

**GLYNN COUNTY STADIUM
BUILDING**

ADDENDUM NO. 2

John A. Tuten & Associates, Inc.
4680 Hwy 17 North
Brunswick, GA 31525

DATE: May 1, 2018

PROJECT MANUAL

1. REQUEST FOR PROPOSALS

A. The bid date is changed to **Tuesday, May 15, 2018 at 11:00 AM.**

2. TABLE OF CONTENTS – VOLUME 1

A. Discard issued “Table of Contents – Volume 1” and replace with attached “Table of Contents – Volume 1” dated 5/1/18.

3. TABLE OF CONTENTS – VOLUME 2

A. Discard issued “Table of Contents – Volume 2” and replace with attached “Table of Contents – Volume 2” dated 5/1/18.

4. PROPOSAL FORM

A. Discard issued “Attachment #4” of the Proposal Form and replace with the revised “Attachment #4” dated 5/1/18.

5. INDEX OF DRAWINGS

A. Discard issued “Index of Drawings” and replace with attached “Index of Drawings” dated 5/1/18.

6. SECTION 012100 – ALLOWANCES

A. At 3.3 Schedule of Allowances, add C.:

Allowance No. 3: Allow the sum of **Nine Thousand Dollars (\$9,000.00)** to furnish and install Stadium Chairs.

7. SECTION 055000 – METAL FABRICATIONS

A. Discard issued “Section 055000” and replace with attached “Section 055000” dated 5/1/18.

8. SECTION 057300 – DECORATIVE METAL RAILINGS

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A. Delete “Section 057300” from the Project Manual.

9. SECTION 101419 – DIMENSIONAL LETTER SIGNAGE

A. Add new “Section 101419” dated 5/1/ 18.

10. SECTION 230220 – MECHANICAL SUBMITTALS

A. Discard issued “Section 230220” and replace with attached “Section 230220” dated 5/1/18.

DRAWINGS

1. SHEET A0.1 – SHEET INDEX / GENERAL ITEMS

A. Discard issued “Sheet A0.1” and replace with attached “Sheet A0.1” dated 4/20/18.

2. SHEET A1.2 – RATED PARTITION PLAN

A. Discard issued “Sheet A1.2” and replace with attached “Sheet A1.2” dated 4/20/18.

3. SHEET A1.4 – ROOF PLAN

A. Discard issued “Sheet A1.4” and replace with attached “Sheet A1.4” dated 4/20/18.

4. SHEET A2.1 – 1/4” FIRST FLOOR PLAN

A. Discard issued “Sheet A2.1” and replace with attached “Sheet A2.1” dated 4/20/18.

5. SHEET A2.2 – 1/4” SECOND FLOOR PLAN

A. Discard issued “Sheet A2.2” and replace with attached “Sheet A2.2” dated 4/20/18.

6. SHEET A3.5 – CURTAIN WALL DETAILS

A. Discard issued “Sheet A3.5” and replace with attached “Sheet A3.5” dated 4/20/18.

7. SHEET A4.1 – EXTERIOR ELEVATIONS

A. Add new “Sheet A4.1” dated 4/20/18.

8. SHEET A5.1 – BUILDING SECTION

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A. Discard issued "Sheet A5.1" and replace with attached "Sheet A5.1" dated 4/20/18.

9. SHEET A5.7 – BUILDING SECTION

A. Discard issued "Sheet A5.7" and replace with attached "Sheet A5.7" dated 4/20/18.

10. SHEET A5.8 – BUILDING SECTION

A. Discard issued "Sheet A5.8" and replace with attached "Sheet A5.8" dated 4/20/18.

11. SHEET A5.9 – BUILDING SECTION

A. Discard issued "Sheet A5.9" and replace with attached "Sheet A5.9" dated 4/20/18.

12. SHEET A6.4 – WALL SECTIONS

A. Discard issued "Sheet A6.4" and replace with attached "Sheet A6.4" dated 4/20/18.

13. SHEET A7.1 – WALL SECTION DETAILS

A. Discard issued "Sheet A7.1" and replace with attached "Sheet A7.1" dated 4/20/18.

14. SHEET A7.2 – STAIR AND RAILINGS DETAILS

A. Add new "Sheet A7.2" dated 4/20/18.

15. SHEET A7.3 – STAIR AND RAILINGS DETAILS

A. Add new "Sheet A7.3" dated 4/20/18.

16. SHEET A7.4 – STAIR AND RAILINGS DETAILS

A. Add new "Sheet A7.4" dated 4/20/18.

17. SHEET A7.5 – STAIR AND RAILINGS DETAILS

A. Add new "Sheet A7.5" dated 4/20/18.

18. SHEET A9.1 – INTERIOR ELEVATIONS & MILLWORK DETAILS

A. Discard issued "Sheet A9.1" and replace with attached "Sheet A9.1" dated 4/20/18.

19. SHEET A11.1 – OVERHEAD COILING – ROLLING FIRE DOOR DETAILS

A. Discard issued "Sheet A11.1" and replace with attached "Sheet A11.1" dated 4/20/18.

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20. SHEET A11.2 – MASONRY STANDARD DETAILS

