

STRUCTURE BULLETIN

NCDOT Construction Unit

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Current Issues: Drilled-In Piles

Section 450-3(E) discusses Drilled-In Piles. In this situation the contractor will drill a hole slightly larger than the pile, install the pile, possibly strike the pile, and then backfill the pile. Why do we do this? Generally, for one of two reasons. First, if the rock line is so high that we can not get enough pile in the ground for stability of the structure. In this case we would drill to a specified tip elevation or socket length and install the pile. If the tip is in hard rock there would be no reason to strike the pile with the hammer, since doing so may damage the pile. The pile would simply be positioned correctly in the clean hole, and the excavation would be filled with the proper material. Second, if there is a boulder layer which can not be penetrated by driving without damaging the pile, the plans may call for pile excavation to below this layer and then the pile would be driven conventionally. In either case the decision of whether to drive the pile or not is based on the material encountered at the tip elevation. Hard rock would not require driving. A softer weathered rock or other material may make driving necessary. If you have a question about which to do, discuss this with your Engineer, Area construction Engineer, or Geotechnical Operations Engineer.



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Subject:

Structure Submittals

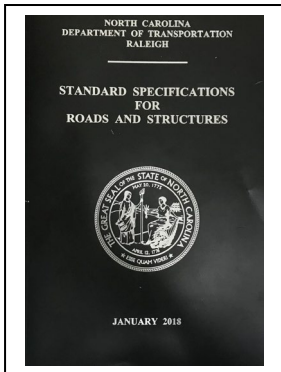
Working Drawings should be submitted in accordance with Article 105-2 and this [Special Provision](#) which is included in all projects with structures. The applicable addresses and/or email addresses are listed in the SP. **All structure submittals** shall be sent to James Bolden jbolden@ncdot.gov with additional copies to Emmanuel Omile eomile@ncdot.gov and Madonna Rorie mrorie@ncdot.gov. All submittals are logged and tracked, so it is important that the submittals be sent to the correct address. Even when communicating directly with another Engineer within SMU, always copy the primary three Engineers above for accurate submittal tracking. For Geotech submittals, send to the following addresses:

Divisions 1-7 –

EastGeotechnicalSubmittal@ncdot.gov

Divisions 8-14 –

WestGeotechnicalSubmittal@ncdot.gov



Standard Specification Questions:

Question: What items do I pay for with drilled-in piles?

Answer: In cases where the material at the tip elevation is competent enough to provide bearing (i.e. rock) you would pay for the appropriate *Pile Excavation* item, either in soil or not in soil. You would also pay for the appropriate linear foot price for the pile installed. The backfill is incidental to the excavation item. Normally we allow either concrete, grout, or flowable fill. However, always check to see if notes in the plans call for a specific material, especially if you have an integral end bent which will usually require a sand backfill. We also allow substitutions for a better mix, such as using AA Drilled Shaft mix instead of a Class A mix.

In cases where the material at the tip is not competent, such as drilling through a boulder layer into softer material, or when the tip is in weathered rock, you would also need to drive the piles to bearing. In addition to the line items above, you would also pay the item *Pile Driving Equipment Setup*. This item is paid per each and is only paid when they use a pile hammer to strike the pile. The purpose in paying this item separately is to reduce the risk to both the Department and contractor so that his material prices do not have to reflect the fixed expenses of pile driving if driving is not necessary.

Area Construction Engineers:

Div	Contact	Phone
1&2	Randy Hall	282-402-9957
3&4	David Candela	910-524-4931
5	Troy Brooks	336-972-4627
6&8	John Partin	336-847-1226
7	Aaron Griffith	336-215-9170
9	Vickie Davis	704-202-0945
10	Darin Waller	980-521-5176
11&12	Doug Eller	336-877-7048
13&14	Aaron Powell	828-694-7971

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:acochran@ncdot.gov) us at either acochran@ncdot.gov or aeerwood@ncdot.gov