. Cap conduit and abandon below grade.
   See attached sketch SK-A.07.
- A3.2 SCOREBOARDS, ENLARGED SITE PLANS AND DETAILS Revised scoreboard elevations 1, 2, 3, 4 and 5. See attached revised drawing A3.2.
- A3.3 –ENLARGED SITE PLANS AND DETAILS Revised to omit demolition of existing fire department connection. See attached sketch SK-A.01 Rev.1.
- E9.3 ELECTRICAL SITE PLAN STORAGE BUILDING Moved the starter for the grinder pump to the interior of the storage building on the wall next to the panelboards. See attached sketch SK-E.01 Rev.1.

# **Changes to Specifications**

- 11 68 43 EXTERIOR ELECTRONIC SCOREBOARDS Revise paragraph 2.1 MANUFACTURERS to include Daktronics, Inc. as an acceptable manufacturer. Revise paragraph 2.3.A. Revise paragraph 2.3.B. Revise paragraph 2.3.C. Added paragraph 2.4.C. See attached revised spec section 11 68 43.
- 13 34 10 PREFABRICATED MODULAR BUILDINGS Added specification section 13 34 10 defining prefabricated modular buildings for turn-key delivery and removal. See attached spec section 13 34 10.

# SECTION 11 68 43 – EXTERIOR ELECTRONIC SCOREBOARDS

# PART 1 - GENERAL

#### 1.1 SUMMARY

A. This Section includes exterior electronic scoreboards including control center and other accessories for complete functional installation.

### 1.2 **REFERENCES**

- A. American society for Testing and Materials (ASTM Publications:
  1. ASTM B221 Aluminum-Alloy Extruded Bar, Rod, Wire, Shape and Tube
- B. National Electrical Code.
- C. Federal Communications Commission, Part 15 Rules & Regulations.
- D. UL Standard for Electric Signs

#### 1.3 SUBMITTALS

- A. See Section 01 30 00 Administrative Requirements.
- B. Product date for scoreboards, controls and accessories including descriptions of control functions, etc.
- C. Installation drawings, face layout, dimensions, construction, electrical wiring diagrams, and method of anchorage.
- D. Installation instructions.
- E. Warranty

#### 1.4 QUALITY ASSURANCE

- A. Source limitation: All components including scoreboard, control center, control cable, and other accessories and installation hardware shall be products of a single manufacturer.
- B. Manufacturer qualifications: Company specializing in manufacturing electronic scoreboards with 10 years minimum successful world-wide experience.
- C. Scoreboards shall be designed for exterior installation with weatherproof housing and optical isolation interface to reduce potential damage from electrical storms.

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- D. Should service be necessary, specialized personnel shall not be required. Modular "plug and play" components will be housed in an internal protective enclosure.
- E. Scoreboards and other electrical components shall be certified by Underwriter Laboratories, (UL) Inc. and shall bear the UL label.
- F. Scoreboards and other electrical components shall be electrically grounded in accordance with National Electrical Code (NEC), Article 600.

# 1.5 WARRANTY

- A. Warranty to cover defects in materials and workmanship.
  - 1. 5 years parts and factory labor guarantee for scoreboards, [wired controls,] and accessories from invoice date.
  - 2. 2 years part and factory labor guarantee for wireless controls and receivers from invoice date.
  - 3. Lifetime telephone support.

# 1.6 MAINTENANCE SERVICE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.
- B. Maintenance Service: Beginning at Substantial Completion, provide six months' full maintenance by skilled employees of door hardware Installer. Include quarterly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper door hardware operation. Provide parts and supplies as used in the manufacture and installation of original products.
- C. Engage a factory authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain door hardware and door hardware finishes.

# PART 2 - PRODUCTS

# 2.1 MANUFACTURERS

- A. Exterior Electronic Scoreboards:
  - 1. Nevco, Inc., 301 East Harris Avenue, Greenville, Illinois 62246; 800-851-4040; <u>www.nevco.com</u>.
  - 2. Subject to compliance with the requirements of the specification, the following manufacturers offer products which may be considered.
    - a. All American Scoreboards, 401 South Main Street, Pardeeville, WI 53945. 800-356-8146; <u>www.allamericanscoreboards.com</u>.
    - b. Daktronics, Inc., 201 Daktronics Drive, Brookings, SD 57006, 800-325-8766; www.daktronics.com.

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- c. Electro-Mech Scoreboard Company, 72 Industrial Blvd., Wrightsville, GA 31096, 800-677-4780; <u>www.electro-mech.com</u>.
- d. Spectrum Scoreboards, 10048 Easthaven Blvd., Houston, TX 77075, 800-392-5050; <u>www.spectrumscoreboards.com</u>.
- 3. Substitutions: See Section 01 60 00 Product Requirements.

