



Addendum No. 1

**Carver Site Upgrades
McMillan Pazdan Smith Project No. 020499
April 29, 2021**

The following clarifications, amendments, additions, deletions, revisions, and/or modifications are hereby made a part of the Contract Documents, and change the original documents only in the manner and to the extent stated below:

- Item No. 1: **Mandatory Pre-Bid Conference:**
The Sign in Sheet from the Mandatory Pre-bid Conference is attached.
The following contractors attended the Pre-Bid meeting:
- Dunbar Construction
 - Clayton Construction
 - Lindler's Construction
- Item No. 2 **General:**
The owner will remove the existing bleachers prior to construction.
- Item No. 3 **General:**
The work may not begin until June 1, 2021.
- Item No. 4: **Project Manual – Section 05 52 13 – Steel Pipe Handrails and Railings:**
Delete the previously issued Section 05 52 13 in its entirety.
- Item No. 5: **Project Manual – Section 05 52 14 Pipe Handrails and Railings, Stainless Steel:**
Include the attached Section 05 52 14 into the contract documents.
- Item No. 6: **Civil Notes:**
1. The construction entrance shall be located off the nearby bus driveway (Caulder Avenue) as discussed at the mandatory pre-bid. Demolition and replacement of 24 LF of 5 ft sidewalk is added to the base bid. This represents the existing damaged section of sidewalk. The contractor shall repair any additional damage caused by construction. The construction entrance is approximately 330 linear feet from the proposed concrete bleacher pad, going around the tennis courts. All areas shall be restored to existing conditions at the conclusion of the project. All disturbed areas shall be grassed to achieve grass stabilization in accordance with SCDHEC land disturbance requirements.
 2. The contractor shall be responsible for importing structural fill to meet elevations. A borrow source is not available on site. The Contractor shall identify the borrow source for geotechnical testing prior to any soil import.

3. The extents of asphalt milling and overlay will be defined by the existing chain link fence around the basketball courts. Milling shall start and stop approximately 8" inside the fence posts on all four sides. The outside edge shall be saw cut for a sharp clean edge prior to overlay.
4. The edge of track along the proposed concrete bleacher pad and sidewalk shall be saw cut to provide a sharp clean edge. The concrete pad and sidewalk shall be extended to the new edge of track. This modification adds approximately 18" to 20" of width (depending on location) to the 321 ft long concrete pad and sidewalk area as shown on CV1.21. The new fence posts shall be cored into the new concrete or sleeves provide for the fence post installation.

Item No. 7: **Architectural Drawings:**
Delete the previously issued drawings A011 – Architectural Site Plan and A012 – Enlarged Ramp Plan and Details in their entirety and include the attached Drawings A011 and A012 into the contract documents.

Item No. 8: **Architectural Drawings – A013 – Site Details:**
Include the attached drawing A013 into the contract documents.

End of Addendum No. 1

This addendum contains	<u> 2 </u>	Summary Pages
	<u> 2 </u>	Pre Bid Sign in Sheets
	<u> 1 </u>	Specification Section
	<u> 3 </u>	30x42 Drawings

PRE-BID SIGN-IN SHEET
Carver Middle School Site Upgrades
Spartanburg School District Seven
McMillan Pazdan Smith Project No. 020499
April 20, 2021

Company	<u>McMillan Pazdan Smith</u>	Name	<u>Donald L. Love, Jr., AIA</u>
Address	<u>127 Dunbar Street</u> <u>Spartanburg, SC 29306</u>	Email Address	<u>dlove@mcmillanpazdansmith.com</u>
Phone	<u>864-585-5678</u>		
Fax	<u>864-542-9451</u>	Trade	<u>Architect</u>
Company	<u>Dunbar Construction Company</u>	Name	<u>Heath Bowen</u>
Address	<u>1075 Southport Rd.</u> <u>Spartanburg, SC 29306</u>	Email Address	<u>heath@dunbarconstruction.net</u>
Phone	<u>864-583-2100</u>		
Fax	<u>864-583-8900</u>	Trade	<u>GC</u>
Company	<u>Clayton Construction Co.</u>	Name	<u>Alex Buddenberg</u>
Address	<u>121 Venture Blvd.</u> <u>Spartanburg, SC 29304</u>	Email Address	<u>abuddenberg@claytonconstruction.net</u>
Phone	<u>864-576-1901</u>		
Fax		Trade	<u>GC</u>
Company	<u>SSD7</u>	Name	<u>Stephen Russell</u>
Address		Email Address	<u>smrussell@ssd7.org</u>
Phone	<u>594-4500</u>		
Fax		Trade	<u>Owner</u>

