

62

March 9, 2018 Letting

Notice to Bidders, Specifications and Proposal



**Illinois Department
of Transportation**

Springfield, Illinois 62764

**Contract No. 46488
Various Counties
Section STWDE FRWY SIGN MAINT 18-51
Various Routes
District 6 Construction Funds**

Plans Included
Herein

Prepared by

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Checked by

(Printed by authority of the State of Illinois)



NOTICE TO BIDDERS

1. **TIME AND PLACE OF OPENING BIDS.** Electronic bids are to be submitted to the electronic bidding system (iCX-Integrated Contractors Exchange). All bids must be submitted to the iCX system prior to 10:00 a.m. March 9, 2018 prevailing time at which time the bids will be publicly opened from the iCX SecureVault.

2. **DESCRIPTION OF WORK.** The proposed improvement is identified and advertised for bids in the Invitation for Bids as:

**Contract No. 46488
Various Counties
Section STWDE FRWY SIGN MAINT 18-51
Various Routes
District 6 Construction Funds**

Repairing or replacing damaged sign components, furnishing and installing new signs and supports or replacing damaged overhead sign structure components and end supports at various locations as described in individual work orders.

3. **INSTRUCTIONS TO BIDDERS.** (a) This Notice, the invitation for bids, proposal and letter of award shall, together with all other documents in accordance with Article 101.09 of the Standard Specifications for Road and Bridge Construction, become part of the contract. Bidders are cautioned to read and examine carefully all documents, to make all required inspections, and to inquire or seek explanation of the same prior to submission of a bid.

(b) State law, and, if the work is to be paid wholly or in part with Federal-aid funds, Federal law requires the bidder to make various certifications as a part of the proposal and contract. By execution and submission of the proposal, the bidder makes the certification contained therein. A false or fraudulent certification shall, in addition to all other remedies provided by law, be a breach of contract and may result in termination of the contract.

4. **AWARD CRITERIA AND REJECTION OF BIDS.** This contract will be awarded to the lowest responsive and responsible bidder considering conformity with the terms and conditions established by the Department in the rules, Invitation for Bids and contract documents. The issuance of plans and proposal forms for bidding based upon a prequalification rating shall not be the sole determinant of responsibility. The Department reserves the right to determine responsibility at the time of award, to reject any or all proposals, to readvertise the proposed improvement, and to waive technicalities.

By Order of the
Illinois Department of Transportation

Randall S. Blankenhorn,
Secretary

INDEX
FOR
SUPPLEMENTAL SPECIFICATIONS
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2018

This index contains a listing of SUPPLEMENTAL SPECIFICATIONS and frequently used RECURRING SPECIAL PROVISIONS.

ERRATA Standard Specifications for Road and Bridge Construction (Adopted 4-1-16) (Revised 1-1-18)

SUPPLEMENTAL SPECIFICATIONS

<u>Std. Spec. Sec.</u>	<u>Page No.</u>
106 Control of Materials	1
403 Bituminous Surface Treatment (Class A-1, A-2, A-3)	2
404 Micro-Surfacing and Slurry Sealing	3
405 Cape Seal	14
420 Portland Cement Concrete Pavement	24
442 Pavement Patching	26
502 Excavation for Structures	27
503 Concrete Structures	29
504 Precast Concrete Structures	32
542 Pipe Culverts	33
586 Sand Backfill for Vaulted Abutments	34
630 Steel Plate Beam Guardrail	36
631 Traffic Barrier Terminals	39
670 Engineer's Field Office and Laboratory	40
701 Work Zone Traffic Control and Protection	41
704 Temporary Concrete Barrier	42
781 Raised Reflective Pavement Markers	44
888 Pedestrian Push-Button	45
1003 Fine Aggregates	46
1004 Coarse Aggregates	47
1006 Metals	50
1020 Portland Cement Concrete	51
1050 Poured Joint Sealers	53
1069 Pole and Tower	55
1077 Post and Foundation	56
1096 Pavement Markers	57
1101 General Equipment	58
1102 Hot-Mix Asphalt Equipment	59
1103 Portland Cement Concrete Equipment	61
1106 Work Zone Traffic Control Devices	63

RECURRING SPECIAL PROVISIONS

The following RECURRING SPECIAL PROVISIONS indicated by an "X" are applicable to this contract and are included by reference:

<u>CHECK SHEET #</u>		<u>PAGE NO.</u>
1	Additional State Requirements for Federal-Aid Construction Contracts	64
2	Subletting of Contracts (Federal-Aid Contracts)	67
3	X EEO	68
4	X Specific EEO Responsibilities Non Federal-Aid Contracts	78
5	X Required Provisions - State Contracts	83
6	Asbestos Bearing Pad Removal	89
7	Asbestos Waterproofing Membrane and Asbestos HMA Surface Removal	90
8	Temporary Stream Crossings and In-Stream Work Pads	91
9	Construction Layout Stakes Except for Bridges	92
10	Construction Layout Stakes	95
11	Use of Geotextile Fabric for Railroad Crossing	98
12	Subsealing of Concrete Pavements	100
13	Hot-Mix Asphalt Surface Correction	104
14	Pavement and Shoulder Resurfacing	106
15	Patching with Hot-Mix Asphalt Overlay Removal	107
16	Polymer Concrete	109
17	PVC Pipeliner	111
18	Bicycle Racks	112
19	Temporary Portable Bridge Traffic Signals	114
20	X Work Zone Public Information Signs	116
21	Nighttime Inspection of Roadway Lighting	117
22	English Substitution of Metric Bolts	118
23	Calcium Chloride Accelerator for Portland Cement Concrete	119
24	Quality Control of Concrete Mixtures at the Plant	120
25	Quality Control/Quality Assurance of Concrete Mixtures	128
26	Digital Terrain Modeling for Earthwork Calculations	144
27	Reserved	146
28	Preventive Maintenance – Bituminous Surface Treatment (A-1)	147
29	Reserved	153
30	Reserved	154
31	Reserved	155
32	Temporary Raised Pavement Markers	156
33	Restoring Bridge Approach Pavements Using High-Density Foam	157
34	Portland Cement Concrete Inlay or Overlay	160
35	Portland Cement Concrete Partial Depth Hot-Mix Asphalt Patching	164

TABLE OF CONTENTS

LOCATION OF IMPROVEMENT	1
COMPLETION DATE.....	1
DESCRIPTION OF IMPROVEMENTS	1
WORK ORDERS	1
FAILURE TO COMPLETE A WORK ORDER ON TIME.....	2
QUANTITIES	2
REIMBURSEMENT FROM THIRD PARTY FOR REPAIRS OR DAMAGES	2
LOCATING UNDERGROUND CABLE	3
CONTRACTOR'S RESPONSIBILITY FOR DAMAGE.....	3
FINAL CLEANING UP	3
TRAFFIC CONTROL AND PROTECTION	3
FURNISH AND ERECT GRAFFITI RESISTANT SIGN PANEL	4
FURNISH AND ERECT SIGN PANEL-LOGO	4
OVERHEAD SIGN STRUCTURE - END SUPPORT.....	5
BRIDGE MOUNTED SIGN SUPPORT	6
BREAKAWAY SLIP BASE CONNECTION BOLT SET	6
STRUCTURAL STEEL SIGN SUPPORT – BREAKAWAY COUPLING TYPE	7
FURNISH BREAKAWAY COUPLING SET	9
FURNISH HINGE PLATE SET	9
RE-ERECT EXISTING STRUCTURAL STEEL SIGN SUPPORT – BREAKAWAY	9
INSTALL SERVICE SIGN OR MILEAGE PLATE	10
REMOVE SERVICE SIGN OR MILEAGE PLATE	10
TRANSFER SERVICE SIGNS.....	11
SIGN SUPPORT REPAIR	11
REMOVE EXISTING SIGN SUPPORT	12
TIGHTEN FUSE AND BASE PLATE	12
TEMPORARY WOOD POST	12
MOUNTING BRACKET – TYPE B.....	13
MOUNTING BRACKET TYPE B REPAIR	13
REPLACE WALKWAY SUPPORT BRACKET	14
SIGN PANEL BACKPLATE	14
REST AREA POST AND PANEL SIGN SYSTEM.....	14
INSTALL REST AREA SIGN	15
SIGN FRAME – SERIES 325 (DOUBLE)	15

SIGN FRAME – SERIES 325 (SINGLE)	15
SIGN POSTS – SERIES 325 OR 218	15
BASE PLATE - SERIES 325 OR 218	16
REMOVE EXISTING SIGN POST	16
TEMPORARY SIGN SUPPORT REPAIR.....	17
REPAIR SIGN PANEL	17
REPLACE OVERHEAD SIGN WALKWAY	18
SIGN SUPPORT BRACKET:.....	19
REMOVE AND REINSTALL SIGN PANEL.....	19
RE-ERECT SIGN PANEL	19
REPLACE AND TIGHTEN SIGN MOUNTING CLIPS PER EACH SIGN	20
REMOVE SIGN COMPLETE	20
INTERNAL TRUSS DAMPER.....	21
INTERNAL MEMBER TRUSS CLAMP	21
REMOVE OVERHEAD SIGN STRUCTURE – WALKWAY	21
STRUCTURAL REPAIR OF CONCRETE	22
DRILL WEEP HOLE	31
REMOVAL OF SIGN LIGHTING, NO SALVAGE	31
METAL SCREEN	32
OVERHEAD SIGN STRUCTURE – TRUSS ONLY	32
TIGHTEN SUPPORT ANCHOR BOLTS	33
TIGHTEN U-BOLT	34
COMPENSABLE DELAY COSTS (BDE).....	34
CONSTRUCTION AIR QUALITY – DIESEL RETROFIT (BDE)	38
DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE).....	40
EQUIPMENT PARKING AND STORAGE (BDE)	52
LIGHTS ON BARRICADES (BDE)	53
PAYMENTS TO SUBCONTRACTORS (BDE)	54
PORTABLE CHANGEABLE MESSAGE SIGNS (BDE)	54
PROGRESS PAYMENTS (BDE)	54
SPEED DISPLAY TRAILER (BDE).....	55
SUBCONTRACTOR MOBILIZATION PAYMENTS (BDE)	56
WEEKLY DBE TRUCKING REPORTS (BDE).....	57

SPECIAL PROVISIONS

STATE OF ILLINOIS

The following Special Provisions supplement the “Standard Specifications for Road and Bridge Construction, Adopted Revised April 1, 2016”, the latest edition of the “Manual on Uniform Traffic Control Devices for Streets and Highways”, and the “Manual of Test Procedures for Materials” in effect on the date of invitation for bids, and the “Supplemental Specifications and Recurring Special Provisions” indicated on the Check Sheet included herein, which apply to and govern the construction of the Various Routes, Section STWDE FRWY SIGN MAINT 18-51, Various Counties, Contract No. 46488, and in case of conflict with any part, or parts, of said Specifications, the said Special Provisions shall take precedence and shall govern.

LOCATION OF IMPROVEMENT

The work to be done under this contract will be primarily on freeways, interstates and major arterials throughout the State, although work may be required to be done on other State-maintained highways at various locations.

COMPLETION DATE

All work on this contract shall be completed on or before December 30, 2021. Should the Contractor fail to complete all work by December 30, 2021, the Contractor shall be liable in accordance with Article 108.09 with of the Standard Specifications.

DESCRIPTION OF IMPROVEMENTS

The work shall consist of repairing or replacing damaged sign components, furnishing, or furnishing and installing new signs and supports or replacing damaged overhead sign structure components, end supports at locations described in a work order.

WORK ORDERS

No work of any kind is to be performed by the Contractor, unless a work order authorizing work has been issued by the Traffic Operations Engineer. A work order will show the date of issue, job number, location, code number(s), pay item(s), quantity of such pay item, and total cost. Only the amount of replacement or repairs shown on the work order is to be done by the Contractor. If at the time repairs are being made, it appears that additional work is needed, a revised work order must be obtained. The contractor will be responsible for all final field measurements prior to fabrication on all work orders. The Contractor shall notify the District Contact at least 72 hours before beginning any work in the field and shall obtain permission to begin such work.

It shall be the contractor’s responsibility to verify all dimensions and conditions existing in the field prior to construction and ordering materials.

Some work orders may require that the Contractor complete the work outlined in the work order during a districts night-time hours.

Any damaged signs, supports, structures or structure components being replaced shall become the property of the contractor and this shall be reflected in the unit price of pay items.

Except as noted below, the Contractor shall complete all the work required on a work order within **75 days** after the date of issue of the work order or its revision unless otherwise extended in the work order or agreed in writing between the Contractor and the Engineer.

Unless otherwise extended on an individual work order the erection of existing sign panels shall be accomplished within **30 days**. Where sign panels are to be installed on new steel posts or a combination of new and existing steel posts, or on an overhead sign truss, where truss repairs are involved and the Contractor cannot meet the 30-day deadline, the Contractor will be allowed to install the sign on temporary wood posts within the same 30-day period. The Contractor shall then have 45 additional days in which to fabricate and install the new steel posts, any required foundations, effect any truss repairs and re-erect the sign panel on the new posts or on the repaired truss.

The repair or re-erection of a sign post(s), where no new post(s) is involved, and the erection of an existing sign panel on the post(s) shall also be accomplished within **30 days**, installation of the panel on temporary supports will not be allowed.

FAILURE TO COMPLETE A WORK ORDER ON TIME

Should the Contractor fail to complete a work order on time, or such extended time as may have been allowed by the Department, a monetary deduction equal to \$75.00 per day per work order will be applied to monies due or that may become due the Contractor.

QUANTITIES

The quantities specified in this contract indicate the estimated amount of work required in a one-year period. This is merely an estimate to allow Contractors to establish unit prices and permit the Department to determine the low bidder. It shall be understood that the unit prices of this contract shall prevail throughout the period of this contract regardless of the quantity.

REIMBURSEMENT FROM THIRD PARTY FOR REPAIRS OR DAMAGES

The Department reserves the right to make recovery from Third Party or Parties for damage to any part of the existing installations and no part of such recovery or recoveries shall inure to the benefit of the Contractor. To enable the Department to assess damages against said Third Party or Parties, the Contractor shall, upon request, furnish the Engineer an itemized statement of the cost of any repairs to Third Party damage, separating the cost of labor, materials, and equipment.

LOCATING UNDERGROUND CABLE

At those locations, where concrete foundations are to be installed, the Contractor shall notify the District Contact at least 72 hours before beginning any work in the field. The Contractor shall request that the Department locate and mark all underground electric cable owned and maintained by the Department which may be in conflict with the construction operations. In the event the Contractor fails to notify the District Contact and cable is damaged, the Contractor shall replace the entire length of cable or conductors in conduit, in a manner satisfactory to the District Contact, at his/her own expense. Splicing below grade will not be permitted.

CONTRACTOR'S RESPONSIBILITY FOR DAMAGE

The Contractor shall be held responsible for damages resulting from the operations of his equipment or employees and of any damage to a sign or sign structure prior to final inspection by the District Contact. The Contractor shall, at his own expense, restore any damaged property to a condition equal to that existing before damage was done, by repairing, rebuilding, or replacing it as directed by the Engineer.

FINAL CLEANING UP

The final cleaning up shall conform to the requirements set forth in Article 104.06. Each time the Contractor accomplishes work at any location, he will be required to clean up the work area before payment for that work will be submitted.

All costs due to compliance with this Special Provision will be included with the contract and no additional compensation will be allowed.

TRAFFIC CONTROL AND PROTECTION

The Contractor shall arrange his work in such a manner so as to keep interruptions to traffic flow at a minimum.

Traffic control and protection shall conform to Article 107.09 and Section 701 and to the following standards as required by the Engineer.

Standards 701006, 701101, 701106, 701201, 701301, 701400, 701401, 701406, 701411,
701428, 701446, 701451, 701456, 701901

Additional traffic control and hour restrictions for closures may have to be imposed to facilitate the flow of traffic on certain sections of highways for some work orders this will also include TC-09 which you will find in the plan sheets.

Conformance to the traffic control and protection standards will not be paid for as a separate item, but will be considered included with the various contract items and no additional compensation will be allowed. **This will also include traffic control and protection on interstates, freeways, expressways, and all major arterials.**

FURNISH AND ERECT GRAFFITI RESISTANT SIGN PANEL

This work shall consist of furnishing and erecting an extruded graffiti resistant sign panel complete with reflectorized sign face, legend, and supplemental panels or plates, on existing sign support(s) or overhead sign structure at the location(s) specified in the work order. The type, size, and content of legend requirements will be as specified below or in the work order.

The aluminum extrusions and the installation shall be in according to the requirements of Section 1090 of the Standard Specification, as shown on the plans and/or as directed by the Engineer.

All Type III reflectorized guide signs, supplemental signs, including route shields and supplemental panels shall be fabricated using faces and legend of Type ZZ retroreflective sheeting. This shall include mainline, ramp, crossroad interchange approach directional signing, and route markers. All signs shall be fabricated such that the copy or text and background material is applied in the preferred orientation for the maximum retroreflectivity per the manufacturer's recommendation. Background sheeting and legend shall be provided by the same manufacturer.

This work shall consist of furnishing and erecting an extruded sign panel complete with reflectorized sign face and legend, and supplemental panels which shall be covered with graffiti resistant sheeting provided by the same manufacturer of the sheeting and legend.

This graffiti protection overlay shall assure similar day-night appearance and not reduce retroreflectivity as required by the sheeting called for in the contract, which shall be substantiated by supporting test results. All graffiti resistant films, when applied to the various types of reflective sheeting, must meet the same durability requirements as specified for that type of reflective sheeting. This work will be measured for payment in square feet from edge-to-edge (horizontally and vertically).

The Contractor shall package all signs so as to prevent damage during shipment.

This work will be paid, for at the contract unit price per square foot, for **FURNISH AND ERECT GRAFFITI RESISTANT SIGN PANEL**. This price shall include, furnishing all materials, fabricating the sign panel (including sign face and sign legend), furnishing all mounting hardware (including any 4WF1.79 sign brackets required for overhead sign structure mounting) and installing the sign panel on previously erected sign supports or sign structure and removing any existing sign panel(s) as required for the proper installation of the new panel(s). Removal of any existing sign panel(s) will be paid for in accordance with REMOVE SIGN PANEL TYPE 1, 2 or 3.

FURNISH AND ERECT SIGN PANEL-LOGO

This work shall consist of installing LOGO service signing along the Interstate. Typical layouts and sign designs are shown in the plans. Specific details and locations will be described in the work order(s).

No mounting on bridges or overhead sign structures will be required for this pay item. The supplemental business LOGO panels and mileage plates will be furnished by others and made available to the Contractor at the appropriate District Sign Shop or at a location agreed upon by the Contractor and Engineer. The supplemental panels and plates will be riveted onto the main sign panel as shown in the work order(s). In addition to the holes in the sign panel, necessary to install the supplemental panels and plates, the Contractor shall also drill the upper left hole for all other possible supplemental business LOGO panels. (This is to facilitate spacing of future LOGO panels.)

This work will be paid for at the contract unit price per square foot for **FURNISH AND ERECT SIGN PANEL - LOGO**. This price shall include furnishing all materials, fabricating the sign panel (including sign face and sign legend), furnishing all mounting hardware, installing all supplemental LOGO panels and mileage plates, and installing the sign panel on previously erected sign supports.

The steel supports and concrete foundations for logo sign panels will be paid for under STRUCTURAL STEEL SIGN SUPPORT-BREAKAWAY, STRUCTURAL STEEL SIGN SUPPORT-BREAKAWAY COUPLING TYPE, and CONCRETE FOUNDATIONS respectively.

OVERHEAD SIGN STRUCTURE - END SUPPORT

This work will consist of replacing a damaged or deteriorated end support(s) for an overhead sign structure-span or cantilever.

Materials shall meet the requirements of the sign structure detail sheets shown in the contract, conforming to the dimensions shown on the details attached to the work order and the applicable requirements of Section 1094.

This work shall be done in accordance with the requirements of Sections 733 and as specified herein.

This work shall include removing all grout, if grout is present, cleaning and painting the exposed anchor bolts, and installing a stainless steel screen wire to enclose the void between the sign support base plates and the foundation. The exposed part of the anchor bolts shall be cleaned and painted with one coat of primer and meet the requirements of Section 4 and 5 of SSPC-PS25 for red iron oxide, zinc oxide, raw linseed oil, and alkyd primer. All debris resulting from this operation shall be removed from the right-of-way.

Any sign panels attached to the end support to be replaced shall be carefully removed and re-installed on the new end support as directed by the Engineer.

Shop drawings for the new end support(s) will be provided by the Contractor and approved in writing before any new materials are ordered.

This work will be paid for at the contract unit price each for **OVERHEAD SIGN STRUCTURE - END SUPPORT**. This price shall include removing any damaged or deteriorated end support(s) from the right-of-way, providing shop drawings, furnishing all materials, fabricating and erecting the end-support(s), galvanizing the exposed steel, removing all grout, cleaning and painting the exposed anchor bolts, installing the wire cloth, removing and reinstalling any existing sign panels, the installation of a sign structure number and providing all necessary traffic control. Removing and re-erecting the overhead sign structure will be paid for as REMOVE AND RE-ERECT OVERHEAD SIGN STRUCTURE-SPAN or REMOVE AND RE-ERECT OVERHEAD SIGN STRUCTURE-CANTILEVER.

BRIDGE MOUNTED SIGN SUPPORT

This work shall consist of removing and replacing bridge-mount sign support(s). The type and number shall be indicated in each individual work order.

Materials shall meet the requirements of the bridge mount sign structure details shown in the contract, conforming to the dimensions shown on the detail sheets attached to the work order and the applicable requirements of Section 1094.

The damaged bridge-mount support(s) shall become the property of the Contractor and shall be removed completely from the right-of-way. The bid price shall reflect any salvage value of the support(s) removed.

Shop drawings for the replacement bridge-mount sign support(s) will be provided by the Contractor and approved in writing before any new materials are ordered.

This work will be paid for at the contract unit price each for **BRIDGE MOUNTED SIGN SUPPORT**, which price shall include removal of the damaged bridge support(s), providing shop drawings, fabricating, furnishing, and erecting the support brackets, angles, and any other necessary hardware.

BREAKAWAY SLIP BASE CONNECTION BOLT SET

This work shall consist of furnishing a breakaway slip base connection bolt set for the installation of a structural steel sign support. The size of the connection bolt set shall be determined by the size of the sign support and as specified in the work order. The Contractor shall deliver the breakaway connection bolt set to the location specified in the work order or the district sign shop in the district where the work order was issued.

A breakaway slip base connection bolt set shall consist of the following items:

FOUR BOLTS, TWELVE FLAT WASHERS AND FOUR HEX NUTS.

The breakaway slip base connection bolt set shall meet the requirements of Section 727 of the Standard Specifications. The diameter and length of the bolt will be as specified in the work order.

This work will be paid for at the contract unit price each for **BREAKAWAY SLIP BASE CONNECTION BOLT SET**, which price shall include furnishing all necessary components to complete the installation for a breakaway slip base type connection for a structural steel sign support and delivery to the location or locations specified in the work order.

STRUCTURAL STEEL SIGN SUPPORT – BREAKAWAY COUPLING TYPE

This work shall consist of furnishing galvanized structural steel breakaway sign supports for ground-mounted signs and breakaway coupling assemblies of the sizes and lengths shown in the work order. The supports shall be attached to the breakaway coupling assembly previously cast within a concrete foundation. Breakaway coupling type structural steel supports shall be used only for the installation of logo sign panels on Interstate Routes 70, 72, 270 and 255.

Materials shall meet the requirements of Articles 1006.04, 1006.08 and 1093.01 except all references to stub posts shall be omitted.

The fabrication of structural steel sign supports shall meet the requirements of Section 727.

The structural steel breakaway sign supports shall be erected in a vertical position on anchor bars previously cast within concrete foundations with the faces of the supports flush with the sign throughout the contact area. The supports shall be plumbed and brought to final grade by using shims as shown on the plans.

The supports shall be connected to the anchor bars by means of a breakaway coupling assembly conforming to the requirements listed elsewhere in these Special Provisions.

Breakaway coupling assemblies shall be the "Break-Safe" system manufactured by Transpo-Safety, Inc., 20 Jones Street, New Rochelle, New York 10801.

The breakaway couplings shall be manufactured from alloy steel meeting the requirements of AISI 4130H or 4340H, and shall have a minimum tensile yield stress of 1,140 MPa (165,000 psi) and an ultimate tensile range of 1,240 to 1,480 MPa (180,000 to 215,000 psi). The breakaway coupling shall have a tensile breaking load of between 209 and 253 kN (47,000 and 57,000 pounds). The Rockwell C hardness shall be 26 minimum.

Hinge plates shall be alloy steel meeting the requirements of AISI 4340, AISI 4130, or an equivalent material and shall have a minimum tensile yield stress of 620 MPa (90,000 psi).

The hinge plates shall have tensile breaking load ranges as follows:

- HI-1 73 - 88 kN, (16,400 - 19,700 lbs.) (10WF21-14WF30)
- HI-2 30 - 36 kN, (6,700 - 8,100 lbs.) (6WF9-8WF20)

All bolts, nuts, and washers shall conform to AASHTO M1641.

Brackets shall be aluminum alloy meeting the requirements of ASTM B-221, Alloy 6061-T6, or an approved equal. The bracket shall incorporate a load-concentrating boss, which shall be stainless steel meeting the requirements of ASTM A-582, Type 416, or approved equal.

Anchor plates shall be made from aluminum Alloy 6061-T6 or equivalent, having minimum yield strength of 240 MPa (35,000 psi).

Anchor bars shall be made from grade 60 steel, or equivalent material, with a minimum allowable tensile stress of 165 MPa (24,000 psi), and shall conform to ASTM designation A-307. The anchor bars shall be hot dip galvanized in conformance with ASTM designation A-153.

Breakaway couplings shall be clean, dry, and free from all foreign material and shall be primed and coated with a coating ground from fully homogenized cellulose acetate butyrate plastic and appropriate coloring agents applied by an electrostatic spray process.

The coating shall have a minimum thickness of .08 mm (3 mils) and be fused at a maximum temperature of 218° C (425° F). Chipped areas of the coated surface shall be repaired. After coating, all threaded surfaces shall be cleaned to allow them to function properly.

Location holes for the breakaway coupling shall be accurately positioned relative to the load concentration member in accordance with the approved shop drawings. All brackets shall be permanently labeled with bracket number to reflect the hole positioning.

The installation of the breakaway coupling assemblies shall be in accordance with the manufacturer's recommendations.

The Contractor shall provide the Engineer certification from the breakaway coupling assembly manufacturer that the assemblies meet all the requirements of these specifications. The Department reserves the right to test any component of the assembly and to reject any or all components failing to meet these specifications.

This work will be measured for payment in pounds of structural steel sign support erected in place. The mass (weight) of structural steel shall be computed on the basis of the nominal weight per foot of the main post installed from the bottom to the top of the post. No allowance will be made for overrun and no deduction made for cuts, copes, and holes.

Bolts, screws, nuts, washers, shims, post brackets, and anchor bars will not be measured for payment, but will be considered as included with this pay item.

This work will be paid for at the contract unit price per pound for **STRUCTURAL STEEL SIGN SUPPORT - BREAKAWAY COUPLING TYPE**, which price shall include payment in full for furnishing and erecting the galvanized posts with all components as specified, including the breakaway coupling assemblies.

FURNISH BREAKAWAY COUPLING SET

Revised January 2003.

This work shall consist of furnishing a small or large breakaway coupling set for the installation of a structural steel sign support. The size of the coupling set shall be determined by the size of the sign support and as specified in the work order. The Contractor shall deliver the breakaway coupling set to the location specified in the work order or the district sign shop in the district where the work order was issued.

A breakaway coupling set shall consist of the following items:

FOUR BOLTS AND FOUR COUPLERS

The breakaway coupling set shall meet the requirements for breakaway coupling assemblies outlined in the Special Provision for Structural Steel Sign Support - Breakaway Coupling Type.

This work will be paid for at the contract unit price each for **FURNISH BREAKAWAY COUPLING SET**, which price shall include furnishing all necessary components to complete the coupling type installation for a structural steel sign support and delivery to the location or locations specified in the work order.

FURNISH HINGE PLATE SET

This work shall consist of furnishing a small or large hinge plate set for breakaway coupling type installation for structural steel sign support. The size of the hinge plate set shall be determined by the size of the sign support and as specified in the work order. The Contractor shall deliver the hinge plate set to the location specified in the work order or the district sign shop in the district where the work order was issued.

A hinge plate set shall consist of the following items:

FOUR HINGE PLATES AND A TOTAL OF EIGHT BOLTS, NUTS AND WASHERS

The hinge plate set shall meet the requirements for breakaway coupling assemblies outlined in the Special Provision for Structural Steel Sign Support - Breakaway Coupling Type.

This work will be paid for at the contract unit price each for **FURNISH HINGE PLATE SET**, which price shall include furnishing all necessary components to complete the hinge type installation for a structural steel sign support and delivery to the location or locations specified in the work order.

RE-ERECT EXISTING STRUCTURAL STEEL SIGN SUPPORT – BREAKAWAY

This work shall consist of re-erecting an existing structural steel sign support on an existing stub post and torqueing the fuse plate and base plate bolts. This item will only be used for those posts that have been knocked down and need no repair.

Any missing bolts or plates shall be replaced by the Contractor and shall be considered included with this pay item. Replacement bolts or plates shall meet the requirements of Article 727.

When the work order requires the Contractor to re-erect a sign support that was installed with a breakaway type coupling the Contractor shall furnish a breakaway coupling set to complete the re-erection. The furnishing of the breakaway coupling set will be paid for as FURNISH BREAKAWAY COUPLING SET.

This work will be paid for at the contract unit price each for **RE-ERECT EXISTING STRUCTURAL STEEL SIGN SUPPORT – BREAKAWAY**, which price shall include all labor, materials, and equipment required to complete the work.

INSTALL SERVICE SIGN OR MILEAGE PLATE

This work shall consist of installing a service plate advertising gas, food, lodging, or camping business establishment or a mileage plate on a previously erected business logo panel. The service plates are fabricated from flat sheet aluminum and will be furnished predrilled by the business establishments and made available to the Contractor at the District Sign Shop where work is being performed or at such other location agreed upon by the Engineer and the Contractor.

Mileage plates are fabricated from flat sheet aluminum and will be furnished predrilled by the District Sign Shop and made available to the Contractor at the District Sign Shop where work is being performed or at such other location agreed upon by the Engineer and the Contractor.

The plates shall be installed using 5 mm (3/16-inch) aluminum rivets with 3 mm (0.125 inch) to 6 mm (0.250 inch) grip range to fully penetrate the sign panel extrusions and firmly attach the plates. Any plate damaged by the Contractor shall be replaced in exact kind at no cost to the Department. The business logo panel shall not be removed when installing a service or mileage plate. A minimum of six plates will be installed or removed on each work order calling for this pay item when the installation of service signs or mileage plates is the only work to be done.

This work will be paid for at the contract unit price each for **INSTALL SERVICE OR MILEAGE PLATE**, which price shall include payment in full for installing a service or mileage plate on a previously erected business logo panel.

REMOVE SERVICE SIGN OR MILEAGE PLATE

This work shall consist of removing an existing service plate advertising a business establishment or a mileage plate from a previously erected business logo panel.

Extreme care shall be taken not to damage or mar the plate in any way. Any plate damaged by the Contractor shall be replaced in exact kind at no cost to the Department. The plates shall be delivered to the District Sign Shop where work is being performed or at such other location agreed upon by the Engineer.

A minimum of six plates will be removed on each work order calling for this pay item when the removal of existing service signs or mileage plates is the only work to be done.

This work will be paid for at the contract unit price each for **REMOVE SERVICE OR MILEAGE PLATE**, which price shall include payment in full for removing a service or mileage plate from a previously erected business logo panel.

TRANSFER SERVICE SIGNS

This work shall consist of removing an existing service sign advertising a business establishment from a previously erected business logo panel and reinstalling the service sign on a newly erected business logo panel.

Extreme care shall be taken not to damage or mar the sign in any way. Any sign damaged by the Contractor shall be replaced in exact kind at no cost to the Department.

This work will be paid for at the contract unit price each for **TRANSFER SERVICE SIGN**, which price shall include payment in full for removing an existing service sign from a previously erected business logo panel and reinstalling the existing service sign on a newly erected business logo panel. The cost of transferring existing mileage plates and directional arrows for the service signs shall be considered incidental to this pay item.

SIGN SUPPORT REPAIR

This work shall consist of repairing an existing breakaway sign support where the fuse plate has separated from the lower post, resulting in bending of the rear flange.

Any missing hardware shall be replaced by the Contractor and considered as included with the pay item. Replacement hardware shall meet the requirements of Article 727.

Care shall be taken to prevent damage or further damage to the sign. Any damage done by the Contractor to the existing sign shall be repaired by him at no cost to the State.

The post may be straightened by mechanical or heat applied methods. There shall be no residual stress in the rear flange when the fuse plate is reattached. The fuse plate shall be attached before the rear reinforcement plates are attached.

When the work order requires the Contractor to repair a sign support that was installed with a breakaway type coupling the Contractor shall furnish a breakaway coupling set to complete the repair of the sign support. The furnishing of the breakaway coupling set will be paid for as **FURNISH BREAKAWAY COUPLING SET**.

This work will be paid for at the contract unit price each for **SIGN SUPPORT REPAIR**. This price shall include straightening of the post, repair or replacement of the fuse plate, re-erection of the existing sign and post if they were removed to facilitate the support repair, attachment of the rear reinforcement plate, replacement of any necessary hardware, and all necessary painting.

REMOVE EXISTING SIGN SUPPORT

This work shall consist of removing an existing steel sign support. The support, including hardware, shall become the property of the Contractor.

This work will be paid for at the contract unit price each for **REMOVE EXISTING SIGN SUPPORT**, which price shall include complete removal of the sign support, including hardware, from the right-of-way.

The removal of any concrete foundations will be paid for as REMOVE CONCRETE FOUNDATION - GROUND MOUNT.

TIGHTEN FUSE AND BASE PLATE

This work shall consist of tightening the bolts on the fuse plate and base plate of a structural steel breakaway sign support. The bolts shall be tightened in accordance with the sign support details shown in the contract. The tightening of the base and fuse plates for at least 16 structural steel breakaway sign supports will be included on each work order calling for this pay item.

The Contractor shall replace any missing bolts, nuts or washers with new ones of the size specified on the sign support details shown in the contract. This work shall be considered included with this pay item. Replacement bolts, nuts or washers shall meet the requirements of Article 727.

The work will be paid for at the contract unit price each per sign support for **TIGHTEN FUSE AND BASE PLATE**. This price shall include payment in full for tightening all bolts on the fuse and base plate for a structural steel breakaway sign support and replacing any missing bolts, nuts, or washers on the fuse and base plate.

TEMPORARY WOOD POST

This work shall consist of furnishing and installing 100 mm (4-in) by 150 mm (6-in) wood posts as temporary sign supports for ground-mounted signs, utilizing direct burial.

This work shall be done in accordance with the requirements of Section 730 and as specified herein.

Should a longer support than specified be necessary; the Contractor shall provide and install the longer support. The method for attaching the sign to the wood posts is shown in the plans.

The temporary wood post(s) shall be supplied in the quantity indicated on the work order and shall be located at a specified offset in close proximity of the permanent sign location.

The height of the sign shall be a minimum of 900 mm (3 feet) from the top of pavement to the bottom of the sign and a minimum of 1500 mm (5 feet) from the top of the ground to the bottom of the sign. The wood post(s) shall be removed and become the property of the Contractor when the permanent post(s) is installed.

This work will be paid for at the contract unit price each for **TEMPORARY WOOD POST**, which price shall include payment in full for furnishing, erecting, drilling, and removing of wood post(s) and refilling the hole(s) to match the surrounding area

MOUNTING BRACKET – TYPE B

This work shall consist of furnishing a steel tubing bracket **for mounting auxiliary panels on ground-mount signs of the sizes shown in the plans and** attaching the bracket to existing sign supports at the location(s) specified in the work order.

The bracket shall meet all requirements of the EXIT PANEL DETAIL SHEET - B contained herein.

This work will be paid for at the contract unit price each for **MOUNTING BRACKET - TYPE B**, which price shall include payment in full for furnishing bracket with all components as specified and attaching it to existing sign supports.

MOUNTING BRACKET TYPE B REPAIR

This work shall consist of repairing the damaged or bent components of an existing mounting bracket - Type B.

Care shall be taken to prevent damage or further damage to the existing sign. Any damage done by the Contractor to the existing sign; shall be repaired by him at no cost to the State.

The bracket may be straightened by mechanical or heat-applied methods.

This work will be paid for at the contract unit price each for **MOUNTING BRACKET TYPE B REPAIR**. This price shall include straightening of the bracket components, reattachment of the existing sign if it was removed to facilitate the bracket repair, reattachment of the bracket to the sign supports if the bracket was removed to facilitate repair, and all necessary painting.

REPLACE WALKWAY SUPPORT BRACKET

This work shall consist of furnishing all necessary material and labor to remove the damaged walkway support bracket and replace it with a new bracket of the same type and material as the existing. The size of the bracket required will be as indicated on the sign structure detail sheets attached to the work order.

