

ESTIMATED SIGNING QUANTITIES

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUAN.
1	2401-6745355	REMOVAL OF CONCRETE FOOTINGS OF HIGHWAY SIGNS	EACH	2	
2	2401-6745910	REMOVAL OF SIGN	EACH	2	
3	2524-6765010	REMOVE AND REINSTALL SIGN AS PER PLAN	EACH	1	
4	2524-9089110	DELINEATOR, RIGID - TYPE IA	EACH	17	
5	2524-9089200	DELINEATOR, RIGID - TYPE II	EACH	10	
6	2524-9275222	WOOD POSTS FOR TYPE A OR B SIGNS, 4 IN. X 6 IN.	LF	40.0	
7	2524-9281426	STEEL BREAKAWAY SIGN POSTS FOR TYPE A OR B SIGNS, W 12 X 26	LF	45.9	
8	2524-9700000	SIGN, INSTALL ONLY	EACH	4	

ESTIMATE REFERENCE INFORMATION

ITEM NO.	ITEM CODE	DESCRIPTION
1	2401-6745355	<p>REMOVAL OF CONCRETE FOOTINGS OF HIGHWAY SIGNS Refer to Tabulation 190-62 and SIGNING NOTES.</p> <p>METHOD OF MEASUREMENT: The Engineer will count each concrete footing removed.</p> <p>BASIS OF PAYMENT: For each concrete footing removed, the Contractor shall be paid the contract unit price.</p>
2	2401-6745910	<p>REMOVAL OF SIGN Refer to Tabulation 190-62 and SIGNING NOTES.</p> <p>All usable materials shall be delivered to the Newton Garage. All damaged materials shall become the property of the Contractor.</p> <p>METHOD OF MEASUREMENT: The Engineer will count each sign removed.</p> <p>BASIS OF PAYMENT: For each sign removed, the Contractor shall be paid the contract unit price.</p>
3	2524-6765010	<p>REMOVE AND REINSTALL SIGN AS PER PLAN Refer to Tabulations 190-50 and 190-62.</p> <p>The Contractor shall remove each sign and the hardware used to secure the sign to another sign, posts, or sign support structure. For signs mounted directly to posts, removal of the sign shall include removal of the posts. Posts may be either wood posts or steel breakaway sign posts. The removal of concrete footings for steel breakaway sign posts will be measured and paid for separately.</p> <p>Holes remaining from the removal of wood posts shall be backfilled with suitable earth to the original level or to the natural ground surface in accordance with Article 2402.09 of the Standard Specifications. All steel posts removed shall become the property of the Contractor. Unless otherwise noted, wood posts removed shall remain the property of DOT. The Contractor shall deliver the wood posts to a DOT storage area within 50 miles, as designated by the Engineer.</p> <p>The existing sign shall be removed and stored. The Contractor shall remove the sign and transport it to a DOT storage area within 50 miles, as designated by the Engineer. The Contractor shall transport the sign back to the job site when ready for reinstallation.</p> <p>The Contractor shall furnish all necessary hardware to install the signs. When the new installation is similar to the original installation, unless otherwise noted, the existing hardware may be used to reinstall the sign.</p> <p>Signs damaged by the Contractor's activities shall be replaced at the Contractor's expense. Replacement materials shall be new. The DOT will furnish all details necessary for fabrication of the replacement materials.</p> <p>METHOD OF MEASUREMENT: The Engineer will count each sign removed and reinstalled.</p> <p>BASIS OF PAYMENT: For each sign removed and reinstalled, the Contractor shall be paid the contract unit price.</p>