Pre-Bid Sign-In Sheet
Carver Middle School Site Upgrades
Spartanburg School District Seven
McMillan Pazdan Smith Project No. 020499
April 20, 2021

Company	<u>BWU Inc - Crawfordsville</u>	Name	<u>PRESCOTT MAY</u>
Address	<u>604 POWERS CT CRAWFORDSVILLE, SC 29615</u>	Email Address	<u>PRESCOTT.MAY @BWUCORP.COM</u>
Phone	<u>864-485-2158</u>		
Fax		Trade	
Company	<u>BAI</u>	Name	<u>Trey Blackwood</u>
Address	<u>PO BOX 366 SPARTANBURG SC 29304</u>	Email Address	<u>tblackwood@baigroup.net</u>
Phone	<u>864 583 5432</u>		
Fax		Trade	
Company	<u>LINDLER'S Construction</u>	Name	<u>Charlie Stock</u>
Address	<u>P.O. 731 Newberry, S.C. 29108</u>	Email Address	<u>charlie@lindlers.com</u>
Phone	<u>803-309-0248</u>		
Fax		Trade	
Company		Name	
Address		Email Address	
Phone			
Fax		Trade	

SECTION 05 52 14 - PIPE HANDRAILS AND RAILINGS, STAINLESS STEEL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Stainless steel pipe and tube handrails and railing systems.
- B. Related Sections: Requirements relating to this Section are contained in the following Sections:
 - 1. Division 05 Section "Metal Pan Stairs" for steel pipe handrails and railing systems included with metal stairs.

1.3 DEFINITIONS

- A. Definitions in ASTM E 985 for railing-related terms apply to this Section.

1.4 PERFORMANCE REQUIREMENTS

- A. General: In engineering handrail and railing systems to comply with horizontal rail spacing and to withstand structural loads, required by current IBC to determine allowable design working stresses of materials based on the following:
 - 1. Stainless Steel: 60 percent of minimum yield strength.
- B. Structural Performance of Handrails and Railing Systems: Engineer, fabricate, and install handrails and railing systems to withstand the following structural loads without exceeding the allowable design working stress of the materials for handrails, railing systems, anchors, and connections. Apply each load to produce the maximum stress in each of the respective components comprising handrails and railing systems.
 - 1. Top Rail of Guardrail Systems: Capable of withstanding the following loads applied as indicated:
 - a. Concentrated load of 200 lb applied at any point and in any direction.
 - b. Uniform load of 50 plf per linear foot applied in any direction (per IBC 1607.7) and concurrently with uniform load of 100 plf per linear foot applied vertically downward.
 - c. Concentrated and uniform loads above need not be assumed to act concurrently.
 - 2. Handrails Not Serving as Top Rails: Capable of withstanding the following loads applied as indicated:
 - a. Concentrated load of 200 lbf applied at any point and in any direction.

- b. Uniform load of 50 lbf per linear foot applied in any direction.
 - c. Concentrated and uniform loads above need not be assumed to act concurrently.
- 3. Infill Area of Guardrail Systems: Capable of withstanding a horizontal concentrated load of 200 lbf applied to 1 sq. ft. at any point in the system including panels, intermediate rails, balusters, or other elements composing the infill area.
 - a. Above load need not be assumed to act concurrently with loads on top rails of railing systems in determining stress on guard.
- C. Thermal Movements: Allow for thermal movement resulting from the following maximum change (range) in ambient temperature in engineering, fabricating, and installing handrails and railing systems to prevent buckling, opening of joints, overstressing of components and connections, and other detrimental effects. Base engineering calculation on actual surface temperatures of materials due to both solar heat gain and nighttime sky heat loss.
 - 1. Temperature Change (Range): 120 deg F ambient 180 deg F material surfaces.
- D. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

1.5 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Product data for mechanically connected handrails and railing systems, each kind of fitting, grout, anchoring cement, and paint products.
- C. Shop drawings showing fabrication and installation of handrails and railing systems including plans, elevations, sections, details of components, and attachments to other units of Work.
 - 1. For installed handrails and railing systems indicated to comply with certain design loadings, include structural analysis data sealed and signed by the qualified professional engineer who was responsible for their preparation.
- D. Qualification data for firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include a list of completed projects with project names, addresses, names of architects and owners, and other information specified.
- E. Product test reports from a qualified independent testing agency evidencing compliance of handrails and railing systems with requirements based on comprehensive testing of current products.
- F. Mill Certificates: Signed by manufacturers of stainless-steel products certifying that products furnished comply with requirements.

