

planted in an acceptable manner and all such replacements as are ordered and planted in accordance with this Specification.

656.7-BASIS OF PAYMENT:

The quantities, determined as provided above, will be paid for at the contract unit prices bid for the items listed below, which prices and payments shall be full compensation for furnishing all the materials, including water, topsoil, peat moss, limestone, fertilizer, and mulch, and doing all the work prescribed in a workmanlike and acceptable manner, including all labor, tools, equipment, supplies and incidentals necessary to complete the work.

All replacements ordered by the Engineer will be paid for at the contract unit price for the item listed.

656.8-PAY ITEMS:

ITEM	DESCRIPTION	UNIT
656001-*	SEEDLING, "***key number", "***size"	EACH

* Sequence number

** Key numbers for seedlings are referenced to the Division's "Seedling Plant List" in effect on the date of the invitation for bids. Copies of the complete "Seedling Plant List" in effect on any date may be obtained from the Division.

*** Size designated will be in accordance with the "American Standards for Nursery Stock".

SECTION 657 ROADSIDE SIGN SUPPORTS

657.1-DESCRIPTION:

This work shall consist of the fabrication and erection of all supports for roadside mounted signs in accordance with the requirements of the Plans and of these Specifications. This shall include the supports for all signs which are located outside of the shoulder and do not extend over the shoulder.

All details not specified or not shown on the Plans shall conform to the details and requirements set forth in the following specifications and publications:

- i. The Manual on Uniform Traffic Control Devices for Streets and Highways, latest issue, as printed by the Federal Highway Administration, U.S. Department of Transportation. (Referred to as the MUTCD).
- ii. Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, latest issue, including revisions, American Association of State Highway and Transportation Officials.

657.2

657.2-MATERIALS:

Materials furnished by the Contractor shall be of new stock, shall be the product of reputable manufacturers of signing equipment, shall conform to the Division's Specifications, and shall meet the approval of the Engineer.

All materials shall conform to Division 700 of the Standard Specifications and specifically as follows. All referenced specifications for materials shall be understood to mean the latest available specifications and revisions at the time of award of the Contract.

657.2.1-Aluminum:

657.2.1.1-Tapered Tubular Supports: Supports shall be void of circumferential welding except at the base. Subject to the Engineer's approval, other alloys may be used in place of those called for. The Contractor shall submit, for approval of the Engineer, design calculations for the above substitutions prior to the fabrication of the supports.

Tapered tubular aluminum supports shall be fabricated from Alloy 6063-T6, ASTM B 221, or ASTM B 429. Taper of the supports shall be uniform and continuous from the base to the top of the support.

657.2.1.2-Structural Supports: Structural aluminum supports shall be of a standard wide-flange shape and of Alloy 6061-T6, conforming to ASTM B 308. Each support shall be fabricated from one piece of metal. Posts built up by welding short pieces together will be rejected. The support shall include a base plate which shall be designed for anchoring to a concrete footing with galvanized steel bolts as shown on the Plans.

657.2.1.3-Support Bases: Bases for roadside mounted signs shall be fabricated from either plates, Alloy 6061-T6, ASTM B 209, or from castings Alloy SG70B-T61, ASTM B 108, or Alloy SG70A-T6, ASTM B 26, or ASTM B 108. Only one of the above type bases will be used on a project. The underside of the bases shall be coated with an alkali-resistant bituminous paint.

657.2.1.4-Support Caps: Castings form aluminum support caps shall be Alloy S5A, ASTM B 26, or Alloy SG70A, ASTM B 26 or ASTM B 108 and shall be held in place by stainless steel set screws. The same type cap must be used throughout a project.

657.2.2-Steel: All steel items shall be galvanized in accordance to ASTM A 123 or ASTM A 153, unless otherwise specified.

