

**SECTION 627**  
**PERMANENT SIGNS**

**04DESCRIPTION**

**627.01.01 GENERAL**

- A. This work shall consist of furnishing, erecting, relocating, and installing signs, sign supports, and other materials required for highway signs in accordance with the current edition of the *Manual on Uniform Traffic Control Devices* (MUTCD) and these specifications, as shown on the plans, and as directed by the Engineer.
- B. This item does not include street name signs or construction signs used for traffic control during construction.
- C. The work shall generally consist of:
  - 1. Overhead signs, including concrete foundations, steel sign posts and frames, and aluminum sign panels with reflective sheeting.
  - 2. Ground mounted signs consisting of concrete foundations, steel sign posts, pole mounted signs, aluminum sign panels with reflective sheeting, and appurtenances.
- D. This work does not include sign illumination systems.

**627.01.02 SHOP DRAWINGS**

- A. When overhead sign structures are to be furnished, the Contractor shall submit to the Engineer 5 sets of shop drawings for each overhead sign structure for approval.
- B. Fabrication of the overhead sign structures shall not commence until the shop drawings have been approved by the Contracting Agency.
- C. Shop drawings for other than overhead signs will not be required; however, all signs shall conform to the plans and the MUTCD.
  - 1. For signs which are shown on the Sign Summary Sheets and are not included in the MUTCD, special sign design sheets shall be furnished by the Contracting Agency to the bidders of the project.
  - 2. The special design sheets shall include such information as letter heights, spacing between letters and words, borders, sign radii, and so forth.
  - 3. These signs shall conform to the special design sheets as well as the drawings noted in the plans.

**02MATERIALS**

**627.02.01 GENERAL**

- A. Materials shall conform to Section [716](#), "Sign Materials."

**627.02.02 REFLECTORIZATION**

- A. All signs shall utilize Class 6 Type XI retroreflective sheeting for sign background, letters, numerals, symbols, borders, and accessories.

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- B. All letters, numerals, symbols, borders, and accessories shall be directly applied to the sign background.

### **627.02.03 LETTERS, NUMERALS, SYMBOLS, AND ACCESSORIES FOR GUIDE SIGNS**

- A. All names of places and highways on guide signs shall be composed of lower case letters with initial capital letters.
  - 1. The initial capital letters shall be 1-1/3 times the loop height of the lower case letters.
  - 2. Other legends on guide signs shall be in capital letters.
- B. The initial capital letters and numerals used shall be Series E, modified by widening the stroke-width to approximately 1/5 the letter or numeral height.
- C. Tables of recommended letter spacing can be obtained from the FHWA.
- D. Arrows that are used for large directional guides shall be in direct proportion to the arrows shown in the MUTCD.

## **03 CONSTRUCTION**

### **627.03.01 PANEL FASTENINGS**

- A. The panel sections shall be provided with suitable fastenings, as shown on the plans, to permit easy attachment to the supporting frames.
  - 1. The fastenings shall be so designed as to carry the full design load with a factor of safety of not less than 1.5.
  - 2. Panel sections shall be provided with closure strips at the joints.
- B. Panel fastenings for use on sign panels covered with ~~Class 4 or Class 6 reflective sign~~ sheeting shall utilize nylon washers for contact between the ~~reflective~~ sheeting and the metal washer.

### **627.03.02 CLOSURE STRIPS**

- A. Closure strip shall be anchored by aluminum rivets as shown on the plans.
- B. Rivets shall be the same color as the sign face.
- C. Closure strips are required only on aluminum sign panels.

### **627.03.03 INSTALLATION**

- A. Sign locations indicated on the plans are approximate only. Final determination of sign locations will be made in the field by the Engineer.
- B. Signs and sign islands shall be constructed to the lines and grades given by the Engineer and in accordance with the design and locations shown on the plans.
- C. All signs shall be erected as specified before, during, or immediately after the completion of bituminous plantmix surface operations.
- D. The date of installation, consisting of month and year, shall be permanently stamped on the back of each sign with metal dies and shall be visible only on close inspection. The stamp shall be placed on the lower right hand corner when facing the rear of the sign.

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- E. Each sign face shall be thoroughly cleaned according to the reflective material manufacturer's recommendations.
  - 1. All undesirable material that is visible on the face of the sign shall be removed.
  - 2. The use of abrasives or other cleaning material that will scratch or otherwise deface the sign shall not be permitted.
- F. Sign islands shall be constructed as roadway embankment in conformity with Section [203](#), "Excavation and Embankment."
  - 1. Structure excavation and backfill shall conform to Section [206](#), "Structure Excavation," and Section [207](#), "Structure Backfill."
  - 2. Anchor bolts shall be set true to line and grade.
  - 3. Posts shall be plumb.
- G. Sign faces of all directional signs facing public traffic and directing such traffic to a portion of the project not yet open to public traffic shall have the message covered.
- H. Care shall be exercised at all times in the handling, storing, transporting, and erecting of the signs. Signs that are damaged shall be repaired or replaced at no additional cost to the Contracting Agency.
- I. Pipe sign posts may be field cut and drilled to adjust for local conditions when approved by the Engineer.
  - 1. Flame cutting will not be permitted.
  - 2. All field cuts and abraded areas on steel posts shall be thoroughly cleaned and given 2 coats of paint having a high-zinc dust content conforming to Federal Specification MIL-P-21035.
- J. Extending the lengths of sign posts to adjust for local conditions by splicing or welding will not be permitted.