ESTIMATE REFERENCE INFORMATION

ITEM NO.	ITEM CODE	DESCRIPTION
4 5	2524-9089110 2524-9089200	<p>DELINEATOR, RIGID - TYPE IA DELINEATOR, RIGID - TYPE II Refer to Tabulation 190-55.</p> <p>Includes removal and delivery or disposal of the existing delineators and posts. All materials in good condition shall be delivered to the Newton garage. All damaged materials shall become the property of the Contractor.</p>
6	2524-9275222	<p>WOOD POSTS FOR TYPE A OR B SIGNS, 4 IN. X 6 IN. See Tabulation 190-51.</p>
7	2524-9281426	<p>STEEL BREAKAWAY SIGN POSTS FOR TYPE A OR B SIGNS, W 12 X 26 See Tabulation 190-50 and SIGNING NOTES.</p>
8	2524-9700000	<p>SIGN, INSTALL ONLY TYPE A SIGN</p> <p>Refer to Tabulation 190-51.</p> <p>The Contracting Authority will furnish the Type A signs. Type A signs will be available for pickup from the 1a DOT Maintenance Facility in Newton.</p> <p>The signs shall be installed, on posts or other sign support structure, as indicated in the plans. Installation shall be in accordance with Articles 2524.07 and 2524.10 of the Standard Specifications</p> <p>METHOD OF MEASUREMENT: The Engineer will count each Type A sign installed.</p> <p>BASIS OF PAYMENT: For each Type A sign installed, the Contractor shall be paid the contract unit price. This payment shall be full compensation for furnishing all labor, equipment and materials necessary to provide the signs complete and erected in place.</p>

STANDARD ROAD PLANS

105-4
10-16-07

The following Standard Road Plans shall be considered applicable to construction work on this project.

Number	Date	Title
SI-101	04-21-09	Locations - Type 'A' Signs
SI-102	10-20-09	Locations - Type 'B' Signs
SI-111	10-20-09	Support Structures - Wood Posts
SI-113	10-19-10	Support Structures - Steel Breakaway Posts
SI-119	10-19-10	Support Structures - Mounting Brackets
SI-131	04-21-09	Sign Installation - Type 'A' Signs
SI-132	04-21-09	Sign Installation - Type 'B' Signs
SI-172	04-20-10	Delineators

SIGNING DESIGN



I hereby certify that this plan was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature: *John M. Narigon* Date: 01/12/11
 Printed or Typed Name: John M. Narigon

My license renewal date is December 31, 20 11

Pages or sheets covered by this seal: _____
 N.1 - N.7

SIGNING NOTES

SIGN-NOTE
09-25-02

GENERAL:

Materials and construction shall conform to the requirements of the applicable sections of the "Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction, series 2001" plus General Supplemental Specifications; and applicable Supplemental Specifications, Developmental Specifications, and Special Provisions.

The exact location of installation for any item is subject to approval by the engineer.

Before excavation, the contractor shall check for the locations of utilities, drainage structures and other facilities in the construction area. Any damage to such facilities due to the contractor's activities shall be repaired at his expense.

During construction of this project the contractor will be required to coordinate his operations with those of other contractors working within the same area.

The following shall apply for both English and Metric projects.

All sign details shown in the plans are in English units because the signs are manufactured using English units. If the project is in Metric units, the outside dimensions of each sign are shown in both units.

All bid quantities have been shown in the units of the project.

The following tolerances will be allowed on all signs:

Accumulation error of not greater than +/- 0.50" per line of copy, not greater than +/- 0.50" for spacing between lines of copy, and the margin between lines of copy and the inside edge of the sign border.

The following tolerances will be allowed on each letter or numeral: (The measurements will be made to the nearest".)

nominal height	variation in height	variation in width
4" thru 12"	-1/8" to +3/8"	-1/4" to +1/4"
over 12"	-1/8" to +3/8"	-3/8" to +3/8"

Type B signs can be separated into two categories:
Major Guide Signs, and
Minor Guide Signs

Major Guide Signs include the advance and exit direction guide signs for an interchange or intersection.

Minor Guide Signs include all other guide signs such as next exits signs, supplemental guide signs, logo signs, exit gore signs, post-interchange mileage signs, ramp destination signs, and ramp logo signs for an interchange; and destination signs along sideroads.

Type A signs are not separated into categories, but special consideration should be given to regulatory signs.

Existing Type B signs shall remain in place until the new replacement signs are installed. If construction activities require the removal of a sign prior to installation of the replacement sign, the existing sign may be relocated to temporary posts, or a temporary plywood sign may be installed to replace the existing sign.

Existing non-regulatory Type A signs are NOT required to remain in place until installation of a replacement sign. Existing regulatory Type A signs, particularly Stop signs, should not be removed until the replacement sign is installed. This guideline may not apply if the traffic control plans have sufficient temporary signing.