1.6 QUALITY ASSURANCE

- A. Single-Source Responsibility: Obtain handrails and railing systems of each type and material from a single manufacturer.

- B. Engineer Qualifications: Professional engineer legally authorized to practice in the jurisdiction where Project is located and experienced in providing engineering services of the kind indicated for handrails and railing systems similar to this Project in material, design, and extent, and that have a record of successful in-service performance.
- B Welding Qualifications: Qualify procedures and personnel according to the following:
 - 1 AWS D1.6, "Structural Welding Code - Stainless Steel."

1.7 STORAGE

- A. Store handrails and railing systems inside a well-ventilated area, away from uncured concrete and masonry and protected from weather, moisture, soiling, abrasion, extreme temperatures, and humidity.

1.8 PROJECT CONDITIONS

- A. Field Measurements: Where handrails and railing systems are indicated to fit to other construction, check actual dimensions of other construction by accurate field measurements before fabrication; show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
 - 1. Where field measurements cannot be made without delaying the Work, guarantee dimensions and proceed with fabricating handrails and railing systems without field measurements. Coordinate other construction to ensure that actual dimensions correspond to guaranteed dimensions.

1.9 SEQUENCING AND SCHEDULING

- A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.
- B. Coordinate installation of anchorages for railings. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- C. Schedule installation so wall attachments are made only to completed walls. Do not support railings temporarily by any means that do not satisfy structural performance requirements.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following
 - 1. Stainless-Steel Pipe and Tube Railings:
 - a Blum, Julius & Co., Inc.
 - b Paragon Aquatics; Division of Pentair, Inc.

- c Pisor Industries, Inc.
- d Stainless Fabricators, Inc.
- e Sterling Dula Architectural Products, Inc.; Div. of Kane Manufacturing.
- f Tri Tech, Inc.
- g Tubular Specialties Manufacturing, Inc.
- h Tuttle Railing Systems; Div. of Tuttle Aluminum & Bronze, Inc.
- i Wagner, R & B, Inc.; a division of the Wagner Companies.

2.2 METALS

- A. Metal Surfaces, General: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes.
- B. Brackets, Flanges, and Anchors: Cast or formed metal of same type of material and finish as supported rails unless otherwise indicated.

2.3 STAINLESS STEEL

- A. Tubing: ASTM A 554 **Grade MT 316L**.
- B.. Pipe: ASTM A 312/A 312M **Grade TP 316L**.
- C Castings: ASTM A 743/A 743M, **Grade CF 8M**
- D Plate and Sheet: ASTM A 240/A 240M or ASTM A 666, **Type 316L**.

2.4 FASTENERS

- A. Stainless-Steel Railings: Type 316 stainless-steel fasteners.
- B. Fasteners for Anchoring Railings to Other Construction: Select fasteners of type, grade, and class required to produce connections suitable for anchoring railings to other types of construction indicated **and capable of withstanding design loads**.
- C. Fasteners for Interconnecting Railing Components:
 - 1. Provide concealed fasteners for interconnecting railing components and for attaching them to other work, unless otherwise indicated.
 - 2. Provide **tamper-resistant** flat-head machine screws for exposed fasteners unless otherwise indicated.
- D. Post-Installed Anchors: **Torque-controlled expansion anchors** capable of sustaining, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load imposed when installed in concrete, as determined by testing according to ASTM E 488, conducted by a qualified independent testing agency.
 - 1 Material for Interior Locations: Carbon-steel components zinc-plated to comply with ASTM B 633 or ASTM F 1941, Class Fe/Zn 5, unless otherwise indicated.
 - 2 Material for Exterior Locations and Where Stainless Steel is Indicated: stainless-steel bolts, ASTM F 593, and nuts, ASTM F 594.

- E. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

- 3 For **stainless-steel** railings, provide type and alloy as recommended by producer of metal to be welded and as required for color match, strength, and compatibility in fabricated items.

2.5 GROUT AND ANCHORING CEMENT

- A. Nonshrink, Nonmetallic Grout: Premixed, factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.

- B. Interior Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching, and grouting compound. Use for interior applications only.

- C. Erosion-Resistant Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching, and grouting compound. Provide formulation that is resistant to erosion from water exposure without need for protection by a sealer or waterproof coating and is recommended for exterior use by manufacturer.