657.2.2.1-Tapered Tubular Supports: Supports shall be void of circumferential welding except at the base. Subject to the Engineer's approval, other types of steel may be used in place of those called for. The Contractor shall submit, for the approval of the Engineer, design calculations for all substitutions prior to the fabrication of the supports.

657.2.2.8

Tapered tubular supports shall be fabricated from SAE 1020 sheet. These sheets shall be formed and welded, using only one longitudinal weld, then cold processed to the final shape and to minimum yield strength of 55,000 psi. (380 MPa) Taper of the supports shall be uniform and continuous from the base to the top.

657.2.2.2-Structural Supports: Galvanized structural steel supports shall be standard wide flange shapes fabricated from steel conforming to ASTM A36 or ASTM A572 Grade 50 as specified (Breakaway Supports). These supports shall be galvanized in accordance with ASTM A123.

Each wide-flange section shall be fabricated from one piece of metal. Those supports built up by welding short pieces together will be rejected. The steel base plate shall be welded to the support and shall be designed for anchoring to a concrete footing with galvanized steel bolts or to an embedded post stub for break-away sign supports as shown on the Standard Drawings.

657.2.2.3-Pipe Posts: Pipe shall conform to the requirements of ASTM A 53, TYPE E or S, Grade B. Hydrostatic tests are not required.

The steel base plate shall be welded to the support and shall be designed for anchoring to an embedded post stub or anchor bolts as shown in the Plans.

657.2.2.4-Channel Bar Supports: Steel channel post shall comply with the requirements of ASTM A499, Grade 60 and shall be galvanized in accordance with the requirements of ASTM A123. Steel channel posts shall be supplied to the WVDOT in accordance with MP707.02.13.

657.2.2.5-Support Bases: Bases shall be fabricated from steel plate conforming to ASTM A 36 or from cast steel meeting the requirements of ASTM A 27, Grade 65-35. Only one type base shall be used throughout a project.

657.2.2.6-Friction Caps for Pipe Post: Caps shall be fabricated from a good commercial grade steel of either hot rolled or cold rolled steel sheets. Caps shall have an electrodeposited coating of zinc in accordance with the requirements of B 663, Class 12.

657.2.2.7-Support Caps: Support caps castings shall be cast steel conforming to ASTM A 27, Grade 60-30, or cast aluminum Alloy S5A, ASTM B 26, or Alloy SG70A, ASTM B 26 or ASTM B 108. Caps shall be held in place by stainless steel set screws. Only one type cap shall be used throughout the project.

657.2.2.8-Reinforcing Steel: Reinforcing steel shall conform to the requirements of 602.

657.2.2.9

657.2.2.9-Anchor Bolts: Anchor bolts shall be of sufficient size and strength to fully develop the bending moment of the shaft. **Anchor bolts shall be fabricated from a commercial quality hot-rolled carbon steel bar with a minimum yield strength of 50,000 psi (345 MPa).** Each bolt shall have the threaded end galvanized for a length sufficient to extend down through the grout and into the concrete foundation. Nuts shall be hot-dipped galvanized and meet the physical, chemical and dimensional requirements of ASTM A-563, Grade A.

657.2.3-Wood:

657.2.3.1-Posts: Material for wood sign posts shall conform to the requirements of 710. The posts shall meet the structural requirements of the current AASHTO Standard Specifications for Highway Bridges for the grade specified. They shall consist of select structural grade posts, seasoned and treated in accordance with these Specifications and the Standard Drawings. Prior to the preservative treatment, the posts shall be cut as indicated on the drawings. Preservatives for treatment shall conform to the requirements of 710.

657.2.4-Concrete: Concrete for sign foundations shall be Class B in accordance with 601.

CONSTRUCTION METHODS

657.3-FABRICATION:

657.3.1-General: Fabrication of all parts of supports shall be in accordance with dimensions shown on the Plans and Standard Drawings. Work shall be done in a uniform workmanlike manner.

