First Look Study

Replace Bridge and Approaches

Over Turtle Creek

Long Stretch Road

Item No. 6-1068.00

Bracken County, CR-1023

Prepared By:

Kentucky Transportation Cabinet (KYTC)

Denise Ford, EIT & KYTC District 6

March 1, 2011

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I. INTRODUCTION

This study is a First Look Study for a bridge project over Turtle Creek in Bracken County, Item Number 6-1068.00. The study presents a number of alternates and their cost estimates.

A. Study Purpose

The purpose of this First Look Study is to address the applicable elements of Purpose and Need as defined by the National Environmental Policy Act (NEPA) in order to develop a draft Purpose and Need Statement for the project. It also provides data that will be of assistance in the project development phase.

B. This bridge replacement project is located in northern Bracken County approximately ½ miles west of the City of Augusta. Bracken County is bordered by Clermont County Ohio, on the northwest; Brown County Ohio on the northeast; Mason County Kentucky on the east; Robertson County Kentucky on the south; Harrison County Kentucky on the southwest, and Pendleton County on the west. See Exhibits in Appendix A, and Appendix B. The coordinates of the project are 38-46-09.56 N, 84-01-26.09 W.

II. PROJECT PURPOSE AND NEED

A. Legislation

The following is a description of the project as it is listed in the Kentucky Transportation Cabinets SYP8160.

Bracken	06-1068	CR-1023	.100

PHASE	FUND	YEAR	ESTIMATE
D:	BRZ	2011	125,000
R:	BRZ	2013	25,000
U:	BRZ	2013	5,000
C:	BRZ	2014	175,000

LONG STRETCH ROAD; REPLACE BRIDGE AND APPROACHES
OVER TURTLE CREEK 400 FEET NORTH OF KY-8 (C03). (SR=17.7)
SCOPE BRIDGE REPLACEMENT (P)

B. Project Status

The bridge is structurally deficient with a Sufficiency Rating of 23.9.
The Sufficiency Rating has increased from the Kentucky Transportation Cabinet's SYP8160 as identified above due to work performed on the structure in 2007 by county forces.

C. System Linkage

Long Stretch Road is classified as a local road, and within the city limits the posted speed is 25 mph. Long Stretch Road primarily serves as an emergency access road to farms and residences, and connects KY 8 to Ferry Street in the City of Augusta. KY 8 Is the main access route into the city, and traffic can use KY 8 when Long Stretch Road is closed to traffic.

D. Transportation Demand

Long Stretch Road is a low volume local road with estimated traffic volumes between 50 and 250 ADT. Actual 2010 traffic counts were not available at the time this study was compiled.

E. Roadway and Bridge Deficiencies

The existing bridge is structurally deficient, and is within the flood plain. Currently the pool channel is only 8" from the bottom chord element of the bridge. See KYTC Bridge Inspection Report Appendix E.

A new bridge will require at least one foot of clearance between the bottom of the bridge and the water surface as freeboard to mitigate any ice buildup. A new 63 ft span girder bridge will require the bridge deck to be raised at least 5 ft above the water surface. Smaller spans will require raising the bridge less than 5 ft. Raising the bridge will require raising the tunnel and relocating the railroad tracks. Impacting the railroad tracks should be avoided if at all possible. The cost for going under the railroad and relocating the tracks is estimated to exceed $837,000.

The roadway is a one 12 ft lane with earth shoulders. Common Geometric Practices for Rural Roads requires 2-9 ft lanes with 2 ft shoulders. Widening the road and bridge will require widening the tunnel pavement to match the roadway's cross section.
See Exhibit 700-01 in Appendix C for the Common Geometric Practices for Rural Roads.

There are two culverts upstream from the bridge. One is a 14 ft X 14 ft double reinforced concrete culvert on the bridges inventory list.
See Culvert Inspection Report in Appendix E. The culvert is submerged, and both barrels are blocked with debris. There are cracks in the vertical members, and in both roof sections near the mid-point. The second culvert is newer, and it is estimated to be a single 12 ft X 12 ft culvert.

III. Preliminary Environmental Overview

A biological assessment should be completed prior to construction to access the potential impact to threatened and endangered species. If habitats exist cutting restriction will be imposed.

The bridge is located in a special flood hazard zone AE. See Appendix F for the FIRM, Flood Insurance Map. The area is subject to flooding by the 1% annual chance flood (100 year flood). A flood insurance study is available at http://msc.fema.gov/.

Turtle Creek is designated as a Blue Line Stream, and impacting a Blue Line Stream requires permits. Permits are anticipated for this project.

IV. Preliminary Project Information

A. Existing Conditions/ Roadway and Bridge Data

County: Bracken
Road Name: Long Stretch Road
Route: CR-1023
Item No.: 6-1068
BMP: .467
EMP: .488
Project Length: .012 miles
Roadway Classification: Rural Local Road
Terrain: Level
Funding Type: BRZ

Roadway Data:

	Existing Conditions	Design Criteria*
Number of Lanes	1	2
Lane Width	12 ft	9 ft
Shoulder Width	earth	2 ft
Minimum Radius	–	205 ft
Maximum Grade	–	8%

*25mph Design Speed

Bridge Data: 012C00003N

Length	62.99 ft
Width, out to out	12.14 ft
Sufficiency Rating	23.9

B. Right of Way

The PVA Map is located in Appendix G. Owner information, property information, assessment information, and land information are available, but not included in this study's documentation.

C. Utilities

There are no electric, telephone, water, gas or sewer utilities within the project limits.

V. Project Purpose And Need Statement

The purpose of this project is to address the structural deficiencies of the bridge over Turtle Creek in order to provide emergency access to the downtown business district of Augusta.

VI. Possible Alternates

The following is a description of the alternates analyzed in the development of this study. The study looks at bridge alternates as opposed to culverts because the rock is deep within the reach, and the bridge lies within the backwater of the Ohio River. Costs are based on similar projects from 2009-2010 in Project Manager Toolbox.

A. No Build- Scenic Walkway

This alternate closes the road, and uses the existing bridge and railroad tunnel as part of a scenic walkway into the City of Augusta and neighboring farms and residences. The costs are minimal.

The alternate does nothing to correct the structural deficiency of the bridge or the tunnel. It creates an opportunity for the bridge and roadway to fail, and or to be washed away by high waters.

The costs are minimal.

B. Build In Place- Alternate 2

This alternate replaces the existing bridge with a Pre-Cast Steel Truss Bridge or a Pre-Fab Single Span Bridge. It addresses the purpose and need of the project by replacing the structure with a new one. It does nothing to address the railroad tunnel. The bridge would still be inundated by high waters, and the railroad tunnel would be too small, and too difficult for larger vehicles to maneuver through.

Pre-Cast Steel Truss Bridge- 2(a).

Design-	$164,000
Right of Way-	$ 25,000
Construction-	$411,000
Total Cost-	$600,000

Pre-Fab Single Span-2(b).

