rev.5/91

GEOTECHNICAL UNIT FIELD SCOUR REPORT

PROJECT: 8.T311002 ID: R-2552AB COUNTY: Johnston

DESCRIPTION (1): Dual Structures on Clayton Bypass (-L-) over White Oak Creek (Austin Pond)

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

COUNTY BRIDGE NO. __, BRIDGE LENGTH __, NO. BENTS __, NO. BENTS IN: CHANNEL __, FLOOD PLAIN __

FOUNDATION TYPE: N/A

EVIDENCE OF SCOUR (2):

ABUTMENTS OR END BENT SLOPES: N/A

INTERIOR BENTS: N/A

CHANNEL BED: N/A

CHANNEL BANKS: Soil slumps on banks and fine to coarse sand deposited on top of banks.

EXISTING SCOUR PROTECTION:

TYPE (3): None

EXTENT (4): N/A

EFFECTIVENESS (5): N/A

OBSTRUCTIONS (6) (DAMS, DEBRIS, ETC.): Downed trees in channel, former dam downstream (washed out) could be rebuilt

DESIGN INFORMATION:

CHANNEL BED MATERIAL (7) (SAMPLE RESULTS ATTACHED): Alluvium: very loose to very dense, wet to saturated, silty, fine to coarse sand and gravel (A-2-4/A-3/A-1-a/A-1-b).

CHANNEL BANK MATERIAL (8) (SAMPLE RESULTS ATTACHED): Alluvium: soft to very stiff, moist to saturated, fine sandy silt and clay (A-4/A-6) and loose to very dense, moist to saturated, silty, fine to coarse sand and gravel (A-2-4/A-3/A-1-a/A-1-b).

FOUNDATION BEARING MATERIAL (9): Residual: clayey silt (A-4/A-5) and silty, fine to coarse sand (A-2-4/A-2-5), Soft and Hard Weathered Rock: Granite and Gneiss, and Hard Rock: Granite and Gneiss.

CHANNEL BANK COVER (10): Grass, brush and small trees

FLOOD PLAIN WIDTH (11): ~120m

FLOOD PLAIN COVER (12): Grass, brush , and small to large trees

DESIGN INFORMATION CONTINUED

STREAM IS _X_ **DEGRADING** _____ **AGGRADING (13)**

OTHER OBSERVATIONS AND COMMENTS: The current system is degrading. If White Oak Creek is confined behind a dam, as it was creating the former Austin Pond, conditions will become aggrading.

CHANNEL MIGRATION TENDENCY (14): The current migration tendency is to the West based on the current meander configuration of White Oak Creek.

CRITICAL SCOUR ELEVATIONS (15): To be determined by N.C.DOT

REPORTED BY: Michael Lear **DATE:** September 12, 2001

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 (RIPRAP, 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, RIPRAP, 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 ELEVATION IS DEPENDENT ON SCOUR COUNTER MEASURES, EXPLAIN. (RIPRAP ARMORING ON SLOPES, ETC.). THE CRITICAL SCOUR ELEVATION IS BASED ON THE ERODABILITY OF MATERIALS WITH CONSIDERATION FOR JOINTING, FOLIATION, BEDDING ORIENTATION AND FREQUENCY; CORE RECOVERY PERCENTAGE; PERCENT RQD; DIFFERENTIAL WEATHERING; SHEAR STRENGTH; OBSERVATIONS AT EXISTING STRUCTURES; OTHER TESTS DEEMED APPROPRIATE; AND OVERALL GEOLOGIC CONDITIONS AT THE SITE.