

April 10, 2023

**ADDENDUM #1**

TO ALL PROSPECTIVE BIDDERS:

SUBJECT: Home Bleacher ADA Upgrades at Fairfax High School (MMB-049-23)

BID OPENING DATE: (ORIGINAL DATE) April 13, 2023, at 2:00 PM

THE SUBJECT INVITATION FOR BID IS AMENDED AS FOLLOWS:

*THIS ADDENDUM IS SUPPLEMENTARY TO THE PLANS AND SPECIFICATIONS FOR THE ABOVE SUBJECT REQUIREMENT. ALL CHANGES, ADDITIONS AND DELETIONS SHALL BECOME PART OF THE CONTRACT.*

**CHANGES:**

The **Intent** and **Technical Specifications** shall be **changed** as listed below.

**INTENT:** It is the intent of this contract is to modify existing bleachers and aisles to meet ADA compliance requirements with the installation of new anodized clear 1 5/8" aluminum aisle handrails and aluminum companion seating. Remove approximately 176 existing concrete risers as needed and replace with new aluminum risers to be attached to existing concrete. Supply and install aluminum 2-line comfort rail/guard rail and aluminum companion seating to meet ADA compliance. Work shall include all associated materials equipment and labor as detailed in these specifications to provide a complete and fully operational installation.

**TECHNICAL SPECIFICATIONS:**

1. SCOPE OF WORK:

It is the intent of this contract is to modify existing bleachers and aisles to meet ADA compliance requirements with the installation of new anodized clear 1 5/8" aluminum aisle handrails and aluminum companion seating. Remove approximately 176 existing concrete risers as needed and replace with new aluminum risers to be attached to existing concrete. Supply and install aluminum 2-line comfort rail/guard rail and aluminum companion seating to meet ADA compliance. Work shall include all associated materials equipment and labor as detailed in these specifications to provide a complete and fully operational installation.

2. DESCRIPTION OF WORK:

The work described in this Contract is for ADA upgrades for the installation of new anodized clear 1 5/8" aluminum aisle handrails, removal of concrete aisle intermediate steps to be replaced with aluminum risers, ADA platform with aluminum comfort rail/guard rails and companion seating to meet ADA compliance.

- A. Remove approximately 176 existing concrete risers as needed in bleacher aisles and replace with new aluminum riser steps to attach to existing concrete to allow for the installation of new anodized clear 1 5/8" handrail. Riser steps to include frames, aluminum footboard, riser on front, contrast nosing strip. Riser steps to be half the standard depth of the concrete tread and half the standard height for the treads.
- B. Modify existing bleacher bench seating to allow for a 4'6" correct ADA Compliance for the aisles.
- C. Provide and install of 1 5/8" anodized clear aluminum handrails for ADA Compliance.
- D. Provide and install nosing contrast markings on aisle steps.
- E. Provide and install anodized clear aluminum 2-line comfort rail/guard rail in area for wheelchair viewing.
- F. Provide and install aluminum companion seating at wheelchair viewing area.

***Attached for Information and Guidance are Technical Section 03300 Cast-In-Place Concrete, Section 13125 Aluminum Bleacher System, and Section 13126 Bleacher Deck and Seating Replacement.***

***All other terms and conditions remain unchanged.***

  
Angela C. Mylechraine, Contracts Administrator  
Office of Administrative Services

THIS ADDENDUM IS ACKNOWLEDGED AND IS CONSIDERED A PART OF THE SUBJECT INVITATION FOR BID.

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

NAME OF FIRM: \_\_\_\_\_

A SIGNED COPY MAY BE RETURNED PRIOR TO BID OPENING OR MAY ACCOMPANY YOUR BID.

**SECTION 03300**

**CAST-IN-PLACE CONCRETE**

**PART 1 - GENERAL**

1.01 RELATED DOCUMENTS

- A. Drawings and General Provisions of Contract, including General and Supplementary Conditions and other Specification Sections, apply to the Work of this Section.

1.02 RELATED WORK

- A. Section 03200: Concrete reinforcement.
- B. Section 04200: Masonry accessories cast in concrete.
- C. Section 05500: Metal fabrications cast in concrete.
- D. Section 01400: Testing services.

1.03 QUALITY ASSURANCE

- A. Perform cast-in-place concrete work in accordance with ACI 318 (latest edition), unless specified otherwise in this Section.
  - 1. The Owner will employ a testing laboratory to conduct tests and provide test results.
  - 2. The testing laboratory shall conduct testing in accordance with the requirements of the Fairfax County Special Instructions Manual and other Fairfax County standards, review test results, and submit reports indicating whether test specimens comply with or deviate from applicable requirements.

1.04 TESTING LABORATORY SERVICES

- A. Provide free access to work and cooperate with appointed firm.
- B. Submit proposed mix design to inspection and testing firm for review prior to commencement of work.
- C. Tests of cement and aggregates may be performed to ensure conformance with requirements stated herein.
- A. Cast the following number of test cylinders for each 150 C.Y. or 5,000 S. F. (not less than one set of test cylinders for each days pour):
  - 1. Two (2) Lab Cured for 28 days
  - 2. Two (2) Lab Cured for 7 days.
  - 3. All field cured cylinders as directed by local building official.

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- E. One additional test cylinder will be taken and held in reserve as required for 56 day testing, and be cured on job site under same conditions as concrete it represents.
- F. One slump test will be taken for each set of test cylinders taken.
- G. At contractor's option, cylinders may be either 6 x 12 inch or 4 x 8 inch.

### 1.05 SUBMITTALS

- A. Submit pour schedule and diagrams of floor slabs, sidewalks, and footings to Architect for approval.
- B. Submit concrete mix design, including material certificates for cement, aggregate and admixtures. Certificates shall state compliance with the applicable referenced ASTM standards.
- C. Submit catalog data and written application instructions for all concrete compounds.

### 1.06 REFERENCE STANDARDS

- A. ASTM C33 - Concrete Aggregates.
- B. ASTM C150 - Portland Cement
- C. ASTM C595 – Blended Hydraulic Cements
- D. ASTM C989 – Blast Furnace Slag
- E. ASTM C618 – Fly Ash
- F. ACI 301 - Specifications for Structural Concrete for Building.
- G. ACI 318 - Building Code Requirements for Reinforced Concrete.
- H. ASTM C260 - Air Entraining Admixtures for Concrete.
- I. ASTM C94 - Ready-Mixed Concrete.
- J. ASTM D994 - Pre-formed Asphalt Expansion Joint Fillers for Concrete Paving and Structural Construction.
- K. ACI 305 - Recommended Practice for Hot Weather Concreting.
- L. ACI 306 - Recommended Practice for Cold Weather Concreting.
- M. ASTM C309/C1315 - Liquid Membrane-Forming Compound for Curing Concrete.
- N. ACI 347 - Recommended Practice for Concrete Formwork.
- O. APA - American Plywood Association.
- P. ACI 315 - Recommended Practice for Detailing Reinforced Concrete Structures.

