



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

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DATE: August 22, 2025

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Signed by:
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SUBJECT: ORD Interim Driveway Modeling Guidelines

This interim guidance provides expectations for modeling driveways in OpenRoads Designer (ORD) and aligns them with NCDOT's current required plan production standards while a long-term 3D model approach to this workflow is finalized. The PDF plans and cross sections should not vary significantly from previous content provided and should include all necessary information for layout and construction as directed by the Division.

PDF Plan Requirements:

- Driveway plan widths should be labeled at the mainline roadway apron and should be tapered to tie to the existing elevation and width.
- Even 50' cross sections which cross a driveway, or a skewed driveway are shown as an exact slice through the model. Do not shear the cross section at the edge of pavement. Add a label indicating there is a driveway.
- Driveways with significant relocation or steep vertical grades should include a horizontal alignment, profile and cross sections necessary to adequately construct the driveway.

Model Requirements:

- All driveways, with occasional exceptions when appropriate, should be included in the model, with Civil Cell tools and Alignment/Profile combinations being the recommended methodologies.

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- Complex Driveways, as noted above, require horizontal and vertical alignments similar to a minor -Y- line.
- Driveway modeling will tie to the edge of pavement and will include either a driveway turnout or shoulder (width/slope) per Roadway Design Standards.

Driveway Classification

Simple Drives:

Simple driveways would be categorized as having no right-of-way impact, with immediate tie-ins, and generally match the existing driveway width at the tie point. Very little modification is required when using the civil cell.

Moderate Drives:

Moderate driveways might be new or existing driveways requiring a skewed centerline, tapered tie-ins, vertical curves and larger radii. They may require some dedicated design or modification of the civil cell characteristics but are not so extensive as to be treated like a full roadway.

Complex Drives:

These driveways typically warrant full plan documentation (their own plan and profile shown in the pdf plan set, and cross-sections) because of the additional complexities such as a shift in horizontal alignment or grades steeper than 10%. They are essentially modeled and reviewed as minor roadway Y-line connections. All complex driveways must be fully designed to ensure constructability.

Quantifying the work effort

- Scope the number of driveways and group them by complexity.
- We have revised the task lines in the **NCDOT workday estimate form** to account for the usage of modeling driveways.
 - Complex driveways will be scoped per driveway.
 - Simple and moderate driveways will be scoped together under one line item.
- No time will be provided for the development of civil cells. Some civil cells will be made available by NCDOT. Firms may create their own civil cells

Project Manager Considerations

Ensure the work effort in the scope of work for quantifying driveways meets the expectations outlined above.

Encourage reuse of standard designs when applicable.

Document modeling exceptions clearly in scope.

Ensure adequate time for QA and QC is in the schedule and QC is incorporated into the PEF scope & estimate and if there is a GESC for reviews, QA is included in their scope & estimate.

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If you have any questions related to this update in guidance, please contact Mike Lindgren, PE at (919) 707-6207 mdlindgren@ncdot.gov, Jordan Woodard, PE at (919) 707-6208 jawoodard4@ncdot.gov, or David Clodgo, PE at (919) 707-6281 djclodgo1@ncdot.gov.

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