- D. Products: Subject to compliance with requirements, provide one of the following:

- 1. Nonshrink, Nonmetallic Grouts:

- a. B-6 Construction Grout; W.R. Bonsal Co.
 - b. Diamond-Crete Grout; Concrete Service Materials Co.
 - c. Supreme; Cormix Construction Chemicals.
 - d. Sure-grip High Performance Grout; Dayton Superior Corp.
 - e. Euco N-S Grout; Euclid Chemical Co.
 - f. Five Star Grout; Five Star Products.
 - g. Vibropruf #11; Lambert Corp.
 - h. Crystex; L & M Construction Chemicals, Inc.
 - i. Masterflow 928 and 713; Master Builders Technologies, Inc.
 - j. Sealtight 588 Grout; W.R. Meadows, Inc.
 - k. SonogROUT 14; Sonneborn Building Products--ChemRex, Inc.
 - l. Kemset; The Spray-Cure Company.

- 2. Interior Anchoring Cement:

- a. Ankertite Cement; Dayton Superior Corp.
 - b. Por-Rok; Minwax Construction Products Division.

- 3. Erosion-Resistant Anchoring Cement:

- a. Bonsal Anchor Cement; W.R. Bonsal Co.
 - b. Super Por-Rok; Minwax Construction Products Division.
 - c. Thorogrip; Thoro Systems Products.

2.6 FABRICATION

- A. General: Fabricate handrails and railing systems to comply with requirements indicated for design, dimensions, details, finish, and member sizes, including wall thickness of hollow members, post spacings, and anchorage, but not less than those required to support structural loads.
- B. Assemble handrails and railing systems in the shop to the greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.
- C. Form changes in direction of members as follows:
 - 1. By radius bends of radius indicated. If not indicated, then by flush radius bends.
- D. Form simple and compound curves by bending pipe in jigs to produce uniform curvature for each repetitive configuration required; maintain cylindrical cross section of pipe throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of pipe.
- E. Welded Connections: Fabricate handrails and railing systems for connection of members by welding. For connections made during fabrication, weld corners and seams continuously to comply with the following:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. At tee and cross intersections, cope ends of intersecting members to fit contour of pipe or tube to which end is joined, and weld all around.
 - 5. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing and welded surface matches contours of adjoining surfaces.
- F. Brackets, Flanges, Fittings, and Anchors: Provide manufacturer's standard wall brackets, flanges, miscellaneous fittings, and anchors to interconnect handrail and railing system members to other construction.
- G. Provide inserts and other anchorage devices to connect handrails and railing systems to concrete. Fabricate anchorage devices capable of withstanding loads imposed by handrails and railing systems. Coordinate anchorage devices with supporting structure.
- H. For railing posts set in concrete, provide preset sleeves of stainless steel, not less than 6 inches long with inside dimensions not less than 1/2 inch greater than outside dimensions of post, and steel plate forming bottom closure.
- I. For removable railing posts, fabricate slip-fit sockets from stainless steel pipe whose inside diameter is sized for a close fit with posts and to limit deflection of post without lateral load, measured at top, to not more than 1/12 of post height. Provide socket covers designed and fabricated to resist accidental dislodgement.

1. Provide chain with eye, snap hook, and staple across gaps formed by removable railing sections at locations indicated or required by code. Fabricate from same metal as railings.
- J. Shear and punch metals cleanly and accurately. Remove burrs from exposed cut edges.
- K. Ease exposed edges to a radius of approximately 1/32 inch, unless otherwise indicated. Form bent-metal corners to the smallest radius possible without causing grain separation or otherwise impairing work.
- L. Cut, reinforce, drill, and tap components, as indicated, to receive finish hardware, screws, and similar items.
- M. Provide weepholes, or another means to evacuate entrapped water, in hollow sections of railing members that are exposed to exterior or to moisture from condensation or other sources.
- N. Fabricate joints that will be exposed to weather in a manner to exclude water.
- O. Provide wall returns at ends of wall-mounted handrails, unless otherwise indicated.
- P. Toe Boards: Where indicated, provide toe boards at railings around openings and at the edge of open-sided floors and platforms. Fabricate to dimensions and details indicated.

2.7 FINISHES, GENERAL

- A. Comply with NAAMM "Metal Finishes Manual" for recommendations relative to applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering prior to shipment.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one half of the range of approved samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved samples and they are assembled or installed to minimize contrast.