## TECHNICAL SPECIFICATIONS

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- Q. ACI 304 - Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete.

### 1.07 ADJUSTMENT OF CONCRETE QUANTITIES

- A. No payments will be made for extra concrete needed as a result of unauthorized material removed below the required depth found in the field.

## PART 2 - PRODUCTS

### 2.01 CEMENT

- A. ASTM C150, Type I/II or ASTM C595 Type IS. Use only one of these types of cement for the entire project.

### 2.02 AGGREGATE

- A. Coarse aggregate for stone concrete: ASTM C33, with maximum size 3/4 in. for reinforced concrete and 1-1/2 in. for plain (unreinforced) concrete.
- B. Fine aggregate: Clean, durable sand, uncoated, grains free from silt, loam, and clay. Graded from fine to coarse with 95-100 percent by weight passing a No. 4 sieve and 3-8 percent passing a No. 100 sieve. ASTM C33 with following maximum permissible limits for deleterious substances, measured in percentage by weight: clay lumps 1.00; coal and lignite 0.25; materials finer than No. 200 sieve 3.00.

### 2.03 WATER

- A. Mixing Water: Drinkable in accordance with ACI 318

### 2.04 ADMIXTURES

- A. Hydration Control: (ASTM C494, Type B and Type D)
  - 1. Pozzolith 100-XR; Master Builders; (Degussa Admixtures, Inc) Cleveland, OH, 1-800-628-9990 ([www.degussa.com](http://www.degussa.com))
  - 2. Plastiment; Sika Chemical Corporation, Lyndhurst, NJ, 1-800-933-SIKA ([www.sikausa.com](http://www.sikausa.com)).
- B. Air-Entraining: ASTM C260.
- C. Water-reducing: ASTM C494, Type A.
- D. Water reducing/retarding: ASTM C494, Type D.
- E. Water reducing/accelerating: ASTM C494, Type E.
- F. Use of calcium chloride as an additive is **not permitted**. (Admixtures for concrete shall contain not more than 0.1 percent chloride ions by weight).

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### 2.05 FORMS

- A. Formwork: Comply with Building Code and ACI 347. Design, erect, support and maintain forms to safely carry all superimposed loads until such time as such loads can be safely supported by the concrete work. Construct formwork to shape, sizes and dimensions as shown on required to ensure accurate alignment and elevation, and level and plumb finished concrete work.
- B. Forms for Unexposed Finish Concrete: Form with plywood, lumber, metal or other acceptable material. Provide lumber dressed on at least two (2) edges and one side for tight fit.
- C. Forms for Exposed Finish Concrete Column Wraps: Use two-piece fiberglass forms to provide a smooth exposed surface. Joints shall be placed so as to be parallel with the face of the radiused building.
- D. Forms for Exposed Finish Concrete: Unless otherwise indicated, construct formwork for exposed concrete surfaces with plywood, metal, metal-framed plywood faced or other acceptable panel-type materials, to provide continuous, straight, smooth, exposed surfaces.
- E. Use plywood complying with U.S. Product Standard PS-1 "B-B (Concrete Form) Plywood", Class I, Exterior Grade or better, mill-oiled and edge-sealed, with each piece bearing legible trademark of an approved inspection agency.
- F. Form Ties: Steel Wire snap ties with positive breakbacks which will leave no metal closer than 1" from formed surface of concrete, leave a cone-shaped recess.
- G. Form Coatings:
  - 1. Where surfaces are painted
    - a. "Duogard Plus", W. R. Meadows, Inc., Hampshire, IL 1-800-342-5976, ([www.wrmeadows.com](http://www.wrmeadows.com))
    - b. "Majic Cote", Symons, Des Plaines, IL 1-800-733-7654 ([www.symons.com](http://www.symons.com)).
  - 2. Other Surfaces (Nonstaining form oil): "Duogard II", W. R. Meadows.

### 2.06 CONCRETE DESIGN MIX

- A. Controlled concrete proportioned as outlined in Section 5.3 ACI 318, unless specified otherwise. Allowable design stresses are based on minimum 28-day compressive strength indicated. Submit design mix for each class of concrete for Architect's approval.
- B. Proportions of aggregate to cement shall produce non-segregating plastic mixture of consistency required to give specified finish and be worked readily into corners and angles of forms and around reinforcement with method of placement employed. Accomplish variations in consistency by changes in proportioning of mix with changing W/C (water/cement) ratios established.

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- C. Admixtures:
  - 1. Admixtures used in concrete: of one manufacturer.
  - 2. Use air-entraining admixture in concrete exposed to elements to obtain air content of 5 percent, plus or minus 1.5 percent for 1-inch maximum aggregate and 6 percent plus or minus 2 percent for 3/4 inch maximum aggregate. Do not premix air-entraining admixture with other admixtures.
  - 3. Retarding densifier: in concrete, except concrete for footings and isolated piers.
  - 4. For low temperature conditions, an accelerating densifier may be used in lieu of a retarding densifier in walls.
  - 5. A water-reducing admixture may be used in lieu of a retarding densifier in slabs.
  - 6. Proportion admixtures in accordance with manufacturer's recommendations.
- D. Slump Limits: 3"  $\pm$  1"; 4 inch maximum.

### 2.07 MIXING CONCRETE

- A. Ready-mixed ASTM C94, except addition of water for material with insufficient slump shall not be permitted.
- B. Provide a certificate signed by authorized official of supplier, with each load of concrete stating the following:
  - 1. Time truck left plant.
  - 2. Mix of concrete.
  - 3. Amount of water and cement in mix.
  - 4. Time truck is unloaded at project site.
- C. Retain certificates at project site for inspection by testing laboratory.
- D. Not more than one hour shall elapse from time water is introduced into mixer drum until drum is discharged. Do not use concrete that has stood outside the mixer drum for more than 30 minutes. Do not add water to a mix that has stiffened to increase workability. Retempering of partly set concrete is not permitted.

### 2.08 FORMWORK FABRICATION

- A. Fabricate formwork mortar tight, braced to prevent displacement under vibration and sagging between supports. For surfaces exposed to view in finished work, use new, clean, smooth plywood free from blemishes, square-cut and in sizes as large as practical.
- B. Fabricate forms for removal without hammering or prying against concrete.
- C. Provide temporary clean-out openings at base of forms and other locations in formwork to facilitate cleaning and inspection for placing concrete.

