

**SECTION 10 14 00
EXTERIOR SIGNAGE**

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section specifies the work required to furnish and install the indicated and specified exterior cemetery site signage systems, including, but not limited to, sign panels, posts, mow strips, and all appurtenant work required to complete the fully functional signage as indicated and/or specified.
- B. Signs shall be products of manufacturers regularly engaged in manufacturing signs of types specified.
- C. Signs included are as follows:
 - 1. Information/Regulation
 - 2. Traffic Regulatory
 - a. Low Profile
 - b. Tall
 - 3. Flower Watering Station Signs
 - 4. Standard Granite Section Marker

1.2 RELATED WORK

- A. Post Setting Excavation, Material, Backfill, Section 31 20 00, EARTH MOVING.
- B. Concrete Bases for posts: Section 32 05 23 CONCRETE FOR EXTERIOR IMPROVEMENTS
- C. Flower Watering Station piping, appurtenances and mounting: Section 32 30 00 SITE FURNISHINGS.

1.3 MANUFACTURER'S QUALIFICATIONS

- A. Sign manufacturer shall regularly and presently manufacture signs similar to those specified as one of their principal products. Sign manufacturer shall submit qualifications demonstrating a minimum of three years of experience manufacturing the qualifying signs and shall, if possible, demonstrate the successful manufacturing of exterior site signs installed at one or more State or National Veteran Cemeteries.

1.4 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Samples: Submit 3 sets. One set to the Contractor, one set to the Contracting Officer/Contracting Officer's Representative (CO/COR) and one set to the A/E Designer. The Contractor shall provide submittal documents that indicate each of the sign types, mounting types and materials to be used for the various combinations to be used for this project.

Submittal materials shall indicate the location(s) for the various sign types including their mounting. Submittals shall include samples of:

1. Cast Metal Letter, of the style, size and finish indicated
 2. Color samples of each color, 6 inches x 6 inches. Show anticipated range of color and texture.
 3. Sample of typeface, arrow and symbols in a typical full size layout.
- C. Shop Drawings: All signs showing material, finish, colors, size of members, details of construction, letter spacing, size and type, numbers, symbols or image details, and mounting details. Identify materials, show joints, welds, anchorage, accessory items, mounting and finishes. The details of construction shall clearly show how the sign is to be disassembled to replace the entire sign or just one side panel, where applicable.
- D. Full size layout in full color of the Sign Panels.
- E. Manufacturer's Literature and Data (Mark literature to indicate items proposed to be furnished): Signs, each type. Manufacturer's printed specifications, anchorage details, installation and maintenance instructions. Manufacturer's recommendations for mounting the Sign Panels shall be provided.
- F. Manufacturer's Certificates: Provide certification from the coating installer, indicating exactly what they did to prepared the aluminum as and applied the coating(s) to the specified thickness(es). The certification shall indicate that the coating has been installed according to specific and identified contract specifications and/or approved submittal materials so it is absolutely clear what was done. As an example, the coating thickness should be shown to be in accordance with Paragraph 2.1.A.1.f.2).
- G. Sample(s) shall be submitted of sign(s) of sufficient size to show the full scaled features of each of the sign types, including frame, mounting, panels, panel mounting, sign mounting facilities, lettering, color and texture. All aluminum signs shall have full exterior Powder Coated finish, with color and quality as specified herein.

1.5 DELIVERY AND STORAGE

- A. Package to prevent damage or deterioration during shipment, handling, storage and installation. Maintain protective covering in place and in good repair until removal is necessary.
- B. Deliver signs to their field locations only when the site, mounting materials, and equipment are ready for installation work to proceed.
- C. Store products in dry condition inside enclosed facilities until they are ready for installation as in B above.

1.6 WARRANTY

- A. Sign Manufacturer shall guarantee the text and symbols applied to the powder coated aluminum for an extended warranty period of five years following final acceptance of the

project. A warranty inspection shall be performed no later than one year following project final acceptance and the Contractor shall be responsible for removing and replacing any text and/or symbols identified, during the inspection, that have started to fade, chip, peel or otherwise fail. The Contractor shall remove and replace any sign panel faces with new, where the applied lettering, or the paint system itself, is causing damage to, or failure of, the paint system. All work to produce replacement sign panels with new lettering and/or paint system shall be provided at no cost to the Government, as part of the Warranty work for the signage system.