# 2.2 MATERIALS

- A. Aluminum faces and perimeter frame: Fabricated from .050 minimum thickness, ASTM B221 aluminum sheet with reinforcement and slotted mounting brackets top and bottom.
- B. Finish: Acrylic polyurethane paint. Color as selected by Architect from manufacturer's full range.
- C. Striping: Striping to separate scoreboard features. Color as selected by Architect from manufacturer's full range.
- D. Brackets: Integrated universal bracket system.
- E. Fasteners, anchors, and other exposed hardware: Corrosion resistant.
- F. Electronics: Low voltage, solid state, 2-wire cable, multiplex system, quartz crystal controlled.
- G. Provide gold plated electrical contacts on interconnecting wiring to reduce corrosion and improve reliability.
- H. Provide optical communication interface to reduce threat of damage from electrical storms and ESD.
- I. LED (light emitting diode) units: Seven-bar, segmented digits with protective aluminum cover, rated typical life 100,000 hours and be designed to provide excellent visibility from all angles and sides.
- J. Junction boxes where required: Sheet metal box and cover, [4-1/2 x 2-1/8 x 2-1/8 inches] [114 x 54 x 54 mm] min. complying with NEMA standards.
- K. Control cable: UL listed, 2-wire, RG-58/U, coaxial cable, [1/4 inch] [6 mm] diameter.

# 2.3 SCOREBOARD

- A. Main Stadium: Football, Soccer, Boys Lacrosse.
  - 1. Type: Exterior, electronic football scoreboard with integral horn and LED displays for time, scores, quarter, down, yards to go, ball location, and ball possession; Model 3604-ETN as manufactured by Nevco, Inc.
  - 2. Size: 30 feet long x 10 feet high x 8 inches deep.
  - 3. Approximate weight: 692 pounds.
  - 4. White on black captions, 15 inches high: "HOME", "GUESTS", "DOWN", "YDS TO GO", and "BALL ON".

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- 5. Black on white captions, 15 inches high: "TIME" and "QTR."
- 6. High intensity red, amber, or translucent white LED displays as selected by Owner:
  - a. 30 inches high digits: Time in minutes and seconds separated by colon.
  - b. 24 inches high digits: Quarter, scores, down, yards to go, and ball location.
  - c. Ball possession indicators: One football shaped indicator per team.
- 7. Power requirement:
  - a. POWER with ETNs (Red/Amber): 120 VAC, 4.9 Amps, 50/60 Hz. / 240 VAC, 2.5 Amps, 50/60 Hz. Requires earth ground.
  - b. POWER with ETNs (Translucent White): 120 VAC, 7.0 Amps, 50/60 Hz. / 240 VAC, 3.5 Amps, 50/60 Hz. Requires earth ground.
- 8. Provide optional conversion caption plates for:
  - a. Soccer: Two "SHOTS".
- B. Auxiliary Stadium: Girls Lacrosse, Soccer, Field Hockey
  - 1. Type: Exterior, electronic, multi-sport scoreboard with integral horn and LED displays for time, scores, and period; Model 3602-ETN as manufactured by Nevco, Inc.
    - a. Size: 12 feet long x 5 feet high x 8 inches deep.
    - b. Approximate weight: 105 pounds.
    - c. White on black captions, 10 inches high: "MIN", "SEC", "HOME", "GUESTS", and "HALF".
    - d. High intensity red, amber, or translucent white LED displays as selected by Owner with 18 inches high digits: Time in minutes and seconds separated by colon, scores, and period.
    - e. Power requirement:
      - 1) POWER (Red/Amber): 120 VAC, 2.2 Amps, 50/60 Hz. / 240 VAC, 1.1 Amps, 50/60 Hz. Requires earth ground.
      - 2) POWER (Translucent White): 120 VAC, 3.0 Amps, 50/60 Hz. / 240 VAC, 1.5 Amps, 50/60 Hz. Requires earth ground.
- C. Baseball Field and Softball Field
  - Type: Exterior, electronic baseball scoreboard with LED displays for inning and scores and LED indicators for balls, strikes, outs, hits, and errors; Model 1600-ETN as manufactured by Nevco.
    - a. Size: 16 feet long x 5 feet high x 8 inches deep.
    - b. Approximate weight: 195 pounds.
    - c. White on black captions: 10 inches high "HOME", "GUESTS", "INNING", "BALL", "STRIKE", "OUT", "H", and "E".
    - d. High Intensity Red, Amber, or Translucent White LED displays as selected by owner, 18 inches high digits: Inning and team scores.
    - e. High Intensity Red, Amber, or Translucent White LED circular indicators: 3 inch [76 mm] diameter minimum; 3 for balls, 2 for strikes, 2 for outs, 1 for hit, and 1 for error.
    - f. Power requirements:
      - 1) Red/Amber with ETNs: 120 VAC, 1.7 Amps, 50/60 Hz., 240 VAC, 0.9 Amps, 50/60 Hz. Includes power factor correction. Requires earth ground accordance with NEC.
      - 2) White with ETNs: 120 VAC, 2.2 Amps, 50/60 Hz., 240 VAC, 1.1 Amps, 50/60 Hz. Includes power factor correction. Requires earth ground accordance with NEC.

