



NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BRIDGE MANAGEMENT UNIT

ATTENTION

BRIDGE INSPECTION REPORT

INSPECTION TYPE: Routine Inspection

COUNTY MECKLENBURG BRIDGE NUMBER 590475 INSPECTION CYCLE 2 YRS
ROUTE SR3815 ACROSS LITTLE SUGAR CREEK M.P. 0

LOCATION 0.25 MI.S.JCT.SR3816

SUPERSTRUCTURE SINGLE 29'6 X12'9 RC ARCH CULV.W/RAILS,78'8 ALONG CTRLN.CULV

SUBSTRUCTURE _____

SPANS

| | | | | | |
|---------------------|----------------------|----------------------|--------------------|----------------------|----------------------|
| LONGITUDE | <u>80° 50' 23.4"</u> | <u>80° 50' 12.8"</u> | LATITUDE | <u>35° 12' 33.0"</u> | <u>35° 12' 20.0"</u> |
| PRESENT CONDITION | <u>FAIR</u> | | INVENTORY RATING | _____ | |
| INSPECTION DATE | <u>09/11/2008</u> | | OPERATING RATING | _____ | |
| PRESENT POSTING | <u>Not Posted</u> | | PROPOSED POSTING | _____ | |
| COMPUTER UPDATE | _____ | | ANALYSIS DATE | _____ | |
| POSTING LETTER DATE | _____ | | SUFFICIENCY RATING | _____ | |
| OTHER SIGNS PRESENT | <u>NONE</u> | | | | |



LOOKING NORTH

| SIGN NOTICE ISSUED FOR | | NUMBERED REQUIRED |
|---------------------------|-----------------|----------------------|
| <u>No</u> | WEIGHT LIMIT | _____ |
| <u>No</u> | DELINEATORS | _____ |
| <u>No</u> | NARROW BRIDGE | _____ |
| <u>No</u> | ONE LANE BRIDGE | _____ |
| <u>No</u> | LOW CLEARANCE | _____ |