Design-	$125,000
Right of Way-	$ 25,000
Construction-	$350,000
Total Cost-	$500,000

C. Alternate 3 - A New 1100 ft Elevated Roadway Over Railroad

This alternate avoids the $837,000 cost for relocating the railroad tracks. It raises the bridge 30ft from the existing bridge's elevation and corrects the problem of flood waters inundating the bridge and roadway.

This alternate involves constructing retaining walls and building large embankment fills. The space for constructing the road is limited. Currently the roadway is a one 12 foot lane with earth shoulders. The rest of the area is surrounded by water. The elevated roadway must be at least 2-9 ft lanes to provide adequate sight distance for traveling vehicles. The cost of constructing this roadway in a rural area, in the outskirts of town with low traffic volumes may not be cost effective.

Design-	$ 1,000,000
Right of Way-	$ 50,000
Railroad-	$ 360,000
Construction-	$10,260,000
Total Cost-	$11,670,000

D. Alternate 4 – Two Lane, Bridge, and Tunnel

This alternate correct the out of alignment problem that exists between the roadway and tunnel. Only a 63 ft bridge would be required to cross the creek. The bridge, tunnel, and roadway would be raised; a wider tunnel, bridge, and roadway would be constructed. Due to the limitation of available land, it will be difficult.

The alternate would require the railroad tracks to be relocated, and a new railroad tunnel installed. The cost for this alternate given the location and traffic volumes may not be cost effective.

Design-	$1,000,000
Railroad-	$ 837,000
Right of Way-	$ 50,000
Construction-	$4,800,000
Total Cost-	$6,687,000

VII. Summary

The purpose of this project is to provide safe and reliable access to the City of Augusta by replacing the structurally deficient bridge over Turtle Creek. The No Build Alternate would not meet the Purpose and Need of this project. The Build In Place Alternates 2(a) and 2(b) would construct a Precast Steel Truss or a Pre-Fab Single Span Bridge at the same location and elevation as the existing bridge. Other alternates are discussed as well, some of which may not be cost effective. The alternate that addresses the Purpose and Need, and has the least expected cost is Alternate 2(b). It constructs the bridge and approaches with a Pre-Fab Single Span Bridge. The cost of this alternate is $500,000.

Alternate 2(a), the installation of the Pre-Cast Steel Truss Bridge is the recommended alternate from this study. A Pre-Cast Steel Truss Bridge will provide more under bridge clearance. It will sit on the abutments, no extra distance for girders will be needed, and it will require less approach work. The cost of this alternate is $600,000.

APPENDIX A: Exhibits

Kentucky TRANSPORTATION CABINET

KYTC PROJECTS ARCHIVE (1909 - Present)

provided by OIT

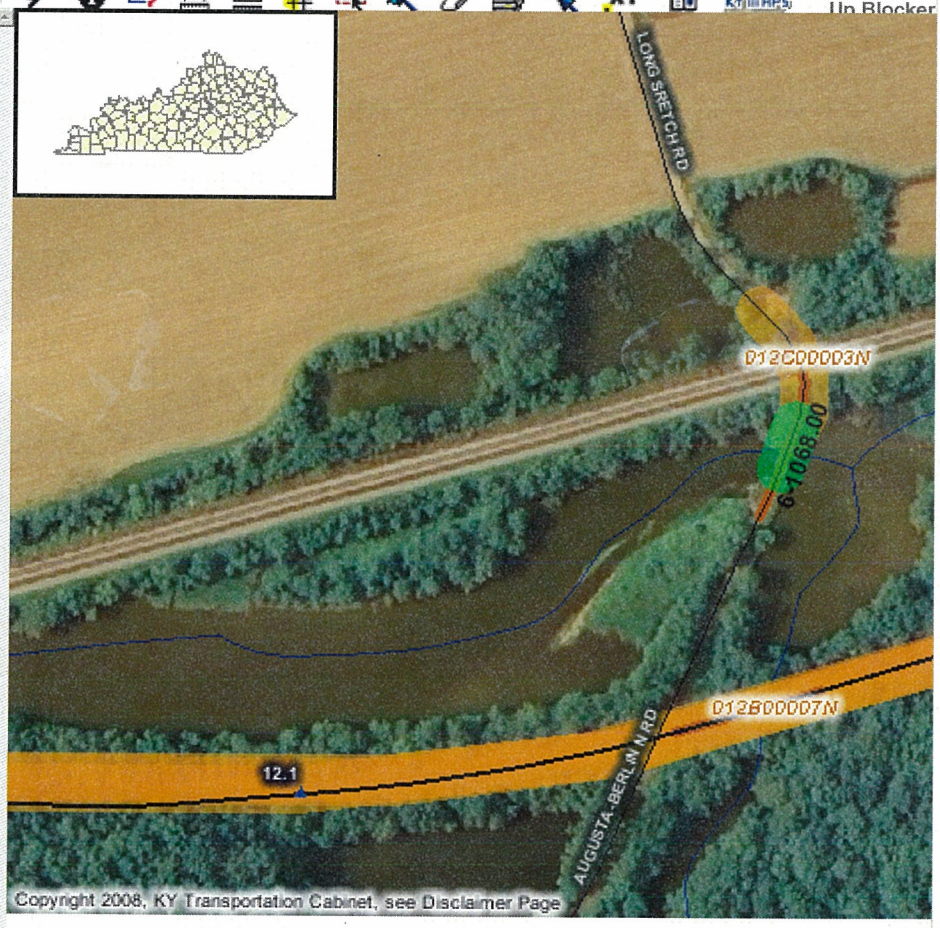
LAYERS

- All Layers
  - Transportation
    - Route Log
    - Local Road Milepoi
    - State Road Milepoi
    - Interstate
    - Parkway
    - US Highway
    - State Road
    - Local Road
    - Local Road Route Name
    - Current SYP Projec
    - SYP PROJS CONS
    - SYP PROJS CONS
    - KYTC Projects Arch
    - Bridge
    - Truck Network
    - National Highway S
    - Railroad
    - KYTC District
  - Base Map
  - Base Imagery