A. Discard issued “Sheet A11.2” and replace with attached “Sheet A11.2” dated 4/20/18.

21. SHEET A14.1 – ROOFING DETAILS

A. Discard issued “Sheet A14.1” and replace with attached “Sheet A14.1” dated 4/20/18.

22. SHEET A14.2 – ROOFING DETAILS

A. Discard issued “Sheet A14.2” and replace with attached “Sheet A14.2” dated 4/20/18.

23. SHEET A17.1 – STANDARD DETAILS

A. Discard issued “Sheet A17.1” and replace with attached “Sheet A17.1” dated 4/20/18.

24. SHEET S1.3 – ROOF FRAMING PLAN

A. Discard issued “Sheet S1.3” and replace with attached “Sheet S1.3” dated 4/20/18.

25. SHEET S3.0 – FRAMING SECTIONS

A. Discard issued “Sheet S3.0” and replace with attached “Sheet S3.0” dated 4/20/18.

26. SHEET S3.1 – FRAMING SECTIONS

A. Discard issued “Sheet S3.1” and replace with attached “Sheet S3.1” dated 4/20/18.

27. SHEET S3.2 – FRAMING SECTIONS

A. Discard issued “Sheet S3.2” and replace with attached “Sheet S3.2” dated 4/20/18.

28. SHEET P1.0 – DRAINAGE & VENT PLAN – FIRST FLOOR

A. Discard issued “Sheet P1.0” and replace with attached “Sheet P1.0” dated 4/20/18.

29. SHEET P1.1 – DRAINAGE & VENT PLAN – SECOND FLOOR

A. Discard issued “Sheet P1.1” and replace with attached “Sheet P1.1” dated 4/20/18.

30. SHEET P2.0 – HOT & COLD WATER PLAN – FIRST FLOOR

A. Discard issued “Sheet P2.0” and replace with attached “Sheet P2.0” dated 4/20/18.

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31. SHEET P2.1 – HOT & COLD WATER PLAN – SECOND FLOOR

A. Discard issued “Sheet P2.1” and replace with attached “Sheet P2.1” dated 4/20/18.

32. SHEET M0.1 – MECHANICAL LEGEND & SCHEDULES

A. Discard issued “Sheet M0.1” and replace with attached “Sheet M0.1” dated 4/20/18.

33. SHEET M1.0 – MECHANICAL PLAN – FIRST FLOOR

A. Discard issued “Sheet M1.0” and replace with attached “Sheet M1.0” dated 4/20/18.

34. SHEET M1.1 – MECHANICAL PLAN – SECOND FLOOR

A. Discard issued “Sheet M1.1” and replace with attached “Sheet M1.1” dated 4/20/18.

35. SHEET M2.0 – MECHANICAL ROOF PLAN

A. Discard issued “Sheet M2.0” and replace with attached “Sheet M2.0” dated 4/20/18.

36. SHEET M3.0 – MECHANICAL DETAILS

A. Discard issued “Sheet M3.0” and replace with attached “Sheet M3.0” dated 4/20/18.

37. SHEET E0.1 – ELECTRICAL LEGEND AND ONE-LINE

A. Discard issued “Sheet E0.1” and replace with attached “Sheet E0.1” dated 4/20/18.

38. SHEET E1.0 – LIGHTING PLAN

A. Discard issued “Sheet E1.0” and replace with attached “Sheet E1.0” dated 4/20/18.

39. SHEET E2.0 – POWER PLAN

A. Discard issued “Sheet E2.0” and replace with attached “Sheet E2.0” dated 4/20/18.

40. SHEET E3.0 – FIRE ALARM PLAN

A. Discard issued “Sheet E3.0” and replace with attached “Sheet E3.0” dated 4/20/18.

END OF ADDENDUM NO. 2

Attachments:

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GLYNN COUNTY STADIUM BUILDING

Attachment #4 – Proposal Form

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Section 055000

Section 101419

Section 230220

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Sheet A1.2

Sheet A1.4

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Sheet A3.5

Sheet A4.1

Sheet A5.1

Sheet A5.7

Sheet A5.8

Sheet A5.9

Sheet A6.4

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Sheet A7.4

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Sheet A9.1

Sheet A11.1

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Sheet A17.1

Sheet S1.3

Sheet S3.0

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Sheet S3.2

Sheet P1.0

Sheet P1.1

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Sheet P2.1

Sheet M0.1

Sheet M1.0

Sheet M1.1

Sheet M2.0

Sheet M3.0

Sheet E0.1

Sheet E1.0

Sheet E2.0

Sheet E3.0

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Proposal Form

ADDENDUM NO. 2

Instructions to Bidders – AIA A701 – 1997, “Instructions to Bidders”

Form of Bid Bond – AIA A310 – 2010, “Bid Bond”

Form of Contract – AIA A101 – 2007, “Standard Form of Agreement between Owner and Contractor where the basis of Payment is a Stipulated Sum”

Form of Performance Bond – AIA A312 – 2010, “Performance Bond”

Form of Payment Bond – AIA A312 – 2010, “Payment Bond”

General Conditions of the Contract – AIA A201 – 2007, “General Conditions of the Contract for Construction”

Supplementary Conditions of the Contract

“Georgia Security and Immigration Compliance Act” of 2006 and W-9 Form

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SPECIFICATIONS

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	012300	Alternates	012300 – 2
	012900	Payment Procedures	012900 – 5
	013100	Project Management Coordination	013100 – 8
	013200	Construction Progress Documentation	013200 – 8
	013300	Submittal Procedures	013300 – 10
	014000	Quality Requirements	014000 – 8
	014150	Special Inspections	014150 – 3
	014200	References	014200 – 8
	015000	Temporary Facilities and Controls	015000 – 8
	016000	Product Requirements	016000 – 3
	017300	Execution	017300 – 9
	017419	Construction Waste Management and Disposal Form CWM-1; Form CWM-3; Form CWM-5; Form CWM-7	017419 – 7
	017700	Closeout Procedures	017700 – 7
EXISTING CONDITIONS	024119	Selective Structure Demolition	024119 – 6