**627.03.04 TESTS**

- A. The Contractor shall verify that all required tests have been made by qualified testing laboratories as approved by the Contracting Agency.
- B. The Contractor shall furnish the Contracting Agency with a written certification that all required tests have been satisfactorily completed and that materials and fabrication thereof comply with all the requirements.

**627.03.05 RELOCATION**

- A. This work shall consist of temporary or permanent relocation of existing permanent sign panels, posts, and footings as shown on the plans and as directed by the Engineer.
- B. Existing sign panels and posts that are removed for relocation shall be stockpiled on the jobsite at locations determined by the Engineer and shall remain the property of the Contracting Agency.
- C. The Contractor shall remove and dispose of all concrete from sign posts prior to stockpiling as directed by the Engineer.
- D. Temporary relocation of permanent sign panels for public bus or transit stops shall be as indicated on the plans or as directed by the Engineer. Temporary locations for public bus or transit stops shall conform to Subsection [107.07](#), "Traffic and Access."

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- E. The Contractor shall exercise care when removing and stockpiling signs for relocation. Signs that are damaged shall be repaired or replaced at no additional cost to the Contracting Agency.

~~04~~METHOD OF MEASUREMENT

**627.04.01 MEASUREMENT**

- A. Permanent signs, other than signs listed as "Overhead," shall be measured for payment by the number of square feet of sign face surface. The square footage shall be determined from the dimensions of sign panels in the completed and accepted work.
- B. The quantity of "Permanent Signs, Relocate" to be measured for payment shall be the number of each sign relocated, temporary or permanent.
- C. Sign panels on permanent signs listed as "Overhead" signs shall be measured by the square foot of sign panel in the completed and accepted work.
- D. Measurement for payment of sign supports for permanent signs listed as "Permanent Overhead Sign Support Structures" shall be measured on a Lump Sum basis.
- E. All measurements will be made in accordance with Subsection [109.01](#), "Measurement of Quantities."

~~05~~BASIS OF PAYMENT

**627.05.01 PAYMENT**

- A. Sign panels shall be paid for at the contract unit price bid per square foot for "Permanent Signs (Ground Mounted)," which shall be full compensation for furnishing all labor, materials, tools, supplies, equipment, and incidentals and for doing all the work involved in furnishing and erecting permanent signs (other than signs listed as overhead) complete in place as shown on the plans and as herein specified, including but not limited to structure excavation and backfill, concrete foundations, supports, sign islands, and making all required tests.
- B. Sign panels shall be paid for at the contract unit price bid per square foot for "Permanent Sign Panels (Overhead)" which shall be full compensation for furnishing all labor, materials, tools, supplies, equipment, and incidentals and for doing all the work involved in furnishing and erecting permanent sign panels (for signs listed as overhead signs) complete in place as shown on the plans and herein specified.
- C. Sign supports shall be paid for at the contract Lump Sum price bid for "Permanent Overhead Sign Support Structures" which shall be full compensation for furnishing all labor, materials, tools, supplies, equipment, and incidentals and for doing all the work involved in furnishing and erecting permanent sign supports (for all signs listed as overhead signs) complete in place as shown on the plans and as herein specified, including structure excavation and backfill, concrete foundations, cast-in-place concrete piles, structural steel posts and frame, sign islands, and making all required tests.
- D. The contract unit price bid per each for "Permanent Signs, Relocate" shall be full compensation for removal of sign panels and posts, removal and disposal of sign footing, stockpiling of existing sign panels and posts, installing existing sign panel at temporary location, furnishing and installing posts and new footings, and installing existing sign panels thereon and for furnishing all labor, materials, tools, supplies, equipment, and

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incidentals necessary to complete the work as shown on the plans, as specified, and as directed by the Engineer.

E. All payments will be made in accordance with Subsection [109.02](#), "Scope of Payment."

F. Payment will be made under:

<b>PAY ITEM</b>	<b>PAY UNIT</b>
Permanent Signs (Ground Mounted).....	Square Foot
Permanent Sign Panels (Overhead).....	Square Foot
Permanent Overhead Sign Support Structures.....	Lump Sum
Permanent Signs, Relocate .....	Each