GEOTECHNICAL UNIT FIELD SCOUR REPORT

PROJECT: 8.2561301 ID: B-3875 COUNTY: Moore

DESCRIPTION(1): Bridge 78 over Old Ford Creek on SR 1456

INFORMATION ON EXISTING BRIDGES Information obtained from: X field inspection
____ microfilm(Reel: _____Pos: __)
___ other _____

COUNTY BRIDGE NO. 78 BRIDGE LENGTH 160 ft. NO. BENTS IN: CHANNEL 1 FLOOD PLAIN 2

FOUNDATION TYPE: _____

EVIDENCE OF SCOUR(2):

ABUTMENTS OR END BENT SLOPES: Scour is not apparent.

INTERIOR BENTS: Some scour is apparent on the up-channel end of existing Bent 3. Bent 2 in the channel shows moderate amounts of scour along the up-channel end, concrete reinforcement has been added.

CHANNEL BED: Channel bed shows exposed bedrock.

CHANNEL BANKS: Slight scour is apparent on the west side of the bank on the EB2 side

EXISTING SCOUR PROTECTION:

TYPE(3): Concrete reinforcement has been added to existing bent 2 in the channel. Wooden wing walls at end bents.

EXTENT(4): The concrete extends along the north side of the bent. Walls wrap around end of embankment slopes.

EFFECTIVENESS(5): The concrete is being scoured out of place. Wing walls OK.

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

DESIGN INFORMATION

CHANNEL BED MATERIAL(7) (SAMPLE RESULTS ATTACHED): Alluvium: Sand and Gravel (A-1-a).

Crystalline Rock: Meta-Volcanic.

CHANNEL BANK MATERIAL(8) (SAMPLE RESULTS ATTACHED): Alluvium: Silt (A-4)

FOUNDATION BEARING MATERIAL(9): Crystalline Rock: Moderately hard to hard Meta-Volcanic

CHANNEL BANK COVER(10): Grass, moss

FLOOD PLAIN WIDTH(11): 50 ft.

FLOOD PLAIN COVER(12): Grass, small bushes, and a few large trees.

DESIGN INFORMATION CONT.

STREAM IS X DEGRADING _____ AGGRADING (13)

OTHER OBSERVATIONS AND COMMENTS: None

CHANNEL MIGRATION TENDENCY (14): The channel is migrating toward the northwest as evidenced by the change in elevation of the residual material across the site. The channel lies at the base of a ridge of residual material to the northwest and presumably will continue to cut into the ridge as it migragtes northeastward.

REPORTED BY: _____ DATE: 2/14/2003
MACTEC Engineering & Consulting, Inc.

GEOTECHNICALLY ADJUSTED SCOUR ELEVATION (15):

	B1-A	B1-B	B2-A	B2-B	
100 year	352.5'	353.0'	354.0'	355.5'	
500 year	352.5'	353.0'	354.0'	355.5'	

*No EFA tubes were submitted to the Materials and Test Lab.

REPORTED BY: _____ DATE: 4/2/2003
NCDOT GEOTECHNICAL UNIT

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 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 ELEVEVATION 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.