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## **PROJECT SIGNAGE**

### **PART I: GENERAL**

#### **1.1 GENERAL REQUIREMENTS**

- A. Requirements for furnishing, fabricating and installing non-reflectORIZED plywood project signs.
- B. Requirements for furnishing, fabricating and installing various interior and exterior aluminum and plastic signs.
- C. Installation of aluminum reflectORIZED street signage.
- D. Commemorative Plaques.

#### **1.2 PAYMENT AND MEASUREMENT**

- A. Unit Prices:
  - 1. Payment for Project Signs shall be per each sign, which shall be full compensation for sign blanks, fabrication of the sign, signposts, all mounting hardware, washing, cleaning, repairing, all incidentals needed to furnish, fabricate and erect sign, and removal of the sign.
  - 2. Payment for signage in buildings shall be on an allowance basis.
- B. Stipulated Price (Lump Sum):
  - 1. If Contract is Stipulated Price Contract, payment for Work in this Section is included in Total Stipulated Price.

#### **1.3 REFERENCES**

- A. APA – The Engineered Wood Association.
- B. ASTM – American Society for Testing and Materials.
  - 1. ASTM A 153 – Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
  - 2. ASTM A 307 – Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength.
  - 3. ASTM B 209 – Standard Specification for Aluminum and Aluminum Alloy Sheet and Plate.
  - 4. ASTM B 449 – Standard Specification for Chromates on Aluminum.
  - 5. ASTM B 695 – Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel.
  - 6. ASTM D 4956 – Standard Specification for Retroreflective Sheeting for Traffic Control.
- C. Canadian Council of Forest Industries (COFI).
- E. TxDOT – Texas Department of Transportation.
  - 1. Compliant Work Zone Traffic Control Devices (CWZTCD), latest edition.
  - 2. Department of Materials Specification DMS-7100 Plywood Sign Blanks.

3. Department of Materials Specification DMS-7110 Aluminum Sign Blanks.
  4. Department of Materials Specification DMS-8300 Sign Face Materials.
  5. Standard Specifications for Construction of Highways, Streets and Bridges Item 634 – Plywood signs (Type A).
  6. Standard Specifications for Construction of Highways, Streets and Bridges Item 636 – Aluminum Signs (Type A).
  7. Texas Manual on Uniform Traffic Control Devices (TMUTCD), Latest Edition.
- F. U.S. Product Standards PS – 1.

#### 1.4 SUBMITTALS

- A. Submit manufacturers' product data for following items for approval for each type of signage specified in this Section.
- B. Submit shop drawings and proofs for Interior and Exterior signage and Commemorative Plaque.
- C. Submit manufacturer's certification that all signage meets requirements in this Specification.

## PART II: PRODUCTS

### 2.1 PLYWOOD SIGN BLANKS

- A. Plywood signs shall conform to Item 634 of the "Texas Department of Transportation Standard Specifications for Construction of Highways, Streets and Bridges" ("TxDOT") and TxDOT Department of Materials Specification DMS-7100.
- B. Plywood blanks shall be five-eighths (5/8) inch thick. Plywood shall be smooth, weather-resistant, of one (1) piece construction and free of scarf or finger joints.
- C. Plywood shall bear legible grade markings of APA – The Engineered Wood Association or the Canadian Council of Forest Industries (COFI) and shall meet the following requirements:
  1. Use plywood that is natural in color or the color approved by the Project Manager.
  2. Classification of Species shall be a group one (1) species classification.
  3. Exposure Durability Classification shall be for exterior.
  4. Use Grade B or better for face and back veneers.
  5. Inner plies shall be:
    - a. Grade B jointed or
    - b. Grade C plugged jointed
  6. Inner ply gaps:
    - a. Do not exceed three-eighths (3/8) inch for any gaps between adjacent pieces of jointed inner ply and do not exceed three-sixteenths (3/16) inch for average of all

- gaps in a panel.
- b. Do not exceed four (4) core gaps and edge splits per eight (8) feet of cross-band layer.
- 7. Use overlay sheets on both sides of the plywood panel of high density material that meets or exceeds the latest revision of U.S. Product Standards PS – 1.
- 8. Plywood shall maintain a flatness that shall not deviate from a plane surface by more than two (2) inches.
- 9. Sign blanks shall be of one continuous piece of plywood and shall not be spliced.
- 10. Plywood blanks shall be used for Temporary or Construction Traffic Signage only.

