

**GEOTECHNICAL UNIT FIELD SCOUR REPORT**

PROJECT: 8.1830501 TIP NO.: R-2206C COUNTY: Lincoln

DESCRIPTION(1): Bridge on NC 16 over Killian Creek

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

COUNTY BRIDGE NO.	BRIDGE LENGTH	NO. BENTS	NO. BENTS IN: CHANNEL	FLOODPLAIN
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FOUNDATION TYPE: None - New Structure

EVIDENCE OF SCOUR(2):

ABUTMENTS OR END BENT SLOPES:

INTERIOR BENTS:

CHANNEL BED: None

CHANNEL BANKS: None

◆ **EXISTING SCOUR PROTECTION:**

TYPE(3): None - New Structure

EXTENT(4):

EFFECTIVENESS(5):

OBSTRUCTIONS(6) (DAMS, DEBRIS, ETC.):

◆ **DESIGN INFORMATION**

CHANNEL BED MATERIAL(7) (Sample Results Attached): Sand, Gravel, Boulders

CHANNEL BANK MATERIAL(8) (Sample Results Attached): Sand (SS-1)

CHANNEL BANK COVER(10): Mature Trees, Grass, Shrubs

FLOOD PLAIN WIDTH(11): Approximately 60 meters

FLOOD PLAIN COVER(12): Mature trees, Grass, Shrubs

STREAM IS:  DEGRADING  AGGRADING (13)

OTHER OBSERVATIONS AND COMMENTS:

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 ◆ **DESIGN INFORMATION CONT.**

CHANNEL MIGRATION TENDENCY(14): Slight

GEOTECHNICAL ADJUSTED SCOUR ELEVATIONS (15):

*The Hydraulics Unit Theoretical Scour elevations for the interior bents fall between 232 - 233. The local scour is plotted from the floodplain elevation. We would be much more comfortable calculating the total scour below the stream channel elevation. This would take into account possible channel migration. We don't consider the migration potential to be high but it is certainly possible, especially within the floodplain. The proposed Bent One is within 5 meters of the streambank.*

*We propose to set the Geotechnically Adjusted Scour Elevation at 231. This is approximately 1.2 meters below the existing streambed and roughly coincides with the base of the alluvial deposit.*

REPORTED BY: JEB / JKS DATE: 9-8-03

**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.