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	035100	Structural Precast Concrete – Plant Cast	035100 – 16
	035216	Lightweight Insulating Concrete	035216 – 5
MASONRY	042000	Unit Masonry	042000 – 24
	047200	Cast Stone Masonry	047200 – 7
METALS	051200	Structural Steel	051200 – 10
	052200	Steel Joists	052200 – 4
	053100	Steel Deck	053100 – 6
	055000	Metal Fabrications	ADDENDUM NO. 2 055000 – 10
	055213	Pipe and Tube Railings	055213 – 9
	057300	Decorative Metal Railings	057300 – 9 ADDENDUM NO. 2
WOOD AND PLASTICS	061053	Miscellaneous Rough Carpentry	061053 – 6
	064020	Solid Surfacing Lavatories & Tops & Window Sills	064020 – 4
	064113	Wood-Veneer-Faced Architectural Cabinets	064113 – 6
THERMAL AND MOISTURE PROTECTION	071113	Bituminous Dampproofing	071113 – 4
	071326	Self-Adhering Sheet Waterproofing	071326 – 6
	072000	Spray Polyurethane Foam Insulation	072000 – 4
	072430	Water Drainage Exterior Insulation & Finish System (EIFS)	072430 – 20
	072600	Under Slab Vapor Barrier / Retarder	072600 – 3
	075200	Modified Bitumen Roofing	075200 – 12
	075201	Roofing Installers Warranty Modified Bitumen Roofing	075201 – 2
	076200	Sheet Metal Flashing and Trim	076200 – 9
	077200	Roof Accessories	077200 – 6
078446	Fire-Resistive Joint Systems	078446 – 5	
	079200	Joint Sealants	079200 – 7
DOORS AND WINDOWS	081113	Steel Doors and Frames	081113 – 6
	081416	Flush Wood Doors	081416 – 5
	083000	Specialty Doors & Frames – Fiberglass Construction	083000 – 8
	083323	Overhead Coiling Fire Doors	083323 – 10
	084113	Aluminum Framed Entrances & Storefronts	084113 – 8
	084413	Glazed Aluminum Curtain Walls	084413 – 10
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	093000	Tiling	093000 – 8
	095113	Acoustical Panel Ceilings	095113 – 6
	096510	Resilient Floor Tile	096510 – 5
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	096813	Tile Carpeting	096813 – 6
	099000	Interior, Exterior and Industrial Paints and Coatings	099000 – 11
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	101400	Signs	101400 – 4
	101419	Dimensional Letter Signage ADDENDUM NO. 2	101419 – 4
	102800	Toilet and Bath Accessories	102800 – 6
	104416	Fire Extinguishers	104416 – 4
	107300	Aluminum Walkway Covers	107300 – 4
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	220120	Plumbing Standards	220120 – 1
	220210	Plumbing Coordination	220210 – 3
	220220	Plumbing Submittals	220220 – 3
	220230	Plumbing Identification	220230 – 3
	220240	Plumbing Work Closeout	220240 – 3
	220310	Plumbing Pipe, Tube and Fittings	220310 – 6
	220320	Plumbing Hangers and Supports	220320 – 3
	220330	Plumbing Excavation	220330 – 3
	221110	Domestic Water Piping System	221110 – 5
	221210	Soil, Waste and Vent Piping System	221210 – 6
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	222210	Water Heaters	222110 – 3
	223110	Plumbing Fixtures	223110 – 5
	223210	Electric Water Coolers & Drinking Fountains	223210 – 2
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	230120	Mechanical Standards	230120 – 2
	230210	Mechanical Coordination	230210 – 4
	230220	Mechanical Submittals ADDENDUM NO. 2	230220 – 3
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	233110	Electric Heaters	233110 – 1
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	236110	Heat Pumps	236110 – 6
	239110	Mechanical Sound, Vibration and Seismic Control	239110 – 4
	239210	Mechanical Testing, Adjusting Balancing	239210 – 3
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	260120	Electrical Submittals	260120 – 7
	261010	Raceway Systems and Supports	261010 – 11
	261020	Cable Trays for Low Voltage Systems	261020 – 2
	262010	Wires and Cables, 600V and Below	262010 – 2
	262020	Wiring Devices	262020 – 5
	262021	Safety and Disconnect Switches	262021 – 2
	262030	Lighting Fixtures	262030 – 4
	262042	Panelboards	262042 – 4
	262044	Separately Enclosed Circuit Breakers	262044 – 2
	262049	Surge Protection Devices (SPD)	262049 – 2
	262080	Electrical Grounding, 600V and Below	262080 – 5
	266010	Emergency Power System – Diesel	266010 – 6
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	312333	Trenching	312333 – 9
	313116	Termite Control	313116 – 4

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ATTACHMENT #4

BASE BID COST DETAIL FORM

The Architect will keep the detailed cost information confidential, and will use it only as reference information to confirm that each Proposer and Sub-Contractor are clear about the scope of the work. The Architect and the Architect's consultants expect to communicate with the Contractor and Sub-Contractors to examine the cost proposals in detail.

SECTION	SUBJECT	SUPPLIER OR SUBCONTRACTOR	COST
010000	General Conditions, Overhead & Profit		
012100	Allowances: 1. Owner's Contingency 2. Door Hardware 3. Stadium Chairs		\$100,000.00 \$ 30,000.00 \$ 9,000.00
015000	Temporary Facilities & Controls		
017419	Construction Waste Management and Disposal		
024119	Selective Structure Demolition		
033000	Cast-In-Place Concrete		
035100	Structural Precast Concrete – Plant Cast		
035216	Lightweight Insulating Concrete		
042000	Unit Masonry		
047200	Cast Stone Masonry		
051200	Structural Steel		
052200	Steel Joists		
053100	Steel Deck		
055000	Metal Fabrications		
055213	Pipe & Tube Railings		
057300	Decorative Metal Railings		
061053	Miscellaneous Rough Carpentry		
064020	Solid Surfacing Lavatories & Tops & Window Sills		
064113	Wood-Veneer-Faced Architectural Cabinets		
071113	Bituminous Dampproofing		