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### 2.09 MISCELLANEOUS MATERIALS

- A. Vapor Retarder: "Moistop Ultra 10, Fortifiber Building Systems Group, Reno, NV 1-800-773-4777 ([www.fortifiber.com](http://www.fortifiber.com)), 10 mil polyolefin film, or Stego Wrap 10 mil Class A Vapor Retarder, San Clemente, CA 1-877-464-7834 ([www.stegoindustries.com](http://www.stegoindustries.com)) or approve equal. Barrier shall resist deterioration when tested in accordance with ASTM E154, and shall meet or exceed ASTM E1745 for Class A.
- B. Porous Fill: Clean, water-worn tailings free from clay, dirt, wood and debris, graded from 2 in. to 3/4 in.
- C. Expansion Joint Material: 1/2 inch (12.7mm) asphalt expansion joint filler complying with the following:
  - 1. ASTM D994
  - 2. FS HH-F-341F, Type III
  - 3. AASHTO M33
  - 4. FAA Specification P-610-2.7
- D. Curing and Sealing Compound (for concrete floors scheduled to remain exposed only): Acrylic, water based curing compound, VOC compliant, non-yellowing, ASTM C-309/C1315, Type 1.
  - 1. "Kure-N-Seal W", Sonneborn (Degussa Building Systems), Shakopee, MN, 1-800-443-9517 ([www.DegussaBuildingSystems.com](http://www.DegussaBuildingSystems.com))
  - 2. "VOCOMP-25-1315", W.R. Meadows, Inc.
- E. Cement feathering compound: Ardex "SD-F Feather Finish", Portland cement-based, latex-modified; or comparable.
- F. Perimeter "Zip Strip": Provide a removable bond break "zip strip" capable of producing a clean 1/2" x 1/2" joint to be used for sealing all joints where walls penetrate and abut floor slab. "Sealtight Snap-Cap," W. R. Meadows, 1/2" (12.7mm), or comparable.

## PART 3 - EXECUTION

### 3.01 FORMS

- A. Construct formwork to lines, dimensions, and shapes of concrete indicated, to a tolerance of 1/8 inch in 10 feet. Provide watertight joints in forms. Provide support to maintain tolerance specified during placing of concrete.
- B. Coat forms with form release agent prior to each use of form.
- C. Secure keys in position by continuous wood blocking rigidly secured to forms or reinforcing.
- D. Do not use pinch bars or other metal tools in exposed work to pry forms loose.



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- E. Use form ties to prevent form deflection, and to prevent spalling of concrete surfaces upon removal of forms.

### 3.02 COORDINATION WITH OTHER WORK

- A. Provide in locations indicated slots, chases, recesses or openings not formed by sleeves, frames, boxes or equipment specified in other Sections.
- B. Examine Contract Documents for work specified in other Sections requiring either building in or provisions for later setting. Set items specified in other Sections and provide protection required to prevent damage or displacement during placing of concrete.
- C. Grout and fill with concrete as required throughout the project, except as otherwise specified, and including column base plates, door saddles, frames in concrete walls, and openings after pipes are in place.
- D. Minimum 1-inch concrete cover is required over conduits and pipes embedded in concrete. Do not place pipes or conduits having an outside diameter larger than 1/3 slab thickness in slabs.
- E. Place conduits and pipes as indicated. Place conduits and pipes to avoid changing location of reinforcing steel.
- F. Provide inserts required to bond adjacent construction to concrete.

### 3.03 PREPARATION

- A. Prior to placing concrete, clean equipment for transporting concrete. Remove debris and ice from spaces to receive concrete. Oil or wet form, as specified and clean reinforcement of ice or other coatings. Remove water from areas to receive concrete.
- B. Reinforcement forms and earth in contact with concrete shall be free from frost. Do not place concrete during rainfall without adequate protection. Make preparation to protect newly placed concrete from rainfall until concrete has hardened sufficiently to preclude rainfall damage.
- C. Place expansion joint material as indicated for slab isolation at perimeter walls and columns. Depress joint material 1/2 in. below finish slab for installation of "Zip Strip" specified in this section and sealant specified in Section 07900.

### 3.04 PLACING CONCRETE

- A. Convey concrete to point of final placement by methods preventing segregation or loss of materials. Place concrete as near as practical in final position to avoid segregation due to handling and flowing. Do not use concrete that has partially hardened, been contaminated by foreign materials or been retempered.
- B. Place concrete in layers not exceeding 18 inches in depth avoiding inclined planes and piling and concrete in forms permitting escape of water or free flow of concrete.
- C. Place concrete for columns and walls through canvas, wood, rubber or metal elephant trunks, 6 inches in diameter minimum, to avoid segregation of concrete in free fall. Do

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not allow concrete to ricochet against forms for exposed surfaces. Deposit concrete directly to center of forms. Space drop chutes on 10-foot centers, maximum. Do not use drop chutes longer than 12 feet. Provide illumination to permit inspection of the interior of forms.

D. Vibration:

1. Exposed surfaces shall be finished with a smooth, dense, concrete without honeycombing. Tamp, space, and vibrate concrete thoroughly during placing.
2. Quantity, capacity and type of vibrators used is left to discretion of the Contractor. Maintain a reserve of vibrators in event of breakdown.
3. Exercise care in use of vibrators to prevent scarring or roughening of forms. Vibrators shall not cause separation of free water from mix. Do not vibrate in one spot to extent pools of grout are formed.
4. Do not vibrate to the extent of causing segregation of aggregate. Insert and withdraw vibrators slowly. Vibrators shall run continuously while being withdrawn. Insert unit in a depth to vibrate lower layer of concrete. Do not insert into concrete that is partly hardened or that will not become plastic under vibrator action. Do not apply vibration to steel reinforcing extending into partially hardened concrete.
5. Exercise care to prevent formation of water pockets and bubbles against form faces.

E. Place concrete in continuous operation until panel or section is completed. Locate construction joints at point of minimum shear.

### 3.05 FORMS REMOVAL

- A. Forms not supporting weight of concrete, such as sides of beams, walls, columns, and similar work, may be removed after cumulatively curing at not less than 50° F. for at least 24 hours after placing concrete, provided that concrete is sufficiently hard so as not to be damaged by form removal, and provided that curing and protection measures are maintained.
- B. Forms supporting the weight of concrete shall not be removed in less than 14 days or until the concrete has attained at least 70% of the design strength.

### 3.06 CURING AND PROTECTION

A. Curing:

1. Spray top surface of slabs with liquid membrane-forming compound in accordance with manufacturer's directions as soon as the newly placed surface has been finished and will not be marred by application.
2. Respray surfaces subjected to heavy rainfall within three hours of compound application.

