

PROJECT: 6.529005T ID: R-2610B (2) COUNTY: Chatham

DESCRIPTION(1): Bridge on SBL US 421 (-L-) over Tick Creek

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

COUNTY BRIDGE NO. 4 BRIDGE LENGTH 36.9m NO. BENTS IN: CHANNEL 2 FLOOD PLAIN 4

FOUNDATION TYPE: NBL (existing) bridge assumed spread footings

EVIDENCE OF SCOUR(2):

ABUTMENTS OR END BENT SLOPES: No evidence of scour at NBL (existing) bridge

INTERIOR BENTS: Scour pockets localized around footings 0.15-0.37m deep with a radius of 0.90m at

NBL (existing) bridge

CHANNEL BED: Minor scour pockets

CHANNEL BANKS: General scour along banks, trees fallen and leaning into creek

EXISTING SCOUR PROTECTION:

TYPE(3): Concrete abutments and wingwalls at end bents, rip-rap at NBL (existing) bridge

EXTENT(4): To the limits of embankment NBL (existing) bridge

EFFECTIVENESS(5): Good at NBL (existing) bridge

OBSTRUCTIONS(6) (DAMS, DEBRIS, ETC.): Remnants of concrete bents and wooden piles from previous bridge

upstream of proposed SBL bridge, remains of corrugated steel pipe on upstream and downstream sides of proposed

SBL bridge and numerous trees in creek and leaning towards creek

DESIGN INFORMATION

CHANNEL BED MATERIAL(7) (SAMPLE RESULTS ATTACHED): Fine to coarse sandy clay (A-6) with gravel

CHANNEL BANK MATERIAL(8) (SAMPLE RESULTS ATTACHED): Residual silty clay, A-6, A-7-5, A-7-6

FOUNDATION BEARING MATERIAL(9): NCR-Metamudstone and Meta-Argillite

CHANNEL BANK COVER(10): Grasses and trees

FLOOD PLAIN WIDTH(11): 150m±

FLOOD PLAIN COVER(12): Grasses and trees

DESIGN INFORMATION CONT.

STREAM IS DEGRADING _____ AGGRADING (13)

OTHER OBSERVATIONS AND COMMENTS: _____

CHANNEL MIGRATION TENDENCY (14): North

REPORTED BY: Elizabeth C. Howey DATE: 5/14/2003
 Froehling & Robertson, Inc.

GEOTECHNICALLY ADJUSTED SCOUR ELEVATION (15): _____

	B1-A	B1-B	B2-A	B2-B
100-year	134.74	135.27	134.65	135.27
500-year	134.74	134.83	134.65	134.9

REPORTED BY: C. G. Y. J. J. DATE: 5/22/03
 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 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.