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SECTION	SUBJECT	SUPPLIER OR SUBCONTRACTOR	COST
071326	Self-Adhering Sheet Waterproofing		
072000	Spray Polyurethane Foam Insulation		
072600	Vapor Barrier / Retarder		
075200	Modified Bitumen Roofing		
076200	Sheet Metal Flashing and Trim		
077200	Roof Accessories		
078446	Fire-Resistive Joint Systems		
079200	Joint Sealants		
081113	Steel Doors and Frames		
081416	Flush Wood Doors		
083000	Specialty Doors & Frames – Fiberglass Construction		
083323	Overhead Coiling Fire Doors		
084113	Aluminum Framed Entrances & Storefronts		
084413	Glazed Aluminum Curtain Walls		
087100	Door Hardware		
088000	Glazing		
089000	Louvers and Vents		
092500	Gypsum Drywall		
093000	Tiling		
095113	Acoustical Panel Ceilings		
096510	Resilient Floor Tile		
096513	Resilient Base and Accessories		
096720	Resinous Flooring		
096813	Tile Carpeting		
099000	Interior, Exterior & Industrial Paints & Coatings		
101100	Visual Display Boards		
101400	Signs		
101419	Dimensional Letter Signage		
102800	Toilet and Bath Accessories		
104416	Fire Extinguishers & Cabinets		
107300	Aluminum Walkway Covers		
142400	Hydraulic Elevators		
220000	Plumbing		

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CIVIL DRAWINGS

C2.1 ENLARGED SITE PLAN
C3.1 ENLARGED GRADING AND DRAINAGE PLAN
C4.1 ENLARGED UTILITY PLAN

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ADDENDUM NO. 1

ADDENDUM NO. 1

ARCHITECTURAL DRAWINGS

A1.1 1/8" FLOOR PLANS – FIRST & SECOND FLOOR
A1.2 RATED PARTITION PLAN
A1.3 LIFE SAFETY NOTES
A1.4 ROOF PLAN
A2.1 1/4" FIRST FLOOR PLAN
A2.2 1/4" SECOND FLOOR PLAN
A2.3 FIRST FLOOR REFLECTED CEILING PLAN
A2.4 SECOND FLOOR REFLECTED CEILING PLAN
A3.1 FINISH SCHEDULE AND DETAILS
A3.2 DOOR SCHEDULE AND DETAILS
A3.3 DOOR SILL DETAILS
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A7.4 STAIR AND RAILINGS DETAILS
A7.5 STAIR AND RAILINGS DETAILS
A9.1 INTERIOR ELEVATIONS & MILLWORK DETAILS
A11.1 OVERHEAD COILING – ROLLING FIRE DOOR DETAILS

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- A11.2 MASONRY STANDARD DETAILS
- A13.1 FIRE RATING DETAILS
- A14.1 ROOFING DETAILS
- A14.2 ROOFING DETAILS
- A16.1 TOILET ROOM DETAILS
- A17.1 STANDARD DETAILS

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- S1.1 FOUNDATION PLAN
- S1.2 SECOND FLOOR FRAMING PLAN
- S1.3 ROOF FRAMING PLAN
- S2.0 FOUNDATION SECTIONS
- S3.0 FRAMING SECTIONS
- S3.1 FRAMING SECTIONS
- S3.2 FRAMING SECTIONS
- S4.0 COLUMN AND FOUNDATION SCHEDULE
- S5.0 TYPICAL DETAILS
- S5.1 TYPICAL DETAILS
- S5.2 TYPICAL DETAILS

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- P1.0 DRAINAGE & VENT PLAN – FIRST FLOOR
- P1.1 DRAINAGE & VENT PLAN – SECOND FLOOR
- P2.0 HOT & COLD WATER PLAN – FIRST FLOOR
- P2.1 HOT & COLD WATER PLAN – SECOND FLOOR

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- M0.1 MECHANICAL LEGEND & SCHEDULES
- M1.0 MECHANICAL PLAN – FIRST FLOOR
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ELECTRICAL DRAWINGS

- E0.1 ELECTRICAL LEGEND AND ONE-LINE
- E1.0 LIGHTING PLAN
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- E2.1 MECHANICAL POWER PLAN
- E3.0 FIRE ALARM PLAN
- E4.0 ELECTRICAL DETAILS
- E5.0 ELECTRICAL PANEL SCHEDULES

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SECTION 055000 – METAL FABRICATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Steel framing and supports for countertops.
2. Steel framing and supports for applications where framing and supports are not specified in other Sections.
3. Metal **ships' ladders**.
4. Miscellaneous steel trim including
5. Metal bollards.
6. Abrasive metal **nosings**.
7. Loose bearing and leveling plates for applications where they are not specified in other Sections.
8. **Steel guard rail systems.**

B. Products furnished, but not installed, under this Section include the following:

1. Loose steel lintels.
2. Anchor bolts, steel pipe sleeves, slotted-channel inserts, and wedge-type inserts indicated to be cast into concrete or built into unit masonry.

1.2 COORDINATION

- 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 metal fabrications that are anchored to or that receive other work. 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.

1.3 ACTION SUBMITTALS

A. Product Data: For the following:

1. Nonslip aggregates and nonslip-aggregate surface finishes.
2. Prefabricated building columns.
3. Metal nosings and treads.
4. Paint products.
5. Grout.

- B. Shop Drawings: Show fabrication and installation details. **Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items.** Provide Shop Drawings for the following:
1. Steel framing and supports for countertops.
 2. Steel framing and supports for applications where framing and supports are not specified in other Sections.
 3. Shelf angles.
 4. Metal **ships' ladders**.
 5. Miscellaneous steel trim including **steel edgings**.
 6. Metal bollards.
 7. Abrasive metal **nosings**.
 8. Loose steel lintels.
- C. Delegated-Design Submittal: For ships' ladders, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.4 MOCK UPS

- A. Install one section of sloped steel guard rail with welded wire mesh insert at the location selected with Architect for review and approval prior to fabricating remainder of guard rail system.