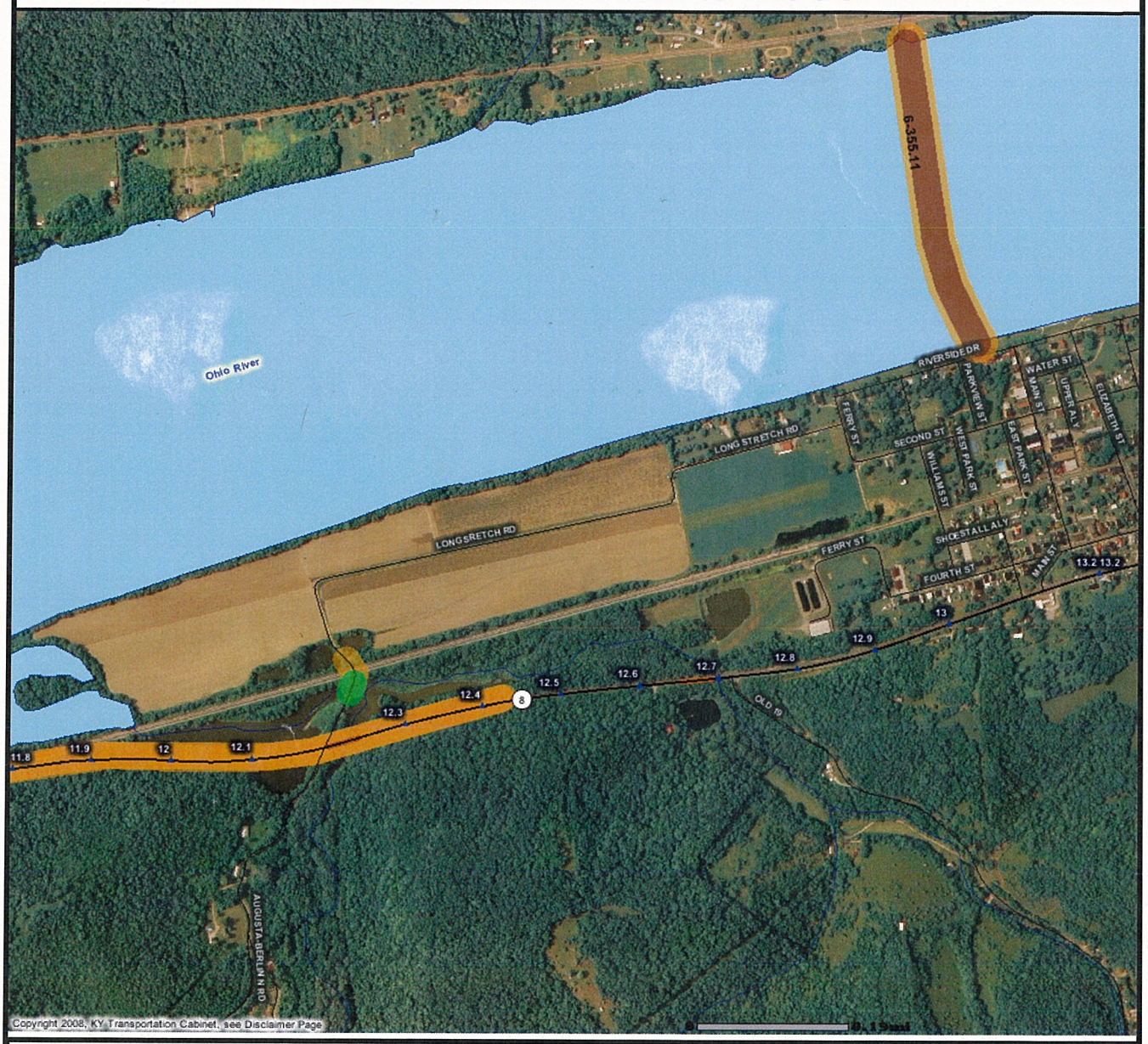
Refresh Map

Help:

- A closed group, click to open.
- An open group, click to close.
- A map layer.
- A hidden group/layer, click to make visible.
- A visible group/layer, click to hide.
- A visible layer, but not at this scale.
- A partially visible group, click to make visible
- An inactive layer, click to make active.
- The active layer.



Bracken\CR-1023\6-1068



KYTC
Division of Highway Design

200 Mero Street,
Frankfort, KY 40601

Phone: (502) 564-3280

Legend

Transportation
- Route Log
- Local Road Milepoint
- State Road Milepoint
- Interstate
- Parkway
- US Highway
- State Road
- Local Road
- SYP Road Improvement Projects
- SYP Projs Const In Process
- SYP Projs Const Awarded
- KYTC Projects Archive
- Bridge
- Truck Network
- National Highway System
- Railroad
- KYTC District

Base Map
- Major Cities
- City Boundary
- County Boundary
- Zip Code Area
- Rivers
- Streams
- Lakes
- USGS Quadrangle
- US House District
- KY Senate District
- KY House District

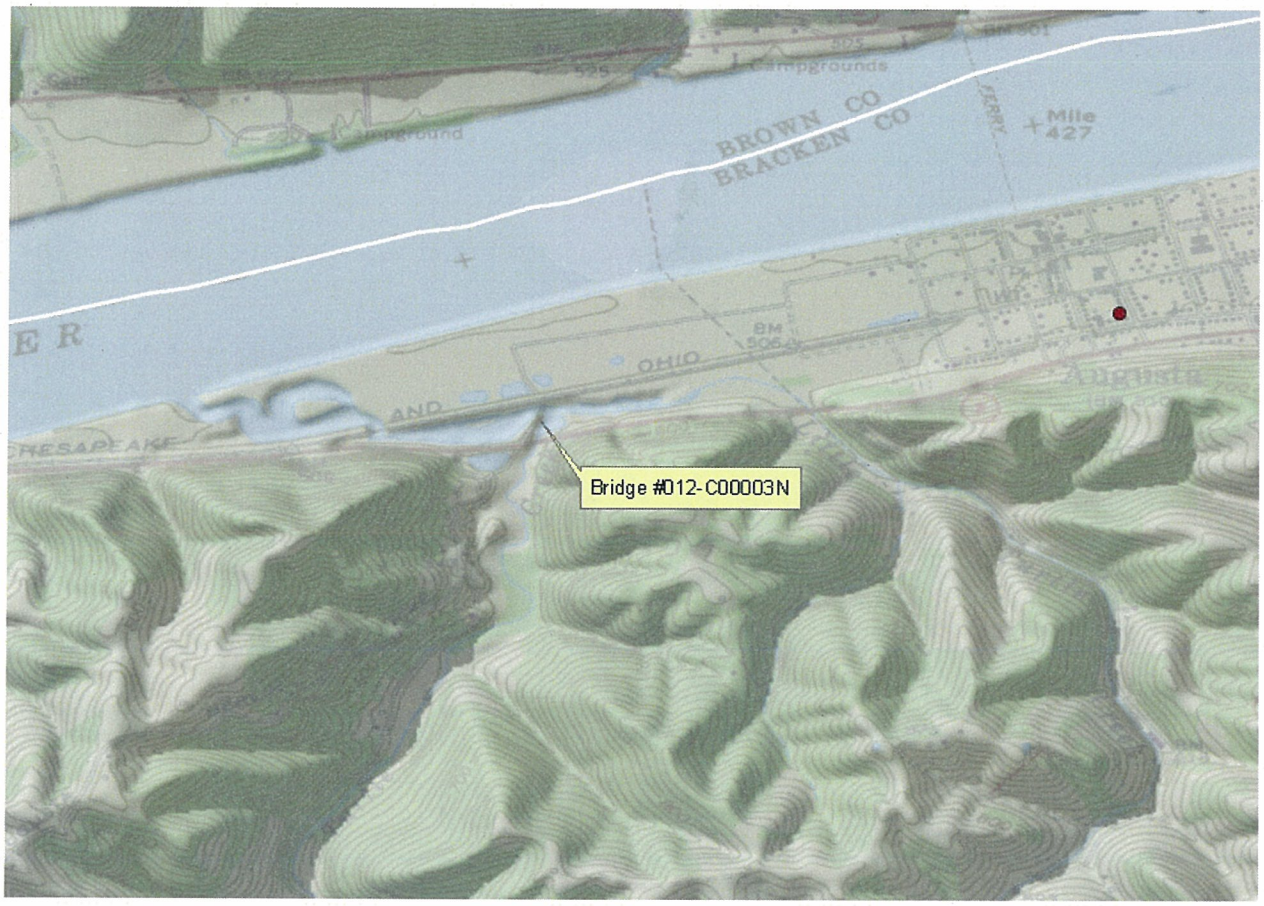
DISCLAIMER : KYTC Division of Highway Design provides this map as a reference only. Users are to validate information independantly.