1.7 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in text by the basic designation only. Comply with applicable provisions and recommendations of the following, except as otherwise shown or specified.
- B. Americans with Disabilities Act - 1990, as amended and in effect as of 01-01-2009
- C. Federal Highway Administration:
Manuals on Uniform Traffic Control Devices for Street and Highways -
Single Post Traffic Regulatory Signs.
- D. American Society for Testing and Materials (ASTM):
 - B209-10 Aluminum and Aluminum-Alloy Sheet and Plate
 - B221-12 Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes and Tubes.
 - B449-93(2010)e1 Standard Specification for Chromates on Aluminum
- E. American Architectural Manufacturer's Association (AAMA):
 - AAMA 2605-05 Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum extrusions and Panels.
- F. Federal Specifications (Fed. Spec.):
 - MIL-P-8184F Plastic Sheet, Acrylic, Modified.
 - A-A-59502 Plastic Sheet, Polycarbonate

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Aluminum, Extruded: Fed. Spec. QQA-200-9, alloy 6063-T5, applicable as material.
- B. Aluminum, Sheet and Plate: ASTM B209
- C. Aluminum, Extrusions and Tubing: ASTM B221
- D. Zinc Chromate Primer: Fed. Spec. TT-P-645.

2.2 SIGNAGE GENERAL

- A. Signs shall be of type, size and design shown on the drawings and as specified.

- B. Signs shall be complete with lettering, framing, and related components for a complete sign installation.
- C. Provide graphics items as completed units produced by a single manufacturer, including necessary mounting accessories, fittings and fastenings.
- D. Do not scale drawings for dimensions. Verify all dimensions and conditions shown by the drawings. CO/COR is to be notified of any discrepancy in drawing(s), in field directions or conditions, and/or of any changes required for any such related construction details.
- E. The Sign Contractor, by commencing work of this section, assumes overall responsibility, as part of his warranty of work, to assure that assemblies, components and parts shown or required within the work of the section, comply with the Contract Documents. The Sign Contractor shall warrant: That all components, specified or required to satisfactorily complete the installation are compatible with each other and with conditions of installations.

2.3 SIGN STANDARDS

- A. Typography:
 - 1. Type Style: Arial Bold. Initial caps or and lower case as indicated in Site Signage Plan, unless otherwise indicated. On the sign submittal, include sample lettering that is proposed for use in the project and identify what product is being submitted.
 - 2. Arrow: See graphic standards in drawings.
 - 3. Letter spacing: See graphic standards on drawings.
 - 4. All text, arrows, and symbols to be provided in size, colors, typefaces and letter spacing shown. Text shall be a true, clean, accurate reproduction of typeface(s) shown. Text shown in drawings are for layout purposes only. Text to be installed on specific signs shall be as submitted, reviewed and finally approved in shop drawings processed as submittal materials.
- B. Sign Colors and Finishes: As specified in this Specification Section and approved in the Shop Drawing & Submittal process.
 - 1. Aluminum sign system color scheme shall have the background color of sign panels and the aluminum posts as powder coated matching "Victor Stanley" bronze/dark-brown.

2.4 SIGNS TYPES

- A. General: The exterior sign system shall be comprised of sign type families that are derived from the 10 Types developed in Chapter 12 - National Cemetery Signs, of the VA Signage Design Guide (SDG). The sign designations used herein follow those in the SDG. An example sign designation, to identify what each of the elements is designated to represent is "NC-07.01 A - m1". "NC" Designates a National Cemetery sign. "07" the two digit numbers identify a particular sign type. "01" the two digit number following the period identifies a specific sign size within the sign type. "A" the letter designates a specific sign configuration, version and/or layout for graphics. "m1" the letter and number designates the post family and

style. "c1" denotes concrete family with square insert style; "c2" denotes concrete family with round insert style; "m1" denotes metal family with square style; and "m2" denotes metal family with rectangular style. All of the above is duplicated herein, originally from the graphical indications in the SDG. The basic sign designations for this project are indicated as follows:

1. NC-01 - Information/Regulations Signs, three size designations.
 2. NC-03 – Traffic Regulatory Signs, two size designations.
 3. Flower Watering Station Signs
 4. Granite Section Markers
- B. Location, layout and construction details for the all of the project exterior signs shall be found in the Construction Drawings. Refer to the signage details for the specific sign panel sizes, text and graphic sizes as well as the layout and content for the text and images for the respective individual signs.