1.5 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel according to the following:
1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
 2. AWS D1.2/D1.2M, "Structural Welding Code - Aluminum."
 3. AWS D1.6/D1.6M, "Structural Welding Code - Stainless Steel."

1.6 FIELD CONDITIONS

- A. Field Measurements: Verify actual locations of walls and other construction contiguous with metal fabrications by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer to design ships' **ladders**.
- B. Structural Performance of Aluminum Ladders: Aluminum ladders, **including landings**, shall withstand the effects of loads and stresses within limits and under conditions specified in ANSI A14.3.

- C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on exterior metal fabrications by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects.

1. Temperature Change: **120 deg F (67 deg C), ambient; material surfaces.**

2.2 METALS

- A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.
- B. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- C. Stainless-Steel Sheet, Strip, and Plate: ASTM A 240/A 240M or ASTM A 666, **Type 304.**
- D. Stainless-Steel Bars and Shapes: ASTM A 276, **Type 304.**
- E. Aluminum Plate and Sheet: ASTM B 209 (ASTM B 209M), Alloy 6061-T6.
- F. Aluminum Extrusions: ASTM B 221 (ASTM B 221M), Alloy 6063-T6.
- G. Aluminum-Alloy Rolled Tread Plate: ASTM B 632/B 632M, Alloy 6061-T6.
- H. Aluminum Castings: ASTM B 26/B 26M, Alloy 443.0-F.

2.3 FASTENERS

- A. General: Unless otherwise indicated, provide **Type 304** stainless-steel fasteners for exterior use and zinc-plated fasteners with coating complying with ASTM B 633 or ASTM F 1941 (ASTM F 1941M), Class Fe/Zn 5, at exterior walls. Select fasteners for type, grade, and class required.
1. Provide stainless-steel fasteners for fastening aluminum.
2. Provide stainless-steel fasteners for fastening stainless steel.
3. Provide stainless-steel fasteners for fastening nickel silver.
4. Provide bronze fasteners for fastening bronze.
- B. Steel Bolts and Nuts: Regular hexagon-head bolts, ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with hex nuts, ASTM A 563 (ASTM A 563M); and, where indicated, flat washers.
- C. Stainless-Steel Bolts and Nuts: Regular hexagon-head annealed stainless-steel bolts, ASTM F 593 (ASTM F 738M); with hex nuts, ASTM F 594 (ASTM F 836M); and, where indicated, flat washers; Alloy **Group 1 (A1).**
- D. Anchor Bolts: ASTM F 1554, Grade 36, of dimensions indicated; with nuts, ASTM A 563 (ASTM A 563M); and, where indicated, flat washers.

1. Hot-dip galvanize or provide mechanically deposited, zinc coating where item being fastened is indicated to be galvanized.
- E. Anchors, General: 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/E 488M, conducted by a qualified independent testing agency.
- F. Cast-in-Place Anchors in Concrete: Either threaded type or wedge type unless otherwise indicated; galvanized ferrous castings, either ASTM A 47/A 47M malleable iron or ASTM A 27/A 27M cast steel. Provide bolts, washers, and shims as needed, all hot-dip galvanized per ASTM F 2329.
- G. Post-Installed Anchors: **Torque-controlled expansion anchors or chemical anchors.**
 1. Material for Interior Locations: Carbon-steel components zinc plated to comply with ASTM B 633 or ASTM F 1941 (ASTM F 1941M), Class Fe/Zn 5, unless otherwise indicated.
 2. Material for Exterior Locations and Where Stainless Steel Is Indicated: Alloy [**Group 1 (A1)**] [**Group 2 (A4)**] stainless-steel bolts, ASTM F 593 (ASTM F 738M), and nuts, ASTM F 594 (ASTM F 836M).

2.4 MISCELLANEOUS MATERIALS

- A. Shop Primers: Provide primers that comply with painting specifications.
- B. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.
- C. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187/D 1187M.
- D. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107/C 1107M. Provide grout specifically recommended by manufacturer for interior and exterior applications.
- E. Concrete: Comply with requirements in Section 033000 "Cast-in-Place Concrete" for normal-weight, air-entrained, concrete with a minimum 28-day compressive strength of 3000 psi (20 MPa).

2.5 FABRICATION, GENERAL

- A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.
- B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch (1 mm) unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

- C. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- D. Form exposed work with accurate angles and surfaces and straight edges.
- E. 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 exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing **and contour of welded surface matches that of adjacent surface.**
- F. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) fasteners unless otherwise indicated. Locate joints where least conspicuous.
- G. Fabricate seams and other connections that are exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
- H. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.
- I. Provide for anchorage of type indicated; coordinate with supporting structure. Space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.
- J. Where units are indicated to be cast into concrete or built into masonry, equip with integrally welded steel strap anchors, 1/8 by 1-1/2 inches (3.2 by 38 mm), with a minimum 6-inch (150-mm) embedment and 2-inch (50-mm) hook, not less than 8 inches (200 mm) from ends and corners of units and 24 inches (600 mm) o.c., unless otherwise indicated.

2.6 MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Provide steel framing and supports not specified in other Sections as needed to complete the Work.
- B. Fabricate units from steel shapes, plates, and bars of welded construction unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction.
 - 1. Furnish inserts for units installed after concrete is placed.
- C. Galvanize miscellaneous framing and supports.