This item does not include replacement or repair of any existing walkway or lighting fixtures.

Shop drawings for the replacement walkway support bracket will be provided by the Contractor and approved in writing before any new materials are ordered.

This work will be paid for at the contract unit price each **for REPLACE WALKWAY SUPPORT BRACKET** and shall be payment in full for furnishing all materials, providing shop drawings, fabricating and erecting this item complete in place.

SIGN PANEL BACKPLATE

This work shall consist of furnishing and installing blank sign panels complete with reflectorized sign faces cut without legend or symbols, and installing them within previously erected sign frames. The sign blanks shall be 3 mm (0.125-inch) thick 5052-H38 aluminum conforming to Section 1090 and the background sheeting shall be brown conforming to the Type B requirements of Section 1091.

This work will be paid for at the contract unit price per square foot for **SIGN PANEL BACKPLATE**, which shall include furnishing the sign backplate and installing it in a previously erected sign frame. The cost of removing an existing backplate from a frame assembly to installing the new backplate will not be paid for as a separate item, but will be considered included with the contract and no additional compensation will be allowed.

REST AREA POST AND PANEL SIGN SYSTEM

The signs shall match signs previously installed in the rest area and meet the requirements of the following special provisions for the post and panel sign system. The system shall be the Series 325 manufactured by: Charleston Industries, Inc., 955 Estes Avenue, Elk Grove Village, IL 60007, 1-800-722-0209, in Illinois: (847) 228-7150.

Alternate systems will be considered provided that the component parts are completely interchangeable with the previously installed signs. The engineer's decision as to the acceptability of alternate systems will be final.

INSTALL REST AREA SIGN

This work shall consist of installing a new rest area sign provided by the Department at the site of installation or at the location specified on the work order. The sign may be installed on an existing sign post and frame or a new sign post and frame. All signs that are removed or replaced shall be returned to the Department location the replacement sign was supplied.

This work will be paid for at the contract unit price per each for **INSTALL REST AREA SIGN** which price shall include all necessary hardware, equipment, and labor required to complete the work order

SIGN FRAME – SERIES 325 (DOUBLE)

This work shall consist of furnishing and installing sign frames on two posts. The entire frame is to be slid into the slots in the posts and secured by tamperproof screws. The frame shall meet the requirements shown on the plans.

Frames will be measured for payment in feet. Such measurements are to be the outside perimeter of the frame.

This work will be paid for at the contract unit price per foot for **SIGN FRAME – SERIES 325 (DOUBLE)**, which shall include furnishing the sign frame complete with all necessary hardware and installing it on previously erected posts.

SIGN FRAME – SERIES 325 (SINGLE)

This work shall consist of furnishing and installing sign frames on single posts. Brackets shall be welded to the frames as shown in the plans to accept a Series 218 - center mounted post. The entire frame shall be bolted securely to the post. The frames shall meet the requirements shown on the plans.

Frames will be measured for payment in feet. Measurement shall be to the outside perimeter of the frame.

This work will be paid for at the contract unit price per foot for **SIGN FRAME – SERIES 325 (SINGLE)**, which shall include furnishing the sign frame complete with all necessary hardware and installing it on a previously erected post.

SIGN POSTS – SERIES 325 OR 218

This work shall consist of furnishing and installing Series 325 posts for two-post installations and Series 218 post for single post installations, on existing concrete surfaces or by direct burial in concrete as specified in the plans. The posts shall meet the requirements shown in the plans.

All sign post lengths and elevations shall be field verified by the Contractor before ordering any material.

The installations shall be by direct burial, in concrete foundations, or attached to concrete surfaces by base plates as noted on the sign layouts. All posts shall be true, plumb, and If two-post installations, parallel to each other. Spacing templates shall be utilized by the Contractor, when installing two-post installations.

The concrete shall be Class SI meeting the applicable portions of Section 503.

The foundation shall be drilled to the dimensions shown in the plans. The post shall be installed plumb and centered in the hole before placement of the concrete. The hole above the foundation shall be filled with black dirt.

This work will be paid for at the contract unit price per foot for **SIGN POST-SERIES 325 OR SIGN POST-SERIES 218**, measured from the bottom of the post in the ground for direct burial or from the base plate where specified, which shall include all necessary drilling, back-filling and seeding, disposal of excess earth, setting of the post and furnishing all concrete. The cost of removing a frame assembly to installing the new post will not be paid for as a separate item, but will be considered included with the contract and no additional compensation will be allowed.

BASE PLATE - SERIES 325 OR 218

This work shall consist of furnishing and installing base plates on Series 325 posts for two-post installations and Series 218 posts for single post installations. The base plates shall be factory welded to the posts as shown on the plans. The base plates shall be securely bolted to the foundations or to the concrete anchors with a 6 mm (1/4-inch) thick neoprene pad placed between the concrete and the base plate. The required concrete "J" bolts or concrete anchors, including their installation and the neoprene pads shall be considered as included with this item.

This work will be paid for at the contract unit price each for **BASE PLATE-SERIES 325 OR BASE PLATE-SERIES 218**, which work shall include furnishing and welding base plates to the posts and including the concrete "J" bolts, concrete anchors and neoprene pads, as required. Installation of the posts will be paid for under the pay item for SIGN POST- SERIES 325 OR SIGN POST-SERIES 218.

REMOVE EXISTING SIGN POST

This work shall consist of removing an existing rest area sign post that is part of the post and panel sign system. The post, including any hardware not reused, shall become the property of the Contractor and the bid price shall reflect any salvage value.

This work will be paid for at the contract unit price each of **REMOVE EXISTING SIGN POST**, which price shall include the complete removal of the sign post, including any concrete foundation and base plate, from the right-of-way. The cost of removing a sign and frame assembly from an existing sign post and relocating the sign and frame assembly to a new post(s) will not be paid for as a separate item, but will be considered included in the contract and no additional compensation will be allowed.

TEMPORARY SIGN SUPPORT REPAIR

This work shall consist of making temporary repairs to an existing breakaway sign support(s) until the replacement sign support has been installed so an existing sign panel may remain in service.

The Contractor shall have the option of making repairs to the existing support, if that is feasible, temporarily installing a used steel breakaway support that matches dimensions of the existing stub post or temporarily installing a wood sign support.

If the existing sign support is repaired, repairs shall be in accordance with the provisions for SIGN SUPPORT REPAIR.

If a temporary wood sign support is installed, the wood sign support shall meet the provisions outlined under TEMPORARY WOOD POST

Any missing hardware shall be replaced by the Contractor and considered as included with the pay item. Replacement hardware shall meet the requirements of Article 727 of the Standard Specifications.

Care shall be taken to prevent damage or further damage to the sign. Any damage done, by the Contractor, to the existing sign shall be repaired by him, at no cost to the State.

The Contractor shall make the temporary sign support repairs within one week of notification.

This work will be paid for at the contract unit price each for **TEMPORARY SIGN SUPPORT REPAIR**. This price shall include the removal and/or, re-erection of the existing sign and providing the necessary traffic control.

REPAIR SIGN PANEL

This work shall consist of repairing a sign panel that has been damaged by vehicle impact where the sign has been damaged but not severe enough to require complete replacement of the sign panel. The Contractor shall be responsible for the removing all dirt and debris from the face of the sign prior to re-erecting the sign panel.

This work may require the assembly of extruded aluminum panels that have been pulled apart, the reattachment of any sign legend, shields, borders, overlay panels and end caps that may have come loose or fallen off the sign panel from vehicle impact. In some cases the sign panel may have to be removed from the sign supports, repairs completed, and re-erected on the sign supports.

Extruded aluminum panels that have been pulled apart shall be re assembled using 3/8" stainless steel bolts installed at 24" spacing. Stainless steel bolts shall conform to ASTM A 276, Type 304. Stainless steel locking nuts shall be used conforming to ASTM A 194 Grade 8. Stainless steel washers shall conform to ASTM A 240, Type 304. Any loose or fallen off sign legend, shields, borders, and overlay panels shall be reattached by the same method as the existing undamaged sign panel.

This work will be paid for at the contract unit price each for **REPAIR SIGN PANEL**. This price shall include removing and re-erecting the sign panel, if necessary, to facilitate the repair of the sign panel, making all required repairs to the sign legend, shields, borders and overlay panels to restores the sign to a serviceable condition and providing the necessary traffic control.

REPLACE OVERHEAD SIGN WALKWAY

This work shall consist of removing the damaged portion of the existing walkway and replacing the damaged walkway with new walkway of the same type and material as the existing.

Materials shall meet the requirements of the sign structure detail sheets shown in the contract; conform to the dimensions shown on the details attached to the work order and the applicable requirements of Section 1094.

Fabrication of the walkway shall meet the requirements of the applicable portions of Section 733.

Any damaged lighting items in the damaged portion of the walkway shall be removed and become the property of the contractor.

The replacement or repair of any damaged handrail, light support channels, or hardware shall be included in the cost of replacing the overhead sign walkway.

The removed portions of walkway shall become the property of the Contractor and shall be removed completely from the right-of-way.

All damaged walkway support brackets shall be paid for under **REPLACE WALKWAY SUPPORT BRACKET**.

Shop drawings for the replacement walkway will be provided by the Contractor and approved in writing before any new materials are ordered.

The work will be measured for payment in feet of the overall length of the walkway installed, end-to-end.

This work will be paid for at the contract unit price per foot for **REPLACE OVERHEAD SIGN WALKWAY**, which price shall include removal of the damaged portion of the existing walkway, providing shop drawings, furnishing the required new walkway, replacing as required the handrail, light support channels, and hardware and removing the damaged walkway from the right-of-way. No electrical work will be required for this pay item.

SIGN SUPPORT BRACKET:

Description: This work shall consist of furnishing, fabricating, and installing sign support extensions to attach additional sign panels to an existing sign panel.

Materials: Sign support extensions shall be aluminum according to Section 1006.29 of the Standard Specifications. The depth shall be 4 in. (100 mm) and the weight shall be a minimum of 1.79 lb/ft (2.60 kg/m).

Installation: 3 sign support extensions shall be used for sign panels with 3 existing posts or less. 4 sign support extensions shall be used for sign panels with 4 or more existing posts. Sign support extensions shall extend from 4 ft below the top of the existing sign post to the top of the new sign panel and shall be spaced as determined by the Engineer. Sign support extensions shall be clipped to the sign panels in accordance with Highway Standard 720021.

Method of Measurement: Sign support extensions will be measured for payment in each.

Basis of Payment: This work will be paid for at the contract unit price per EACH for **SIGN SUPPORT BRACKET**.

REMOVE AND REINSTALL SIGN PANEL

This work shall consist of removing an existing sign panel from temporary sign supports and reinstalling it on an overhead sign structure. Where the temporary posts were installed by others, this work shall also consist of removing the temporary posts which will then become the property of the Contractor.

This work will be paid for at the contract unit price per square meter (square foot) for **REMOVE AND REINSTALL SIGN PANEL**, which price shall include removing the existing sign panel from temporary supports, installing it on the overhead sign structure, furnishing all necessary mounting hardware to complete the installation and removing any temporary supports.

RE-ERECT SIGN PANEL

This work shall consist of re-erecting a new or existing sign panel on new or existing posts. The sign panel shall be provided by the Department at the site of installation or at the location specified on the work order. The Contractor shall be responsible for the removing all dirt and debris from the face of the sign prior to re-erecting the sign panel.

The replacement of any damaged or missing mounting hardware shall meet the requirements of Article 1090.03.

This work will be paid for at the contract unit price per square foot for **RE-ERECT SIGN PANEL**, which price shall include all necessary hardware, equipment, and labor required to complete the work order.

REPLACE AND TIGHTEN SIGN MOUNTING CLIPS PER EACH SIGN

This work shall consist of replacing missing post clips and post clip bolts or tightening loose post clip bolts on signs mounted on overhead sign structures. Stainless steel bolts, nuts and washers shall be used with aluminum post clips for all overhead - mounted signs.

Aluminum post clips shall conform to ASTM B 108, Alloy SG 70A-T 6. A flat washer shall be used under each nut to prevent gouging of the clip. Stainless steel bolts, nuts and washers for fastening extruded aluminum sign panels to supports shall conform to ASTM A 276, Type 304. Nuts shall conform to ASTM A 194 Grade 8 and be of the self - locking type. Washers shall conform to ASTM A 240, Type 304.

This work will be paid for at the contract unit price each per sign location for **REPLACE AND TIGHTEN SIGN MOUNTING CLIPS PER EACH SIGN**, which price shall include furnishing and installing post clips and post clip bolts complete with washers and tightening all loose sign clip bolts for each overhead sign location shown in the plans and providing all necessary traffic control.

REMOVE SIGN COMPLETE

This work shall consist of removing an existing ground-mounted sign and supports as shown in the work order. The removal items shall consist of the sign panel and exit panel, and the structural steel supports. The sign panel shall become the property of the State and shall be delivered to the District Sign Shop in the District in which the work is being performed. The supports, including hardware, shall become the property of the Contractor. The bid price shall reflect any salvage value for the supports and hardware.

Where the existing sign and supports are to be removed and be replaced by a new sign and new supports, the new sign shall be completely installed prior to the removal of the existing sign. However, duplicate signs are not to exist for periods in excess of 24 hours.

This work will be paid for at the contract unit price each for **REMOVE SIGN COMPLETE** and shall be payment in full for all labor and equipment necessary to remove the sign and supports as herein specified and no additional compensation will be allowed.

The removal of any concrete foundations will be paid for as REMOVE CONCRETE FOUNDATION-GROUND MOUNT.

INTERNAL TRUSS DAMPER

This work shall consist of furnishing and installing a truss damper on an aluminum overhead sign structure-span or cantilever. The damper shall be attached to the overhead sign structure as indicated on the attached details.

The damper design shall be similar to those shown in the plans. The Contractor shall submit shop drawings for the damper for approval prior to fabrication and before any materials are ordered.

This work will be paid for at the contract unit price each for **INTERNAL TRUSS DAMPER** price shall include providing the shop drawings, furnishing and installing the damper complete with all necessary hardware and providing the necessary traffic control.

INTERNAL MEMBER TRUSS CLAMP

This work shall consist of furnishing and installing stainless steel internal member truss clamp on an aluminum overhead sign structure - span or cantilever. The clamp shall be attached at the joint of an interior member with the main top or bottom chords where a partial fracture of an internal member has occurred.

The clamp design shall be similar to those shown in the plans. Shop drawings for the clamp shall be provided by the Contractor for approval prior to fabrication and before any materials are ordered.

This work will be paid for at the contract unit price each for **INTERNAL MEMBER TRUSS CLAMP**, which price shall include providing the shop drawings, fabricating the clamp, furnishing and installing the clamp complete with all necessary hardware and providing the necessary traffic control.

REMOVE OVERHEAD SIGN STRUCTURE – WALKWAY

This work shall consist of the complete removal and disposal of the overhead sign structure external walkway, handrail, and related mounting hardware according to the requirements of Section 736 of the Standard Specifications and as specified on the work order.

The removed overhead sign structure external walkway shall become the property of the Contractor and shall be completely disposed of off the right of way. Any salvage value of the elements to be removed shall be reflected in the Contractor's bid for the removal of the overhead sign structure walkway.

This work will be paid for at the agreed unit price in feet for **REMOVE OVERHEAD SIGN STRUCTURE - WALKWAY** which price shall include all labor and equipment to complete this work.

STRUCTURAL REPAIR OF CONCRETE

Effective: March 15, 2006

Revised: August 29, 2014

Description. This work shall consist of structurally repairing concrete.

Materials. Materials shall be according to the following.

Item	Article/Section
(a)	Portland Cement Concrete (Note 1) 1020
(b)	R1 or R2 Concrete (Note 2)
(c)	Normal Weight Concrete (Notes 3 and 4)
(d)	Shotcrete (High Performance) (Notes 5 and 6)
(e)	Reinforcement Bars 1006.10
(f)	Anchor Bolts 1006.09
(g)	Water 1002
(h)	Curing Compound 1022.01
(i)	Cotton Mats 1022.02
(j)	Protective Coat 1023.01
(k)	Epoxy (Note 7) 1025
(l)	Mechanical Bar Splicers 508.06(c)

Note 1. The concrete shall be Class SI, except the cement factor shall be a minimum 6.65 cwt/cu yd (395 kg/cu m), the coarse aggregate shall be a CA 16, and the strength shall be a minimum 4000 psi (27,500 kPa) compressive or 675 psi (4650 kPa) flexural at 14 days. A high range water-reducing admixture shall be used to obtain a 5-7 in. (125-175 mm) slump, but a cement factor reduction according to Article 1020.05(b)(8) is prohibited. A self-consolidating concrete mixture is also acceptable per Article 1020.04, except the mix design requirements of this note regarding the cement factor, coarse aggregate, strength, and cement factor reduction shall apply.

Note 2. The R1 or R2 concrete shall be from the Department's approved list of Packaged, Dry, Rapid Hardening, Cementitious Materials for Concrete Repairs. The R1 or R2 concrete shall comply with the air content and strength requirements for Class SI concrete as indicated in Note 1. Mixing shall be per the manufacturer's recommendations, except the water/cement ratio shall not exceed the value specified for Class SI concrete as indicated in Note 1. A high range water-reducing admixture shall be used to obtain a 5-7 in. (125-175 mm) slump, and a retarder may be required to allow time to perform the required field tests. The admixtures shall be per the manufacturer's recommendation, and the Department's approved list of Concrete Admixtures shall not apply.

Note 3. The “high slump” packaged concrete mixture shall be from the Department’s approved list of Packaged, Dry, Formed, Concrete Repair Mixtures. The materials and preparation of aggregate shall be according to ASTM C 387. The cement factor shall be 6.65 cwt/cu yd (395 kg/cu m) minimum to 7.05 cwt/cu yd (418 kg/cu m) maximum. Cement replacement with fly ash or ground granulated blast-furnace slag shall be according to Section 1020. The “high slump” packaged concrete mixture shall have a water soluble chloride ion content of less than 0.40 lb/cu yd (0.24 kg/cu m). The test shall be performed according to ASTM C 1218, and the “high slump” packaged concrete mixture shall have an age of 28 to 42 days at the time of test. The ASTM C 1218 test shall be performed by an independent lab a minimum of once every two years, and the test results shall be provided to the Department. The coarse aggregate shall be a maximum size of 1/2 in. (12.5 mm). The packaged concrete mixture shall comply with the air content and strength requirements for Class SI concrete as indicated in Note 1. Mixing shall be per the manufacturer’s recommendations, except the water/cement ratio shall not exceed the value specified for Class SI concrete as indicated in Note 1. A high range water-reducing admixture shall be used to obtain a 5-7 in. (125-175 mm) slump. The admixture shall be per the manufacturer’s recommendation, and the Department’s approved list of Concrete Admixtures shall not apply. A maximum slump of 10 in. (250 mm) may be permitted if no segregation is observed by the Engineer in a laboratory or field evaluation.

Note 4 The “self-consolidating concrete” packaged concrete mixture shall be from the Department’s approved list of Packaged, Dry, Formed, Concrete Repair Mixtures. The materials and preparation of aggregate shall be according to ASTM C 387. The cement factor shall be 6.65 cwt/cu yd (395 kg/cu m) minimum to 7.05 cwt/cu yd (418 kg/cu m) maximum. Cement replacement with fly ash or ground granulated blast-furnace slag shall be according to Section 1020. The “self-consolidating concrete” packaged concrete mixture shall have a water soluble chloride ion content of less than 0.40 lb/cu yd (0.24 kg/cu m). The test shall be performed according to ASTM C 1218, and the “self-consolidating concrete” packaged concrete mixture shall have an age of 28 to 42 days at the time of test. The ASTM C 1218 test shall be performed by an independent lab a minimum of once every two years, and the test results shall be provided to the Department. The concrete mixture should be uniformly graded, and the coarse aggregate shall be a maximum size of 1/2 in. (12.5 mm). The fine aggregate proportion shall be a maximum 50 percent by weight (mass) of the total aggregate used. The packaged concrete mixture shall comply with the air content and strength requirements for Class SI concrete as indicated in Note 1. Mixing shall be per the manufacturer’s recommendations, except the water/cement ratio shall not exceed the value specified for Class SI concrete as indicated in Note 1. The admixtures used to produce self-consolidating concrete shall be per the manufacturer’s recommendation, and the Department’s approved list of Concrete Admixtures shall not apply. The packaged concrete mixture shall meet the following self-consolidating requirements:

- The slump flow range shall be 22 in. (560 mm) minimum to 28 in. (710 mm) maximum and tested according to Illinois Test Procedure SCC-2.
- The visual stability index shall be a maximum of 1 and tested according to Illinois Test Procedure SCC-2.
- The J-Ring value shall be a maximum of 2 in. (50 mm) and tested according to Illinois Test Procedure SCC-3. The L-Box blocking ratio shall be a minimum of 80 percent and tested according to Illinois Test Procedure SCC-4. The Manufacturer has the option to select either the J-Ring or L-Box test.
- The hardened visual stability index shall be a maximum of 1 and tested according to Illinois Test Procedure SCC-6.

Note 5. Packaged shotcrete that includes aggregate shall be from the Department's approved list of Packaged High Performance Shotcrete, and independent laboratory test results showing the product meets Department specifications will be required. The product shall be a packaged, pre-blended, and dry combination of materials, for the wet-mix shotcrete method according to ASTM C 1480. A non-chloride accelerator may be used according to the shotcrete manufacturer's recommendations. The shotcrete shall be Type FA or CA, Grade FR, and Class I. The fibers shall be Type III synthetic according to ASTM C 1116.

The packaged shotcrete shall have a water soluble chloride ion content of less than 0.40 lb/cu yd (0.24 kg/cu m). The test shall be performed according to ASTM C 1218, and the hardened shotcrete shall have an age of 28 to 42 days at the time of test. The ASTM C 1218 test shall be performed by an independent lab a minimum of once every two years, and the test results shall be provided to the Department.

Each individual aggregate used in the packaged shotcrete shall have either a maximum ASTM C 1260 expansion of 0.16 percent or a maximum ASTM C 1293 expansion of 0.040 percent. However, the ASTM C 1260 value may be increased to 0.27 percent for each individual aggregate if the cement total equivalent alkali content ($\text{Na}_2\text{O} + 0.658\text{K}_2\text{O}$) does not exceed 0.60 percent. As an alternative to these requirements, ASTM C 1567 testing which shows the packaged shotcrete has a maximum expansion of 0.16 percent may be submitted. The ASTM C 1260, C 1293, or C 1567 test shall be performed a minimum of once every two years.

The 7 and 28 day compressive strength requirements in ASTM C 1480 shall not apply. Instead the shotcrete shall obtain a minimum compressive strength of 4000 psi (27,500 kPa) at 14 days.

The packaged shotcrete shall be limited to the following proportions:

The portland cement and finely divided minerals shall be 6.05 cwt/cu yd (360 kg/cu m) to 8.50 cwt/cu yd (505 kg/cu m) for Type FA and 6.05 cwt/cu yd (360 kg/cu. m) to 7.50 cwt/cu yd (445 kg/cu m) for Type CA. The portland cement shall not be below 4.70 cwt/cu yd (279 kg/cu m) for Type FA or CA.

The finely divided mineral(s) shall constitute a maximum of 35 percent of the total cement plus finely divided mineral(s).

Class F fly ash is optional and the maximum shall be 20 percent by weight (mass) of cement.

Class C fly ash is optional and the maximum shall be 25 percent by weight (mass) of cement.

Ground granulated blast-furnace slag is optional and the maximum shall be 30 percent by weight (mass) of cement.

Microsilica is required and shall be a minimum of 5 percent by weight (mass) of cement, and a maximum of 10 percent. As an alternative to microsilica, high-reactivity metakaolin may be used at a minimum of 5 percent by weight (mass) of cement, and a maximum of 10 percent.

Fly ash shall not be used in combination with ground granulated blast-furnace slag. Class F fly ash shall not be used in combination with Class C fly ash. Microsilica shall not be used in combination with high-reactivity metakaolin. A finely divided mineral shall not be used in combination with a blended hydraulic cement, except for microsilica or high-reactivity metakaolin.

The water/cement ratio as defined in Article 1020.06 shall be a maximum of 0.42.

The air content as shot shall be 4.0 – 8.0 percent.

Note 6 Packaged shotcrete that does not include pre-blended aggregate shall be from the Department's approved list of Packaged High Performance Shotcrete, and independent laboratory test results showing the product meets Department specifications will be required. The shotcrete shall be according to Note 5, except the added aggregate shall be according to Articles 1003.02 and 1004.02 in addition to each individual aggregate meeting the maximum expansion requirements of Note 5. The aggregate gradation shall be according to the manufacturer. The shotcrete shall be batched and mixed with added aggregate according to the manufacturer.

Note 7. In addition ASTM C 881, Type IV, Grade 2 or 3, Class A, B, or C may be used.

Equipment. Equipment shall be according to Article 503.03 and the following.

Chipping Hammer – The chipping hammer for removing concrete shall be a light-duty pneumatic or electric tool with a 15 lb. (7 kg) maximum class or less.

Blast Cleaning Equipment – Blast cleaning equipment for concrete surface preparation shall be the abrasive type, and the equipment shall have oil traps.

Hydrodemolition Equipment – Hydrodemolition equipment for removing concrete shall be calibrated, and shall use water according to Section 1002.

High Performance Shotcrete Equipment – The batching, mixing, pumping, hose, nozzle, and auxiliary equipment shall be for the wet-mix shotcrete method, and shall meet the requirements of ACI 506R.

CONSTRUCTION REQUIREMENTS

General. The repair methods shall be either formed concrete repair or shotcrete. The repair method shall be selected by the Contractor with the following rules.

- (a) Rule 1. For formed concrete repair, a subsequent patch to repair the placement point after initial concrete placement will not be allowed. As an example, this may occur in a vertical location located at the top of the repair.
- (b) Rule 2. Formed concrete repair shall not be used for overhead applications.
- (c) Rule 3. If formed concrete repair is used for locations that have reinforcement with less than 0.75 in. (19 mm) of concrete cover, the concrete mixture shall contain fly ash or ground granulated blast-furnace slag at the maximum cement replacement allowed.
- (d) Rule 4. Shotcrete shall not be used for any repair greater than 6 in. (150 mm) in depth, except in horizontal applications, where the shotcrete may be placed from above in one lift.
- (e) Rule 5. Shotcrete shall not be used for column repairs greater than 4 in. (100 mm) in depth, unless the shotcrete mixture contains 3/8 in. (9.5 mm) aggregate.

Temporary Shoring or Cribbing. When a temporary shoring or cribbing support system is required, the Contractor shall provide details and computations, prepared and sealed by an Illinois licensed Structural Engineer, to the Department for review and approval. When ever possible the support system shall be installed prior to starting the associated concrete removal. If no system is specified, but during the course of removal the need for temporary shoring or cribbing becomes apparent or is directed by the Engineer due to a structural concern, the Contractor shall not proceed with any further removal work until an appropriate and approved support system is installed.

Concrete Removal. The Contractor shall provide ladders or other appropriate equipment for the Engineer to mark the removal areas. Repair configurations will be kept simple, and squared corners will be preferred. The repair perimeter shall be sawed a depth of 1/2 in. (13 mm) or less, as required to avoid cutting the reinforcement. Any cut reinforcement shall be repaired or replaced at the expense of the Contractor. If the concrete is broken or removed beyond the limits of the initial saw cut, the new repair perimeter shall be recut. The areas to be repaired shall have all loose, unsound concrete removed completely by the use of chipping hammers, hydrodemolition equipment, or other methods approved by the Engineer. The concrete removal shall extend along the reinforcement bar until the reinforcement is free of bond inhibiting corrosion. Reinforcement bar with 50 percent or more exposed shall be undercut to a depth of 3/4 in. (19 mm) or the diameter of the reinforcement bar, whichever is greater.

If sound concrete is encountered before existing reinforcement bars are exposed, further removal of concrete shall not be performed unless the minimum repair depth is not met.

The repair depth shall be a minimum of 1 in. (25 mm). The substrate profile shall be $\pm 1/16$ in. (± 1.5 mm). The perimeter of the repair area shall have a vertical face.

If a repair is located at the ground line, any excavation required below the ground line to complete the repair shall be included in this work.

The Contractor shall have a maximum of 14 calendar days to complete each repair location with concrete or shotcrete, once concrete removal has started for the repair.

The Engineer shall be notified of concrete removal that exceeds 6 in. (150 mm) in depth, one fourth the cross section of a structural member, more than half the vertical column reinforcement is exposed in a cross section, more than 6 consecutive reinforcement bars are exposed in any direction, within 1.5 in. (38 mm) of a bearing area, or other structural concern. Excessive deterioration or removal may require further evaluation of the structure or installation of temporary shoring and cribbing support system.

Surface Preparation. Prior to placing the concrete or shotcrete, the Contractor shall prepare the repair area and exposed reinforcement by blast cleaning. The blast cleaning shall provide a surface that is free of oil, dirt, and loose material.

If a succeeding layer of shotcrete is to be applied, the initial shotcrete surface and remaining exposed reinforcement shall be free of curing compound, oil, dirt, loose material, rebound (i.e. shotcrete material leaner than the original mixture which ricochets off the receiving surface), and overspray. Preparation may be by lightly brushing or blast cleaning if the previous shotcrete surface is less than 36 hours old. If more than 36 hours old, the surface shall be prepared by blast cleaning.

The repair area and perimeter vertical face shall have a rough surface. Care shall be taken to ensure the sawcut face is roughened by blast cleaning. Just prior to concrete or shotcrete placement, saturate the repair area with water to a saturated surface-dry condition. Any standing water shall be removed.

Concrete or shotcrete placement shall be done within 3 calendar days of the surface preparation or the repair area shall be prepared again.

Reinforcement. Exposed reinforcement bars shall be cleaned of concrete and corrosion by blast cleaning. After cleaning, all exposed reinforcement shall be carefully evaluated to determine if replacement or additional reinforcement bars are required.

Reinforcing bars that have been cut or have lost 25 percent or more of their original cross sectional area shall be supplemented by new in kind reinforcement bars. New bars shall be lapped a minimum of 32 bar diameters to existing bars. A mechanical bar splicer shall be used when it is not feasible to provide the minimum bar lap. No welding of bars shall be performed.

Intersecting reinforcement bars shall be tightly secured to each other using 0.006 in. (1.6 mm) or heavier gauge tie wire, and shall be adequately supported to minimize movement during concrete placement or application of shotcrete.

For reinforcement bar locations with less than 0.75 in. (19 mm) of cover, protective coat shall be applied to the completed repair. The application of the protective coat shall be according to Article 503.19, 2nd paragraph, except blast cleaning shall be performed to remove curing compound.

The Contractor shall anchor the new concrete to the existing concrete with 3/4 in. (19 mm) diameter hook bolts for all repair areas where the depth of concrete removal is greater than 8 in. (205 mm) and there is no existing reinforcement extending into the repair area. The hook bolts shall be spaced at 15 in. (380 mm) maximum centers both vertically and horizontally, and shall be a minimum of 12 in. (305 mm) away from the perimeter of the repair. The hook bolts shall be installed according to Section 584.

Repair Methods. All repair areas shall be inspected and approved by the Engineer prior to placement of the concrete or application of the shotcrete.

(a) Formed Concrete Repair. Falsework shall be according to Article 503.05. Forms shall be according to Article 503.06. Formwork shall provide a smooth and uniform concrete finish, and shall approximately match the existing concrete structure. Formwork shall be mortar tight and closely fitted where they adjoin the existing concrete surface to prevent leakage. Air vents may be provided to reduce voids and improve surface appearance. The Contractor may use exterior mechanical vibration, as approved by the Engineer, to release air pockets that may be entrapped.

The concrete for formed concrete repair shall be a Class SI Concrete, or a packaged R1 or R2 Concrete with coarse aggregate added, or a packaged Normal Weight Concrete at the Contractor's option. The concrete shall be placed and consolidated according to Article 503.07. The concrete shall not be placed when frost is present on the surface of the repair area, or the surface temperature of the repair area is less than 40 °F (4 °C). All repaired members shall be restored as close as practicable to their original dimensions.

Curing shall be done according to Article 1020.13.

If temperatures below 45°F (7°C) are forecast during the curing period, protection methods shall be used. Protection Method I according to Article 1020.13(d)(1), or Protection Method II according to Article 1020.13(d)(2) shall be used during the curing period.

The surfaces of the completed repair shall be finished according to Article 503.15.

(b) Shotcrete. Shotcrete shall be tested by the Engineer for air content according to Illinois Modified AASHTO T 152. The sample shall be obtained from the discharge end of the nozzle by shooting a pile large enough to scoop a representative amount for filling the air meter measuring bowl. Shotcrete shall not be shot directly into the measuring bowl for testing.

For compressive strength of shotcrete, a 18 x 18 x 3.5 in. (457 x 457 x 89 mm) test panel shall be shot by the Contractor for testing by the Engineer. A steel form test panel shall have a minimum thickness of 3/16 in. (5 mm) for the bottom and sides. A wood form test panel shall have a minimum 3/4 in. (19 mm) thick bottom, and a minimum 1.5 in. (38 mm) thickness for the sides. The test panel shall be cured according to Article 1020.13 (a) (3) or (5) while stored at the jobsite and during delivery to the laboratory. After delivery to the laboratory for testing, curing and testing shall be according to ASTM C 1140.

The method of alignment control (i.e. ground wires, guide strips, depth gages, depth probes, and formwork) to ensure the specified shotcrete thickness and reinforcing bar cover is obtained shall be according to ACI 506R. Ground wires shall be removed after completion of cutting operations. Guide strips and formwork shall be of dimensions and a configuration that do not prevent proper application of shotcrete. Metal depth gauges shall be cut 1/4 in. (6 mm) below the finished surface. All repaired members shall be restored as close as practicable to their original dimensions.

For air temperature limits when applying shotcrete in cold weather, the first paragraph of Article 1020.14(b) shall apply. For hot weather, shotcrete shall not be applied when the air temperature is greater than 90°F (32°C). The applied shotcrete shall have a minimum temperature of 50°F (10°C) and a maximum temperature of 90°F (32°C). The shotcrete shall not be applied during periods of rain unless protective covers or enclosures are installed. The shotcrete shall not be applied when frost is present on the surface of the repair area, or the surface temperature of the repair area is less than 40°F (4°C). If necessary, lighting shall be provided to provide a clear view of the shooting area.

The shotcrete shall be applied according to ACI 506R, and shall be done in a manner that does not result in cold joints, laminations, sandy areas, voids, sags, or separations. In addition, the shotcrete shall be applied in a manner that results in maximum densification of the shotcrete. Shotcrete which is identified as being unacceptable while still plastic shall be removed and re-applied.

The nozzle shall normally be at a distance of 2 to 5 ft. (0.6 to 1.5 m) from the receiving surface, and shall be oriented at right angles to the receiving surface. Exceptions to this requirement will be permitted to fill corners, encase large diameter reinforcing bars, or as approved by the Engineer. For any exception, the nozzle shall never be oriented more than 45 degrees from the surface. Care shall be taken to keep the front face of the reinforcement bar clean during shooting operations. Shotcrete shall be built up from behind the reinforcement bar. Accumulations of rebound and overspray shall be continuously removed prior to application of new shotcrete. Rebound material shall not be incorporated in the work.

Whenever possible, shotcrete shall be applied to the full thickness in a single layer. The maximum thickness shall be according to Rules 4 and 5 under Construction Requirements, General. When two or more layers are required, the minimum number shall be used and shall be done in a manner without sagging or separation. A flash coat (i.e. a thin layer of up to 1/4 in. (6 mm) applied shotcrete) may be used as the final lift for overhead applications.

Prior to application of a succeeding layer of shotcrete, the initial layer of shotcrete shall be prepared according to the surface preparation and reinforcement bar cleaning requirements. Upon completion of the surface preparation and reinforcement bar treatment, water shall be applied according to the surface preparation requirements unless the surface is moist. The second layer of shotcrete shall then be applied within 30 minutes.

Shotcrete shall be cut back to line and grade using trowels, cutting rods, screeds or other suitable devices. The shotcrete shall be allowed to stiffen sufficiently before cutting. Cutting shall not cause cracks or delaminations in the shotcrete. For depressions, cut material may be used for small areas. Rebound material shall not be incorporated in the work. For the final finish, a wood float shall be used to approximately match the existing concrete texture. A manufacturer approved finishing aid may be used. Water shall not be used as a finishing aid. All repaired members shall be restored as close as practicable to their original dimensions.

Contractor operations for curing shall be continuous with shotcrete placement and finishing operations. Curing shall be accomplished using wetted cotton mats, membrane curing, or a combination of both. Cotton mats shall be applied according to Article 1020.13(a)(5) except the exposed layer of shotcrete shall be covered within 10 minutes after finishing, and wet curing shall begin immediately. Curing compound shall be applied according to Article 1020.13(a)(4), except the curing compound shall be applied as soon as the shotcrete has hardened sufficiently to prevent marring the surface, and each of the two separate applications shall be applied in opposite directions to ensure coverage. The curing compound shall be according to Article 1022.01. Note 5 of the Index Table in Article 1020.13 shall apply to the membrane curing method.