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3. Where practicable, keep forms in place for a seven-day curing period. Keep top exposed concrete surface wet and forms moist. Loosen forms to allow curing water to run down between concrete and forms.
  4. If forms cannot remain in place for seven days, cover concrete with fabrics that have moisture-retaining properties. Examine fabrics to detect elements that might discolor concrete finish. Keep fabric moist continuously to ensure a film of water on concrete surface.
- B. Cold weather protection:
1. Protection of concrete during cold weather shall comply with ACI 306; heating of concrete shall be in accordance with ASTM C94-78. Cold weather techniques shall be used where the mean daily temperature falls below 40 degrees F for at least two (2) consecutive days.
  2. Temperature of the concrete at time of placement shall not be less than 50 degrees F. Temperature of the soil against which concrete to be placed shall not be less than 40 degrees F.
  3. Concrete temperature shall be maintained at a minimum of 50 degrees F for at least seventy-two (72) hours after placement.
  4. Contractor shall provide to the architect a description of cold weather protection procedures to be used, including the methods for determining the need for the procedures.
- C. Hot Weather Protection:
1. Protection of concrete during hot weather shall comply with ACI 301 and ACI 305. Hot weather protection procedures shall be used when the temperature of the concrete mix exceeds 85 degrees F.
  2. Temperature of the concrete mix may exceed 85 degrees F only if water reducing and retarding compound complying with ASTM C494 is used.
  3. Hot weather precautions shall be instituted by the contractor when the anticipated rate of evaporation, as determined by guidelines in ACI 305, is expected to reach 0.2 pounds per square foot per hour (lb./sq. ft./hr.).
  4. The contractor shall provide to the architect a description of hot weather protection procedures to be used, including the methods for determining when the procedures will need to be implemented. Provide written recommendations from the manufacturer for use of water reducing and retarding compounds.

### 3.07 CONTRACTION JOINTS FOR GRADE SLABS

- A. Contraction joints shall be located as indicated on Drawings or, if not indicated, so as not to impair the strength and appearance of the structure. Joints shall be spaced at a maximum of 20 feet on center, in either direction and shall coincide with column grids, where present. Install contraction joints in accordance with approved joint location shop drawings.
- B. Sawcut joints in grade slabs immediately after finishing, and after curing compound has been applied so that the slab surface is not damaged by equipment and sawcutting does

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not dislodge aggregate. In general, sawcutting of joints shall take place within a period of 7 to 14 hours after concrete is placed, depending on actual project conditions. Sawcutting shall be scheduled to occur within this timeframe to minimize the risk of shrinkage cracking. Work shall not be postponed until the following work day.

- C. Contraction joints shall be 1/8 inch wide by a depth equal to 25% of slab thickness.

### 3.08 FINISHES OTHER THAN FLOORS

- A. After removal of forms, remove fins and forms marks by grinding on exposed interior and exterior surfaces scheduled to receive paint or membrane waterproofing. Patch voids and honeycombs.
- B. Interior and exterior exposed concrete surfaces: "Rubbed Finish." Apply grout, clean-down after the patching, grinding, and cleaning operations are complete. The grout wash shall follow the patching operation as soon as possible and the procedure shall be as follows:
  1. Mix one part portland cement and 1-1/2 parts fine sand with sufficient water to produce a grout having the consistency of thick paint. Use white portland cement for cement in grout. Wet the surface of the concrete sufficiently to prevent absorption of water from grout and apply grout with a brush or burlap completely filling air bubbles and holes. Immediately after applying grout, float surface with a cork or other suitable float, scouring vigorously. While the grout is still plastic, finish surface with a sponge rubber float, removing excess grout.
  2. Finishing shall be done at time when grout will not pull from holes or depressions. Next, allow surface to dry until surface takes on a powdery appearance, and then rub vigorously with dry burlap to remove completely dried grout. No visible film or grout shall remain after rubbing. Complete entire cleaning operation for an area the day it is started. Do not leave grout on overnight.
  3. After the concrete has been grout-cleaned, if slightly dark spots or streaks remain, wipe off lightly with a fine abrasive hone without using water. Rubbing with the hone shall not be sufficient to change the texture of the concrete. Include final operation as part of grout cleaning where necessary.
- C. In foundation walls below grade and both sides of pit walls, cut back ties and spreaders to a depth of approximately 1-1/2 in. Cut back honeycombed concrete and voids to sound concrete. Cuts shall be to depth of at least 1-1/2 in. with edges perpendicular to surface.
- D. Concrete surfaces not exposed to view may be left "as is." Fill holes resulting from cutting back of scale pockets, honeycomb, surface voids and the removal of form wires or spreaders with cement mortar.

### 3.09 FLOOR AND SLAB FINISHES

- A. Measure floor finish tolerances in accordance with ASTM E1155. Individual floor sections shall be bounded by construction joints, contraction (control) joints, or column lines that form the smallest sections.

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- B. Floor Slab Tolerance: After final troweling operation slab shall have a surface plane tolerance not exceeding 1/4 inch in 10 feet when tested with a loft straightedge, but 1/4 inch shall not be cumulative.
- C. Where specified tolerances in surface elevation of slabs are exceeded, grind or patch the surface to obtain specified tolerance. Grind as soon as possible but not before 3 days of cure. Install patching material in accordance with manufacturer's instructions.
- D. Finishes:
  - 1. Scratched finish for surfaces to receive bonded applied cementitious finishes: After the surface has been struck off, consolidated and leveled, roughen surface with stiff brushes or rakes before final set.
  - 2. Troweled finish for surface to receive finish flooring or be exposed: Float finish surfaces first and then apply power-driven trowel and then hand trowel. First troweling after power floating shall be with a power trowel producing a smooth surface relatively free of defects. Additional troweling by hand after surface has hardened sufficiently to produce a ringing sound as the trowel is moved over the surface. Thoroughly consolidate surface by hand trowel operation. Finished surface shall be free of trowel markings and be uniform in texture and appearance. On surfaces receiving floor coverings, remove defects of sufficient magnitude to show through floor covering by grinding.
  - 3. Broom finish: Light/medium broom on ramps and sidewalks, to be approved in field by Architect, finish to be consistent.
- E. Floor Slab Recesses and Slopes:
  - 1. Where floor drains are indicated on Drawings, slope floor slabs to drain.

