

GEOTECHNICAL UNIT FIELD SCOUR REPORT

SHEET OF

2

SHEET 23 OF 28

PROJECT: 34517.1.1 TIP NO.: R-2911D COUNTY: ROWAN

DESCRIPTION(1): BRIDGE ON US 70 OVER SECOND CREEK

◆ **INFORMATION ON EXISTING BRIDGES** Information obtained from Field Inspection
 Microfilm (Reel: Position:)
 Other

COUNTY BRIDGE NO. 85 BRIDGE LENGTH 220 NO. BENTS 8 NO. BENTS IN: CHANNEL 2 FLOODPLAIN 8

FOUNDATION TYPE: CONCRETE GIRDERS ON CONCRETE PIERS

EVIDENCE OF SCOUR(2):

ABUTMENTS OR END BENT SLOPES: NONE

INTERIOR BENTS: BENT 3 AND BENT 4 ARE WASHED OUT AROUND PIERS IN CREEK

CHANNEL BED: NONE

CHANNEL BANKS: CHANNEL BANKS BEING UNDERMINED - TREES LEANING TOWARD CHANNEL - HIGH DEBRIS

◆ **EXISTING SCOUR PROTECTION:**

TYPE(3): RIP-RAP

EXTENT(4): PARTS OF SLOPE AT EB1 AND EB2

EFFECTIVENESS(5): GOOD

OBSTRUCTIONS(6) (DAMS, DEBRIS, ETC.): LOTS OF DEBRIS AT SITE

◆ **DESIGN INFORMATION**

CHANNEL BED MATERIAL(7) (Sample Results Attached): SAND AND SILT (REFERENCE SS-13 AND SS-14)

CHANNEL BANK MATERIAL(8) (Sample Results Attached): SAND AND SILT (REFERENCE SS-12 AND SS-13)

CHANNEL BANK COVER(9): MATURE TREES AND SHRUBS

FLOOD PLAIN WIDTH(10): STATION 302+00 TO 306+50

FLOOD PLAIN COVER(11): MATURE TREES AND SHRUBS

STREAM IS: DEGRADING AGGRADING (12)

OTHER OBSERVATIONS AND COMMENTS:

◆ **DESIGN INFORMATION CONT.**

CHANNEL MIGRATION TENDENCY(13): SLIGHT

GEOTECHNICAL ADJUSTED SCOUR ELEVATIONS (14):

The Geotechnical Engineering Unit agrees with the theoretical scour elevations predicted on the Hydraulics Report. There is no geological reason to raise the elevation of predicted scour as weathered rock is well below Theoretical Overtopping Scour.

Bent 1 - 100 year local pier scour prediction = 653'

Bent 2 - 100 year local pier scour prediction = 651.5'

REPORTED BY: JKS/JEB DATE: APRIL 15, 2004

INSTRUCTIONS

- (1) GIVE THE DESCRIPTION OF THE SPECIFIC SITE GIVING ROUTE NUMBER AND BODY OF WATER CROSSED.
- (2) NOTE ANY EVIDENCE OF SCOUR AT THE EXISTING END BENTS OR ABUTMENTS (UNDERMINING, SLOUGHING, SCOUR LOCATIONS DEGRADATIONS, ETC.)
- (3) NOTE ANY EXISTING SCOUR PROTECTION (RIPRAP, ETC.)
- (4) DESCRIBE THE EXTENT OF ANY EXISTING SCOUR PROTECTION.
- (5) DESCRIBE WHETHER OR NOT THE SCOUR PROTECTION APPEARS TO BE WORKING.
- (6) NOTE ANY DAMS, FALLEN TREES, DEBRIS AT BENTS, ETC.
- (7) DESCRIBE THE CHANNEL BED MATERIAL; A SAMPLE SHOULD BE TAKEN FOR GRAIN SIZE DISTRIBUTION, ATTACH LAB RESULTS.
- (8) DESCRIBE THE CHANNEL BANK MATERIAL; A SAMPLE SHOULD BE TAKEN FOR GRAIN SIZE DISTRIBUTION, ATTACH LAB RESULTS.
- (9) DESCRIBE THE BANK COVERING (GRASS, TREES, RIPRAP, NONE, ETC.)
- (10) GIVE THE APPROXIMATE FLOOD PLAIN WIDTH (ESTIMATE).
- (11) DESCRIBE THE FLOOD PLAIN COVERING (GRASS, TREES, CROPS, ETC.)
- (12) CHECK THE APPROPRIATE SPACE AS TO WHETHER THE STREAM IS DEGRADING OR AGGRADING.
- (13) DESCRIBE THE POTENTIAL OF THE BODY OF WATER TO MIGRATE Laterally DURING THE LIFE OF THE BRIDGE (APPROXIMATELY 100 YEARS).
- (14) GIVE THE GEOTECHNICAL ADJUSTED SCOUR ELEVATION EXPECTED OVER THE LIFE OF THE BRIDGE (APPROXIMATELY 100 YEARS). THIS CAN BE GIVEN AS AN ELEVATION RANGE ACROSS THE SITE, OR ON A BENT BY BENT BASIS WHERE VARIATIONS EXIST. DISCUSS RELATIONSHIP BETWEEN THE HYDRAULICS THEORETICAL SCOUR AND THE GEOTECHNICAL ADJUSTED SCOUR ELEVATION. IF THE GEOTECHNICAL ADJUSTED SCOUR ELEVATION IS DEPENDENT ON SCOUR COUNTER MEASURES, EXPLAIN. (RIPRAP ARMORING ON SLOPES, ETC.) THE GEOTECHNICAL ADJUSTED SCOUR ELEVATION IS BASED ON THE ERODABILITY OF MATERIALS WITH CONSIDERATION FOR JOINTING, FOLIATION, BEDDING ORIENTATION AND FREQUENCY; CORE RECOVERY PERCENTAGE; PERCENT RQD; DIFFERENTIAL WEATHERING; SHEAR STRENGTH; OBSERVATIONS AT EXISTING STRUCTURES; OTHER TESTS DEEMED APPROPRIATE; AND OVERALL GEOLOGIC CONDITIONS AT THE SITE.

rev. 10-03