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# 2.4 ACCESSORIES

- A. Provide each scoreboard or accessory with control cable of length required. Electrical junction boxes, conduits, mounting hardware, and other accessories as required for installation are to be provided by
- B. Electronic Team Names: Provide each scoreboard with programmable Electronic Team Names as manufactured by Nevco, Inc. Provide additional electrical connections as required for complete, functioning installation.
  - 1. Shall not require controller upgrade, use of additional accessories or computer.
  - 2. Color: Match scoreboard LED color.
- C. Provide each scoreboard with supplemental sign(s) as shown on the drawings. Text-Logo-Artwork for supplemental signs shall be provided by
- D. Provide each scoreboard and sign with gold edge banding.

# 2.5 CONTROL CENTER

- Type: Wireless, microprocessor based operator's control center designed to operate different models of scoreboard by interchange of keyboard overlay; Model MPC as manufactured by Nevco Inc. Console will operate earlier scoreboards from Nevco Inc.
- 2. Console: High impact, break-resistant black plastic with improved UV resistance.[11 x 9-1/2 x 4-1/8 inches].
- 3. Features:
  - a. Provide with LED displays, lithium cell battery backup to maintain scoreboard memory and time of day, self test mode, power on-off switch, alternate time control, and multiple scoreboard operation.
  - b. Split and raised 40 key soft touch keyboard.
  - c. Keyboard shall be spill resistant.
  - d. Internal beeper acknowledging each entry
  - e. System Profiles feature set all parameters of operation including choice of controlled accessories and scoreboards.
  - f. Colorful graphic rich keyboard overlays for scoreboard or accessory.
  - g. Remote hand-held main time switch with programmable integral horn button.
  - h. 25 feet control cable with connectors.
  - i. Timer features: Time of day display, multiple time out timers with warning, interval horn, up-count auto stop with horn, 1/10th second display during last minute, changeable horn tone on scoreboards with the feature.
  - j. Segment timing for practice and workout.
  - k. Dimmer control for scoreboard.
  - I. MPC features shall be accessed through yes/no abbreviated questions in a drop down menu format.
  - m. Multiple receiver management shall be accomplished through direct keyboard input.
  - n. Electronic Team Names and automatic Electronic Caption Plates shall be controlled from MPC control without need to change overlays.
  - o. Power requirements: 120 volts, 12 watts, 50/60 Hz.

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- p. Provide option of battery supply for control operation if utility power not available.
- q. Provide carrying case for control center, cable, and hand-held switch; Model CC-3 as manufactured by Nevco Inc.
  - 1) Size: 18-1/2 x 14-1/2 x 6 inches.
  - 2) Construction: Double wall, high density black polyethylene with padded interior, mechanical latches, and hinges.
- r. Receiver:
  - 1) Sturdy impact resistant construction, 6 x 4 x 1.5 inches
  - 2) Integrated antenna, mounted flush in scoreboard face. Protruding antennas shall not be used.
- s. Maximum range: 1,000 feet from control center to receiver.
- t. Receiver shall require no additional source of power or separate control cable.

# PART 3 - EXECUTION

# 3.1 EXAMINATION

- A. Examine mounting posts for compliance with requirements for installation tolerances.
- B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

# 3.2 PREPARATION

- A. Verify exact scoreboard and control center quantities and junction box locations with Architect.
- B. Coordinate requirements for electrical power, concrete, steel erection, auxiliary framing and supports, suspension cables, and other components to be provided under other Specification Sections to ensure adequate provisions are made for complete, functional installation of scoreboards.
- C. Coordinate scoreboard electrical requirements to ensure proper power source, conduit, wiring, and boxes are provided. Prior to installation, verify type and location of power supply.

