

PROJECT: 8.2407901 ID: B-3704 COUNTY: Wake

DESCRIPTION(1): Bridge 108 Over Lower Barton's Creek on SR 1834 (Norwood Road)

INFORMATION ON EXISTING BRIDGES Information obtained from: field inspection
 microfilm(Reel: _____ Pos: _____)
 other Br. Survey & Hydraulic Report.

COUNTY BRIDGE NO. 108 BRIDGE LENGTH 104ft. NO. BENTS IN: CHANNEL 5 FLOOD PLAIN 2

FOUNDATION TYPE: Timber caps on timber piles

EVIDENCE OF SCOUR(2):

ABUTMENTS OR END BENT SLOPES: erosion esp. on unprotected EB1 side. Also on EB2 slope above rip rap

INTERIOR BENTS: Between existing interior bents 2 and 3, scour is eroding bank material forming a rounded depression. Also, the concrete pad under the timber supports is being exposed by erosion

CHANNEL BED: Deeper water under bridge on the downstream end

CHANNEL BANKS: Banks are being undercut as evidenced by trees falling into the channel

EXISTING SCOUR PROTECTION:

TYPE(3): rip rap on slopes

EXTENT(4): All of the existing end bent 2 slope (none on the end bent 1 side)

EFFECTIVENESS(5): Rip rap on EB2 side is effective. Unprotected EB1 side is being degraded.

OBSTRUCTIONS(6) (DAMS, DEBRIS, ETC.): Large boulders & outcrop in downstream channel / fallen trees across channel upstream / concrete and rebar debris under bridge as well as old timber piles protruding out of channel

DESIGN INFORMATION

CHANNEL BED MATERIAL(7) (SAMPLE RESULTS ATTACHED): f. to cse. SAND with gravel (A-1-a)
 silty cse. to f. SAND (A-3)

CHANNEL BANK MATERIAL(8) (SAMPLE RESULTS ATTACHED): silty cse. to f. SAND (A-2-4)
 silty f. to cse. SAND (A-3)

CHANNEL BANK COVER(10): hardwood trees, underbrush, silt and sand, large boulders and rock outcrops

FLOOD PLAIN WIDTH(11): Approximately 50 yards wide upstream and downstream

FLOOD PLAIN COVER(12): Hardwoods, underbrush, (agricultural - cornfield), silt and sand, drainage ditches cut across floodplain and enter Lower Barton's Creek both upstream and downstream of existing bridge

DESIGN INFORMATION CONT.

STREAM IS DEGRADING AGGRADING (13)

OTHER OBSERVATIONS AND COMMENTS: Outcrops exhibited no good foliations or joint sets to get strike and dip

CHANNEL MIGRATION TENDENCY (14): lateral migration tendency toward the NW due to meander

REPORTED BY: Dana J. Goodnight DATE: 8/1/2003
 TRIGON ENGINEERING

GEOTECHNICALLY ADJUSTED SCOUR ELEVATION (15):

	B1-A	B1-B	B2-A	B2-B
100-year	266.6	265.2	258.5	259.7
500-year	266.6	265	257.2	257.4

REPORTED BY: Bradley D. Wiley DATE: 10-27-03
 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.