2.7 METAL SHIPS' LADDERS

- A. Provide metal **ships' ladders** where indicated. Fabricate of open-type construction with channel or plate stringers and pipe and tube railings unless otherwise indicated. Provide brackets and fittings for installation.
1. Treads shall be not less than 5 inches (127 mm) exclusive of nosing or less than 8-1/2 inches (216 mm) including the nosing, and riser height shall be not more than 9-1/2 inches (241 mm).
 2. Fabricate **ships' ladders**, including railings from **aluminum**.
 3. Fabricate treads **and platforms rolled-aluminum-alloy tread plate**.
 4. Comply with applicable railing requirements in Section 055213 "Pipe and Tube Railings."
 5. Provide ship's ladders manufactured by one of the following:
 - a. Precision Ladders, LLC
 - b. ALACO Ladder Company
 - c. FS Industries

2.8 MISCELLANEOUS STEEL TRIM

- A. Unless otherwise indicated, fabricate units from steel shapes, plates, and bars of profiles shown with continuously welded joints and smooth exposed edges. Miter corners and use concealed field splices where possible.
- B. Provide cutouts, fittings, and anchorages as needed to coordinate assembly and installation with other work.
1. Provide with integrally welded steel strap anchors for embedding in concrete or masonry construction.
- C. Galvanize **and prime** miscellaneous steel trim.

2.9 METAL BOLLARDS

- A. Fabricate metal bollards from **Schedule 40 steel pipe**.
1. Cap bollards with 1/4-inch- (6.4-mm-) thick steel plate.
 2. Where bollards are indicated to receive controls for door operators, provide cutouts for controls and holes for wire.
 3. Where bollards are indicated to receive light fixtures, provide cutouts for fixtures and holes for wire.
- B. Prime bollards with **zinc-rich primer**.

2.10 ABRASIVE METAL NOSINGS

- A. Cast-Metal Units: Cast **aluminum**, with an integral-abrasive, as-cast finish consisting of aluminum oxide, silicon carbide, or a combination of both. Fabricate units in lengths necessary to accurately fit openings or conditions.
 - 1. Manufacturers: Subject to compliance with requirements:
 - a. American Safety Tread Co., Inc.
 - b. Balco, Inc.
 - c. Barry Pattern & Foundry Co., Inc.
 - d. Granite State Casting Co.
 - e. Safe-T-Metal Company, Inc.
 - f. Wooster Products Inc.
 - 2. Nosings: Cross-hatched units, 4" wide with 1" lip, for casting into concrete.

2.11 LOOSE BEARING AND LEVELING PLATES

- A. Provide loose bearing and leveling plates for steel items bearing on masonry or concrete construction. Drill plates to receive anchor bolts and for grouting.
- B. Galvanize plates.
- C. Prime plates with **zinc-rich primer**.

2.12 LOOSE STEEL LINTELS

- A. Fabricate loose steel lintels from steel angles and shapes of size indicated for openings and recesses in masonry walls and partitions at locations indicated. Fabricate in single lengths for each opening unless otherwise indicated. Weld adjoining members together to form a single unit where indicated.
- B. Size loose lintels to provide bearing length at each side of openings equal to 1/12 of clear span, but not less than 8 inches (200 mm) unless otherwise indicated.
- C. Galvanize **and prime** loose steel lintels located in exterior walls.
- D. Prime loose steel lintels located in exterior walls with **zinc-rich primer**.

2.13 STEEL WELD PLATES AND ANGLES

- A. Provide steel weld plates and angles not specified in other Sections, for items supported from concrete construction as needed to complete the Work. Provide each unit with no fewer than two integrally welded steel strap anchors for embedding in concrete.

2.14 STEEL GUARD RAIL SYSTEMS

- A. Assemble railings with non-welded connections.
- B. Secure railing brackets to concrete and solid anchorage by using drilled in expansion shields and hanger or lag bolts.

2.15 FINISHES, GENERAL

- A. Finish metal fabrications after assembly.
- B. Finish exposed surfaces to remove tool and die marks and stretch lines, and to blend into surrounding surface.

2.16 STEEL AND IRON FINISHES

- A. Galvanizing: Hot-dip galvanize items as indicated to comply with ASTM A 153/A 153M for steel and iron hardware and with ASTM A 123/A 123M for other steel and iron products.
 - 1. Do not quench or apply post galvanizing treatments that might interfere with paint adhesion.
- B. Preparation for Shop Priming Galvanized Items: After galvanizing, thoroughly clean railings of grease, dirt, oil, flux, and other foreign matter, and treat with metallic phosphate process.
- C. Shop prime iron and steel items unless they are to be embedded in concrete, sprayed-on fireproofing, or masonry, or unless otherwise indicated.
- D. Preparation for Shop Priming: Prepare surfaces to comply with **requirements indicated below:**
 - 1. Exterior Items: SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
 - 2. Items Indicated to Receive Zinc-Rich Primer: SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
 - 3. Items Indicated to Receive Primers Specified in Section 099600 "High-Performance Coatings": SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
 - 4. Other Items: SSPC-SP 3, "Power Tool Cleaning."
- E. Shop Priming: Apply shop primer to comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.
 - 1. Stripe paint corners, crevices, bolts, welds, and sharp edges.

2.17 ALUMINUM FINISHES

- A. As-Fabricated Finish: AA-M12.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.
- C. 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 no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- D. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag screws, wood screws, and other connectors.
- E. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.
- F. Corrosion Protection: Coat concealed surfaces of aluminum that come into contact with grout, concrete, masonry, wood, or dissimilar metals with the following:
 - 1. Cast Aluminum: Heavy coat of bituminous paint.
 - 2. Extruded Aluminum: Two coats of clear lacquer.

3.2 INSTALLING MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Install framing and supports to comply with requirements of items being supported, including manufacturers' written instructions and requirements indicated on Shop Drawings.

3.3 INSTALLING METAL BOLLARDS

- A. Anchor bollards in place with concrete footings. Center and align bollards in holes 3 inches (75 mm) above bottom of excavation. Place concrete and vibrate or tamp for consolidation. Support and brace bollards in position until concrete has cured.
- B. Fill bollards solidly with concrete, mounding top surface to shed water.
 - 1. Do not fill removable bollards with concrete.

