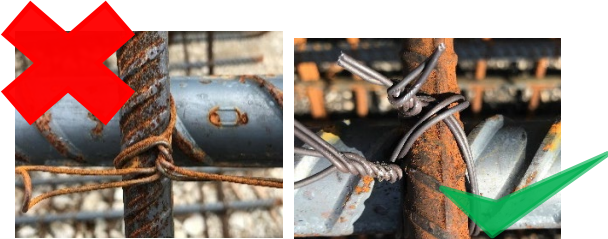


# STRUCTURE BULLETIN

## NCDOT Construction Unit

[Website email](#)



### Current Issues: Shaft Rebar Cages

Shaft spiral steel was covered in [Issue 3, Volume 10](#). I am still seeing two issues on the projects regarding this subject. First, the specifications state “**Securely cross tie reinforcing steel at each intersection with double wire.**” This means every connection should look like the second photo above. Cross tying with a single wire or double tying in a single direction is not acceptable and will result in a cage more likely to rack or fail when it is lifted.

Second, when the plans contain the note “**THE CONTRACTOR’S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR THE DRILLED PIERS IS DETAILED WITH 3 FEET OF EXTRA LENGTH**” this means there is an additional 3’ of vertical bar that is supposed to be tied **BELOW** the spiral steel. So, the completed cage should have 3’ of bare vertical steel at the bottom. If the shaft tip matches plan this steel is cut off. If the shaft goes 0-3’ deeper than tip, the steel is cut to fit. If you omit this and tie the spiral from the bottom of the cage you will end up with insufficient spiral at the top of the cage when the shaft is deeper than plan tip. The cage below is improperly tied and the area with the arrows should not have spiral steel. The spiral should have started at the right arrow head, making the M bar splice at the right 3’ shorter.



1. Current Issues
2. New Slump Allowances
3. Temp. Approach Slab Drainage
4. Training

### Increased Slump:

Last month we covered the allowable variation in slump for concrete mixes. The new guidance allows up to a 6” slump.

A couple of points need to be clarified.

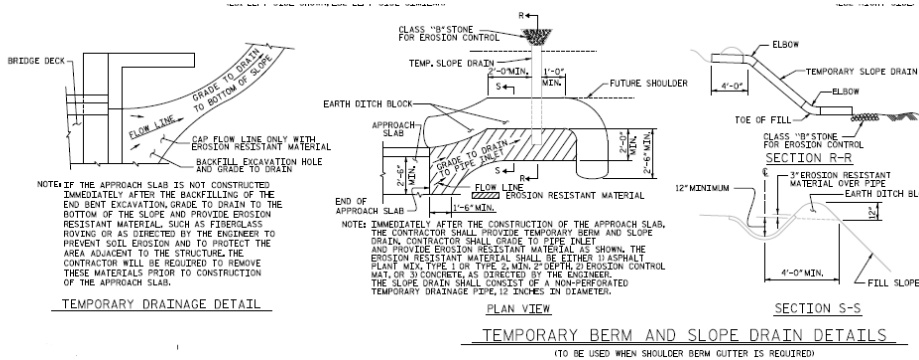
**Increasing the slump does not change the pour sequence.** The argument that the increased slump will keep the concrete plastic longer so the pour sequence is not needed is not acceptable. While an increase in the plastic period may be a side effect of the water reducing agents, there are more variables that play into the situation. Pour sequences are designed to limit the potential for cracking and should not be changed without consulting the Engineer.

**Increasing the slump does not give you more time to cover the deck.** Just because the concrete stays plastic longer does not mean evaporation decreases. Decks should be covered quickly. Yes, this may result in burlap marks in the deck, but these are much more desirable than repairs to correct shrinkage cracks.



## Washouts:

It is the season for dying hurricanes to deluge your projects with runoff. If you do not prepare in advance and control the runoff from your deck, you can easily undermine the approach slab. There are details in your plans on the approach slab sheets to address this. Use them. At least look at your bridge and ask yourself “Where is the water coming from, where is it going, and what will it tear up along the way?” In the above situation sandbags could have redirected the runoff to the end of the slab where the plan details could have been implemented.



## 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](#).

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