NATIONAL BRIDGE INVENTORY----- STRUCTURE INVENTORY AND APPRAISAL

Run Date: 02/19/2009

| IDENTIFICATION | | | | CLASSIFICATION | | | |
|--|------------------------|-----------------|--|---|-----------------------|------------|--|
| (1) STATE NAME -NORTH CAROLINA | BRIDGE | 590475 | | SUFFICIENCY RATING = | | 60.8 | |
| (8) STRUCTURE NUMBER(FEDERAL) | | 000000001190475 | | STATUS = | Not Deficient | | |
| INVENTORY ROUTE (ON/UNDER) - ON | | 131038150 | | | | | |
| (2) STATE HIGHWAY DEPARTMENT DISTRICT | | 10 | | | | | |
| (3) COUNTY CODE 119 | (4) PLACE CODE | 12000 | | (112)NBIS BRIDGE SYSTEM - | | YES | |
| (6) FEATURE INTERSECTED - LITTLE SUGAR CREEK | | | | (104)HIGHWAY SYSTEM NON NHS Route | | 0 | |
| (7) FACILITY CARRIED SR3815 | | | | (26) FUNCTIONAL CLASS - Minor Arterial | | 16 | |
| (9) LOCATION 0.25 MI.S.JCT.SR3816 | | | | (100)STRAHNET HIGHWAY - Not a STRAHNET Route | | 0 | |
| (11)MILEPOINT | | 0 | | (101)PARALLEL STRUCTURE - No Parallel Structure | | N | |
| (16)LAT 35° 12' 20.0" | (17)LONG 80° 50' 12.8" | | | (102)DIRECTION OF TRAFFIC - 2-way Traffic | | 2 | |
| (98)BORDER BRIDGE STATE CODE | PCT SHARE | | | (103)TEMPORARY STRUCTURE - Not Temporary | | | |
| (99)BORDER BRIDGE STRUCTURE NO | | | | (110)DESIGNATED NATIONAL NETWORK - Not Part of | | 0 | |
| | | | | (20) TOLL On Free Road | | 3 | |
| | | | | (31) MAINTAIN - State Highway Agency | | 01 | |
| | | | | (22) OWNER - State Highway Agency | | 01 | |
| | | | | (37) HISTORICAL SIGNIFICANCE - Not Eligible | | 5 | |
| STRUCTURE TYPE AND MATERIAL | | | | CONDITION | | | |
| (43) STRUCTURE TYPE MAIN: Concrete | | | | (58) DECK | | N | |
| TYPE - Culverts (includes frame culverts) | CODE | 119 | | (59) SUPERSTRUCTURE | | N | |
| (44) STRUCTURE TYPE APPR : | | | | (60) SUBSTRUCTURE | | N | |
| TYPE - | CODE | | | (61) CHANNEL & CHANNEL PROTECTION | | 7 | |
| (45) NUMBER OF SPANS IN MAIN UNIT | | 1 | | (62) CULVERTS | | 5 | |
| (46) NUMBER OF APPROACH SPANS | | | | | | | |
| (107)DECK STRUCTURE TYPE - Concrete cast-in-place | CODE | 1 | | LOAD RATING AND POSTING | | | |
| (108)WEARING SURFACE / PROTECTIVE SYSTEM : | | | | (31) DESIGN LOAD H 15 | | 2 | |
| (A) TYPE OF WEARING SURFACE - Bituminous | CODE | 6 | | (64) OPERATING RATING - HS-19 | | 535 | |
| (B) TYPE OF MEMBRANE - None | CODE | 0 | | (66) INVENTORY RATING - HS-15 | | 527 | |
| (C) TYPE OF DECK PROTECTION - Unknown | CODE | 8 | | (70) BRIDGE POSTING - No Posting Required | | 5 | |
| | | | | (41) STRUCTURE OPEN, POSTED ,OR CLOSED | | A | |
| | | | | DESCRIPTION - Open, No Restriction | | | |
| AGE AND SERVICE | | | | APPRAISAL | | | |
| (27) YEAR BUILT | | 1945 | | (67) STRUCTURAL EVALUATION | | 5 | |
| (106)YEAR RECONSTRUCTED | | 1963 | | (68) DECK GEOMETRY | | N | |
| (42) TYPE OF SERVICE : ON - Highway - Pedestrian | | | | (69) UNDERCLEARANCES,VERTI & HORIZ | | N | |
| UNDER - Waterway | CODE | 55 | | (71) WATERWAY ADEQUACY | | 7 | |
| (28) LANES: ON STRUCTURE 4 UNDER STRUCTURE | | | | (72) APPROACH ROADWAY ALIGNMENT | | 8 | |
| (29) AVERAGE DAILY TRAFFIC | | 22000 | | (36) TRAFFIC SAFETY FEATURES | | 0000 | |
| (30) YEAR OF ADT 2006 | (109) TRUCK ADT PCT | 6 % | | (11)SCOUR CRITICAL BRIDGES | | 8 | |
| (19) BYPASS OR DETOUR LENGTH | | 1 MI | | | | | |
| GEOMETRIC DATA | | | | PROPOSED IMPROVEMENTS | | | |
| (48) LENGTH OF MAXIMUM SPAN | | 30 FT | | (75) TYPE OF WORK - | CODE | | |
| (49) STRUCTURE LENGTH | | 37 FT | | (76) LENGTH OF STRUCTURE IMPROVEMENT | | 0 FT | |
| (50)CURB OR SIDEWALK: LEFT 5.0 FT RIGHT | | 6.7 FT | | (94) BRIDGE IMPROVEMENT COST | | | |
| (51) BRIDGE ROADWAY WIDTH CURB TO CURB | | 49.7 FT | | (95) ROADWAY IMPROVEMENT COST | | | |
| (52) DECK WIDTH OUT TO OUT | | 63.3 FT | | (96) TOTAL PROJECT COST | | | |
| (32) APPROACH ROADWAY WIDTH (W/SHOULDERS) | | 40.0 FT | | (97) YEAR OF IMPROVEMENT COST ESTIMATE | | 200 | |
| (33) BRIDGE MEDIAN - No Median | CODE | 0 | | (114)FUTURE ADT 44000 | (115) YEAR FUTURE ADT | 2025 | |
| (34) SKEW 37° (35) STRUCTURE FLARED | | NO | | | | | |
| (10) INVENTORY ROUTE MIN VERT CLEAR | | 99 FT 99 IN | | INSPECTIONS | | | |
| (47) INVENTORY ROUTE TOTAL HORIZ CLEAR | | 49.7 FT | | (90) INSPECTION DATE | | 09/11/2008 | |
| (53) MIN VERT CLEAR OVER BRIDGE RDWY | | 99 FT 99 IN | | (92) CRITICAL FEATURE INSPECTION : | | | |
| (54) MIN VERT UNDERCLEAR REF Not a Highway or Railroad | | | | A) FRACTURE CRIT DETAIL - NO | | A) | |
| (55) MIN LAT UNDERCLEAR RT REF Not a Highway or Railroad | | 99.9 FT | | B) UNDERWATER INSP - NO | | B) | |
| (56) MIN LAT UNDERCLEAR LT REF - | | 0.0 FT | | C) OTHER SPECIAL INSP NO | | C) | |
| NAVIGATION DATA | | | | | | | |
| (38) NAVIGATION CONTROL - No Navigational Control | CODE | 0 | | | | | |
| (111)PIER PROTECTION - Not Applicable | CODE | | | | | | |
| (39) NAVIGATION VERTICAL CLEARANCE | | 0 | | | | | |
| (116)VERT - LIFT BRIDGE NAV MIN VERT CLEAR | | | | | | | |
| (40) NAVIGATION HORIZONTAL CLEARANCE | | 0 | | | | | |