When a shotcrete layer is to be covered by a succeeding shotcrete layer within 36 hours, the repair area shall be protected with intermittent hand fogging, or wet curing with either burlap or cotton mats shall begin within 10 minutes. Intermittent hand fogging may be used only for the first hour. Thereafter, wet curing with burlap or cotton mats shall be used until the succeeding shotcrete layer is applied. Intermittent hand fogging may be extended to the first hour and a half if the succeeding shotcrete layer is applied by the end of this time.

The curing period shall be for 7 days, except when there is a succeeding layer of shotcrete. In this instance, the initial shotcrete layer shall be cured until the surface preparation and reinforcement bar treatment is started.

If temperatures below 45°F (7°C) are forecast during the curing period, protection methods shall be used. Protection Method I according to Article 1020.13(d)(1), or Protection Method II according to Article 1020.13(d)(2) shall be used during the curing period

Inspection of Completed Work. The Contractor shall provide ladders or other appropriate equipment for the Engineer to inspect the repaired areas. After curing but no sooner than 28 days after placement of concrete or shooting of shotcrete, the repair shall be examined for conformance with original dimensions, cracks, voids, and delaminations. Sounding for delaminations will be done with a hammer or by other methods determined by the Engineer.

The acceptable tolerance for conformance of a repaired area shall be within 1/4 in. (6 mm) of the original dimensions. A repaired area not in dimensional conformance or with delaminations shall be removed and replaced.

A repaired area with cracks or voids shall be considered as nonconforming. Exceeding one or more of the following crack and void criteria shall be cause for removal and replacement of a repaired area.

1. The presence of a single surface crack greater than 0.01 in. (0.25 mm) in width and greater than 12 in. (300 mm) in length.
2. The presence of two or more surface cracks greater than 0.01 in. (0.25 mm) in width that total greater than 24 in. (600 mm) in length.
3. The presence of map cracking in one or more regions totaling 15 percent or more of the gross surface area of the repair.
4. The presence of two or more surface voids with least dimension 3/4 in. (19 mm) each.

A repaired area with cracks or voids that do not exceed any of the above criteria may remain in place, as determined by the Engineer.

If a nonconforming repair is allowed to remain in place, cracks greater than 0.007 in. (0.2 mm) in width shall be repaired with epoxy according to Section 590. For cracks less than or equal to 0.007 in. (0.2 mm) in width, the epoxy may be applied to the surface of the crack. Voids shall be repaired according to Article 503.15.

Publications and Personnel Requirements. The Contractor shall provide a current copy of ACI 506R to the Engineer a minimum of one week prior to start of construction.

The shotcrete personnel who perform the work shall have current American Concrete Institute (ACI) nozzle men certification for vertical wet and overhead wet applications, except one individual may be in training. This individual shall be adequately supervised by a certified ACI nozzle men as determined by the Engineer. A copy of the nozzle men certificate(s) shall be given to the Engineer.

Method of Measurement. This work will be measured for payment in place and the area computed in square feet (square meters). For a repair at a corner, both sides will be measured.

Basis of Payment. This work will be paid for at the contract unit price per square foot (square meter) for STRUCTURAL REPAIR OF CONCRETE (DEPTH GREATER THAN 5 IN. (125 MM)), STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 IN. (125 MM)).

When not specified to be paid for elsewhere, the work to design, install, and remove the temporary shoring and cribbing will be paid for according to Article 109.04.

With the exception of reinforcement damaged by the Contractor during removal, the furnishing and installation of supplemental reinforcement bars, mechanical bar splicers, hook bolts, and protective coat will be paid according to Article 109.04.

DRILL WEEP HOLE

This work shall consist of drilling weep holes as described in the work order, using a ¼ inch drill bit mounted on a portable electric drill.

The work will be paid for at the agreed unit price each for **DRILL WEEP HOLE**, which price shall include all equipment and labor necessary to safely drill any hole described in the work order.

REMOVAL OF SIGN LIGHTING, NO SALVAGE

This item shall consist of disconnecting, completely removing and disposing of existing sign lighting as specified herein. This pay item shall also include removal of the associated conduit, wire and disconnect switch from the sign structure.

Luminaire removal shall be in accordance with Section 842, the cleaning and painting of sign structure caused by the removal of sign lighting and associated conduit shall be in accordance with section 506 of the Standard Specifications for Road and Bridge Construction, current version.

The Contractor shall coordinate any electrical work with the Department's Electrical Maintenance Contractor (EMC) prior to any work.

Prior to the removal of any equipment, the Contractor shall notify the Engineer to obtain the approval for equipment removal. No removal work shall be permitted until approved by the Engineer.

The removal of sign luminaires shall include all associated conduit, wire up to the handhole on the sign structure, if existing otherwise up to the nearest feed to the sign lighting (Junction Box or Light Pole), disconnect switch and hardware. All appurtenances shall become the property of the contractor and shall be disposed of according to the Article 202.03.

This work will be paid for at the agreed unit price each for **REMOVE EXISTING SIGN LIGHTING UNIT, NO SALVAGE** which price shall include all labor and equipment to complete the work described herein.

METAL SCREEN

This work shall consist of cleaning and installing stainless steel screen wire to enclose the void between the sign support base plates and the foundation.

The stainless steel mesh shall meet the requirements of Section 733 and be installed as shown in the details of Overhead Sign Structures Support Frame Base Sheet OS-A-6A.

The work will be paid for at the agreed unit price each for **METAL SCREEN**, which price shall include cleaning and installing the screen wire around each sign support base plate.

OVERHEAD SIGN STRUCTURE – TRUSS ONLY

This work shall consist of furnishing and installing a Type IA or IIA overhead sign structure-truss on or existing end supports at the location shown in the plans.

The Contractor shall be responsible for field verifying the existing dimensions for the end supports to assure the proper fit for the replacement truss on the existing end supports.

This work shall include all labor, material, and equipment necessary for proper execution and completion of the work as shown on the plans and as herein specified. It shall include all work not specifically included in the contract documents which is reasonably and properly inferable and necessary for proper completion of the improvement.

Materials shall meet the requirements of the sign structure detail sheets shown in the contract, conforming to the dimensions shown on the details included in the contract, and the applicable requirements of Section 1094.

The replacement overhead sign structure-span shall include the fabrication and installation of truss grating, to facilitate inspections, the entire length of the span conforming to the details shown in the contract.

The cost of fabricating and installing the truss grating and the truss damper shall be included in the cost of fabricating and installing the replacement overhead sign structure-span.

Due to the down sizing of the overhead sign structures a retrofit for the support frame at those locations where the existing end supports will be used is required. The retrofit for the existing end supports shall meet the requirements shown on the "OVERHEAD SIGN STRUCTURES EXISTING SUPPORT FRAME RETROFIT FOR ALUMINUM TRUSS" as shown on detail sheet OS-A-12 RETROFIT. The cost of the retrofit shall be included in the cost of fabricating and installing the replacement overhead sign structure-truss.

This work shall be done in accordance with Section 733, including providing all necessary mounting hardware and as specified herein.

Shop drawings for the new structure will be provided by the Contractor and approved in writing before any new materials are ordered or fabrication is begun.

Before starting work, the Contractor shall provide an erection plan to the Engineer detailing the method of erection proposed to be followed and the amount and type of equipment proposed to be used. The plan shall be subject to the approval of the Engineer. The approval of the Engineer shall not be considered as relieving the Contractor of the responsibility for the safety of the Contractor's method or equipment or from carrying out the work in full.

Traffic control and protection shall be included under this pay item. It shall be understood that the freeway will be closed a maximum of 15 minutes to remove and re-erect the sign structure and the time of the week allowed for closure will be as directed by the Engineer.

Basis of Payment: This work will be paid for at the contract unit price per foot for **OVERHEAD SIGN STRUCTURE- TRUSS ONLY** Type Specified which price shall include providing all necessary traffic control.

TIGHTEN SUPPORT ANCHOR BOLTS

This work shall consist of tightening the anchor bolts for an overhead sign structure support. For existing gaps less than 1/4 inch, an adequate size wrench shall be used to firmly seat the anchor bolt nut against the base plate of the overhead sign structure support, to the satisfaction of the Engineer. For gaps equal to or exceeding 1/4 inch, the threads above the nut shall be cleaned to allow raising the nut approximately 1/4 inch. A U-shaped, galvanized steel shim(s) of adequate thickness shall be inserted between the base plate and existing washer before tightening the nut to the Engineer's satisfaction.

This work will be paid for at the contract unit price each for TIGHTEN SUPPORT ANCHOR BOLTS, which price shall be payment in full for tightening all bolts for an overhead sign structure support, supplying and inserting the necessary shim(s), and providing all necessary traffic control.

TIGHTEN U-BOLT

This work shall consist of tightening existing U-bolts at the locations shown in the plans.

The U-bolts shall be tightened enough to bring the U-bolt against the tube and leave nuts/washers with less than 1/8-inch gap to the support or as directed by the Engineer.

U-bolts that cannot be tightened but are loose shall be replaced. Replacement U-bolts shall be either 8 mm or 20 mm (5/16" or 3/4") stainless steel U-bolts of the appropriate dimensions, two stainless steel washers and two hexagon lock-nuts per bolt.

The 8 mm (5/16 inch) U-bolts are located at the connection of the walkway support and sign brackets to the truss and the 20 mm (3/4 inch) U-bolts are located at the connection of the overhead sign structure to the end support. The U-bolt, washers, and lock-nuts shall meet the requirements of Section 733 and the Overhead Sign Structure Base Sheet OS-A-1. All U-bolts shall be of sufficient length to fully engage the lock-nut.

The Contractor shall field verifying dimensions prior to ordering any material.

This work will be paid for at the contract unit price each for TIGHTEN U-BOLT, which price shall be payment in full for properly tightening loose U-bolts, replacing any U-bolts that cannot be tightened and providing all necessary traffic control.

COMPENSABLE DELAY COSTS (BDE)

Effective: June 2, 2017

Revise Article 107.40(b) of the Standard Specifications to read:

“(b) Compensation. Compensation will not be allowed for delays, inconveniences, or damages sustained by the Contractor from conflicts with facilities not meeting the above definition; or if a conflict with a utility in an unanticipated location does not cause a shutdown of the work or a documentable reduction in the rate of progress exceeding the limits set herein. The provisions of Article 104.03 notwithstanding, compensation for delays caused by a utility in an unanticipated location will be paid according to the provisions of this Article governing minor and major delays or reduced rate of production which are defined as follows.

- (1) Minor Delay. A minor delay occurs when the work in conflict with the utility in an unanticipated location is completely stopped for more than two hours, but not to exceed two weeks.
- (2) Major Delay. A major delay occurs when the work in conflict with the utility in an unanticipated location is completely stopped for more than two weeks.
- (3) Reduced Rate of Production Delay. A reduced rate of production delay occurs when the rate of production on the work in conflict with the utility in an unanticipated location decreases by more than 25 percent and lasts longer than seven calendar days.”

Revise Article 107.40(c) of the Standard Specifications to read:

“(c) Payment. Payment for Minor, Major, and Reduced Rate of Production Delays will be made as follows.

(1) Minor Delay. Labor idled which cannot be used on other work will be paid for according to Article 109.04(b)(1) and (2) for the time between start of the delay and the minimum remaining hours in the work shift required by the prevailing practice in the area.

Equipment idled which cannot be used on other work, and which is authorized to standby on the project site by the Engineer, will be paid for according to Article 109.04(b)(4).

(2) Major Delay. Labor will be the same as for a minor delay.

Equipment will be the same as for a minor delay, except Contractor-owned equipment will be limited to two weeks plus the cost of move-out to either the Contractor's yard or another job and the cost to re-mobilize, whichever is less. Rental equipment may be paid for longer than two weeks provided the Contractor presents adequate support to the Department (including lease agreement) to show retaining equipment on the job is the most economical course to follow and in the public interest.

(3) Reduced Rate of Production Delay. The Contractor will be compensated for the reduced productivity for labor and equipment time in excess of the 25 percent threshold for that portion of the delay in excess of seven calendar days. Determination of compensation will be in accordance with Article 104.02, except labor and material additives will not be permitted.

Payment for escalated material costs, escalated labor costs, extended project overhead, and extended traffic control will be determined according to Article 109.13.”

Revise Article 108.04(b) of the Standard Specifications to read:

“(b) No working day will be charged under the following conditions.

(1) When adverse weather prevents work on the controlling item.

(2) When job conditions due to recent weather prevent work on the controlling item.

(3) When conduct or lack of conduct by the Department or its consultants, representatives, officers, agents, or employees; delay by the Department in making the site available; or delay in furnishing any items required to be furnished to the Contractor by the Department prevents work on the controlling item.

(4) When delays caused by utility or railroad adjustments prevent work on the controlling item.

(5) When strikes, lock-outs, extraordinary delays in transportation, or inability to procure critical materials prevent work on the controlling item, as long as these delays are not due to any fault of the Contractor.

(6) When any condition over which the Contractor has no control prevents work on the controlling item.”

Revise Article 109.09(f) of the Standard Specifications to read:

“(f) **Basis of Payment.** After resolution of a claim in favor of the Contractor, any adjustment in time required for the work will be made according to Section 108. Any adjustment in the costs to be paid will be made for direct labor, direct materials, direct equipment, direct jobsite overhead, direct offsite overhead, and other direct costs allowed by the resolution. Adjustments in costs will not be made for interest charges, loss of anticipated profit, undocumented loss of efficiency, home office overhead and unabsorbed overhead other than as allowed by Article 109.13, lost opportunity, preparation of claim expenses and other consequential indirect costs regardless of method of calculation.

The above Basis of Payment is an essential element of the contract and the claim cost recovery of the Contractor shall be so limited.”

Add the following to Section 109 of the Standard Specifications.

“**109.13 Payment for Contract Delay.** Compensation for escalated material costs, escalated labor costs, extended project overhead, and extended traffic control will be allowed when such costs result from a delay meeting the criteria in the following table.

Contract Type	Cause of Delay	Length of Delay
Working Days	Article 108.04(b)(3) or Article 108.04(b)(4)	No working days have been charged for two consecutive weeks.
Completion Date	Article 108.08(b)(1) or Article 108.08(b)(7)	The Contractor has been granted a minimum two week extension of contract time, according to Article 108.08.

Payment for each of the various costs will be according to the following.

(a) **Escalated Material and/or Labor Costs.** When the delay causes work, which would have otherwise been completed, to be done after material and/or labor costs have increased, such increases will be paid. Payment for escalated material costs will be limited to the increased costs substantiated by documentation furnished by the Contractor. Payment for escalated labor costs will be limited to those items in Article 109.04(b)(1) and (2), except the 35 percent and 10 percent additives will not be permitted.

(b) Extended Project Overhead. For the duration of the delay, payment for extended project overhead will be paid as follows.

(1) Direct Jobsite and Offsite Overhead. Payment for documented direct jobsite overhead and documented direct offsite overhead, including onsite supervisory and administrative personnel, will be allowed according to the following table.

Original Contract Amount	Supervisory and Administrative Personnel
Up to \$5,000,000	One Project Superintendent
Over \$ 5,000,000 - up to \$25,000,000	One Project Manager, One Project Superintendent or Engineer, and One Clerk
Over \$25,000,000 - up to \$50,000,000	One Project Manager, One Project Superintendent, One Engineer, and One Clerk
Over \$50,000,000	One Project Manager, Two Project Superintendents, One Engineer, and One Clerk

(2) Home Office and Unabsorbed Overhead. Payment for home office and unabsorbed overhead will be calculated as 8 percent of the total delay cost.

(c) Extended Traffic Control. Traffic control required for an extended period of time due to the delay will be paid. For working day contracts the payment will be made according to Article 109.04. For completion date contracts, an adjustment will be determined as follows.

Extended Traffic Control occurs between April 1 and November 30:

$$\text{ETCP Adjustment (\$)} = \text{TE} \times (\% / 100 \times \text{CUP} / \text{OCT})$$

Extended Traffic Control occurs between December 1 and March 31:

$$\text{ETCP Adjustment (\$)} = \text{TE} \times 1.5 (\% / 100 \times \text{CUP} / \text{OCT})$$

Where: TE = Duration of approved time extension in calendar days.
% = Percent maintenance for the traffic control, % (see table below).
CUP = Contract unit price for the traffic control pay item in place during the delay.
OCT = Original contract time in calendar days.

Original Contract Amount	Percent Maintenance
Up to \$2,000,000	65%
\$2,000,000 to \$10,000,000	75%
\$10,000,000 to \$20,000,000	85%
Over \$20,000,000	90%

When an ETCP adjustment is paid under this provision, an adjusted unit price as provided for in Article 701.20(a) for increase or decrease in the value of work by more than ten percent will not be paid.

Upon payment for a contract delay under this provision, the Contractor shall assign subrogation rights to the Department for the Department's efforts of recovery from any other party for monies paid by the Department as a result of any claim under this provision. The Contractor shall fully cooperate with the Department in its efforts to recover from another party any money paid to the Contractor for delay damages under this provision."

CONSTRUCTION AIR QUALITY – DIESEL RETROFIT (BDE)

Effective: June 1, 2010

Revised: November 1, 2014

The reduction of emissions of particulate matter (PM) for off-road equipment shall be accomplished by installing retrofit emission control devices. The term "equipment" refers to diesel fuel powered devices rated at 50 hp and above, to be used on the jobsite in excess of seven calendar days over the course of the construction period on the jobsite (including rental equipment).

Contractor and subcontractor diesel powered off-road equipment assigned to the contract shall be retrofitted using the phased in approach shown below. Equipment that is of a model year older than the year given for that equipment's respective horsepower range shall be retrofitted:

Effective Dates	Horsepower Range	Model Year
June 1, 2010 ^{1/}	600-749	2002
	750 and up	2006
June 1, 2011 ^{2/}	100-299	2003
	300-599	2001
	600-749	2002
	750 and up	2006
June 1, 2012 ^{2/}	50-99	2004
	100-299	2003
	300-599	2001
	600-749	2002
	750 and up	2006

- 1/ Effective dates apply to Contractor diesel powered off-road equipment assigned to the contract.
- 2/ Effective dates apply to Contractor and subcontractor diesel powered off-road equipment assigned to the contract.

The retrofit emission control devices shall achieve a minimum PM emission reduction of 50 percent and shall be:

- a) Included on the U.S. Environmental Protection Agency (USEPA) *Verified Retrofit Technology List* (<http://www.epa.gov/cleandiesel/verification/verif-list.htm>), or verified by the California Air Resources Board (CARB) (<http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm>); or
- b) Retrofitted with a non-verified diesel retrofit emission control device if verified retrofit emission control devices are not available for equipment proposed to be used on the project, and if the Contractor has obtained a performance certification from the retrofit device manufacturer that the emission control device provides a minimum PM emission reduction of 50 percent.

Note: Large cranes (Crawler mounted cranes) which are responsible for critical lift operations are exempt from installing retrofit emission control devices if such devices adversely affect equipment operation.

Diesel powered off-road equipment with engine ratings of 50 hp and above, which are unable to be retrofitted with verified emission control devices or if performance certifications are not available which will achieve a minimum 50 percent PM reduction, may be granted a waiver by the Department if documentation is provided showing good faith efforts were made by the Contractor to retrofit the equipment.

Construction shall not proceed until the Contractor submits a certified list of the diesel powered off-road equipment that will be used, and as necessary, retrofitted with emission control devices. The list(s) shall include (1) the equipment number, type, make, Contractor/rental company name; and (2) the emission control devices make, model, USEPA or CARB verification number, or performance certification from the retrofit device manufacturer. Equipment reported as fitted with emissions control devices shall be made available to the Engineer for visual inspection of the device installation, prior to being used on the jobsite.

The Contractor shall submit an updated list of retrofitted off-road construction equipment as retrofitted equipment changes or comes on to the jobsite. The addition or deletion of any diesel powered equipment shall be included on the updated list.

If any diesel powered off-road equipment is found to be in non-compliance with any portion of this special provision, the Engineer will issue the Contractor a diesel retrofit deficiency deduction.

Any costs associated with retrofitting any diesel powered off-road equipment with emission control devices shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed. The Contractor's compliance with this notice and any associated regulations shall not be grounds for a claim.

Diesel Retrofit Deficiency Deduction

When the Engineer determines that a diesel retrofit deficiency exists, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency continues to exist. The calendar day(s) will begin when the time period for correction is exceeded and end with the Engineer's written acceptance of the correction. The daily monetary deduction will be \$1,000.00 for each deficiency identified.

The deficiency will be based on lack of diesel retrofit emissions control.

If a Contractor accumulates three diesel retrofit deficiency deductions for the same piece of equipment in a contract period, the Contractor will be shutdown until the deficiency is corrected. Such a shutdown will not be grounds for any extension of the contract time, waiver of penalties, or be grounds for any claim.

DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE)

Effective: September 1, 2000

Revised: July 2, 2016

FEDERAL OBLIGATION. The Department of Transportation, as a recipient of federal financial assistance, is required to take all necessary and reasonable steps to ensure nondiscrimination in the award and administration of contracts. Consequently, the federal regulatory provisions of 49 CFR Part 26 apply to this contract concerning the utilization of disadvantaged business enterprises. For the purposes of this Special Provision, a disadvantaged business enterprise (DBE) means a business certified by the Department in accordance with the requirements of 49 CFR Part 26 and listed in the Illinois Unified Certification Program (IL UCP) DBE Directory.

STATE OBLIGATION. This Special Provision will also be used by the Department to satisfy the requirements of the Business Enterprise for Minorities, Females, and Persons with Disabilities Act, 30 ILCS 575. When this Special Provision is used to satisfy state law requirements on 100 percent state-funded contracts, the federal government has no involvement in such contracts (not a federal-aid contract) and no responsibility to oversee the implementation of this Special Provision by the Department on those contracts. DBE participation on 100 percent state-funded contracts will not be credited toward fulfilling the Department's annual overall DBE goal required by the US Department of Transportation to comply with the federal DBE program requirements.

CONTRACTOR ASSURANCE. The Contractor makes the following assurance and agrees to include the assurance in each subcontract that the Contractor signs with a subcontractor.

The Contractor, subrecipient, or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of contracts funded in whole or in part with federal or state funds. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

- (a) Withholding progress payments;
- (b) Assessing sanctions;
- (c) Liquidated damages; and/or
- (d) Disqualifying the Contractor from future bidding as non-responsible.

OVERALL GOAL SET FOR THE DEPARTMENT. As a requirement of compliance with 49 CFR Part 26, the Department has set an overall goal for DBE participation in its federally assisted contracts. That goal applies to all federal-aid funds the Department will expend in its federally assisted contracts for the subject reporting fiscal year. The Department is required to make a good faith effort to achieve the overall goal. The dollar amount paid to all approved DBE companies performing work called for in this contract is eligible to be credited toward fulfillment of the Department's overall goal.

CONTRACT GOAL TO BE ACHIEVED BY THE CONTRACTOR. This contract includes a specific DBE utilization goal established by the Department. The goal has been included because the Department has determined that the work of this contract has subcontracting opportunities that may be suitable for performance by DBE companies. The determination is based on an assessment of the type of work, the location of the work, and the availability of DBE companies to do a part of the work. The assessment indicates that, in the absence of unlawful discrimination, and in an arena of fair and open competition, DBE companies can be expected to perform **0.00%** of the work. This percentage is set as the DBE participation goal for this contract. Consequently, in addition to the other award criteria established for this contract, the Department will only award this contract to a bidder who makes a good faith effort to meet this goal of DBE participation in the performance of the work. A bidder makes a good faith effort for award consideration if either of the following is done in accordance with the procedures set for in this Special Provision:

- (a) The bidder documents that enough DBE participation has been obtained to meet the goal or,
- (b) The bidder documents that a good faith effort has been made to meet the goal, even though the effort did not succeed in obtaining enough DBE participation to meet the goal.

DBE LOCATOR REFERENCES. Bidders shall consult the IL UCP DBE Directory as a reference source for DBE-certified companies. In addition, the Department maintains a letting and item specific DBE locator information system whereby DBE companies can register their interest in providing quotes on particular bid items advertised for letting. Information concerning DBE companies willing to quote work for particular contracts may be obtained by contacting the Department's Bureau of Small Business Enterprises at telephone number (217) 785-4611, or by visiting the Department's website at:

<http://www.idot.illinois.gov/doing-business/certifications/disadvantaged-business-enterprise-certification/il-ucp-directory/index>.

BIDDING PROCEDURES. Compliance with this Special Provision is required prior to the award of the contract and the failure of the low bidder to comply will render the bid not responsive.

In order to assure the timely award of the contract, the low bidder shall submit:

- (a) The bidder shall submit a DBE Utilization Plan on completed Department forms SBE 2025 and 2026.
 - (1) The final Utilization Plan must be submitted within five calendar days after the date of the letting in accordance with subsection (a)(2) of Bidding Procedures herein.
 - (2) To meet the five day requirement, the bidder may send the Utilization Plan electronically by scanning and sending to **DOT.DBE.UP@illinois.gov** or faxing to (217) 785-1524. The subject line must include the bid Item Number and the Letting date. The Utilization Plan should be sent as one .pdf file, rather than multiple files and emails for the same Item Number. It is the responsibility of the bidder to obtain confirmation of email or fax delivery.

Alternatively, the Utilization Plan may be sent by certified mail or delivery service within the five calendar day period. If a question arises concerning the mailing date of a Utilization Plan, the mailing date will be established by the U.S. Postal Service postmark on the certified mail receipt from the U.S. Postal Service or the receipt issued by a delivery service when the Utilization Plan is received by the Department. It is the responsibility of the bidder to ensure the postmark or receipt date is affixed within the five days if the bidder intends to rely upon mailing or delivery to satisfy the submission day requirement. The Utilization Plan is to be submitted to:

Illinois Department of Transportation
Bureau of Small Business Enterprises
Contract Compliance Section
2300 South Dirksen Parkway, Room 319
Springfield, Illinois 62764

The Department will not accept a Utilization Plan if it does not meet the five day submittal requirement and the bid will be declared not responsive. In the event the bid is declared not responsive due to a failure to submit a Utilization Plan or failure to comply with the bidding procedures set forth herein, the Department may elect to cause the forfeiture of the penal sum of the bidder's proposal guaranty, and may deny authorization to bid the project if re-advertised for bids. The Department reserves the right to invite any other bidder to submit a Utilization Plan at any time for award consideration.

- (b) The Utilization Plan shall indicate that the bidder either has obtained sufficient DBE participation commitments to meet the contract goal or has not obtained enough DBE participation commitments in spite of a good faith effort to meet the goal. The Utilization Plan shall further provide the name, telephone number, and telefax number of a responsible official of the bidder designated for purposes of notification of Utilization Plan approval or disapproval under the procedures of this Special Provision.
- (c) The Utilization Plan shall include a DBE Participation Commitment Statement, Department form SBE 2025, for each DBE proposed for the performance of work to achieve the contract goal. For bidding purposes, submission of the completed SBE 2025 forms, signed by the DBEs and scanned or faxed to the bidder will be acceptable as long as the original is available and provided upon request. All elements of information indicated on the said form shall be provided, including but not limited to the following:
 - (1) The names and addresses of DBE firms that will participate in the contract;
 - (2) A description, including pay item numbers, of the work each DBE will perform;
 - (3) The dollar amount of the participation of each DBE firm participating. The dollar amount of participation for identified work shall specifically state the quantity, unit price, and total subcontract price for the work to be completed by the DBE. If partial pay items are to be performed by the DBE, indicate the portion of each item, a unit price where appropriate and the subcontract price amount;

- (4) DBE Participation Commitment Statements, form SBE 2025, signed by the bidder and each participating DBE firm documenting the commitment to use the DBE subcontractors whose participation is submitted to meet the contract goal;
- (5) If the bidder is a joint venture comprised of DBE companies and non-DBE companies, the Utilization Plan must also include a clear identification of the portion of the work to be performed by the DBE partner(s); and,
- (6) If the contract goal is not met, evidence of good faith efforts; the documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor is selected over a DBE for work on the contract.

GOOD FAITH EFFORT PROCEDURES. The contract will not be awarded until the Utilization Plan submitted by the apparent successful bidder is approved. All information submitted by the bidder must be complete, accurate and adequately document that enough DBE participation has been obtained or document that good faith efforts of the bidder, in the event enough DBE participation has not been obtained, before the Department will commit to the performance of the contract by the bidder. The Utilization Plan will be approved by the Department if the Utilization Plan documents sufficient commercially useful DBE work to meet the contract goal or the bidder submits sufficient documentation of a good faith effort to meet the contract goal pursuant to 49 CFR Part 26, Appendix A. The Utilization Plan will not be approved by the Department if the Utilization Plan does not document sufficient DBE participation to meet the contract goal unless the apparent successful bidder documented in the Utilization Plan that it made a good faith effort to meet the goal. This means that the bidder must show that all necessary and reasonable steps were taken to achieve the contract goal. Necessary and reasonable steps are those which, by their scope, intensity and appropriateness to the objective, could reasonably be expected to obtain sufficient DBE participation, even if they were not successful. The Department will consider the quality, quantity, and intensity of the kinds of efforts that the bidder has made. Mere *pro forma* efforts, in other words, efforts done as a matter of form, are not good faith efforts; rather, the bidder is expected to have taken genuine efforts that would be reasonably expected of a bidder actively and aggressively trying to obtain DBE participation sufficient to meet the contract goal.

- (a) The following is a list of types of action that the Department will consider as part of the evaluation of the bidder's good faith efforts to obtain participation. These listed factors are not intended to be a mandatory checklist and are not intended to be exhaustive. Other factors or efforts brought to the attention of the Department may be relevant in appropriate cases, and will be considered by the Department.
 - (1) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBE companies that have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBE companies to respond to the solicitation. The bidder must determine with certainty if the DBE companies are interested by taking appropriate steps to follow up initial solicitations.

- (2) Selecting portions of the work to be performed by DBE companies in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the prime Contractor might otherwise prefer to perform these work items with its own forces.
- (3) Providing interested DBE companies with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.
- (4)
 - a. Negotiating in good faith with interested DBE companies. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBE companies that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBE companies to perform the work.
 - b. A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBE companies is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also the ability or desire of a bidder to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidders are not, however, required to accept higher quotes from DBE companies if the price difference is excessive or unreasonable. In accordance with subsection (c)(6) of the above Bidding Procedures, the documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor was selected over a DBE for work on the contract.
- (5) Not rejecting DBE companies as being unqualified without sound reasons based on a thorough investigation of their capabilities. The bidder's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal.
- (6) Making efforts to assist interested DBE companies in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.
- (7) Making efforts to assist interested DBE companies in obtaining necessary equipment, supplies, materials, or related assistance or services.

- (8) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBE companies.
- (b) If the Department determines that the apparent successful bidder has made a good faith effort to secure the work commitment of DBE companies to meet the contract goal, the Department will award the contract provided that it is otherwise eligible for award. If the Department determines that the bidder has failed to meet the requirements of this Special Provision or that a good faith effort has not been made, the Department will notify the responsible company official designated in the Utilization Plan that the bid is not responsive. The notification shall include a statement of reasons for the determination. If the Utilization Plan is not approved because it is deficient as a technical matter, unless waived by the Department, the bidder will be notified and will be allowed no more than a five calendar day period in order to cure the deficiency.
- (c) The bidder may request administrative reconsideration of a determination adverse to the bidder within the five working days after the receipt of the notification date of the determination by delivering the request to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764 (Telefax: (217) 785-1524). Deposit of the request in the United States mail on or before the fifth business day shall not be deemed delivery. The determination shall become final if a request is not made and delivered. A request may provide additional written documentation or argument concerning the issues raised in the determination statement of reasons, provided the documentation and arguments address efforts made prior to submitting the bid. The request will be forwarded to the Department's Reconsideration Officer. The Reconsideration Officer will extend an opportunity to the bidder to meet in person in order to consider all issues of documentation and whether the bidder made a good faith effort to meet the goal. After the review by the Reconsideration Officer, the bidder will be sent a written decision within ten working days after receipt of the request for consideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. A final decision by the Reconsideration Officer that a good faith effort was made shall approve the Utilization Plan submitted by the bidder and shall clear the contract for award. A final decision that a good faith effort was not made shall render the bid not responsive.

CALCULATING DBE PARTICIPATION. The Utilization Plan values represent work anticipated to be performed and paid for upon satisfactory completion. The Department is only able to count toward the achievement of the overall goal and the contract goal the value of payments made for the work actually performed by DBE companies. In addition, a DBE must perform a commercially useful function on the contract to be counted. A commercially useful function is generally performed when the DBE is responsible for the work and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. The Department and Contractor are governed by the provisions of 49 CFR Part 26.55(c) on questions of commercially useful functions as it affects the work. Specific counting guidelines are provided in 49 CFR Part 26.55, the provisions of which govern over the summary contained herein.

- (a) DBE as the Contractor: 100 percent goal credit for that portion of the work performed by the DBE's own forces, including the cost of materials and supplies. Work that a DBE subcontracts to a non-DBE does not count toward the DBE goals.

- (b) DBE as a joint venture Contractor: 100 percent goal credit for that portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work performed by the DBE's own forces.
- (c) DBE as a subcontractor: 100 percent goal credit for the work of the subcontract performed by the DBE's own forces, including the cost of materials and supplies, excluding the purchase of materials and supplies or the lease of equipment by the DBE subcontractor from the prime Contractor or its affiliates. Work that a DBE subcontractor in turn subcontracts to a non-DBE does not count toward the DBE goal.
- (d) DBE as a trucker: 100 percent goal credit for trucking participation provided the DBE is responsible for the management and supervision of the entire trucking operation for which it is responsible. At least one truck owned, operated, licensed, and insured by the DBE must be used on the contract. Credit will be given for the following:
 - (1) The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract.
 - (2) The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit only for the fee or commission is receives as a result of the lease arrangement.
- (e) DBE as a material supplier:
 - (1) 60 percent goal credit for the cost of the materials or supplies purchased from a DBE regular dealer.
 - (2) 100 percent goal credit for the cost of materials of supplies obtained from a DBE manufacturer.
 - (3) 100 percent credit for the value of reasonable fees and commissions for the procurement of materials and supplies if not a DBE regular dealer or DBE manufacturer.

CONTRACT COMPLIANCE. Compliance with this Special Provision is an essential part of the contract. The Department is prohibited by federal regulations from crediting the participation of a DBE included in the Utilization Plan toward either the contract goal or the Department's overall goal until the amount to be applied toward the goals has been paid to the DBE. The following administrative procedures and remedies govern the compliance by the Contractor with the contractual obligations established by the Utilization Plan. After approval of the Utilization Plan and award of the contract, the Utilization Plan and individual DBE Participation Statements become part of the contract. If the Contractor did not succeed in obtaining enough DBE participation to achieve the advertised contract goal, and the Utilization Plan was approved and contract awarded based upon a determination of good faith, the total dollar value of DBE work calculated in the approved Utilization Plan as a percentage of the awarded contract value shall become the amended contract goal. All work indicated for performance by an approved DBE shall be performed, managed, and supervised by the DBE executing the DBE Participation Commitment Statement.

- (a) NO AMENDMENT. No amendment to the Utilization Plan may be made without prior written approval from the Department's Bureau of Small Business Enterprises. All requests for amendment to the Utilization Plan shall be submitted to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764. Telephone number (217) 785-4611. Telefax number (217) 785-1524.
- (b) CHANGES TO WORK. Any deviation from the DBE condition-of-award or contract plans, specifications, or special provisions must be approved, in writing, by the Department as provided elsewhere in the Contract. The Contractor shall notify affected DBEs in writing of any changes in the scope of work which result in a reduction in the dollar amount condition-of-award to the contract. Where the revision includes work committed to a new DBE subcontractor, not previously involved in the project, then a Request for Approval of Subcontractor, Department form BC 260A or AER 260A, must be signed and submitted. If the commitment of work is in the form of additional tasks assigned to an existing subcontract, than a new Request for Approval of Subcontractor shall not be required. However, the Contractor must document efforts to assure that the existing DBE subcontractor is capable of performing the additional work and has agreed in writing to the change.
- (c) SUBCONTRACT. The Contractor must provide DBE subcontracts to IDOT upon request. Subcontractors shall ensure that all lower tier subcontracts or agreements with DBEs to supply labor or materials be performed in accordance with this Special Provision.

- (d) ALTERNATIVE WORK METHODS. In addition to the above requirements for reductions in the condition of award, additional requirements apply to the two cases of Contractor-initiated work substitution proposals. Where the contract allows alternate work methods which serve to delete or create underruns in condition of award DBE work, and the Contractor selects that alternate method or, where the Contractor proposes a substitute work method or material that serves to diminish or delete work committed to a DBE and replace it with other work, then the Contractor must demonstrate one of the following:
- (1) That the replacement work will be performed by the same DBE (as long as the DBE is certified in the respective item of work) in a modification of the condition of award; or
 - (2) That the DBE is aware that its work will be deleted or will experience underruns and has agreed in writing to the change. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so; or
 - (3) That the DBE is not capable of performing the replacement work or has declined to perform the work at a reasonable competitive price. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so.
- (e) TERMINATION AND REPLACEMENT PROCEDURES. The Contractor shall not terminate or replace a DBE listed on the approved Utilization Plan, or perform with other forces work designated for a listed DBE except as provided in this Special Provision. The Contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which each is listed unless the Contractor obtains the Department's written consent as provided in subsection (a) of this part. Unless Department consent is provided for termination of a DBE subcontractor, the Contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the DBE in the Utilization Plan.

