

PROJECT: 33234.1.1 ID: B-3694 COUNTY: Rockingham

DESCRIPTION(1): Bridge No. 55 on -L- (SR 1138) over Belews Creek

INFORMATION ON EXISTING BRIDGE

Information obtained from: field inspection
 microfilm (Reel: _____ Pos: _____)
 other: Hydro Report

BR. NO.: 55 BR. LENGTH: 150.5 ft NO. BENTS: 6 NO. BENTS IN: CHANNEL: 2 FLOODPLAIN: 4

FOUNDATION TYPE: Timber Piles (additional H piles have been added for support at Bents 1 and 2)

EVIDENCE OF SCOUR(2):

ABUTMENTS OR END BENT SLOPES: None

INTERIOR BENTS: Minor scour around Bent 3 piles. Bent 2 piles have been encased in concrete.

CHANNEL BED: None directly beneath bridge. Channel is scoured to outcrop upstream and downstream.

CHANNEL BANKS: Some erosion and slope failures along stream banks.

EXISTING SCOUR PROTECTION:

TYPE(3): Rip-rap has been placed at Interior bents 1 and 4

EXTENT(4): Rip-rap (1' to 3' in diameter) has been placed in a 25' x 25' area around bents

EFFECTIVENESS(5): Fair. Some rip-rap near creek channel has been washed downstream.

OBSTRUCTIONS(6) (DAMS,DEBRIS,ETC.): Old concrete bridge abutments are located 150' upstream.

DESIGN INFORMATION

CHANNEL BED MATERIAL(7) (SAMPLE RESULTS ATTACHED): Boulders, cobbles, gravel, and coarse sand (SS-15)

CHANNEL BANK MATERIAL(8) (SAMPLE RESULTS ATTACHED): Soft, sandy silt (SS-12) and loose to medium dense, silty sand (SS-6).

CHANNEL BANK COVER(10): Trees, shrubs, and brush

FLOOD PLAIN WIDTH(11): +/- 150 feet at bridge site. Joins Dan River floodplain 100' downstream.

FLOOD PLAIN COVER(12): Trees, shrubs, grass, and brush

DESIGN INFORMATION CONT.

STREAM IS: X DEGRADING AGGRADING (13)

OTHER OBSERVATIONS AND COMMENTS: The Belews Lake Dam is located approximately 2000 feet southeast of the site. The dam spillway flows into Belews Creek directly upstream.

Stream flow increases dramatically when water is released into the spillway.

CHANNEL MIGRATION TENDENCY (14): None

GEOTECHNICALLY ADJUSTED SCOUR ELEVATIONS(15):

	Elevation (feet)
Bent 1	561
Bent 2	563

The GASE scour elevations agree with the Hydraulic Unit's predicted scour elevations.

REPORTED BY: Therese P. Monfield DATE: 5/3/04
(field observations by Jaime Love)

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,
- (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 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.