During the replacement or modification of signs, no more than one of the major guide sign for each direction of travel at an interchange shall be out of service at any one time. No major guide sign shall be out of service for more than 8 hours. Minor guide signs shall not be out of service for more than 24 hours.

Existing signs and posts shall be removed within 24 hours following the installation of a new replacement sign.

SIGNING NOTES

SIGN-NOTE
09-25-02

In any case where the plans call for a new sign and posts to be installed at the same station location and offset as an existing sign, the new posts will be installed at a minimum of either 5 ft (1.5 m) ahead or behind the existing sign installation. Whenever posts for a replacement sign are erected directly in front of an existing sign, the new replacement sign shall be installed and the existing sign installation shall be removed within 24 hours of the time that the new posts are erected.

Where signs are located behind guardrail, the near edge of the sign shall be a minimum of 3 ft (1 m) behind the guardrail posts. The engineer may approve reducing this distance to a minimum of 1 ft (0.3 m) where field conditions warrant.

Unless otherwise noted, auxiliary panels such as exit number panels shall remain or be reattached to the sign using the existing mounting hardware. Also, when replacing an existing logo sign with a new logo sign, the business logo panel(s) will be removed from the existing sign and attached to the new sign as directed by the engineer. Care should be taken to prevent damage to the auxiliary or logo panels when removing and reattaching them. This work shall be considered incidental and no separate payment will be made.

In the location columns of Tabulation TYPE-B, the following symbols are used:
(R) = Ramp
(X) = Crossroad/Intersecting Road at Interchange
(M) = Metric Station Number
(L) = Left Side of Roadway

The following notes shall apply to the corresponding sign installations shown on the plan sheets and listed in the tabulations.

IB INSTALL NEW TYPE B SIGN
IA INSTALL NEW TYPE A SIGN

The Contractor shall install new signs at the locations identified in the plans.

For installation of new signs on existing posts:

- If the new sign is taller than the existing sign, the Contractor shall furnish the necessary hardware to extend the sign above the posts. Refer to Standard Road Plan SI-132.
- If the new sign is shorter than the existing sign,
 - for wood posts, the Contractor shall install the sign at the proper height and cut off the excess post length.
 - for steel posts, the Contractor shall install the sign at the top of the posts.

For installation of new signs on an existing sign support structure, refer to note (L).

All costs incurred for mounting hardware, extension of signs above existing posts, and cutting off wood posts shall be considered incidental to the price bid for Type A or Type B signs.

MS MODIFY EXISTING SIGN ASSEMBLY

The Contractor shall modify the copy on the existing sign as shown in the plan.

Existing copy which is removed shall delivered to a DOT storage area within 50 mi (80 km), as designated by the Engineer.

The Contractor shall install the new copy as needed to make the sign modifications.

All costs for copy removal, delivery to a DOT storage area, and installation of new copy shall be included in the price bid for sign modification.

SIGNING NOTES

SIGN-NOTE
09-25-02

MB INSTALL SPECIAL MOUNTING BRACKET

Special mounting brackets shall be installed at the locations identified in the plans. Refer to the tabulations TYPE-A, MILEPOST, and/or MNT-BRK details.

PW INSTALL NEW WOOD POSTS
PB INSTALL NEW BREAKAWAY STEEL POSTS AND FOOTINGS

New wood posts or breakaway steel posts and footings shall be installed at the locations indicated in the plans. Refer to tabulations TYPE-A and TYPE-B for post size and footing information.

If note (RR) accompanies either (PW) or (PB), an existing sign will be installed on the new posts.

RR REMOVE AND REINSTALL EXISTING SIGN:

Existing major Type B guide signs on posts shall not be removed until the new posts are installed. Then the sign shall be removed and promptly installed at the new location.

Existing major Type B guide signs on overhead support structures, minor Type B guide signs, plywood signs, and Type A signs may be removed and stored. The Contractor may remove the signs and transport them to a DOT storage area within 50 mi (80 km), as designated by the Engineer. The Contractor shall transport the signs back to the job site when ready for installation at the new location.

Signs damaged by the Contractor's activities shall be replaced at the Contractor's cost.

All costs for the sign removal, delivery to the DOT storage area (if applicable), and reinstallation shall be included in the price bid for remove and reinstall existing sign.