As stated above, the Contractor shall not terminate or replace a DBE subcontractor listed in the approved Utilization Plan without prior written consent. This includes, but is not limited to, instances in which the Contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm. Written consent will be granted only if the Bureau of Small Business Enterprises agrees, for reasons stated in its concurrence document, that the Contractor has good cause to terminate or replace the DBE firm. Before transmitting to the Bureau of Small Business Enterprises any request to terminate and/or substitute a DBE subcontractor, the Contractor shall give notice in writing to the DBE subcontractor, with a copy to the Bureau, of its intent to request to terminate and/or substitute, and the reason for the request. The Contractor shall give the DBE five days to respond to the Contractor's notice. The DBE so notified shall advise the Bureau and the Contractor of the reasons, if any, why it objects to the proposed termination of its subcontract and why the Bureau should not approve the Contractor's action. If required in a particular case as a matter of public necessity, the Bureau may provide a response period shorter than five days.

For purposes of this paragraph, good cause includes the following circumstances:

- (1) The listed DBE subcontractor fails or refuses to execute a written contract;
- (2) The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the prime contractor;
- (3) The listed DBE subcontractor fails or refuses to meet the prime Contractor's reasonable, nondiscriminatory bond requirements;
- (4) The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;
- (5) The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant 2 CFR Parts 180, 215 and 1200 or applicable state law.
- (6) You have determined that the listed DBE subcontractor is not a responsible contractor;
- (7) The listed DBE subcontractor voluntarily withdraws from the projects and provides to you written notice of its withdrawal;
- (8) The listed DBE is ineligible to receive DBE credit for the type of work required;
- (9) A DBE owner dies or becomes disabled with the result that the listed DBE subcontractor is unable to complete its work on the contract;
- (10) Other documented good cause that compels the termination of the DBE subcontractor. Provided, that good cause does not exist if the prime Contractor seeks to terminate a DBE it relied upon to obtain the contract so that the prime Contractor can self-perform the work for which the DBE contractor was engaged or so that the prime Contractor can substitute another DBE or non-DBE contractor after contract award.

When a DBE is terminated, or fails to complete its work on the Contract for any reason the Contractor shall make a good faith effort to find another DBE to substitute for the original DBE to perform at least the same amount of work under the contract as the terminated DBE to the extent needed to meet the established Contract goal. The good faith efforts shall be documented by the Contractor. If the Department requests documentation under this provision, the Contractor shall submit the documentation within seven days, which may be extended for an additional seven days if necessary at the request of the Contractor. The Department shall provide a written determination to the Contractor stating whether or not good faith efforts have been demonstrated.

- (f) PAYMENT RECORDS. The Contractor shall maintain a record of payments for work performed to the DBE participants. The records shall be made available to the Department for inspection upon request. After the performance of the final item of work or delivery of material by a DBE and final payment therefore to the DBE by the Contractor, but not later than thirty calendar days after payment has been made by the Department to the Contractor for such work or material, the Contractor shall submit a DBE Payment Agreement on Department form SBE 2115 to the Resident Engineer. If full and final payment has not been made to the DBE, the DBE Payment Agreement shall indicate whether a disagreement as to the payment required exists between the Contractor and the DBE or if the Contractor believes that the work has not been satisfactorily completed. If the Contractor does not have the full amount of work indicated in the Utilization Plan performed by the DBE companies indicated in the Utilization Plan and after good faith efforts are reviewed, the Department may deduct from contract payments to the Contractor the amount of the goal not achieved as liquidated and ascertained damages. The Contractor may request an administrative reconsideration of any amount deducted as damages pursuant to subsection (h) of this part.
- (g) ENFORCEMENT. The Department reserves the right to withhold payment to the Contractor to enforce the provisions of this Special Provision. Final payment shall not be made on the contract until such time as the Contractor submits sufficient documentation demonstrating achievement of the goal in accordance with this Special Provision or after liquidated damages have been determined and collected.
- (h) RECONSIDERATION. Notwithstanding any other provision of the contract, including but not limited to Article 109.09 of the Standard Specifications, the Contractor may request administrative reconsideration of a decision to deduct the amount of the goal not achieved as liquidated damages. A request to reconsider shall be delivered to the Contract Compliance Section and shall be handled and considered in the same manner as set forth in paragraph (c) of "Good Faith Effort Procedures" of this Special Provision, except a final decision that a good faith effort was not made during contract performance to achieve the goal agreed to in the Utilization Plan shall be the final administrative decision of the Department. The result of the reconsideration process is not administratively appealable to the U.S. Department of Transportation.

EQUIPMENT PARKING AND STORAGE (BDE)

Effective: November 1, 2017

Replace the first paragraph of Article 701.11 of the Standard Specifications with the following.

“701.11 Equipment Parking and Storage. During working hours, all vehicles and/or nonoperating equipment which are parked, two hours or less, shall be parked at least 8 ft (2.5 m) from the open traffic lane. For other periods of time during working and for all nonworking hours, all vehicles, materials, and equipment shall be parked or stored as follows.

- (a) When the project has adequate right-of-way, vehicles, materials, and equipment shall be located a minimum of 30 ft (9 m) from the pavement.
- (b) When adequate right-of-way does not exist, vehicles, materials, and equipment shall be located a minimum of 15 ft (4.5 m) from the edge of any pavement open to traffic.
- (c) Behind temporary concrete barrier, vehicles, materials, and equipment shall be located a minimum of 24 in. (600 mm) behind free standing barrier or a minimum of 6 in. (150 mm) behind barrier that is either pinned or restrained according to Article 704.04. The 24 in. or 6 in. measurement shall be from the base of the non-traffic side of the barrier.
- (d) Behind other man-made or natural barriers meeting the approval of the Engineer.”

LIGHTS ON BARRICADES (BDE)

Effective: January 1, 2018

Revise Article 701.16 of the Standard Specifications to read:

“701.16 Lights. Lights shall be used on devices as required in the plans, the traffic control plan, and the following table.

Circumstance	Lights Required
Daylight operations	None
First two warning signs on each approach to the work involving a nighttime lane closure and “ROUGH GROOVED SURFACE” (W8-I107) signs	Flashing mono-directional lights
Devices delineating isolated obstacles, excavations, or hazards at night (Does not apply to patching)	Flashing bi-directional lights
Devices delineating obstacles, excavations, or hazards exceeding 100 ft (30 m) in length at night (Does not apply to widening)	Steady burn bi-directional lights
Channelizing devices for nighttime lane closures on two-lane roads	None
Channelizing devices for nighttime lane closures on multi-lane roads	None
Channelizing devices for nighttime lane closures on multi-lane roads separating opposing directions of traffic	None
Channelizing devices for nighttime along lane shifts on multilane roads	Steady burn mono-directional lights
Channelizing devices for night time along lane shifts on two lane roads	Steady burn bi-directional lights
Devices in nighttime lane closure tapers on Standards 701316 and 701321	Steady burn bi-directional lights
Devices in nighttime lane closure tapers	Steady burn mono-directional lights
Devices delineating a widening trench	None
Devices delineating patches at night on roadways with an ADT less than 25,000	None
Devices delineating patches at night on roadways with an ADT of 25,000 or more	None

Batteries for the lights shall be replaced on a group basis at such times as may be specified by the Engineer.”

Delete the fourth sentence of the first paragraph of Article 701.17(c)(2) of the Standard Specifications.

Revise the first paragraph of Article 603.07 of the Standard Specifications to read:

“603.07 Protection Under Traffic. After the casting has been adjusted and Class SI concrete has been placed, the work shall be protected by a barricade for at least 72 hours.”

PAYMENTS TO SUBCONTRACTORS (BDE)

Effective: November 2, 2017

Add the following to the end of the fourth paragraph of Article 109.11 of the Standard Specifications:

“If reasonable cause is asserted, written notice shall be provided to the applicable subcontractor and/or material supplier and the Engineer within five days of the Contractor receiving payment. The written notice shall identify the contract number, the subcontract or material purchase agreement, a detailed reason for refusal, the value of payment being withheld, and the specific remedial actions required of the subcontractor and/or material supplier so that payment can be made.”

PORTABLE CHANGEABLE MESSAGE SIGNS (BDE)

Effective: November 1, 2016

Revised: April 1, 2017

Revise the second paragraph of Article 701.20(h) of the Standard Specifications to read:

“For all other portable changeable message signs, this work will be paid for at the contract unit price per calendar day for each sign as CHANGEABLE MESSAGE SIGN.”

Revise this second sentence of the first paragraph of Article 1106.02(i) of the Standard Specifications to read:

“The message panel shall be a minimum of 7 ft (2.1 m) above the edge of pavement in urban areas and a minimum of 5 ft (1.5 m) above the edge of pavement in rural areas, present a level appearance, and be capable of displaying up to eight characters in each of three lines at a time.”

PROGRESS PAYMENTS (BDE)

Effective: November 2, 2013

Revise Article 109.07(a) of the Standard Specifications to read:

“(a) Progress Payments. At least once each month, the Engineer will make a written estimate of the quantity of work performed in accordance with the contract, and the value thereof at the contract unit prices. The amount of the estimate approved as due for payment will be vouchered by the Department and presented to the State Comptroller for payment. No amount less than \$1000.00 will be approved for payment other than the final payment.

Progress payments may be reduced by liens filed pursuant to Section 23(c) of the Mechanics' Lien Act, 770 ILCS 60/23(c).

If a Contractor or subcontractor has defaulted on a loan issued under the Department's Disadvantaged Business Revolving Loan Program (20 ILCS 2705/2705-610), progress payments may be reduced pursuant to the terms of that loan agreement. In such cases, the amount of the estimate related to the work performed by the Contractor or subcontractor, in default of the loan agreement, will be offset, in whole or in part, and vouchered by the Department to the Working Capital Revolving Fund or designated escrow account. Payment for the work shall be considered as issued and received by the Contractor or subcontractor on the date of the offset voucher. Further, the amount of the offset voucher shall be a credit against the Department's obligation to pay the Contractor, the Contractor's obligation to pay the subcontractor, and the Contractor's or subcontractor's total loan indebtedness to the Department. The offset shall continue until such time as the entire loan indebtedness is satisfied. The Department will notify the Contractor and Fund Control Agent in a timely manner of such offset. The Contractor or subcontractor shall not be entitled to additional payment in consideration of the offset.

The failure to perform any requirement, obligation, or term of the contract by the Contractor shall be reason for withholding any progress payments until the Department determines that compliance has been achieved."

SPEED DISPLAY TRAILER (BDE)

Effective: April 2, 2014

Revised: January 1, 2017

Revise the third paragraph of Article 701.11 of the Standard Specifications to read:

"When not being utilized to inform and direct traffic, sign trailers, speed display trailers, arrow boards, and portable changeable message boards shall be treated as nonoperating equipment."

Add the following to Article 701.15 of the Standard Specifications:

"(m) Speed Display Trailer. A speed display trailer is used to enhance safety of the traveling public and workers in work zones by alerting drivers of their speed, thus deterring them from driving above the posted work zone speed limit."

Add the following to Article 701.20 of the Standard Specifications:

"(k) When speed display trailers are shown on the Standard, this work will not be paid for separately but shall be considered as included in the cost of the Standard.

For all other speed display trailers, this work will be paid for at the contract unit price per calendar month or fraction thereof for each trailer as SPEED DISPLAY TRAILER."

Add the following to Article 1106.02 of the Standard Specifications:

“(o) Speed Display Trailer. The speed display trailer shall consist of a LED speed indicator display with self-contained, one-direction radar mounted on an orange see-through trailer. The height of the display and radar shall be such that it will function and be visible when located behind concrete barrier.

The speed measurement shall be by radar and provide a minimum detection distance of 1000 ft (300 m). The radar shall have an accuracy of ± 1 mile per hour.

The speed indicator display shall face approaching traffic and shall have a sign legend of “YOUR SPEED” immediately above or below the speed display. The sign letters shall be between 5 and 8 in. (125 and 200 mm) in height. The digital speed display shall show two digits (00 to 99) in mph. The color of the changeable message legend shall be a yellow legend on a black background. The minimum height of the numerals shall be 18 in. (450 mm), and the nominal legibility distance shall be at least 750 ft (250 m).

The speed indicator display shall be equipped with a violation alert that flashes the displayed detected speed when the work zone posted speed limit is exceeded. The speed indicator shall have a maximum speed cutoff. On roadway facilities with a normal posted speed limit greater than or equal to 45 mph, the detected speeds of vehicles traveling more than 25 mph over the work zone speed limit shall not be displayed. On facilities with normal posted speed limit of less than 45 mph, the detected speeds of vehicles traveling more than 15 mph over the work zone speeds limit shall not be displayed. On any roadway facility if detected speeds are less than 25 mph, they shall not be displayed. The display shall include automatic dimming for nighttime operation.

The speed indicator measurement and display functions shall be equipped with the power supply capable of providing 24 hours of uninterrupted service.”

SUBCONTRACTOR MOBILIZATION PAYMENTS (BDE)

Effective: November 2, 2017

Replace the second paragraph of Article 109.12 of the Standard Specifications with the following:

“This mobilization payment shall be made at least 14 days prior to the subcontractor starting work. The amount paid shall be at the following percentage of the amount of the subcontract reported on form BC 260A submitted for the approval of the subcontractor’s work.

Value of Subcontract Reported on Form BC 260A	Mobilization Percentage
Less than \$10,000	25%
\$10,000 to less than \$20,000	20%
\$20,000 to less than \$40,000	18%
\$40,000 to less than \$60,000	16%
\$60,000 to less than \$80,000	14%
\$80,000 to less than \$100,000	12%
\$100,000 to less than \$250,000	10%
\$250,000 to less than \$500,000	9%
\$500,000 to \$750,000	8%
Over \$750,000	7%”

WEEKLY DBE TRUCKING REPORTS (BDE)

Effective: June 2, 2012

Revised: April 2, 2015

The Contractor shall submit a weekly report of Disadvantaged Business Enterprise (DBE) trucks hired by the Contractor or subcontractors (i.e. not owned by the Contractor or subcontractors) that are used for DBE goal credit.

The report shall be submitted to the Engineer on Department form "SBE 723" within ten business days following the reporting period. The reporting period shall be Monday through Sunday for each week reportable trucking activities occur.

Any costs associated with providing weekly DBE trucking reports shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
STWDE FRWY SIGN MAINT 18-51
M-60-027-18

INDEX OF SHEETS

1	COVER SHEET
2 - 3	ESTIMATED SUMMARY OF QUANTITIES
4 - 5	SAMPLE WORK ORDER
6	CLEAR HEIGHT DETAIL
7	EXIT PANEL DETAIL SHEET - B
8	SIGN SUPPORT REPAIR DETAIL
9 - 10	BREAK - AWAY STEEL SIGN POST DETAILS
11 - 16	BREAKAWAY COUPLING DEVICES
17 - 18	BREAKAWAY TUBULAR STEEL SIGN POSTS
19- 29	TYPICAL LOGO SIGNING DETAILS
30 - 31	MEMORIAL PLAQUE AND TYPICAL MONUMENT DETAIL
32 - 37	REST AREA SIGNING DETAILS
38 - 39	REST AREA SIGN MOUNTING DETAILS
40 - 45	ALUMINUM TRUSS AND SUPPORT FRAME DETAILS
46 - 48	OVERHEAD SIGN STRUCTURES WALKWAY DETAILS
49 - 51	BRIDGE MOUNT SIGN SUPPORT DETAILS
52	BRIDGE MOUNT SIGN SUPPORT WALKWAY DETAILS

STANDARDS

701006-05	701401-11
701101-05	701406-11
701106-02	701411-09
701201-04	701426-09
701301-04	701901-07
701400-09	720021-02

Various Routes
 STWDE FRWY SIGN MAINT 18-51
 Various Counties
 Sheet 2 of 52
 Contract Number 46488

CODE NUMBER	ITEM	UNIT	0021 TOTAL QUANTITY	100% STATE 0021 QUANTITY	100% S MCHD 0021 QUANTITY
X0301032	SIGN FRAME - SERIES 325 (DOUBLE)	FOOT	5	5	0
X0301033	SIGN FRAME - SERIES 325 (SINGLE)	FOOT	5	5	0
X0301036	BASE PLATE - SERIES 325	EACH	5	5	0
X0301037	BASE PLATE - SERIES 218	EACH	5	5	0
X0326718	INSTALL REST AREA SIGN	EACH	5	5	0
X0327303	REMOVAL OF EXISTING SIGN LIGHTING UNIT WITH NO SALVAGE	EACH	50	45	5
X5210005	TIGHTEN SUPPORT ANCHOR BOLT	EACH	10	10	0
X7200050	TEMPORARY SIGN SUPPORT REPAIR	EACH	10	8	2
X7200060	FURNISH AND ERECT GRAFFITI RESISTANT SIGN PANEL	SQ FT	120	120	0
X7200065	SIGN PANEL BACKPLATE	SQ FT	2	2	0
X7200070	REPAIR SIGN PANEL	EACH	50	25	25
X7200075	REMOVE AND REINSTALL SIGN PANEL	SQ FT	2500	1500	1000
X7200080	RE-ERECT SIGN PANEL	SQ FT	5000	2500	2500
X7200085	REPLACE AND TIGHTEN SIGN MOUNTING CLIPS PER EACH SIGN	EACH	10	10	0
X7200096	FURNISH AND ERECT SIGN PANEL - LOGO	SQ FT	7500	6,000	1,500
X7240205	REMOVE SIGN COMPLETE	EACH	75	50	25
X7270005	RE-ERECT EXISTING STRUCTURAL STEEL SIGN SUPPORT - BREAKAWAY	EACH	150	100	50
X7270006	BREAKAWAY SLIP BASE CONNECTION BOLT SET	EACH	10	10	0
X7270010	STRUCTURAL STEEL SIGN SUPPORT - BREAKAWAY COUPLING TYPE	POUND	2000	1,500	500
X7270015	FURNISH BREAKAWAY COUPLING SET	EACH	30	30	0
X7270020	FURNISH HINGE PLATE SET	EACH	30	30	0
X7270025	REMOVE EXISTING SIGN SUPPORT	EACH	85	60	25
X7301034	SIGN POST - SERIES 325	FOOT	5	5	0
X7301035	SIGN POST - SERIES 218	FOOT	5	5	0
X7330072	OVERHEAD SIGN STRUCTURE - END SUPPORT	EACH	2	2	0
X7330076	BRIDGE MOUNTED SIGN SUPPORT	EACH	4	2	2
X7330078	REPLACE WALKWAY SUPPORT BRACKET	EACH	5	5	0
X7330082	MOUNTING BRACKET - TYPE B	EACH	5	3	2
X7330084	MOUNTING BRACKET TYPE B REPAIR	EACH	2	0	2
X7330090	METAL SCREEN	EACH	5	5	0
X7330093	INTERNAL MEMBER TRUSS CLAMP	EACH	1	1	0
X7330094	INTERNAL TRUSS DAMPER	EACH	8	8	0
X7330102	REPLACE OVERHEAD SIGN WALKWAY	FOOT	25	20	5
X7330210	OSS T1 TRUSS ONLY	FOOT	15	10	5
X7330220	OSS T2 TRUSS ONLY	FOOT	15	10	5
X7330230	OSS T3 TRUSS ONLY	FOOT	15	10	5
X7350005	SIGN SUPPORT REPAIR	EACH	150	120	30
X7350010	SIGN SUPPORT BRACKET	EACH	75	75	0
X7360300	REMOVE OVERHEAD SIGN STRUCTURE - WALKWAY	FOOT	200	175	25

Various Routes
 STWDE FRWY SIGN MAINT 18-51
 Various Counties
 Sheet 3 of 52
 Contract Number 46488

CODE NUMBER	ITEM	UNIT	0021 TOTAL QUANTITY	100% STATE 0021 QUANTITY	100% S MCHD 0021 QUANTITY
Z0012754	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	50	10	40
Z0012755	STRUCTURAL REPAIR OF CONCRETE (DEPTH GREATER THAN 5 INCHES)	SQ FT	50	10	40
Z0030902	TIGHTEN FUSE AND BASE PLATE	EACH	30	28	2
Z0030905	INSTALL SERVICE SIGN OR MILEAGE PLATE	EACH	30	30	0
Z0030907	REMOVE SERVICE OR MILEAGE PLATE	EACH	25	25	0
Z0030910	TRANSFER SERVICE SIGN	EACH	200	175	25
Z0051398	REMOVE EXSTING SIGN POST	EACH	250	225	25
Z0052395	TIGHTEN U-BOLT	EACH	10	10	0
Z0077598	DRILL WEEP HOLE	EACH	5	5	0
Z0077802	TEMPORARY WOOD POST	EACH	2	2	0
67100100	MOBILIZATION	L SUM	1	0.91	0.09
70200100	NIGHTTIME WORK ZONE LIGHTING	L SUM	1	0.91	0.09
72000100	SIGN PANEL - TYPE 1	SQ FT	200	200	0
72000200	SIGN PANEL - TYPE 2	SQ FT	200	200	0
72000300	SIGN PANEL - TYPE 3	SQ FT	30000	25,000	5,000
72100100	SIGN PANEL OVERLAY	SQ FT	200	200	0
72300100	INSTALL EXSTING SIGN PANEL	SQ FT	1500	1,500	
72400100	REMOVE SIGN PANEL ASSEMBLY - TYPE A	EACH	5	4	1
72400200	REMOVE SIGN PANEL ASSEMBLY - TYPE B	EACH	5	4	1
72400310	REMOVE SIGN PANEL - TYPE 1	SQ FT	200	150	50
72400320	REMOVE SIGN PANEL - TYPE 2	SQ FT	300	250	50
72400330	REMOVE SIGN PANEL - TYPE 3	SQ FT	30000	29,500	500
72400500	RELOCATE SIGN PANEL ASSEMBLY - TYPE A	EACH	25	25	0
72400600	RELOCATE SIGN PANEL ASSEMBLY - TYPE B	EACH	25	25	0
72400710	RELOCATE SIGN PANEL - TYPE 1	SQ FT	25	25	0
72400720	RELOCATE SIGN PANEL - TYPE 2	SQ FT	25	25	0
72400730	RELOCATE SIGN PANEL - TYPE 3	SQ FT	1000	850	150
72700100	STRUCTURAL STEEL SIGN SUPPORT - BREAKAWAY	POUND	115000	95,000	20,000
73000100	WOOD SIGN SUPPORT	FOOT	4	4	0
73300100	OVERHEAD SIGN STRUCTURE - SPAN, TYPE I-A (4'-0" X 4'-6")	FOOT	15	0	15
73300200	OVERHEAD SIGN STRUCTURE - SPAN, TYPE I-A (4'-6" X 5'-3")	FOOT	15	0	15
73300300	OVERHEAD SIGN STRUCTURE - SPAN, TYPE II-A (5'-0" X 7'-0")	FOOT	10	0	10
73301810	OVERHEAD SIGN STRUCTURE WALKWAY, TYPE A	FOOT	5	5	0
73304000	OVERHEAD SIGN STRUCTURE - BRIDGE MOUNTED	FOOT	5	2	3
73400100	CONC FOUNDATION	CU YD	225	200	25
73400200	DRILLED SHAFT CONCRETE FOUNDATIONS	CU YD	2	1	1
73600100	REMOVE OVERHEAD SIGN STRUCTURE - SPAN	EACH	2	1	1
73600200	REMOVE OVERHEAD SIGN STRUCTURE - CANTILEVER	EACH	1	0	1
73602000	REMOVE OVERHEAD SIGN STRUCTURE - BRIDGE MOUNTED	EACH	3	1	2
73700100	REMOVE GROUND MOUNTED SIGN SUPPORT	EACH	125	100	25
73700200	REMOVE CONCRETE FOUNDATION - GROUND MOUNT	EACH	250	225	25
73700300	REMOVE CONCRETE FOUNDATION - OVERHEAD	EACH	2	0	2

WORK ORDER
 STATEWIDE FREEWAY SIGN MAINTENANCE 18-51
 Sheet 1 of 2

WORK ORDER NO. _____ Date of Issue _____ ROUTE _____
 LOCATION DESCRIPTION _____

CONTRACT NO. 46488 CLAIM NO.: _____
 HIGHWAY LIGHTING CABLE PRESENT (YES) (NO) (N/A) JOB NO. C-60-027-18

CODE NUMBER		UNIT	QUANTITY	UNIT PRICE	ITEM COST
72000100	SIGN PANEL T1	SQ FT			
72000200	SIGN PANEL T2	SQ FT			
72000300	SIGN PANEL T3	SQ FT			
72100100	SIGN PANEL OVERLAY	SQ FT			
72300100	INSTALL EX SIGN PANEL	SQ FT			
72400100	REMOV SIN PAN ASSY TA	EACH			
72400200	REMOV SIN PAN ASSY TB	EACH			
72400310	REMOV SIGN PANEL T1	SQ FT			
72400320	REMOV SIGN PANEL T2	SQ FT			
72400330	REMOV SIGN PANEL T3	SQ FT			
72400500	RELOC SIN PAN ASSY TA	EACH			
72400600	RELOC SIN PAN ASSY TB	EACH			
72400710	RELOC SIGN PANEL T1	SQ FT			
72400720	RELOC SIGN PANEL T2	SQ FT			
72400730	RELOC SIGN PANEL T3	SQ FT			
72700100	STR STL SIN SUP BA	POUND			
73000100	WOOD SIN SUPPORT	FOOT			
73300100	OVHD SIN STR-SPAN T1	FOOT			
73300200	OVHD SIN STR-SPAN T2	FOOT			
73300300	OVHD SIN STR-SPAN T3	FOOT			
73301810	OSS WALKWAY TY A	FOOT			
73304000	OVHD SIN STR BR MT	FOOT			
73400100	CONC FOUNDATION	CU YD			
73400200	DRILL SHAFT CONC FDN	CU YD			
73600100	REMOV OH SIN STR-SPAN	EACH			
73600200	REMOV OH SIN STR-CANT	EACH			
73602000	REM OVHD SN STR-BR MT	EACH			
73700100	REM GR MT SIN SUPPORT	EACH			
73700200	REM CONC FDN-GR MT	EACH			
73700300	REM CONC FDN-OVHD	EACH			
X0301032	SIGN FRAME S-325 DBL	FOOT			
X0301033	SIGN FRAME S-325 SING	FOOT			
X0301036	BASE PLATE S-325	EACH			
X0301037	BASE PLATE S-218	EACH			
X0326718	INSTAL REST AREA SIGN	EACH			
X0327303	REM EX SIGN LT UNT NS	EACH			
X5210005	TIGHTEN SUP ANCH BOLT	EACH			
X7200050	TEMP SIGN SUP REP	EACH			
X7200060	F & E GRAFFIRES S PL	SQ FT			

SAMPLE

Various Routes
 STWDE FRWY SIGN MAINT 18-51
 Various Counties
 Sheet 5 of 52
 Contract Number 46488

Sheet 2 of 2
 WORK ORDER NO.

CODE NUMBER		UNIT	QUANTITY	UNIT PRICE	ITEM COST
X7200065	SIGN PANEL BACKPLATE	SQ FT			
X7200070	REPAIR SIGN PANEL	EACH			
X7200075	REM & REIN SIGN PANEL	SQ FT			
X7200080	RE-ERECT SIGN PANEL	SQ FT			
X7200085	RPL/TIGH CLP PER SIGN	EACH			
X7200096	F & E SIGN PAN - LOGO	SQ FT			
X7240205	REMOV SIGN COMPLETE	EACH			
X7270005	RE-E STR ST SN SUP BA	EACH			
X7270006	BREAK SLIP B CON BOLT	EACH			
X7270010	STR STL SN SUP-COUP T	POUND			
X7270015	FUR BRKWAY COUP SET	EACH			
X7270020	FUR HINGE PLATE SET	EACH			
X7270025	REM EX SIGN SUPPORT	EACH			
X7301034	SIGN POST S-325	FOOT			
X7301035	SIGN POST S-218	FOOT			
X7330072	OVHD SIN STR-END SUP	EACH			
X7330076	BR MOUNT SIGN SUPPORT	EACH			
X7330078	REPL WLKWAY SUP BRCKT	EACH			
X7330082	MTNG BRCKT TY B	EACH			
X7330084	MTNG BRCKT TYB REPAIR	EACH			
X7330090	METAL SCREEN	EACH			
X7330093	INT MEMBR TRUSS CLAMP	EACH			
X7330094	INTERNAL TRUSS DAMPER	EACH			
X7330102	REPL OVHD SIN WALKWAY	FOOT			
X7330210	OSS T1 TRUSS ONLY	FOOT			
X7330220	OSS T2 TRUSS ONLY	FOOT			
X7330230	OSS T3 TRUSS ONLY	FOOT			
X7350005	SIGN SUPPORT REPAIR	EACH			
X7350010	SIGN SUPPORT BRACKET	EACH			
X7360300	REM OH SIN STR-WLKWAY	FOOT			
Z0012754	STR REP CON DP = < 5	SQ FT			
Z0012755	STR REP CON DP OVER 5	SQ FT			
Z0030902	TIGHTEN FUSE & BSE PL	EACH			
Z0030905	INS SER SN OR MILE PL	EACH			
Z0030907	REM SER OR MILE PLATE	EACH			
Z0030910	TRANSFER SERVICE SIGN	EACH			
Z0051398	REM EX SIGN POST	EACH			
Z0052395	TIGHTEN U-BOLT	EACH			
Z0077598	DRILL WEEP HOLE	EACH			
Z0077802	TEMP WOOD POST	EACH			
X9T00100	R&R HANDRAIL	FOOT			
				Total	

SAMPLE

DISTRICT CONTACT _____ SUBMITTED BY: _____
 Deputy Director, Division of Highways,
 Regional Engineer

NAME: _____ DATE: _____

TELEPHONE: _____

CELL PHONE: _____ APPROVED BY: _____
 Traffic Operations Engineer, Central Office

EMAIL ADDRESS: _____ DATE: _____

CLEAR HEIGHT DETAIL

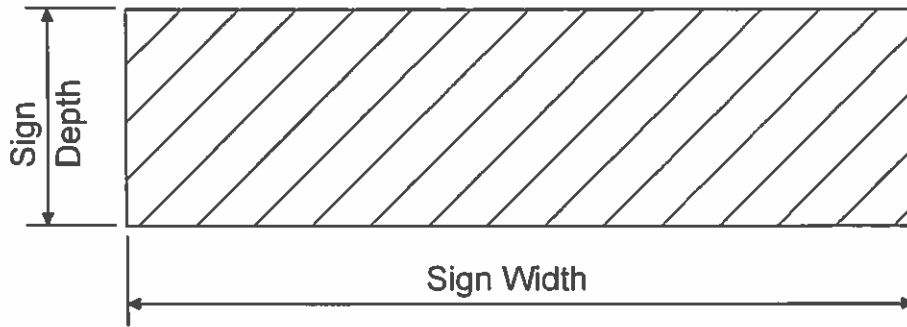


Figure 1

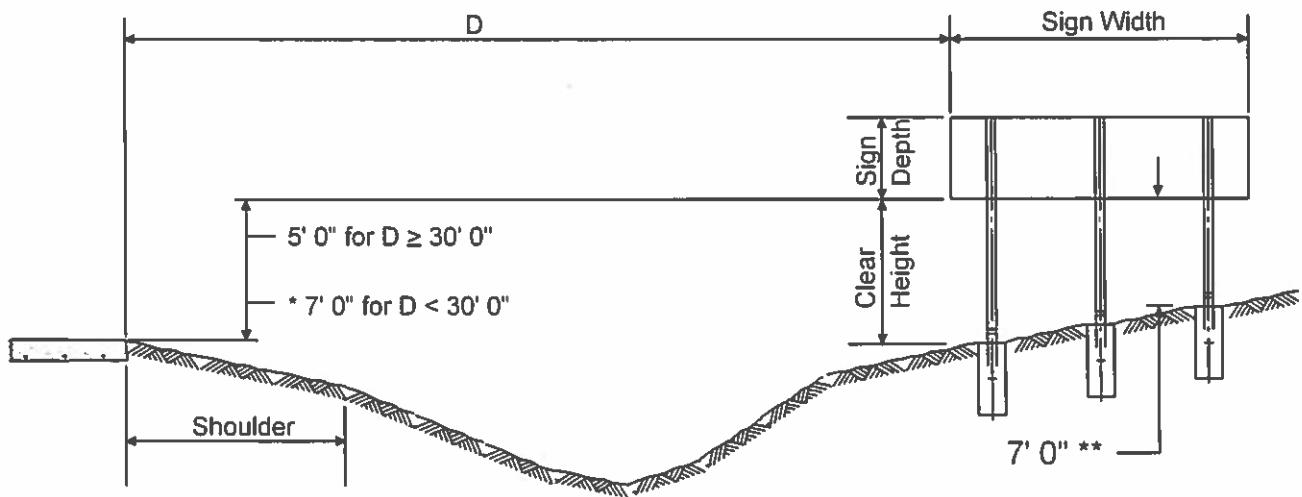


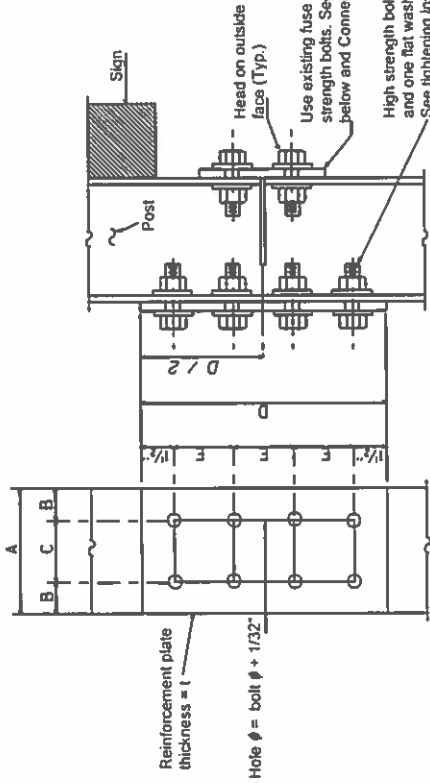
Figure 2

- * May be reduced to 6' 0" when a supplemental panel is mounted below the main panel.
- ** Between top of stud post and fuse plate. May be reduced to 5' 0" when $D = 30' 0''$ and the slope is 2:1 or steeper or where it would be unlikely for an out of control vehicle to reach the post.

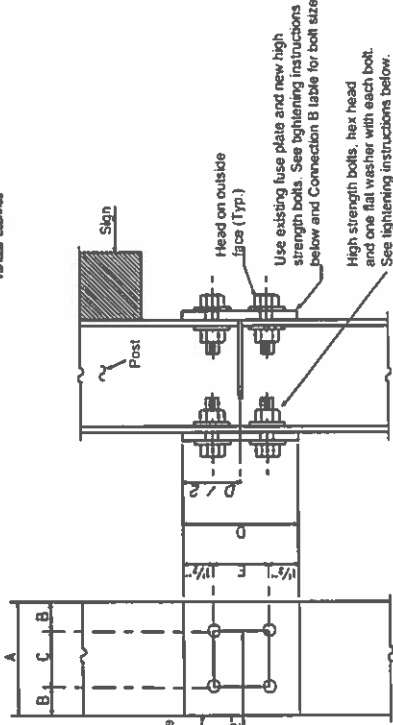
The criteria illustrated in Figure 2 above is for expressways or fully access controlled freeways. All mounting heights shall be in accordance with the latest edition of the Illinois Manual on Uniform Traffic Control Devices.

DATE	BY	CHKD	APP'D

• Vertical Routes
•• Chief Supt. Div. Rep. & Maint. 2003-15
••• Vertical Counties



CONNECTION A (8 BOLTS)



CONNECTION B (4 BOLTS)

POST	CONNECTION A (8 BOLTS)							
	A	B	C	D	E	F	G	H
W6 X 9	6"	1 1/4"	3 1/2"	10 1/2"	2 1/2"	1 1/4"	1 1/2"	1 1/2"
W6 X 15	6"	1 1/4"	3 1/2"	10 1/2"	2 1/2"	3/8"	3/8"	1/2"
W8 X 18	5 1/4"	1 1/4"	2 3/4"	12"	3"	3/8"	3/8"	5/8"
W10 X 22	5 3/4"	1 1/2"	2 3/4"	12"	3"	1/2"	1/2"	5/8"
W10 X 26	5 3/4"	1 1/2"	2 3/4"	12"	3"	1/2"	1/2"	5/8"
W12 X 26	6 1/2"	1 1/2"	3 1/2"	12"	3"	1/2"	1/2"	5/8"
W14 X 30	6 3/4"	1 5/8"	3 1/2"	12"	3"	1/2"	1/2"	5/8"
W14 X 36	6 3/4"	1 5/8"	3 1/2"	12"	3"	1/2"	1/2"	5/8"
W16 X 45	7"	1 3/4"	3 1/2"	12"	3"	1/2"	1/2"	5/8"

INSTRUCTIONS FOR INSTALLING REINFORCEMENT PLATE AND FUSE PLATE WITH HIGH STRENGTH BOLTS

If the beam flanges are not in full contact with the reinforcement plate due to burrs, galvanizing runs or misalignment of the flanges, the plate or plates shall be removed and flanges ground, straightened or corrected until full contact is obtained.

