

7000000 – HIGHWAY SIGNING
COMMENTS/RESPONSES FROM INDUSTRY REVIEW

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Comments:

Section 700-9 second paragraph as this is written it appears to allow a support up to 6" above the ground to be left indefinitely.

Response:

The 6" allows a span or cantilever sign to be removed or relocated without immediately having to remove the drilled shaft. The allowance of the 6" is only a temporary measure until the foundation is removed a minimum of 12" below grade as required by the specifications.

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Comments:

With Regards to the proposal of Mr. Chester Henson on the above noted subject. The requirement of flowable fill to be installed 6" around a precast footer for multi post sign assemblies must be changed to clean sand.

This is currently a huge burden as flowable fill is a specified product requiring certification and other requirements. It is also very expensive in small quantities. The time for installing the footers is greatly increased as a result of the flowable fill, as is the price for the assembly.

Please see Index 11200, Page 1; Foundation note; second sentence.

Should you have any questions or wish to discuss, please contact me at 813 621 8484.

Response:

The specification revision did not change the required use of flowable fill. The specifications and Design Standards give the Contractor two options for foundations. One is poured in place foundations and the other is precast. Yes the precast option does require the Contractor to install flowable fill around the precast foundation.

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Comments:

Thank you for the opportunity of allowing Gulf Industries, Incorporated and Transpo Industries, Incorporated the opportunity of commenting on the subject proposed specification revision.

The Federal Highway Administration states on its product acceptance web page “the current criteria for breakaway supports focuses on the velocity change of the impacting vehicle and the height of the stub remaining after impact. Hardware that breaks away without slowing the velocity by more than 5 meters per second (about 15.4 feet per second) and leaves a stub with no substantial remains taller than 100 mm (4 inches) can be acceptable.”

It goes further so state under omni-directional “breakaway supports that are placed near intersections or other locations where errant vehicles may come at them from all directions must be of an omni-directional design. (Omni-directional) means that the support is symmetrical and will break safely when struck from any direction, or it has specifically designed to function properly at all angles. Certain generic bases like the rectangular four bolt slip base or the inclined base are not designed to be omni-directional and will act like a non-breakaway support if struck from the side.”

An added safety feature documented in the FHWA’s acceptance letter for Transpo Industries, Incorporated’s Break-Safe breakaway sign support system is the stub remaining after impact has a height of 0.3 inches.

The FHWA has two categories of breakaway supports, slip base and omni-directional. I recommend the State use the same reference to eliminate confusion. Please accept the following specification recommendations for consideration:

700-2.3 Breakaway Support Mechanisms:

700-2.3.1 Frangible Supports: Provide post as listed on the Qualified Products List (QPL) for all frangible sign assemblies consisting of aluminum tubes up to 3 ½ inches outside diameter with 3/16 inch wall thickness, or galvanized steel U-Channel up to 3 lb/ft.

700-2.3.2 Generic Bases: Provide rectangular four bolt or inclined slip bases as listed on the Qualified Products List (QPL) consisting of aluminum or galvanized steel in accordance with the requirements in the Design Standards.

700-2.3.3 Omni-directional Bases: Provide aluminum or galvanized steel assemblies that meet the requirements of NCHRP 350 and Structures Manual wind load requirements as listed on the Qualified Products List (QPL). Attach the sign to the base using hardware meeting the manufacturer’s requirements specified on the QPL drawings.

An omni-directional support is symmetrical and designed to break safely when struck from any direction, or has been designed to function properly at all angles.

Response:

An additional sentence will be added to 700-2.3.2 to indicate the QPL will classify approval of these systems as directional or omni-directional bases.

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Comments:

In reviewing this specification, you are removing the reference to DS 11865 in section 700-2.4 and telling us to go to the QPL listing. However, in reviewing the QPL listing, the QPL label includes 2, 2.5, and 3 lb/ft U-channels. But we will still need to know what U-channel is supposed to be used with the type of sign it is supporting. We won't be able to depend on the QPL label to tell us if it is the right size support. We need the Design Standards to show us what is expected in the field.

