

GEOTECHNICAL UNIT FIELD SCOUR REPORT

PROJECT: 33410.1.1 ID: B-4044 COUNTY: Burke

DESCRIPTION(1): Bridge No. 4 over Smokey Creek on SR 1515

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

COUNTY BRIDGE NO. 4 BRIDGE LENGTH 140 NO. BENTS IN: CHANNEL 2 FLOOD PLAIN 4

FOUNDATION TYPE: Piles & Pile Bents on Footings

EVIDENCE OF SCOUR(2):

ABUTMENTS OR END BENT SLOPES: None

INTERIOR BENTS: None

CHANNEL BED: None

CHANNEL BANKS: Minor sloughing of west bank

EXISTING SCOUR PROTECTION:

TYPE(3): Timber Wing Walls @ End Bents; Boulders/ Rip Rap at Upstream Side of West Int Bent

EXTENT(4): Wing Walls = 5' outside; Boulders/ Rip Rap = 15' Outside of Bridge

EFFECTIVENESS(5): Good

OBSTRUCTIONS(6) (DAMS,DEBRIS,ETC.): None

DESIGN INFORMATION

CHANNEL BED MATERIAL(7) (SAMPLE RESULTS ATTACHED): Crystalline Rock, Cobbles, &

Alluvial Brown-Orange Coarse to Fine SAND (A-1-a)

CHANNEL BANK MATERIAL(8) (SAMPLE RESULTS ATTACHED): Alluvial-V Loose Brown-Orange Silty Coarse to

Fine SAND (A-2-4), Alluvial-V Soft Grey Micaceous Fine Sandy Clayey SILT (A-5)

CHANNEL BANK COVER(9): Underbrush, Small Trees

FLOOD PLAIN WIDTH(10): 150'

FLOOD PLAIN COVER(11): Underbrush, Trees, Grass

DESIGN INFORMATION CONT.

STREAM IS DEGRADING X AGGRADING (12)

OTHER OBSERVATIONS AND COMMENTS:

CHANNEL MIGRATION TENDENCY (13): South to Southwest

REPORTED BY: [Signature] DATE: 3/2/05 GEOSCIENCE GROUP, INC.

GEOTECHNICALLY ADJUSTED SCOUR ELEVATION (14):

Table with 3 columns: Boring, 100 yr, 500 yr. Rows include B1-A, B1-B, B2-A, B2-B with corresponding elevation values.

REPORTED BY: Cheryl A. Hornum [Signature] DATE: 3/22/05 NCDOT GEOTECHNICAL 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 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, RIP RAP, 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 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.