



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

JAMES B. HUNT JR.
GOVERNOR

P.O. BOX 25201, RALEIGH, N.C. 27611-5201

GARLAND B. GARRETT JR.
SECRETARY

October 15, 1997

To: Group Leaders
Area Engineers

From: D. E. Burwell, Jr., PE *DEB*
State Location & Surveys Engineer

Subject: Requests for Information from Structure Design
RR Surveys
Bridges

Please refer to the following information. This will constitute policy changes for the Unit in the information collected for the Structure Design Unit during initial surveys and should be implemented immediately on all applicable projects.

Thank you for your assistance in this matter. If you have any questions or comments, please do not hesitate to contact your Area Engineer or the Central Office staff.

DEB:cwb

cc: Mr. R. L. Hill, PE
Mr. W. J. Rogers, PE

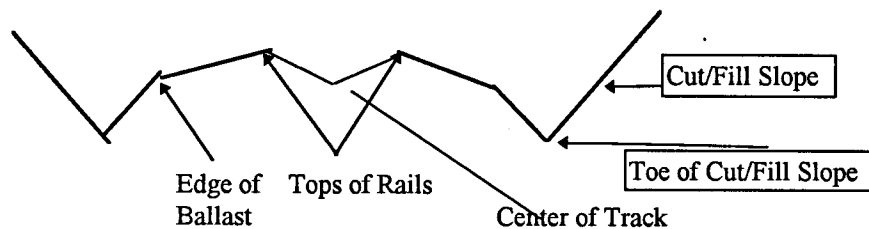


Structure Design Information Railroad Surveys

Any route location survey that includes a railroad will require certain information. That information cannot always be generalized and categorized, but certain information is consistent to all surveys.

Milepost Markers - railroad companies require distance from the survey line to the nearest milepost markers up and down the line. This distance needs to be accurate to 10 meters (or 50') along the tracks. This information can be labeled in design files with alignments or on classified photography. If on photography, Photogrammetry will transfer the data to planimetric files.

DTM Data - DTM's on rails should consist of the toe of ditch or slope, the edge of ballast, and the tops of both rails. This will make a cross section that looks like



DTM shots on rails should be sufficient to accurately portray the alignment, curvature, and superelevation of the rails. DTM shots should be taken at minimum on both rails beneath both edges of any overhead structure and on both rails at the center of the overhead structure. A centerline alignment can be determined from the two rails.

Bridges over Railroads - Railroad owners require a minimum clearance, horizontally and vertically. This clearance must be equal to or greater than the existing clearances. DTM shots taken as stated above, along with bottom of girder shots, should be sufficient to determine vertical clearance. Or a simple sketch showing vertical clearances at points of concern will be sufficient. Horizontally, interior edges of bridge posts should be located, to determine the horizontal clearances between the railroad centerline and these posts. Again, a simple sketch with measurements will suffice. These measurements are usually required for bridge replacements, to ensure that the existing clearances are maintained after a new structure is built.

Railroad Realignments - Railroad owners require horizontal and vertical alignments for 500' beyond any railroad realignment tie-ins. Because these tie-ins are rarely known to the locating engineer at the time of surveys, he or she should try to determine probable limits from the designer and go at least 500' beyond that point. This is just for horizontal and vertical alignments. Cross sections and topo are not required for this.

Structure Design Information Bridge Sketch

The Structure Design Unit requires a sketch of all bridges on any project. This sketch should be prepared at the time of initial surveys and can be hand-drawn.

On all bridges this sketch should include the following information:

Bridge Number

Plan view of bridge - no scale required - showing number and approximate location of caps

Cross Sectional view of bridge - no scale required - showing lane configuration, median, gutter, etc.

Any utilities hanging from bridge

Any structures, gauges, etc., that may be attached to the bridge

Station of baseline intersection or middle of structure

If available, the sketch should also show:

-L- or -Y- station of intersection or middle of structure