5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-2237B	38

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20677 ENGINEER GREGORY A. KEMPF
11-3-04

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 14160 ENGINEER DOUGLAS A. ANDERS
11/02/04

HDR Engineering, Inc. of the Carolinas
3733 National Drive, Suite 207 Raleigh, N.C. 27612

TRANSITE CONSULTING ENGINEERS, INCORPORATED
1300 Paddock Drive, Suite G-10 Raleigh, N.C. 27609

NOTE:
DESIGN EXCEPTION REQUIRED FOR MAX.GRADE
STA. -L- 89+00 TO STA. -L- 112+85

REFERENCE: FOR PLAN VIEW SEE PLAN SHEET 10

-L-

PI = 89+00.00
EL = 1,878.38'
K = 127
VC = 450.00'

1,900.33

(+)3.7668%

(+)7.3167%

EXIST. 5' X 5' RCBC

(+)2.9886%

1,840.38

BEGIN SPECIAL CUT DITCH
STA. 83+50 RT.
ELEV. 1855.52

END SPECIAL CUT DITCH
STA. 84+50 RT.
ELEV. 1858.51

EXIST. 8' X 4' RCBC

RCBC HYDRAULIC DATA
DRAINAGE STRUCTURE NO._

DRAINAGE AREA	= 167.0	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 270.0	CFS
DESIGN HW ELEVATION	= 1870.08	FT
100 YEAR DISCHARGE	= 340	CFS
100 YEAR HW ELEVATION	= 1871.64	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= OFF CHART	CFS
OVERTOPPING ELEVATION	= 1889.15	FT

CULVERT HYDRAULIC DATA
DRAINAGE STRUCTURE NO._

DESIGN DISCHARGE	= 320.0	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 1841.20	FT
BASE DISCHARGE	= 400	CFS
BASE FREQUENCY	= 100	CFS
BASE HW ELEVATION	= 1843.70	FT
OVERTOPPING DISCHARGE	= 570	CFS
OVERTOPPING FREQUENCY	= 200+	YRS
OVERTOPPING ELEVATION	= 1850.20	FT

1,846.55
+55.00

1,869.91
+75.00

1,894.84
+25.00

BM-4 RR SPIKE IN BASE OF A 27" YELLOW POPLAR TREE.
76.32 FEET LEFT OF -L- STA. 89+45.29
ELEV. 1875.57

1,960 1,950 1,940 1,930 1,920 1,910 1,900 1,890 1,880 1,870 1,860 1,850 1,840 1,830 1,820 1,810 1,800 1,790 1,780 1,770 1,760

79+00 80+00 81+00 82+00 83+00 84+00 85+00 86+00 87+00 88+00 89+00 90+00 91+00 92+00

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02/26/2004
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