



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

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March 10, 2006

To: L&S Group Leaders
Area Engineers

From: C. W. Brown, PE, PLS
State Location & Surveys Engineer

Subject: Proc 2006-1
L&S Involvement with Construction
Anticipated Responsibilities

Due to several issues arising from new construction procedures, utilizing GPS (survey and machine control), SUE, and earthwork measurement, it has become apparent that we need to make a strong effort to make ourselves available to the Resident Engineer's staff and the Contractor on all highway construction projects. In order to anticipate and be in a better position to resolve future problems, we will be attending the Pre-Construction meetings. Our purpose and actions should be as follows:

GPS and Base Surveys

- We need to review each project to be let, looking at time of survey, methods used, etc., to determine if the project may have potential problems with GPS and project controls, both horizontal and vertical, including datum (NAD 83 vs HARN). If so, we should be prepared to address these at the Pre-Construction meeting.
- We need to consider proposed construction methods, to determine if there is potential for error due to the procedures used, or due to the quality of our surveys.
- We need to become familiar with the Construction Surveyor, to help in any way allowable (and as requested through the Resident's office), to review data, correct control data, recommend methods of calibrating GPS equipment, etc., as needed in the construction of the project.
- We need to ensure that the Construction Surveyor is knowledgeable of and can correctly utilize our localized coordinate systems, and that he/she has access to all control/coordinate information available on the project.
- Although it may not be our responsibility to review or supervise construction survey procedures, we need to notify the Resident Engineer at any time when we may feel that procedures applied may not meet the needs or standards anticipated by NCDOT.

Utilities; SUE and Above Ground

- Test Hole Certification Sheets are not getting to the Resident Engineers and Contractors. We are in the process of establishing an electronic storage on a server for this data (similar to our project control database). This will only contain data from some point in the near future, Proc 2006-1

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going forward. We need to ensure that the Resident Engineer has been delivered all test hole certification sheets at the time of the Pre-Construction meeting.

- We need to be aware of any issues relating to erroneous underground utility locations performed by SUE firms, in order to ensure quick response in corrective actions and/or compensation of error.

Earthwork Measurement/ Photo Ties

- Earthwork quantities are becoming more important in the project costs. As such, Photogrammetry has requested that we work with the Resident Engineer's staff in setting (where feasible) permanent panel/photo tie points, and providing accurate coordinates, on projects where the Resident will utilize Photogrammetry. This will include contacting Photogrammetry to obtain a panel plan for these points. Once we acquire High Definition Laser Scanning capabilities, we may be requested to scan borrow pits and small grading sections on projects. This will need to be coordinated with the Resident's office as well, when that activity is feasible.

Please note: This in no way implies that we will be doing construction stake-out.

We should make ourselves available to the Resident Engineer, and through the Resident to the Construction Surveyor, to assist in those issues relating to the route location surveys. We are the experts in survey procedures. It should be, and is, our duty to help those who follow our survey lines and use our survey controls and data. The most reasonable way to accomplish this is for your staff to attend Pre-Construction meetings, or to at minimum contact the Resident Engineer (and the Construction Surveyor) prior to the Pre-Construction meeting, to pass on information and coordinate any required activities.

My suggestion is that this duty become a standard part of the TE I's responsibilities, with assistance from the TT VI as needed. However, each of you knows your staff, and can best determine the knowledge and responsibility level of those who will be involved in this extremely important activity (I would hesitate to send a TT IV).

My office will be receiving notices of the pre-Construction meetings. We will forward these on to the Group Leader and Area Engineer in each Division, for your information and attendance. However, it is also your responsibility to be in contact with the Division Construction Engineer, to ensure that you are aware of scheduled Pre-Construction meetings in your Divisions.

As always, thank you for your cooperation in this activity. I hope that we all look forward to this as another opportunity to expand our knowledge, improve our operations, and build better highways.

CWB

Cc: Ellis Powell, PE
Keith Johnston, PE, PLS