RA REMOVE EXISTING TYPE A SIGN ASSEMBLY
RB REMOVE EXISTING TYPE B SIGN ASSEMBLY

A Type A Sign Assembly consists of
- one or more signs,
- installed on one or more wood posts,
- either directly mounted to the post, or mounted to the post with special sign mounting brackets.

A Type B Sign Assembly consists of
- the main sign,
- all auxiliary signs and brackets, and
- the wood or steel posts.

Unless stated otherwise in the plans, all posts shall be removed with the signs and brackets.

The Contractor shall remove each sign assembly identified in the plans. Steel posts removed shall become the property of the Contractor. All other materials removed shall remain the property of the DOT.

Each sign assembly removed, shall be disassembled before delivery to the DOT. For Type A sign assemblies, the Contractor shall unbolt all signs, special mounting brackets, and posts from each other. For Type B sign assemblies, the Contractor shall unbolt all extruded aluminum panels, brackets, and posts from each other. Care should be taken not to damage the disassembled materials.

Holes remaining from the removal of wood posts shall be backfilled and restored to the normal surrounding conditions. This work shall be considered incidental and no separate payment will be made.

The Contractor shall deliver the removed signs, special sign mounting brackets, extruded aluminum panels, and wood posts to a DOT storage area within 50 mi (80 km), as designated by the Engineer.

SIGNING NOTES

SIGN-NOTE
09-25-02

The concrete footings for steel posts are not considered part of the sign assembly.

All costs for the sign assembly removal and disassembly, post removal (if applicable), restoration of the surrounding conditions, and delivery to the DOT storage area shall be included in the price bid for removal of sign.

RF REMOVE EXISTING CONCRETE FOOTING FOR STEEL POST

Existing concrete footings shall be removed to a depth of 1 ft (0.3 m) below ground. The remaining holes shall be backfilled and restored to the normal surrounding conditions. This work shall be considered incidental and no separate payment will be made.

RS REMOVE EXISTING TYPE B SIGN SUPPORT STRUCTURE

The following are considered Type B Sign Support Structures:

- overhead sign truss and footings,
- cantilevered sign truss and footing, or
- bridge mounted brackets.

For removal purposes, wood and steel posts are not considered Type B Sign Support Structures.

Unless otherwise directed in the plans, the existing overhead trusses, cantilevered trusses, and bridge brackets, which are removed, shall become the property of the Contractor. If stated in the plan, the Contractor shall deliver the overhead trusses, cantilevered trusses, and bridge brackets to a DOT storage area within 50 mi (80 km), as designated by the Engineer.

All costs for the sign support structure removal, delivery to the DOT storage area (if applicable), and restoration of the surrounding conditions shall be included in the price bid for removal of sign support structure and footing.

L MODIFY SIGN SUPPORT ANGLES NEEDED TO INSTALL SIGNS ON EXISTING SIGN SUPPORT STRUCTURES

Refer to the sign support structure details for information on the required angle brackets.

Provided all specifications are met, the existing sign support angles may be reused. Existing sign support angles to be reused shall only be installed on the sign support structure from which they were removed.

Any sign support angles removed and not reused shall become the property of the Contractor.

When reusing the existing sign support angles with a shorter replacement sign, the sign support angles may need to be trimmed. Refer to the sign support structure details to determine if and where to trim the sign support angles.

Existing fasteners shall not be reused. New stainless steel bolts and nuts shall be used to install the existing or new sign support angles to the sign support structure.

Payment will not be made for the removal of existing sign support angles. This work shall be included in the price bid for removal of the sign.

Payment will not be made for reinstallation, and/or modification of existing sign support angles; furnishing and installation of new sign support angles (if required); and furnishing and installation of new fasteners. This work shall be included in the price bid for Type B signs.