2.8 STAINLESS STEEL FINISHES

- A. Remove tool and die marks and stretch lines, or blend into finish.
- B. Grind and polish surfaces to produce uniform, directionally textured, polished finish indicated, free of cross scratches. Run grain with long dimension of each piece.
- C. Dull Satin Finish: No. 6.
- D. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Coordinate setting drawings, diagrams, templates, instructions, and directions for installing anchorages, such as sleeves, concrete inserts, anchor bolts, and miscellaneous items having integral anchors, that are to be embedded in concrete. Coordinate delivery of such items to Project site.

3.2 INSTALLATION, GENERAL

- A. Fit exposed connections accurately together to form tight, hairline joints.
- B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing handrails and railing systems. Set handrails and railing systems accurately in location, alignment, and elevation, measured from established lines and levels and free from rack.
 - 1. Do not weld, cut, or abrade surfaces of handrails and railing components that have been coated or finished after fabrication and are intended for field connection by mechanical or other means without further cutting or fitting.
 - 2. Set posts plumb within a tolerance of 1/4 inch in 12 feet.
 - 3. Align rails so that variations from level for horizontal members and from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet.
- E. Anchor posts to metal surfaces with oval flanges, angle type, or floor type as required by conditions, connected to posts and to metal supporting members as follows:
 - 1. For stainless-steel pipe railings, weld flanges to post and bolt to supporting surfaces.
- D. Field Welding: Comply with the following requirements:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing, and welded surface matches contours of adjoining surfaces.
- E. Adjust handrails and railing systems prior to anchoring to ensure matching alignment at abutting joints. Space posts at interval indicated but not less than that required by design loadings.
- F. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing handrails and railing systems and for properly transferring loads to in-place construction.

3.3 RAILING CONNECTIONS

- A. Welded Connections: Use fully welded joints for permanently connecting railing components by welding. Cope or butt components to provide 100 percent contact, or use fittings designed for this purpose.

- B. Expansion Joints: Install expansion joints at locations indicated but not further apart than required to accommodate thermal movement. Provide slip-joint internal sleeve extending 2 inches beyond joint on either side; fasten internal sleeve securely to one side; locate joint within 6 inches of post.

3.4 ANCHORING POSTS

- A. Removable Posts: Where removable posts are indicated, anchor posts in concrete with pipe sleeves preset and anchored into concrete. After posts have been inserted into sleeves, solidly fill annular space between post and sleeve with the following anchoring material, mixed and placed to comply with anchoring material manufacturer's directions.
- B. Non-Removable Posts: Where posts are not removable, anchor posts in concrete by forming or core-drilling holes not less than 5 inches deep and 3/4 inch greater than outside diameter of post. Clean holes of all loose material, insert posts, and fill annular space between post and concrete with the following anchoring material, mixed and placed to comply with anchoring material manufacturer's directions.
 - 1. Nonshrink, nonmetallic grout.
- C. Cover anchorage joint with a round steel flange attached to post as follows:
 - 1. Welded to post after placement of anchoring material or by set screws.
- D. Leave anchorage joint exposed, wipe off surplus anchoring material, and leave 1/8-inch buildup, sloped away from post.
- E. Anchor posts to metal surfaces with oval flanges, angle type, or floor type as required by conditions, connected to posts and to metal supporting members as follows:
 - 1. For steel pipe railings, weld flanges to post and bolt to metal supporting surfaces.
- F. Install removable railing sections where indicated in slip-fit metal sockets cast into concrete. Accurately locate sockets to match post spacing.

3.5 ANCHORING RAIL ENDS

- A. Anchor rail ends into concrete with round flanges connected to rail ends and anchored into wall construction with postinstalled anchors and bolts.
- B. Anchor rail ends to metal surfaces with oval or round flanges.

3.6 ATTACHING HANDRAILS TO WALLS

- A. Attach handrails to wall with wall brackets and end fittings. Provide bracket with 1-1/2-inch clearance from inside face of handrail to finished wall surface.
- B. Locate brackets as indicated or, if not indicated, at spacing required to support structural loads.
- C. Secure wall brackets and wall return fittings to building construction as follows:

1. Use type of bracket with flange tapped for concealed anchorage to threaded hanger bolt.
2. Use type of bracket with predrilled hole for exposed bolt anchorage.
3. For concrete anchorage, use drilled-in expansion shield and either concealed hanger bolt or exposed lag bolt, as applicable.

