

GEOTECHNICAL UNIT FIELD SCOUR REPORT

PROJECT: 8.2001201 ID: B-3914 COUNTY: Transylvania

DESCRIPTION(1): Bridge 116 over Gladly Fork Creek on SR 1105

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

COUNTY BRIDGE NO. 116 BRIDGE LENGTH 40' NO. BENTS IN: CHANNEL 0 FLOOD PLAIN 2

FOUNDATION TYPE:

EVIDENCE OF SCOUR(2):

ABUTMENTS OR END BENT SLOPES: Minor accretion on upstream side

INTERIOR BENTS: N/A

CHANNEL BED: Some accretion, 2/3 of channel bed is bedrock

CHANNEL BANKS: No sloughing, stable, some accretion

EXISTING SCOUR PROTECTION:

TYPE(3): RR-Ties

EXTENT(4): Used as abutment wall on end bents

EFFECTIVENESS(5): No scour at end bents

OBSTRUCTIONS(6) (DAMS,DEBRIS,ETC.): No obstructions near proposed or existing bridge

DESIGN INFORMATION

CHANNEL BED MATERIAL(7) (SAMPLE RESULTS ATTACHED): Some gravel with fine sand and silt

2/3 of channel bed is bedrock

CHANNEL BANK MATERIAL(8) (SAMPLE RESULTS ATTACHED): Fine sand and silt with organic material

FOUNDATION BEARING MATERIAL(9): Saprolite to hard rock

CHANNEL BANK COVER(10): Heavy vegetation (grass, bushes & trees)

FLOOD PLAIN WIDTH(11): No developed floodplain on southside or northeast, extensive on NW 100' plus

FLOOD PLAIN COVER(12): Trees, grass

DESIGN INFORMATION CONT.

STREAM IS DEGRADING X AGGRADING (13)

OTHER OBSERVATIONS AND COMMENTS: Due to heavy precipitation, stream was carrying large sediment load obscuring channel bed, stream banks were very stable

CHANNEL MIGRATION TENDENCY (14): Very slowly in southwest direction

REPORTED BY: [Signature] for Martin Johnson DATE: 5/7/2003
FLORENCE & HUTCHESON, INC.

GEOTECHNICALLY ADJUSTED SCOUR ELEVATION (15):

REPORTED BY: DATE:

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 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.