657.3.2-Shop Drawings: If supports vary from the Standard Drawings, the Contractor shall submit for the Engineer's approval complete detail drawings, eight copies, showing all structural steel, structural aluminum, aluminum castings, light fixtures and supports, sign brackets and any miscellaneous accessories.

657.3.3-Packaging: All aluminum supports shall be protected by tire wrapping during shipment and storage. The wrapping shall be adequate to prevent damage to the support. Supports delivered for use on a project shall be stored off the ground and under cover in a manner meeting the approval of the Engineer.

657.4-ERECTION:

657.4.1-General: All signs and delineators shall be supported at the points designated on the Plans or by the Engineer in accordance with these specifications and approved shop drawings and shall be erected in reasonably

close conformity to the locations, elevations, and angles shown on the Plans or established by the Engineer.

The Contractor shall take full responsibility for checking all cross sections at approved sign locations to determine final support lengths.

Before starting the excavation for footings, the Contractor shall establish the location of each sign in accordance with the Plans or as directed by the Engineer, and shall mark each site with construction stakes. The Contractor shall furnish stakes, paint, other materials, and labor for performing the locating and staking as described. When the sites have been staked and are ready for inspection, the Contractor shall inform the Engineer, who will check and approve the site or make necessary changes. Centerline station information will be furnished to the Contractor by the Engineer.

Galvanized coating damaged for any reason shall be repaired by the application of a zinc-rich paint conforming to Military Specification MIL-21035 or Federal Specification TIP-461 or as directed by the Engineer.

657.4.2-Setting Posts: All sign posts shall be set vertically so that the sign will be level and at the proper angle with the roadway as shown on the Plans. Posts with bolt-down plates shall be securely bolted to the cast-in-place concrete footings. Leveling shall be accomplished by the use of two nuts and washers on each anchor bolt. One nut with washer shall be turned on each anchor bolt to its approximate position. After setting, the post top nuts and washer shall then be turned into place loosely and the post adjusted to the vertical position by adjusting both upper and lower nuts. The upper nuts shall then be snugly tightened. After leveling the posts, the space between the base plate and the concrete footing shall be filled with grout consisting of one part cement to 1-½ parts of sand, with the addition of an approved admixture to produce high strength and minimum shrinkage grout, or other nonshrink grout approved by the Engineer. Exposed edges of the grout shall be finished to present a neat appearance.

Channel posts shall be driven either by hand or by mechanical devices to the required line and grade, and they shall be plumb above the ground. During driving, posts shall be protected by a special driving cap. Any post bent or otherwise damaged so as to be unfit for use in the finished work shall be removed from the site and replaced by the Contractor at their expense.

All channel posts which are to be erected back-to-back shall be bolted together with 5/16 in. (8 mm) steel bolts for the entire length of the post at the following spacing:

- i. From the ground level to the top of the posts, shall be spaced at 18 in. (457 mm) centers.
- ii. From the ground level to the bottom of the posts, bolts shall be spaced at four inch (102 mm) centers.
- iii. All bolts shall be sufficiently tightened.

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When posts are to be located in existing concrete such as dividers or islands, the concrete shall be carefully opened by drilling or other suitable methods. The post shall then be placed to the required depth of embedment and backfilled with base course material to a point approximately 2 inches (50 mm) from the top of the opening. The opening shall then be sealed with approximately 2 inches (50 mm) of a liquid, rubberized asphalt compound in accordance with 708.3.

Post mounted delineators shall be supported by channel bar posts of the material, design, and dimensions specified, driven in earth or inserted in concrete dividers or island. Posts shall be driven plumb in undisturbed earth to a minimum of 24 in. (600 mm) and with the top 4 feet (1.2 m) above the near pavement edge, as shown on the Standard Drawings, and faced toward approaching traffic.

Posts shall be spaced laterally 2 feet (600 mm) beyond the shoulder; in curbed sections 2 feet (600 mm) behind the face of curb; in areas protected by guardrail, in the line of guardrail posts; and in the center of dividers less than 8 feet (2.4 m) in width or as shown on the Standard Drawings.

