

GEOTECHNICAL UNIT FIELD SCOUR REPORT

PROJECT: 8.2312501 ID: B-3670 COUNTY: Johnston

DESCRIPTION (1): Bridge No. 448 on SR 1229 over Bernal Creek

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

COUNTY BRIDGE NO. 448 BRIDGE LENGTH 31' NO. BENTS 3 NO. BENTS IN CHANNEL 1 FLOOD PLAIN 2

FOUNDATION TYPE: Timber piles

EVIDENCE OF SCOUR (2):

ABUTMENTS OR END BENT SLOPES: None observed

INTERIOR BENTS: None observed

CHANNEL BED: None observed

CHANNEL BANKS: None observed

EXISTING SCOUR PROTECTION:

TYPE (3): Timber bulkheads with wing walls

EXTENT (4): To approximate toe of fill

EFFECTIVENESS (5): Appears satisfactory

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

DESIGN INFORMATION

CHANNEL BED MATERIAL (7) (SAMPLE RESULTS ATTACHED): Loose fine to coarse sand (SS-1)

CHANNEL BANK MATERIAL (8) (SAMPLE RESULTS ATTACHED): Soft sandy silt

FOUNDATION BEARING MATERIAL (9): Hard residual silty sandy clay (SS-3)

CHANNEL BANK COVER (10): Trees and brush

DESIGN INFORMATION CONT.

FLOOD PLAIN WIDTH (11): 500± feet

FLOOD PLAIN COVER (12): Primarily woodland

STREAM IS [X] DEGRADING [] AGGRADING [] EQUILIBRIUM (13)

OTHER OBSERVATIONS AND COMMENTS: None

CHANNEL MIGRATION TENDENCY (14): Unlikely

GEOTECHNICALLY ADJUSTED SCOUR ELEVATION (15): The Geotechnically adjusted scour elevation should concur with the 100 yr. Theoretical scour elevation of 120± feet. This elevation closely corresponds to the base of alluvial sediments.

REPORTED BY: EA Wint DATE: 4-10-03

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, AGGRADING, OR EQUILIBRIUM.
(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.