

GEOTECHNICAL UNIT FIELD SCOUR REPORT

PROJECT: 33296.1.1 ID: B-3848 COUNTY: Guilford

F.A. Number: BRZ-2124(1)

DESCRIPTION(1): Bridge No. 102 over Lake Higgins/Brush Creek on SR 2124

INFORMATION ON EXISTING BRIDGES Information obtained from:  field inspection  
 microfilm(Reel:      Pos:     )  
 other Bridge Survey and Hydraulic Design Report

COUNTY BRIDGE NO. 102 BRIDGE LENGTH 110' NO. BENTS IN: CHANNEL 4 FLOOD PLAIN 2

FOUNDATION TYPE: Timber deck with asphalt surface supported by wood piles with timber abutments; interior bents have been shored with steel girders supported by steel H-piles

**EVIDENCE OF SCOUR(2):**

ABUTMENTS OR END BENT SLOPES: None noted.

INTERIOR BENTS: None noted

CHANNEL BED: None noted

CHANNEL BANKS: None noted

**EXISTING SCOUR PROTECTION:**

TYPE(3): Rip rap and boulders on end bent slopes

EXTENT(4): Face and partly on sides of end bent embankments

EFFECTIVENESS(5): Appears to be effective

OBSTRUCTIONS(6) (DAMS,DEBRIS,ETC.): None noted.

**DESIGN INFORMATION**

CHANNEL BED MATERIAL(7) (SAMPLE RESULTS ATTACHED): Clayey, coarse to fine sandy SILT (A-4) overlying fine to coarse SAND (A-1-b)

CHANNEL BANK MATERIAL(8) (SAMPLE RESULTS ATTACHED): Clayey, fine to coarse sandy SILT (A-4), and silty, fine to coarse sandy CLAY (A-6 and A-7-5)

CHANNEL BANK COVER(9): Hardwood, brush, and grass/weeds

FLOOD PLAIN WIDTH(10): Greater than 1,000 feet

FLOOD PLAIN COVER(11): Hardwood, brush, and grass/weeds

DESIGN INFORMATION CONT.

STREAM IS  DEGRADING  AGGRADING (12)

OTHER OBSERVATIONS AND COMMENTS: \_\_\_\_\_

CHANNEL MIGRATION TENDENCY (13): Migration potential appears to be towards End Bent-1.

REPORTED BY: Paul R. W... DATE: 6/9/2005  
 Trigon Engineering Consultants, Inc.

GEOTECHNICALLY ADJUSTED SCOUR ELEVATION (14): \_\_\_\_\_

Boring	100 yr	Overtopping
B1-A	734.4	730.1
B1-B	731.5	729.0
B2-A	734.3	730.2
B2-B	734.8	730.7

REPORTED BY: Chal m whaly DATE: 6/28/05  
 NCDOT GEOTECHNICAL UNIT 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 (RIP RAP, 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, RIP RAP, 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 GEOTECHNICALLY 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 GEOTECHNICALLY ADJUSTED SCOUR ELEVATION. THE GEOTECHNICALLY ADJUSTED SCOUR ELEVATION IS BASED ON THE ERODABILITY OF MATERIALS WITH CONSIDERATION FOR JOINTING, FOLIATION, BEDDING ORIENTATION AND FREQUENCY; CORE RECOVERY PERCENTAGE; PERCENTAGE RQD; DIFFERENTIAL WEATHERING, SHEAR STRENGTH; OBSERVATIONS AT EXISTING STRUCTURES; OTHER TESTS DEEMED APPROPRIATE; AND OVERALL GEOLOGIC CONDITIONS AT THE SITE.