

Rev. 5/91

GEOTECHNICAL UNIT FIELD SCOUR REPORT

PROJECT: 8.2251101 ID: B-3496 COUNTY: New Hanover

DESCRIPTION (1): Bridge No. 10 on SR 1411 over Bradley Creek

**INFORMATION ON EXISTING BRIDGES** Information obtained from  field inspection  
 microfilm (Reel: \_\_\_\_\_ Position: \_\_\_\_\_)  
 other Bridge Survey Report

COUNTY BRIDGE NO. 10 BRIDGE LENGTH 39.3' NO. BENTS 3 NO. BENTS IN CHANNEL 1 FLOOD PLAIN 2

FOUNDATION TYPE: Timber piles

EVIDENCE OF SCOUR (2):

ABUTMENTS OR END BENT SLOPES: None observed

INTERIOR BENTS: None observed

CHANNEL BED: None observed

CHANNEL BANKS: Rip-rap placed bank northwest of structure

**EXISTING SCOUR PROTECTION:**

TYPE (3): Timber abutments with wing walls at end bents

EXTENT (4): To approximate toe of fill

EFFECTIVENESS (5): Appears satisfactory

**OBSTRUCTIONS (6) (DAMS, DEBRIS, ETC.):** Concrete piers for sewer line located adjacent to northwest side of existing bridge. Remains of concrete abutments from former structure located at edge of channel.

**DESIGN INFORMATION**

CHANNEL BED MATERIAL (7) (SAMPLE RESULTS ATTACHED): Medium dense fine to coarse sand (SS-1, SS-5)

CHANNEL BANK MATERIAL (8) (SAMPLE RESULTS ATTACHED): Soft slightly organic fine sandy clay and clayey sandy silt (see representative samples SS-16 and SS-8 taken at B2-A and B3-B respectively)

FOUNDATION BEARING MATERIAL (9): Medium dense fine to coarse sand and/or fine sandy limestone

CHANNEL BANK COVER (10): Marsh grass and brush

**DESIGN INFORMATION CONT.**

FLOOD PLAIN WIDTH (11): Approximately 1,000 feet

FLOOD PLAIN COVER (12): Marsh grass

STREAM IS  DEGRADING  AGGRADING  EQUILIBRIUM (13)

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

CHANNEL MIGRATION TENDENCY (14): Unlikely

GEOTECHNICALLY ADJUSTED SCOUR ELEVATION (15): An undisturbed sample (ST-1) was obtained in the sandy portion of the projected scour limits at B1-B and submitted for EFA testing. However, results are not available at this time. Geotechnical analysis agrees with the Hydraulics Unit's estimate of scour potential to an elevation of -10± feet at Bent 1 and to an elevation of -6± feet along Bent 2 and Bent 3, respectively.

REPORTED BY: Ea Witte, Jr. DATE: 3-11-03

**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 (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 FOUNDATION BEARING MATERIAL.
- (10) DESCRIBE THE BANK COVERING (GRASS, TREES, RIP RAP, 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, AGGRADING, OR EQUILIBRIUM.
- (14) DESCRIBE THE POTENTIAL OF THE BODY OF WATER TO MIGRATE Laterally DURING THE LIFE OF THE BRIDGE (APPROXIMATELY 100 YEARS).
- (15) 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.