BRIDGE INSPECTION RECORD AND SUMMARY (R. C. BOX CULVERTS)

INSPECTION TYPE Routine Inspection
BRIDGE NO. 590475

ROUTE SR3815

INSPECTION DATE 09/11/2008
OVER

ROUTE ORIENTATION N - S
LITTLE SUGAR CREEK

EVALUATION CODE: 0-2 CRITICAL, 3 & 4 POOR, 5 & 6 FAIR, 7-9 GOOD

| | | |
|-------------------------------------|---------------------------------------|---------|
| 1. Top Slab | | 5 |
| 2. Bottom Slab | | |
| 3. Ext. & Int. Walls | | 6 |
| 4. Wingwalls - Retaining Walls | | 7 |
| 5. Headwalls, Toewalls, Flumes | | 7 |
| 6. Structure Alignment - Settlement | | 8 |
| 7. Drainage Systems (On Structure) | | 8 |
| 8. Channel & Channel Protection | a. Waterway | 7 |
| | b. Alignment | 8 |
| | c. Scour | 7 |
| | d. Slope Prot. (Rip-Rap, Dikes, etc.) | |
| 9. Approach Roadway Condition | | 6 |
| 10. Estimated Remaining Life | | 12 |
| 11. Channel & Channel Protection | Item 61 | 7 |
| 12. Culvert & Retaining Walls | Item 62 | 5 |
| 13. Waterway Adequacy | Item 71 | 7 |
| 14. Approach Roadway | Item 72 | 8 |
| 15. Field Scour Evaluation | | G |
| 16. Presently Posted | | NO |
| 17. Regulatory Sign Notice Issued | | NO |
| 18. Prompt Action Notice Issued | | NO |
| 19. Total Field Inspection Time | | 3 |
| 20. Inspected By | | RS Kuhn |

| | | | |
|---|--------------|--|--|
| Bridge I&A Form 1(82)H State of North Carolina Dept. of Transportation Division of Highways | | FIELD INSPECTION REPORT <u>Bridge Inspeccion & Analysis</u> | |
| Team Leader RG KIKER | | | |
| Assisted By SWA | | | |
| Item No. | Grade | | |
| 8c | 7 | SCOUR AT THE S.E CORNER REPAIRED | |
| 9 | 6 | CRACKS IN BOTH SIDEWALKS UP TO 1/8" WIDE AND SETTLEMENT UP TO 2" WASH AT THE S.E CORNER REPAIRED | |
| 1 | 5 | 3 HOLES APPROX. 15 FT. FROM EACH END OF THE CULVERT UP TO 30" IN DIA. WITH REBAR EXPOSED. APPEARS HOLES ARE FOR DRAINAGE | |
| 3 | 6 | VERTICAL HL CRACKS IN THE WALLS WITH EFFLO | |

BRIDGE INSPECTOR'S RECOMMENDATION FOR MAINTENANCE REPAIRS

Bridge: 590475

County MECKLENBURG

Date: 09/11/2008

These Repairs Should Be Made Within Twelve Months From Date Of This Inspection

| MMS Code | Description of Function | Unit | Quantity | Remarks | Est. Cost |
|----------|--|-----------|----------|---|-----------|
| 551 | Maintenance of reinforced box culverts | Man-Hours | 60 | HOLES IN TOP OF CULVERT, BOTH SIDEWALKS CRACKED AND SETTLED | |

Key



Priority Maintenance Item



Critical Finding Item



Priority Maintenance Level Not Determined



CRACKS IN BOTH SIDEWALKS UP TO 1/8" WIDE AND SETTLEMENT UP TO 2"



3 HOLES IN APPROX. 15 FT. FROM EACH END OF THE CULVERT UP TO 30" IN DIA. WITH REBAR EXPOSED.
APPEARS HOLES ARE FOR DRAINAGE