## 2.2 ALUMINUM SIGN BLANKS

- A. Aluminum sheet or coil sign blanks shall meet all requirements of TxDOT Standards Specification Item 635, TxDOT DMS-7110 Aluminum Sign Blanks and ASTM B 209, Alloys 6061-T-6 or 5052-H38.
- B. Sign blanks made from sheet or coil shall be free of buckles, warps, dents, cockles, burrs and other defects and must be a plane surface. Sign blank thickness shall be eight-hundredths (0.08) inch.
- C. Treat all sign blanks fabricated from sheet and coil with a chromate chemical process resulting in a coating meeting the requirements of ASTM B 449, Class 2. The coating shall be light colored, tight and free from powdery residues.
- D. Manufacturer shall furnish mill test reports for aluminum sheet or coil which reflect the chemical and physical properties of the aluminum.

## 2.3 SIGN MOUNTING HARDWARE AND ADHESIVES

- A. All material for sign posts and mounting hardware shall be galvanized steel and be in compliance with ASTM A307, ASTM A153 and ASTM B695.
- B. Sign posts shall be galvanized steel two and three-eighths (2-3/8) inch outside diameter.
- C. Sign Post mounting shall be “Pos-Lok” or equal system consisting of sixteen (16) inch sleeve and removable wedge.
- D. Pipe and post clamp castings and miscellaneous fasteners shall be verified by manufacturer’s certifications stating that the material meets all applicable requirements.
- E. Interior signage shall either use fasteners or bond adhesive to fasten sign to the wall.
- F. Exterior signage and plaque shall have studs on back of signage and use either cement or bonding agent.

## 2.4 FACE MATERIALS

- A. All materials are to be certified by lot or shipment that material supplied meets requirements listed in this Specifications. Material shall also

comply with ASTM D4956 and TxDOT DMS 8300.

- B. Sign face materials shall be processed, applied and stored according to the manufacturer's recommendations. Sign face materials shall perform for a minimum of ten (10) years.
- C. The Project Manager shall reject any sign and/or face material for the following reasons:
  - 1. Cracks discernible with the unaided eye from the driver's position while in an outside lane at a distance of fifty (50) feet or greater from the sign;
  - 2. Peeling in excess of one-quarter (1/4) inch;
  - 3. Shrinkage in excess of one-eighth (1/8) inch total per forty-eight (48) inches of sheeting width
  - 4. Fading or loss of color to the extent that color fails to meet the requirements of ASTM D 4956 or TxDOT DMS 8300;
  - 5. In non-construction zone – loss of reflectivity to a level eighty (80) percent of the minimum values as specified in ASTM D 4956;
  - 6. In construction zone – loss of reflectivity to a level sixty (60) percent of the minimum values as specified in ASTM D 4956; or
  - 7. Consist of pressure activated material of diamond or prismatic vinyl.
- D. Any sign face that does not conform to this Section shall be rejected, and the Contractor shall replace it with no additional cost to the City.

## 2.5 INTERIOR BUILDING SIGNAGE

- A. All interior signs shall be made of intergraded photo-etched plastic, with letters either raised or etched. All interior signage shall be ADA compliant and shall include at the bottom of the sign Grade 2 Braille raised one-thirty-seconds (1/32) inch.