### 3.10 QUALITY CONTROL TESTING DURING CONSTRUCTION BY OWNER

- A. Concrete shall be sampled and tested for quality control during the placement of concrete as follows:
  - 1. Sampling Fresh Concrete: ASTM C172, except modified for slump to comply with ASTM C94.
  - 2. Slump: ASTM C143; one test for each concrete load at point of discharge, and one for each set of compressive strength test specimens. The testing laboratory or Owner's Representative shall have the authority to reject any concrete that does not have the specified slump.
  - 3. Air Content: ASTM C231, pressure method; one for each set of compressive strength test specimens.
- B. Compression Test Specimens
  - 1. ASTM C31: One set of 5 standard cylinders for each compressive strength test, unless otherwise directed. Mold and store cylinders for laboratory cured test specimens except when field-cure test specimens are required.

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2. Tests shall be made by an independent testing laboratory. Not less than one test for each 150 cubic yards of concrete, or fraction thereof, or each 5,000 sq. ft. of slab, for each class of concrete placed will be required and in any event not less than one test for each day's pour of each class of concrete. Four specimens will be made for each test: ASTM C39 and C31.
3. Standard age of test shall be 28 days. Seven-day test results shall be reported to Architect for two cylinders of each class of concrete. Test 2 cylinders at 28 days and 2 at 7 days.
4. If strength of laboratory control cylinders for any portion of structure falls below the compressive strength required for the design, Architect shall have the right to order change in proportions of water content of concrete for remaining portions of structure. In addition, where there is question as to quality of concrete in structure, Architect may require tests in accordance with ASTM C42. Should such tests fail to develop minimum strengths specified, faulty concrete shall be replaced.
5. Report test results in writing to the Architect and the Contractor on the same day that tests are made. Reports of compressive strength tests shall contain the project identification name and number, date of concrete placement, name of Contractor, name of concrete supplier and truck number, name of concrete testing service, concrete type and class, location of concrete batch in the structure, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength and type of break for both 7-day and 28-day tests. Furnish copy of each test to local building inspections office at same time other submittals are made.
6. Contractor must provide a concrete cylinder storage box acceptable to the testing and inspection laboratory.

END OF SECTION

**SECTION 13125**

**ALUMINUM BLEACHER SYSTEM**

**PART 1 - GENERAL**

1.01 RELATED DOCUMENTS

- A. Drawings and General Provisions of Contract, including General and Supplementary Conditions and other Specification Sections, apply to the Work of this Section with special attention to the following:
  - 1. Shop Drawings, Product Data and Samples: See General Conditions, Item 17.
  - 2. Substitutions and Product Options: See Instructions to Bidders, Item 16.
  - 3. Cast in place concrete: Section 03300.

1.02 RELATED WORK

- A. Bleacher deck and seat replacement is covered in Section 13126.

1.03 REFERENCED STANDARDS

- A. Aluminum Association, Inc. standards referenced herein.
- B. The 2000 VUSBC (2000 IBC, Chapter 10, Section 1008.0).
- C. "Special Inspections: Implementation in Fairfax County" (2000 Edition), Department of Public Works and Environmental Services, Fairfax County, Virginia.
- D. ICC/ANSI A117.1-1998 (Accessible and Usable Buildings and Facilities).
- E. ADAAG: Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities, U.S. Architectural and Transportation Barriers Compliance Board.
- F. ASTM A36 – Specification for Structural Steel.
- G. ASTM A123 – Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products, after fabrication.
- H. ASTM A307 – Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile.
- I. AWS D1.1, Structural Welding Code – Steel.
- J. AWS D1.3, Structural Welding Code – Sheet Steel.

1.04 DESCRIPTION OF WORK *(Edit based on project scope of work)*

- A. Design, fabrication and installation of elevated aluminum bleacher system(s) complete with concrete footings, steel substructure, decking, stairs, ramps and guard rails for "Home" and "Visitor" sides (as applicable).

## TECHNICAL SPECIFICATIONS

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- B. Pressbox: Coordinate interface of "Home" side bleachers with new pressbox (by others) or with existing pressbox, as applicable (See Drawings).
- C. Demolition (*Existing School Sites*): Remove existing bleacher system(s) completely, and dispose of legally off site. Comply with applicable requirements of Section 02070, Selective Demolition.

### 1.05 SYSTEM PERFORMANCE REQUIREMENTS

- A. General: Provide a complete, integrated set of mutually dependent components and assemblies that form a bleacher system capable of withstanding structural and other loads, thermally induced movement, and exposure to weather without failure. Include primary and secondary framing, and accessories complying with requirements indicated.
- B. Structural Performance: Provide bleacher system(s) capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated.
  - 1. A uniformly distributed live load of not less than 100 pounds per square foot of gross horizontal projection of the bleachers.
  - 2. Bleachers shall be designed to withstand, with or without live loads, the horizontal and uplift pressures due to the wind. Wind load: 80 miles per hour minimum wind speed.
  - 3. A horizontal swaying force applied to the seats, in a direction parallel to the length of the seats, of 24 pounds per foot.
  - 4. A horizontal swaying force applied to the seats, in a direction perpendicular to the length of the seats, of 10 pounds per foot.
  - 5. All seat and footboard members shall be designed for live loads of not less than 120 pounds per lineal foot.
  - 6. All seat and footboard members shall be designed for a minimum concentrated load of 400 lb. applied at any point on surface.
  - 7. Top Rail of Guardrail Systems: Capable of withstanding the following minimum loads applied as indicated.
    - a. Concentrated load of 200 lb. applied at any point in any direction and non-concurrently with uniform load.
    - b. Uniform load of 100 lb. per linear foot applied non-concurrently with concentrated load, acting vertically downward.
    - c. Uniform load of 50 lb. per linear foot applied in any direction, acting non-concurrently with concentrated load.
- C. The bleacher system(s) shall be designed and assembled so that the maximum expansion, contraction, settlement or misalignment likely to occur will not cause stresses in excess of those permissible.



## TECHNICAL SPECIFICATIONS

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### 1.06 SUBMITTALS

- A. Submit shop drawings in accordance with General Conditions Item 17 Shop Drawings.
- B. Shop Drawings for bleacher system components (Include plans, elevations, sections, details, and attachments):
  - 1. Anchor Bolt Plans: Include location, diameter, and projection of anchor bolts required to attach bleacher to foundation.
  - 2. Structural Framing Drawings: Show complete fabrication of primary and secondary framing. Indicate welds and bolted connections, distinguishing between shop and field applications.
  - 3. Provide structural analysis data, including foundation design, signed and sealed by the registered professional engineer responsible for their preparation and licensed in the Commonwealth of Virginia.
- C. Include 4 additional copies of the bleacher shop drawing bearing signature and seal of the registered professional engineer for submission to the Fairfax County Critical Structures Section (FCCSS) of the Commercial Inspections Branch of the Division of Inspection Services, Department of Environmental Management (DPWES).
- D. Product Samples: Submit two 18-inch samples of each type of planking (seat foot, aisle, and riser), and two samples of end caps and support assemblies brackets, clips and fasteners).
- E. Product and Material Certificates: Signed by manufacturer of bleacher systems certifying that products and materials furnished comply with requirements of this Section.
- F. Letter of Design Certification: Signed and sealed by the registered professional engineer. Include the following:
  - 1. Name and location of Project.
  - 2. Order number.
  - 3. Name of manufacturer.
  - 4. Name of Contractor.
  - 5. Bleacher dimensions, including width, length, and height.
  - 6. Indicate compliance with AISC standards for hot-rolled steel and AISI standards for cold-rolled steel, including edition dates of each standard.
  - 7. Virginia Uniform Building Code (VUSBC) and year of edition.
  - 8. Design Loads: Include dead load, live load, deflection, wind loads/speeds, uplift loads and exposure.
  - 9. Load Combinations: Indicate that loads were applied acting simultaneously with concentrated loads, in accordance with applicable code provisions.