CRACKS THRU OUT THE CULVERT



WASH AT THE S.E CORNER REPAIRED

BRIDGE MANAGEMENT UNIT
DATA ON EXISTING STRUCTURE

RUN DATE 02/19/2009

| | | | | |
|-------------------------|-------------|-------------|------------------------------|---------------------|
| COUNTY : MECKLENBURG | DIV : 10 | DIST : 2 | STRUCTURE NUMBER : 590475 | LENGTH : 37 FEET |
|-------------------------|-------------|-------------|------------------------------|---------------------|

| | |
|---------------------------|---|
| ROUTE CARRIED : SR3815 | FEATURE INTERSECTED : LITTLE SUGAR CREEK |
|---------------------------|---|

| | |
|-----------------------------------|---------------|
| LOCATED : 0.25 MI.S.JCT.SR3816 | BRIDGE NAME : |
|-----------------------------------|---------------|

| | | | | |
|---------------------|-----------------|---------------------|--------------------------|------------------------------|
| FUNC. CLASS : 16 | SYST.ON : FA | SYST.UNDER : NFA | ADT & YR : 22000 2006 | RAIL TYPE : LT 139 RT 139 |
|---------------------|-----------------|---------------------|--------------------------|------------------------------|

| | | | | |
|-----------------|--------------|--------|----------------|-----------------------|
| BUILT : 1945 | BY : CITY | PROJ : | FED.AID PROJ : | DESIGN LOAD : H 15 |
|-----------------|--------------|--------|----------------|-----------------------|

| | | | | | |
|-----------------|------|--------|--------------------|--------------|-----------------------|
| REHAB : 1963 | BY : | PROJ : | ALIGNMENT : TAN | SKEW : 53 | LANES : ON 4 UNDER |
|-----------------|------|--------|--------------------|--------------|-----------------------|

| | | |
|-------------------------------------|----------------------------|-----------------------|
| NAVIGATION : VC 0.0 FT HC 0.0 FT | HT. CRN. TO BED : 15 FT | WATER DEPTH : 3 FT |
|-------------------------------------|----------------------------|-----------------------|

SUPERSTRUCTURE : SINGLE 29'6"X12'9"RC ARCH CULV.W/RAILS,78'8"ALONG CTRLN.ARCH

SUBSTRUCTURE :

SPANS :

BEAMS OR GIRDERS :

| | | |
|------------------------------|----------------|--------------------------------|
| FLOOR : 4" RC,1.5" AWS | ENCROACHMENT : | DECK (OUT TO OUT) : 63.3 FT |
|------------------------------|----------------|--------------------------------|

| | | |
|----------------------------|----------------------------|---|
| CLEAR ROADWAY : 49.7 FT | BETWEEN RAILS : 61.3 FT | SIDEWALK OR CURB : LT 5.0 FT RT 6.7 FT |
|----------------------------|----------------------------|---|

| | | |
|-------------------------------|--------------------------------|--------------------------|
| VERT.CL.OVER : 99 FT 99 IN | VERT.CL.UNDER : 00 FT 00 IN | HOR.CL.UNDER : 0.0 FT |
|-------------------------------|--------------------------------|--------------------------|

| | | | | | |
|---------------------|---------------------|----------------|----------------|------|------|
| INV.RTG. : HS-15 | OPE.RTG. : HS-19 | CONTR.MEMBER : | POSTED : SV | TTST | DATE |
|---------------------|---------------------|----------------|----------------|------|------|

| | |
|----------------------------------|-------------------------|
| SYSTEM : Secondary S.R. Route | GREEN LINE ROUTE : N |
|----------------------------------|-------------------------|

| | | | |
|---------------|---------------|---------------|---------------|
| 2ND OPENING : | 3RD OPENING : | 4TH OPENING : | 5TH OPENING : |
|---------------|---------------|---------------|---------------|

REMARKS :

