

**GUIDELINES FOR THE PREPARATION OF SIGNING PLANS
FOR
DESIGN-BUILD PROJECTS
AUGUST 2007**

I. Introduction

The Design-Build Team shall develop Signing Plans that adhere to the following Guidelines, in conjunction with the Signing Scope of Work provided in the Request for Proposals and Design-Build Submittal Guidelines located on the Design-Build website.

II. General Procedure and Requirements

As a minimum, the Signing Plans shall show the following existing and proposed features:

- Pavement
- Paved Shoulders
- Bridges
- Culverts
- Guardrail
- Drainage
- Survey / Base Lines
- Right-of-way

The Signing Plans shall incorporate stationing, including equalities, as labeled on the Roadway Plans; north orientation for each sheet; signalized intersection notations; and beginning and ending stations for the signing limits. Proposed traffic flow arrows shall be shown at the beginning and end of each sheet, at overhead sign locations and following any lane transitions.

The Design-Build Team shall develop Signing Plans in compliance with the latest version of the *MUTCD*, 2004 *NC Supplement to the MUTCD*, 2006 NCDOT *Standard Specifications for Roads and Structures*, and 2006 NCDOT *Roadway Standard Drawings*

The Design-Build Team shall incorporate details found in the NCDOT's 2006 *Roadway Standard Drawings* – Section 900, as necessary.

Upon request, the NCDOT will provide the following information to the Design-Build Team:

- Information previously prepared by the NCDOT Signing Section
- Non-proprietary computer software for support design

- NCDOT Signing Cell Libraries, Seed Files, Typical Layout Sheets and Typical Signing Details

The Design-Build Team shall incorporate the Roadway Standard Drawings and Special Provisions found at the website below, as necessary:

<http://www.doh.dot.state.nc.us/preconstruct/traffic/congestion/SIGN/>

The Design-Build Team shall adhere to the NCDOT’s signing cell libraries, seed files, typical layout sheets and typical signing details.

III. Plan Layout

The Design-Build Team shall submit Signing Plan Sheets that comply with the following:

- Overview sheets shall be developed with a maximum scale of 1" = 100' (for metric projects 1:1000) *
- Full-size sheets shall be 22" x 34"
- Half-size sheets shall be 11" x 17"
- All sheets shall be numbered as S-1, S-2, etc.
- On all full-size sheets, a 4 ½" x 4 ½" area, directly below the information block in the upper right corner, shall be reserved for construction revision notes.

* Scales are for full-size plans

The plan layout shall contain:

- **Title sheet**, with index of sheets, list of applicable 2006 *Roadway Standard Drawings*, and overview of project. The title sheet shall also contain the following NCDOT contact information:

NCDOT CONTACT INFORMATION

Phone Number: (919) 250-4128 Fax Number: (919) 250-4119
 Rodger Rochelle, PE, State Alternative Delivery Engineer
 Teresa Bruton, PE, Design-Build Project Engineer
 Timothy McFadden, Design-Build Squad Leader

- **Summary of Quantities Sheet** is not required.
- **Signing Note Sheet** shall show only the notes that apply to the project. The note sheet shall contain the appropriate general notes and any project specific notes that may apply.

- **Overhead Sign and DMS Structure Line Drawing Sheets** shall include lane widths, pavement and ground slopes, location of supports, S-dimensions at support locations, positioning of signs relative to travel lanes, sign messages and / or future messages, future signs, minimum and maximum vertical clearances, existing and proposed guardrail, walkway detail (if required), labeling of facility and direction of travel, windload and deadload requirements to be used for the structure and footing designs, and all applicable notes. Overhead sign lightning and DMS detail sheets (if applicable) shall precede the structure line drawings.
- **Type A & B Ground Mounted Support Chart Sheet(s)** shall contain the sign number, sign type, sign size, roadway station, number of supports, beam section size, type of sign support, offset from the edge of travel lane, sign attachment method (if applicable), sign support S dimensions, lengths, weight, and the amount of concrete needed for the support footings. The support chart sheet shall contain the typical elevation detail for ground mounted signs and the detail for exit gore sign offsets.
- **Type A, B & D Signs Sheets** shall contain the Type A, B, and D signs for the project. The sign designs shall be included on the sheets and contain the sign number, sign size, type of sign, quantity, total area of the sign, type of border, background color, copy color, material thickness, number of Z-bars, and the applicable notes for fabricating the sign.
- **Type E, F, and Milemarker Sheets** shall contain the sign size, the quantity of each sign, and the number of U-channel posts per sign. The Type E sheet shall contain only the Type E signs used on the project. Determination of required Type E and F signs shall be made by the Design-Build Team and included in the Signing Plans.

The signing plan sheets shall contain the following:

- **Sign Locations** shall be determined and noted by stationing on -L- Lines, -Y- Lines, ramps, service roads and cul-de-sacs for re-erected existing signs, existing signs remaining in place, proposed signs, and future signs. No stations are required for Type E and F signs erected at intersections and on -Y-lines. When stationing is not available, such as outside of the project limits, sign locations shall be dimensioned from a fixed point or sign spacing shall otherwise be indicated on the plans. Graphic representation of all existing, proposed, and future signs on the -L- Line, -Y- Lines, ramps, service roads and cul-de-sacs are to be positioned on the plans, as traffic would view them.
- **Ground Mounted Support Design for Type A and B Signs**, determined by S dimensions from X-sections (or from field survey when X-sections are not available), shall be required for Type A and B ground mounted signs. Design of supports shall be required using these S dimensions. (Spreadsheets are available electronically upon request.)

Other plan requirements include:

- **Sign Designs** shall be prepared by the Design-Build Team for Type A, B, D, and Exit Gore signs using the latest version of GuideSign software. The individual sign designs shall be included in the Signing Plans in numerical / alphabetical order. The latest update to the GuideSign software is located at the following website:

<http://www.doh.dot.state.nc.us/preconstruct/traffic/congestion/SIGN/>

- **Crane Safety:** The Design-Build Team shall refer to the Crane Safety project special provision for structures and bridges when erecting Type A and B guide signs, and overhead sign structures. The Crane Safety Special Provision is located on the following website:

<http://www.ncdot.org/doh/preconstruct/highway/structur/psp/>

- **Project Special Provisions**, for special signing items, shall be written by the Design-Build Team and sealed by a professional engineer registered in the state of North Carolina representing the Design-Build Team.
- **Coordination with Other Traffic Engineering Plan Requirements:** When locating and designing overhead signs and sign assemblies, lane drop signing, and "All Traffic Exit" signing, the Design-Build Team shall coordinate with the Traffic Control and Pavement Marking & Delineation Plans and Intelligent Transportation System Plans to ensure that they adhere to the signing requirements. The Design-Build Team shall label locations of traffic signal elements on the Signing Plans.
- **Coordination of Signing Plans with Division and Regional Traffic Engineers:** The Design-Build Team shall meet with the Division Traffic Engineer, Regional Traffic Engineer, the Design-Build Section and / or the Signing Section of the Traffic Engineering Branch as outlined in the Design-Build Submittal Guidelines.
- **Requirements for Sign Lighting Design:** The Design-Build Team shall design sign lighting according to the requirements as noted in the RFP.