

GEOTECHNICAL UNIT FIELD SCOUR REPORT

PROJECT: 33405.1.1 ID: B-4039 COUNTY: Burke

DESCRIPTION(1): Bridge 91 on SR 1127 (Scott Road) over Silver Creek

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

COUNTY BRIDGE NO. 91 BRIDGE LENGTH 70 NO. BENTS IN: CHANNEL 1 FLOOD PLAIN 2

FOUNDATION TYPE: Timber Piles

EVIDENCE OF SCOUR(2):

ABUTMENTS OR END BENT SLOPES: Sloughing at end bents outside of abutments

INTERIOR BENTS: Scour pockets approximately 1 foot deep on downstream side of interior bent 2

CHANNEL BED: None

CHANNEL BANKS: Minor sloughing along north and south banks

EXISTING SCOUR PROTECTION:

TYPE(3): Timber Abutment

EXTENT(4): to toe of slope

EFFECTIVENESS(5): Fair

OBSTRUCTIONS(6) (DAMS,DEBRIS,ETC.): Fallen trees and tree limbs against interior bents

DESIGN INFORMATION

CHANNEL BED MATERIAL(7) (SAMPLE RESULTS ATTACHED): A-1-b coarse sand with cobbles and A-2-4 silty coarse to fine sand

CHANNEL BANK MATERIAL(8) (SAMPLE RESULTS ATTACHED): A-2-4 silty coarse to fine sand and A-3 coarse sand

CHANNEL BANK COVER(9): Grass underbrush and trees

FLOOD PLAIN WIDTH(10): 100 feet

FLOOD PLAIN COVER(11): Grass underbrush and trees

DESIGN INFORMATION CONT.

STREAM IS DEGRADING X AGGRADING (12)

OTHER OBSERVATIONS AND COMMENTS: None

CHANNEL MIGRATION TENDENCY (13): to the South

REPORTED BY: [Signature] DATE: 02/16/2005

GEOTECHNICALLY ADJUSTED SCOUR ELEVATION (14):

We agree with the Maximum Theoretical Scour as calculated in the Bridge Survey and Hydraulic Design Report dated 10/20/04.

REPORTED BY: [Signature] DATE: 4-21-05

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 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.