The bolts shall be brought to a "snug tight" condition to ensure that the reinforcement or fuse plate is in full contact with the flange of the post. "Snug tight" shall be obtained by a few impacts on an impact wrench or the full effort of a man using an ordinary spud wrench. After all the bolts are "snug tight" each shall be tightened by an additional one - third rotation. The hardened washer specified shall be under the bolt head which shall be turned in the tightening process rather than the nut.

DESIGNED	
CHECKED	
DATE	

POST	CONNECTION B (4 BOLTS)							
	A	B	C	D	E	F	G	H
W6 X 9	4"	7/8"	2 1/4"	3"	2"	1/4"	1 1/2"	1 1/2"
W6 X 15	6"	1 1/4"	3 1/2"	3 1/2"	2 1/2"	1/4"	3 1/2"	3 1/2"
W8 X 18	5 1/4"	1 1/4"	2 3/4"	3 1/2"	2 1/2"	3/8"	3 1/2"	3 1/2"
W10 X 22	5 3/4"	1 1/2"	2 3/4"	6"	3"	3/8"	3 1/2"	3 1/2"
W10 X 26	5 3/4"	1 1/2"	2 3/4"	6"	3"	1/2"	3 1/2"	3 1/2"
W12 X 26	6 1/2"	1 1/2"	3 1/2"	6"	3"	1/2"	3 1/2"	3 1/2"
W14 X 30	6 3/4"	1 5/8"	3 1/2"	6"	3"	1/2"	3 1/2"	3 1/2"
W14 X 36	6 3/4"	1 5/8"	3 1/2"	6"	3"	1/2"	3 1/2"	3 1/2"
W16 X 45	7"	1 3/4"	3 1/2"	6"	3"	1/2"	3 1/2"	3 1/2"

GENERAL NOTES

The Contractor shall have the choice of using the eight (8) bolt Connection A or the four (4) bolt Connection B for the reinforcement plate unless specified.

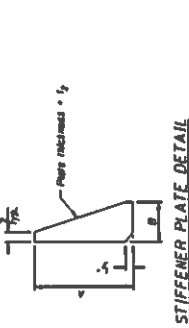
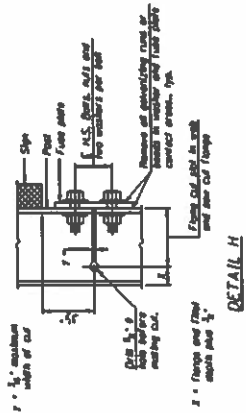
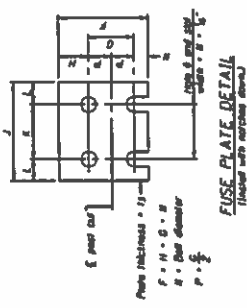
The steel reinforcement plate shall conform to AASHTO M270 Gr. 36. (CVN not required)

High strength bolts, nuts, and washers shall conform to AASHTO M163.

The steel reinforcement plate, new high strength bolts, nuts, and hardened washers and areas of damaged or missing paint on fuse plates shall be painted with an approved zinc rich paint (two coats) after assembly.

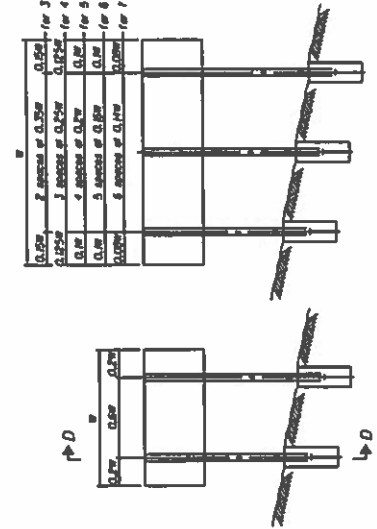
**REINFORCEMENT PLATE DETAILS
"BREAK-AWAY" SIGN POSTS**

FUSE PLATE DATA			
# of Bar Diameter	G	H	N
3"	2"	15"	
3 1/2"	2 1/2"	15"	
4"	3"	15"	
4 1/2"	3 1/2"	15"	
5"	4"	15"	
5 1/2"	4 1/2"	15"	
6"	5"	15"	
6 1/2"	5 1/2"	15"	
7"	6"	15"	
7 1/2"	6 1/2"	15"	
8"	7"	15"	
8 1/2"	7 1/2"	15"	
9"	8"	15"	

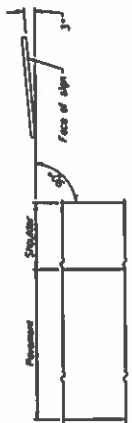


GENERAL NOTES
 Posts shall be installed by the contractor in accordance with Article 72.05. Strength bars shall be in accordance with Article 72.05 and located at the junction of the bar and nut and shall be turned or center punched to prevent the nut from loosening.
 LOADING: 80 M.B.A. value with 30% gust factor, normal to sign.
 DESIGN STRESSES:
 Allowable stress - 20,000 P.S.I.
 Maximum stress - 20,000 P.S.I.
 Allowable stress - 14,000 P.S.I.
 Maximum stress - 14,000 P.S.I.
 Feeding and pressure - 2,000 P.S.I.
 After fabrication, the post, fuse plate and upper G₁ nut of the stub post shall be not-ole painted in accordance with AASHTO M11. All bolts, nuts and washers shall be hot-dip galvanized in accordance with AASHTO M23.
 Start this sheet with Base Sheet BAW-A-2.

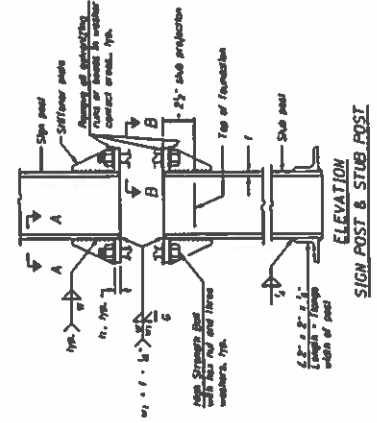
# of Posts	Distance of Posts	For
2	0.350'	For 3 posts
3	0.475'	For 4 posts
4	0.600'	For 5 posts
5	0.725'	For 6 posts
6	0.850'	For 7 posts
7	0.975'	For 8 posts



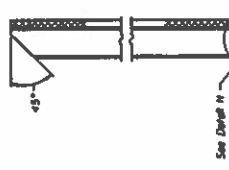
ELEVATION



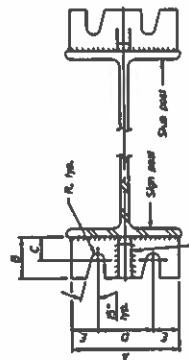
LOCATION SKETCH



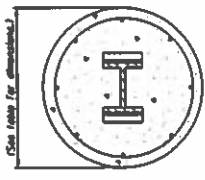
ELEVATION
 SIGN POST & STUB POST



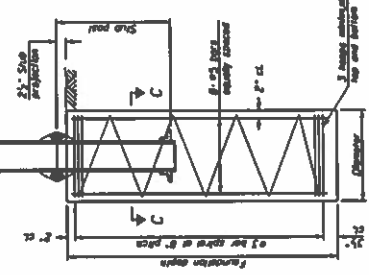
SHIM DETAIL
 Furnish two 607 zinc and two 6037 zinc stainless steel or brass ASTM B263 shims per post.



SECTION A-A



SECTION C-C



SECTION D-D

Contractor is responsible for all local field measurements

6-1-82

BAW-A-1

REVISED	BY	DATE

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

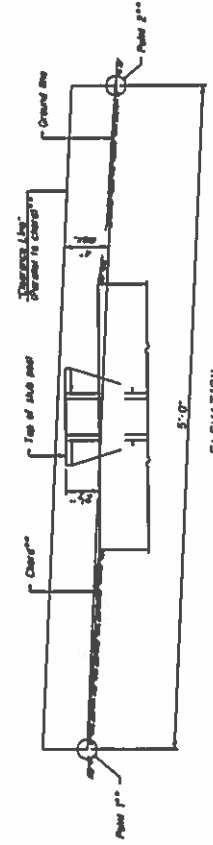
BEAR-RUNNIN WIDE FLANGE
 STEEL SIGN POST DETAILS

Sheet 1 of 21

POST	CONCRETE FOUNDATION TABLE				POST TO STUB POST CONNECTION DATA													FUSE PLATE DATA												
	Minimum Depth (On site)	Concrete (On site)	Vertical Rebar (Length)	Horizontal Rebar (Length)	Sub Post Length	Sub Post Dia	A	B	C	D	E	F	G	H	I	J	K	L												
W6-9	2'-0"	6'-0"	0.10	5'-9"	1'-6"	19'-0"	78	2'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"												
W8-15	2'-0"	6'-0"	0.10	5'-9"	1'-6"	19'-0"	78	2'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"												
W8-18	2'-0"	6'-0"	0.10	5'-9"	1'-6"	19'-0"	78	2'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"												
W10-22	2'-0"	6'-0"	0.10	5'-9"	1'-6"	19'-0"	78	2'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"												
W10-27	2'-0"	6'-0"	0.10	5'-9"	1'-6"	19'-0"	78	2'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"												
W12-24	2'-0"	6'-0"	0.10	5'-9"	1'-6"	19'-0"	78	2'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"												
W12-30	2'-0"	6'-0"	0.10	5'-9"	1'-6"	19'-0"	78	2'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"												
W14-17	2'-0"	6'-0"	0.10	5'-9"	1'-6"	19'-0"	78	2'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"												
W14-22	2'-0"	6'-0"	0.10	5'-9"	1'-6"	19'-0"	78	2'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"												
W16-25	2'-0"	6'-0"	0.10	5'-9"	1'-6"	19'-0"	78	2'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"												

*Dimensional changes required for varying site conditions shall be approved by the Engineer.

POST	FUSE PLATE SIZE												
	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	15'-0"	16'-0"	17'-0"
W6-9	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"
W8-15	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"
W8-18	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"
W10-22	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"
W10-27	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"
W12-24	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"
W12-30	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"
W14-17	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"
W14-22	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"
W16-25	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"	1/2" x 1/4"



ELEVATION
 GROUND LINE & STUB POST
 ** For all other "L" and "Yield" topologies, Clearance Line must be at above top of stub post.

- ① Quantity include of concrete necessary for one foundation.
- ② Includes reinforcement bars and other loading for one foundation.

BAW-A-2

6-1-E

Contractor is responsible for all final field measurements

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

Sheet 2 of 21

SECTION

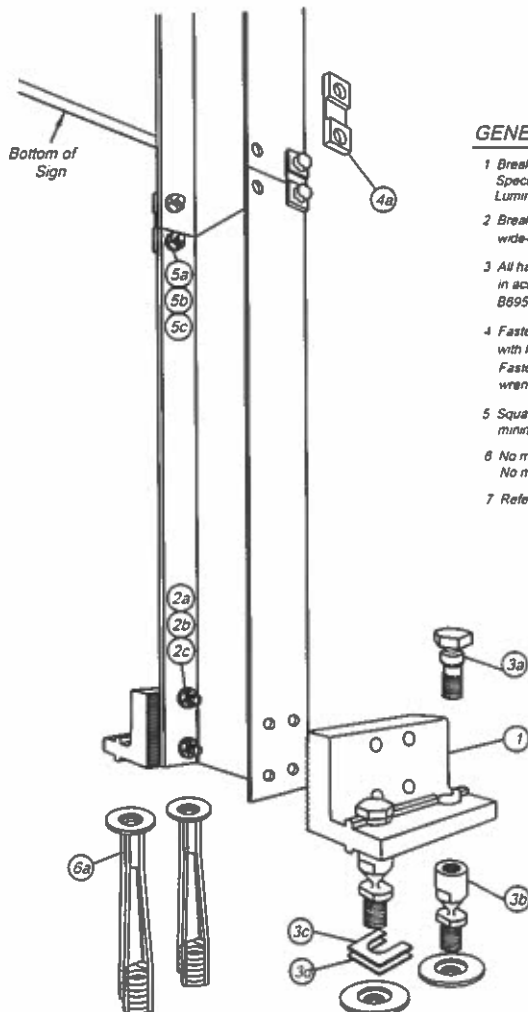
COMET

DATE

NUMBER OF POSTS

PARTS LIST

ITEM	DESCRIPTION	SIZE/SPECIFICATIONS	QTY/ POST	PART NUMBER
1	Bracket, Type A16	6061-T6 Aluminum	2	SBAK6117
2	Bracket Hardware Assembly, Type A16, includes:		1	SB-A16H
2a	Bolt	12.7mm(1/2")-13UNCx57.2mm(2-1/4"), Hex Head ASTM A325 Galv ASTM A153	8	
2b	LockWasher	12.7mm(1/2"), ANSI B18-21-1, Galv ASTM A153	8	
2c	Nut	12.7mm(1/2")-13UNC, Heavy Hex, ASTM A563 Gr DH Galv ASTM A153	8	
3	Coupling & Special Bolt Assembly, Type A, includes:		1	SB-CALP
3a	Special Bolt	15.9mm(5/8")-11UNC, ASTM A449, Galv ASTM A153/B695	4	
3b	Coupling	15.9mm(5/8")-11UNC, LP, AMS 6378D, Galv ASTM A153, Polyester Coat	4	
3c	Shim	15.9mm(5/8") Horseshoe, 14 Gauge, Galv Steel Sheet	2	
3d	Shim	15.9mm(5/8") Horseshoe, 18 Gauge, Galv Steel Sheet	2	
4	Hinge Assembly, Type A, includes:		1	SB-HB3
4a	Hinge Plate	Type A, AISI 4130 Steel, Galv ASTM A123	4	
5	Hinge Hardware Assembly, Type A, includes:		1	SB-HHA
5a	Bolt	12.7mm(1/2")-13UNCx37.2mm(1-1/2"), Hex Head ASTM A325 Galv ASTM A153	8	
5b	LockWasher	12.7mm(1/2"), ANSI B18-21-1, Galv ASTM A153	8	
5c	Nut	12.7mm(1/2")-13UNC, Heavy Hex, ASTM A563 Gr DH Galv ASTM A153	8	
6	Anchor Assembly, Type A, includes:		1	SBAAPK
6a	Anchor	15.9mm(5/8")-11UNC, 304 S S Ferrule, AISI 1045 Rod, AISI 1008 Coil	4	



GENERAL NOTES:

- 1 Break-Safe meets all requirements of "AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals"
- 2 Break-Safe Model A16 is designed to fit W150x14 (W6x9) wide-flange steel I-Beam signposts
- 3 All hardware items are American Standard sizes, galvanized in accordance with ASTM A153 (hot dipped) or ASTM B695 (mechanically applied)
- 4 Fasteners, except for special bolt and coupling, are installed with lockwashers, and do not have specific torque requirements. Fasteners should be secured as tight as possible with conventional wrenches, unless noted otherwise
- 5 Square-up and level individual components, particularly Anchors to minimize the need for shimming between the Couplings and Anchors
- 6 No more than two shims shall be placed under any one coupling. No more than three shims underneath any pair of couplings.
- 7 Refer to other side of page for complete installation instructions

W6 X 9

Break-Safe Model A16
 Breakaway Support System for Sign Posts

Scale: Not To Scale	Date: July 2000
Drawing No. BS-A16-1	Sheet: 1 of 2

INSTALLATION INSTRUCTIONS

ANCHOR ASSEMBLY:

Note: Precise positioning of the anchors is critical to proper assembly of the system. It is recommended that actual posts be used to locate the correct position of the anchors.

- 1 Fabricate a flat, rigid template with four (4) 16mm (5/8") diameter holes located to match the specified anchor pattern of the Break-Safe Brackets attached to the signpost. See diagram below.
- 2 Attach four (4) Transpo Type A Female Anchors to the template using four (4) 16mm (5/8") diameter bolts. Ensure that each Anchor Washer is snug against the bottom of the template.
- 3 Lower Anchor Assembly into fresh concrete foundation, and vibrate into position such that the tops of the Anchor Washers are flush with the finished top surface of the foundation. Support the template such that all Anchors are level and in their proper locations.
- 4 Allow concrete to cure, and then remove the bolts and template from the top of the foundation.

HINGE ASSEMBLY:

- 1 Butt upper and lower post sections together on a flat surface.
- 2 Drill eight (8) 14.3mm (9/16") holes in the flanges of the post sections as shown.
- 3 Place Hinge Plates on outer surface of the post flanges and secure with bolts, lock washers, and nuts. Ensure that upper and lower post sections are in alignment, and then tighten all nuts 1/2 turn beyond snug.

BRACKET ASSEMBLY:

- 1 Drill eight (8) 14.3mm (9/16") diameter holes in the flanges of the lower post section as shown.
- 2 Place Brackets squarely on outer surface of the post flanges, and secure with bolts, lock washers, and nuts. Then, tighten all 1/2 turn beyond snug.

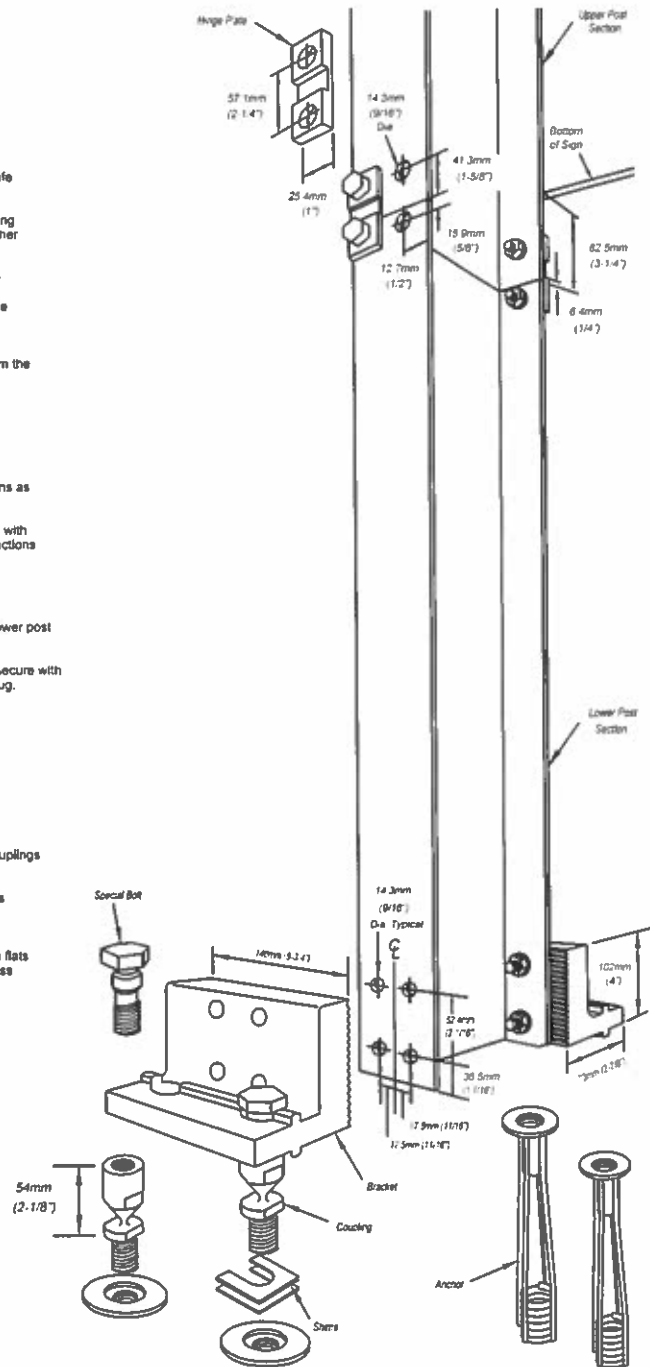
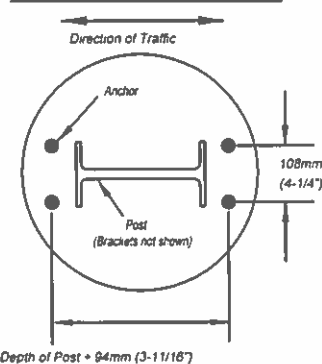
COUPLING ASSEMBLY:

- 1 Thread four (4) Break-Safe Couplings into Anchors. Do not tighten.
- 2 Suspend post assembly over foundation, insert Special Bolts through holes in the Brackets, and thread them snug into the Couplings.
- 3 If post is not plumb, insert Shims (14g and/or 18g) between the Couplings and Anchors, where needed.
- 4 Use lower wrench flats to tighten Couplings into Anchors as tight as possible using a conventional wrench. Do not use a pipe wrench. Couplings must be seated squarely.
- 5 Tighten Special Bolts while holding Couplings by the upper wrench flats with an additional wrench to prevent an induced torque stress across the necked portion of the Coupling. All Special Bolts shall also be tightened as tight as possible using conventional wrenches.

SIGN PANEL ASSEMBLY:

- 1 After all signposts are secured in place, attach sign panel assembly to posts in accordance with the sign manufacturer's recommendations.

PLAN VIEW OF TYPICAL FOUNDATION



W6 X 9

Break-Safe Model A16
Breakaway Support System for Sign Posts

Scale: Not To Scale

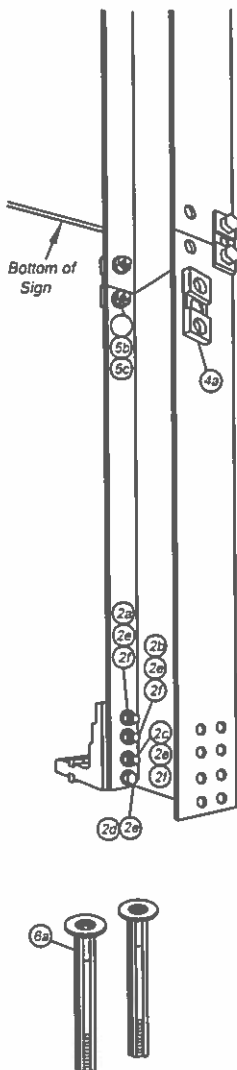
Date: July 2000

Drawing No. BS-A16-2

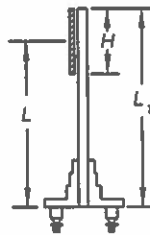
Sheet: 2 of 2

PARTS LIST

ITEM	DESCRIPTION	SIZE/SPECIFICATIONS	QTY/ POST	PART NUMBER
1	Bracket, Type B525	6061 T8 Aluminum (see Bracket Selection Table for Number)	2	SBBK525-1A, -2A, -3A
2	Bracket Hardware Assembly, Type B525, includes		1	SB-B525LPH
2a	Bolt	12.7mm(1/2")-13UNCx63.5mm(2-1/2"), Hex Head, ASTM A325, Galv. ASTM A153	4	
2b	Bolt	12.7mm(1/2")-13UNCx89.0mm(3-3/4"), Hex Head, ASTM A325, Galv. ASTM A153	4	
2c	Bolt	12.7mm(1/2")-13UNCx76.2mm(3"), Hex Head, ASTM A325, Galv. ASTM A153	4	
2d	Cap Screw	12.7mm(1/2")-13UNCx31.7mm(1-1/4"), Hex Head, ASTM A307, Galv. ASTM A153	4	
2e	LockWasher	12.7mm(1/2"), ANSI B18-21-1, Galv. ASTM A153	16	
2f	Nut	12.7mm(1/2")-13UNC, Heavy Hex, ASTM A563 Gr. DH, Galv. ASTM A153	12	
3	Coupling & Special Bolt Assembly, Type B, includes		1	SB-CBLP
3a	Special Bolt	25.4mm(1")-8UNC, ASTM A449, Galv. ASTM A153/B695	4	
3b	Coupling	25.4mm(1")-8UNC, LP, AMS 6378D, Galv. ASTM A153, Polyester Coat	4	
3c	Shim	25.4mm(1") Horseshoe, 14 Gauge, Galv. Steel Sheet	2	
3d	Shim	25.4mm(1") Horseshoe, 18 Gauge, Galv. Steel Sheet	2	
4	Hinge Assembly, Type B525, includes		1	SB-HB1
4a	Hinge Plate	Type B525, AISI 4130 Steel, Galv. ASTM A123	4	
5	Hinge Hardware Assembly, Type B, includes		1	SB-HHB
5a	Bolt	19.0mm(3/4")-10UNCx57.1mm(2-1/4"), Hex Head, ASTM A325, Galv. ASTM A153	8	
5b	LockWasher	19.0mm(3/4"), ANSI B18-21-1, Galv. ASTM A153	8	
5c	Nut	19.0mm(3/4")-10UNC, Heavy Hex, ASTM A563 Gr. DH, Galv. ASTM A153	8	
6	Anchor Assembly, Type B, includes		1	SBABPK
6a	Anchor	25.4mm(1")-8UNC, 304 S S Ferrule, AISI 1038 Rod, AISI 1008 Coil	4	



$$L = L - H/2$$



BRACKET SELECTION TABLE

Select correct Break-Safe bracket number from table, using 'L' value from the longest post. Use figure to the left to determine 'L'.

POST SIZE	BRACKET No 1		BRACKET No 2		BRACKET No 3	
	Min. L'	Max. L'	Min. L'	Max. L'	Min. L'	Max. L'
152mm (6")	3.6m(12')	8.8m(29')	2.7m(9')	3.6m(12')	0	2.7m(9')
203mm (8")	4.3m(14')	8.8m(29')	3.0m(10')	4.3m(14')	0	3.0m(10')

GENERAL NOTES:

- 1 Break-Safe meets all requirements of "AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals"
- 2 Break-Safe Model B525 is designed to fit 150mm (6") and 200mm (8") Wide Flange I-Beam, and 127mm (5") and 150mm (6") Square Tube signposts.
- 3 Select proper Bracket Number by referring to Bracket Selection Table
- 4 All hardware items are American Standard sizes, galvanized in accordance with ASTM A153 (hot dipped) or ASTM B695 (mechanically applied).
- 5 Fasteners, except for special bolt and coupling, are installed with lockwashers, and do not have specific torque requirements. Fasteners should be secured as tight as possible with conventional wrenches, unless noted otherwise.
- 6 Square-up and level individual components, particularly Anchors to minimize the need for shimming between the Couplings and Anchors.
- 7 No more than two shims shall be placed under any one coupling. No more than three shims underneath any pair of couplings.
- 8 Refer to other side of page for complete installation instructions.

W6 & W8

Break-Safe Model B525
 Breakaway Support System for Sign Posts

Scale: Not To Scale	Date: July 2000
Drawing No. BS-B525-1, -2, -3	Sheet: 1 of 2

INSTALLATION INSTRUCTIONS

ANCHOR ASSEMBLY:

Note: Precise positioning of the anchors is critical to proper assembly of the system. It is recommended that actual posts be used to locate the correct position of the anchors.

- 1 Determine proper Break-Safe Bracket Number from the Bracket Selection Table. All posts within a sign structure shall use the same Bracket Number, determined by the length of the longest post.
- 2 Fabricate a flat, rigid template with four (4) 25mm (1") diameter holes located to match the specified anchor pattern of the Break-Safe Brackets attached to the signpost. See diagram below.
- 3 Attach four (4) Transpo Type B Female Anchors to the template using four (4) 25mm (1") diameter bolts. Ensure that each Anchor Washer is snug against the bottom of the template.
- 4 Lower Anchor Assembly into fresh concrete foundation, and vibrate into position such that the tops of the Anchor Washers are flush with the finished top surface of the foundation. Support the template such that all Anchors are level and in their proper locations.
- 5 Allow concrete to cure, and then remove the bolts and template from the top of the foundation.

HINGE ASSEMBLY:

- 1 Butt upper and lower post sections together on a flat surface.
- 2 Drill eight (8) 20.6mm (13/16") holes in the flanges of the post sections as shown.
- 3 Place Hinge Plates on outer surface of the post flanges and secure with bolts, lock washers, and nuts. Ensure that upper and lower post sections are in alignment, and then tighten all nuts 1/2 turn beyond snug.

BRACKET ASSEMBLY:

- 1 Drill sixteen (16) 14.3mm (9/16") diameter holes in the flanges of the lower post section as shown.
- 2 Place Brackets squarely on outer surface of the post flanges, and secure with bolts, lock washers, nuts, and cap screws. Then, tighten all 1/2 turn beyond snug.

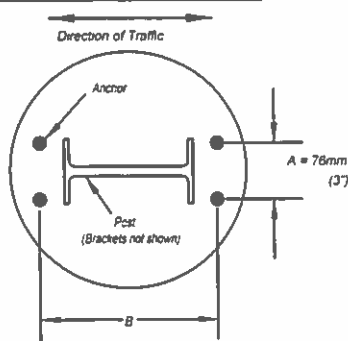
COUPLING ASSEMBLY:

- 1 Thread four (4) Break-Safe Couplings Into Anchors. Do not tighten.
- 2 Suspend post assembly over foundation, insert Special Bolts through holes in the Brackets, and thread them snug into the Couplings.
- 3 If post is not plumb, insert Shims (14g and/or 18g) between the Couplings and Anchors, where needed.
- 4 Use lower wrench flats to tighten Couplings into Anchors as tight as possible using a conventional wrench. Do not use a pipe wrench. Couplings must be seated squarely.
- 5 Tighten Special Bolts while holding Couplings by the upper wrench flats with an additional wrench to prevent an induced torque stress across the necked portion of the Coupling. All Special Bolts shall also be tightened as tight as possible using conventional wrenches.

SIGN PANEL ASSEMBLY:

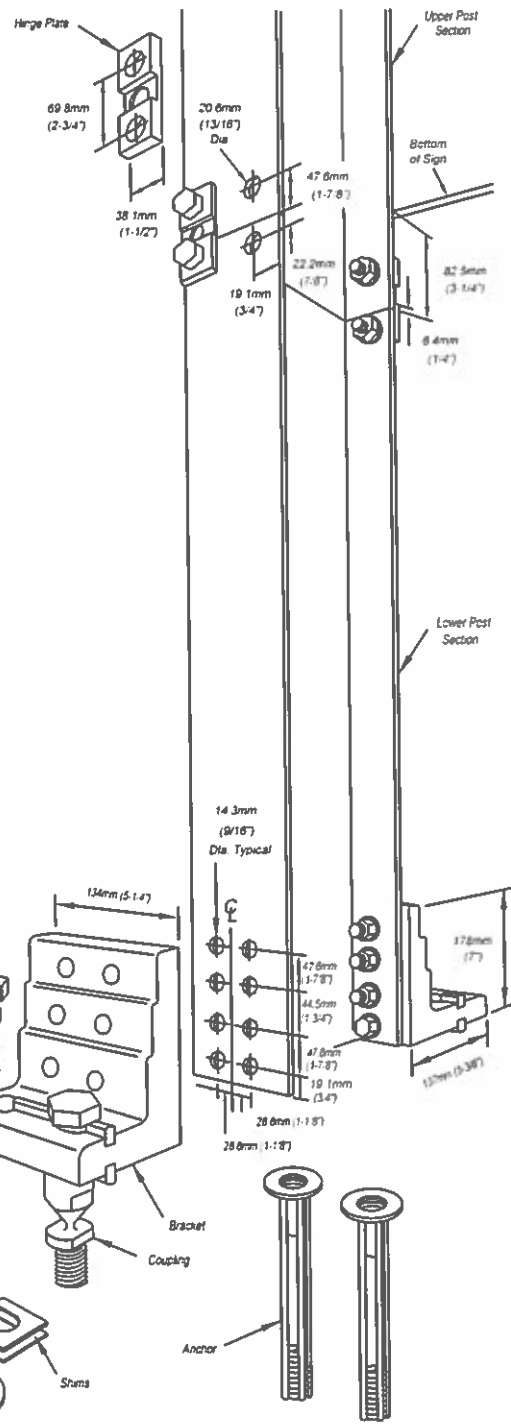
- 1 After all signposts are secured in place, attach sign panel assembly to posts in accordance with the sign manufacturer's recommendations.

PLAN VIEW OF TYPICAL FOUNDATION



- B (Bracket No 1) = Depth of Post + 202mm (7-15/16")
 B (Bracket No 2) = Depth of Post + 205mm (8-1/16")
 B (Bracket No 3) = Depth of Post + 207mm (8-1/8")

Patent Nos 4,528,788 and 5,598,845



W6 & W8

Break-Safe Model B525
Breakaway Support System for Sign Posts

Scale: Not To Scale	Date: July 2000
Drawing No. BS-B525-1, -2, -3	Sheet 2 of 2

PARTS LIST

ITEM	DESCRIPTION	SIZE/SPECIFICATIONS	QTY/ POST	PART NUMBER
1	Bracket, Type B650	6061-T6 Aluminum (see Bracket Selection Table for -Number)	2	SBBK650-1A, -2A, -3A
2	Bracket Hardware Assembly, Type B650, includes:		1	SB-B650LPH
2a	Bolt	15.9mm(5/8")-11UNCx19.9mm(3/4"), Hex Head, ASTM A325, Galv. ASTM A153	4	
2b	Bolt	15.9mm(5/8")-11UNCx7.92mm(3/4"), Hex Head, ASTM A325, Galv. ASTM A153	4	
2c	Bolt	15.9mm(5/8")-11UNCx8.2mm(3/4"), Hex Head, ASTM A325, Galv. ASTM A153	4	
2d	Cap Screw	15.9mm(5/8")-11UNCx31.7mm(1-1/4"), Hex Head, ASTM A307, Galv. ASTM A153	4	
2e	LockWasher	15.9mm(5/8"), ANSI B18-21-1, Galv. ASTM A153	16	
2f	Nut	15.9mm(5/8")-11UNC, Heavy Hex, ASTM A563 Gr. DH, Galv. ASTM A153	12	
3	Coupling & Special Bolt Assembly, Type B, includes:		1	SB-CBLP
3a	Special Bolt	25.4mm(1")-8UNC, ASTM A449, Galv. ASTM A153/B695	4	
3b	Coupling	25.4mm(1")-8UNC LP, AMS 6378D, Galv. ASTM A153, Polyester Coat	4	
3c	Shim	25.4mm(1") Horseshoe, 14 Gauge, Galv. Steel Sheet	2	
3d	Shim	25.4mm(1") Horseshoe, 18 Gauge, Galv. Steel Sheet	2	
4	Hinge Assembly, Type B650, includes:		1	SB-HB2
4a	Hinge Plate	Type B650, AISI 4130 Steel, Galv. ASTM A123	4	
5	Hinge Hardware Assembly, Type B, includes:		1	SB-HHB
5a	Bolt	19.0mm(3/4")-10UNCx17.1mm(2-1/4"), Hex Head, ASTM A325, Galv. ASTM A153	8	
5b	LockWasher	19.0mm(3/4"), ANSI B18-21-1, Galv. ASTM A153	8	
5c	Nut	19.0mm(3/4")-10UNC, Heavy Hex, ASTM A563 Gr. DH, Galv. ASTM A153	8	
6	Anchor Assembly, Type B, includes:		1	SBABPK
6a	Anchor	25.4mm(1")-8UNC, 304 S.S. Ferrule, AISI 1045 Rod, AISI 1008 Cold	4	

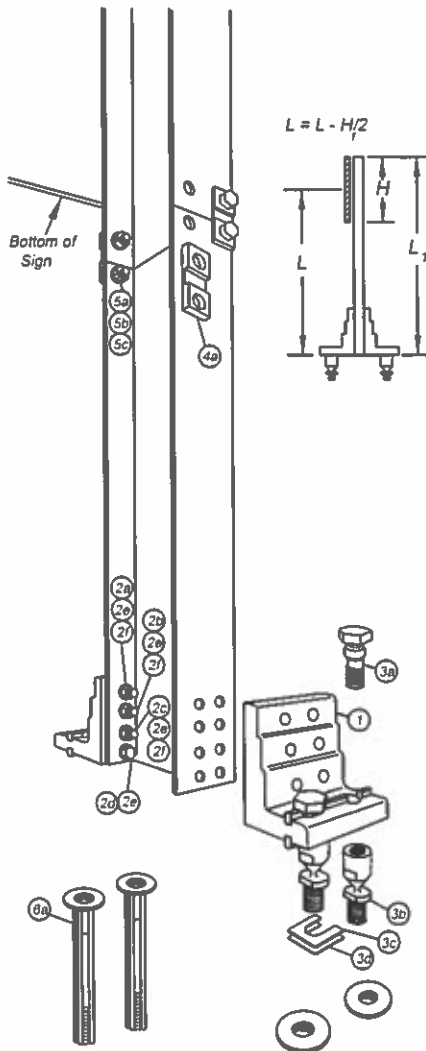
BRACKET SELECTION TABLE

Select correct Break-Safe bracket number from table, using 'L' value from the longest post. Use figure to the left to determine 'L'.

