Rev. 5/91

GEOTECHNICAL UNIT FIELD SCOUR REPORT

PROJECT: 8.2271401 ID: B-3887 COUNTY: Pender

DESCRIPTION (1): Bridge No. 116 on SR 1520 over Shaken Creek

INFORMATION ON EXISTING BRIDGES Information obtained from X field inspection
____ microfilm (Reel:____ Position:____)
____ other ____

COUNTY BRIDGE NO. 116 BRIDGE LENGTH 87' NO. BENTS 6 NO. BENTS IN CHANNEL 4 FLOOD PLAIN 2

FOUNDATION TYPE: Timber 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): Wooden end walls

EXTENT (4): 15' outside edge of bridge

EFFECTIVENESS (5): Appears satisfactory

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

DESIGN INFORMATION

CHANNEL BED MATERIAL (7) (SAMPLE RESULTS ATTACHED): Very loose to loose fine sand (SS-18)

CHANNEL BANK MATERIAL (8) (SAMPLE RESULTS ATTACHED): Very soft silty sandy clay (SS-2) and very loose fine sand (SS-10)

CHANNEL BANK COVER (9): Wooded

DESIGN INFORMATION CONT.

FLOOD PLAIN WIDTH (10): 300± feet

FLOOD PLAIN COVER (11): Wooded

STREAM IS X DEGRADING ____AGGRADING __EQUILIBRIUM (12)

OTHER OBSERVATIONS AND COMMENTS: ____

CHANNEL MIGRATION TENDENCY (13): Southwest toward End Bent 1

GEOTECHNICALLY ADJUSTED SCOUR ELEVATION (14): Geotechnical analysis agrees with the Hydraulic Unit's estimate of scour potential to an elevation of -9± feet at Bent 2. Calculations based on a correlation of scourability with the material strength of clay yields a scour depth of -2± feet at Bent 1. This scour elevation is 7 feet higher than the respective maximum theoretical scour elevation provided by the Hydraulics Unit.

REPORTED BY: Fred M Nibbs IV DATE: 10-16-03

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 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, AGGRADING, OR EQUILIBRIUM.
(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 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.