657.4.3-Structural Excavation: The Contractor shall do all excavation for each sign installation to the levels and dimensions shown on the Plans or as directed by the Engineer to obtain a suitable foundation. Excavation may be accomplished manually or by mechanical means. The Contractor is advised that the grading specifications permit the construction of embankment of rock fill to at least 12 in. (300 mm) below the bottom of subbase.

If rock or a boulder is encountered in excavation, it shall be removed to a depth sufficient, in the opinion of the Engineer, to obtain the stability which would have been obtained had the excavation been made in earth to the depth required by the Plans.

The Contractor shall remove all excavated material from the site that is not needed to backfill and level the disturbed area and restore the site to its original condition.

The Standard Drawings are compiled on the basis of average soil conditions. When, in the opinion of the Engineer, soil conditions will permit lesser foundations or require larger foundations, the Contractor shall propose to the Engineer for written approval the necessary revisions to either post or foundations, or both. Any work in such cases shall be performed without change in the unit bid price.

If the soil tends to cave in, forms shall be used to support the sides of the excavation. The forms shall be placed in such a manner as not to disturb the adjacent soil. If the Contractor elects to remove the form, the removal shall be done immediately after the concrete is poured so that the flowing concrete may fill the space occupied by the form. Otherwise, the form shall become a permanent part of the installation. In the latter case the top portion of the form shall be removed to a minimum of 6 inches (150 mm) below the ground.

The Engineer will determine when forms are necessary. This form work shall be performed at the expense of the Contractor and no compensation will

be allowed therefor.

657.4.4-Footings: Concrete footings are required for all sign supports, except for those specified to be driven. Footings for each sign will vary according to the size of the sign. The Contractor shall construct footings based on the size of the sign and in accordance with these Specifications and the Standard Drawings and Plans, unless otherwise directed by the Engineer. Both circle data as supplied by the manufacturer of the supports shall be followed by the Contractor. All concrete footings shall be flush with the uphill side of the ground line as shown on the Plans or approved drawings. The tops of foundations for embedded posts shall be flush with the ground and sloped to assure proper water drainage away from the posts. When forms for encasement above ground are used, they shall not be removed for at least 18 hours after the concrete is poured.

The concrete footing shall not be loaded by mounting sign support on the anchor bolts until the concrete has cured in accordance with 601 for a period of seven days.

All concrete pedestals shall be given an ordinary finish.

657.4.5-Backfilling: All excavations shall be backfilled with suitable random material in horizontal layers not to exceed 4 inches (100 mm) after compaction. Each lift shall be compacted to the satisfaction of the Engineer. Testing is not required. All surplus material shall be removed from the right-of-way and the backfill finished flush with surrounding natural ground, including replacement of any damaged facilities or appurtenances. The Contractor shall restore all areas disturbed by this excavation or other operations to their original conditions including grading, seeding, mulching and fertilizing as directed by the Engineer.

No separate payment will be made for backfilling materials.

657.4.6-Field Painting of Posts: All aluminum and steel supports shall be painted as specified below. No painting shall begin until the concrete foundations are firmly set.

657.4.6.1-Channel Posts: The 4 inches (100 mm) of a channel post above the concrete foundation shall receive sufficient coats of an asphaltic paint, conforming to the requirements of 705.7, to provide a film of paint approximately 1/8-in. (3 mm) thick. Three coats shall be lapped onto the concrete foundations to provide seal between the post and concrete. Care shall be taken to cover no more of the footing than necessary to provide a proper seal.

657.4.6.2-Aluminum: Protection of aluminum is required where aluminum members are to be attached to steel members or concrete masonry. To avoid the possibility of galvanic corrosion, aluminum members attached to steel shall be coated at the points of contact with a zinc chromate primer. The surface of

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non-galvanized steel members shall be coated at the points of contact with suitable paint, followed by a coat of aluminum paint. Where aluminum surfaces are to be in contact with concrete or masonry, they shall first be given a heavy coat of an alkali-resistant bituminous paint.

