GEOTECHNICAL UNIT FIELD SCOUR REPORT

PROJECT: **8.2360601** ID: **B-4515** COUNTY: **Franklin**

DESCRIPTION(1): Bridge No. 40 on -L- (SR 1235) over Bear Swamp Creek at -L- Sta.15+37

INFORMATION ON EXISTING BRIDGE

Information obtained from: ☑ field inspection ☐ microfilm (Reel: ____ Pos: ____) ☑ other: Hydro Report

BR. NO.: 40 BR. LENGTH: 41' NO. BENTS: 3 NO. BENTS IN: CHANNEL: 1 FLOODPLAIN: 2

FOUNDATION TYPE: Timber piles

EVIDENCE OF SCOUR(2):

ABUTMENTS OR END BENT SLOPES: None visible, base of abutment is submerged.

INTERIOR BENTS: None visible, submerged.

CHANNEL BED: None visible, submerged.

CHANNEL BANKS: No evidence of scour.

EXISTING SCOUR PROTECTION:

TYPE(3): Shoring and rip-rap.

EXTENT(4): Sheet pile shoring, approx.15 feet horizontal length, has been driven into the upstream side of the western embankment as an extended wingwall (see site photo). Rip-rap has been placed against the shoring, extending 50' upstream, and 75' westward along the base of the embankment.

EFFECTIVENESS(5): Appears very effective, although it has not been in place very long.

OBSTRUCTIONS(6) (DAMS,DEBRIS,ETC.): None directly beneath existing bridge.See "Other Observations".

DESIGN INFORMATION

CHANNEL BED MATERIAL(8): Alluvial, brown, very loose, silty coarse sand with trace of organic material (Sample No. SS-12)

CHANNEL BANK MATERIAL(8): Alluvial,gray-brown, medium stiff, sandy silt with trace organic material (Sample No. SS-2)

CHANNEL BANK COVER(9): Grass and brush, rip-rap on bank northwest of bridge.

FLOOD PLAIN WIDTH(10): 200 ft.+/-

FLOOD PLAIN COVER(11): Trees, grass, and brush

DESIGN INFORMATION CONT.

STREAM IS: ____ DEGRADING Slight AGGRADING (12)

OTHER OBSERVATIONS AND COMMENTS: Several old timber piles protrude from abutment slope beneath east end of bridge. Old concrete bridge abutment and approach slab located north of east end of bridge.

CHANNEL MIGRATION TENDENCY (13): None, channel confined by upstream features (see above).

GEOTECHNICALLY ADJUSTED SCOUR ELEVATIONS(14):

	Elevation (feet)
Bent 1	199.0
Bent 2	199.3

The Geotechnically Adjusted Scour Elevation (GASE) is unchanged from the Hydraulic Units's estimates indicated on the Bridge Survey & Hydraulic Design Report dated 9-30-02.

REPORTED BY: Tom P. Mumford (field observations by J. L. Love) DATE: 10-27-03

INSTRUCTIONS

(1) GIVE THE DESCRIPTION OF THE SPECIFIC SITE, INCLUDING 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 (RIR 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 BASED ON OBSERVATION AND/OR SAMPLES.
(8) DESCRIBE THE CHANNEL BANK MATERIAL BASED ON OBSERVATION AND/OR SAMPLES.
(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 OR AGGRADING.
(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 THE RELATIONSHIP BETWEEN THE HYDRAULICS THEORETICAL SCOUR AND THE GEOTECHNICALLY ADJUSTED SCOUR ELEVATION. IF THE GEOTECHNICALLY ADJUSTED SCOUR ELEVATION IS DEPENDENT ON SCOUR COUNTER MEASURES, EXPLAIN. (RIPRAP ARMORING ON SLOPES, ETC.) 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.