

GEOTECHNICAL UNIT FIELD SCOUR REPORT

PROJECT: 33131.1.1 ID: B-3522 COUNTY: Wake

DESCRIPTION(1): Bridge No. 215 on -L- (SR 1007, Poole Road) over Buffalo Creek

INFORMATION ON EXISTING BRIDGE

Information obtained from: field inspection
 microfilm (Reel: _____ Pos: _____)
 other: _____

BR. NO.: 215 BR. LENGTH: 50 NO. BENTS: 2 NO. BENTS IN: CHANNEL: 0 FLOODPLAIN: 2

FOUNDATION TYPE: Single span bridge with steel girders and vertical concrete abutments

EVIDENCE OF SCOUR(2):

ABUTMENTS OR END BENT SLOPES: None

INTERIOR BENTS: N/A

CHANNEL BED: N/A

CHANNEL BANKS: Minimal

EXISTING SCOUR PROTECTION:

TYPE(3): Concrete end wall and wing walls

EXTENT(4): Wing Walls : 20 +/- feet at each end of the bridge

EFFECTIVENESS(5): Good

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

DESIGN INFORMATION

CHANNEL BED MATERIAL(7): Channel bed material consists of sand and outcropping crystalline rock
(20 +/- feet upstream from existing bridge)

CHANNEL BANK MATERIAL(8): Channel bank material consists of sand(SS-6, SS-7) and a few clay lenses.

CHANNEL BANK COVER(9): Channel bank cover consists of grass, shrubs and trees

FLOOD PLAIN WIDTH(10): Flood plain width is approximately 250 feet.

FLOOD PLAIN COVER(11): Flood plain cover consists of grass, shrubs and small to large trees

DESIGN INFORMATION CONT.

STREAM IS: X DEGRADING AGGRADING (12)

OTHER OBSERVATIONS AND COMMENTS: _____

CHANNEL MIGRATION TENDENCY (13): Slight chance of eastern migration toward End Bent 2

GEOTECHNICALLY ADJUSTED SCOUR ELEVATIONS(14):

Bent 1: 250.5' Geotechnical analysis of scourability verses material strength yields a geotechnically adjusted scour elevation 13.5' higher than the theoretical elevation shown on the Bridge and Hydraulic Design Report.

Bent 2: 251.8' Geotechnical analysis of scourability verses material strength yields a geotechnically adjusted scour elevation 7.8' higher than the theoretical elevation shown on the Bridge and Hydraulic Design Report.

REPORTED BY: Joseph J. Milkovits Jr. DATE: 3-31-04
J. I. Milkovits, Jr.

INSTRUCTIONS

- (1) GIVE THE DESCRIPTION OF THE SPECIFIC SITE, INCLUDING 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 BASED ON OBSERVATION AND/OR SAMPLES.
- (8) DESCRIBE THE CHANNEL BANK MATERIAL BASED ON OBSERVATION AND/OR SAMPLES.
- (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 THE RELATIONSHIP BETWEEN THE HYDRAULICS THEORETICAL SCOUR AND THE GEOTECHNICALLY ADJUSTED SCOUR ELEVATION. IF THE GEOTECHNICALLY ADJUSTED SCOUR ELEVATION IS DEPENDENT ON SCOUR COUNTER MEASURES, EXPLAIN. (RIPRAP ARMORING ON SLOPES, ETC.) 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.