2.5 TEXT AND GRAPHICS

- A. There are multiple Message Layout types for some of the different size signs within the same type of sign. See the drawing layout and detail drawings for the specifics of the locations for the signs, as well as the size, types, materials and messages for the individual signs for the project.
1. Surface applied letters, numbers and graphics shall be of a quality and life expectancy equal to or exceeding that for reflective white opaque Engineering Grade 3M™ Scotchlite™ vinyl, unless otherwise noted. Color shall match existing. Font Type Style shall be as indicated in Paragraph "SIGN STANDARDS" as approved during the submittal process.
- B. All text and graphics for the exterior signage shall be provided in detailed submittal information. Each sign face shall be represented in scaled drawings, with exact font, letter style, font, letter spacing, graphics being shown. Only signs and or sign faces approved in the submittal process shall be manufactured.

2.6 FABRICATION

- A. Design components to allow for expansion and contraction for a minimum material temperature range of 100 °F, without causing buckling, excessive opening of joints or over stressing of adhesives, welds and fasteners.
- B. Form work to required shapes and sizes, with true curve lines and angles. Provide necessary rebates, lugs and brackets for assembly of units. Use concealed fasteners whenever and wherever possible.
- C. Shop fabricate so far as practicable. Joints fastened flush to conceal reinforcement, or welded where thickness or section permits.

- D. Contact surfaces of connected members shall be true. Assemble so joints will be tight and practically unnoticeable, without use of filling compound.
- E. Signs shall have fine, even texture and be flat and sound. Lines and miters sharp, arises unbroken, profiles accurate and ornament true to pattern. Plane surfaces shall be smooth flat and without oil-canning, free of rack and twist. Maximum variation from true plane of surface shall be plus or minus 1/64 inch. Restore texture to filed or cut areas.
- F. Level or straighten wrought work. Members shall have sharp lines and angles and smooth surfaces.
- G. Extruded members to be free from extrusion marks. Members shall have square turns and corners sharp, and curves shall be true.
- H. Drill holes for bolts and screws. Conceal fastenings where possible. Exposed ends and edges mill smooth, with corners slightly rounded. Form joints exposed to weather to exclude water.
- I. All painted surfaces properly primed. Finish coating of paint to have complete coverage with no light or thin applications allowing substrate or primer to show. Finished surface smooth, free of scratches, gouges, drips, bubbles, thickness variations, peeling, foreign matter and other imperfections.
- J. Movable parts, including hardware, are to be cleaned and adjusted to operate as designed without binding or deformation of members. All contact surfaces fit tight and even without forcing or warping components.
- K. Pre-assemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for re-assembly and coordinated installation.
- L. Completed sign installations shall not have any exposed openings so insect nesting inside of signs will be prevented.
- M. No signs are to be manufactured until final sign message schedule and location review has been completed by the CO/COR & forwarded to contractor.
- N. Final sign fabrication shall not proceed until samples and shop drawings detailing the sign system as it will be installed, have been submitted and approved during the submittal process.

2.7 PROTECTION OF ALUMINUM

- A. Isolate aluminum in contact with or fastened to dissimilar metals other than stainless steel, white bronze or other metals compatible with aluminum by one of the following:
 - 1. Painting the dissimilar metal with a prime coat of zinc-chromate or other suitable primer, followed by two coats of aluminum paint.
 - 2. Placing an approved caulking compound, or a non-absorptive tape, or gasket between the aluminum and the dissimilar metal.

- B. Paint aluminum in contact with or built into mortar, concrete, or other masonry materials with bituminous paint or zinc chromate primer.

2.8 SINGLE-POST TRAFFIC REGULATORY SIGNS

- A. Signs shall be constructed of square tubular galvanized steel post with an aluminum plate sign panel.
- B. Sign panel shall be a 0.080" aluminum plate with surface applied reflective vinyl traffic regulatory decals. Panel, text & graphics shall comply with the Department of Transportation, Manual for Uniform Traffic Control Devices in color, shape, proportions, text and symbols. Panel shall mechanically fasten to support post with tamper resistant fasteners.
- C. Posts shall be a minimum thickness of 12 gauge finished as specified on the Drawing Detail(s).