The specifications are going to tell us to use "U-channel sign supports are listed on QPL,". But what size of U-channel are we to use if the QPL label encompasses multiple cross sections? Currently in our District, we are having a problem in that the sign contractors are using the 2.5 lb/ft U-channel to support the 48" X 48" advance warning signs, but DS 600, sheet 4 of 10 tells us to use the 3.0 lb/ft U-channel. And we need to go to DS 11865 to see what the "B" dimension is so we can measure it in the field to see if we have the right supports.

Response:

The new Index 600 gives specific U-channel requirements for all construction signs. The QPL approves the material requirements for U-channel in Section 700-2.4 and will also provide vendor drawings for breakaway connection details and post details to determine various sections.

David Price
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Comments:

I would like to comment on a couple of proposed specification changes.

700-2.54—Overhead Signs “Department’s Design”

Spec says that we, as contractor’s should verify ACTUAL LENGTHS of the columns and include them in the shop drawings based on existing field conditions. Well what would happen

on a project that the existing conditions will not work after project is in final configuration. Grade changes, slope changes, the raising of the roadway, or the lowering the roadway all will have major consequences if we base and build a sign structure per existing field conditions. This is all part of the design and it should stay with the professional designer and NOT the professional installer. As field conditions change throughout the course of the project then the designers, who are a part of the changes, should recognize if the structure will be tall enough, wide enough, short enough, etc. This should not be a part of the installers responsibility.

Response:

I agree the designer is to do everything in his control to determine the length of the support column and if he makes field changes to some aspect of the project that would affect the length of the support column, he should also reevaluate the sign design. We also realize the final grading on projects may not be consistent with the plans and the only way to insure the sign is at the proper height is to require the Contractor to verify the length of support columns based on final grading.

700-9—Removal/Relocate of Signs

Spec says to remove footing of these items and they are incidental. I agree, however; a pay items should still be used for removal of sign assembly because that will eliminate the guesswork of the installer. For example, there are many plans that tell you NOT to remove signs unless the plans say. On many instances, the plans don't show a removal of a sign, however; we are installing the same sign right next to the same sign. If we remove a structure and an pay item exist for that structure, we know it includes the removal of the footing because the pay item is for the (AS) ASSEMBLY.

Response:

Anytime a sign is to be removed, it should have the removal pay item, regardless if it is being replaced or not. The removal pay item covers all work to remove the sign in accordance with the Specifications. Likewise the "furnish and install" pay item for a sign includes all work to install a new assembly.

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Comments:

Section 700-2 Suggest changing the second sentence as follows: **If using galvanized steel for the sign panels, provide the same dimensions, including the thickness as those shown in the plans Contract Documents for aluminum.** The plans don't always show the sign sizes and the thickness is detailed in the Design Standards.

Response:

I agree with your comment. We will change the specification.

Section 700-9. Suggest changing the first sentence as follows or providing clarification between relocating a sign panel to a new assembly and relocating a sign assembly. **Relocation of signs shall consist of removing the existing sign assembly and installing the sign panel on a new foundation sign assembly.** Is the intent for the Contractor to put the existing panel on a new assembly or relocate the entire assembly on a new foundation. In the past we could do both via pay items 700-46-2B (Existing Sign - relocate "complete assembly") and 700-47-A (Install existing sign on breakaway supports).

Although the word "breakaway" is a misnomer it should have read "new". According to the BOE manual 700-47-A is "valid through 12-31-06; replaced by 700-46-AB" (although this is not mentioned in the BOE implementation letter). 700-46-AB (B=1 to 4) is being replaced by 700-20 thru 700-23. Also a foundation may not be required on the smaller single column ground signs. Very often when the plans call for relocating an existing sign assembly (usually in an effort to save \$) a supplement agreement occurs because the existing assembly has issues meeting our standards because the column is too short or too small. I believe that with the changes to the Design Standards we would always want a new column installed or at least the option to do so.

Response:

The intent of a relocation is to reinstall the complete assembly at a new location. Since it is very difficult to relocate the foundations, we tell the Contractor to install a new foundation. It is not the intent to relocate the sign panel on a new assembly. If there are concerns that the existing assembly will not work at the new location, then a new sign should be called for.
