

GEOTECHNICAL UNIT FIELD SCOUR REPORT

PROJECT: 33568.1.1 ID: B-4224 COUNTY: Pender/Duplin

DESCRIPTION(1): Bridge No. 63 Over Doctor's Creek on SR 1305 - SR 1155

INFORMATION ON EXISTING BRIDGE

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

BR. NO.: 63 BR. LENGTH: 121 NO. BENTS: 5 NO. BENTS IN: CHANNEL: 2 FLOODPLAIN: 3

FOUNDATION TYPE: Timber Piles

EVIDENCE OF SCOUR(2):

ABUTMENTS OR END BENT SLOPES: Sand bags at End Bent 1 end wall

INTERIOR BENTS: None noted

CHANNEL BED: Not visible

CHANNEL BANKS: None noted

EXISTING SCOUR PROTECTION:

TYPE(3): Timber end walls and wing walls with sand bags at End Bent 1

EXTENT(4): Extend to toe of fill approximately 15 feet

EFFECTIVENESS(5): Sand bags indicate previous scour problems at End Bent 1(EB1 walls appear new)

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

DESIGN INFORMATION

CHANNEL BED MATERIAL(7): Loose to medium dense tan silty sand (SS-11)

CHANNEL BANK MATERIAL(8): Medium dense gray sand (SS-7)

CHANNEL BANK COVER(9): Wooded

FLOOD PLAIN WIDTH(10): Approximately 2,000 feet

FLOOD PLAIN COVER(11): Grasses and scrub

DESIGN INFORMATION CONT.

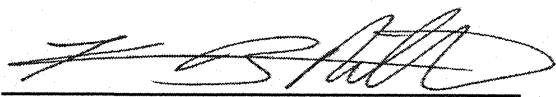
STREAM IS: Slightly DEGRADING AGGRADING (12)

OTHER OBSERVATIONS AND COMMENTS:

CHANNEL MIGRATION TENDENCY (13): Slight tendency towards End Bent 2

GEOTECHNICALLY ADJUSTED SCOUR ELEVATIONS(14):

Based on historical scour, the GASE for Bent 1 is elevation 27 to 30 feet which is approximately 23 to 25 feet higher than the 500 year theoretical scour. At Bent 2 the GASE is elevation 27 feet which is approximately 20 feet higher than the 500 year theoretical scour.

REPORTED BY:  DATE: June 24, 2005
 Kevin B. Miller

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.