## TECHNICAL SPECIFICATIONS

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- G. Welding Certificates: Copies of certificates for welding procedures and personnel.
- H. Erector Certificates: Signed by manufacturer certifying that erectors comply with requirements.
- I. Manufacturer Certificates: Signed by manufacturer certifying compliance with requirements. Include evidence of manufacturing experience.
- J. Qualification Data: For firms and persons specified in 1.07 "Quality Assurance" to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- K. Warranties: Sample of manufacturer's warranty as specified in 1.09 of this Section.

### 1.07 QUALITY ASSURANCE

- A. Codes and Standards: Design, fabrication, and installation shall be in accordance with applicable codes, regulations, and accessibility requirements.
- B. Erector Qualifications: An experienced erector who has specialized in erecting and installing work similar in material, design, and extent to that indicated for this Project and who is acceptable to manufacturer.
- C. Professional Engineer Qualifications: A registered professional engineer who is legally licensed to practice in the Commonwealth of Virginia and who is experienced in providing engineering services of the kind indicated and required by this Section. Engineering services are defined as those performed for installations of bleacher systems that are similar to those indicated for this Project in material, design, and extent.
- D. Manufacturer Qualifications: A firm with a minimum of five (5) years' experience in manufacturing bleacher systems similar to those indicated for this Project and with a record of successful in-service performance.
- E. Source Limitations: Obtain bleacher system components through one source from a single manufacturer.
- F. Welding: Qualify procedures and personnel according to AWS requirements indicated in 3.03, "Referenced Standards".

### 1.08 FOUNDATIONS

- A. Design, provide and install concrete foundations to support bleacher system. Coordinate size and location of concrete foundations and casting of anchor-bolt inserts into foundations piers and footings. Concrete, reinforcement, and formwork requirements are specified in Division 3 "Concrete."

### 1.09 WARRANTY

- A. All materials and workmanship shall be guaranteed for a period of two (2) years.
  - 1. Repairs during the warranty period shall be initiated within twenty four (24) hours of notification by the Owner.

## TECHNICAL SPECIFICATIONS

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2. One (1) month prior to the expiration of the warranty, Contractor shall visit the site with the Owner's Representative to determine if any deficiencies exist with the installation, or if any items previously reported by the Owner's Representative have not been corrected. Contractor shall correct such items, regardless of whether or not the duration of corrective work extends beyond the expiration date of the warranty.

### 2. PART 2 - PRODUCTS

#### 2.01 APPROVED MANUFACTURERS

- A. Sturdisteel Company, P.O. Box 2655, Waco, Texas 76702-2655, 1 800-433-3116 ([www.sturdisteel.com](http://www.sturdisteel.com))
- B. Southern Bleacher Company, P.O. Box One, Graham, Texas 76450, 1 800-433-0912 ([www.southernbleacher.com](http://www.southernbleacher.com))
- C. Dant Clayton Corporation, 1500 Bernheim Lane, Louisville, Kentucky, 40201-7408, 1 800-626-2177 ([www.dantclayton.com](http://www.dantclayton.com))
- D. E & D Specialty Stands, Inc., P.O. Box 770, 2081 Franklin Street, North Collins, NY 14111, 1 800-525-8515 ([www.edstands.com](http://www.edstands.com))
- E. National Recreation Systems, Inc., 5120 Investment Drive, Fort Wayne, IN 46808, 1-888-568-9064 ([www.bleachers.net](http://www.bleachers.net))
- F. Other manufacturers, pre-bid approved in accordance with Instructions to Bidders, Section 17, shall be acceptable.

#### 2.02 MATERIALS

- A. All materials shall be new and free of scrapes, scratches and other blemishes or defects. Mill test certification shall be made available to the Owner upon request.
- B. Structural steel shall be A572-50, hot-dipped galvanized after fabrication to ASTM A-123 specifications. Material thickness and design of members shall be fully engineered for the full length and depth of the bleacher unit.
- C. Seatboards shall be extruded aluminum 6063-T6 alloy, clear anodized per AA-M10C22A31 class II (204 R1); minimum 1 3/4" x 9 5/8"; minimum wall thickness .075", channel configuration with a minimum of 4 vertical legs. Weight per foot: 1.861 pounds minimum.
- D. Footboards shall be extruded aluminum 6063-T6 alloy, mill finished; minimum 1 3/4" x 11-5/8"; minimum wall thickness .075" channel configuration with a minimum of 4 vertical legs. Weight per foot: 2.179 pounds minimum.
- E. Coved risers shall be extruded aluminum 6063-T6 alloy, mill finished, nominal 8" high with a 1" coved radius at the bottom of the boards to catch debris and aid in the cleaning process, wall thickness .080".

