

To: Doug Buskirk, Doug Pack	
From: Brad Hyre, Joanne Shaner	Project: SCI-823-0.00
CC:	
Date: 12/12/12	Job No: 189559

RE: R/W needed for crane movements and access to site during construction – SR 823 over CSX and SR 823 over Little Scioto River

Using the Stage 1 plans for the project (developed by TranSystems), probable girder lengths and sizes were estimated and used to calculate approximate maximum pick weights for the two structures. These weights, along with the Stage 1 plans and proposed R/W limits contained in the attached exhibits, were used to determine crane sizes, reach, and radii needed for each location.

SR 823 over CSX:

Two possible span arrangements were used for estimating girder lengths; the three-span option shown in the Stage 1 plans and a four-span structure which spans the abandoned track south of the CSX tracks. Lengths of the girders were assumed to be a maximum of 120'-125' based on recommendations from an erector after review of the girder depth and span arrangements. Girder weight was estimated using the Stage 1 plans and approximating the flange sizes using AASHTO guidelines.

For the four-span structure, the proposed right of way limits shown on the exhibit appear to be sufficient for erection at the rear abutment and pier 1. Portions of the new embankment will likely have to be removed so as to provide access for the crane and trucks. A 15% grade would likely be the maximum possible for the access road which may lead to the need for a switchback type of access road. Preferred grade is 10%. Width of access road would likely be 30'-40'. It appears this can be done within the proposed limits. However, access to the site via the abandoned railroad line may be necessary at this location. It is anticipated the site will be accessed by entering along the abandoned railroad line and then building the access road back toward the rear abutment. It is recommended the agreement with the railroad include the use of the abandoned railroad for access to site.

For the three-span structure, as with the four-span structure, portions of the new embankment will likely have to be removed so as to provide access for the crane and trucks. For this option, the right of way is expected to include a standard highway easement. It appears the access road, with similar grade and width as the four-span option, will be able to be constructed within the standard highway easement shown. Access to the site via the abandoned railroad line will likely be the most feasible options.

For both span arrangements, there is a need for a railroad agreement to work over and within their right of way to set the span over the active tracks. In addition, a crawler crane is required due to the size of the crane needed for the assumed weights of the girders. The crawler crane must be assembled on site. Therefore, the work area for the crane must be large enough for the delivery trucks to access and for the assembling of the crane. Hence the need for the larger areas at the Northwest and Southeast corners of the active tracks where crossing beneath the bridge.

A 50-100' width will need to be provided on either side of the structure to allow for the girder transport truck and crane. The 50' was estimated as a minimum with the 100' limit being the preferred. This limit is shown on both sides of the structure as a worse case scenario. With the heavy skew, it may or may not be possible to set the girders from one side of the structure. Limiting the R/W to one side would limit the means and methods of the contractor. Therefore, it is recommended the R/W be shown on both sides of the proposed structure.

