

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, PE
State Bridge Design Engineer

DATE: July 8, 2011

SUBJECT: AS-BUILT PLAN CERTIFICATION FOR FEMA-REGULATED
STREAM CROSSINGS

At the request of the Hydraulics Unit, for projects involving FEMA-regulated stream crossings, reserve an area on the first sheet of the General Drawing for a Professional Engineer's seal and place the following note above the area:

I hereby certify these plans are the as-built plans.

For FEMA-regulated stream crossings which utilize culverts, place the note and the area for the seal on the sheet showing the culvert profile and location sketch.

Refer to the Project Commitments sheets ("green sheets") in the Planning Document or the Bridge/Culvert Survey Report to determine if the proposed structure involves a FEMA-regulated stream. The as-built plans for FEMA-regulated stream crossings will be sealed by the Construction Unit.

Attached are two examples of the reserved area for as-built plan certification for your reference. This policy is effective with the September 2011 letting.

GRP/GM/

[Attachments](#)

cc: T. K. Koch, PE
R. A. Raynor, Jr., PE
D. S. Chang, PE
R. A. Hancock, PE, Attn: M. S. Robinson, PE
D. D. Holderman, PE
R. D. Rochelle, PE
E. Dubin, PE, FHWA

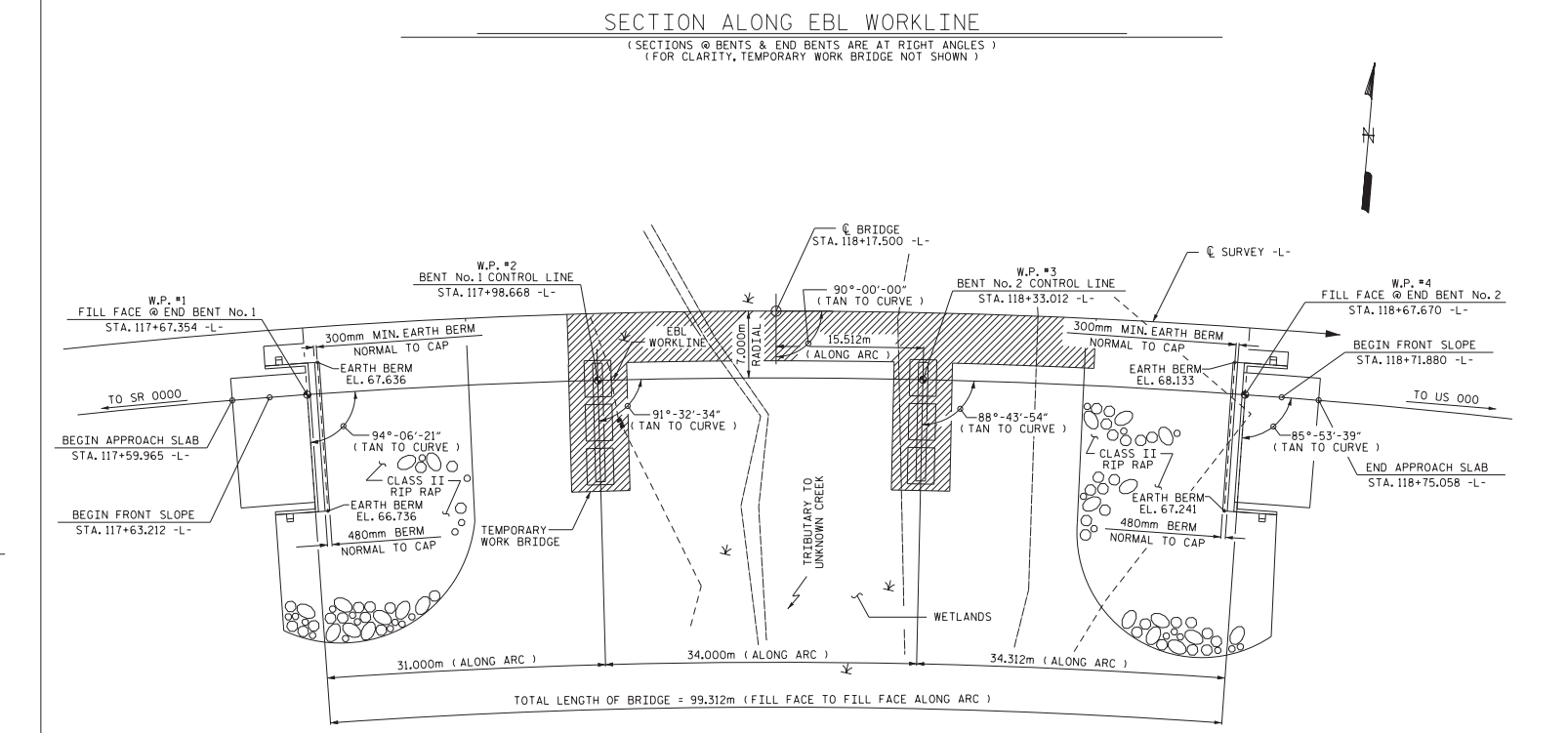
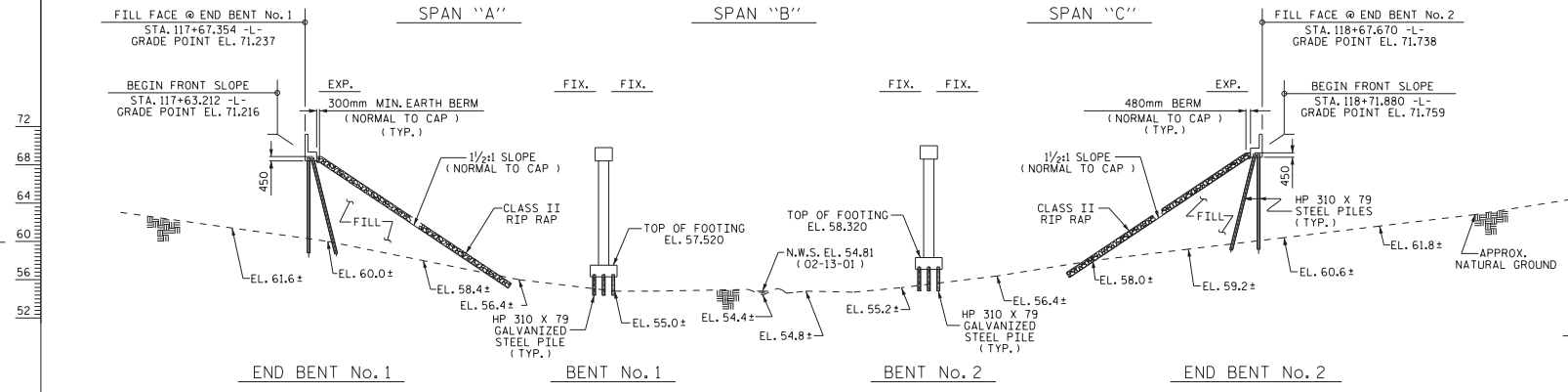
MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
STRUCTURE DESIGN
1581 MAIL SERVICE CENTER
RALEIGH NC 27699-1581