## TECHNICAL SPECIFICATIONS

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- F. Seat end caps shall be one piece, anodized aluminum channel design. Walkway and footboard end caps shall be one-piece mill finish channel design. All end caps shall be attached with rivets to the underside of the plank.
- G. Internal splice sleeves shall be provided at all perpendicular seams in load bearing deck members to maintain alignment of decking members during expansion/contraction. All seams shall occur at steel supports.
- H. Guard Rails: Provide and install at all sides of bleacher, stairs, ramps and landings.
1. "2 Pipe Rail System": A top rail with fencing infill between rails.
  2. "3 Pipe Rail System": A top rail, intermediate rail and bottom rail with fencing infill between rails.
  3. The "2 Pipe Rail System" shall be used on the front and the "3 Pipe Rail System" shall be used on the sides and the back.
  4. The railings shall be 1 1/4" Schedule 40 anodized aluminum pipe (1-5/8" O.D.). The fencing shall be 2" x 9 Ga. Galvanized mesh, chain link fence.
  5. All rails shall be 42" in height (height of rail adjacent to seating shall be measured from the leading edge of the seat).
- I. Stairs shall have "3 Pipe Rail System" consisting of 1 1/4" schedule 40, anodized aluminum pipe, 1 5/8" O.D., with 2" x 9" gauge galvanized mesh chain link fencing. Top guardrail shall be 42" above the leading edge of the treads. A 34" high handrail shall be provided.
- J. All ordinary bolts shall be ASTM A-307 steel and all high strength bolts shall be ASTM A-325 steel; all bolts shall have a hot-dipped galvanized finish.
- K. Decking.
1. The decking shall be fully closed with no openings between foot planks or risers.
- L. Stairs:
1. Shall conform to all above pertinent criteria consistent with the component design of the grandstand.
  2. Shall be self-supporting and shall not attach to or be suspended from any footboard of decking member.
  3. Stair risers shall be fully closed.
- M. Aisles:
1. Aisles shall be designed so that all vertical and horizontal areas within the bay of the aisles area shall be fully closed.
  2. Aisles shall be provided with handrails in accordance with the VUSBC.

## TECHNICAL SPECIFICATIONS

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3. Aisle stairs shall have contrasting nosings with black powder coat finish or other means to distinguish the leading edge of each step.
- N. Ramps and Ramp Platforms:
1. Treads shall be 6063-T6 extruded aluminum with a fluted surface and a minimum wall thickness of .078". Minimum vertical height of treads shall be 1.75" actual. Treads shall be mill finish.
- O. Accessible Viewing Positions (See Drawings for layout and location):
1. Accessible viewing area inset into the front rows of seating shall comply with the most stringent requirements of the VUSBC or the ADA Accessibility Guidelines. Handicapped seating shall be enclosed as indicated on the Drawings with no open vertical risers allowed.
  2. The ramp shall have a "3 Pipe Rail System" consisting of 1 1/4" Schedule 40, anodized aluminum pipe (1 5/8" O.D.) with 2" x 9 Ga. Galvanized mesh, chain link fencing. Top guardrail shall be 42" above the ramp surface.
  3. A handrail 34" above the ramp surface shall be provided.
- P. Other System Features and Components: (See Drawings for number of rows and aisles; stair, ramp and seating configuration; seating capacity, and configuration of accessible viewing areas)
1. Riser per row shall be 8 in.
  2. Depth per row shall be 24 in.
  3. Height of seats above respective footboards shall be 18".
  4. Walkway width shall be 60 in. minimum.
  5. Footboard decking system shall be fully closed.
  6. Aisles to have intermediate aisle rails.
  7. Front to back bracing shall be structural angle, bolted at ends and centers. Rod bracing shall be used for side-to-side bracing.
  8. On columns requiring 2 or more sets of "X" bracing, the connecting strut shall run continuously for the entire length of the unit.
  9. Seat numbers:
    - a. Decals with black lettering on aluminum field.
    - b. Rows: Alphabetical letters.
    - c. Seat Numbers: Numerals.

**PART 3 - EXECUTION**

**3.01 SITE INSPECTION AND PROTECTION** (*Existing School Sites*)

- A. Prior to beginning work, inspect the work area in the presence of the Owner's Representative to review work conditions, site constraints and limitations for use of the site by Contractor's personnel.
- B. The Contractor shall maintain the project site in a clean, safe, and orderly condition.
- C. All existing site features (such as paving, grassed areas, lights, fencing, etc.) not designated to be removed, altered or relocated shall be protected during the course of the work. Repair, replace or restore any site features damaged as the result of this work at no cost to the Owner.
- D. No vehicular traffic, foot traffic, or storage of materials shall be allowed on the stadium running track. No construction activity shall be allowed to cross the track.
- E. Any existing fencing otherwise designated to remain, but which may require temporary removal for access to project area, shall be restored at completion of the work.

**3.02 DEMOLITION** (*Existing School Sites*)

- A. The Contractor shall completely remove and legally dispose of all existing planking, bleacher structure including foundations, and other related materials. No demolished materials shall be allowed to remain on site for more than 48 hours.
- B. The Owner shall have right of first refusal on any salvageable materials. Any materials designated by the Owner's Representative for salvage shall be stored on site in an approved location.

**3.03 INSTALLATION**

- A. All work shall be installed in accordance with the manufacturer's written installation instructions and the approved submittal.
- B. All fasteners shall be torqued to the manufacturer's specifications using a torque wrench or other approved means.
- C. All welding shall be performed in accordance with AWI Standards.
- D. Immediately after installation, inspect all parts for proper alignment and fastening.

**3.04 CLEAN UP**

- B. Remove all excess materials, packaging and other debris associated with the work of this Section from the work area and dispose of legally.
- C. Restore all areas of site disturbed by the work of this Section.

TECHNICAL SPECIFICATIONS

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3.05 CLOSE OUT

- A. Instruct Owner's personnel in the proper maintenance of bleacher seats, foot and riser planking, railings and associated components.

END OF SECTION

**SECTION 13126**

**BLEACHER DECK AND SEATING REPLACEMENT**

**PART 1 - GENERAL**

1.01 RELATED DOCUMENTS

- A. Drawings and General Provisions of Contract, including General and Supplementary Conditions and other Specification Sections, apply to the Work of this Section.

1.02 RELATED WORK

- A. Complete, outdoor aluminum bleacher systems are covered under Section 13125.

1.03 REFERENCED STANDARDS

- A. ASTM A307, Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile.
- B. Aluminum Association, Inc. standards referenced herein.
- C. The Virginia USBC (IBC, Chapter 10, Section 1008, as applicable).

1.04 DESCRIPTION OF WORK (*Edit based on site survey and required scope of work*)

- A. Provide all labor, supervision, material, and equipment for the work as follows:
  - 1. Removal of all existing foot planks.
  - 2. Removal of all existing seat planks.
  - 3. Removal of all aisle, stair and walkway planking.
  - 4. Installation of new aluminum planking (replacement in kind, except as noted).
  - 5. Installation of new aluminum risers to fully enclose vertical gaps between foot planks at seating areas and at aisles, stairs and walkways.
  - 6. Installation of new aisle handrails.
  - 7. Installation of new chain link mesh infill at existing guardrails, *or* complete replacement of existing guardrails.

1.05 QUALITY ASSURANCE

- A. Manufacturers Qualifications: Minimum five (5) years' experience in the design and manufacture of aluminum bleacher planking and accessories.
- B. Installer Qualifications: Contractor shall utilize personnel trained and experienced in the installation of aluminum bleacher planking.



## TECHNICAL SPECIFICATIONS

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- C. Aluminum planking and associated components shall all be products of one manufacturer.

