PROJECT REFERENCE NO.	SHEET NO.
17BP.5.R.88	EC-04/CONST.04
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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5/14/99

REVISIONS

–Design Standards in Sensitive Watersheds (15A NCAC 04B.0124 (b) **(e)] are incorporated into NCDOT projects that occur within or upstream of water bodies that contain federally protected aquatic species. Within the Environmentally Sensitive Areas, the following shall apply:

–The contractor may perform clearing operations but not grubbing operation until immediately prior to beginning grading operations. Erosion control devices shall be installed immediately following the clearing operation.
–Once grading operations begin, work shall progress in a continuous manner until complete.
–Seeding mulching shall be performed on the areas disturbed by construction immediately following final grade establishment.
–Seeding mulching shall be done in stages on cut and fill slopes that are greater than 20 feet in height measure along the slope or greater than two acres in area, whichever is less.

–Special sediment control fence NCDOT Standard No. 1606.01 or a combination of special sediment control fence and standard silt fence will be installed between the top of the stream bank and bridge embankment. Once the disturbed areas of the project draining to these areas have been stabilized, the special sediment control fence and/or standard silt fence and all built up sediment adjacent to these devices will be removed to natural ground and stabilized with appropriate seed mix. Native grass mix will be used on the floodplain.

–All appropriate sedimentation and erosion control measures, throughout the project limits, will be cleaned out as appropriate to ensure proper function of the measures.

–In the event that visible sediment loss from the project is observed at the bridge site, a review of turbidity levels will be made upstream and downstream 400 meters (0.25 miles) to determine if sedimentation effects are occuring beyond the Action Area as defined in the Biological Opinion. If visual observation of turbidity levels downstream appear to be elevated beyond upstream observations, the project inspector will contact the Division Environmental Officer. If determined that project-related sedimentation is occuring beyon 400 meters, the amount or extent of incidental take specified in the Incidental Take Statement (see page 24 of Biological Conference Opinion, USFWS July 16, 2019) has been exceeded and the USFWS must be contacted immediately.

–Embankment construction and grading shall be managed in such a manner as to prevent surface runoff/drainage from discharging untreated into the riparian buffer. Instead all interim surfaces will be graded to drain to temporary erosion control devices. Temporary berms, ditches, etc. will be incorporated, as necessary, to treat temporary runoff before discharging into the riparian buffer (as specified in the NCDOT BMP Manual).

SCOUR HOLE DETAIL
DETAIL 7
NTS

FILL IN SCOUR HOLE WITH CLASS II RIP RAP TO WITHIN 2.0' OF NATURAL GROUND. ADD 1.0' OF CLASS B RIP RAP ON TOP OF CLASS II RIP RAP. TOP CLASS B RIP RAP WITH ENGINEER APPROVED MATERIAL AND COMPACT AS NEEDED TO PROMOTE VEGETATION GROWTH AND FILL VOIDS. GRADE TO DRAIN AND SEED AND MULCH.

–L–

PI Sta 10+92.05
Δ = 19° 05' 44.2" (LT)
D = 22° 55' 05.9"
L = 83.32'
T = 42.05'
R = 250.00'
Se = EXIST.

PI Sta 11+70.75
Δ = 47° 02' 10.4" (LT)
D = 66° 37' 22.8"
L = 70.60'
T = 37.43'
R = 86.00'
Runoff = 90'
Se = 4%

PI Sta 13+07.18
Δ = 42° 58' 35.2" (RT)
D = 57° 17' 44.8"
L = 75.01'
T = 39.37'
R = 100.00'
Runoff = 90'
Se = 4%

–L–

PI Sta 13+86.74
Δ = 47° 25' 32.9" (LT)
D = 57° 17' 44.8"
L = 82.77'
T = 43.92'
R = 100.00'
Runoff = 90'
Se = 4%