TELEPHONE: 919-707-6400
FAX: 919-250-4082

WEBSITE: WWW.NCDOT.ORG

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

117+60 117+80 118+00 118+20 118+40 118+60 118+80 119+00



I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

PROJECT NO. _____ COUNTY _____
 STATION: _____
 SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

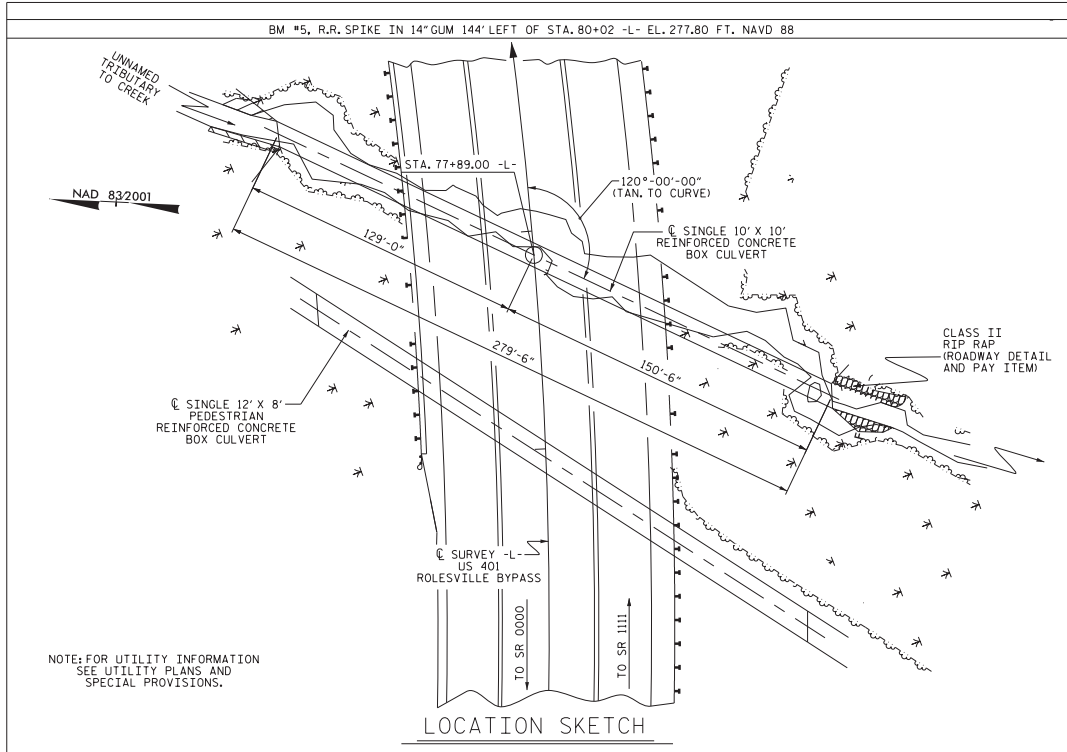
GENERAL DRAWING

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			
2			4			



DRAWN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____

*****SYSTEM*****
 *****USER*****



NOTES:

- ASSUMED LIVE LOAD -----HS20-44 OR ALTERNATE LOADING.
- DESIGN FILL----- 35.40'
- FOR OTHER DESIGN DATA AND NOTES SEE STANDARD NOTE SHEET.
- 3"Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.
- CONCRETE IN CULVERTS TO BE POURED IN THE FOLLOWING ORDER:
 1. WING FOOTINGS AND FLOOR SLAB INCLUDING 4" OF ALL VERTICAL WALLS.
 2. THE REMAINING PORTIONS OF THE WALLS, BAFFLES AND WINGS FULL HEIGHT FOLLOWED BY ROOF SLAB AND HEADWALLS.
- THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF CULVERT BEFORE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF THE FILL.
- DIMENSIONS FOR WING LAYOUT AS WELL AS ADDITIONAL REINFORCING STEEL EMBEDDED IN BARREL ARE SHOWN ON WING SHEET.
- TRANSVERSE CONSTRUCTION JOINTS SHALL BE USED IN THE BARREL, SPACED TO LIMIT THE POURS TO A MAXIMUM OF 70 FT. LOCATION OF JOINTS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.
- AT THE CONTRACTOR'S OPTION, HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF EXTERIOR WALL ABOVE LOWER WALL CONSTRUCTION JOINT. THE SPLICE LENGTH SHALL BE AS PROVIDED IN THE SPLICE LENGTH CHART SHOWN ON THE PLANS. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES SHALL BE PAID FOR BY THE CONTRACTOR.
- THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS.
- A 3 FOOT STRIP OF FILTER FABRIC SHALL BE ATTACHED TO THE FILL FACE OF THE WING COVERING THE ENTIRE LENGTH OF THE EXPANSION JOINT.
- NO PRECAST REINFORCED CONCRETE BOX CULVERT OPTION WILL BE ALLOWED.
- FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.
- FOR CONSTRUCTION SEQUENCE, SEE EROSION CONTROL PLANS.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

GRADE DATA

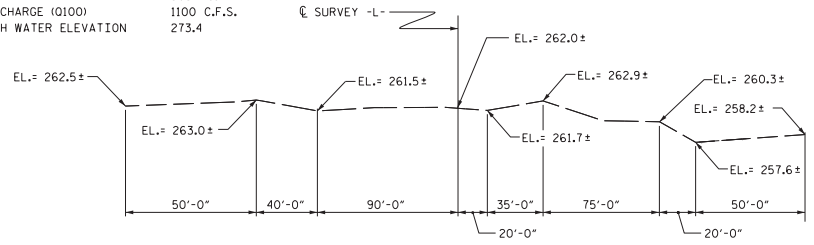
GRADE POINT ELEV. @ STA. 77+89.00 -L- =	302.06
BED ELEV. @ STA. 77+89.00 -L- =	260.01
ROADWAY SLOPE =	2:1

OVERTOPPING DATA

DESIGN DISCHARGE	5557 C.F.S.
FREQUENCY OF DESIGN FLOOD	500+ YR.
OVERTOPPING FLOOD ELEVATION	303.4 FT.

HYDRAULIC DATA

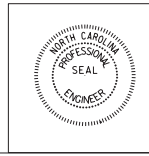
DESIGN DISCHARGE	1000 C.F.S.
FREQUENCY OF DESIGN FLOOD	50 YRS.
DESIGN HIGH WATER ELEVATION	272.9
DRAINAGE AREA	505 AC.
BASE DISCHARGE (Q100)	1100 C.F.S.
BASE HIGH WATER ELEVATION	273.4



PROFILE ALONG CULVERT
 5% HYDRO. SIZE

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

PROJECT NO. _____
 _____ COUNTY
 STATION: _____
 SHEET 1 OF 4



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SINGLE 10 FT. X 10 FT.
 CONCRETE BOX CULVERT
 120° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-4
1			3			TOTAL SHEETS
2			4			29

REVISED 11-13-91 BY E.L.R. CHECKED BY G.R.P.
 ADDED 8-22-89

ASSEMBLED BY : _____	DATE : _____	SPECIAL
CHECKED BY : _____	DATE : _____	
DRAWN BY : B.M. MEYERS	DATE : AUG. 1989	STANDARD
CHECKED BY : A.R. BISSETTE	DATE : AUG. 1989	