

GEOTECHNICAL UNIT FIELD SCOUR REPORT

2

15/17

PROJECT: 8.1600901 TIP NO.: R-2658B COUNTY: DAVIDSON

DESCRIPTION(1): BRIDGE #124 ON NC 109 OVER RICH FORK CREEK.

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

COUNTY BRIDGE NO. 124 BRIDGE LENGTH 31.50m NO. BENTS 3 NO. BENTS IN: CHANNEL 3
FLOODPLAIN 3

FOUNDATION TYPE: UNKNOWN

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.): SMALL SANDBAR APP. 50.0m DOWNSTREAM. SMALL AMOUNT OF DEBRIS ON UPSTREAM
SIDE.

◆ **DESIGN INFORMATION**

CHANNEL BED MATERIAL(7) (Sample Results Attached): BRN. & GRAY, LOOSE, WET, COARSE SAND (AS SS-4).

CHANNEL BANK MATERIAL(8) (Sample Results Attached): BRN., SOFT, MOIST, SANDY SILT (AS SS-1).

FOUNDATION BEARING MATERIAL(9): UNKNOWN

CHANNEL BANK COVER(10): TREES

FLOOD PLAIN WIDTH(11): APPROXIMATELY 100.0m

FLOOD PLAIN COVER(12): TREES

STREAM IS: DEGRADING AGGRADING (13)

OTHER OBSERVATIONS AND COMMENTS: LARGE SCOUR HOLE BETWEEN EXISTING END BENT ONE AND BENT ONE.

CHANNEL MIGRATION TENDENCY(14): NONE

GEOTECHNICALLY ADJUSTED SCOUR ELEVATIONS(15): SCOUR IS NOT ANTICIPATED ON END BENTS ASSUMING ADEQUATE RIP-RAP IS USED. OUR GEOTECHNICALLY ADJUSTED SCOUR ELEVATION FOR BENT ONE (NBL & SBL) IS 209.30m. THIS ELEVATION MATCHES THE PREDICTION MADE BY THE HYDRAULICS UNIT FOR MAXIMUM STREAMBED SCOUR. THE LOCAL SCOUR PREDICTION AT BENT ONE IS ACTUALLY 210.60m. DUE TO THE PROXIMITY OF THE BENT TO THE CREEK AND THE MATERIALS ENCOUNTERED AT BENT ONE, WE FEEL THE MAXIMUM STREAMBED SCOUR ELEVATION IS MORE ACCURATE.

REPORTED BY: R.W. TODD DATE: 5/02

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 CRITICAL 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 CRITICAL SCOUR ELEVATION. IF THE CRITICAL SCOUR ELEVATION IS DEPENDENT ON SCOUR COUNTER MEASURES, EXPLAIN. (RIPRAP ARMORING ON SLOPES, ETC.) THE CRITICAL 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.