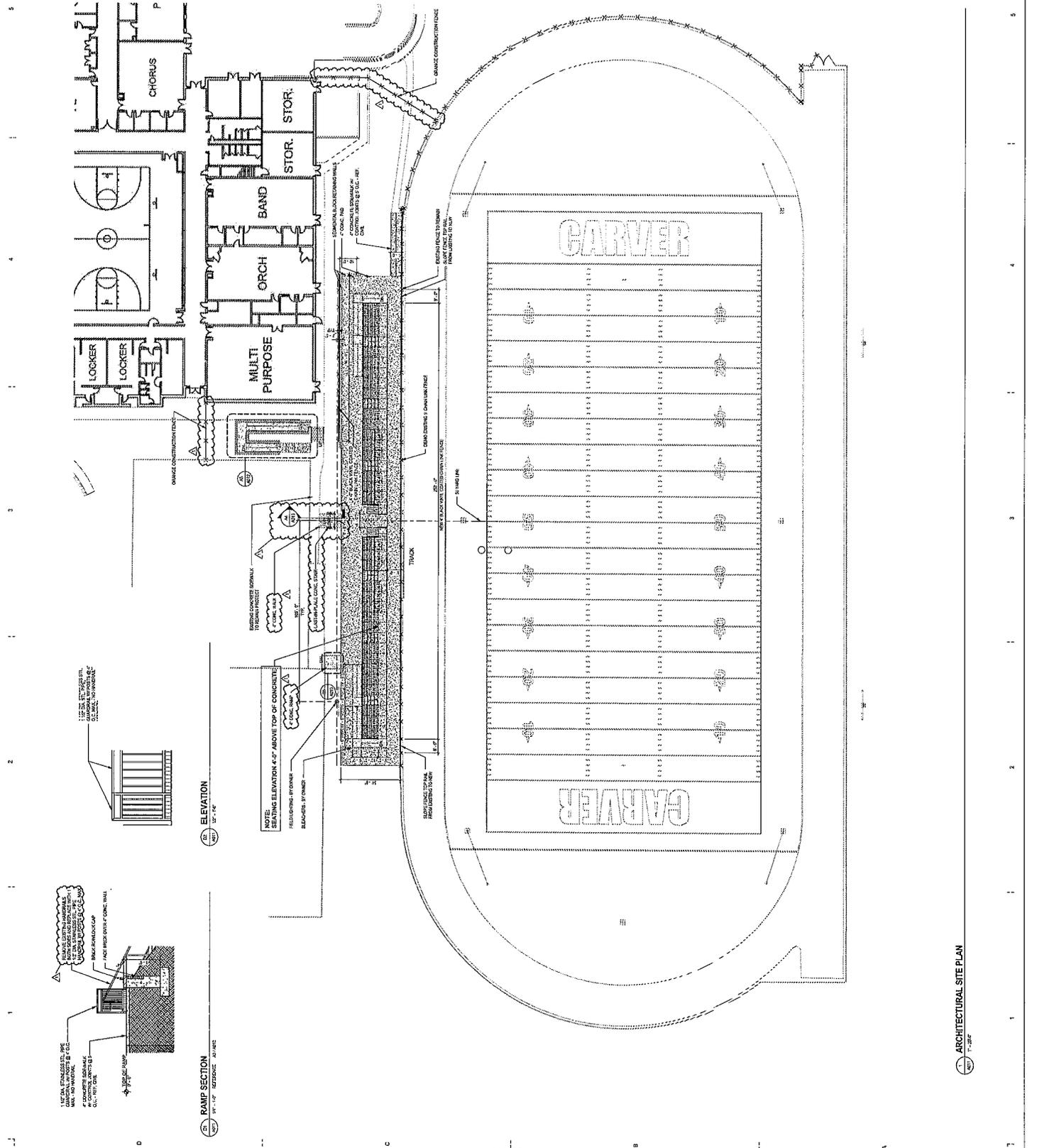
3.7 ADJUSTING AND CLEANING

Clean **stainless steel** by washing thoroughly with clean water and soap and rinsing with clean water.

3.8 PROTECTION

- A. Protect finishes of handrails and railing systems from damage during construction period with temporary protective coverings approved by railing manufacturer. Remove protective coverings at time of Substantial Completion.
- B. Restore finishes damaged during installation and construction period so that no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units.

END OF SECTION 05 52 14



ELEVATION
1/2" = 1'-0"

NOTE:
SEATING ELEVATION 4'-0" ABOVE TOP OF CONCRETE
FOLLOWING FORMER
BLDG. BY FOUND.

RAMP SECTION
1/2" = 1'-0" REFERENCE: 21-102