SIGNING NOTES

SIGN-NOTE
09-25-02

SIGN INSTALLATION QUALITY CONTROL NOTES

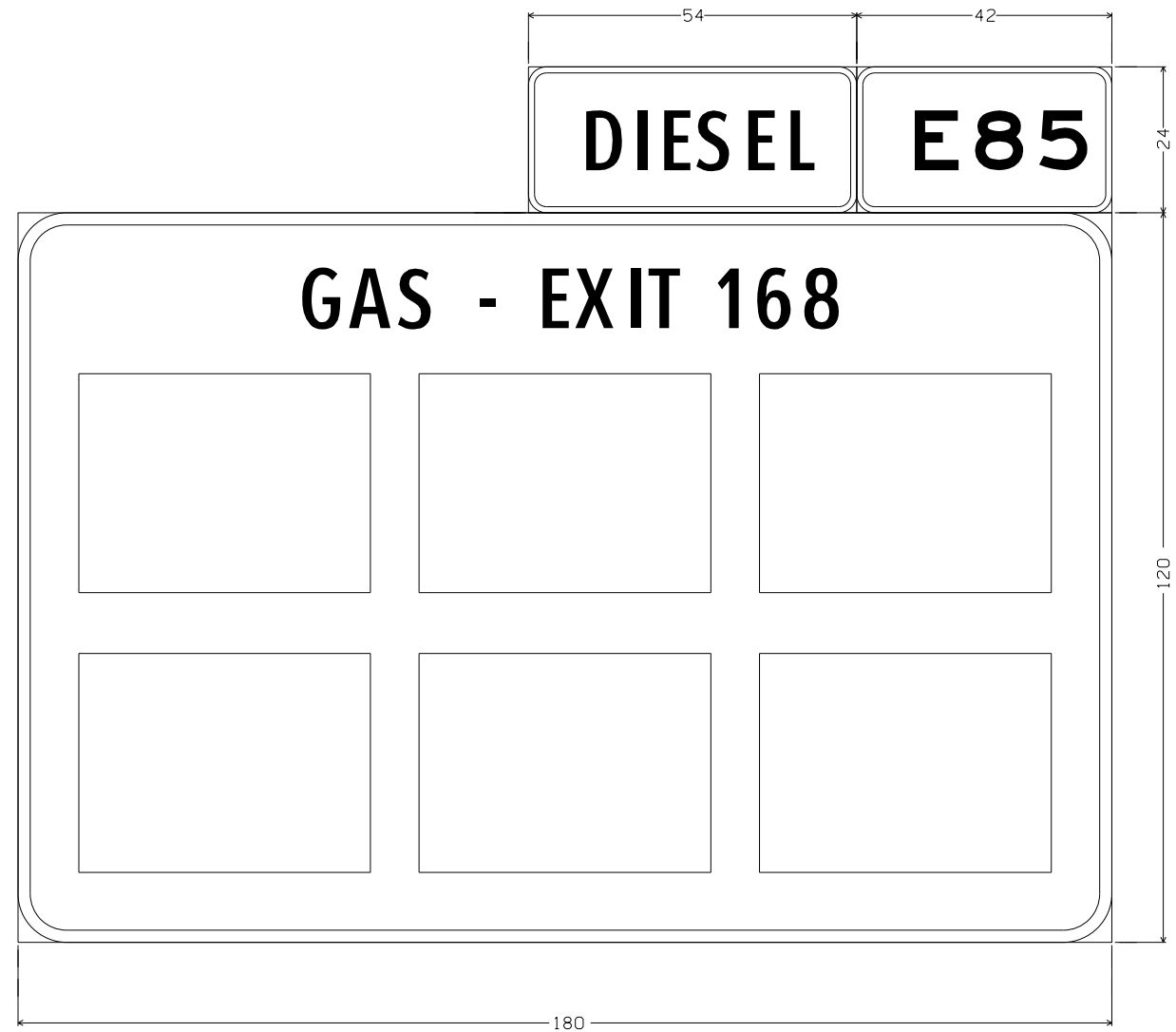
Post lengths have been derived from the proposed grading cross sections. The Contractor shall request the Engineer field verify actual conditions prior to ordering posts.

Slight differences between the design template and the actual field conditions should be expected. These variations should be resolved by doing some localized grading and shaping. Material needed to meet the site requirements of SI-113 should be obtained from the footing excavation and/or the area immediately adjacent to the footing. Any reshaping work shall not substantially change the foreslopes or the drainage in the vicinity of the sign.

