

GEOTECHNICAL UNIT FIELD SCOUR REPORT

PROJECT: 8.2301201 ID: B-3467 COUNTY: Halifax

DESCRIPTION (1): Bridge No. 40 on SR 1003 over Beech Swamp

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

COUNTY BRIDGE NO. 40 BRIDGE LENGTH 140' NO. BENTS 6 NO. BENTS IN CHANNEL 3 FLOOD PLAIN 3

FOUNDATION TYPE: Timber pile

EVIDENCE OF SCOUR (2):

ABUTMENTS OR END BENT SLOPES: None noted

INTERIOR BENTS: None noted

CHANNEL BED: None noted

CHANNEL BANKS: None noted

EXISTING SCOUR PROTECTION:

TYPE (3): Wooden end wall

EXTENT (4): 30' from outside edge of bridge

EFFECTIVENESS (5): Appears satisfactory

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

DESIGN INFORMATION

CHANNEL BED MATERIAL (7) (SAMPLE RESULTS ATTACHED): Loose to medium dense sand (SS-26)

CHANNEL BANK MATERIAL (8) (SAMPLE RESULTS ATTACHED): Very loose fine to coarse sand (SS-11) and sandy clay (SS-34)

FOUNDATION BEARING MATERIAL (9): Medium dense fine to coarse sand and very stiff sandy silty clay

CHANNEL BANK COVER (10): Wooded

DESIGN INFORMATION CONT.

FLOOD PLAIN WIDTH (11): 4,000± feet

FLOOD PLAIN COVER (12): Wooded

STREAM IS [] DEGRADING [] AGGRADING [X] EQUILIBRIUM (13)

OTHER OBSERVATIONS AND COMMENTS:

CHANNEL MIGRATION TENDENCY (14): West toward End Bent 1

GEOTECHNICALLY ADJUSTED SCOUR ELEVATION (15): Geotechnical analysis agrees with the Hydraulics Unit's estimate of scour potential to an elevation of 55± feet at Bent 1, 50± feet (Bent 2), and 57± feet (Bent 3).

REPORTED BY: F. M. Wescott, III DATE: 3/26/03

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 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, AGGRADING, OR EQUILIBRIUM.
(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.