3.4 INSTALLING NOSINGS, TREADS, AND THRESHOLDS

- A. Center nosings on tread widths unless otherwise indicated.
- B. For nosings embedded in concrete steps or curbs, align nosings flush with riser faces and level with tread surfaces.
- C. Seal thresholds exposed to exterior with elastomeric sealant complying with Section 079200 "Joint Sealants" to provide a watertight installation.

3.5 INSTALLING CAST-IRON WHEEL GUARDS

- A. Anchor wheel guards to concrete or masonry construction to comply with manufacturer's written instructions. Fill cores solidly with concrete.

3.6 INSTALLING BEARING AND LEVELING PLATES

- A. Clean concrete and masonry bearing surfaces of bond-reducing materials, and roughen to improve bond to surfaces. Clean bottom surface of plates.
- B. Set bearing and leveling plates on wedges, shims, or leveling nuts. After bearing members have been positioned and plumbed, tighten anchor bolts. Do not remove wedges or shims but, if protruding, cut off flush with edge of bearing plate before packing with nonshrink grout. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.

3.7 ADJUSTING AND CLEANING

- A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
 - 1. Apply by brush or spray to provide a minimum 2.0-mil (0.05-mm) dry film thickness.
- B. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint are specified in painting.

- C. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780/A 780M.

END OF SECTION 055000

SECTION 101419 – DIMENSIONAL LETTER SIGNAGE

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Cast dimensional characters.
 2. Cutout dimensional characters.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For signs.
1. Include fabrication and installation details and attachments to other work.
 2. Show sign mounting heights, locations of supplementary supports to be provided by other installers, and accessories.
 3. Show message list, typestyles, graphic elements, and layout for each sign.
- C. Samples for Initial Selection: For each type of sign assembly, exposed component, and exposed finish.
1. Include representative Samples of available typestyles and graphic symbols.
- D. Samples for Verification: For each type of sign assembly showing all components and with the required finish(es), in manufacturer's standard size unless otherwise indicated and as follows:
1. Dimensional Characters: **Full-size Sample letter.**

1.3 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For **manufacturer.**

PART 2 - PRODUCTS

2.1 DIMENSIONAL CHARACTERS

- A. Cast Characters: Characters with uniform faces, sharp corners, and precisely formed lines and profiles, and as follows:
1. Character Material: Cast **aluminum.**
 2. Character Height: 8".

3. Thickness: ½”.
4. Finishes:
 - a. Integral Aluminum Finish: **Clear anodized.**
5. Mounting: **Concealed studs.**
6. Typeface: **Times Bold (is letter style), all caps, flat face.**

2.2 DIMENSIONAL CHARACTER MATERIALS

- A. Aluminum Castings: ASTM B 26/B 26M, alloy and temper recommended by sign manufacturer for casting process used and for type of use and finish indicated.

2.3 ACCESSORIES

- A. Fasteners and Anchors: Manufacturer's standard as required for secure anchorage of signs, noncorrosive and compatible with each material joined, and complying with the following:
 1. Use concealed fasteners and anchors.
 2. For exterior exposure, furnish **stainless-steel.**
 3. Exposed Metal-Fastener Components, General:
 - a. Fabricated from same basic metal and finish of fastened metal unless otherwise indicated.

2.4 FABRICATION

- A. General: Provide manufacturer's standard sign assemblies according to requirements indicated.
 1. Provide rabbets, lugs, and tabs necessary to assemble components and to attach to existing work. Drill and tap for required fasteners. Use concealed fasteners where possible; use exposed fasteners that match sign finish.
 2. Castings: Fabricate castings free of warp, cracks, blowholes, pits, scale, sand holes, and other defects that impair appearance or strength. Grind, wire brush, sandblast, and buff castings to remove seams, gate marks, casting flash, and other casting marks before finishing.

2.5 GENERAL FINISH REQUIREMENTS

- A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

- C. Directional Finishes: Run grain with long dimension of each piece and perpendicular to long dimension of finished trim or border surface unless otherwise indicated.
- D. Organic, Anodic, and Chemically Produced Finishes: Apply to formed metal after fabrication but before applying contrasting polished finishes on raised features unless otherwise indicated.

2.6 ALUMINUM FINISHES

- A. Clear Anodic Finish: AAMA 611, **Class I, 0.018 mm** or thicker.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.
- B. Verify that sign-support surfaces are within tolerances to accommodate signs without gaps or irregularities between backs of signs and support surfaces unless otherwise indicated.
- C. Verify that electrical service is correctly sized and located to accommodate signs.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General: Install signs using mounting methods indicated and according to manufacturer's written instructions.
 - 1. Install signs level, plumb, true to line, and at locations and heights indicated, with sign surfaces free of distortion and other defects in appearance.
 - 2. Before installation, verify that sign surfaces are clean and free of materials or debris that would impair installation.
 - 3. Corrosion Protection: Coat concealed surfaces of exterior aluminum in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.
- B. Mounting Methods:
 - 1. Concealed Studs: Using a template, drill holes in substrate aligning with studs on back of sign. Remove loose debris from hole and substrate surface.
 - a. Masonry Substrates: Fill holes with adhesive. Leave recess space in hole for displaced adhesive. Place sign in position and push until flush to surface, embedding studs in holes. Temporarily support sign in position until adhesive fully sets.
 - 2. Adhesive: Clean bond-breaking materials from substrate surface and remove loose debris. Apply linear beads or spots of adhesive symmetrically to back of sign and of

suitable quantity to support weight of sign after cure without slippage. Keep adhesive away from edges to prevent adhesive extrusion as sign is applied and to prevent visibility of cured adhesive at sign edges. Place sign in position, and push to engage adhesive. Temporarily support sign in position until adhesive fully sets.