## 2.6 EXTERIOR BUILDING SIGNAGE

- A. Raised lettering and numbers on the exterior of buildings shall be of the type and size shown in the Drawings and approved by the Project Manager.
- B. Acceptable sign materials shall be one (1) of the following:
  - 1. Anodized Aluminum, satin finish.
    - a. Color shall be either clear satin or;
    - b. Medium Bronze or;
    - c. Dark Bronze
  - 2. Bronze finish
    - a. Color shall be either natural satin or;
    - b. Oxidized Bronze or;
    - c. Dark Oxidized
  - 3. Plastic or Acrylic
    - a. Color shall compliment the building finish and to be selected by the City.

## 2.7 PROJECT SIGN

- A. Projects signs shall use materials as stated in paragraphs 2.1 and 2.4. Signs using non-reflective facing shall be in conformance with the City's Sign Ordinance. Sign post shall be painted non-reflective white.
- B. Project sign shall have the following information:
  - 1. City of Friendswood Seal
  - 2. Words "City of Friendswood"
  - 3. Project Name
  - 4. Design Professional Name and address
  - 5. Contractor Name, address and phone number
  - 6. Name of Mayor, City Council and City Manager
  - 7. City contact information
- C. Proof shall be approved by the Project Manager before sign is made. If the Contractor has the sign made without the approval of the Project Manager, the Contractor shall replace at no additional cost to the City. See Figure 4.1 of this Section for typical project sign.

## 2.8 COMMEMORATIVE PLAQUE

- A. Commemorative plaques shall be made of either brass or bronze. Finish shall be either dark oxidized or light oxidized. Lettering shall have satin finish.
- B. Commemorative plaque shall be either eighteen (18) inches wide by twenty-four (24) inches tall, or twenty-four (24) inches wide by eighteen (18) inches tall.
- C. Commemorative plaque shall have the following information:
  - 1. City of Friendswood Seal
  - 2. Words "City of Friendswood"
  - 3. Project Name
  - 4. Name of Mayor, City Council and City Manager at the time that the Project was funded and approved for construction.
  - 5. Year the construction was completed.
  - 6. Optional emblem of Sponsor Department.

## 2.9 TEMPORARY SIGN POSTS

- A. Sign posts shall be either:
  - 1. Four (4) inch by four (4) inch Pressure Treated Lumber. Sign posts shall be painted non-reflective white. Timber post shall be used for temporary construction and temporary projects signs only, no exceptions.
  - 2. One and seven-eighths square galvanized metal tubing (SGMT), with seven-sixteenths (7/16) holes punched on one (1) inch centers. SGMT and mounting shall conform to the TxDOT Construction Work Zone Traffic Control Devices (CWTZTD). This sign post shall be used for temporary construction signs only, no exceptions.

- B. Posts shall be installed as specified in Paragraph 3.2.A.2.a or other method approved by the Project Manager.

## **PART III: EXECUTION**

### **3.1 GENERAL**

- A. Installation of signs shall be in compliance with current City of Friendswood Sign Ordinance.
- B. All signs shall be installed at the locations directed by the Project Manager.

### **3.2 TRAFFIC SIGNS**

- A. All traffic signs, whether permanent or temporary, and their installation shall be accordance with the latest edition of the “Texas Manual on Construction Traffic Control Devices” (TMUTCD), and “Construction Work Zone Traffic Control Devices” (CWZTCD).

#### **1. Permanent Signs**

- a. Permanent traffic sign posts mounting device shall be set a minimum of two (2) foot – six (6) inches in depth in a twelve (12) inch diameter hole filled with Class C concrete to within three (3) inches below finished grade.
- b. Mounting wedge shall extend two (2) inches above natural grade.
- c. Bottom of sign shall be a minimum of seven (7) feet above natural or finished grade or above top of curb/edge of pavement, whichever is higher.
- d. Side of sign closest to traffic shall be a minimum of two (2) feet from either back of curb or edge of pavement.

