

GEOTECHNICAL UNIT FIELD SCOUR REPORT

PROJECT: 33656.1.1 ID: B-4319 COUNTY: Wayne

DESCRIPTION(1): Bridge No. 21 over Great Swamp on NC 222

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

COUNTY BRIDGE NO. 21 BRIDGE LENGTH 52.5 ft NO. BENTS IN: CHANNEL 2 FLOOD PLAIN 4

FOUNDATION TYPE: Timber piles with a few encased in concrete

EVIDENCE OF SCOUR(2):

ABUTMENTS OR END BENT SLOPES: Scouring at base of wingwall where rip-rap has been placed

INTERIOR BENTS: None observed

CHANNEL BED: None observed

CHANNEL BANKS: Some minor scouring along banks

EXISTING SCOUR PROTECTION:

TYPE(3): Timber wingwall and rip-rap

EXTENT(4): To the limits of embankment

EFFECTIVENESS(5): Good

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

DESIGN INFORMATION

CHANNEL BED MATERIAL(7) (SAMPLE RESULTS ATTACHED): A-2-4, A-2-6, A-4, A-6

CHANNEL BANK MATERIAL(8) (SAMPLE RESULTS ATTACHED): A-2-4, A-2-6, A-4, A-6

CHANNEL BANK COVER(9): Grasses, shrubs and trees

FLOOD PLAIN WIDTH(10): 500±

FLOOD PLAIN COVER(11): Trees, grasses and shrubs

DESIGN INFORMATION CONT.

STREAM IS DEGRADING AGGRADING (12)

OTHER OBSERVATIONS AND COMMENTS: _____

CHANNEL MIGRATION TENDENCY (13): East

REPORTED BY: Elizabeth C. Howey DATE: 5/25/2005
Froehling & Robertson, Inc.

GEOTECHNICALLY ADJUSTED SCOUR ELEVATION (14): _____

	Elevation
100 year	94.1'
500 year	92.4'

*Note: G.A.S.E. determined at 102.6' elevation (creek bed) as given in the Bridge Survey and Hydro Report (4/28/05)

REPORTED BY: Bob Dwyer DATE: 7-6-05
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 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.