

PRELIMINARY DESIGN AND ASSESSMENT STREAM CROSSING AND ENCROACHMENTS

COUNTY Brunswick PROJECT# B-4440
 STREAM Mulberry Swamp ROUTE SR 1349
 ASSESSMENT PREPARED BY CAF DATE 2/28/14

HYDROLOGIC EVALUATION

NEAREST GAUGING STATION ON THIS STREAM _____ (NONE) _____

ARE FLOOD STUDIES AVAILABLE ON THIS STREAM: YES

FLOOD DATA:

Q10 470 cfs EST. BKWTR. _____ FT. Q25 700 cfs EST. BKWTR. _____ FT.

Q50 _____ cfs EST. BKWTR. _____ FT. Q100 1100 cfs EST. BKWTR. _____ FT.

Q500 1700 cfs OR OVERTOPPING CFS EST. BKWTR. _____ FT.

DRAINAGE AREA 4.35 SQ. MI. METHOD USED TO COMPUTE Q USGS Rural Coastal Plain report 01-4207

PROPERTY RELATED EVALUATIONS

DAMAGE POTENTIAL: LOW MODERATE _____ HIGH _____

COULD THIS BE SIGNIFICANTLY INCREASED BY PROPOSED

ENCROACHMENT: YES _____ NO

EXPLANATION: _____

LIST BUILDINGS IN FLOOD PLAIN NONE LOCATION NA

FLOOR ELEVATION: NA

UPSTREAM LAND USE: RURAL W/ RESIDENTIAL ALONG ROADWAY & SOME COMMERCIAL DEVELOPMENT

ANTICIPATE ANY CHANGE? NO

ANY FLOOD ZONE? (FIA STUDIES, ETC.) YES NO _____

TYPE OF STUDY REDELINEATED DETAILED STUDY

BASE FLOOD ELEVATION 10.4' (100yr.)

REGULATORY FLOODWAY WIDTH 75' (AS NOTED IN FIA STUDIES)

COMMENTS: _____

TRAFFIC RELATED EVALUATIONS

PRESENT YEAR 2010 TRAFFIC COUNT 5,300 VPD %TRUCKS 4

DESIGN YEAR 2035 TRAFFIC COUNT 10,600 VPD % TRUCKS 4

EMERGENCY ROUTE - SCHOOL BUS ROUTE - MAIL ROUTE Y

DETOUR AVAILABLE? YES LENGTH OF DETOUR 2.6 MILES

DOES THE LEVEL OF TRAFFIC SERVICE OF AN EXISTING CROSSING VARY GREATLY FROM STANDARD DESIGN LEVELS? NO

IS THE TRAFFIC VOLUME, TYPE, USAGE SUCH TO WARRANT CONSIDERATION FOR VARIANCE FROM STANDARDS OR EXISTING LEVEL OF INTERRUPTION? NO

COMMENTS: _____

HIGHWAY AND BRIDGE (CULVERT) RELATED EVALUATIONS

NOTE ANY OUTSIDE FEATURES WHICH MIGHT AFFECT STAGE, DISCHARGE OR FREQUENCY.

LEVEES NA AGGRADATION/DEGRADATION NA RESERVOIRS NA

DIVERSIONS NA DRAINAGE DISTRICT NA NAVIGATION NA

BACKWATER FROM ANOTHER SOURCE SHALLOTTE RIVER

EXPLANATION: _____

ROADWAY OVERFLOW SECTION (NONE Y) LENGTH 180' ELEVATION 10.4'

EMBANKMENT: SOIL TYPE SAND TYPE SLOPE COVER GRASS

COMMENTS: DITCH EROSION ON DS EOB DUE TO WATERLINE BREAK.

ENVIRONMENTAL CONSIDERATIONS

LIST SPECIAL CONDITIONS OR CONSIDERATIONS WHICH AFFECT HYDRAULIC DESIGN (NONE _____)

- WETLANDS IN QUADRANTS I, II, & III

- STORMWATER POND -L- STA. 16+00 LT.

MISCELLANEOUS COMMENTS

IS THERE UNUSUAL SCOUR POTENTIAL? YES _____ NO X PROTECTION NEEDED NO

ARE BANKS STABLE? YES PROTECTION NEEDED AT DITCH OUTLETS

DOES STREAM CARRY APPRECIABLE AMOUNT OF LARGE DEBRIS? NO

COMMENTS: _____

ALTERNATIVES

RECOMMENDED DESIGN 85' BRIDGE

DETOUR STRUCTURE 70' BRIDGE LOCATED DOWN STREAM

LOW ROAD GRADE MATCH EXISTING DETOUR GRADE MATCH EXISTING

BRIDGE WATERWAY OPENING ≥ APPROX. 370 SQ. FT. CULVERT OPENING NA

WERE OTHER HYDRAULIC ALTERNATIVES CONSIDERED? YES _____ NO X

DISCUSSION: _____

THIS SITE ASSESSMENT INDICATES THE DESIGN SHOULD FOLLOW:

(1) X NORMAL PROCESS

(2) _____ NORMAL PROCESS WITH SPECIAL SPECIFIC CONSIDERATION FOR

(3) _____ SPECIFIC DESIGN PROCESS WITH APPROPRIATE RISK/ECONOMIC EVALUATION

ADDRESSING: _____