

GEOTECHNICAL UNIT FIELD SCOUR REPORT

PROJECT: 33312.1.1 ID: B-3866 COUNTY: Lenoir/Greene

DESCRIPTION(1): Bridge No.59 on NC 58 over Wheat Swamp Creek

INFORMATION ON EXISTING BRIDGE

- field inspection, microfilm (Reel: Pos: ), other:

BR. NO.: 59 BR. LENGTH: 42' NO. BENTS: 3 NO. BENTS IN: CHANNEL: 1 FLOODPLAIN: 2

FOUNDATION TYPE: Wooden pile

EVIDENCE OF SCOUR(2):

ABUTMENTS OR END BENT SLOPES: None noted

INTERIOR BENTS: None noted

CHANNEL BED: None noted

CHANNEL BANKS: None noted

EXISTING SCOUR PROTECTION:

TYPE(3): Concrete end walls and riprap

EXTENT(4): 15' from outside edge of bridge

EFFECTIVENESS(5): Appears satisfactory

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

DESIGN INFORMATION

CHANNEL BED MATERIAL(7): Fine to coarse sand

CHANNEL BANK MATERIAL(8): Fine to coarse sand (SS-2)

CHANNEL BANK COVER(9): Wooded

FLOOD PLAIN WIDTH(10): 300+/- feet

FLOOD PLAIN COVER(11): Wooded

DESIGN INFORMATION CONT.

STREAM IS: x DEGRADING AGGRADING (12)

OTHER OBSERVATIONS AND COMMENTS:

CHANNEL MIGRATION TENDENCY (13): North toward end bent 2

GEOTECHNICALLY ADJUSTED SCOUR ELEVATIONS(14):

Geotechnical analysis agrees with the Hydraulic Units's estimate of contraction scour potential to an elevation of 44+/- feet.

REPORTED BY: [Signature] DATE: 11-2-09

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.