#### **2. Temporary Traffic Sign**

- a. Temporary construction posts shall be set a minimum of three (3) feet in depth in a twelve (12) inch diameter hole filled with either sand or natural ground which shall be compacted to ninety-five (95) percent density.
- b. Bottom of sign shall be a minimum of seven (7) feet above natural or finished grade or above top of curb/edge of pavement, whichever is higher.
- c. Side of sign closest to traffic shall be a minimum of two (2) feet from either back of curb or edge of pavement.
- d. Signs shall be maintained, cleaned and repaired as needed during the construction of the project.
- e. Signs shall be permitted and installed on the right-of-way where designated by the Project Manager or Traffic Control Plan.
- f. The signs shall become the property of the Contractor and shall be removed at the completion of the project.

**3.3 PROJECT SIGN**

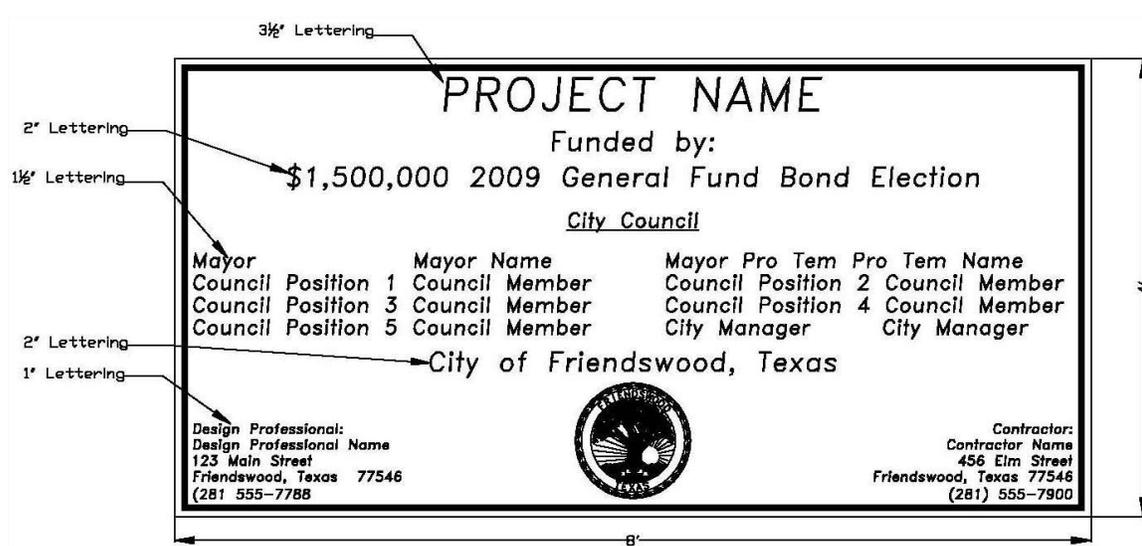
- A. project sign posts shall be set a minimum of three (3) feet in depth in a twelve (12) inch diameter hole filled with either sand or natural ground which shall be compacted to ninety-five (95) percent density.
- B. Project signs shall be mounted so that the top of the sign does not exceed eight (8) feet above natural ground.
- C. There shall be two (2) signs for street, drainage and utility improvements or one (1) sign for public facility projects.
- D. Signs shall be maintained, cleaned and repaired as needed during the construction of the project.
- E. Signs shall be permitted and installed on the right-of-way or the project site where designated by the Project Manager or Traffic Control Plan.
- F. The signs shall become the property of the Contractor and shall be removed at the completion of the project.

**3.4 INTERIOR AND EXTERIOR SIGNS AND COMMEMORATIVE PLAQUE.**

- A. Interior and exterior signs and Commemorative Plaque shall be installed in conformance with all specifications in this Section.
- B. All protective coatings or materials shall remain in place until facility is accepted.

**PART IV: FIGURES**

**4.1 TYPICAL PROJECT SIGN**



**END OF SECTION**