

GEOTECHNICAL UNIT FIELD SCOUR REPORT

PROJECT: 33240.1.1 TIP NO.: B-3700 COUNTY: STANLY

DESCRIPTION(1): BRIDGE NO. 187 OVER LONG CREEK ON SR 1214

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

COUNTY BRIDGE NO. 187 BRIDGE LENGTH 81' NO. BENTS 4 NO. BENTS IN: CHANNEL 3 FLOODPLAIN 4

FOUNDATION TYPE: TIMBER POST AND SILL

EVIDENCE OF SCOUR(2):

ABUTMENTS OR END BENT SLOPES: NONE

INTERIOR BENTS: NONE

CHANNEL BED: NONE

CHANNEL BANKS: NONE

◆ **EXISTING SCOUR PROTECTION:**

TYPE(3): NONE

EXTENT(4): N/A

EFFECTIVENESS(5): N/A

OBSTRUCTIONS(6) (DAMS, DEBRIS, ETC.): DEBRIS (WOOD, TREE LIMBS) BENT 2

◆ **DESIGN INFORMATION**

CHANNEL BED MATERIAL(7) (Sample Results Attached): SAND & GRAVEL

CHANNEL BANK MATERIAL(8) (Sample Results Attached): MED. STIFF MOIST F. SANDY SILTY CLAY (A-7-5) (SS-5)

CHANNEL BANK COVER(9): TREES, & SHRUBS

FLOOD PLAIN WIDTH(10): 650' +/-

FLOOD PLAIN COVER(11): PLANTED CROPS, GRASS, TREES & SHRUBS

STREAM IS: DEGRADING AGGRADING (12)

OTHER OBSERVATIONS AND COMMENTS: TWO SMALL AREAS ON EB1-B & EB2-B SIDE HAVE BEEN PUSHED OUT AND FILLED WITH

OLD ASPHALT AND ROADWAY CONSTRUCTION MATERIALS. AREAS ARE DELINEATED ON PLAN SHEET AND LABELED AS ARTIFICIAL FILL.

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◆ **DESIGN INFORMATION CONT.**

CHANNEL MIGRATION TENDENCY(13): SLIGHT TO NONE

GEOTECHNICAL ADJUSTED SCOUR ELEVATIONS (14):

*Due to the fact that this is a single span structure with end bent pile design it is not anticipated that pier scour will be a structural issue.**As far as scour is concerned in the stream channel itself, scour penetration will not greatly exceed the weathered and/or hard rock boundaries which were encountered as high as elevation 475.5 feet at End Bent 1 and as low as elevation 460.5 feet at End Bent 2. Theoretical 500 year scour shown on the NCDOT Hydro Report is indicated to elevation 460 feet in the center of the creek channel.*

REPORTED BY: J.K. STICKNEY / J. E. BEVERLY DATE: JUNE 17, 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.