

GEOTECHNICAL UNIT FIELD SCOUR REPORT

PROJECT: 33501.1.1 TIP NO.: B-4152 COUNTY: HOKE

DESCRIPTION(1): BRIDGE # 53 ON SR 1422 OVER PUPPY CREEK

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

COUNTY BRIDGE NO. 53 BRIDGE LENGTH 41' NO. BENTS 3 NO. BENTS IN: CHANNEL 3 FLOODPLAIN 3

FOUNDATION TYPE: *TIMBER DECK ON STEEL GIRDERS*

EVIDENCE OF SCOUR(2):

ABUTMENTS OR END BENT SLOPES: *NONE*

INTERIOR BENTS: *NONE*

CHANNEL BED: *NONE*

CHANNEL BANKS: *NON*

◆ **EXISTING SCOUR PROTECTION:**

TYPE(3): *NONE*

EXTENT(4): *N/A*

EFFECTIVENESS(5): *N/A*

OBSTRUCTIONS(6) (DAMS, DEBRIS, ETC.): *TREES AND LIMBS*

◆ **DESIGN INFORMATION**

CHANNEL BED MATERIAL(7) (Sample Results Attached): *SAND (A-2-4)*

CHANNEL BANK MATERIAL(8) (Sample Results Attached): *SAND (A-2-4)*

CHANNEL BANK COVER(9): *MATURE TREES AND SHRUBS*

FLOOD PLAIN WIDTH(10): *APPROXIMATELY 400'*

FLOOD PLAIN COVER(11): *MATURE TREES, GRASS, AND SHRUBS*

STREAM IS: DEGRADING AGGRADING (12)

OTHER OBSERVATIONS AND COMMENTS:

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◆ **DESIGN INFORMATION CONT.**

CHANNEL MIGRATION TENDENCY(13): *SLIGHT / NONE*

GEOTECHNICAL ADJUSTED SCOUR ELEVATIONS (14):

The 100 year scour predicted on the NCDOT Hydraulic Report shows a maximum scour elevation of 128 feet in the creek channel. Based on boring data collected we determined that the alluvial boundary has extended to an elevation as low as 126 feet during past events. We therefore recommend a geotechnical adjusted scour elevation at approximate elevation 125 feet.

REPORTED BY: *JEB / JKS* DATE: *2-15-05*

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.