

**GEOTECHNICAL UNIT FIELD SCOUR REPORT**

PROJECT: 8.2572401 TIP NO.: B-3506 COUNTY: RANDOLPH

DESCRIPTION(1): BRIDGE NO. 226 ON SR 2832 OVER RICHLAND CREEK

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

COUNTY BRIDGE NO. 226 BRIDGE LENGTH 62.0' NO. BENTS 2 NO. BENTS IN: CHANNEL 0 FLOODPLAIN 2

FOUNDATION TYPE: ABUT. RC CAPS ON RUBBLE MASONRY

EVIDENCE OF SCOUR(2):

ABUTMENTS OR END BENT SLOPES: NONE

INTERIOR BENTS: NONE

CHANNEL BED: NONE

CHANNEL BANKS: TREES LEANING IN TOWARD CHANNEL

◆ **EXISTING SCOUR PROTECTION:**

TYPE(3): NONE

EXTENT(4): NONE

EFFECTIVENESS(5): NONE

OBSTRUCTIONS(6) (DAMS, DEBRIS, ETC.): NONE

◆ **DESIGN INFORMATION**

CHANNEL BED MATERIAL(7) (Sample Results Attached): ROCK, (RS-3)

CHANNEL BANK MATERIAL(8) (Sample Results Attached): SAND, GRAVEL, ROCK

FOUNDATION BEARING MATERIAL(9): ROCK

CHANNEL BANK COVER(10): MATURE TREES, SHRUBS

FLOOD PLAIN WIDTH(11): 125'(+/-)

FLOOD PLAIN COVER(12): MATURE TREES, SHRUBS

STREAM IS:  DEGRADING  AGGRADING (13)

OTHER OBSERVATIONS AND COMMENTS:

◆  
◆  
◆  
◆ **DESIGN INFORMATION CONT.**

CHANNEL MIGRATION TENDENCY(14): NONE

GEOTECHNICAL ADJUSTED SCOUR ELEVATIONS (15):

THE GEOTECHNICAL ENGINEERING UNIT HAS REVIEWED THE SCOUR DATA PROVIDED BY THE NCDOT BRIDGE SURVEY AND HYDRAULICS DESIGN REPORT. IN DOING SO WE HAVE CONCLUDED THAT BOTH 100 AND 500 YEAR SCOUR COMPUTATIONS SHOULD BE RAISED SIGNIFICANTLY TO COINCIDE WITH THE OCCURRENCE OF HARD ROCK. THE CREEK BOTTOM ITSELF IS RUNNING ON HARD ROCK.

AT PROPOSED INTERIOR BENT 1 HARD ROCK WAS ENCOUNTERED AT THE GROUND SURFACE AND APPEARS TO CONTINUE ACROSS THE BENT AT APPROXIMATE ELEVATION 496.0 FEET.

PROPOSED INTERIOR BENT 2 FALLS WELL OUTSIDE THE CREEK CHANNEL THEREFORE THERE SHOULD BE NO POTENTIAL FOR SCOUR. IT SHOULD HOWEVER BE NOTED THAT HARD ROCK WAS ENCOUNTERED BETWEEN ELEVATION 497 - 502 FEET AT THIS LOCATION.

REPORTED BY: J.E. BEVERLY / J.K. STICKNEY DATE: 5/14/03

**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 FOUNDATION BEARING MATERIAL
- (10) DESCRIBE THE BANK COVERING (GRASS, TREES, RIPRAP, NONE, ETC.)
- (11) GIVE THE APPROXIMATE FLOOD PLAIN WIDTH (ESTIMATE).
- (12) DESCRIBE THE FLOOD PLAIN COVERING (GRASS, TREES, CROPS, ETC.)
- (13) CHECK THE APPROPRIATE SPACE AS TO WHETHER THE STREAM IS DEGRADING OR AGGRADING.
- (14) DESCRIBE THE POTENTIAL OF THE BODY OF WATER TO MIGRATE Laterally DURING THE LIFE OF THE BRIDGE (APPROXIMATELY 100 YEARS).
- (15) 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.