

GEOTECHNICAL UNIT FIELD SCOUR REPORT

PROJECT: 8.2860401 ID: B-2583 COUNTY: Madison

DESCRIPTION(1): Bridge No. 328 on SR-1001 Over French Broad River

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

COUNTY BRIDGE NO. 328 BRIDGE LENGTH 187 m NO. BENTS IN: CHANNEL 11 FLOOD PLAIN 1

FOUNDATION TYPE: Probably footings.

EVIDENCE OF SCOUR(2):

ABUTMENTS OR END BENT SLOPES: Slight to moderate.

INTERIOR BENTS: Slight.

CHANNEL BED: Slight.

CHANNEL BANKS: Moderate to severe when flooded.

EXISTING SCOUR PROTECTION:

TYPE(3): None at bents.

EXTENT(4)

EFFECTIVENESS(5):

OBSTRUCTIONS(6) (DAMS,DEBRIS,ETC.): Ice dam constructed at Span 3 to divert ice around island downstream.

DESIGN INFORMATION

CHANNEL BED MATERIAL(7) (SAMPLE RESULTS ATTACHED): One to two meters of loose, sand and gravel deposited on rock.

CHANNEL BANK MATERIAL(8) (SAMPLE RESULTS ATTACHED): Silt, sand and gravel.

FOUNDATION BEARING MATERIAL(9): Rock.

CHANNEL BANK COVER(10) South Bank - woods and underbrush. North Bank - Embankment.

FLOOD PLAIN WIDTH(11): ± 400 meters.

FLOOD PLAIN COVER(12): South Bank - woods and underbrush. North Bank - Town of Marshall.

DESIGN INFORMATION CONT.

STREAM IS x DEGRADING AGGRADING (13)

OTHER OBSERVATIONS AND COMMENTS:

CHANNEL MIGRATION TENDENCY (14):

CRITICAL SCOUR ELEVATION (15): Scour elevation is top of rock.

Table with 2 columns of scour elevations: B1: 493.5 m, B7: 494.0 m, B2: 493.5 m, B8: 494.5 m, B3: 493.5 m, B9-A: 494 .5 m, B9-B: 493 .5m, B4: 494.0 m, B10: 493. 5 m, B5: 493.5 m, EB2: 494. 0 m, B6: 493.0 m

REPORTED BY: F. R. Glass, TEGS DATE: 01/23/01

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 CRITICAL 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 CRITICAL SCOUR ELEVATION. IF THE CRITICAL SCOUR ELEVATIONS DEPENDENT ON SCOUR COUNTER MEASURES, EXPLAIN. (RIP RAP ARMORING ON SLOPES, ETC.) THEORETICAL 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.