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PROJECT REFERENCE NO.	SHEET NO.
BR-0160	6

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 040418 ENGINEER MARK K. SWARD
3/14/2023

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 040417 ENGINEER RICHARD LEON BOTTINGER
3/14/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
NC FIRM LICENSE No: F-0493

STRUCTURE HYDRAULIC DATA

DRAINAGE AREA	= 8.16	SQ.MI.
DESIGN DISCHARGE	= N/A	CFS
DESIGN FREQUENCY	= 50 (FEMA) + 0.5' SLR	YRS
DESIGN HW ELEVATION	= 10.1	FT
BASE DISCHARGE	= N/A	CFS
BASE FREQUENCY	= 100 (FEMA)	YRS
BASE HW ELEVATION	= 12.0	FT
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING FREQUENCY	= 100+ (FEMA)	YRS
OVERTOPPING ELEVATION	= 13.1	FT

–L–

BM #1
RAILROAD SPIKE IN 21" OAK
–L– STA 17+64.00 143' LEFT
ELEV. = 11.88'

BEGIN PROPOSED GRADE
–L– STA.13+00.00
ELEV.= 19.70'

BEGIN SPECIAL CUT
BASE DITCH GRADE
–L– STA.12+75 RT
EL = 19.60'

BEGIN SPECIAL CUT
BASE DITCH GRADE
–L– STA.12+50 LT
EL = 18.00'

(–)10.5000%
(–)16.4600%
PI=13+00.000
EL=17.98'
(–)11.9000%
PI=13+50.000
EL=17.50'
PI=13+50.000
EL=17.03'
(–)14.3400%
END SPECIAL CUT BASE DITCH GRADE
–L– STA.13+94 RT
EL = 16.00'
(–)12.3409%
END SPECIAL CUT BASE DITCH GRADE
–L– STA.14+00 LT
EL = 15.33'
24" RCP–V
INV IN = 12.0'
(–)19.33%
BEGIN SPECIAL LATERAL BASE DITCH GRADE
–L– STA.15+00 RT
EL = 13.68'

PI = 16+83.50
EL = 12.41'
VC = 250'
K = 96

(–)1.9000%
PI=16+50.000
EL=10.81'
(+)0.7000%
BEGIN SPECIAL LATERAL BASE DITCH GRADE
–L– STA.17+15 LT
EL = 13.66'
(–)5.0000%
PI=17+50.000
EL=11.25'
(–)16.5600%
(–)15.3667%
PI=18+00.000
EL=5.76'
(–)0.9841%
END SPECIAL LATERAL BASE DITCH GRADE
–L– STA.18+63 RT
EL = 5.14'
END SPECIAL LATERAL BASE DITCH GRADE
–L– STA.18+37 LT
EL = 7.10'

BEGIN BRIDGE
–L– STA.18+88.31

PI=18+00.000
EL=7.97'
(–)2.3514%

PI = 21+62.00
EL = 15.76'
VC = 300'
K = 214

FEMA 50yr WSEL (9.6') + 0.5' SLR = ELEVATION 10.1'

(+)0.7000%
(–)0.7000%

LEFT DITCH –·–·–·–·–
RIGHT DITCH ----------

FOR –L– ALIGNMENT, SEE SHEET NO. 4, 5

END BRIDGE
–L– STA.24+66.69

PI = 26+37.50
EL = 12.43'
VC = 250'
K = 96

END SPECIAL LATERAL BASE DITCH GRADE
–L– STA.26+40 LT
EL = 13.20'
(+)2.5000%
(+)0.6000%
(+)3.0194%
(–)0.7000%
PI=24+97.000
EL=8.35'
(+)15.5422%
PI=25+50.000
EL=8.61'
(+)1.0000%
PI=26+00.000
EL=9.10'
PI=26+00.000
EL=11.46'
(+)0.7.3682%

BEGIN SPECIAL LATERAL BASE DITCH GRADE
–L– STA.24+79 LT
EL = 7.90'

BEGIN SPECIAL LATERAL 'V' DITCH GRADE
–L– STA.24+67 RT
EL = 4.00'

(+)1.9012%
(+)1.8936%
PI=27+00.000
EL=10.40'
(+)1.8182%

BEGIN SPECIAL CUT DITCH GRADE
–L– STA.26+53 RT
EL = 9.51'

END SPECIAL LATERAL 'V' DITCH GRADE
–L– STA.26+19 RT
EL = 9.24'

BEGIN SPECIAL CUT DITCH GRADE
–L– STA.27+38 LT
EL = 13.10'
(+)1.8710%
PI=28+00.000
EL=14.26'
(+)0.8800%
PI=28+50.000
EL=14.70'
(+)1.7021%
PI=28+00.000
EL=12.00'
(+)1.6129%

BEGIN SPECIAL CUT DITCH GRADE
–L– STA.27+53 RT
EL = 11.20'

END SPECIAL CUT DITCH GRADE
–L– STA.27+33 RT
EL = 11.00'

(+)1.8600%
PI=29+50.000
EL=16.56'
(+)2.3704%
(+)3.3696%

END PROPOSED GRADE
–L– STA.29+50.00
ELEV.= 18.38'

END SPECIAL CUT DITCH GRADE
–L– STA.29+77 LT
EL = 17.20'

END STANDARD 'V' DITCH GRADE
–L– STA.30+37 RT
EL = 18.50'
(+)2.8846%

BEGIN STANDARD 'V' DITCH GRADE
–L– STA.29+85 RT
EL = 17.00'

END SPECIAL CUT DITCH GRADE
–L– STA.29+00 RT
EL = 14.30'

BEGIN SPECIAL CUT DITCH GRADE
–L– STA.28+54 RT
EL = 12.75'

END SPECIAL CUT DITCH GRADE
–L– STA.28+31 RT
EL = 12.50'

LEFT DITCH –·–·–·–·–
RIGHT DITCH ----------

FOR –L– ALIGNMENT, SEE SHEET NO. 5

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