657.5-METHOD OF MEASUREMENT:

657.5.1-Class B Concrete Footing, Plain: The quantity of work done for Class B Concrete Footing, Plain will be measured in cubic yards (meters), complete in place and accepted, as determined by the dimensions on the Plans or Contract documents and will be the number of cubic yards (meters) established in the Proposal, subject to adjustment as provided for in 104.2 and 109.2.

Payment will be made at the contract unit price per cubic yard (meter) for "Class B Concrete Footing Plain". Such price will be full compensation for furnishing all labor, materials, and equipment necessary to construct all footings, including staking out footings and stakes for this purpose; excavation for footings regardless of the type of material encountered; constructing and removing forms when required; furnishing, placing, finishing, and curing the concrete; and all other incidentals necessary to complete the work.

657.5.2-Class B Concrete Footing, Reinforced, Roadside: The quantity of work done for Class B Concrete Footing, Reinforced, Roadside will be measured in cubic yards (meters), complete in place and accepted, as determined by the dimensions on the Plans or Contract documents and will be the number of cubic yards (meters) established in the Proposal, subject to adjustment as provided for in 104.2 and 109.2.

Payment will be made at the concrete unit price per cubic yard (meter) for "Class B Concrete Footing, Reinforced, Roadside". Such price will be full compensation for furnishing all labor, materials, and equipment necessary to construct all footings, including staking out footings and stakes for this purpose; excavation for footings regardless of the type of material encountered; constructing and removing forms; furnishing and installing reinforcing steel, anchor bolts, washers and nuts; furnishing and installing electrical grounding and conduit sleeves when required; furnishing, placing, finishing, and curing the concrete; furnishing and placing grout as required by the Plans; and all other incidentals necessary to complete the work.

657.5.3-Wood Supports: Measurements for payment for "Wood Supports" will be based on the linear feet (meters) of wood supports for each size necessary to complete the work. The quantity to be paid for shall be the Plan quantity unless the Engineer orders changes in the lengths of posts or determines the Plan quantity is in error. In such cases the Plan quantity shall be recomputed to the nearest foot (0.25 meter).

Payment will be made at the contract unit price per linear foot (meter) of support and shall be full compensation for furnishing and erecting the supports, furnishing and installing the galvanized steel sleeve inserts in footings if

required on the Plans, furnishing and installing aluminum angles, and all other materials, equipment, tools, and labor necessary to complete the work.

657.5.4-Channel Posts: Measurement for payment of "Channel Posts" will be based on the linear feet (meters) of steel channel post of each size necessary to complete the work. The length shall be the Plan quantity unless the Engineer orders changes in the lengths of posts or determines that the Plan quantity is in error. In such case the Plan quantity shall be recomputed to the nearest foot (meter).

Payment will be made at the contract unit price per linear foot (meter) for each size of post required by the Plans. For back to back installation the price per linear foot (meter) shall include all necessary hardware. Such price and payment shall be full compensation for furnishing and erecting the posts, and all labor, equipment, tools, materials, and incidentals necessary to complete the work.

657.5.5-A 36 Supports: Measurement for payment of "A 36 Supports", a specified for A 36 steel in 657.2.2.2, will be based on the number of linear feet (meters) of supports for each size necessary to complete the work. The quantity to be paid for shall include the supports and base plates. The length shall be the Plan quantity unless the Engineer orders changes in the lengths of posts or determines that the Plan quantities are in error, in which cases the Plan quantities will be recomputed. Lengths will be computed to the nearest ½ ft. (150 mm) for each installation and the nearest 1 ft. (300 mm) for the total length. This item does not include brackets or clamps for attaching the sign to the supports.