WIDE FLANGE I-BEAM POST SIZE	BRACKET No. 1		BRACKET No. 2		BRACKET No. 3	
	Min. L	Max. L	Min. L	Max. L	Min. L	Max. L
250mm(10")	4.9m(16")	8.8m(29")	3.3m(11")	4.9m(16")	0	3.3m(11")
310mm(12")	5.5m(18")	8.8m(29")	4.0m(13")	5.5m(18")	0	4.0m(13")
360mm(14")	5.8m(19")	8.8m(29")	4.3m(14")	5.8m(19")	0	4.3m(14")
410mm(16")	6.4m(21")	8.8m(29")	4.6m(15")	6.4m(21")	0	4.6m(15")
480mm(18")	7.0m(23")	8.8m(29")	4.9m(16")	7.0m(23")	0	4.9m(16")
530mm(21")	7.8m(25")	8.8m(29")	5.5m(18")	7.8m(25")	0	5.5m(18")

GENERAL NOTES:

- Break-Safe meets all requirements of "AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals."
- Break-Safe Model B650 is designed to fit 250mm (10") through 530mm (21") Wide Flange I-Beam, and 178mm (7") and 203mm (8") Square Tube signposts.
- Select proper Bracket Number by referring to Bracket Selection Table.
- All hardware items are American Standard sizes, galvanized in accordance with ASTM A153 (hot dipped) or ASTM B695 (mechanically applied).
- Fasteners, except for special bolt and coupling, are installed with lockwashers, and do not have specific torque requirements. Fasteners should be secured as tight as possible with conventional wrenches, unless noted otherwise.
- Square-up and level individual components, particularly Anchors to minimize the need for shimming between the Couplings and Anchors.
- No more than two shims shall be placed under any one coupling. No more than three shims underneath any pair of couplings.
- Refer to other side of page for complete installation instructions.



W10 through W21

Break-Safe Model B650
Breakaway Support System for Sign Posts

Scale: Not To Scale	Date: July 2000
Drawing No. BS-B650-1, -2, -3	Sheet: 1 of 2

INSTALLATION INSTRUCTIONS

ANCHOR ASSEMBLY:

Note: Precise positioning of the anchors is critical to proper assembly of the system. It is recommended that actual posts be used to locate the correct position of the anchors.

- 1 Determine proper Break-Safe Bracket Number from the Bracket Selection Table. All posts within a sign structure shall use the same Bracket Number, determined by the length of the longest post.
- 2 Fabricate a flat, rigid template with four (4) 25mm (1") diameter holes located to match the specified anchor pattern of the Break-Safe Brackets attached to the signpost. See diagram below.
- 3 Attach four (4) Transpo Type B Female Anchors to the template using four (4) 25mm (1") diameter bolts. Ensure that each Anchor Washer is snug against the bottom of the template.
- 4 Lower Anchor Assembly into fresh concrete foundation, and vibrate into position such that the tops of the Anchor Washers are flush with the finished top surface of the foundation. Support the template such that all Anchors are level and in their proper locations.
- 5 Allow concrete to cure, and then remove the bolts and template from the top of the foundation.

HINGE ASSEMBLY:

- 1 Butt upper and lower post sections together on a flat surface.
- 2 Drill eight (8) 20.6mm (13/16") holes in the flanges of the post sections as shown.
- 3 Place Hinge Plates on outer surface of the post flanges and secure with bolts, lock washers, and nuts. Ensure that upper and lower post sections are in alignment, and then tighten all nuts 1/2 turn beyond snug.

BRACKET ASSEMBLY:

- 1 Drill sixteen (16) 17.5mm (11/16") diameter holes in the flanges of the lower post section as shown.
- 2 Place Brackets squarely on outer surface of the post flanges, and secure with bolts, lock washers, nuts, and cap screws. Then, tighten all 1/2 turn beyond snug.

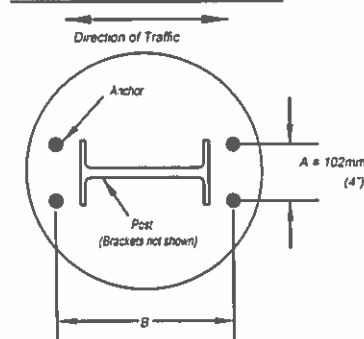
COUPLING ASSEMBLY:

- 1 Thread four (4) Break-Safe Couplings into Anchors. Do not tighten.
- 2 Suspend post assembly over foundation, insert Special Bolts through holes in the Brackets, and thread them snug into the Couplings.
- 3 If post is not plumb, insert Shims (14g and/or 18g) between the Couplings and Anchors, where needed.
- 4 Use lower wrench flats to tighten Couplings into Anchors as tight as possible using a conventional wrench. Do not use a pipe wrench. Couplings must be seated squarely.
- 5 Tighten Special Bolts while holding Couplings by the upper wrench flats with an additional wrench to prevent an induced torque stress across the necked portion of the Coupling. All Special Bolts shall also be tightened as tight as possible using conventional wrenches.

SIGN PANEL ASSEMBLY:

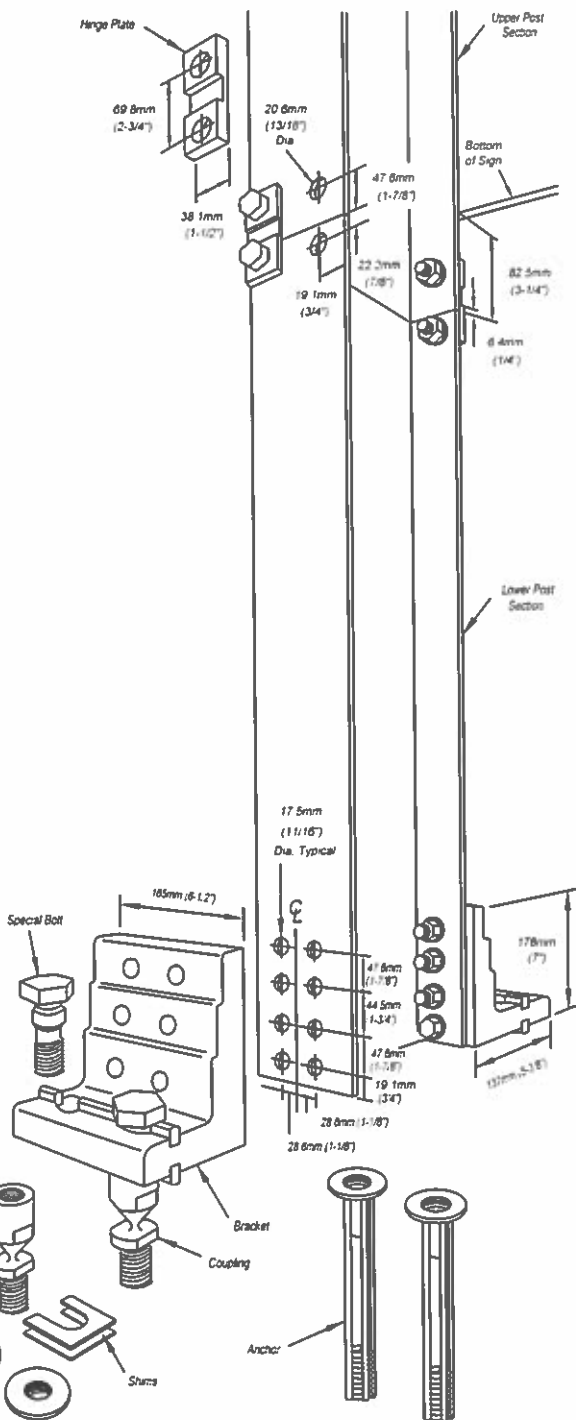
- 1 After all signposts are secured in place, attach sign panel assembly to posts in accordance with the sign manufacturer's recommendations.

PLAN VIEW OF TYPICAL FOUNDATION



- B (Bracket No 1) = Depth of Post = 202mm (7-15/16")
 B (Bracket No 2) = Depth of Post = 205mm (8-1/16")
 B (Bracket No 3) = Depth of Post = 207mm (8-1/8")

Patent Nos. 4,528,786 and 5,586,845



W10 through W21

Break-Safe Model B650
 Breakaway Support System for Sign Posts

Scale: Not To Scale

Date: October 2004

Drawing No. BS-B650-1 -2 -3

Sheet 2 of 2

GENERAL NOTES

Posts shall be assumed to carry ultimate loads per AASHTO Article 7.2.1.5 and treated as such in accordance with Article 7.2.1.5 and treated as such in accordance with the full and not be buried or center punched to prevent the full from meeting.

One foundation requires 0.7 cubic yards of concrete and 45 pounds of reinforcement bars and spiral hoops.

LOADING: 80 mph wind with 30X gust factor, normal to sign.

DESIGN STRESSES

Reinforcing steel - 60,000 psi
 Concrete - 4,000 psi
 Fatigue and pressure - 2,000 psi

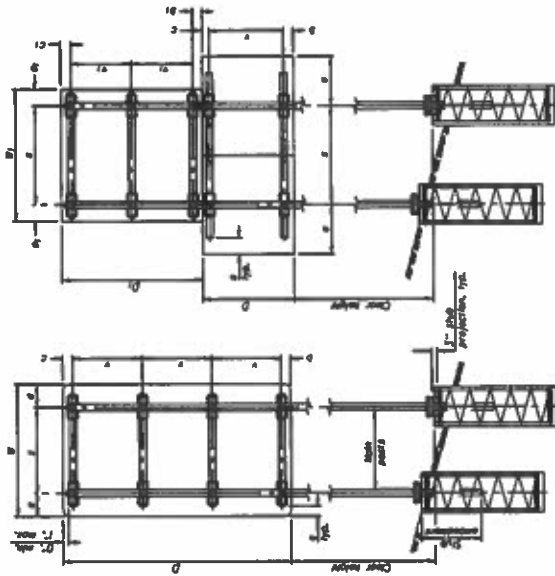
After fabrication, the post, top plate, base plate and cap shall be treated with a rust-inhibiting material in accordance with AASHTO M11. All steel, nuts and washers shall be hot-dip galvanized in accordance with AASHTO M292.

For Sections A-1 and B-1, see Base Sheet BAT-A-2.

FOUNDATION

As shown, the post shall be embedded in concrete and secured to rock, backfilling with approved material (subject to availability of suitable material). Formwork and bracing shall be provided to support the concrete during curing. The reinforcement shall be included in the shop drawings for foundation.

The manufacturer of the tubular steel shall be contacted to determine the minimum length of the support, furnished by the combined length of the main posts and sub posts.



DUAL POST ASSEMBLY EXAMPLES

MAIN POST STEEL TUBING	WEIGHT PER FOOT	SUB POST TABLE		MAIN POST TABLE			
		Sub Post (Equivalent Length)	Sub Post (Length)	Sub Size	A	I	R
3" x 3" x 1/4"	7.1	2'-0"	2'-3"	3" x 3" x 1/4"	6'-0"	6'-0"	6'-0"
4" x 4" x 1/4"	8.8	2'-0"	2'-3"	4" x 4" x 1/4"	6'-0"	6'-0"	6'-0"
5" x 5" x 1/4"	12.2	2'-0"	2'-3"	5" x 5" x 1/4"	6'-0"	6'-0"	6'-0"
6" x 6" x 1/4"	18.7	2'-0"	2'-3"	6" x 6" x 1/4"	6'-0"	6'-0"	6'-0"
8" x 8" x 1/4"	28.0	2'-0"	2'-3"	8" x 8" x 1/4"	6'-0"	6'-0"	6'-0"
10" x 10" x 1/4"	42.0	2'-0"	2'-3"	10" x 10" x 1/4"	6'-0"	6'-0"	6'-0"
12" x 12" x 1/4"	60.0	2'-0"	2'-3"	12" x 12" x 1/4"	6'-0"	6'-0"	6'-0"
14" x 14" x 1/4"	84.0	2'-0"	2'-3"	14" x 14" x 1/4"	6'-0"	6'-0"	6'-0"
16" x 16" x 1/4"	112.0	2'-0"	2'-3"	16" x 16" x 1/4"	6'-0"	6'-0"	6'-0"

SINGLE POST ASSEMBLY EXAMPLES

• Dimensions shown are for typical conditions and shall be approved by the Engineer.

- 6" or 11" - 6" min. to 2'-0" max. (Approximately 0.27' or 0.29')
- 8" or 13" - 8" min. to 2'-0" max.
- 10" or 17" - 10" min. to 2'-0" max.
- 12" or 21" - 12" min. to 2'-0" max.
- 14" or 25" - 14" min. to 2'-0" max.
- 16" or 29" - 16" min. to 2'-0" max.

6-1-82

BAT-A-1

Contractor is responsible for all final field measurements

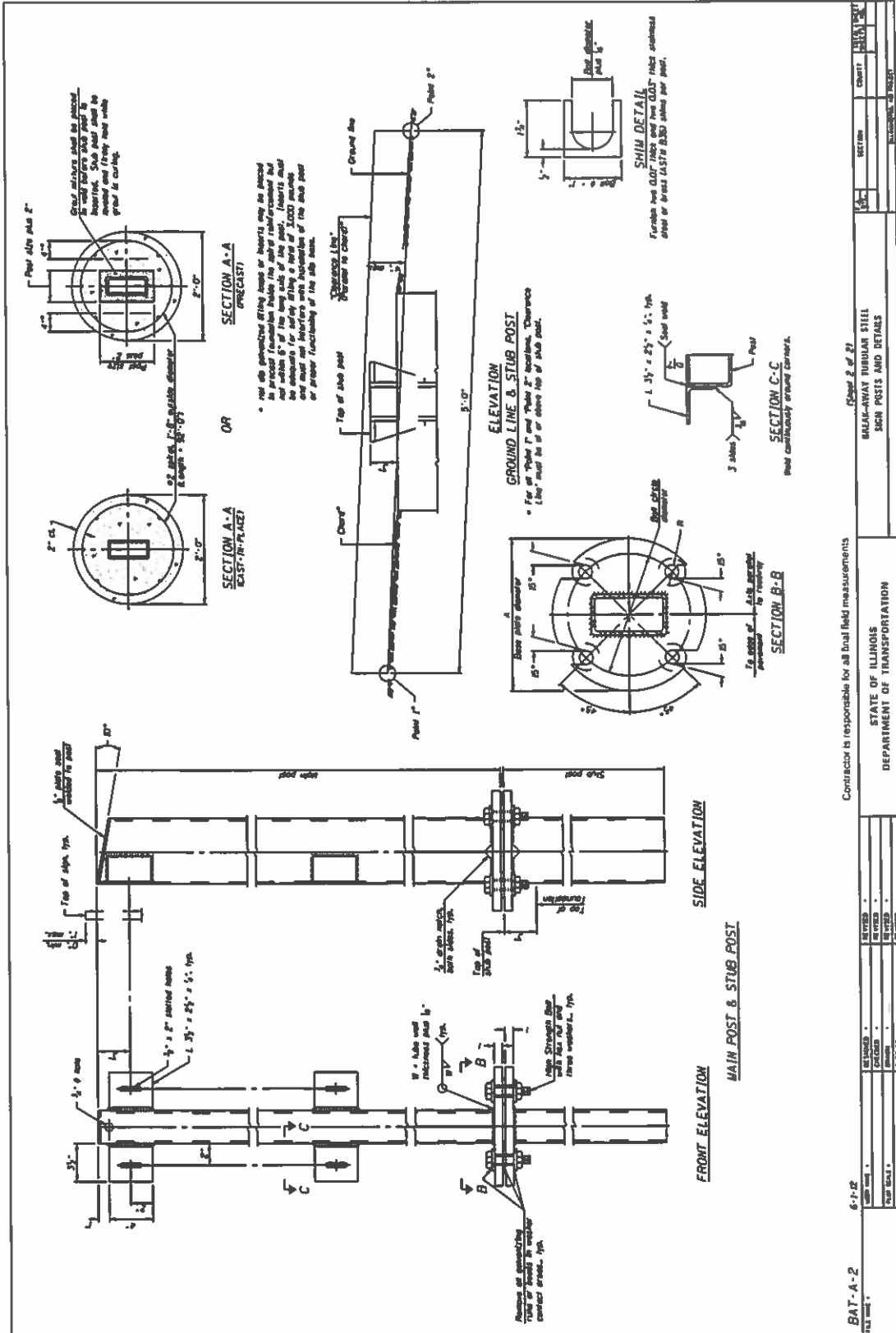
Sheet 17 of 52

DESIGNED	REVIEWED
CHECKED	REVIEWED
APPROVED	REVIEWED

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

BRICK-WAY TUBULAR STEEL
 SIGN POSTS AND FOUNDATIONS

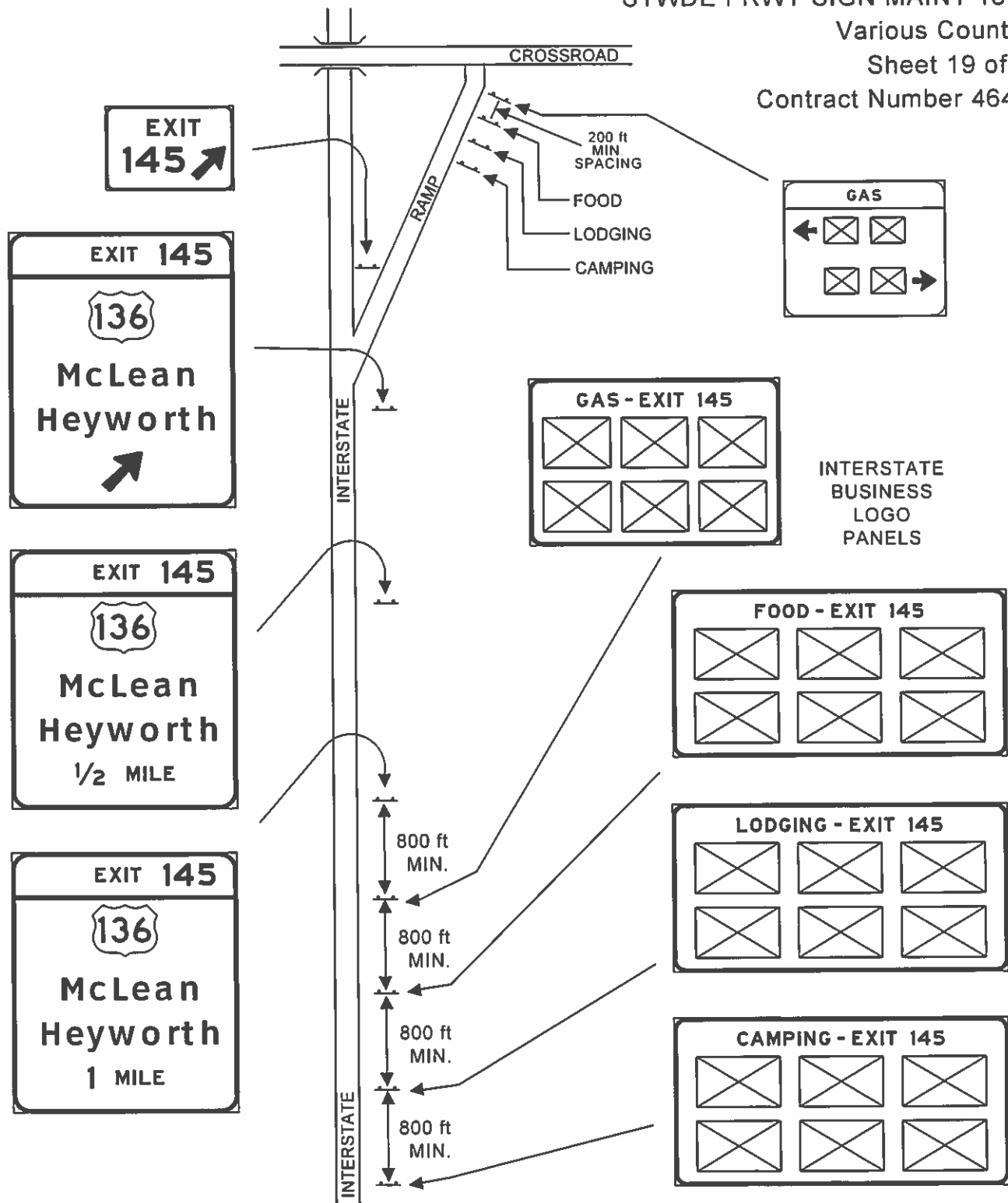
DATE	BY	CHKD	BY



Contractor is responsible for all field measurements

Sheet 18 of 52

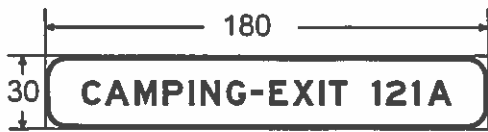
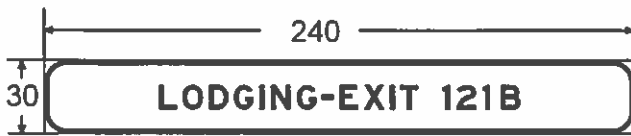
BAT-A-2 6-1-82	DESIGNED CHECKED DRAWN DATE	DESIGNED CHECKED DRAWN DATE	DESIGNED CHECKED DRAWN DATE	DESIGNED CHECKED DRAWN DATE	DESIGNED CHECKED DRAWN DATE
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STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		BULK-HEAD TUBULAR STEEL SIGN POSTS AND DETAILS			



 BUSINESS LOGO

LOGO SERVICE SIGN DETAILS

MAINLINE SUPPLEMENTAL SERVICE SIGN DETAILS

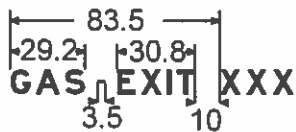


**MAINLINE SUPPLEMENTAL SERVICE SIGNS
ONLY USED FOR THE FOLLOWING SERVICES.
GAS, FOOD, LODGING, AND CAMPING**

MAINLINE SUPPLEMENTAL SERVICE SIGN NOTES:

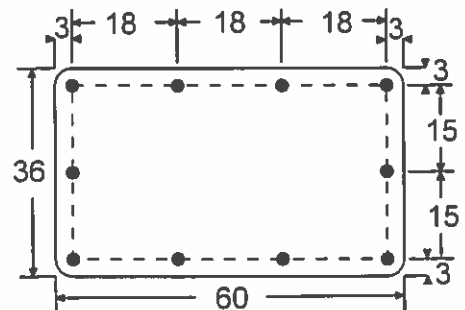
1. To be placed beneath Logo Service Signs where indicated.
2. Same general notes and legend sizes apply here as to other mainline Logo Service Signs.

MAINLINE SIGN WORD SPACING

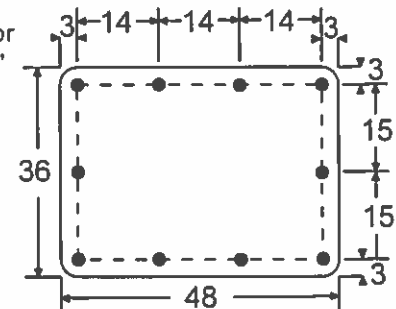


**MAINLINE SERVICE PLATE HOLE SPACING DETAILS
(PLATES FURNISHED BY OTHERS)**

Hole spacing for 60" wide by 36" high FOOD, LODGING, CAMPING, ATTRACTIONS, 24-HR PHARMACY logos.



Hole spacing for 48" wide by 36" high GAS logo.



GENERAL NOTES FOR MAINLINE SIGNS:

1. All legends are 10 inch E Modified.
2. All borders are 2 inches wide.
3. All corners have a 9 inch radius.
4. Background is Blue.
5. Legend and border is white.
6. All dimensions are shown in inches.
7. Multiple services on a single panel shall be listed by priority, from left to right or top to bottom. Priority order is GAS, FOOD, LODGING, CAMPING, ATTRACTIONS, 24-HOUR PHARMACY.

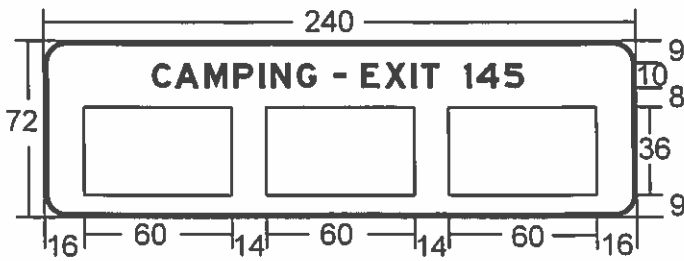
SERVICE PLATE NOTES:

1. Holes must be $\frac{3}{16}$ " (0.1875 in. dia.).
2. All Service Plate corners have a 3 inch radius.

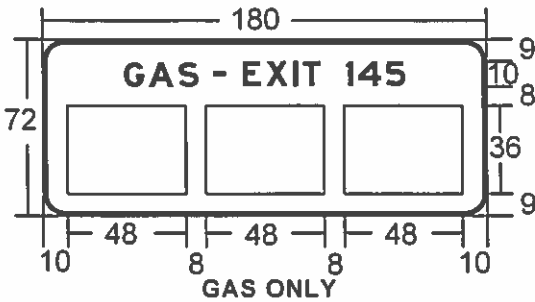
LOGO SERVICE SIGN DETAILS

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

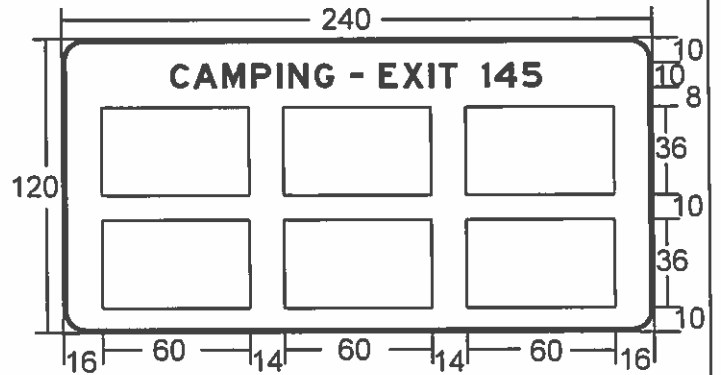
**MAINLINE SIGN
SPECIFICATIONS**



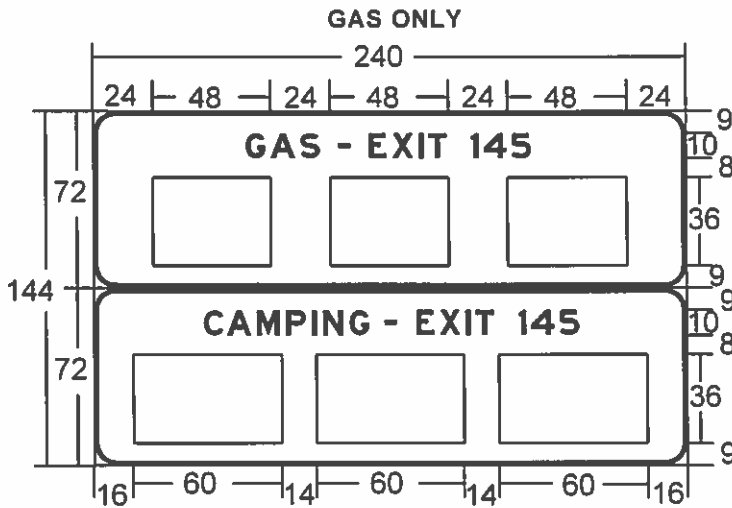
FOOD, LODGING, CAMPING,
ATTRACTIONS, 24-HOUR PHARMACY



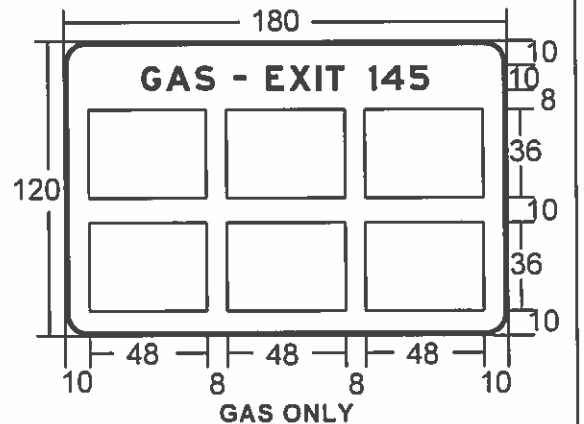
GAS ONLY



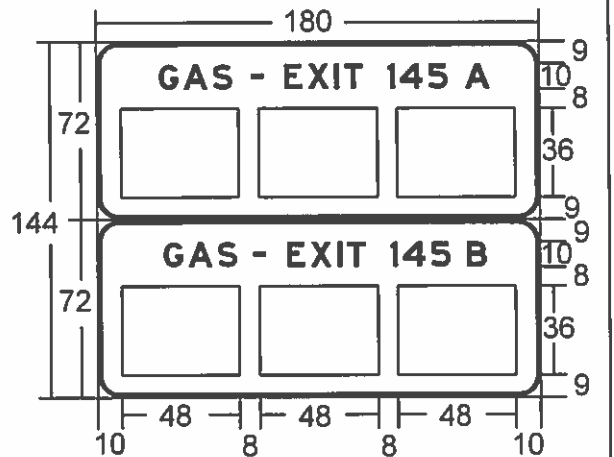
FOOD, LODGING, CAMPING,
ATTRACTIONS, 24-HOUR PHARMACY



FOOD, LODGING, CAMPING,
ATTRACTIONS, 24-HOUR PHARMACY



GAS ONLY



GAS ONLY

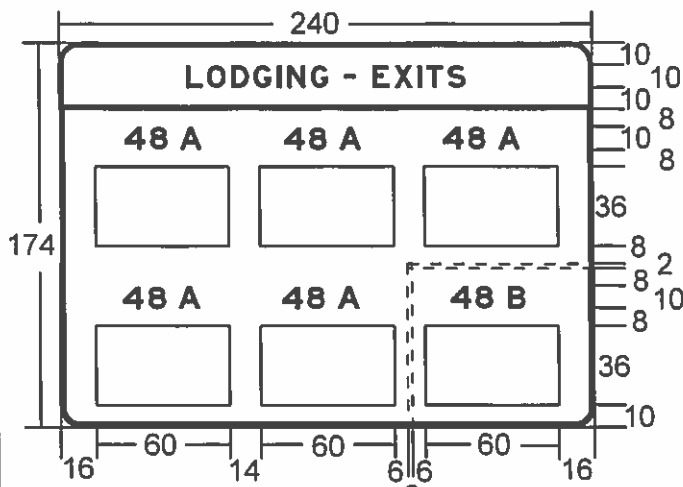
GENERAL NOTES FOR MAINLINE SIGNS:

1. All legends are 10 inch E Modified.
2. All borders are 2 inches wide.
3. All corners have a 9 inch radius.
4. Background is Blue.
5. Legend and border is white.
6. All dimensions are shown in inches.
7. Multiple services on a single panel shall be listed by priority, from left to right or top to bottom. Priority order is GAS, FOOD, LODGING, CAMPING, ATTRACTIONS, 24-HOUR PHARMACY.

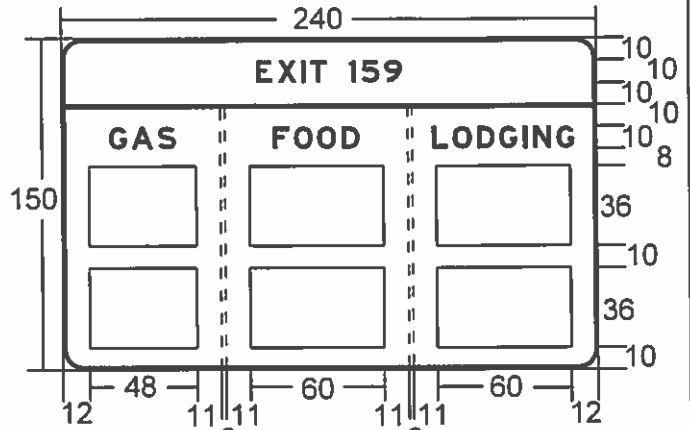
LOGO SERVICE SIGN DETAILS

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

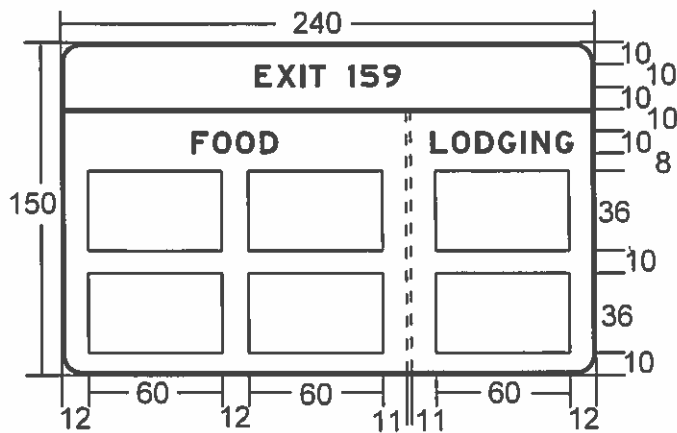
**MAINLINE SIGN
EXAMPLES**



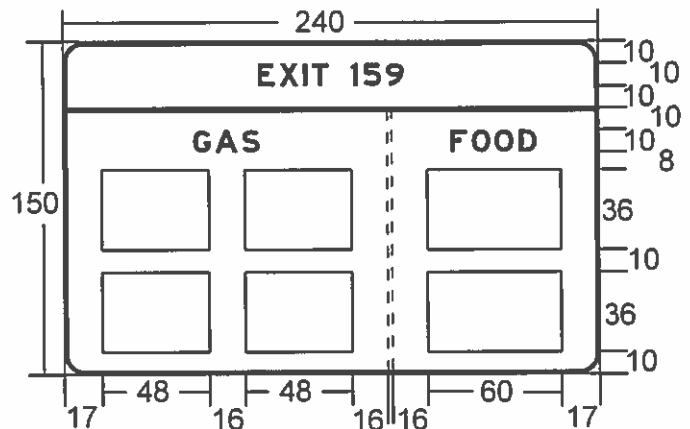
FOOD, LODGING, CAMPING,
ATTRACTIONS, 24-HOUR PHARMACY



GAS FOOD, LODGING, CAMPING



FOOD, LODGING, CAMPING



GAS FOOD, LODGING,
CAMPING

GENERAL NOTES FOR MAINLINE SIGNS:

1. All legends are 10 inch E Modified.
2. All borders are 2 inches wide.
3. All corners have a 9 inch radius.
4. Background is Blue.
5. Legend and border is white.
6. All dimensions are shown in inches.
7. Multiple services on a single panel shall be listed by priority, from left to right or top to bottom. Priority order is GAS, FOOD, LODGING, CAMPING, ATTRACTIONS, 24-HOUR PHARMACY.

DETACHABLE BORDER

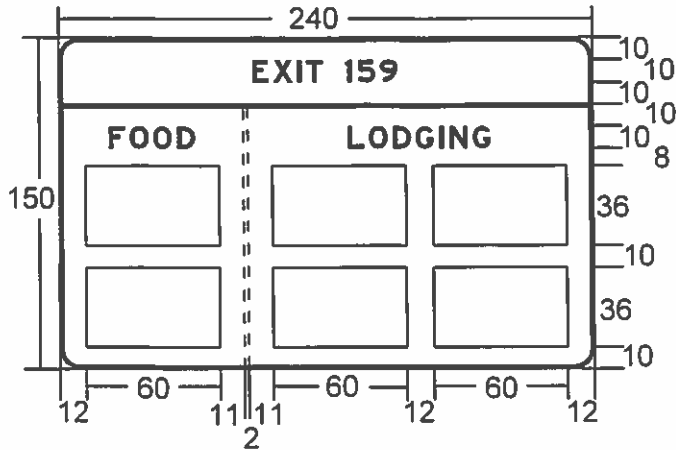


When using a detachable border, secure with a rivet at the beginning, end and every 2 feet in between.

