

GEOTECHNICAL UNIT FIELD SCOUR REPORT

PROJECT: 32930.1.1 ID: B-3205 COUNTY: MADISON

DESCRIPTION(1): BRIDGE NUMBER 30 ON NC-209 OVER SPRING CREEK

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

COUNTY BRIDGE NO. 30 BRIDGE LENGTH 85' NO. BENTS IN: CHANNEL 1 FLOOD PLAIN 2

FOUNDATION TYPE: STONE FOOTINGS

EVIDENCE OF SCOUR(2):

ABUTMENTS OR END BENT SLOPES: NORTH EAST WING REPAIR INDICATES PAST DAMAGE

INTERIOR BENTS: NOT MUCH

CHANNEL BED: NEW SOUR HOLE NEXT TO INTERIOR BENT, UPSTREAM END, NORTH SIDE.

BOULDER BED LOAD RESISTANT TO MOST SCOUR, BOULDERS REARRANGED BY FLOOD EVENTS.

CHANNEL BANKS: MOST BANKS PROTECTED BY BOULDER FILL - SOUTH BANK UPSTREAM IS NOT.

EXISTING SCOUR PROTECTION:

TYPE(3): ABUTMENTS AND WINGS FROM UNDERWATER UP TO ROADWAY

EXTENT(4): THEY ARE SHORT - LESS THAN 10 FEET HIGH.

EFFECTIVENESS(5): PRETTY GOOD

OBSTRUCTIONS(6) (DAMS, DEBRIS, ETC.): FORMER SAND AND BOULDER DEPOSIT UNDER BRIDGE

DESIGN INFORMATION REMOVED BY HURRICANE FLOODING IN THE SUMMER OF 2004.

CHANNEL BED MATERIAL(7) (SAMPLE RESULTS ATTACHED): COBBLES AND BOULDERS

CHANNEL BANK MATERIAL(8) (SAMPLE RESULTS ATTACHED): MOSTLY BOULDERY FILL.

THIN ALLUVIUM ON SOUTH BANK UPSTREAM IS COARSE SAND, COBBLES AND BOULDERS

FOUNDATION BEARING MATERIAL(9): HARD GNEISS, SOME SLIGHT TO MOD. WEATHERING

CHANNEL BANK COVER(10): WEEDS AND TREES

FLOOD PLAIN WIDTH(11): 150 - 200 FEET

FLOOD PLAIN COVER(12): GRASS, GRAVEL AND ASPHALT PAVEMENT

updated 10/5/95

DESIGN INFORMATION CONT.

STREAM IS XX DEGRADING AGGRADING (13)

OTHER OBSERVATIONS AND COMMENTS: CREEK IS ACTIVELY DOWN CUTTING VALLEY AND

ALLUVIAL SOILS ARE GENERALLY SHALLOW W/ COBBLES AND BOULDERS OVER BEDROCK.

CHANNEL MIGRATION TENDENCY (14): NORTH

GEOTECHNICALLY ADJUSTED SCOUR ELEVATION (15):

BEDROCK ACROSS SITE NEAR ELEVATION 2398 - 2400 FEET WILL RESTRICT SCOUR

TO THAT ELEVATION

REPORTED BY: PQ LOCKAMY DATE: 5/25/2005

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.