



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

January 17, 2007

MEMORANDUM TO: J. Stuart Bourne, P.E.
State Work Zone Traffic Engineer

Njoroge Wainaina, P.E.
State Geotechnical Engineer

Jay Bennett, P.E.
State Roadway Design Engineer

Greg Perfetti, P.E.
State Bridge Design Engineer

FROM: Art McMillan, P.E. *Art McMillan*
State Highway Design Engineer

SUBJECT: Temporary Shoring

The purpose of this memorandum is to assign and clarify the responsibilities and roles related to temporary shoring. The Geotechnical Engineering Unit has completed a new standard Temporary Shoring Special Provision and Notes and Standard Shoring Details in order to:

- specify and clarify requirements,
- reduce number of submittals and re-submittals,
- minimize review time,
- standardize typical designs and
- provide Contractor with flexibility.

These items are attached for your reference and will be recommended by the Geotechnical Engineering Unit for each project as necessary. These guidelines address three types of temporary shoring. They do not address shoring for railroads. Structure Design will continue to be responsible for railroad shoring at structures.

The provision requires temporary shoring to maintain traffic and as shown on the plans. Temporary shoring shown on the plans may be for reasons other than maintenance of traffic such as to protect wetlands, structures or pavements (with no traffic) for undercut or to remove existing structures. As has always been the case, the Temporary Shoring Special Provision does not apply to nor does the Department pay for shoring for OSHA reasons or for Contractor convenience.

cc: **ROADWAY DESIGN UNIT**
JAN 19 2007

<input checked="" type="checkbox"/> ALLEN	<input checked="" type="checkbox"/> BLEVINS	<input checked="" type="checkbox"/> OWENS
<input checked="" type="checkbox"/> BROWN	<input checked="" type="checkbox"/> C. HOUSER	<input checked="" type="checkbox"/> T. HOUSER
<input checked="" type="checkbox"/> LOVINGS	<input checked="" type="checkbox"/> D. TAYLOR	<input checked="" type="checkbox"/> GOODRIGHT
<input checked="" type="checkbox"/> MOORE	<input checked="" type="checkbox"/> C. HAIRE	<input checked="" type="checkbox"/> SPEER
<input checked="" type="checkbox"/> S. MOORE	<input checked="" type="checkbox"/> LYNDY TIPPET	<input checked="" type="checkbox"/> THOMAS
<input checked="" type="checkbox"/> NUMFORD	SECRETARY	<input checked="" type="checkbox"/> WALLS
	THOMPSON	

PREPARE REPLY FOR _____ SIGNATURE
F.Y.I.
REVIEW/DISCUSS WITH _____

Each type of temporary shoring with a procedure is listed below. The Unit primarily responsible for identifying and coordinating each type of shoring is also listed below; however, all Units should be involved in the identification of the temporary shoring.

Roadway Shoring for Maintenance of Traffic (common):

Responsible Unit – Work Zone Traffic Control Unit

1. One month before Final Design Field Inspection (FDFI), Traffic Control may schedule a meeting to discuss the temporary shoring with Roadway, Geotechnical, Division and Hydraulics (if there are drainage issues). If a meeting is not necessary, Traffic Control will request temporary shoring recommendations from the Geotechnical Engineering Unit.
2. Traffic Control will determine the shoring limits (begin and end stations) and offsets between reference line and shoring face (minimum or maximum depending on situation) and provide this information to the Geotechnical Engineering Unit. Roadway Design will show the temporary shoring on the Roadway Plans (plan view without stations) and reference the Traffic Control Plans (TCP).
3. The Geotechnical Engineering Unit will estimate the average and maximum shoring height for use in developing the temporary shoring recommendations.
4. The Geotechnical Engineering Unit will recommend a special provision, estimated average shoring height and notes on plans including soil parameters to Traffic Control and provide any shoring details to Roadway Design to be included in the 2-series sheets of the Roadway Plans.
5. Traffic Control will show the temporary shoring location (stations and offsets), typical section(s) and notes on the TCP. If temporary shoring is required for more than one location, the quantity for each location will also be shown on the TCP.
6. Traffic Control will calculate the temporary shoring quantity based on the limits and the estimated average shoring height and provide this quantity to Roadway Design.

Structure Shoring for Maintenance of Traffic (common):

Responsible Unit – Work Zone Traffic Control Unit

1. One month before FDFI, Traffic Control may schedule a meeting to discuss the temporary shoring with Roadway, Structures, Geotechnical, Division and Hydraulics (if there are drainage or culvert issues). If a meeting is not necessary, Traffic Control will request temporary shoring recommendations from the Geotechnical Engineering Unit and the Structure Design Unit.
2. Structure Design and Traffic Control will coordinate to determine the shoring limits (begin and end stations), offsets between reference line and shoring face (minimum or maximum depending on situation) and estimated average and maximum heights and provide this information to the Geotechnical Engineering Unit. Structure Design will show the temporary shoring on the Structure Plans (plan view without stations) and reference the TCP.
3. The Geotechnical Engineering Unit will recommend a special provision and notes on plans including soil parameters to Traffic Control and provide any shoring details to Roadway Design to be included in the 2-series sheets of the Roadway Plans.

4. Traffic Control will show the temporary shoring location (stations and offsets), typical section(s) and notes on the TCP. If temporary shoring is required for more than one location, the quantity for each location will also be shown on the TCP.
5. Traffic Control will calculate the temporary shoring quantity based on the limits and the estimated average shoring height and provide this quantity to Roadway Design.

Roadway or Structure Shoring for Other Reasons (rare):

Responsible Unit – Roadway or Structure Design Unit

1. One month before FDFI, the Responsible Unit may schedule a meeting to discuss the temporary shoring with Roadway, Geotechnical, Division and Hydraulics (if there are drainage or culvert issues). If a meeting is not necessary the Responsible Unit will request temporary shoring recommendations from the Geotechnical Engineering Unit.
2. The Responsible Unit will determine the shoring limits (begin and end stations), offsets between reference line and shoring face (minimum or maximum depending on situation) and estimated average and maximum heights and provide this information to the Geotechnical Engineering Unit.
3. The Geotechnical Engineering Unit will recommend a special provision and notes on plans including soil parameters to the Responsible Unit and provide any shoring details to Roadway Design to be included in the 2-series sheets of the Roadway Plans.
4. The Responsible Unit will show the temporary shoring location (stations and offsets), typical section(s) and notes on the Responsible Unit's plans. If temporary shoring is required for more than one location, the quantity for each location will also be shown on the Responsible Unit's plans.
5. The Responsible Unit will calculate the temporary shoring quantity based on the limits and the estimated average shoring height and provide this quantity to Roadway Design.

Please implement this new policy on projects with temporary shoring as feasible. If there are any questions, please contact Scott Hidden at (919) 250-4088.

cc: Bill Rosser, P.E., State Highway Administrator
Deborah Barbour, P.E., Director of Preconstruction
Steve Varnedoe, P.E., Chief Engineer of Operations
John Sullivan, FHWA Division Administrator
Victor Barbour, P.E., State Project Services Engineer (w/ attachments)
Roger Worthington, P.E., Utilities Section Engineer (w/ attachments)
Cecil Jones, P.E., State Materials Engineer (w/ attachments)
Ellis Powell, P.E., State Construction Engineer (w/ attachments)
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