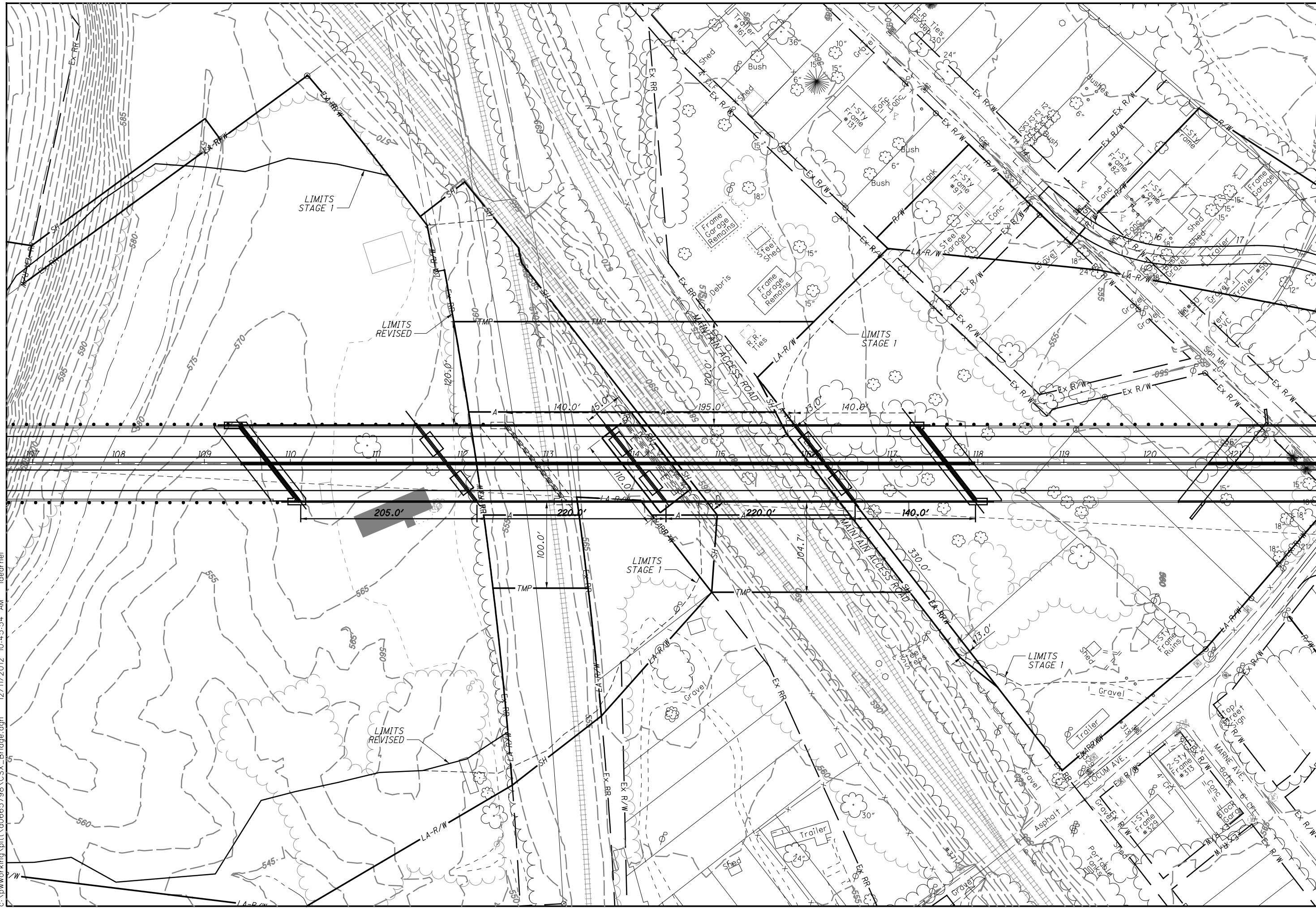
SR 823 over Little Scioto River:

The proposed layout in the Stage 1 plans was used to estimate girder lengths, understanding the structure layout may change. An essential element for the erection of the girders over the river is the allowance of construction of a minimum partial causeway in the Little Scioto River. A full width causeway would be preferred.

The proposed girder lengths shown in the Stage 1 plans were used for determining approximate pick weights for the crane. The maximum length from the plan set is 160'±. Girder weight was estimated using the Stage 1 plans and approximating the flange sizes using AASHTO guidelines.

Using the proposed right of way exhibit, it appears an access road approximately 30-40' wide at a grade of 15% or less can be constructed within the current proposed R/W limits at each abutment. A 50-100' width will need to be provided on either side of the structure to allow for the girder transport truck and crane. The 50' was estimated as a minimum with the 100' limit being the preferred. This is shown on both sides of the structure as a worse case scenario. It is possible the girders can be set from one side of the structure but limiting the R/W to one side will limit the means and methods of the contractor. Therefore, it is recommended the R/W be shown on both sides of the proposed structure.

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 LBD
 CHECKED
 JBH

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 HORIZONTAL
 SCALE IN FEET

RAILROAD IMPACTS

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