

GEOTECHNICAL UNIT FIELD SCOUR REPORT

PROJECT: 8.1711301 ID: B-3300 COUNTY: ASHE

DESCRIPTION(1): BRIDGE # 57 ON NC 88 OVER BUFFALO CREEK

INFORMATION ON EXISTING BRIDGES Information obtained from: x field inspection, microfilm(Reel: Pos: ), x other hydro report

COUNTY BRIDGE NO. 57 BRIDGE LENGTH 121 NO. BENTS IN: CHANNEL 1 FLOOD PLAIN 1

FOUNDATION TYPE: THREE SPAN REINFORCED CONCRETE, PILES

EVIDENCE OF SCOUR(2):

ABUTMENTS OR END BENT SLOPES: NONE

INTERIOR BENTS: WEST INTERIOR BENTS ARE IN WATER, UPSTREAM COLUMN IN FAST FLOW WITH MODERATE SCOUR

CHANNEL BED: RAPIDS WITH DEEPENING OF CHANNEL MOVING UPSTREAM

CHANNEL BANKS: SLIGHT

EXISTING SCOUR PROTECTION:

TYPE(3): RIPRAP UNDER EACH END BEND, AND SOME INTERIOR BENTS

EXTENT(4): RIPRAP ON WEST SIDE TO WATER EDGE. SOME CONCRETE RUBBLE DOWNSTREAM EAST SIDE

EFFECTIVENESS(5): SOME BOULDERS APPEAR TO HAVE MOVED BY FLOW

OBSTRUCTIONS(6) (DAMS, DEBRIS, ETC.): CONCRETE FROM OLD BRIDGE

DESIGN INFORMATION

CHANNEL BED MATERIAL(7) (SAMPLE RESULTS ATTACHED): COBBLE AND GRAVEL WITH INTERSTICIAL SAND AND 1-2 FOOT BOULDERS

CHANNEL BANK MATERIAL(8) (SAMPLE RESULTS ATTACHED): BROWN SILTY SAND (A-2-4)

FOUNDATION BEARING MATERIAL(9): WR AMD CR AMPHIBOLITE GNEISS AND SCHIST

CHANNEL BANK COVER(10): DOWNSTREAM SHRUBS, GRASSES, SOME TREES, UPSTREAM TREE AND SHRUBS

FLOOD PLAIN WIDTH(11): APPROXIMATELY 60'

FLOOD PLAIN COVER(12): GRASS, SHRUBS AND SOME TREES

DESIGN INFORMATION CONT.

STREAM IS x DEGRADING AGGRADING (13)

OTHER OBSERVATIONS AND COMMENTS: NEARBY CONFLUENCE OF STREAM, DOWNSTREAM

OBCURED BY MOUND OF CONCRETE RUBBLE. STREAM HAS IRREGULAR STEP POOL MORPHOLOGY.

CHANNEL MIGRATION TENDENCY (14): WEST

REPORTED BY: JIM HARRIS DATE: 5/16/03 TIERRA, INC

GEOTECHNICALLY ADJUSTED SCOUR ELEVATION (15):

We agree with thescour analysis in the Bridge Survey and Hydraulic Design Report dated 3/25/03.

REPORTED BY: David NCDOT GEOTECHNICAL UNIT INSTRUCTIONS DATE: 7/17/03

- (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 FOUNDATION BEARING MATERIAL, (10) DESCRIBE THE BANK COVERING (GRASS, TREES, RIP RAP, 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 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.