2.9 GRANITE SECTION MARKERS

- A. Details for the Granite Section Markers are to be as indicated on the drawings and associated notes, and the intention is to match the existing.

2.10 FLOWER WATERING STATION SIGNS

- A. Flower Watering Station "Do Not Drink" signs are non-illuminated with text and symbols as indicated. The signs shall match the existing.

2.11 CONCRETE MOW COLLARS OR STRIPS

- A. Reinforced concrete mow collars shall be provided for all new single elements in this Specification Section, where they are to be located in lawn areas and are not connected to another adjoining element. For all elements that are connected to another adjoining element, like double post signs, provide a continuous reinforced concrete mow strip. The requirements for the collars and strips are as follows:
 - 1. Reinforced and free floating, concrete not in contact with the element.
 - a. As detailed on the drawings
 - b. Submitted and approved during the submittal process
 - c. Separated from the element with expansion joint material the full depth of the concrete.
 - d. Closed steel rebar, with overlap at joint, 2" minimum distance from surrounding earth.
 - e. Minimum #3 diameter rebar as enclosing the element or elements approximately 2" inside the perimeter of the concrete. On the strips, there shall be an additional bar in the middle between the elements that extends to within 2" from the closest parts of the adjoining elements.
 - f. Cast-in-place concrete shall be same as for other flatwork elements.
 - g. Construct the collars and/or strips to be 1" above finished grade at the junction with the lawn, and with a slope up toward the element(s) and or middle, for drainage, of 1/2" to 3/4".

2.12 TRAFFIC REGULATORY - TALL

- A. Sign faces shall be 1'-4" x 12" and shall be mounted so the bottom of message panel is 7'-0" above finished grade.
- B. The background color for the signs shall match existing be as indicated on the drawings.
- C. Text and graphics shall be white surface applied vinyl of same material used for the text on the other signs.
- D. The post for mounting the message panels shall be 4" square extruded aluminum with powder coating dark bronze, or as sized on the drawings, with the drawing size taking precedence.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Set work accurately, in alignment and where shown. Signs shall be plumb, level, free of rack and twist and set parallel or perpendicular as required to line and plane the surface.
- B. Signs shall be installed with direct burial of post into concrete as shown on Contract Drawings. Depth of posts shall be such that the bottom of the concrete surrounding the posts is at least below the frost, or as indicated in the drawings, whichever is the greater depth.
- C. Protect aluminum in contact with dissimilar metals or mortar as specified in Paragraph "PROTECTION OF ALUMINUM".
- D. Furnish setting drawings and instructions for installation of anchors and for the positioning of items having anchors or sleeves to be built into construction. Provide temporary bracing for such items until permanent anchors are set.
- E. Provide anchoring devices and fasteners as shown and as necessary for securing signs to construction as specified.
- F. Utilize approved layout template for the installation of the cast metal lettering on the entry wall. Pins shall be securely anchored as detailed. Face of all lettering shall be in a constant plane, while at the same time minimizing the distance between the back of the letters and the stone wall. Maintain a minimum gap as detailed between the back of the letter and the face of the stone wall.
- G. Verify that behind or beneath each sign location there are no utility lines, or other buried infrastructure elements, that will be affected by installation of signs. Any damage during installation of signs to utilities, or other buried infrastructure will be the sole responsibility of the Contractor to correct and repair.
- H. Furnish inserts and anchoring devices which must be set in concrete or other material for installation of signs. Provide setting drawings, templates, instructions and directions for installation of anchorage devices which may involve other trades.

- I. Furnish and install concrete collars and/or mow strips, with reinforcing to prevent cracking as well as expansion joints around the posts, or other elements of this section installed in the lawn areas, to allow for movement due to frost action. The mow strips shall be set so they are parallel to the finished grade around the sign posts, so mowers can drive around them without hitting the concrete, or going into a depression.
- J. Sign message panels shall be mounted using tamper-proof mechanical fasteners that are coated and colored to match the message panels.
- K. Install permanent caps on top of all aluminum posts.
- L. Mounting details and materials shall be provided as samples during the submittal process, and complete demonstration of all of the installation features, materials and methods shall be provided during the submittal process.

3.2 CLEANING

- A. After installation, all items shall be cleaned as recommended by the manufacturer and protected from damage until completion of the project.

3.3 PROTECTION

- A. Protect finished surfaces from damage during fabrication, erection and after completion of the work.

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