# GEOTECHNICAL UNIT FIELD SCOUR REPORT

PROJECT: *33608.1.1* TIP NO.: *B-4266* COUNTY: *RUTHERFORD*

DESCRIPTION(1): *BRIDGE NO. 110 ON SR 1991 OVER HILL'S CREEK.*

♦ ***INFORMATION ON EXISTING BRIDGES*** Information obtained from ☒ Field Inspection
☐ Microfilm (Reel: Position: )
☐ Other

COUNTY BRIDGE NO. *BR-110* BRIDGE LENGTH *APP. 40.0'* NO. BENTS *3* NO. BENTS IN: CHANNEL *1* FLOODPLAIN *3*

FOUNDATION TYPE: *PILES ON END BENTS, TIMBER PILES ON INTERIOR BENTS.*

*EVIDENCE OF SCOUR(2):*

ABUTMENTS OR END BENT SLOPES: *NONE*

INTERIOR BENTS: *NONE*

CHANNEL BED: *NONE*

CHANNEL BANKS: *EROSION OF ON UPSTREAM SIDE OF BRIDGE, BOTH BANKS DOWNSTREAM. APP. 4' DIA. TREE HAS BEEN UNDERCUT DOWNSTREAM OF EXISTING BRIDGE.*

♦ ***EXISTING SCOUR PROTECTION:***

TYPE(3): *RIP-RAP*

EXTENT(4): *ON THE BANKS UP AND DOWNSTREAM OF THE EXISTING BRIDGE BETWEEN EXISTING EB1 AND B1.*

EFFECTIVENESS(5): *MODERATE*

OBSTRUCTIONS(6) (DAMS, DEBRIS, ETC.): *NONE*

♦ ***DESIGN INFORMATION***

CHANNEL BED MATERIAL(7) (Sample Results Attached): *BRN., LOOSE, SAT COARSE SILTY SAND AS SS-4.*

CHANNEL BANK MATERIAL(8) (Sample Results Attached): *LOOSE TO MED. DENSE SAND AS SS-1 AND SS-5.*

CHANNEL BANK COVER(9): *GRASS AND TREES RANGING IN DIA. FROM ONE TO FOUR FEET.*

FLOOD PLAIN WIDTH(10): *APP. 300'*

FLOOD PLAIN COVER(11): *GRASS AND TREES RANGING IN DIA. FROM ONE TO FOUR FEET.*

STREAM IS: ☐ DEGRADING ☒ AGGRADING (12)

OTHER OBSERVATIONS AND COMMENTS:

♦ ***DESIGN INFORMATION CONT.***

CHANNEL MIGRATION TENDENCY(14): *SLIGHT TO MODERATE TENDENCY FOR EASTWARD MIGRATION.*

GEOTECHNICAL ADJUSTED SCOUR ELEVATIONS (15): *NO SCOUR ANTICIPATED ON THE END BENTS ASSUMING ADEQUATE RIPRAP IS USED. OUR GEOTECHNICALLY ADJUSTED SCOUR ELEVATIONS ARE AS FOLLOWS:*

*BENT ONE – 100 YR. = 743.50', OVERTOPPING SCOUR = 745.50'*

*B2-A – 100 YR. = 745.50', OVERTOPPING SCOUR = 744.50'*

*B2-B – 100 YR. = 745.50', OVERTOPPING SCOUR = 743.50'*

*ALL ELEVATIONS EXCEPT FOR B2-A MATCH THE PREDICTIONS MADE BY THE HYDRAULICS UNIT.*

*THE 100 YR. ELEVATION AT B2-A WAS REVISED UPWARD BY ONE FOOT DUE TO THE PRESENCE OF WEATHERED ROCK.*

REPORTED BY: *JP ROGERS* DATE: *01/10/05*

## 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 GEOTECHNICAL 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 GEOTECHNICAL ADJUSTED SCOUR ELEVATION. IF THE GEOTECHNICAL ADJUSTED SCOUR ELEVATION IS DEPENDENT ON SCOUR COUNTER MEASURES, EXPLAIN. (RIPRAP ARMORING ON SLOPES, ETC.) THE GEOTECHNICAL ADJUSTED 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.

rev. 10-94