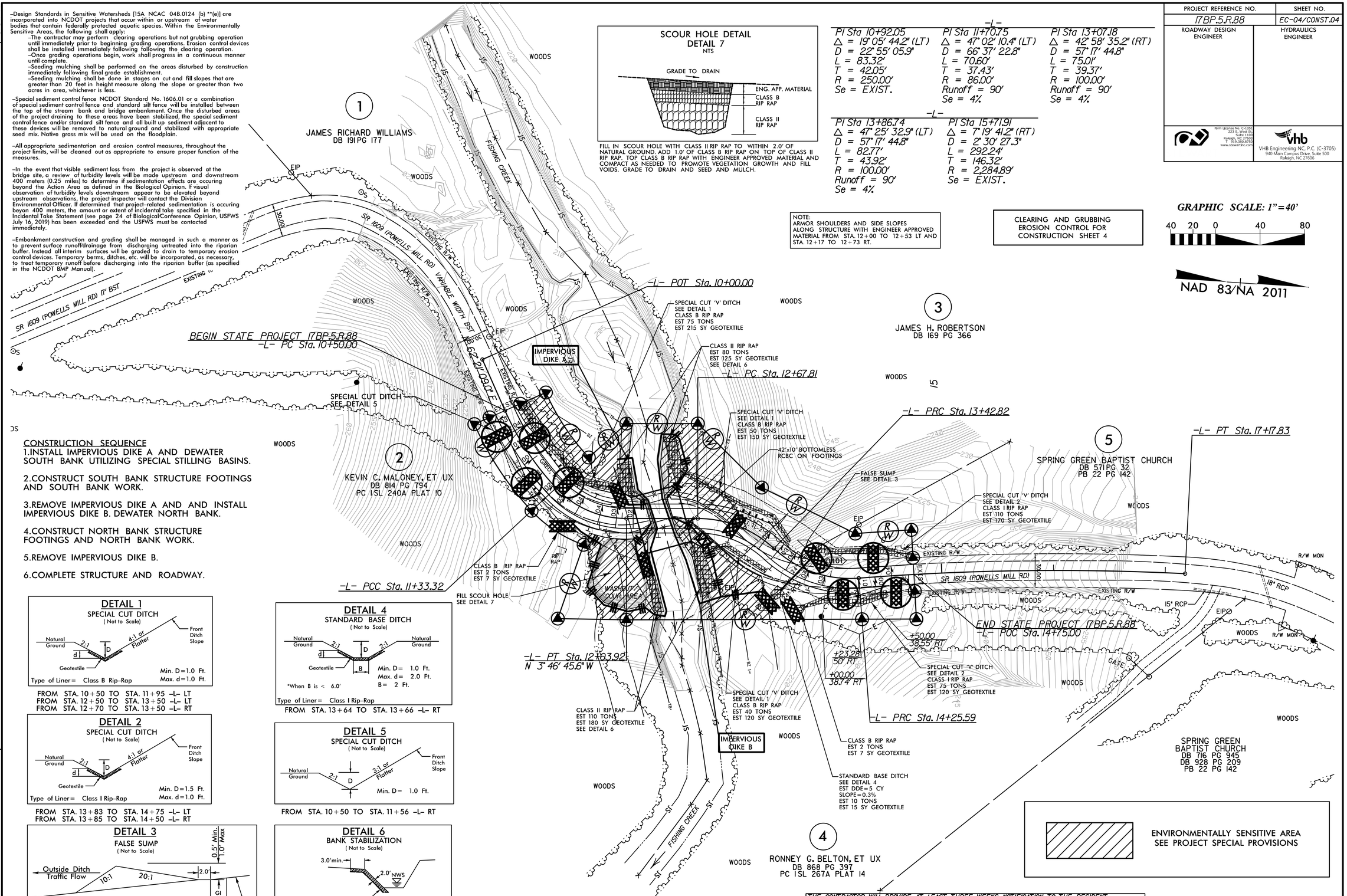
PI Sta 15+71.91
Δ = 7° 19' 41.2" (RT)
D = 2° 30' 27.3"
L = 292.24'
T = 146.32'
R = 2,284.89'
Se = EXIST.

NOTE:
ARMOR SHOULDERS AND SIDE SLOPES ALONG STRUCTURE WITH ENGINEER APPROVED MATERIAL FROM STA. 12+00 TO 12+53 LT AND STA. 12+17 TO 12+73 RT.

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

GRAPHIC SCALE: 1" = 40'
40 20 0 40 80

NAD 83/NA 2011



CONSTRUCTION SEQUENCE

1. INSTALL IMPERVIOUS DIKE A AND DEWATER SOUTH BANK UTILIZING SPECIAL STILLING BASINS.
2. CONSTRUCT SOUTH BANK STRUCTURE FOOTINGS AND SOUTH BANK WORK.
3. REMOVE IMPERVIOUS DIKE A AND AND INSTALL IMPERVIOUS DIKE B. DEWATER NORTH BANK.
4. CONSTRUCT NORTH BANK STRUCTURE FOOTINGS AND NORTH BANK WORK.
5. REMOVE IMPERVIOUS DIKE B.
6. COMPLETE STRUCTURE AND ROADWAY.

DETAIL 1
SPECIAL CUT DITCH
(Not to Scale)

Type of Liner= Class B Rip-Rap

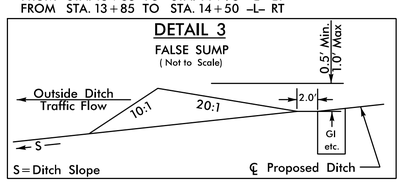
FROM STA. 10+50 TO STA. 11+95 –L– LT
FROM STA. 12+50 TO STA. 13+50 –L– LT
FROM STA. 12+70 TO STA. 13+50 –L– RT

DETAIL 2
SPECIAL CUT DITCH
(Not to Scale)

Type of Liner= Class I Rip-Rap

FROM STA. 13+83 TO STA. 14+75 –L– LT
FROM STA. 13+85 TO STA. 14+50 –L– RT

DETAIL 3
FALSE SUMP
(Not to Scale)



STA. 13+67 –L– LT

DETAIL 4
STANDARD BASE DITCH
(Not to Scale)

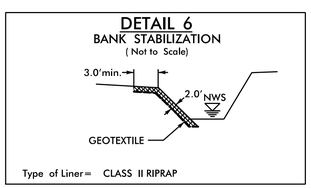
Type of Liner= Class I Rip-Rap

FROM STA. 13+64 TO STA. 13+66 –L– RT

DETAIL 5
SPECIAL CUT DITCH
(Not to Scale)

FROM STA. 10+50 TO STA. 11+56 –L– RT

DETAIL 6
BANK STABILIZATION
(Not to Scale)



Type of Liner= CLASS II RIPRAP

THE CONTRACTOR WILL PROVIDE AT LEAST THREE WEEKS NOTIFICATION TO THE RESIDENT ENGINEER AND DIVISION ENVIRONMENTAL OFFICER CONCERNING START OF WORK AT THE PROJECT TO ALLOW FOR APPROPRIATE CONTACT WITH PARTIES CONDUCTING THE PRE-CONSTRUCTION MUSSEL SURVEY AND RELOCATION ACTIVITIES.
THE MUSSEL RELOCATION MUST OCCUR WITHIN THREE WEEKS PRIOR TO START OF IN-CHANNEL WORK.
THE DIVISION ENVIRONMENTAL OFFICER WILL CONTACT APPROPRIATE PERSONNEL FROM RK&K TO SCHEDULE THE RELOCATION.

FOR –L– PROFILE, SEE SHEET 5

FOR CULVERT PLANS, SEE SHEETS C-1 THRU C-4

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