STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

MEMORANDUM TO: Project Engineers
Project Design Engineers

FROM: G. R. Perfetti, P.E.
State Bridge Design Engineer

DATE: October 11, 2010

SUBJECT: STANDARD CORED SLAB BRIDGE PLANS

Effective with the January 2011 letting, utilize Standard Cored Slab Bridge plans for all bridges that meet the following design criteria:

- Out to out bridge widths = 27' to 39' (3' increments)
- Cored Slab Unit Length = 25' to 70' (5' increments)
  - Note - maintain 5' increments of cored slab unit lengths in determining span lengths
- Bridge skew = 60, 75, 90, 105, 120 degrees
- Asphalt Overlay
- Vertical Concrete Barrier Rail
- Either Conventional or Top-Down Construction
- End Bent on HP, Pipe or Prestressed Concrete Piles
- Interior Bents with:
  - HP 14 x 73 Piles
  - 18" Pipe Piles
  - 16" or 20" Prestressed Concrete Piles
  - 36" or 42" Drilled Shafts
  - Note - all pile and shaft lengths are limited to 60' from bottom of cap to point of fixity
  - Note - when Top-Down construction is required coordinate with the Working Drawing Approval group to ensure that pile driving operations can be accommodated

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LOCATION:
CENTURY CENTER COMPLEX
BUILDING A
1000 BIRCH RIDGE DRIVE
RALEIGH NC 27610

The attached matrix identifies standards that are available for the various unit lengths, depths and skews and whether they are applicable for top down construction. There will be instances when the standard plans must be modified to include special details, such as alternate rail types, corrosion protection or a step in the cap. Modifying the standards to meet these unique site requirements is preferred over redesigning and redetailing.

All Standard Cored Slab Bridge Plans will require individually prepared General Drawing sheets for: Plan and Elevation, Long Chord Layout, if applicable, and Location Sketch and Total Bill of Material. The LRFR summary sheets are available as standards and shall be included as the last sheet of the General Drawing. Foundation Layout sketches are not required.

The Standard Cored Slab Bridge Plans and design computations are available on the S: Drive at the following location:

- S:\Share\Cored Slab Standard Plans\Drawings
- S:\Share\Cored Slab Standard Plans\Design

When using Standard Cored Slab Bridge Plans for Division Managed Projects, adhere to the following guidelines:

- The Division's responsible party will contact the Regional Structure Design Unit Project Engineer with the request for bridge plans. They will provide the following supporting documents:
  - Roadway plans (Grade data, cross-section, bridge width, etc.)
  - Bridge Survey Report (Hydraulic data, span arrangement, etc.)
  - Foundation Recommendation (in most cases, this will not yet be available)

- Notify the Geotechnical Unit to coordinate the scheduling and acquisition of borings and Foundation Recommendations. In most cases it will only be necessary to transmit the Bridge Survey Report and standard loads.

- As these projects will not be let through the Contract Office, the Division requires Sealed final plans and provisions in paper and electronic formats. Mail a full size set of Sealed plans with provisions and email an electronic set of Sealed half-size plans with provisions. Coordinate with the Division to ensure a delivery schedule that will accommodate advertisement and Let.

- In some situations, the Division will elect to hire a Private Engineering Firm, PEF, to assist in the project delivery. In these cases, the SDU Project Engineer will assemble and transmit Sealed plans and provisions to the PEF. The PEF will be responsible for preparing and sealing the non-standard General Drawing sheets only.

GRP/TKK/BCH

cc: D. D. Holderman, P.E., with attachment
T. P. Garrett, P.E., with attachment
D. R. Henderson, P. E., with attachment
J. A. Bennett, P. E., with attachment
N. Wainaina, P.E., with attachment
Division Maintenance Engineers, with attachment
Division Bridge Program Engineers, with attachment
Division Bridge Engineer, FHWA, with attachment

Table of Available Standard Cored Slab Bridge Plans

	Span Length									
Bridge Skew	**25'**	**30'**	**35'**	**40'**	**45'**	**50'**	**55'**	**60'**	**65'**	**70'**
60°	21" C&TD	21" C&TD	21" C&TD	21" C&TD	21" C&TD	21" C&TD 24" TD	21" C 24" TD	24" C 24" TD	24" C	24" C
75°	21" C&TD	21" C&TD	21" C&TD	21" C&TD	21" C&TD	21" C&TD 24" TD	21" C 24" TD	24" C 24" TD	24" C	24" C
90°	21" C&TD	21" C&TD	21" C&TD	21" C&TD	21" C&TD	21" C&TD 24" TD	21" C 24" TD	24" C 24" TD	24" C	24" C
105°	21" C&TD	21" C&TD	21" C&TD	21" C&TD	21" C&TD	21" C&TD 24" TD	21" C 24" TD	24" C 24" TD	24" C	24" C
120°	21" C&TD	21" C&TD	21" C&TD	21" C&TD	21" C&TD	21" C&TD 24" TD	21" C 24" TD	24" C 24" TD	24" C	24" C

21"C = 21" Conventional
21" C&TD = 21" Conventional and Top Down Construction (same design for both)
24" C = 24" Conventional
24" TD = 24" Top Down Construction