APPENDIX B: Topographic Map

TOPOGRAPHIC MAP

KYGEONET

BRACKEN COUNTY, 6-1068



APPENDIX C: Common Geometric Practices for Rural Local Roads

COMMON GEOMETRIC PRACTICES
RURAL LOCAL ROADS

		TRAFFIC VOLUME					
	TERRIAN	UNDER 50 A.D.T.	50-250 A.D.T.	250-400 A.D.T.	400-1500 A.D.T.	1500-2000 A.D.T.	OVER 2000 A.D.T.
MINIMUM DESIGN SPEED (M.P.H.) (6) (7)	LEVEL	30		40	50		
	ROLLING	20	30		40		
	MOUNTAIN	20			30		

	DESIGN SPEED	UNDER 400 A.D.T.	400-1500 A.D.T.	1500-2000 A.D.T.	OVER 2000 A.D.T.
PAVEMENT WIDTH (FEET) (4) (8)	15 MPH	18	20 (9)	20	22
	20 MPH			22	24 (11)
	25 MPH				
	30 MPH				
	40 MPH				
	45 MPH	20	22		
	50 MPH				
	55 MPH	22		24 (11)	
	60 MPH				
MIN. GRADED SHOULDER WIDTH (FEET) (5)	ALL SPEEDS	2	5 (9) (10)	6	8
MIN. CLEAR ROADWAY WIDTH OF NEW AND RECONSTRUCTED BRIDGES	ALL SPEEDS	APPROACH ROADWAY WIDTH			

	DESIGN SPEED	eMAX. 4%	eMAX. 6%	eMAX. 8%
MINIMUM RADIUS (FEET)	20 MPH	125	115	105
	25 MPH	205	185	170
	30 MPH	300	275	250
	35 MPH	420	380	350
	40 MPH	565	510	465
	45 MPH	730	660	600
	50 MPH	930	835	760

NORMAL PAVEMENT CROSS SLOPES (3)	RATE OF CROSS SLOPE = 2%							
NORMAL SHOULDER CROSS SLOPES	EARTH = 8%				PAVED = 4%			
MAXIMUM GRADE (PERCENT)	M.P.H.	20	25	30	35	40	45	50
	LEVEL	8	7					6
	ROLLING	11		10			9	8
	MOUNTAIN	16	15	14		13	12	10
MINIMUM STOPPING SIGHT DISTANCE (1)	(FEET)	115	155	200	250	305	360	425
MINIMUM PASSING SIGHT DISTANCE (2)	(FEET)	710	900	1090	1280	1470	1625	1835

(1) MINIMUM STOPPING SIGHT DISTANCE BASED ON HEIGHT OF EYE OF 3.5 FT AND HEIGHT OF OBJECT OF 2.0 FT. CONSIDER BOTH HORIZONTAL AND VERTICAL ALIGNMENT.

(2) MINIMUM PASSING SIGHT DISTANCE BASED ON HEIGHT OF EYE OF 3.5 FT AND HEIGHT OF OBJECT OF 3.5 FT. CONSIDER BOTH HORIZONTAL AND VERTICAL ALIGNMENTS.

(3) NORMAL PAVEMENT CROSS SLOPES ON BRIDGES IS 2%.

(4) CONSIDER CURVE WIDENING ON PROJECTS WITH SIGNIFICANT TRUCK VOLUMES.

(5) WIDEN 3 FT FOR GUARDRAIL.

(6) WHERE SELECTED DESIGN SPEED IS > 50 MPH, USE COMMON GEOMETRIC PRATICES EXHIBIT 500-02 FOR RURAL COLLECTOR ROADS.

(7) DOCUMENT AND RETAIN JUSTIFICATION FOR A DESIGN SPEED LESS THAN THE REGULATORY OR POSTED SPEED IN THE PROJECT FILES.

(8) FOR ROADS < 400 ADT, REFER TO AASHTO'S "GEOMETRIC DESIGN GUIDELINES FOR VERY LOW-VOLUME LOCAL ROADS (ADT≤400)".

(9) FOR ROADS IN MOUNTAINOUS TERRAIN WITH DESIGN VOLUME OF 400 TO 600 VEH/DAY, USE 18 FT TRAVELED WAY WIDTH AND 2 FT SHOULDER WIDTH.

(10) MAY BE ADJUSTED TO ACHIEVE A MINIMUM ROADWAY WIDTH OF 30 FT FOR DESIGN SPEEDS > THAN 40 MPH.

(11) WHERE THE WIDTH OF THE TRAVELED WAY IS SHOWN AS 24 FT, THE WIDTH MAY REMAIN AT 22 FT ON RECONSTRUCTED HIGHWAYS WHERE SAFETY RECORDS AND ALIGNMENT ARE SATISFACTORY.

APPENDIX D: 1959 Roadway Plans

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

PLAN AND PROFILE OF PROPOSED
STATE HIGHWAY

BRACKEN COUNTY
S 198 (9)

BRACKEN Co.			S 198(9)		
Adj. Num. P.S.	Jn.	Jn. Name	Prov. No.	Sec. No.	Proj. Num.
7		Ky.	198	7	268
Newport-Maysville Road					