### 1.06 SUBMITTALS

- A. Submit shop drawings in accordance with General Conditions, Item 17.
- B. Shop drawing submittal shall include the following:
  - 1. Manufacturer's descriptive data and details for all materials.
  - 2. Details showing placement and attachment to existing bleacher substructure.
  - 3. Product samples: Submit two (2) 18" samples of each type of planking (seat, foot and riser boards), two (2) samples of end caps and support assemblies (including brackets, hold down clips, and nuts and bolts).

### 1.07 WARRANTY

- A. Contractor shall warrant the workmanship and materials for a period of two (2) years.
  - 1. Repairs during the warranty period shall be initiated within twenty four (24) hours of notification by the Owner.
  - 2. One (1) month prior to the expiration of the warranty, Contractor shall visit the site with the Owners Representative to determine if any deficiencies exist with the installation, or if any items previously reported by the Owner's Representative have not been corrected. Contractor shall correct such items, regardless of whether or not the duration of corrective work extends beyond the expiration date of the warranty.

## PART 2 - PRODUCTS

### 2.01 APPROVED MANUFACTURERS

- A. Sturdisteel Company, P.O. Box 2655, Waco, Texas 76702-2655, 1 800-433-3116 ([www.sturdisteel.com](http://www.sturdisteel.com))
- B. Southern Bleacher Company, P.O. Box One, Graham, Texas 76450, 1 800-433-0912 ([www.southernbleacher.com](http://www.southernbleacher.com))
- C. Dant Clayton Corporation, 1500 Bernheim Lane, Louisville, Kentucky, 40201-7408, 1 800-626-2177 ([www.dantclayton.com](http://www.dantclayton.com))
- D. E & D Specialty Stands, Inc., P.O. Box 770, 2081 Franklin Street, North Collins, New York, 1 800-525-8515 ([www.edstands.com](http://www.edstands.com))
- E. National Recreation Systems, Inc., 5120 Investment Drive, Fort Wayne, IN 46808, 1-888-568-9064 ([www.bleachers.net](http://www.bleachers.net)).
- F. Other manufacturers pre-bid approved in accordance with Instructions to Bidders, Item 17 shall be acceptable.

## TECHNICAL SPECIFICATIONS

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### 2.02 MATERIALS

- A. General: All materials shall be new and free of scrapes, scratches and other blemishes or defects.
- B. Seat Planks: Extruded Aluminum, 6063-T6 alloy, clear anodized per AA-M10C22A31, Class II, 204R1, minimum 1 3/4" deep channel configuration with a minimum wall thickness of 0.75". Boards shall have a minimum of 4 vertical legs.
- C. Foot Planks Walkways and Aisle Stairs: Extruded aluminum, 6063-T6 alloy, mill finished, minimum 1 3/4" deep channel configuration with a minimum wall thickness of 0.75". Boards shall have a minimum of 4 vertical legs.
- D. Riser Planks: Extruded aluminum, 6063-T6 alloy, mill finished, with minimum wall thickness of 0.80".
- E. Guard Rail Mesh: 2" x 9 gauge galvanized chain link.
- F. Guard Rails:
  - 1. Provide and install at all sides of bleacher, stairs, ramps and landings.
    - i. "2 Pipe Rail System": A top rail with fencing infill between rails.
    - ii. "3 Pipe Rail System": A top rail, intermediate rail and bottom rail with fencing infill between rails.
    - iii. The "2 Pipe Rail System" shall be used on the front and the "3 Pipe Rail System" shall be used on the sides and the back.
    - iv. The railings shall be 1 1/4" Schedule 40 anodized aluminum pipe (1-5/8" O.D.). The fencing shall be galvanized mesh per 202.E above.
    - v. All rails shall be 42" in height (height of rail adjacent to seating shall be measured from the leading edge of the seat).
  - 2. Stairs shall have a "3 Pipe Rail System" consisting of 1 1/4" schedule 40, anodized aluminum pipe (1 5/8" O.D.), with 2" x 9 gauge galvanized mesh chain link fencing. Top guardrail shall be 42" above the leading edge of the treads. A 34" high handrail shall be provided.
- G. Accessories:
  - 1. Channel end caps: Extruded aluminum, 6063-T6, clear anodized per AA-M10622A31, Class II, 204R1, for seat planks; mill finish for foot planks. Provide at end rows of foot and seat planks.
  - 2. Joint sleeves: Extruded aluminum, 6061-T6 inserted in planks to maintain alignment when joining two planks together.
  - 3. Brackets: Extruded aluminum, 6061-T6; for attaching seat planks to bleacher structure.

## TECHNICAL SPECIFICATIONS

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4. Hold down clip assembly: Extruded aluminum, 6061-T6, with coated tamper resistant nuts and bolts.
5. Aisle stair nosing: Provide contrasting nosing with black powder coat finish or other means to distinguish the leading edge of each step.

### PART 3 - EXECUTION

#### 3.01 SITE INSPECTION AND PROTECTION

- A. Prior to beginning work, inspect the work area in the presence of the Owner's Representative and Architect to review existing conditions, site constraints and limitations for use of the site by Contractor's personnel.
- B. The Contractor shall maintain the project site in a clean, safe, and orderly condition.
- C. All existing site features (such as paving, grassed areas, lights, fencing, etc. not designated to be removed, altered or relocated shall be protected during the course of the work. Repair, restore or replace any site features damaged as the result of the work of this Section at no cost to the Owner.
- D. No vehicular or foot traffic shall be allowed on or across the stadium running track. No materials shall be stored on the track.
- E. Any existing fencing otherwise designated to remain, but which may require temporary removal for access to project area, shall be restored at completion of the work.

#### 3.02 DEMOLITION

- A. The Contractor shall remove and legally dispose of all existing planking and related materials. No demolished materials shall be allowed to remain on site for more than 48 hours.
- B. The Owner shall have right of first refusal on any salvageable materials. Any materials designated by the Owner's Representative for salvage shall be stored on site in an approved location.

#### 3.03 INSTALLATION

- A. All work shall be installed in accordance with the manufacturer's written installation instructions and the approved submittal.
- B. All fasteners shall be torqued to the manufacturer's specifications using a torque wrench or other approved means.
- C. Immediately after installation, inspect all parts for proper alignment and fastening.

#### 3.04 CLEAN UP

- D. Remove all excess materials, packaging and other debris associated with the work of this Section from the work area and dispose of legally.
- E. Restore all areas of site disturbed by the work of this Section.

TECHNICAL SPECIFICATIONS

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3.05 CLOSE OUT

- A. Instruct Owner's personnel in the proper maintenance of bleacher seats, foot and riser planking, and associated components.

END OF SECTION