#### 3.3 INSTALLATION

- A. Install scoreboards and accessories in accordance with manufacturer's instructions and approved installation drawings.
- B. Before installation, field test scoreboards and accessories for operating functions. Ensure that scoreboards accurately perform all operations. Correct deficiencies.

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- C. Rigidly mount scoreboards and accessories level and plumb with brackets and fasteners.
- D. Clean exposed surfaces.
- E. Protect scoreboards and finishes from other construction operations.

# 3.4 DEMONSTRATION AND TRAINING

A. Provide demonstration and training session for Owner's representative covering operation and maintenance of electronic scoreboard.

# END OF SECTION 11 68 43

# SECTION 13 34 10 PREFABRICATED MODULAR BUILDINGS

#### PART 1 GENERAL

### 1.01 SECTION INCLUDES

A. Manufacturer-engineered, shop-fabricated modular buildings.

### 1.02 REFERENCE STANDARDS

- A. ADA Americans with Disabilities Act
- B. IBC International Building Code
- C. IECC International Energy Conservation Code
- D. ICC/ANSI A117.1 Accessible and Usable Buildings and Facilites
- E. NFPA 70 National Electric Code
- F. UL 580 Standard for Tests for Uplift Resistance of Roof Assemblies.

### **1.03 ADMINISTRATIVE REQUIREMENTS**

A. Preinstallation Meeting: Convene one week before starting work of this section.

### 1.04 SUBMITTALS

- A. See Section 01 30 00 Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate plan, section and elevation dimensions; foundation design and layout; ramp and stair design and layout; finish materials; mechanical, electrical and plumbing systems and components; provide professional seal and signature.
- C. Material Samples: Provide material samples and color chips for initial selection of interior and exterior finishes.

#### 1.05 QUALITY ASSURANCE

- A. Design structural components, develop shop drawings, and perform shop and site work under direct supervision of a Professional Structural Engineer experienced in design of this Work.
  - 1. Design Engineer Qualifications: Licensed in Delaware.
- B. Manufacturer Qualifications: Company specializing in the manufacture of products similar to those required for this project.
  - 1. Not less than 20 years of documented experience
- C. Erector Qualifications: Company specializing in performing the work of this section with minimum 20 years experience.

#### 1.06 WARRANTY

- A. See Section 01 78 00 Closeout Submittals, for additional warranty requirements.
- B. Correct defective Work within a five year period after Date of Substantial Completion.

# PART 2 PRODUCTS

#### 2.01 MANUFACTURERS

- A. Prefabricated Modular Buildings:
  - 1. Vanguard Modular Building Systems:www,vanguardmodular.com
  - 2. Substitutions: See Section 01 60 00 Product Requirements.

#### 2.02 PREFABRICATED MODULAR BUILDING

- A. Structural System
  - 1. Framing:
    - a. Wood framing at 16" O.C.

- 2. Insulation:
  - a. Floors: R-30
  - b. Walls: R-20
  - c. Roof: R-38 within joists or R-25 continuous insulation above framing.
- 3. Live Loads:
  - a. Floors: 40 psf
  - b. Roof: 30 psf + drift
- 4. Snow Loads:
  - a. Roof: 20 psf
  - b. Snow Exposure Factor: 1.0
  - c. Snow Load Importance Factor: 1.1
  - d. Snow Thermal Factor: 1
- 5. Window Loads:
  - a. Ultimate Design Wind Speed: 120 MPH
  - b. Nominal Design Wind Speed: 95 MPH
  - c. Risk Category: III
  - d. Exposure Category: B
  - e. Internal Pressure Coefficient: ± 0.18
  - f. Simple diaphram, low-Rise, Enclosed Rigid Structure
- 6. Earthquake Loads:
  - a. Seismic Risk Category III
  - b. Seismic Importance Factore: 1.25
  - c. Spectral Response Acceleration (SS): 0.126g
  - d. Spectral Response Acceleration (SI): 0.049g
  - e. Site Class: D
  - f. Spectral Response Coefficient (SDS): 0.135g
  - g. Spectral Response Coefficient (SDI): 0.079g
  - h. Seismic Design Category: B
- B. Exterior Finish
  - 1. Underfloor: Rodent barrier, vinyl impregnated board.
  - 2. Walls: 26 gage high rib steel siding
  - 3. Roof: 0.045 EPDM (white)
  - 4. Gutters and Downspouts: Prefinished aluminum box gutters and downspouts
- C. Interior Finish
  - 1. Floors: 12" x 12" vinyl composition tile and 4" vinyl base
  - 2. Walls: Painted 5/8" abuse resistant gypsum wall board
  - 3. Ceilings: 24" x 24" Armstrong School Zone suspended acoustic ceiling system
- D. Windows
  - 1. Type: Vinyl, Fiberglass or Aluminum
  - 2. Glazing: Insulated, Low-E
  - 3. Trim: Painted wood casing
  - 4. Treatment: 1" vinyl blinds
- E. Exterior Doors
  - 1. Type: 20 gage, insulated hollow metal with narrow light vision panel
  - 2. Glazing: Insulated, tempered, Low-E
  - 3. Frame: Hollow metal, 18 gage.
  - 4. Hardware:
    - a. Butt Hinges
    - b. Panic Hardware with Lever Trim
    - c. Closer

