

STRUCTURE BULLETIN

NCDOT Construction Unit

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Current Issues: Can a Contractor use a model to grade falsework and screeds for bridge decks?

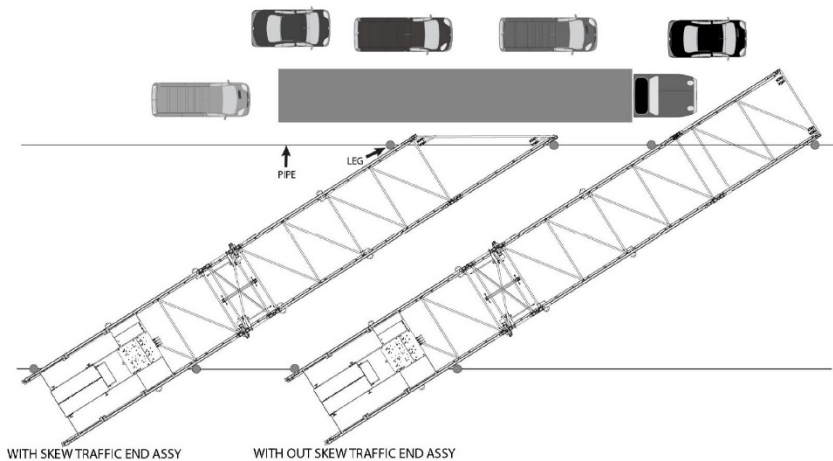
[Section 801](#) of the Standard Specifications requires that the Contractor perform surveying and stakeout in accordance with the [Manual for Construction Layout](#). This manual requires that the Contractor mark and shoot elevations at either the 20th, 40th, or 60th points on the girder and calculate buildups based on the Construction Elevations provided by the designer for each structure. This information allows the inspector to have the information they need to check the proper installation of the falsework (SIP's or Deck Panels), Overhangs, and Screed Set-up. The Contractor may choose to use alternate technology for their convenience during these operations, but only after providing the above required information. During installation of falsework, overhangs, and screed set-up, regardless of how the Contractor is grading them, the inspector should use the verified buildup grades to check each operation. If a difference is found and the contractor has used a model for these operations, the burden is on the Contractor to find the reason for the difference rather than just proceeding with the Contractor's results. As a reminder, always shoot top of girder elevations early in the morning and preferably on an overcast day. Direct sun and temperature cause the girder elevations to rise and fall through the day. This applies to steel and concrete girders. Using a model on a moving girder can be a potential reason for some errors. Review these videos for information on grading bridge decks. ([Buildups](#), [Decking Forms](#), [Overhangs](#), [Dry Run Using "The Stick"](#))

1. Current Issues: Using Models for Screed Set-Up
2. Lumber Prices
3. Bridge Screed – Skewed End Piece

How Lumber Prices May Affect Your Bridge:

Lumber prices are at an all time high and are up as much as 300% in some locations. High demand and low supply are contributing to the high prices. Although our bridges are primarily built from Concrete and Steel, which may have their own supply issues, the increased cost of lumber could lead to some contractors re-using old forms more times than they should. [Article 420-3](#) requires forms to be in sound and good condition. Using old and worn-out plywood leads to more imperfections in the concrete, and requires more effort to point, patch, and rub, and can affect the appearance and durability of the concrete. [Article 420-17](#) of the specs addresses Surface Finish of concrete. Most concrete requires an "Ordinary Surface Finish" which means it should have a uniform surface texture and color. Using forms in poor condition makes achieving this very difficult. Be on the lookout for this on your projects!

Bridge Deck Screed: Skewed End Piece



Phased construction has many challenges. We are building bridges in tighter and tighter spaces, which means we have less working room for personnel and equipment. In many cases, traffic is maintained onsite while the bridge is built in phases. Hopefully, the phasing allows sufficient room between the work area and traffic. However, when a bridge is on a skew, the potential for the screed to stick out into or closer to traffic is increased. Although it is not well known, Bidwell (the manufacturer of most bridge screeds used on NCDOT projects) makes a skewed end piece for the truss to help with this issue. Most Contractors do not have this truss piece and may not be aware of it. Early discussions with the Contractor on skewed bridges that are phased will allow for enough lead time to get the skewed end piece fabricated and delivered and avoid conflicts with the screed.

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Videos:

Inspection training videos can be found on the [Construction Unit YouTube playlist](#).

Training:

Structure Bulletins are now archived on the [Construction Unit](#) website under [Construction Resources](#).

If you have a topic you would like to see addressed in a future edition of the Structure Bulletin, please [email](mailto:cearwood@ncdot.gov) us at cearwood@ncdot.gov