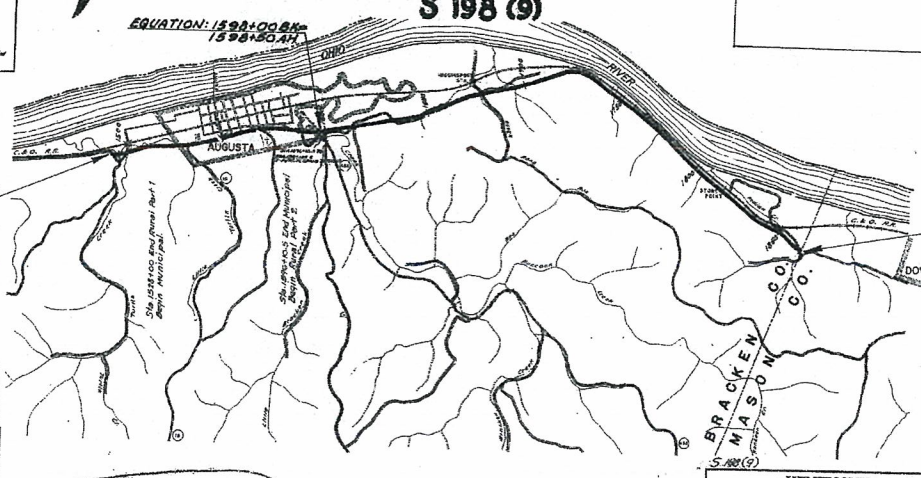
INDEX OF SHEETS

SHEET NO.	DESCRIPTION
2-3-4-5	LAYOUT SHEET
	TYPICAL SECTIONS—SUMMARY OF QUANTITIES
	LIST OF STANDARD DRAWINGS
10-01	CURVE WIDENING AND SUPERELEVATION
10-02	SOLID NOSE ISLANDS AND INLET DETAILS
10-03	MISCELLANEOUS STANDARDS PART 1
10-06	MISCELLANEOUS STANDARDS PART 2
11-01	TYPICAL CULVERT STANDARDS
11-11	DRAINAGE PIPE STANDARDS
11-24	24"-36"-42" DIAMETER PIPE CULVERTS (1969)
11-25	30"-36"-42" DIAMETER PIPE CULVERTS (1969)
11-26	30"-36"-42" DIAMETER PIPE CULVERTS (1969)
11-27	30"-36"-42" DIAMETER PIPE CULVERTS (1969)
11-28	30"-36"-42" DIAMETER PIPE CULVERTS (1969)
11-29	30"-36"-42" DIAMETER PIPE CULVERTS (1969)
11-32	30"-36"-42" DIAMETER PIPE CULVERTS (1969)
13-01	CIRCULAR AND VERTICAL ELLIPTICAL PIPE CHARTS
13-02	CURBS & CURB & GUTTER
14-01	DRIVEWAYS, ROADWAYS AND PRIVATE ENTRANCES
15-05	CURB AND GUTTER RAMPS AND ROAD INTERSECTIONS
15-22	MANHOLES
15-32	MISCELLANEOUS DRAINAGE STRUCTURES PART 1
17-03	TIMBER GUARD RAILS
17-04	STEEL GUARD RAIL INSTALLATION
18-09	STEPS AND HANDRAILS
18-01	7'x 8'-0"MIN. STRAW MULCH
MW1	STANDARD METAL BIN TYPE WALL UNITS
31-50	PLAN & PROFILE SHEETS
21-21	DETAIL SHEETS
60-64	REFERENCE SHEETS
75-11	ROW & ROW "A" SHEETS
100-248	CROSS SECTION SHEETS
23	BRIDGE SHEETS

Note: Include Std. 18-01 (Mb. Chk), in addition to the above listed sheets.

SUBSECTIONS OF CONTRACT FOR BRACKEN COUNTY S 198(9) SP 12-126-9

12-126-9C1 Grade, drain and surface from Sta. 1496+00 to Sta. 1528+00
12-126-9C2 Grade, drain and surface from Sta. 1528+00 to Sta. 1596+10.5
12-126-9C3 Grade drain and surface from Sta. 1596+10.5 to Sta. 1864+50
12-126-9B1 Bridge (Obl. 14'X14' X 126' R.C. Culvert - 30° skew) Sta. 1804+78
12-126-9B2 Bridge (Obl. 12.25' X 187 R.C. Culvert - 30° Skew) Sta. 1732+30.
12-126-9B3 Bridge (3-50' R.C.D.G. Spans - 30° Skew) Sta. 1876+90



DESIGN DESIGNATION

	"A"	"B"	"C"
ADT (1957)	100	200	100
ADT (1977)	600	1200	600
D.H.V.	60	120	60
V.C.	55%-65%	55%-65%	55%-65%
V.T.	10%	8%	10%
V.	50		50
CONTROL OF ACCESS		FREE ACCESS	

SECTION "A" WEST OF AUGUSTA
SECTION "B" THRU AUGUSTA
SECTION "C" EAST OF AUGUSTA

CONSTRUCTION REVISION

DATE	SHEET NO.	DESCRIPTION
10-13-61	5th Sheet	11/13/61
11-3-61	Add Sta. 1890+50	12/11/61 Memo
11-30-61	Add Sta. 1876+90	12/14/61 Memo

CONSTRUCTION REVISION

DATE	SHEET NO.	DESCRIPTION
11/3/61	All Sh. of 2-6	Approved 11/3/61

CONVENTIONAL SIGNS

X-Sect's Sent To Area Engr. 11-3-60 G.M.

GRAPHIC SCALE IN FEET

LAYOUT MAP

	RURAL 1	MUNICIPAL	RURAL 2	TOTAL PROJECT
Gross Length	32000.0 Lin. Ft. 0.606 Miles	6310.5 Lin. Ft. 1.209 Miles	26282.8 Lin. Ft. 5.074 Miles	86600.0 Lin. Ft. 6.969 Miles
Deductions				
Net Length	32000.0 Lin. Ft. 0.606 Miles	6310.5 Lin. Ft. 1.209 Miles	26282.8 Lin. Ft. 5.074 Miles	86600.0 Lin. Ft. 6.969 Miles
Not Included				

TOTAL RURAL: Gross Length 39282.8 Lin. Ft. 5.680 Miles; Deductions; Net Length 39282.8 Lin. Ft. 5.680 Miles

KENTUCKY DEPARTMENT OF HIGHWAYS
COUNTY OF BRACKEN
NEWPORT-MAYSVILLE ROAD
PROJECT No. S.P. 12-126-9
DATE 1959

APPROVED _____ 19____
BY: _____ COMMISSIONER OF HIGHWAYS

SURVEYED: Sept. 1959 — Chief Engineer
SURVEY APPROVED: — Chief Engineer
PLAN CHECKED: 5-14 1959 — Chief Draftsman
SURVEY AND PLAN APPROVED: — Chief Engineer
SURVEY AND PLAN APPROVED: — Chief Highway Engineer

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS:
RECOMMENDED FOR APPROVAL:
DISTRICT ENGINEER — DATE
APPROVED:
DIVISION ENGINEER — DATE

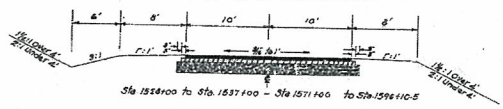
LETTING DATE 6/19/59

Copy Flex 11-3-60

PROJECT Co.			8198(9)		
FED. AID PROJ. NO.	STATE		FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	Ky		1978	2	268

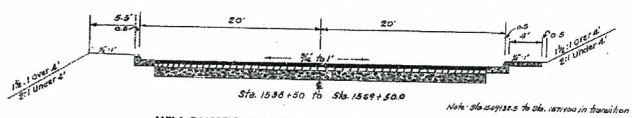
Newport - Maysville Road

TYPICAL SECTIONS



Sta 1534+00 to Sta. 1537+00 – Sta 1571+00 to Sta 1596+10.5

Note: Sta 1537+00 to Sta. 1538+50 in transition



Sta. 1536+50 to Sta. 1569+50.0

Note: Sta 1549+37.5 to Sta. 1571+00 in transition

NEW CONSTRUCTION: Grade, Drain and Surface USING

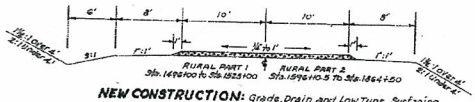
BITUMINOUS CONCRETE SURFACE CLASS I
DENSE GRADED AGGREGATE BASE

11" Base — 3" Compacted Dense Graded Aggregate Base
3" Compacted Dense Graded Aggregate Base (Top course)
1½ lbs per Sq Yd. Calcium Chloride. (Top course only)
3" Bituminous Concrete Base (Class I Modified)

Prime (Tack) — 0.10 Gal. per Sq Yd Emulsified Asphalt RS-1. Apply by fogging

1½" Surface — Bituminous Concrete Surface, type B.

