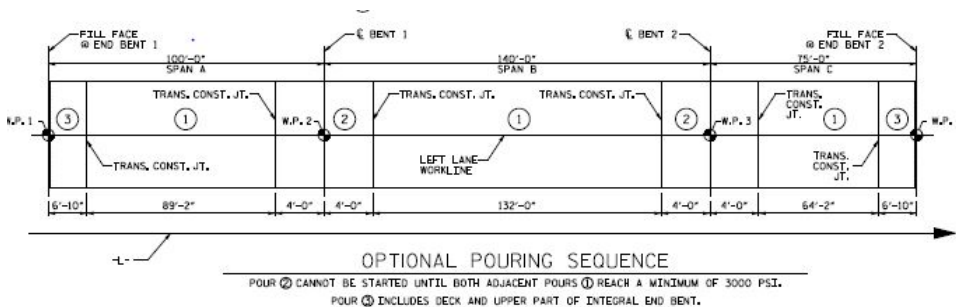


STRUCTURE BULLETIN

NCDOT Construction Unit

[Website email](#)



Current Issues: Pour Sequences

Pour sequences are a common source of confusion. There are normally two pour sequences in the plans on C/FLL (continuous for live load) bridges: a normal pour sequence and an optional pour sequence. These bridges are concrete girder bridges with a large bent diaphragm that makes the girders act like a continuous beam. We need to realize the point of having a pour sequence. We want to have the deflections out of the adjacent spans before we cast the concrete over the bent. If we were to cast the part over the bent first and then cast the spans we would risk causing cracks over the bent.

This time we will look at the optional pour sequence. In the one above there are three pour numbers designated (①, ②, ③). Just because there are three pours designated as “①” does not mean all three of them must be poured at the same time. The contractor could pour these in three separate days. They could even begin pouring ② before finishing all the ① sections. Notice the note states “Pour ② cannot be started until adjacent pours ① reach a minimum of 3000 psi.” This means as long as the 89'-2" span and the 132' span have been cast and have attained a strength of 3000 psi the contractor could pour the 8' section at work point 2. He would then need to pour the 64'2" pour and get 3000 psi on it before casting the other 8' pour at work point 3.

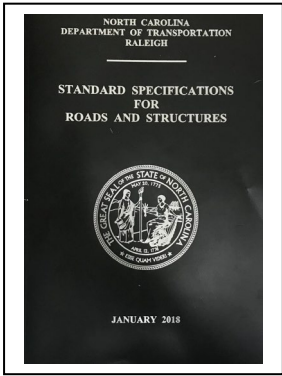
Next month we will discuss some possible problems with the normal pour sequence. Merry Christmas!



1. Current Issues
2. Updates
3. Specification Questions
4. Training

Updates: Structure Acceptance

This is the last installment on the structure acceptance series. Thanks for the response that SMU has seen in the last few months regarding this subject, and please continue the good work. The last item is plans and working drawings. When a structure is accepted please make sure to make copies of these documents available to Structure Management. For pipe and arch culvert systems the working drawings are likely small enough to attach to the notice sent to SIA@ncdot.gov. On larger structures please make sure to upload a copy of the as-built plans to the Connect site for your project as soon as you can, or at least make sure a copy of the construction plans are there. Again, thanks, and if you have any questions contact David Snoke at either SIA@ncdot.gov or dsnoke@ncdot.gov.



Special Provision Questions:

Question: Is the rolling straight edge only used in wheelpaths?

Answer: The rolling straight edge is the method used to evaluate the acceptability of the ride on a bridge deck unless there is a Special Provision for rideability using IRI or a Profilograph. The straight edge is a simple device but must be set up properly to work. See

the [Videos section](#) for more on that. There is a common misconception that the test is only to be run in the wheel paths. Section 420-14(B) simply states that you should test the finished surface without dictating where to do so. You should make several passes in each lane or shoulder, more where problems are found.

Another area that is commonly questioned is low areas. High areas are easy to detect since the pins on the straight edge drag across them. Low areas may not be as obvious. If an area looks low, it should be checked. In a perfect situation the pin should be 1/8" above the deck. The permissible variation is also 1/8", so if the pin is more than 1/4" above the deck the area is too low. Two pennies are about 1/8" thick, so if the pin clears 4 pennies it falls in this category. While the specification states that the low area may be filled with the engineer's permission we very rarely want to do this. There are no good materials for filling in low spots and to properly fix this problem would likely require a class II repair. A better solution may be to grind adjacent areas. Always consult the engineer for low areas to determine the most appropriate course of action. Many times low areas are best left alone.

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Videos:

There is a video to accompany the topic this month: [Rolling Straight Edge](#) shows the proper way to set up and run the test. Inspection training videos can be found on the [Construction Unit YouTube playlist](#).

Training:

This winter Structure Inspector Training will introductory level material designed for those with limited structure related experience. Details are still being worked out, so check back to see the schedule. Additionally, the CON 802 Basic Structure Inspection class will be revised and used as the text

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

Below is a QR code link to the Structure Bulletin Archive.



If you have a topic you would like to see addressed in a future edition of the Structure Bulletin please [email](#) us at either acochran@ncdot.gov or aeawood@ncdot.gov