Payments will be made at the contract unit price per linear foot (meter) of supports for each size and shall be full compensation for furnishing and erecting all supports and materials, tools, labor, and equipment necessary to complete the work.

657.5.6-Structural Supports, Aluminum: Measurement for payment of "Structural Supports, Aluminum" for Alloy 6061-T6 as specified in 657.2.1.2 will be based on the number of linear feet (meters) of supports for each size necessary to complete the work. The quantity to be paid for shall include the supports and base plates. The length shall be the Plan quantity unless the Engineer orders changes in the lengths of posts or determines that the Plan quantities are in error, in which cases the Plan quantities will be recomputed. Lengths will be computed to the nearest ½ ft. (150 mm) for each installation and the nearest 1 ft. (300 mm) for the total length. This item does not include brackets or clamps for attaching the sign to the supports.

Payment will be made at the contract unit price per linear foot (meter) of support for each size and shall be full compensation for furnishing and erecting all supports and materials, tools, labor, and equipment necessary to complete the work.

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657.5.7-Tubular Supports: Measurement for payment of "Tubular Supports" will be based on the number of linear feet (meters) of supports for each size necessary to complete the work. This material shall be either steel or aluminum, as required by the Plans. The quantity to be paid for shall include the supports, base plates, and pole caps. The length shall be the Plan quantity unless the Engineer orders changes in the lengths of posts or determines that the Plan quantities are in error, in which cases the Plan quantities will be recomputed. Lengths will be computed to the nearest ½ ft.(150 mm) for each installation and the nearest 1 ft. (300 mm) for the total length. This item does not include brackets or clamps for attaching the sign to the supports.

Payments will be made at the contract unit price per linear foot (meter) of supports for each size and shall be full compensation for furnishing and erecting all supports and materials, tools, supplies, labor, and equipment necessary to complete the work.

657.5.8 - A572 Supports, Galvanized: Measurement for payment of "A572 Supports, Galvanized" as specified for A572 Grade 50 steel in 657.2.2.2 will be based on the number of linear feet (meter) of supports for each size necessary to complete the work. The quantity to be paid for shall include the supports and all special items included in the break-away support design configuration. The length shall be the Plan quantity unless the Engineer orders changes in the lengths of posts or determines that the Plan quantities are in error, in which cases the Plan quantities will be recomputed. Lengths will be computed to the nearest ½ ft.(150 mm) for each installation and the nearest 1 ft. (300 mm) for the total length. This item does not include brackets or clamps for attaching the sign to the supports.

Payment will be made at the contract unit price per linear foot (meter) of support for each size and shall be full compensation for furnishing and erecting all supports and materials, tools, labor, and equipment necessary to complete the work.

657.5.9-A572 Supports, Painted: Measurement for payment of "A572 Supports, Painted" as specified for A572 Grade 50 steel in 657.2.2.2 will be based on the number of linear feet (meter) of supports for each size necessary to complete the work. The quantity to be paid for shall include the supports, all special items included in the break-away support design configuration, and painting of these supports. The length shall be the Plan quantity unless the Engineer orders changes in the lengths of posts or determines that the Plan quantities are in error, in which cases the Plan quantities will be recomputed. Lengths will be computed to the nearest ½ ft. (150 mm) for each installation and the nearest 1 ft. (300 mm) for the total length. This item does not include brackets or clamps for attaching the sign to the supports.

Payment will be made at the contract unit price per linear foot (meter) of support for each size and shall be full compensation for furnishing and erecting all supports and materials, tools, labor, and equipment necessary to complete

the work.

657.5.10-Pipe Posts: Measurement for payment of "Pipe Posts" will be based on the actual number of pipe posts of each type necessary to complete the work. This quantity shall be the Plan quantity unless the Engineer determines the Plan quantity to be in error and changes the quantity of pipe posts per type.

Payment will be made at the contract unit price per type of pipe post and shall be full compensation for furnishing and erecting all posts and materials, tools, labor, and equipment necessary to complete the work.