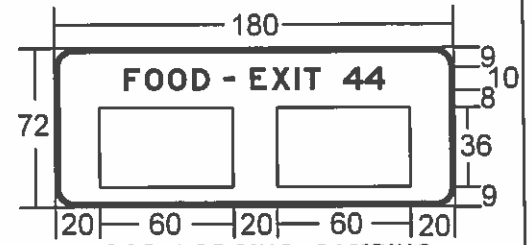
LOGO SERVICE SIGN DETAILS

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

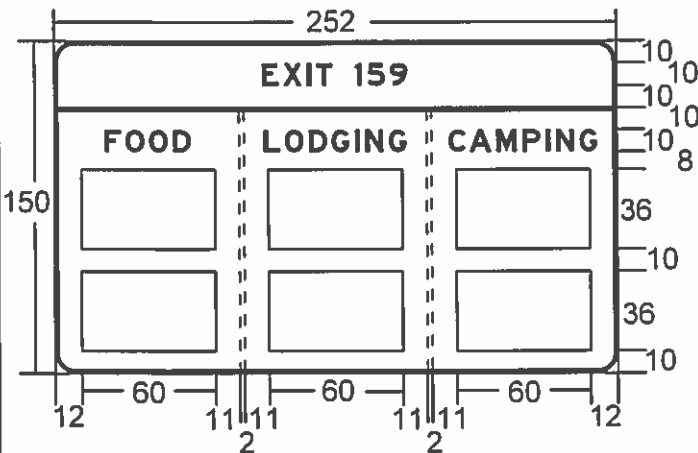
**MAINLINE SIGN
EXAMPLES**



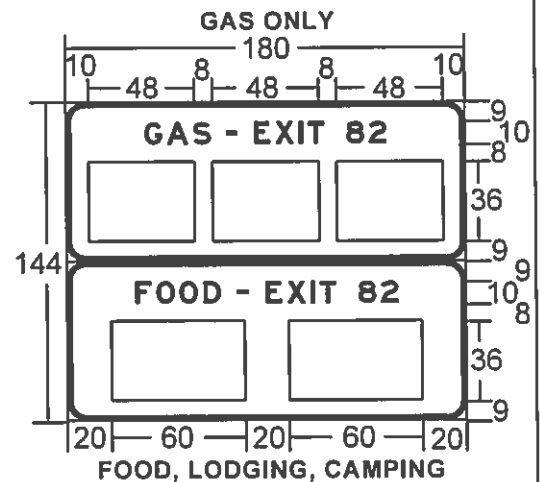
FOOD, LODGING, CAMPING



FOOD, LODGING, CAMPING



FOOD, LODGING, CAMPING



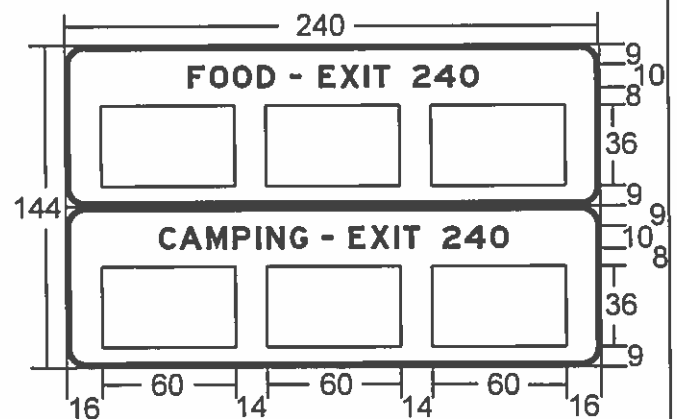
FOOD, LODGING, CAMPING

DETACHABLE BORDER

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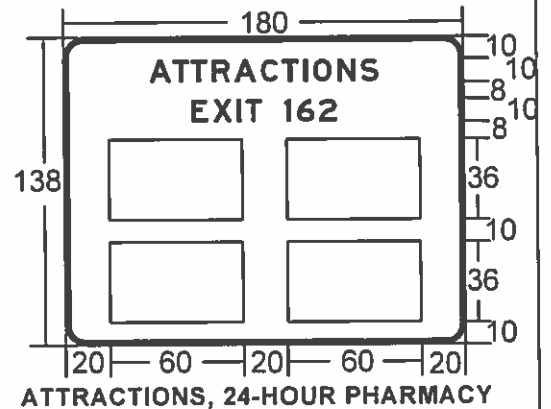
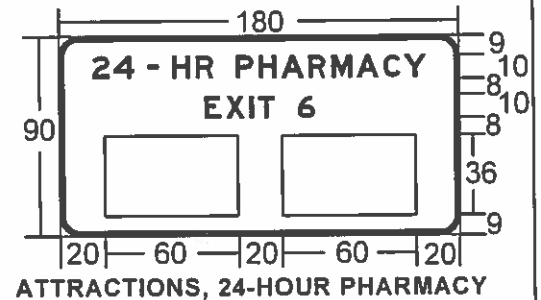
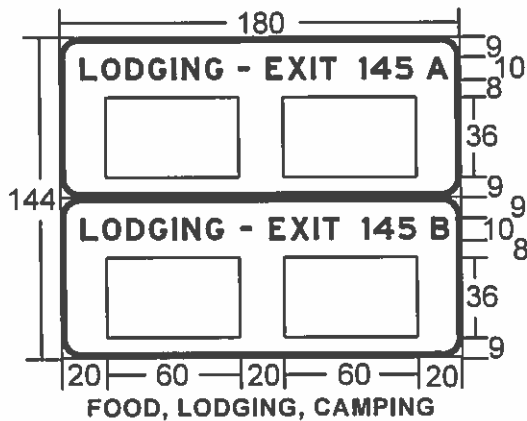
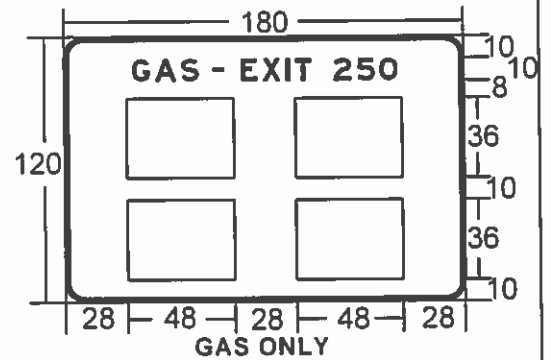
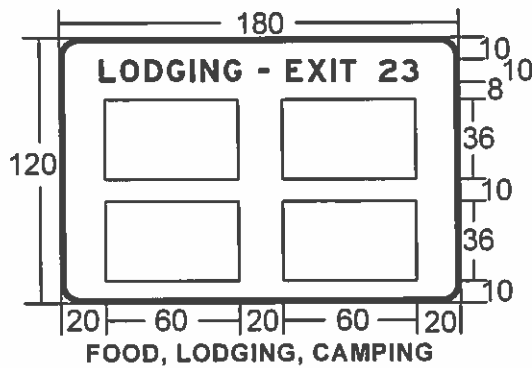
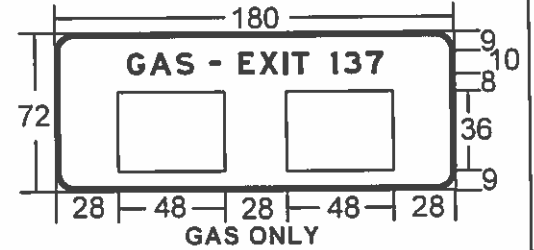
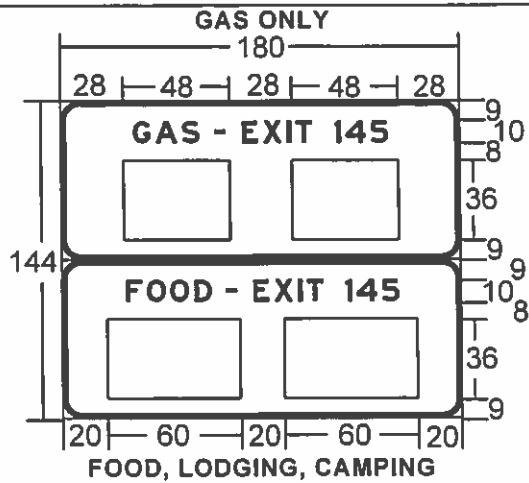


FOOD, LODGING, CAMPING, ATTRACTIONS, 24-HOUR PHARMACY

LOGO SERVICE SIGN DETAILS

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**MAINLINE SIGN
EXAMPLES**



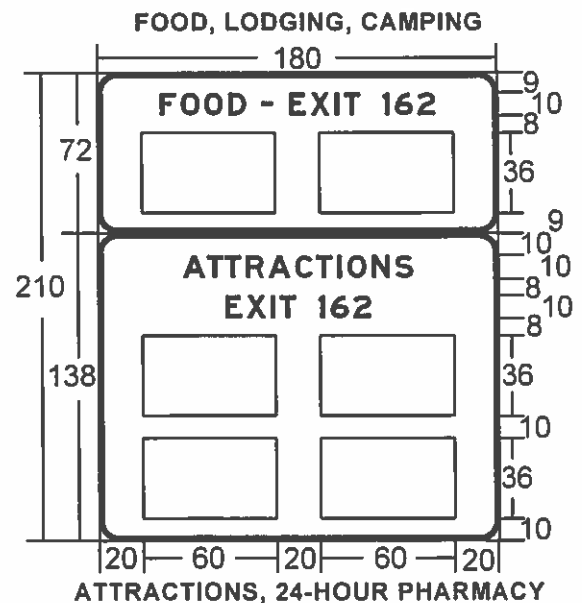
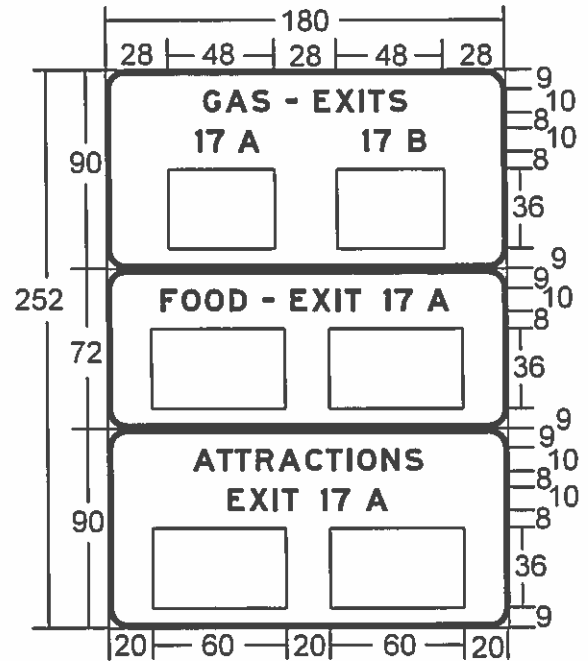
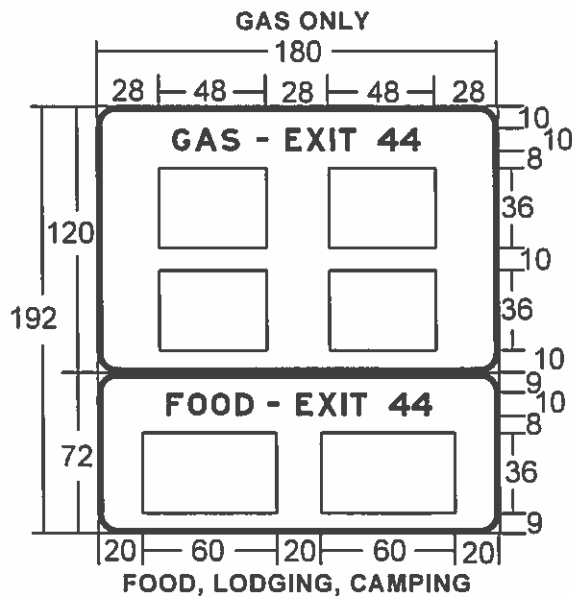
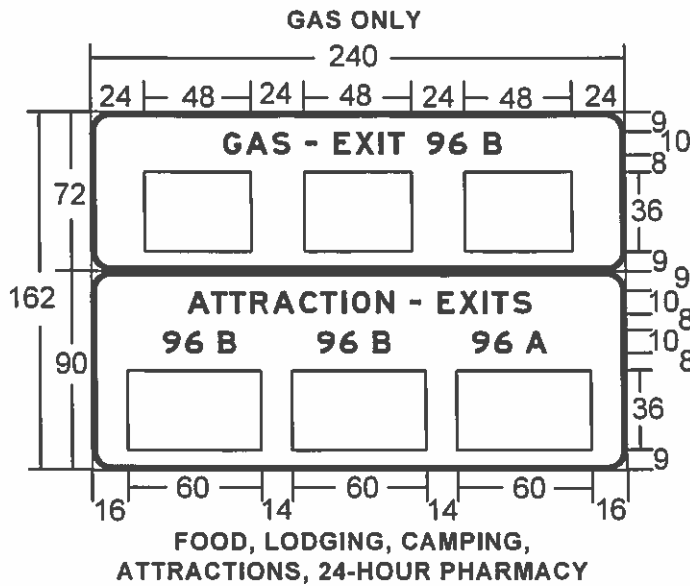
GENERAL NOTES FOR MAINLINE SIGNS:

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3. All corners have a 9 inch radius.
4. Background is Blue.
5. Legend and border is white.
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LOGO SERVICE SIGN DETAILS

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**MAINLINE SIGN
 EXAMPLES**



GENERAL NOTES FOR MAINLINE SIGNS:

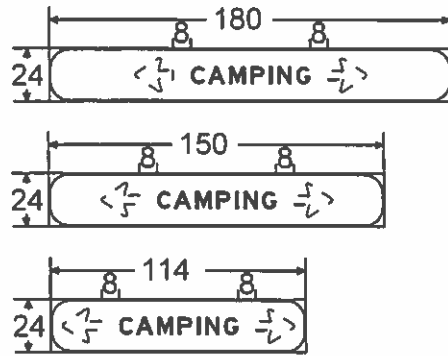
1. All legends are 10 inch E Modified.
2. All borders are 2 inches wide.
3. All corners have a 9 inch radius.
4. Background is Blue.
5. Legend and border is white.
6. All dimensions are shown in inches.
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LOGO SERVICE SIGN DETAILS

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**MAINLINE SIGN
EXAMPLES**

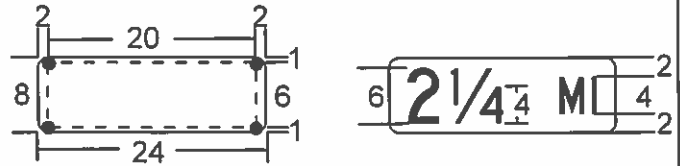
RAMP SUPPLEMENTAL SERVICE SIGN DETAILS



RAMP SUPPLEMENTAL SERVICE SIGNS ONLY USED FOR THE FOLLOWING SERVICES. GAS, FOOD, LODGING, AND CAMPING

Various Routes
 STWDE FRWY SIGN MAINT 18-51
 Various Counties
 Sheet 26 of 52
 Contract Number 46488

MILEAGE PLATE HOLE SPACING DETAIL



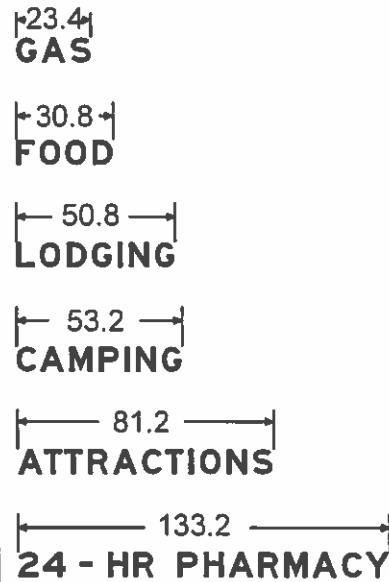
RAMP SUPPLEMENTAL SERVICE SIGN NOTES:

1. To be placed beneath Logo Service Signs where indicated.
2. Same general notes and legend sizes apply here as to other ramp Logo Service Signs.

MILEAGE PLATE NOTES:

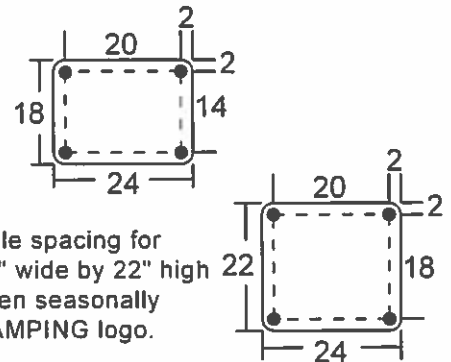
1. Holes must be 3/16" (0.1875 in. dia.).
2. All legends are C series.
3. All legends are centered.
4. All dimensions are shown in inches.
5. Legend is white.
6. Background is Blue.

RAMP SIGN WORD SPACING



RAMP SERVICE PLATE HOLE SPACING DETAILS (PLATES FURNISHED BY OTHERS)

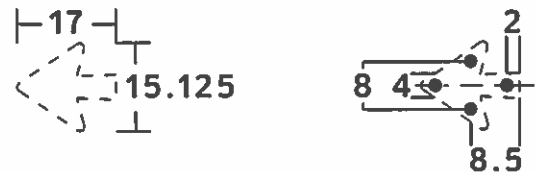
Hole spacing for 24" wide by 18" high GAS, FOOD, LODGING, CAMPING, ATTRACTIONS, or 24-HR PHARMACY logos.



RAMP SERVICE PLATE NOTES:

1. Holes must be 3/16" (0.1875 in. dia.).
2. All Ramp Service Plate corners have a 2 inch radius.

ARROW HOLE SPACING DETAILS:



RAMP SERVICE PLATE NOTES:

1. Holes must be 3/16" (0.1875 in. dia.).
2. All Ramp Service Plate corners have a 2 inch radius.

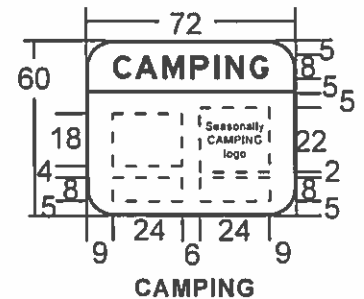
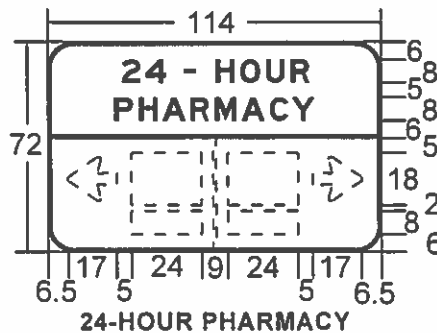
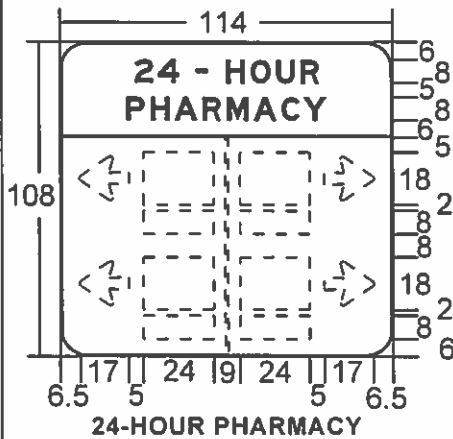
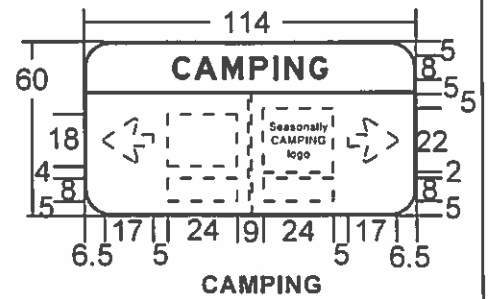
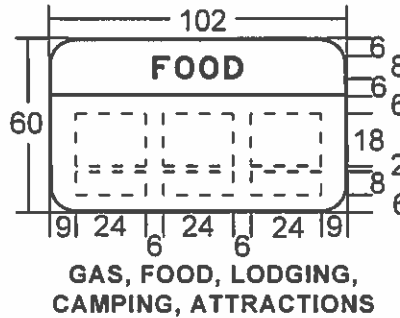
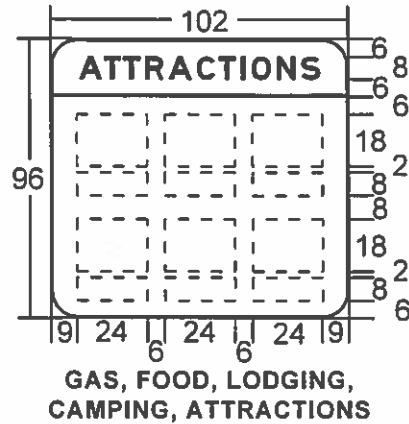
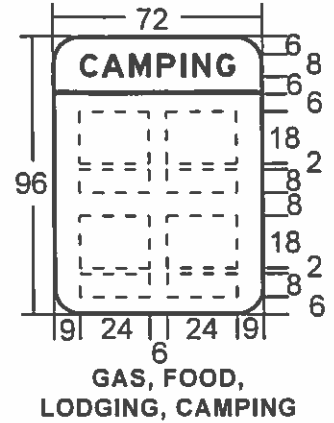
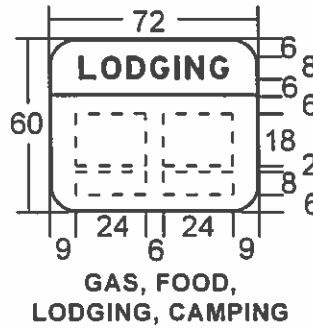
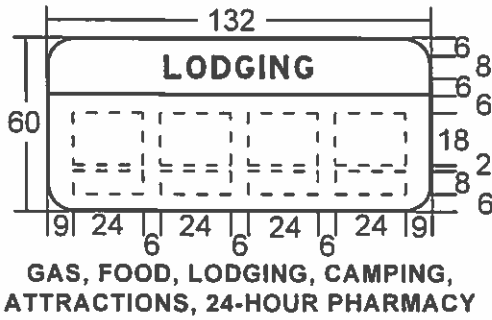
GENERAL NOTES FOR RAMP SIGNS:

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2. All borders are 1 inches wide.
3. All corners have a 9 inch radius.
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LOGO SERVICE SIGN DETAILS



**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**RAMP SIGN
 SPECIFICATIONS**



GENERAL NOTES FOR RAMP SIGNS:

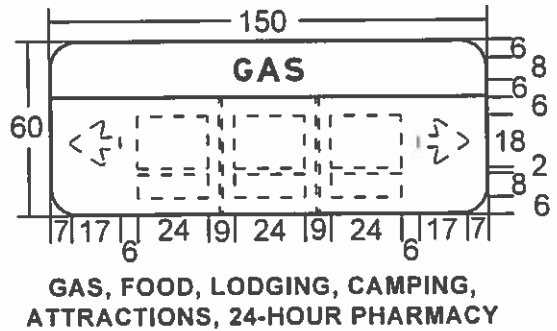
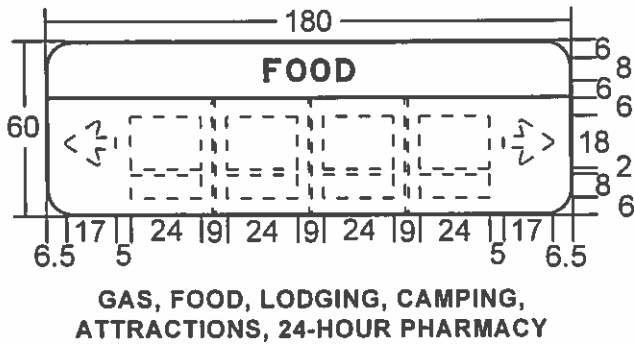
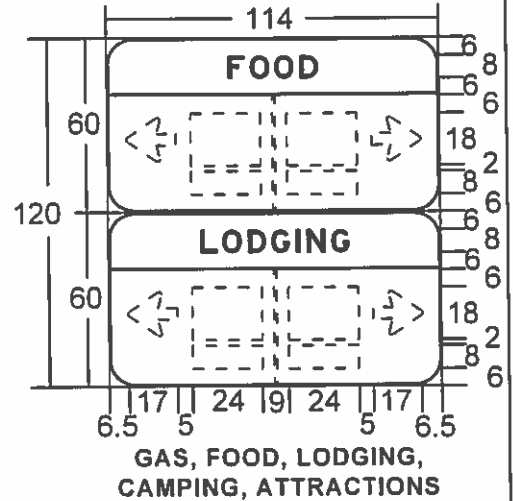
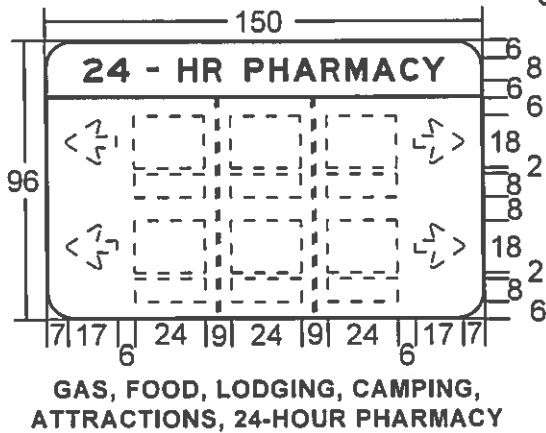
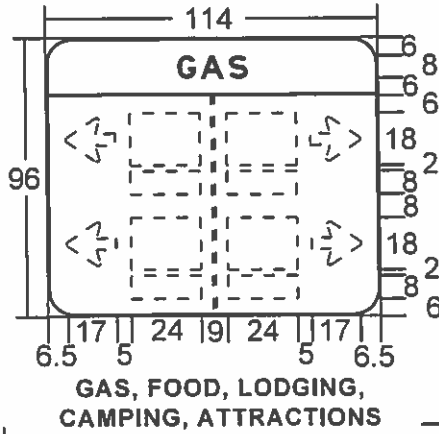
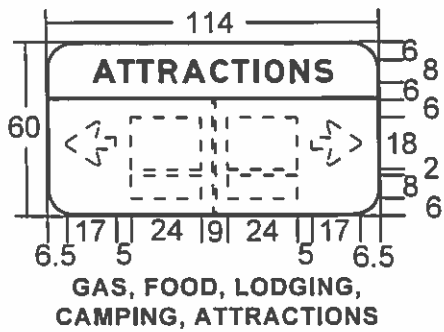
1. All legends are 8 inch E Modified.
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-  POSSIBLE VERTICAL BAR LOCATIONS
-  POSSIBLE RAMP SERVICE PLATE LOCATIONS
-  POSSIBLE RAMP MILEAGE PLATE LOCATIONS
-  POSSIBLE ARROW LOCATIONS

LOGO SERVICE SIGN DETAILS





**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**RAMP SIGN
 EXAMPLES**



GENERAL NOTES FOR RAMP SIGNS:

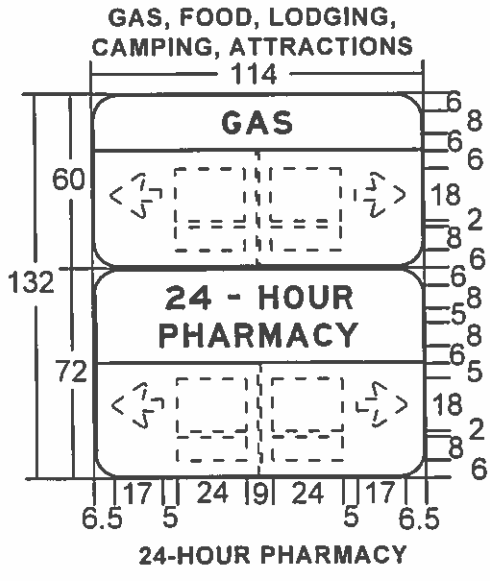
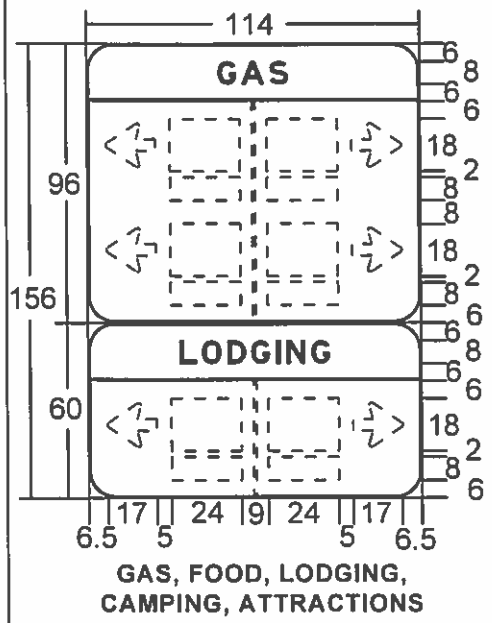
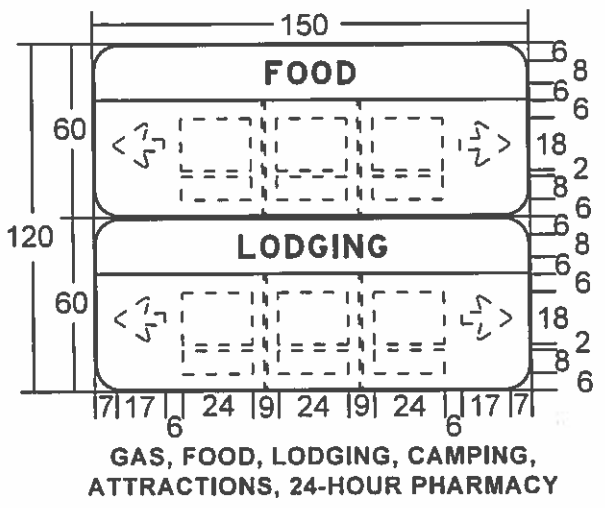
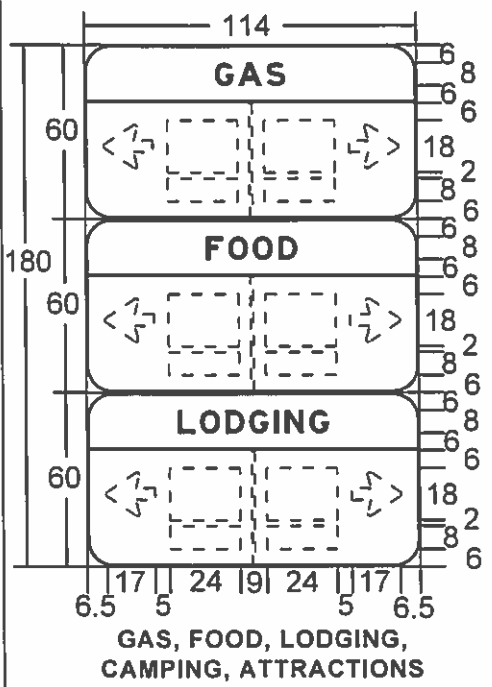
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-  POSSIBLE RAMP SERVICE PLATE LOCATIONS
-  POSSIBLE RAMP MILEAGE PLATE LOCATIONS
-  POSSIBLE ARROW LOCATIONS

LOGO SERVICE SIGN DETAILS

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**RAMP SIGN
 EXAMPLES**



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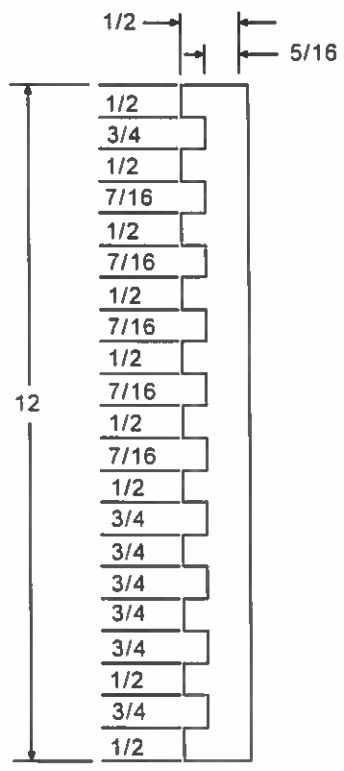
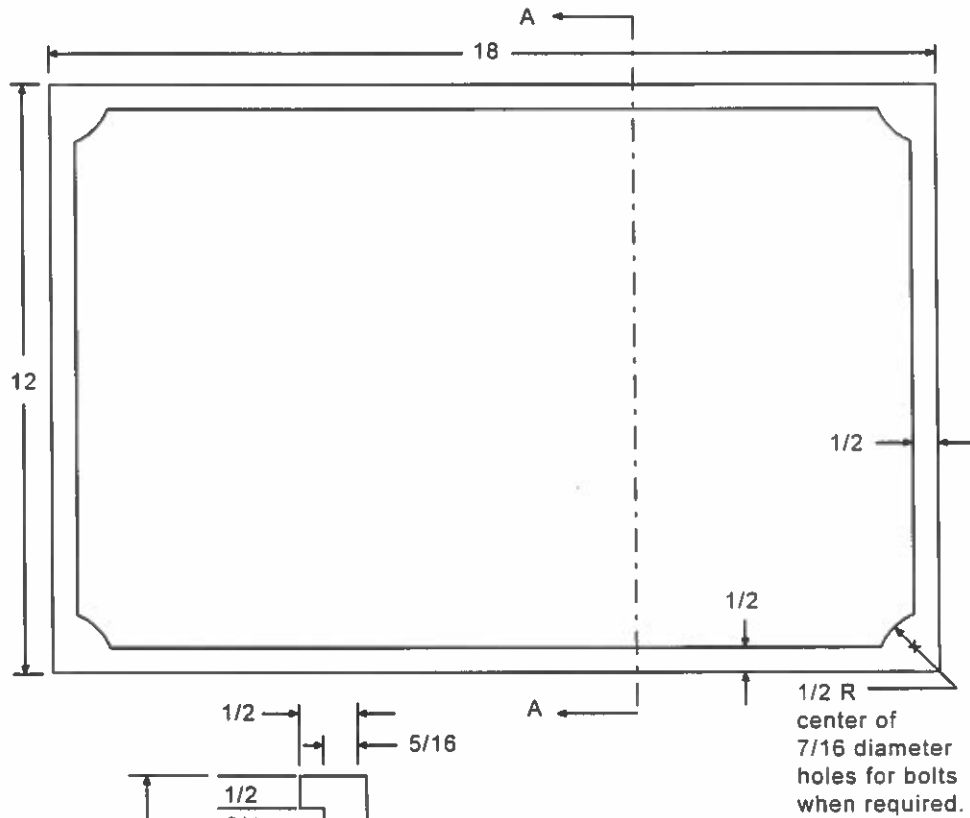
- POSSIBLE VERTICAL BAR LOCATIONS
- POSSIBLE RAMP SERVICE PLATE LOCATIONS
- POSSIBLE RAMP MILEAGE PLATE LOCATIONS
- POSSIBLE ARROW LOCATIONS

LOGO SERVICE SIGN DETAILS

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**RAMP SIGN
 EXAMPLES**

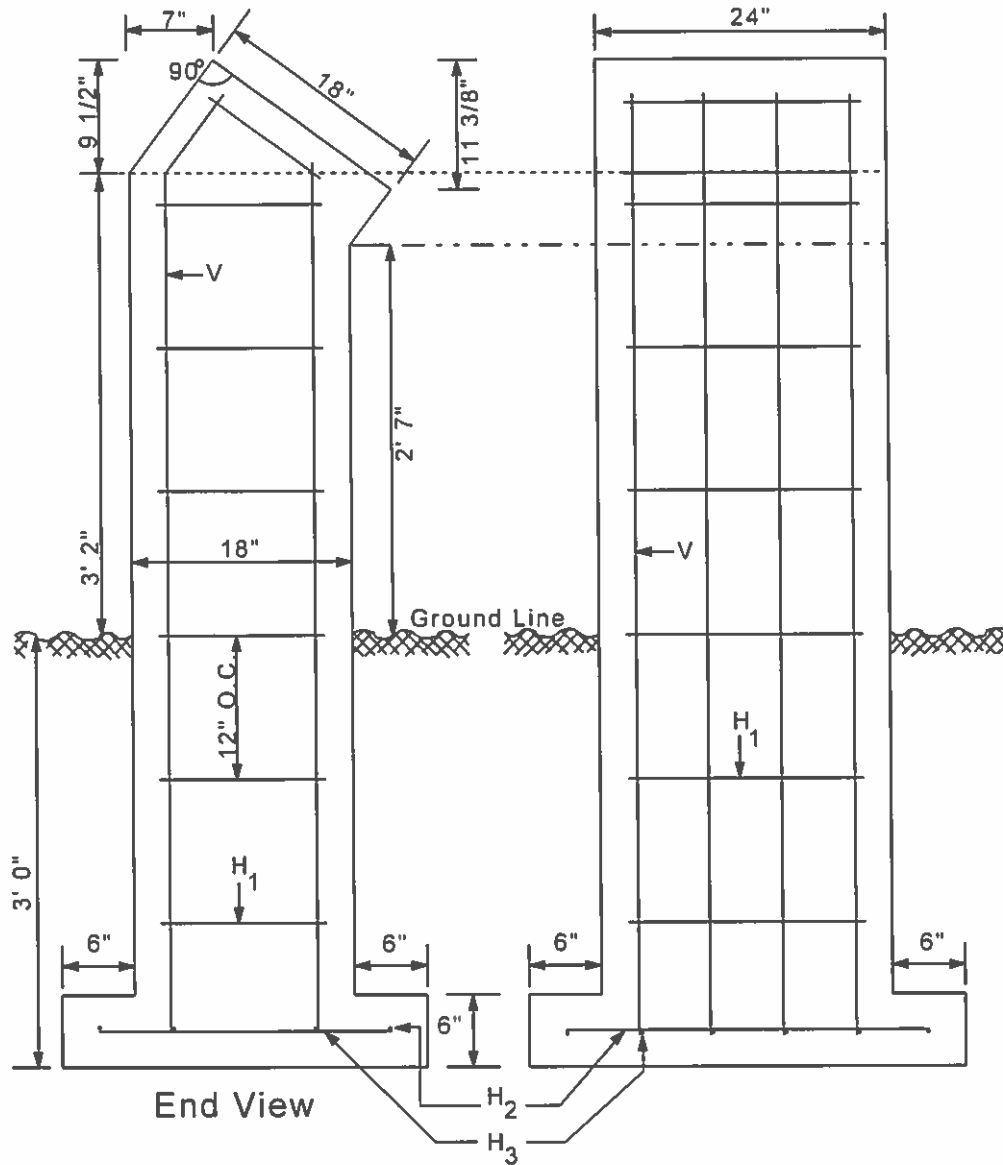
MEMORIAL PLAQUE DETAIL




View A-A

- Notes:
1. All dimensions are in inches.
 2. Material to be best quality brass or bronze.
 3. Border and lettering raised 1/8 inch ribbon letters.
 4. Top surface polished with brown background.
 5. For fastening in concrete, use six (6) lugs at least 3-inches long cast on the back of the plaque. Drill concrete and place lugs in epoxy/grout mix.
 6. For fastening on steel, bolt four (4) 3/8-inch by 1-inch stainless steel or brass cap screws. Screws may be self-tapping or steel may be drilled and tapped in the field.