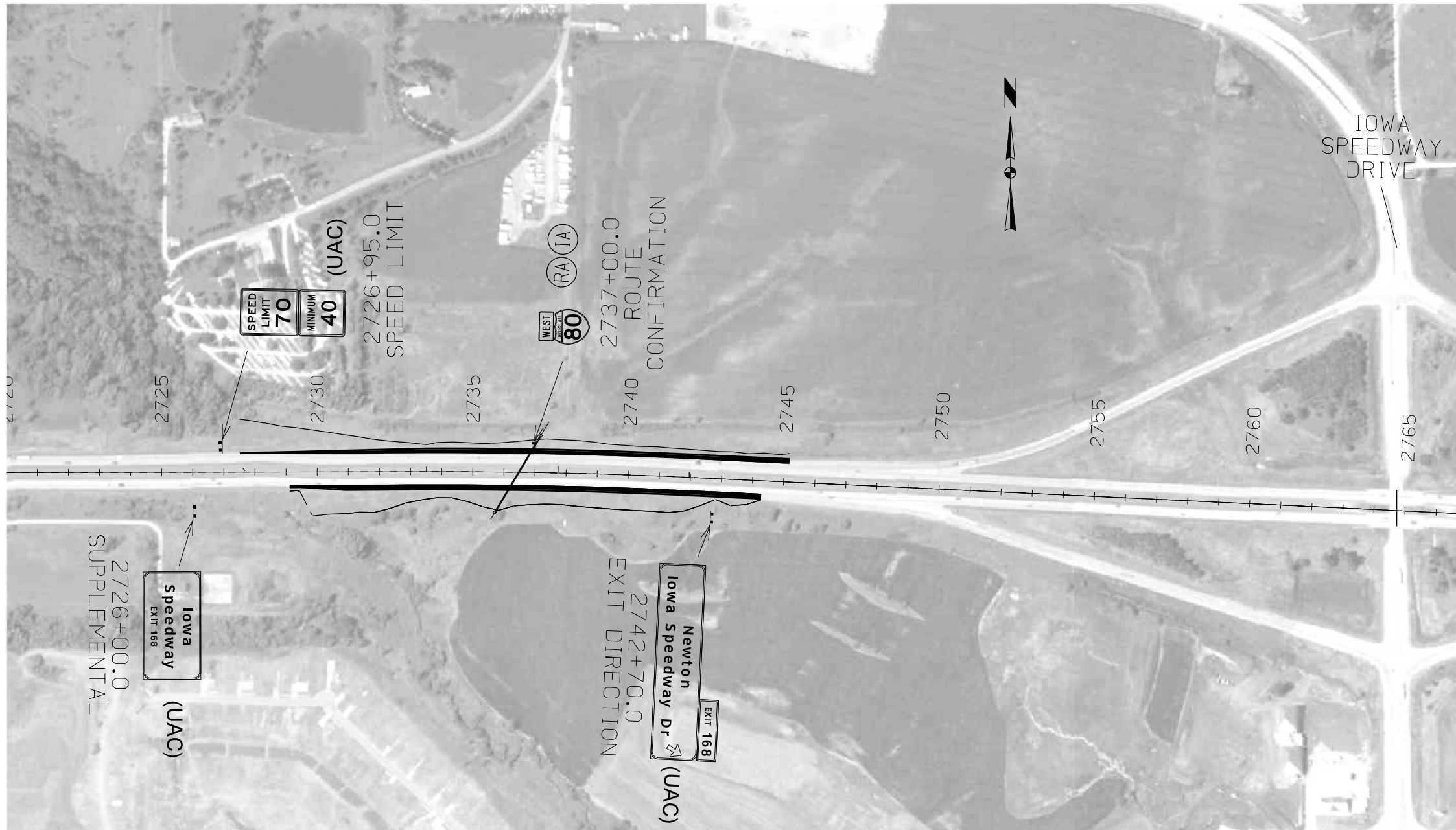
Significant differences between the design template and the actual field conditions need to be resolved in this manner. The location will be surveyed and the actual template drawn on the cross section. Each post length shall be recalculated and compared to the maximum allowable leg length. If all of the leg lengths are less than or equal to the maximum allowable leg length, then the proposed post design will be sufficient. If any leg is greater than the maximum allowable leg length, the Engineer will forward this information on to the design Engineer in order to complete a new post design.

