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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

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SECRETARY

MEMO TO: Roadway Design Unit Project Engineers
Hydraulics Unit Project Managers

FROM: Jay A. Bennett, PE
State Roadway Design Engineer

David R. Henderson, PE
State Hydraulics Engineer

DATE: August 11, 2009

SUBJECT: Drainage Structure Numbers

The Hydraulics Unit and IT are currently working on an application that will number the drainage structures by reading the node numbers in the Geopak Drainage (.gdf) file and then place them in the drainage structure number cell in the MicroStation (drn) file. For items not stored in the Geopak Drainage (.gdf) file, the application will ask the user to number that structure or the Hydraulic designer will number that structure manually.

Since the node numbers in Geopak Drainage are assigned randomly as the user designs the project and can not be easily renumbered after the design is complete, the question was raised of how to logically number the drainage structures. Through coordination with the Construction Unit, Divisions, Roadway Design, Hydraulics, and IT, it has been determined the best way to number the drainage structure numbers is to use a 4 digit numbering system. The first two numbers will match the plan sheet and the last two numbers will be unique to that structure. For example, structure number 10 on sheet 5 would be labeled as "0510".

Based on the information above, the following plan of action shall be implemented on all projects being submitted to the Hydraulics Unit for Drainage Recommendations. All projects in which Drainage Recommendations have been received or are currently being designed by the Hydraulics Unit are not subject to this plan of action.

Hydraulics Unit & Hydraulic Unit Consultant Firms

- Hydraulics will begin placing the 4 digit drainage structure numbers and drainage structure cell in the MicroStation (drn) file before transmitting it to Roadway Design.
- All structure numbers will be oriented to the corresponding plan sheet and placed in a logical location.
- Alphanumeric structure numbers will no longer be needed or allowed.
- Drainage structure numbers no longer need to be placed in order of flow, by system, or from left to right on the plan sheets.

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Roadway Design Unit

- The Roadway Design Unit should try to avoid moving or deleting plan sheets once the project has been transmitted to the Hydraulics Unit since the drainage structure numbers will be based on the plan sheet location.
- If special cases arise which require plans sheets to be moved, added, or deleted, Roadway Design will contact Hydraulics to coordinate the best solution for the situation.
- As in the past, Roadway Design will move the structure numbers as needed for plan production.
- Roadway Design will not add, delete, or change any drainage structure numbers.
- If drainage structure numbers need to be added, deleted, or changed, Roadway Design will contact the Hydraulics Unit and request they make the necessary changes.
- Roadway Design will not request the Hydraulic Unit renumber the structures in the direction of flow or the system, increasing from left to right on the plan sheet, or any personal preferences.

Since the Hydraulics Unit will be numbering the drainage structures from this point forward, Part I-5-19 of the Roadway Design Manual should be considered void for new projects and will be updated to reflect this memo's recommendations.

If you have any questions, please contact Ron McCollum, PE at 919-250-4016 or Bill Elam, PE at 919-250-4100.

JAB, DRH/rem

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