Tops of cuts, toe of fills ditches and shoulders shall be rounded in conformity with Std Dwg. No. 10.03



RURAL PART 1 Sta. 1492+00 to Sta 1525+00 | RURAL PART 2 Sta. 1596+10.5 To Sta. 1664+50

NEW CONSTRUCTION: Grade, Drain and Low Type Surfacing USING

TRAFFIC BOUND LIMESTONE

Crushed Limestone Sizes No. 6 and No. 10 applied loose equal to 2" compacted depth

OR

TRAFFIC BOUND RIVER GRAVEL

River Gravel applied loose equal to 2" compacted depth

River Gravel shall conform to Specification 7.4.4-8.2, River Gravel Maintenance Floater Course. Gradation shall meet the requirements for Size No. 710.

Top of cuts shall be rounded in conformity with Std Dwg No. 10.03

BASIS FOR CLASS I ESTIMATE

COURSE	LIMESTONE	GRAVEL
	LBS PER SQ. YD.	
8"	303	306
1½"	151	153

NOTES FOR BITUMINOUS CONCRETE CLASS I

When natural sand fine aggregate is used in the manufacturing of Class I bituminous concrete any material collected in the dust collector may be returned, all or in part, to the mix, provided that the accumulated material is agitated by a uniform method approved by the Engineer, or in uniform quantities within the percentage limits of the gradation specifications. Only the material collected by the dry type of dust collectors may be returned to the mix.

Fine aggregate used in class I bituminous concrete mixtures that are to be used for riding surface shall be natural sand. Fine aggregate used in Class I bituminous concrete mixtures for other courses shall be natural sand or crushed limestone sand.

Prime (tack) between Base and Surface to be used only if directed on construction.

Asphalt Cement PAC-5 shall be used in all Class I mixtures.

Each completed course of the 5" Dense Graded Aggregate Base shall be wetted and rolled as necessary to prevent rewelling until overlying course is applied. In addition to quantities set up the Contractor may use calcium chloride as a surface treatment to reduce the amount of wetting and rolling provided satisfactory results are obtained. No direct payment will be made for calcium chloride used for this purpose.

Extra compaction in conformity with Article 2-5-5-0-2 of the Department's 1956 Standard Specifications will be required throughout the project.

All Dense Graded Aggregate shall be Plant Mixed, and constructed in the number of courses necessary to obtain required density.

GENERAL NOTES

All curves to be banked and widened according to Standard or as directed. Superelevation for special cases to be authorized by the Area Engineer.

The Contractor is not to order material for drainage structures until the quantities have been checked by the Engineer for typical sections in solid rock cuts, see Standard Drawings on Sheet No 10-02 of these plans.

Drawings for standard warning signs for the protection of traffic will be furnished by the Area Engineer.

The location of inlet structures shown on the plans is approximate and the structures are to be shifted to the low point as directed to obtain proper drainage.

The Contractor shall use all possible care in excavating on this project so as not to disturb any existing pipe lines, whether shown on the plans or not shown on the plans. Elevations and locations of existing pipes are approximate only. Any pipe disturbed or damaged by the Contractor through carelessness during his construction operations shall be replaced by the Contractor at no extra cost to the Department.

Waste material in excess of that wasted as directed by the Engineer within the right-of-way limits, shall be disposed of off the right-of-way at sites acquired by the Contractor, and approved by the Engineer, at no additional cost to the Department. No direct payment will be allowed for overhaul of waste material.

Unanticipated waste material resulting from slides shall either be wasted within the right-of-way limits as directed by the Engineer or disposed of off the right-of-way at sites acquired by the Department. Payment for necessary overhaul of this material will be allowed.

All buildings, within the right-of-way limits on this project are to be removed by others, provided, however, that any remaining foundations or debris shall be removed by the Contractor. Payment for this work shall be included in the unit price bid per acre for Clearing and Grubbing.

Punching will be required under embankment sections as indicated on the Cross Sections. No direct payment will be allowed for this operation, same being considered incidental to other items of work.

The Standard Specifications for Road and Bridge Construction, edition of 1956, as amended by the amendments and revisions published in Pamphlet No. 1 of "Approved Amendments, Provisions and Specifications" with the following Special Specifications and additional Amendments and Provisions will apply on this project:

Shoulders shall be widened two feet before Timber Guard Posts are to be installed.

Special Provision For Removal of Miscellaneous Structures.
Special Provision for Seed Germination Test
Special Provision For Bituminous Concrete Base (Class I Modified)*

Special Specification No. 12-Sec. Timber Guard Posts.

*Erosion Control Notes

SELECTED SOILS

Low bearing soils, identified herein as Soils Nos. *1,4,8, 9, 12, 15 and 18, shall not be used in the top 12" of subgrade in fill sections and when encountered within the top 12" of subgrade in cut sections shall be removed and replaced with Selected Soils having a C.B.R. value of 5.0 or greater, identified herein as Soils Nos. *1,2,4,5, 6,7,8, 10, 11, 13, 14, 16, and 17.

*Alinas profile continued from preceding project.

The Contractor shall conduct grading operations in such manner as to allow ample quantities of Selected Soils to be held in reserve or stockpiled as necessary to provide the required topping for fills and subgrade replacement in cuts. No direct payment will be allowed for such necessary manipulation as double-handling or hauling between balance points.

TRAFFIC NOTE

The Road shall be kept open to all traffic at all times

BRACKEN CO.			S.P.R. (X)	
FED. ROAD PROJ. NO.	STATE	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	Ky.	1969	8	260