The Contractor shall install the footings & stub posts, and posts in accordance with the following tolerances:

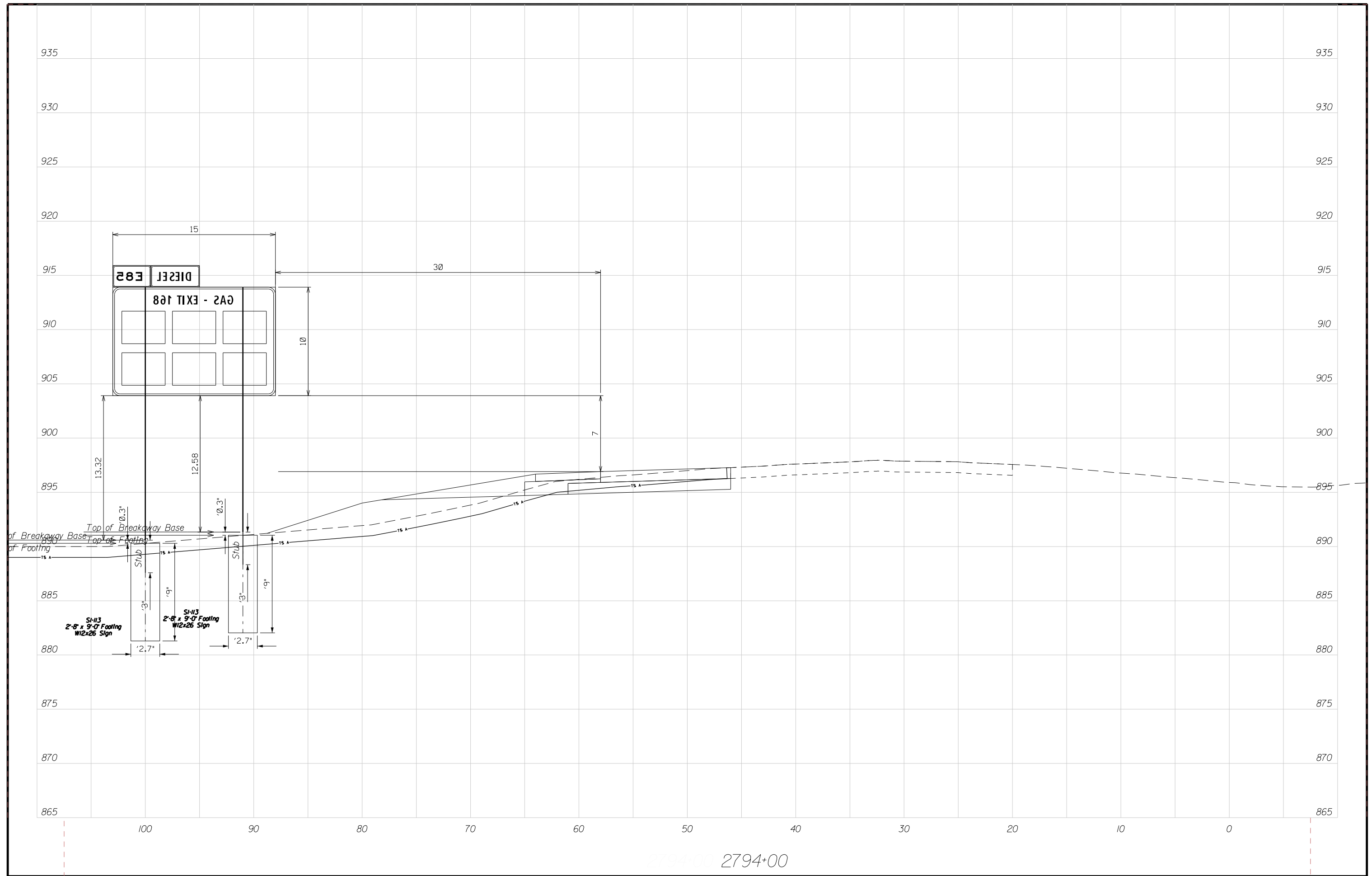
- the elevation difference from the edge of pavement to the bottom of the sign shall be ± 6 inches (150 mm) the dimension shown.
- the elevation difference between the top of the highest post and the lowest post at a site shall be less than 2 inches (50 mm).



80-50-168 MI02







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