

PROJECT: 33198.1.1 ID: B-3652 COUNTY: Guilford

DESCRIPTION(1): Bridge No. 20 on -L- (SR 4121) over Deep River

INFORMATION ON EXISTING BRIDGE

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

BR. NO.: 20 BR. LENGTH: 169' NO. BENTS: 5 NO. BENTS IN: CHANNEL: 1 FLOODPLAIN: 4

FOUNDATION TYPE: Concrete footings

EVIDENCE OF SCOUR(2):

ABUTMENTS OR END BENT SLOPES: None

INTERIOR BENTS: Minor contraction and local scour around bent no. 3 (1 to 2 feet total)

CHANNEL BED: Minor contraction and local scour

CHANNEL BANKS: Minor contraction scour along the bank

EXISTING SCOUR PROTECTION:

TYPE(3): Concrete slopes

EXTENT(4): Across the end slope and 6+/- feet outside the edge of the bridge

EFFECTIVENESS(5): Very effective

OBSTRUCTIONS(6) (DAMS,DEBRIS,ETC.): Few logs around bent 3

DESIGN INFORMATION

CHANNEL BED MATERIAL(7): Channel bed material consists of silty sand (SS-15,SS-21)
and sandy silt (SS-14, SS-17)

CHANNEL BANK MATERIAL(8): Channel bank material consists of sandy silt (SS-14)

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

FLOOD PLAIN WIDTH(10): Flood plain width is approximately 200+/- feet.

FLOOD PLAIN COVER(11): Flood plain cover consists of grass, shrubs and woods

DESIGN INFORMATION CONT.

STREAM IS: X DEGRADING AGGRADING (12)

OTHER OBSERVATIONS AND COMMENTS: _____

CHANNEL MIGRATION TENDENCY (13): Slight tendency for migration toward the east

GEOTECHNICALLY ADJUSTED SCOUR ELEVATIONS(14):

Bent 1: 712.6' GASE agrees with the scour elevation indicated on the Hydraulics Report

Bent 2: 713.3' left Geotechnical analysis of scourability verses material strength yields a geotechnically adjusted scour elevation 11.3' higher on the left side and 8.6' higher on the right side than the theoretical elevation shown on the Bridge and Hydraulic Design Report.
710.6' right

REPORTED BY: Joseph D. Milkovits Jr. DATE: 5/10/04

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.