Bridge Inspection Field Sketch

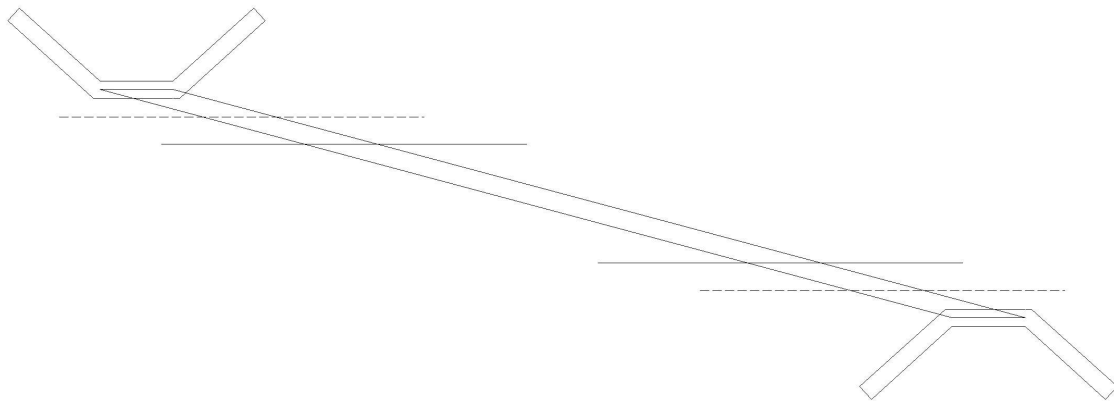


| | | | |
|-----------------|-----------|--------------------------|---------------|
| Roadway | 40ft Wide | 4 Paved Lanes | Looking North |
| Left Shoulder | 0ft Wide | CONCRETE CURB AND GUTTER | |
| Right Shoulder | 0ft Wide | CONCRETE CURB AND GUTTER | |
| Left Guardrail | | | |
| Right Guardrail | | | |

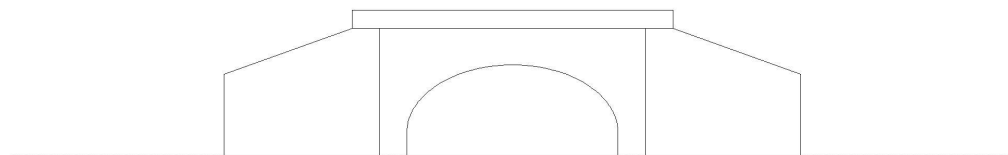
MEASUREMENT VERIFIED 9/11/08

| Title | | Description | |
|-------------------|--------------------|------------------|------------------------|
| APPROACH ROADWAY | | SHEET 1 | |
| Bridge No: 590475 | Drawn By: S.AUSTIN | Date: 09/11/2008 | File Name: S0082001277 |

Bridge Inspection Field Sketch



Crown of Roadway



Bed

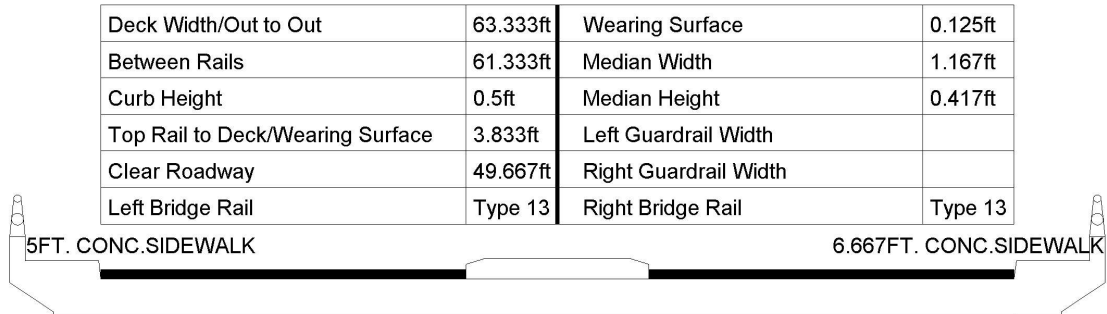
| Number of Barrels | Skew | Distance From Crown to Bed |
|----------------------------------|------|-------------------------------------|
| 1 | 15° | 15ft |
| Length Along Center Line of Pipe | | Length Along Center Line of Roadway |
| 78.667ft | | 37.167ft |

| Barrel # | Width | Height | Wall Thickness | Scour at Inlet | Scour at Outlet | Distance From Previous Pipe | Type |
|----------|---------|----------|----------------|----------------|-----------------|-----------------------------|------|
| 1 | 29.5FT. | 12.75FT. | | | | | Arch |

MEASUREMENT VERIFIED 9/11/08

| Title | | | Description | |
|------------|--------|-----------|-------------|------------------|
| CULVERT | | | SHEET 2 | |
| Bridge No: | 590475 | Drawn By: | S.AUSTIN | Date: 09/11/2008 |
| | | | File Name: | S0082001278 |

Bridge Inspection Field Sketch



MEASURMENT VERIFIED 9/11/08

| Title | | Description | |
|-----------------|------------|-------------|-------------|
| TYPICAL SECTION | | SHEET 3 | |
| Bridge No: | 590475 | Drawn By: | S.AUSTIN |
| Date: | 09/11/2008 | File Name: | S0082001279 |



LOOKING SOUTH



GPS READING



LOOKING DOWNSTREAM



LOOKING EAST



LOOKING NORTH



LOOKING WEST



LOOKING UPSTREAM