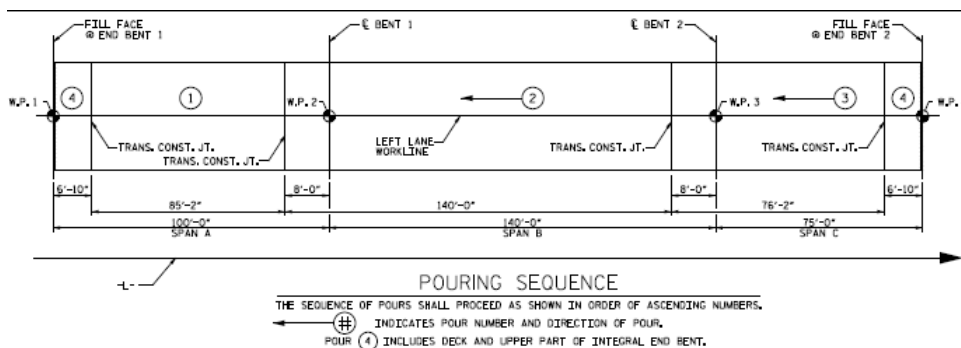


FORMS
STRUCTURE BULLETIN

NCDOT Construction Unit

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Current Issues: Pour Sequences

Last month we discussed the optional pour sequence for Continuous For Live Load (CFL) bridges. This time we will look at the regular pour sequence. Again, we want to have the deflections out of the adjacent spans before we cast the concrete over the bent. If we were to begin over the bent it would be possible for the mix over the bent to hit initial set before all the deflection was out. If this were to happen it would cause cracks over the bent.

In the sequence above there are four pour numbers designated (①, ②, ③, ④). Pour ① has no directional arrow. Since it does not cross a diaphragm the direction does not matter. Normally the contractor will choose to pour it the same direction as ② and ③ to minimize screed setup, but it could be poured either way.

Just as with the optional pour sequence, the previous pour must attain 3000 psi before beginning the next pour. This means pour ② cannot be started until adjacent pour ① reaches a minimum of 3000 psi, and pour ③ cannot be started until adjacent pour ② reaches a minimum of 3000 psi.

Pour ④ is a little different. There are two areas denoted as pour ④. They are combined mainly for simplicity (not adding another pour number) and due to the small concrete quantity in each. The contractor could do both these at the same time, or he could do

Water:

2018 was the wettest year on record in the mountains. Seems like a good reason to discuss controlling storm water at the ends of the bridges. Always follow the details on the approach slab plan sheets, both before and after the approach slab has been cast. Significant erosion can occur under the caps even after the slab is cast and the approach is paved if the drainage is not controlled.

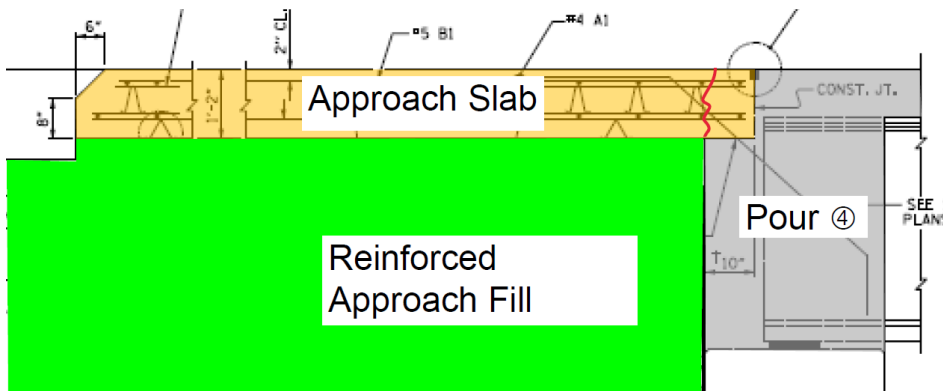
Until any gutters are built, the shoulders are constructed, and the joints are installed you must use some sort of temporary drainage to control stormwater. Have a look where your water is going during the next storm and see if you need to make any adjustments.

them on different days. The biggest concern is that 1) the span adjacent to any included bent diaphragm is already cast, and 2) all adjacent cast members have achieved 3000 psi compressive strength. Using this logic the pour on the left labeled ④ could be cast before pours ② and ③.

If you have any questions about this, or if you have a confusing example for a pour sequence, give one of us a call. Plan errors on pour sequences and directions are not uncommon, so if you have questions don't be afraid to ask them. A few minutes running down a question can save years of maintenance problems.

Integral Abutments:

For integral abutments the top section of the end bent is cast with the last section of deck, pour ④ in the example above. The contractor should never be allowed to combine pour ④ with the approach slab pour. This will result in a crack starting at the corner of the reinforced approach fill as shown in the sketch below.



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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 aeerwood@ncdot.gov