

GEOTECHNICAL UNIT FIELD SCOUR REPORT

Sheet 24 of 39

PROJECT: 33375.1.1 ID: B-4007 COUNTY: Alleghany

DESCRIPTION(1): Bridge No. 38 over Crab Creek on NC 18

INFORMATION ON EXISTING BRIDGES Information obtained from: field inspection
 microfilm(Reel: _____ Pos: _____)
 other _____

COUNTY BRIDGE NO. 38 BRIDGE LENGTH 136 NO. BENTS IN: CHANNEL 2 FLOOD PLAIN 2

FOUNDATION TYPE: Concrete Piers

EVIDENCE OF SCOUR(2):

ABUTMENTS OR END BENT SLOPES: Minor Sloughing at End Bent-2 outside of Wing Walls

INTERIOR BENTS: Scour pockets approximately 1 foot deep on downstream side of interior Bent-1

CHANNEL BED: None

CHANNEL BANKS: Minor sloughing along north and south banks

EXISTING SCOUR PROTECTION:

TYPE(3): End Dumped boulders near Bent-2 and End Bent-2

EXTENT(4): to toe of slope

EFFECTIVENESS(5): Fair

OBSTRUCTIONS(6) (DAMS,DEBRIS,ETC.): None in immediate area of bridge bents

DESIGN INFORMATION

CHANNEL BED MATERIAL(7) (SAMPLE RESULTS ATTACHED): A-1-b fine to coarse sand with cobbles

CHANNEL BANK MATERIAL(8) (SAMPLE RESULTS ATTACHED): A-3 fine to coarse sand

CHANNEL BANK COVER(9): Grass underbrush and trees

FLOOD PLAIN WIDTH(10): 100 feet

FLOOD PLAIN COVER(11): Trees on Stream Banks, Farm Land and Grasses

DESIGN INFORMATION CONT.

STREAM IS _____ DEGRADING AGGRADING (12)

OTHER OBSERVATIONS AND COMMENTS:

CHANNEL MIGRATION TENDENCY (13): to the south

REPORTED BY: [Signature] DATE: 06/09/2005
 Engineering Consulting Services, Ltd.

GEOTECHNICALLY ADJUSTED SCOUR ELEVATION (14): _____

The following GASE are based on the Bridge Survey and Hydraulic Design report dated 10/11/04.

Location	100 yr	500yr
B1-A	2405.6'	2405.5'
B1-B	2404.7'	2404.6'

REPORTED BY: [Signature] DATE: 07/26/2005
 NCDOT GEOTECHNICAL ENGINEERING 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 FOF A-1-b fine to coarse sand with cobbles ATTACH LAB RESULTS.
- (8) DESCRIBE THE CHANNEL BANK MATERIAL: A SAMPLE SHOULD BE TAKEN FC A-3 fine to coarse sand 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 COVERII Trees on Stream Banks, Farm Land and Grasses
- (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.