3.3 ADJUSTING AND CLEANING

- A. Remove and replace damaged or deformed characters and signs that do not comply with specified requirements. Replace characters with damaged or deteriorated finishes or components that cannot be successfully repaired by finish touchup or similar minor repair procedures.
- B. Remove temporary protective coverings and strippable films as signs are installed.
- C. On completion of installation, clean exposed surfaces of signs according to manufacturer's written instructions, and touch up minor nicks and abrasions in finish. Maintain signs in a clean condition during construction and protect from damage until acceptance by Owner.

END OF SECTION 101419

SECTION 230220 – MECHANICAL SUBMITTALS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General and Special Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUBMITTAL FORMS AND PROCEDURES:

- A. The purpose of submittals is to demonstrate to the Architect/Engineer that the Contractor understands the design concept. The Architect/Engineer's review of such drawings, schedules, or cuts shall not relieve the Contractor from responsibility for deviation from drawings or specifications unless he has, in writing, called the Architect/Engineer's attention to such deviations at the time of submission, and has received from the Architect/Engineer, in writing, permission for such deviations. All submittals must be completely checked by the Contractor prior to submission for review.
- B. Hard Copy Submittals: Submittal data shall be placed in one or more hard-back 3-ring binders, arranged and labeled according to specification section. Each binder shall contain a title page and table of contents. Provide separator tabs, and label by specification section. Make note in the table of contents, any drawings that accompany the submittal. Title page shall contain Project Name, Contractor's Name, Division 23 Superintendent's name, Suppliers and point of contact for each, and date. Except as otherwise indicated in other sections, submit 5 complete copies. Quantity indicated does not include copies required for regulatory agencies.
- C. Electronic Submittals: If the Architect agrees to allow electronic submittals via an on-line information management product such as "Submittal Exchange," etc., all electronic submittal files shall be organized to match the bid documents for specification section and name. Each submittal file shall be complete for each specification section. Multiple partial submittals per specification section will be rejected. Make note in the table of contents, any drawings that accompany the submittal. Title page shall contain Project Name, Contractor's Name, Division 23 Superintendent's name, Suppliers and point of contact for each, and date.
- D. Submittals shall be made for all items contained in the Mechanical Submittal List in PART 3 - EXECUTION.
- E. Response to Submittals: A Mechanical Submittal Review Report shall be issued by the Engineer with the following classifications for each item:
 - 1. **"No Exceptions Taken"**: No corrections, no marks. Contractor shall submit copies for distribution.
 - 2. **"Make Corrections Noted"**: A few minor corrections. Items may be ordered as marked up without further resubmission. Submit copies for distribution.
 - 3. **"Revise and Resubmit"**: Minor corrections. Item may be ordered at the Contractor's option. Contractor shall resubmit drawings with corrections noted.

4. **"Rejected"**: Major corrections or not in accordance with the contract documents. No items shall be ordered. Contractor shall correct and resubmit drawings.

PART 2 – PRODUCTS

2.1 SUBMITTAL REQUIREMENTS:

- A. General: Each specification section shall list the required submittal items. All submittal items shall conform to the requirements listed below. For each major section of submittal data, include a summary page which lists items and model numbers for each piece of equipment.
- B. Manufacturer's Data: Where pre-printed data is submitted for more than one distinct product, size, type, material, trim, accessory group or other variation, mark submitted copy with black pen to indicate which of the variations is to be provided. Delete or mark-out significant portions of preprinted data which are not applicable. Where operating ranges are shown, mark data to show portion of range required for project application. Expansion or elaboration of standard data to describe a non-standard product must be processed as a shop drawing submittal. For each product include the manufacturer's production specifications, installation or fabrication instructions, nearest source of supply (including telephone number), sizes, weights, speeds, operating capacities, piping and service line connection sizes and locations, statements of compliance with required standards and governing regulation (include manufacturer's signed statements if not covered in printed data), performance data (where applicable) and similar information needed to confirm compliance with the requirements.

PART 3 – EXECUTION

3.1 MECHANICAL SUBMITTAL LIST:

23 0210 – Mechanical Coordination:

Mechanical Coordination Plans.

23 0230 – Mechanical Identification:

Engraved Nameplates.

23 0240 – Mechanical Work Closeout:

Record Plans.
Maintenance Manuals.
Mechanical TAB Report.

23 2110 – Ductwork:

Duct Construction Standards.
Galvanized Steel Ducts.
Flexible Ducts.

Flexible Connectors.
Balancing Dampers.
Round Takeoff Fittings.
Rectangular Takeoff Fittings.
Fire Dampers.
Access Doors.
Duct Wrap Type 'A'.
Duct Wrap Type 'B'.
Duct Liner Type 'A'.
Duct Liner Type 'B'.
Duct Board.
Duct Insulation Accessories.
Duct Insulation Compounds.
Duct Sealant.

23 2210 – Air Distribution:

All devices in AIR DISTRIBUTION SCHEDULE and/or plans and/or specifications.

23 2310 – Fans:

All equipment in FAN SCHEDULE and/or plans and/or specifications.

23 3110 – Electric Heaters:

All equipment in ELECTRIC HEATER SCHEDULE and/or plans and/or specifications.

23 4320 – Air Treatment Systems:

All equipment in noted in equipment schedules and/or plans and/or specifications.

23 5310 – Air Conditioners:

All equipment in AIR CONDITIONER SCHEDULES and/or plans and/or specifications.

23 6110 – Heat Pumps:

All equipment in HEAT PUMP SCHEDULES and/or plans and/or specifications.

23 9110 – Mechanical Sound, Vibration, Wind, and Seismic:

Wind Calculations for all roof mounted equipment.
All equipment in plans and/or specifications.

23 9210 – Mechanical TAB (Test, Adjust, Balance):

Qualifications package.

END OF SECTION 230220