TYPICAL MONUMENT



Note:
 Use Number 3 rebar.
 Monument may be cast-in-place
 or prefabricated.
 Backfill with existing material
 thoroughly tamped in 12-inch lifts.

Bar	Size	Type
V	#3	—
H ₁	#3	 4 1/2"
H ₂	#3	—
H ₃	#3	—

REST AREA SIGNS

Various Routes
 STWDE FRWY SIGN MAINT 18-51
 Various Counties
 Sheet 32 of 52
 Contract Number 46488



(A)
 48" X 48"
 White on Brown
 Arrow on left
 of symbols
 where noted



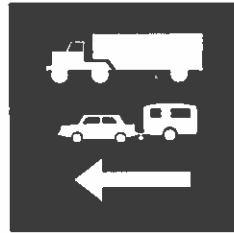
(E)
 48" X 48"
 Std. 36" X 36"
 R5-1
 or
 36" X 36"
 overall
 with Std 36" X 36"
 R5-1 where noted



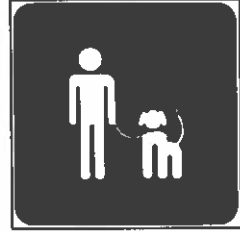
(B)
 48" X 48"
 White on Brown



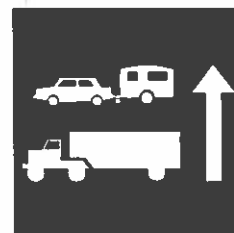
(F)
 12" X 24"
 Std. R7-8/
 Std. R7-1101
 combined



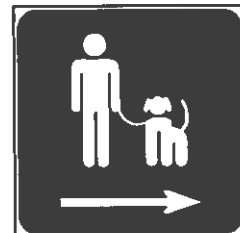
(C)
 48" X 48"
 White on Brown



(G)
 24" X 24"
 White on Brown



(D)
 48" X 48"
 White on Brown
 Arrow on left
 of symbols
 where noted



(H)
 24" X 24"
 White on Brown

REST AREA SIGNS

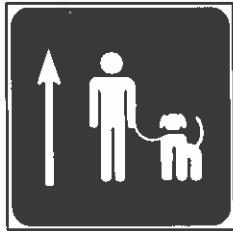
Various Routes
STWDE FRWY SIGN MAINT 18-51
Various Counties
Sheet 33 of 52
Contract Number 46488



I
24" X 24"
White on Brown



M
36" X 36"
White on Brown



J
24" X 24"
White on Brown



N
36" X 24"
White on Brown



K
12" X 18"
White on Brown



O
24" X 18"
White on Brown



L
CLICK IT
OR
TICKET



P
24" X 30"
Std. R4-7

REST AREA SIGNS



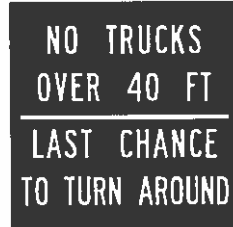
Q
36" X 36"
Std. 30" X 30"
R1-1
← Brown



U
18" X 24"
Std. R6-2
Arrow direction
as noted



R
36" X 24"
White on
brown



V
48" X 48"
White on
brown



S
18" X 24"
Std. R2-1
Speed as
noted



W
36" X 36"
with 24" X 24"
black/yellow
warning sign
← Brown



T
36" X 36"
Std. 30" R1-2
← Brown



X
36" X 24"
White on
brown

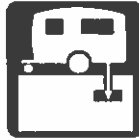
Various Routes
STWDE FRWY SIGN MAINT 18-51
Various Counties
Sheet 34 of 52
Contract Number 46488

REST AREA SIGNS

Various Routes
 STWDE FRWY SIGN MAINT 18-51
 Various Counties
 Sheet 35 of 52
 Contract Number 46488



Y
 36" X 36"
 with Std.
 24" X 24"
 W6-1
 ← Brown



CC
 24" X 24"
 Std/RM-160
 Modified
 White on brown



Z
 12" X 18"
 White on
 brown.
 Logo: white
 on blue



DD
 36" X 24"
 White on brown



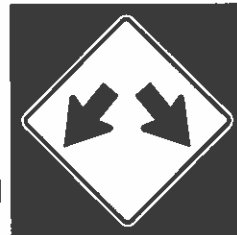
AA
 ← Brown
 Top 36" X 36"
 with 24" X 24" W1-1
 Speed 36" X 18"
 Black on yellow.
 Speed and arrow
 direction as noted.



EE
 24" X 36"
 Std. 18" shield
 White on brown
 Route as noted.



BB
 48" X 36"
 White on Brown
 Std. 18" shield
 (1 sign north and
 1 sign south)
 Route and
 direction as noted.



FF
 36" X 36"
 Std. 24" X 24"
 W12-1
 Brown background

REST AREA SIGNS

Various Routes
 STWDE FRWY SIGN MAINT 18-51
 Various Counties
 Sheet 36 of 52
 Contract Number 46488



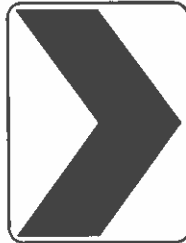
GG
 12" X 12"
 Std. R8-3



KK
 18" X 30"
 White on brown



HH
 24" X 24"
 Std. R3-1
 Direction as noted



LL
 18" X 24"
 Std. W1-8



II
 30" X 24"
 Black on white



MM
 12" X 18"
 White on brown.
 Logo: White on blue



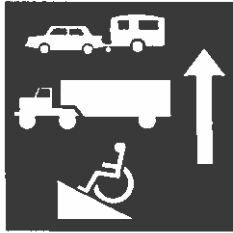
JJ
 18" X 36"
 Upper: White on red
 Lower: Black on white



NN
 72" X 24"
 White on Brown

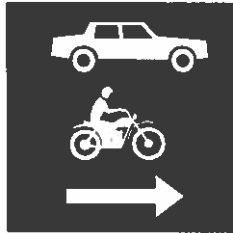
REST AREA SIGNS

Various Routes
STWDE FRWY SIGN MAINT 18-51
Various Counties
Sheet 37 of 52
Contract Number 46488



OO

48" X 48"
White on Brown
Arrow on left
of symbols
where noted



PP

48" X 48"
White on Brown



QQ

48" X 48"
Std. W11-2
Brown background

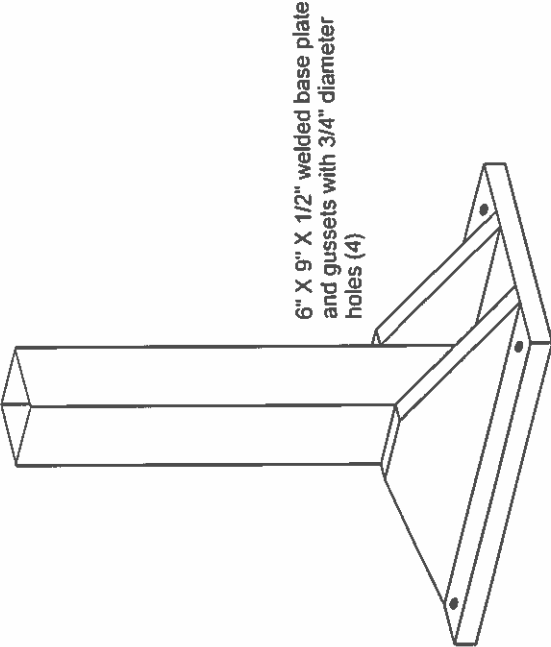


RR

12" X 18"
White on Brown

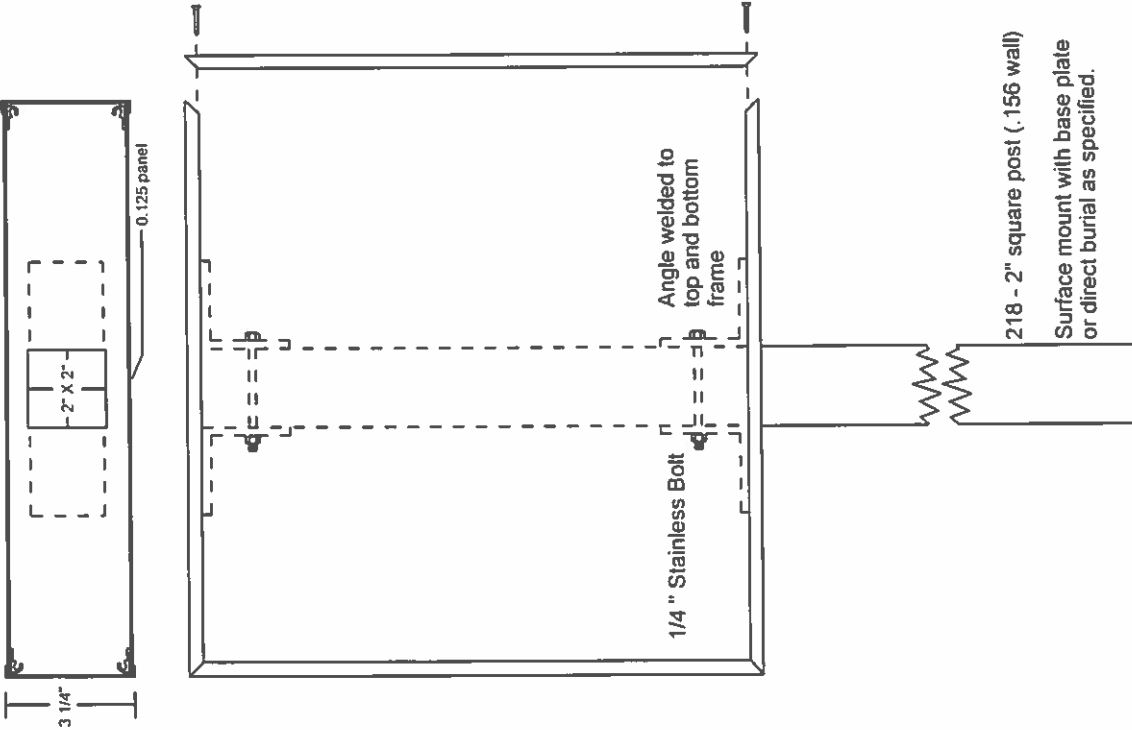
NOTES

- All posts and frames shall be manufactured from heavy duty 6063 alloy aluminum extrusions. Posts shall be temper T6 and frames temper T5.
- All extrusions shall be produced to Aluminum Association standards and ASTM B221.
- All hardware shall be stainless steel. All fasteners shall be temper resistant.
- Frames and posts shall be finished in dark bronze meeting the approval on the Engineer. Color samples shall be furnished prior to fabrication. The finish is to be acrylic polyurethane, electrostatically applied to pretreated and primed surfaces and oven baked.



Anchor system to meet the approval of the Engineer.

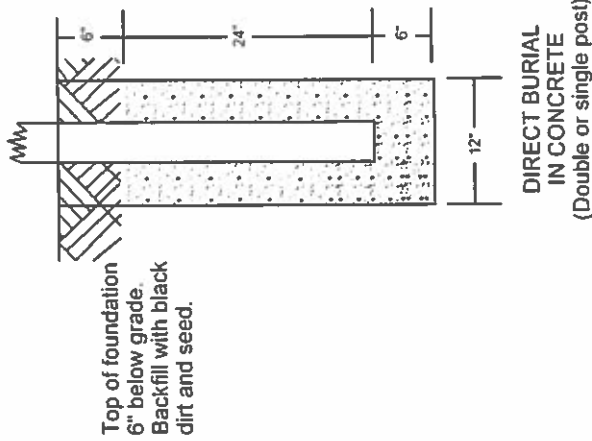
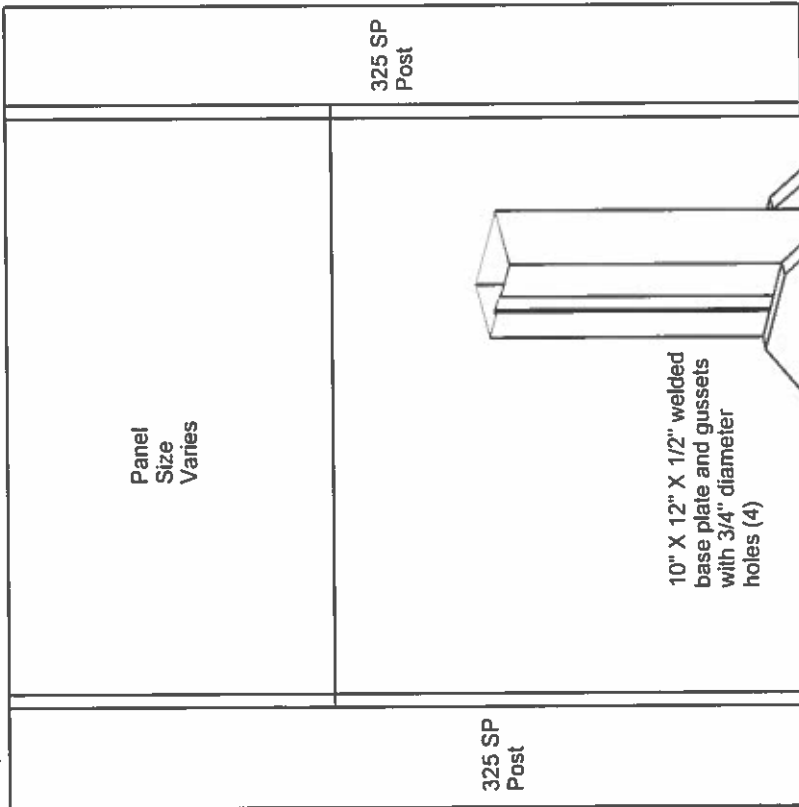
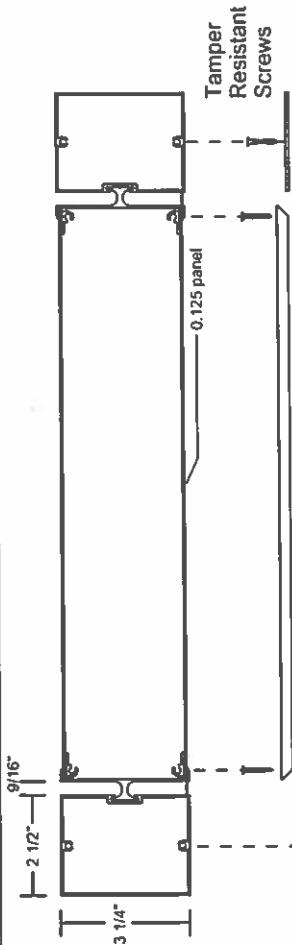
SINGLE POST INSTALLATIONS



218 - 2" square post (.156 wall)
 Surface mount with base plate
 or direct burial as specified.

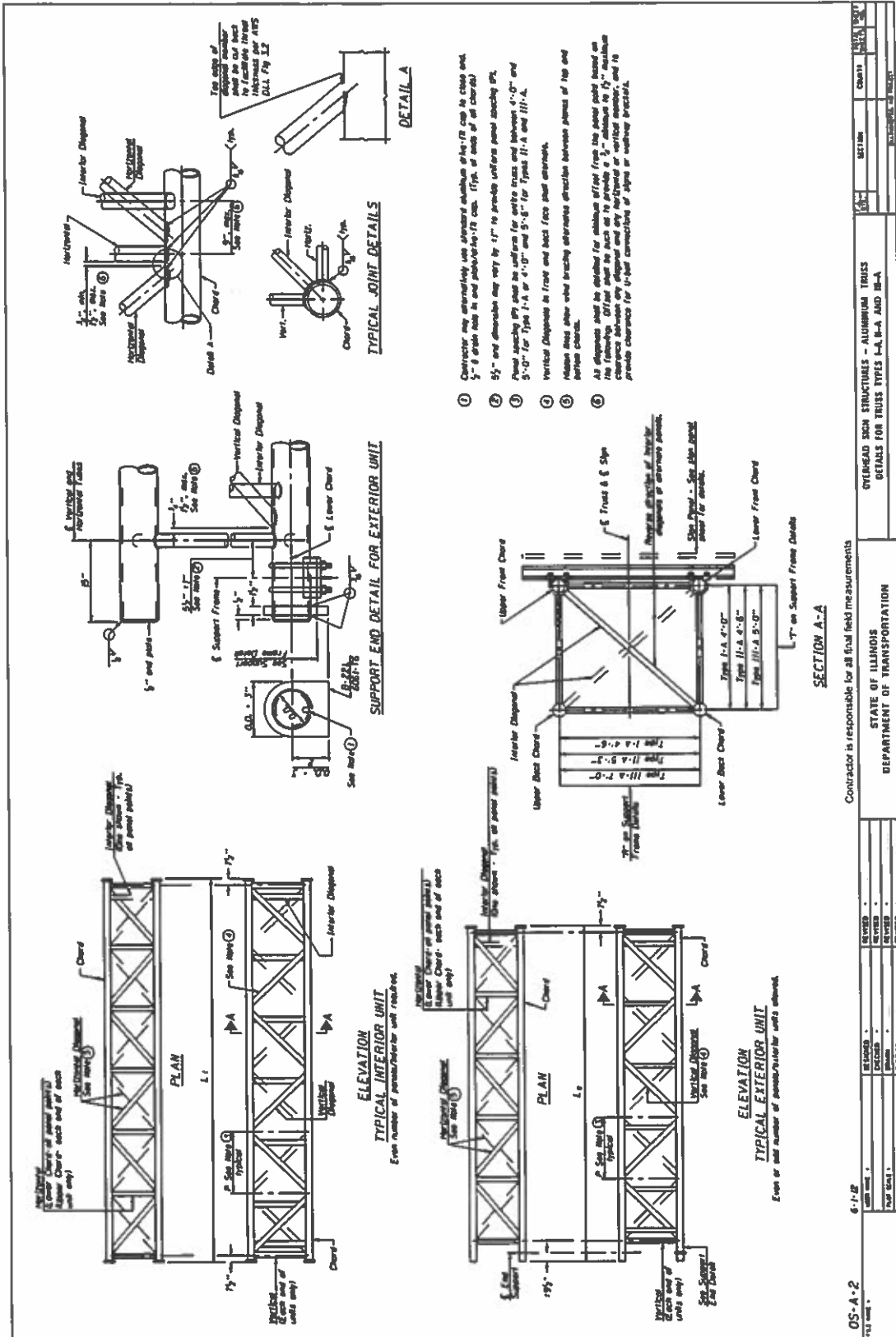
NOTES

- All posts and frames shall be manufactured from heavy duty 6063 alloy aluminum extrusions. Posts shall be temper T6 and frames temper T5.
- All extrusions shall be produced to Aluminum Association standards and ASTM B221.
- All hardware shall be stainless steel. All fasteners shall be tamper resistant.
- Frames and posts shall be finished in dark bronze meeting the approval on the Engineer. Color samples shall be furnished prior to fabrication. The finish is to be acrylic polyurethane, electrostatically applied to pretreated and primed surfaces and oven baked.



Anchor system to meet the approval of the Engineer.

DOUBLE POST INSTALLATIONS



- 1 Contractor may alternatively use standard aluminum 4x4x1/2 cap to close end. 5'-0" dia hole in end and hole-in-1/2 cap. (Typ. at ends of all chords).
- 2 5/8" end diameter may vary by 1/8" to provide uniform panel spacing.
- 3 Panel spacing may vary by 1/8" to provide uniform panel spacing.
- 4 5'-0" for Type I-A or 4'-0" and 5'-6" for Type II-A and III-A.
- 5 Vertical Diagonal in front and back face panel attachment.
- 6 Reason lines show other bracing alternative direction between panels of top and bottom chords.
- 7 All diagonals shall be attached to minimum offset from the panel point based on the (members) offset shall be such as to provide a 5/16" minimum clearance between any diagonal and any horizontal or vertical member, and to provide clearance for 1/2" bolt connections of plates or webbing brackets.

SECTION A-A

Contractor is responsible for all field measurements

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES - ALUMINUM TRUSSES
 DETAILS FOR TRUSS TYPES I-A, II-A AND III-A

DATE	REVISION	BY	CHKD

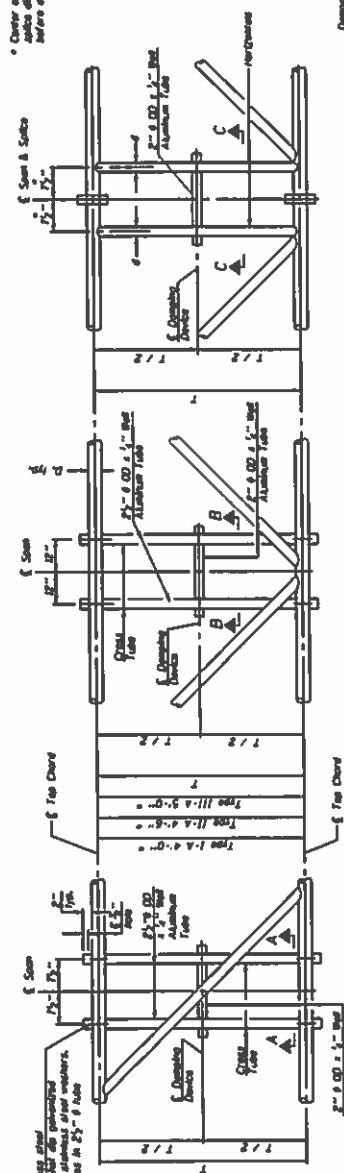
OS-A-2
 1/3 scale

6-1-82	REVISED	REVISED	REVISED
	REVISED	REVISED	REVISED
	REVISED	REVISED	REVISED
	REVISED	REVISED	REVISED

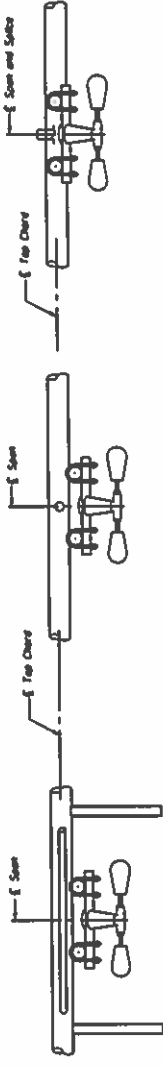
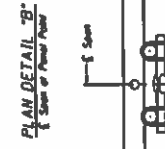
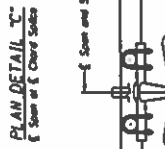
Even or odd number of panels/interior units shown

Even or odd number of panels/interior units shown

Center of truss to center of
 tube assembly may vary. VERIFY
 before setting into mounting tube.



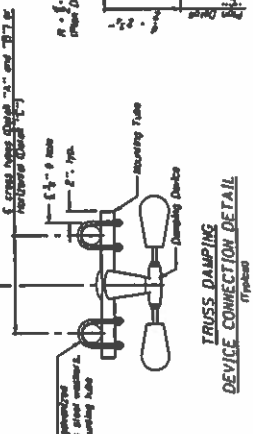
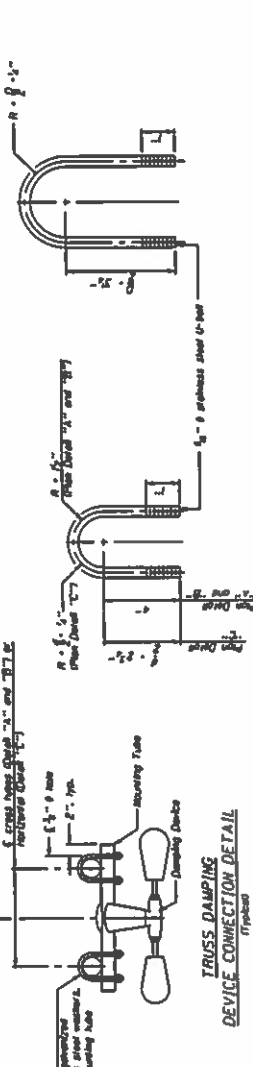
NOTES
 One damper per truss. (1) Min. minimum Structure-Type
 Aluminum - 25" minimum between ends of vertical Chord
 Included in Overhead Sign Structure.
 Materials: Aluminum Nails and as ASTM B221 only 6061
 Temper T6. Clear Included in Overhead Sign Structure.



SECTION A-A
 TRUSS CONNECTION DETAIL
 (Typical)

SECTION B-B
 DAMPING DEVICE MOUNTING
 TUBE U-BOLT DETAIL
 (Typical)

SECTION C-C
 TOP CHORD TO CROSS TUBE
 U-BOLT DETAIL
 (Typical - Detail "A" and "B")



SECTION B-B
 DAMPING DEVICE MOUNTING
 TUBE U-BOLT DETAIL
 (Typical)

SECTION C-C
 TOP CHORD TO CROSS TUBE
 U-BOLT DETAIL
 (Typical - Detail "A" and "B")

ELEVATION
 Aluminum Overhead
 Sign Truss

OS-A-D	6-1-82	DESIGNED	REVIEWED	CONTRACT	DATE
		DRAWN	CHECKED	SECTION	REVISION
		FIELD	TESTED		
		ERECTED	REMOVED		

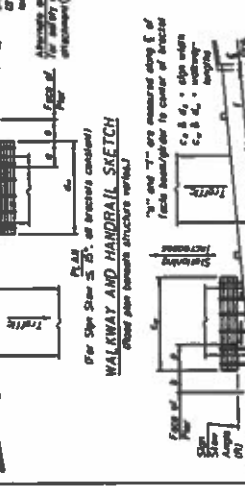
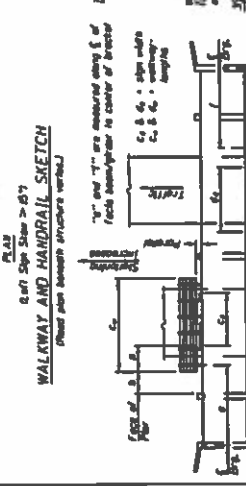
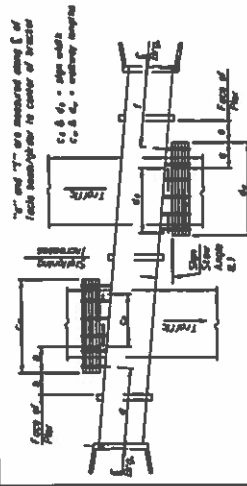
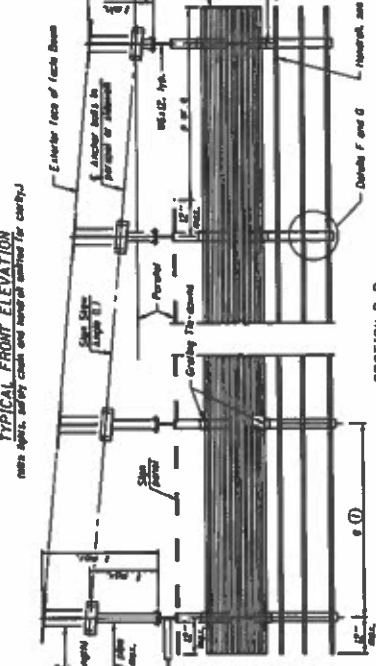
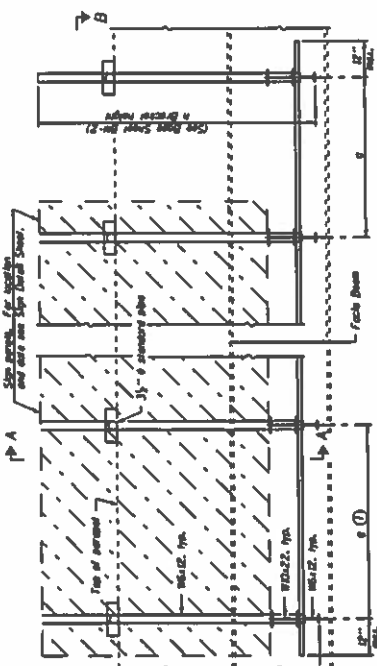
Contractor is responsible for all final field measurements

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURE
 DAMPING DEVICE

GENERAL NOTES

SPECIFICATIONS
 DESIGN: AISI/ITW Standards Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signs. (AISITD Specifications)
 CONSTRUCTION: Conformed to the design of the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Special Provisions. (Standard Specifications)
 LOADING: 90 MPH WIND VELOCITY
 MATERIALS: All Structural Steel Pipes shall be ASTM A513 Grade B with a minimum yield of 35,000 A.S.T.M. or A500 Grade B or C with a minimum yield of 45,000 A.S.T.M. All pipe shall be galvanized and the coating shall conform to AISI, A.S.T.M. or A.S.T.M. A513, A500, A500B, A500C, A500D, A500E, A500F, A500G, A500H, A500I, A500J, A500K, A500L, A500M, A500N, A500O, A500P, A500Q, A500R, A500S, A500T, A500U, A500V, A500W, A500X, A500Y, A500Z, A500AA, A500AB, A500AC, A500AD, A500AE, A500AF, A500AG, A500AH, A500AI, A500AJ, A500AK, A500AL, A500AM, A500AN, A500AO, A500AP, A500AQ, A500AR, A500AS, A500AT, A500AU, A500AV, A500AW, A500AX, A500AY, A500AZ, A500BA, A500BB, A500BC, A500BD, A500BE, A500BF, A500BG, A500BH, A500BI, A500BJ, A500BK, A500BL, A500BM, A500BN, A500BO, A500BP, A500BQ, A500BR, A500BS, A500BT, A500BU, A500BV, A500BW, A500BX, A500BY, A500BZ, A500CA, A500CB, A500CC, A500CD, A500CE, A500CF, A500CG, A500CH, A500CI, A500CJ, A500CK, A500CL, A500CM, A500CN, A500CO, A500CP, A500CQ, A500CR, A500CS, A500CT, A500CU, A500CV, A500CW, A500CX, A500CY, A500CZ, A500DA, A500DB, A500DC, A500DD, A500DE, A500DF, A500DG, A500DH, A500DI, A500DJ, A500DK, A500DL, A500DM, A500DN, A500DO, A500DP, A500DQ, A500DR, A500DS, A500DT, A500DU, A500DV, A500DW, A500DX, A500DY, A500DZ, A500EA, A500EB, A500EC, A500ED, A500EE, A500EF, A500EG, A500EH, A500EI, A500EJ, A500EK, A500EL, A500EM, A500EN, A500EO, A500EP, A500EQ, A500ER, A500ES, A500ET, A500EU, A500EV, A500EW, A500EX, A500EY, A500EZ, A500FA, A500FB, A500FC, A500FD, A500FE, A500FF, A500FG, A500FH, A500FI, A500FJ, A500FK, A500FL, A500FM, A500FN, A500FO, A500FP, A500FQ, A500FR, A500FS, A500FT, A500FU, A500FV, A500FW, A500FX, A500FY, A500FZ, A500GA, A500GB, A500GC, A500GD, A500GE, A500GF, A500GG, A500GH, A500GI, A500GJ, A500GK, A500GL, A500GM, A500GN, A500GO, A500GP, A500GQ, A500GR, A500GS, A500GT, A500GU, A500GV, A500GW, A500GX, A500GY, A500GZ, A500HA, A500HB, A500HC, A500HD, A500HE, A500HF, A500HG, A500HH, A500HI, A500HJ, A500HK, A500HL, A500HM, A500HN, A500HO, A500HP, A500HQ, A500HR, A500HS, A500HT, A500HU, A500HV, A500HW, A500HX, A500HY, A500HZ, A500IA, A500IB, A500IC, A500ID, A500IE, A500IF, A500IG, A500IH, A500II, A500IJ, A500IK, A500IL, A500IM, A500IN, A500IO, A500IP, A500IQ, A500IR, A500IS, A500IT, A500IU, A500IV, A500IW, A500IX, A500IY, A500IZ, A500JA, A500JB, A500JC, A500JD, A500JE, A500JF, A500JG, A500JH, A500JI, A500JJ, A500JK, A500JL, A500JM, A500JN, A500JO, A500JP, A500JQ, A500JR, A500JS, A500JT, A500JU, A500JV, A500JW, A500JX, A500JY, A500JZ, A500KA, A500KB, A500KC, A500KD, A500KE, A500KF, A500KG, A500KH, A500KI, A500KJ, A500KK, A500KL, A500KM, A500KN, A500KO, A500KP, A500KQ, A500KR, A500KS, A500KT, A500KU, A500KV, A500KW, A500KX, A500KY, A500KZ, A500LA, A500LB, A500LC, A500LD, A500LE, A500LF, A500LG, A500LH, A500LI, A500LJ, A500LK, A500LL, A500LM, A500LN, A500LO, A500LP, A500LQ, A500LR, A500LS, A500LT, A500LU, A500LV, A500LW, A500LX, A500LY, A500LZ, A500MA, A500MB, A500MC, A500MD, A500ME, A500MF, A500MG, A500MH, A500MI, A500MJ, A500MK, A500ML, A500MM, A500MN, A500MO, A500MP, A500MQ, A500MR, A500MS, A500MT, A500MU, A500MV, A500MW, A500MX, A500MY, A500MZ, A500NA, A500NB, A500NC, A500ND, A500NE, A500NF, A500NG, A500NH, A500NI, A500NJ, A500NK, A500NL, A500NM, A500NN, A500NO, A500NP, A500NQ, A500NR, A500NS, A500NT, A500NU, A500NV, A500NW, A500NX, A500NY, A500NZ, A500OA, A500OB, A500OC, A500OD, A500OE, A500OF, A500OG, A500OH, A500OI, A500OJ, A500OK, A500OL, A500OM, A500ON, A500OO, A500OP, A500OQ, A500OR, A500OS, A500OT, A500OU, A500OV, A500OW, A500OX, A500OY, A500OZ, A500PA, A500PB, A500PC, A500PD, A500PE, A500PF, A500PG, A500PH, A500PI, A500PJ, A500PK, A500PL, A500PM, A500PN, A500PO, A500PP, A500PQ, A500PR, A500PS, A500PT, A500PU, A500PV, A500PW, A500PX, A500PY, A500PZ, A500QA, A500QB, A500QC, A500QD, A500QE, A500QF, A500QG, A500QH, A500QI, A500QJ, A500QK, A500QL, A500QM, A500QN, A500QO, A500QP, A500QQ, A500QR, A500QS, A500QT, A500QU, A500QV, A500QW, A500QX, A500QY, A500QZ, A500RA, A500RB, A500RC, A500RD, A500RE, A500RF, A500RG, A500RH, A500RI, A500RJ, A500RK, A500RL, A500RM, A500RN, A500RO, A500RP, A500RQ, A500RR, A500RS, A500RT, A500RU, A500RV, A500RW, A500RX, A500RY, A500RZ, A500SA, A500SB, A500SC, A500SD, A500SE, A500SF, A500SG, A500SH, 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1. Brackets spacing 6'-0" max. Spacing shall be uniform if possible at any very 15" to allow suitable observation and work. For posts, use attractor, unless noted, incl. Adjust bracket height accordingly for desired projection.
2. Any design modifications shall be based on the current version of applicable specifications and submitted for the Engineer's approval.
3. This price includes galvanized structural brackets, supports, anchor rods, fasteners, luminaires, fixtures, their erection and other necessary items. Lists of quantities are included for the Engineer's information. For Safety Chains, please see Details D, F and G. Also See Sheet BM-4.
4. If volume bracket or safety chain hardware is better than that shown on sheet, see sheet for bracket. See sheet on Sheet BM-4.

TOTAL BILL OF MATERIAL

① IMPROVED SIGN STRUCTURE:	Feet
BRIDGE ADJUSTED:	

BM-1 STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BRIDGE MOUNT SIGN STRUCTURES GENERAL PLAN AND ELEVATION	SHEET NO. 49 OF 52	CONTRACT NO. 46488
		DATE: 11/1/18	PROJECT: STWDE FRWY SIGN MAINT 18-51

Contractor is responsible for all final field measurements

REVISIONS TO THE ILLINOIS PREVAILING WAGE RATES

The Prevailing rates of wages are included in the Contract proposals which are subject to Check Sheet #5 of the Supplemental Specifications and Recurring Special Provisions. The rates have been ascertained and certified by the Illinois Department of Labor for the locality in which the work is to be performed and for each craft or type of work or mechanic needed to execute the work of the Contract. As required by Prevailing Wage Act (820 ILCS 130/0.01, et seq.) and Check Sheet #5 of the Contract, not less than the rates of wages ascertained by the Illinois Department of Labor and as revised during the performance of a Contract shall be paid to all laborers, workers and mechanics performing work under the Contract. Post the scale of wages in a prominent and easily accessible place at the site of work.

If the Illinois Department of Labor revises the prevailing rates of wages to be paid as listed in the specification of rates, the contractor shall post the revised rates of wages and shall pay not less than the revised rates of wages. Current wage rate information shall be obtained by visiting the Illinois Department of Labor web site at <http://www.state.il.us/agency/idol/> or by calling 312-793-2814. It is the responsibility of the contractor to review the rates applicable to the work of the contract at regular intervals in order to insure the timely payment of current rates. Provision of this information to the contractor by means of the Illinois Department of Labor web site satisfies the notification of revisions by the Department to the contractor pursuant to the Act, and the contractor agrees that no additional notice is required. The contractor shall notify each of its subcontractors of the revised rates of wages.