657.5.11-Post Removal: Measurement for payment of "Post Removal" will be based on the actual number of posts that are designated on the Plans and are necessary to complete the work. This quantity shall be the Plan quantity unless the Engineer determines the Plan quantity to be in error and changes the quantity of posts to be removed.

Payment will be made at the contract unit price per post. This price shall also be full compensation for the removal and disposal of the signs and sign assemblies, including hardware and bracing, the removal and disposal of the post supports and the restoration of the ground surface to its original condition.

657.6-BASIS OF PAYMENT:

The quantities, determined as provided, will be paid for at the contract unit price for the items listed below, which prices and payment shall be full compensation for furnishing all the material and doing all the work prescribed in a workmanlike and acceptable manner, including all tools, equipment, supplies and incidentals necessary to complete the work. All incidental work and materials for which no basis of payment is provided will be considered as completely covered by the prices bid for the items included in the Contract.

657.7-PAY ITEMS:

ITEM	DESCRIPTION	UNIT
657001-*	"size" A 36 SUPPORT, **	LINEAR FOOT (METER)
657002-*	STRUCTURAL SUPPORT, ALUMINUM, **	LINEAR FOOT (METER)
657003-*	TUBULAR SUPPORT, STEEL, **	LINEAR FOOT (METER)
657004-*	TUBULAR SUPPORT, ALUMINUM, **	LINEAR FOOT (METER)
657005-*	WOOD SUPPORT, **	LINEAR FOOT (METER)
657006-*	"size" , A572 SUPPORT, GALVANIZED, **	LINEAR FOOT (METER)
657007-*	"size" A572 SUPPORT, PAINTED, **	LINEAR FOOT (METER)
657008-*	2.0 LB CHANNEL POST	LINEAR FOOT (METER)
657009-*	BLANK	

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ITEM	DESCRIPTION	UNIT
657010-*	3.00 LB CHANNEL POST	LINEAR FOOT (METER)
657011-*	BLANK	
657012-*	4.00 POUND BACK TO BACK CHANNEL POST	LINEAR FOOT (METER)
657013-*	BLANK	
657014-*	6.00 POUND BACK TO BACK CHANNEL POST	LINEAR FOOT (METER)
657015-*	BLANK	
657016-*	CLASS B CONCRETE FOOTING, PLAIN	CUBIC YARD (METER)
657017-*	CLASS B CONCRETE FOOTING, REINFORCED, ROADSIDE	CUBIC YARD (METER)
657018-*	POST REMOVAL	EACH
657019-*	PIPE POST, **	EACH
657021-*	BREAKSAFE COUPLINGS FOR A 572 SUPPORT	EACH
657022-*	BREAKSAFE COUPLINGS FOR CHANNEL POST	EACH

* Sequence number

** Key number

SECTION 658

OVERHEAD SIGN STRUCTURES

658.1-DESCRIPTION:

This item shall consist of the fabrication and erection of overhead bridge, cantilever, and butterfly sign supports and fastening accessories in accordance with the requirements of the Plans and of these Specifications. All details not specified or not shown on the Plans shall conform to the details and requirements set forth in the following Specifications and publications:

The Manual on Uniform Traffic Control Devices for Streets and Highways, latest issue, including revisions, as printed by the Federal Highway Administration, U.S. Department of Transportation. (Referred to as the MUTCD).

Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, latest issue, including revisions, American Association of State Highway and Transportation Officials.

658.2-MATERIALS:

Materials furnished by the Contractor shall be of new stock conforming to the requirements of the Standard Specifications, and shall meet with the approval of the Engineer.

All materials shall conform to the requirements of Division 700 of the Standard Specifications and shall also conform to the following requirements unless otherwise modified on the Plans. All referenced specifications for materials shall be the latest available specifications and revisions at the time of award of the contract.

658.2.1-Aluminum: Tubular aluminum supports of a uniform diameter