NEWPORT - MAYSVILLE ROAD

GENERAL SUMMARY

SHEET NO.	STATION TO STATION	CLEARING AND GRUBBING	EXCAVATION: ROADWAY	EXCAVATION: STRUCTURE: UNCLASS	EXCAVATION: STRUCTURE: COMMON	EXCAVATION: STRUCTURE: SOLID ROCK	(1) WATER	OVERHAUL	FINAL DRESSING	CONCRETE: CLASS "B"	CONCRETE: CLASS "D"	CONCRETE: CLASS "A"	STEEL REINFORCEMENT BARS	PIPE UNDERDRAIN	PIPE CULVERT	18" PIPE CULVERT	24" PIPE CULVERT	RURAL U.P. AREA BOX INLET TYPE 1A	SUBURBAN BOX INLET TYPE A	MANHOLE	STEEL BEAM GUARD RAIL (2)	GUARD RAIL WOOD SECTION	CRIB WALL (3)	CONC. CURB & GUTTER	CONC. CURB	REMOVING: PIPE	REMOVING: HOUSE	REMOVING: INCINERATOR	REMOVING: CONCRETE BASTIONS	REMOVING: STANDING STRUCTURE	REMOVING: STANDING WOODEN STRUCTURE	REMOVING: BRICK STRUCTURE	REMOVING: BRICK PAVEMENT	REMOVING: TRAFFIC CONTROL MATERIALS	REMOVING: ASPHALTIC PAVEMENT	REMOVING: CONCRETE PAVEMENT	REMOVING: ASPHALTIC PAVEMENT (PARTIAL)	REMOVING: CONCRETE PAVEMENT (PARTIAL)	REMOVING: ASPHALTIC PAVEMENT (PARTIAL)	REMOVING: SIDEWALK	REMOVING: CONCRETE CURB AND GUTTER	REMOVING: CONCRETE CURB	REMOVING: WOOD GUARD RAIL
	UNIT TO BID ON	ACRE	CU. YD				1000 GAL.	YD.-STA.	100' STA.	CU. YD.			LB.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	EACH	EACH	EACH	LIN. FT.	EACH	SQ. FT. (CURB)	LIN. FT.	LIN. FT.	EACH	EACH	EACH	CU. YD.	CU. YD.	CU. YD.	SQ. YD.	SQ. YD.	EACH	SQ. YD.							
	RURAL PART 1																																										
91	1498+00 — 1501+41	2.05	296					5170																																			
92	1501+41 — 1526+00	14.50	96330					3558																																			
	From Pipe Drainage Sheets		199	149																																							
	From Bridge and Culvert Summary				260							12.38																															
	For Contingencies		9000									296.5	130760																														
	TOTAL RURAL PART 1	16.7	106825	149	260	—	1037	8728	32.0	—	—	285.9	130760	1	—	1300	400	—	—	—	—	3125	8	—	—	28	—	—	—	—	25	—	—	—	32	—	—	—	—	—	—	—	—
	MUNICIPAL																																										
93	1528+00 — 1537+06	7.36	46639																																								
94	1537+06 — 1538+34	1.10	8256																																								
95	1538+34 — 1549+50	1.53	9282																																								
96	1549+50 — 1554+05	1.43	1952																																								
97	1554+05 — 1560+20	1.51	639																																								
98	1560+20 — 1570+88	2.36	1300																																								
99	1570+88 — 1581+92	3.13	6492																																								
100	1581+92 — 1596+10.5	7.42	81866																																								
	From Pipe Drainage Sheets		59	62																																							
	From Bridge and Culvert Summary				440							17.98	1027																														
	For Contingencies		7500									473.8	882.22																														
	TOTAL MUNICIPAL	25.9	144663	62	440	—	1424	—	(3)	106.1	—	541.8	66271	—	112	400	—	31	17	2	380	—	—	—	206	1595	100	4	5	446	104	28	131	5	18	39905	8660	24.8	4.6	50	1261	5
	RURAL PART 2																																										
101	1596+10.5 — 1609+63	7.43	40024																																								
102	1609+63 — 1619+80	12.14	73720																																								
103	1619+80 — 1673+13	9.06	33209																																								
104	1673+13 — 1706+61	10.10	30970																																								
105	1706+61 — 1729+29	6.57	13289																																								
106	1729+29 — 1751+81	8.60	83213																																								
107	1751+81 — 1796+05	19.20	160022																																								
108	1796+05 — 1820+00	11.97	39069																																								
109	1820+00 — 1853+00	10.38	15406																																								
110	1853+00 — 1864+50	5.25	15469																																								
	From Pipe Drainage Sheets		1968	1845																																							
	From Bridge and Culvert Summary				1280	385						242.93	4119																														
	For Contingencies		54000									153.9	1738.2	258770																													
	TOTAL RURAL PART 2	100.5	392709	1845	1280	385	2293	—	246.5	—	153.9	1881.1	262889	1	—	1005	600	—	—	—	75	16419	96	4005	—	137	—	6	—	35	21	—	—	—	280	—	—	—	—	—	—	—	—
	TOTAL RURAL	117.6	499184	1994	1490	385	2330	8728	278.5	—	153.9	2170.0	393649	2	—	2305	1000	—	—	—	75	20038	102	4035	—	165	—	6	—	35	25.5	—	—	—	262	—	—	—	—	—	—	—	—
	TOTAL PROJECT	143.3	853797	2056	1990	385	4754	8728	378.3	106.4	153.9	3461.8	469930	2	112	2325	1000	31	17	2	455	20058	102	5235	504	1700	100	10	5	796	1375	28	131	5	280	39905	8660	24.8	4.6	1068	1261	5

(1) Estimated 10 Gal of Water per cubic yard of common excavation used in embankment.

(2) Steel Beam Guard Rail shall be installed where directed on construction

(3) No direct payment will be allowed for Final Dressing from Sta. 1538+00 to Sta 1596+10.5

(8) Crib Wall may be either Metal Bin type wall or Reinforced Concrete Crib Wall (Closed face)

BRIDGE & CULVERT SUMMARY

BRACKEN Co.			3.198 (9)
FED. ROAD DIV.	ROUTE NO.	STATE	FISCAL YEAR / SHEET NO. / TOTAL SHEETS
7	Ky.		1969 / 4 / 268

Newport - Maysville Road

SHEET NO	STATION	SIZE	SKEW	INLET ELEV	INLET LENGTH	OUTLET ELEV	OUTLET LENGTH	GRADE	DRAWING NUMBER	STANDARD OR SPECIAL	FILL ON CULVERT FT	CONCRETE CLASS "A"	CONCRETE CLASS "D"	STEEL REINFORCEMENT	STRUCTURE EXCAVATION COMMON	STRUCTURE EXCAVATION SOLID ROCK	CHANNEL CHANGE	EXISTING STRUCTURE	REMOVING CONCRETE MASONRY		12" STEEL PILES 0.25" ABRADING	12" STEEL PILES 0.25" DRIVING	SLOPE PROTECTION ⑦	BRACE PLATES	REMOVAL OF EXISTING STRUCTURE		
UNIT TO BID ON												CU. YD.		LB.	CU. YD.				CU. YD.		LIN. FT.		SQ. YD.	LB.	EACH		
32	1504+78	Del. 12'x8'x126'-0"	45°	471.37	62'-0"	471.0	64'-0"	30.40	13960	Special				RURAL PART 1													
TOTAL RURAL PART 1												776.6		120760	260		See Road Plans										
												776.6	—	120760	260	—											
	1529+30	Del. 12'x8'x187'-0"	45°	446.30	92'-0"	445.81	91'-0"	38.70	13961	Special				MUNICIPAL													
TOTAL MUNICIPAL												675.8		85244	440												
												675.8	—	85244	440	—											
41	1598+90	3-90" R.C.D.S. Spans	45°						13962	Special				RURAL PART 2													
42	1630+45	5'x7'x98'-0"	45°	856.0	34'-0"	846.69	42'-0"	37.45	13963	Special		382.3	15.3	118371	525	215					1170	1170	1170	1140	1		
44	1677+14	5'x3'x69'-0"	45°	875.0	32'-8"	870.32	34'-4"	35.71	CM68	Standard	11.2'	66.4		7436	50		See Road Plans										
46	1694+69	5'x6'x132'-0"	45°	918.0	61'-6"	907.8	72'-0"	38.91	CM 63	Standard		103.0		12301	75	10	See Road Plans	12"-Pipe Conc. Box	10								
46	1746+92	6'x6'x 250'-0"	45°	896.1	106'-0"	886.8	126'-0"	34.05	13964	Special	20'	185.0		21091	80		See Road Plans										
47	1775+45	5'x6'x 105'-0"	45°	945.50	56'-6"	940.0	105'-6"	30.46	13965	Special		259.5		33393	130	10	See Road Plans										
48	1804+92	5'x6'x144'-0"	45°	980.0	87'-0"	970.82	87'-0"	34.30	13966	Special		184.1		16813	140	140	See Road Plans										
50	1863+33	14'x8'x 102'-0"	45°	996.0	81'-0"	995.0	81'-0"	30.45	13968	Special		94.8		11369	100		See Road Plans										
TOTAL RURAL PART 2												2651		37087	130	10	See Road Plans	12"-Pipe Conc. Box	5								
TOTAL RURAL												1733.2	15.3	258770	1255	325			15		1170	1170	1170	1140	1		
TOTAL PROJECT												2509.7	15.3	379530	1490	325			15		1170	1170	1170	1140	1		
												3185.5 ⑥	15.3	466774 ⑥	1930	325			13		1170	1170	1170	1140	1		