- d. Weatherstripping
- e. Sweep
- f. Sill
- F. HVAC
  - 1. Wall-Mount, designed to poerate from -40F to +131F outdoor temperature range.
- G. Electrical
  - 1. Service: 120/208V Three phase / 4 wire
  - 2. Lights: 24" x 24" lay-in LED
  - 3. Exit Light: Rustproof, vandal-resistant wall/ceiling mount
  - 4. Emergency: Dual head exit/emergency light with 90 minute bbattery backup and exterior remote head.
  - 5. Voice/Data/Security: Box and conduit to above ceiling
  - 6. Fire Alarm: Fire/smoke detection and alarm system

#### 2.03 ACCESSORY COMPONENTS

- A. Foundation System
  - 1. Foundation system for prefabricated modular building, stairs, ramps and other components shall be designed and installed by the prefabricated modular building contractor.
  - 2. Foundation system shall be designed to accommodate gravity loads, uplift loads and shall comply with building code requirements.
  - 3. A skirting shall be provided to enclose area between floor framing and grade.
- B. Access System
  - 1. Code compliant access sytems including stairs and ramps shall be designed and installed by the prefabricated modular building contractor.
  - 2. Stair and ramp systems shall be constructed of preservative treated wood.
  - 3. Stair risers shall be 7" maximum.
  - 4. Stair treads shall be 11"
  - 5. Ramps shall be 1:12 maximum slope with a maximum rise of 30" between landings
  - 6. Level landings shall be provided at the top and bottom of ramps and stairs. Landings at bottom of ramps and stairs may be compacted crushed stone with stone fines.

#### PART 3 EXECUTION

#### 3.01 TURN-KEY DELIVERY

- A. Contractor shall deliver a turn-key, design-build product including prefabricated modular building design and construction, site preparation, foundation design and construction, building placement, access stair and ramp design and construction, utility service, and all system components and accessories required for complete functional installation.
- B. Contractor shall remove premanufactured modular buildings at conclusion of rental period and shall remove stairs, ramps, foundations, utilities and other site improvements associated with the modular buildings and shall restore the site to its preconstruction condition.

#### 3.02 EXAMINATION

A. Veruft that foundations and anchors are in correct position prior to delivery and placement of prefabricated modular buildings.

#### 3.03 SCHEDULE

- A. West Fields
  - 1. Drawing C-503 illustrates two "Temporary Team Trailers" at the west fields at 16' x 40' (640 square feet) each. The prefabricated modular building manufacturer may propose standard unit sizes which meet or exceed the dimensional requirements noted below:
  - 2. Quantity: Two

- 3. Size: 640 gsf, minimum
- 4. Width: 14 feet, minimum
- 5. Occupancy Type: Assembly; 1 occupant per 7 nsf
- 6. Occupant Load: ± 90 occupants at each space. Two means of egress required at each space.
- 7. Electric Service: Electric service shall be provided from the main electric room at the school. Contractor shall provide temporary wood poles to support the electric service line overhead. Approximate length of electric service line is 500 feet.
- B. Main Stadium
  - 1. Drawing C-504 illustrates two "Temporary Team Trailers" at the Northeast corner of the Main Stadium at 16' x 20' (320 square feet) each. The prefabricated modular building manufacturer may propose standard unit sizes which meet or exceed the dimensional requirements noted below:
  - 2. Quantity: Two
  - 3. Size: 320 gsf, minimum
  - 4. Width: 14 feet, minimum
  - 5. Occupant Type: Assembly; 1 occupant per 7 nsf
  - 6. Occupant Load: ± 45 occupants at each space. One means of egress required at each space.
  - 7. Electric Service. Electric servic shall be provided from the electric service at the stadium concession building. Contractor shall provide temporary wood poles to support the electric service line overhead. Approximate length of electric service line is 450 feet.

### END OF SECTION