⑥ Included in the General Summary

⑦ Slope Protection shall be constructed as indicated on bridge plans.

SURFACING QUANTITIES

ITEM	UNIT	RURAL PART 1	MUNICIPAL	RURAL PART 2	TOTAL RURAL	TOTAL PROJECT	
BITUMINOUS CONCRETE SURFACE CLASS I (USING LIMESTONE AGGREGATE)							
Dense Graded Aggregate Base	TON	—	12065	240	240	12305	⑥
Calcium Chloride	TON	—	19.5	—	—	19.5	
Bituminous Concrete Base (Class I Modified)	TON	—	3925	205	205	4130	⑥
Emulsified Asphalt RS-1 Prime (Tack)	GAL.	—	2720	135	135	2855	⑥
Bituminous Concrete Surface, Type B	TON	—	1935	100	100	2035	⑥
Placing and Compacting Private Entrances	SQ.YD.	—	143		—	143	
Curb and Gutter	LIN.FT.	—	6062	—	—	6062	
Concrete Roll Header Curb, Type 2 ⑦	LIN.FT.	—	77	—	—	77	
Crushed Limestone Size No.6G for Entrances, Maintenance of Traffic, Mailbox Tu.	TON	—	605	—	—	605	
-OR- BITUMINOUS CONCRETE SURFACE CLASS I (USING GRAVEL AGGREGATE) (WITH CRUSHED LIMESTONE FOR DENSE GRADED AGGREGATE BASE ENTRANCES, MAINTENANCE OF TRAFFIC, MAILBOX TURNOUTS)							
Dense Graded Aggregate Base	TON	—	12065	240	240	12305	⑥
Calcium Chloride	TON	—	19.5	—	—	19.5	
Bituminous Concrete Base (Class I Modified)	TON	—	3960	205	205	4165	⑥
Emulsified Asphalt RS-1 Prime (Tack)	GAL.	—	2720	135	135	2855	⑥
Bituminous Concrete Surface, Type B	TON	—	1960	100	100	2060	⑥
Placing and Compacting Private Entrances	SQ.YD.	—	143	—	—	143	
Curb and Gutter	LIN.FT.	—	6064	—	—	6064	
Concrete Roll Header Curb, Type 2 ⑦	LIN.FT.	—	77	—	—	77	
Crushed Limestone Size No.6G for Entrances, Maintenance of Traffic, Mailbox Tu.	TON	—	605	—	—	605	
-WITH- TRAFFIC BOUND LIMESTONE							
Crushed Limestone Size No.6G and No.10	TON	1150	—	6645	7295	7795	
Crushed Limestone Size No.6G for Entrances and Mailbox Turnouts	TON	115	—	965	1090	1090	
-OR- TRAFFIC BOUND RIVER GRAVEL							
River Gravel	TON	1195	—	6760	7955	7955	
River Gravel for Entrances and Mailbox Turnouts	TON	115	—	970	1085	1085	

FOR SURFACING

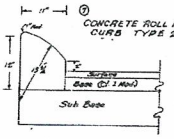
COUNTY	PROJECT NUMBER	DESCRIPTION	GROSS LENGTH DEDUCTED FOR EQUATIONS	GROSS LENGTH LIN. FT.	GROSS LENGTH MILE	NET LENGTH DEDUCTED FOR BRIDGE LIN. FT.	NET LENGTH LIN. FT.	NET LENGTH MILE	ADDED FOR CURVE WIDENING, TRANSITIONS AND APPROACHES	TOTAL AREA
									SQ. YD.	
BRACKEN	3.198 (9)	RURAL PART 1 STA. 1498+00 TO STA. 1526+00	—	2700.0	0.606	—	2700.0	0.606	9867	11098 - 20' 11454 - 21'
		MUNICIPAL STA. 1526+00 TO STA. 1596+10.5	—	6810.5	1.289	—	6810.5	1.289	5088-DGA Base 4509.8-Bituminous Base (Tack) 6795-Surface	5088-DGA Base 5750-Bituminous Base (Tack) 7246-Surface
		RURAL PART 2 STA. 1596+10.5 TO STA. 1646+50	50	5039.5	0.954	154	5030.5	0.944	7809 1281-DGA Base (340-Tack) Base 1498-Surface Appr.	6449 - 20' 6448 - 21' 1281-DGA Base (340-Tack) Base 1498-Surface Int. Appr.
		TOTAL RURAL STA. 1498+00 TO STA. 1596+00 STA. 1596+10.5 TO STA. 1646+50	50	8449.5	1.600	154	8395.5	1.590	16276 1281-DGA Base (340-Tack) Base 1498-Surface Appr.	16265 - 20' 16266 - 21' 1281-DGA Base (340-Tack) Base 1498-Surface Int. Appr.
		TOTAL PROJECT STA. 1498+00 TO STA. 1646+50	50	9280.0	1.759	154	9226.0	1.749	16165 1281-DGA Base (340-Tack) Base 1498-Surface Int. Appr.	16265 - 20' 16266 - 21' 16266-DGA Base 15750-Bituminous Base (Tack) 19846-Surface 1281-DGA Base (340-Tack) Base 1498-Surface Int. Appr.

⑥ Includes sufficient material for surfacing entrances and approaches as follows:

6" Base — 3" Compacted Dense Graded Aggregate Base, 3" Bituminous Concrete Base (Class I Modified)

Prime (Tack) — .01 Gal. per Sq. Yd. Emulsified Asphalt RS-1. Apply by fanning

1½" Surface — Bituminous Concrete Surface, Type B



CONCRETE ROLL HEADER CURB TYPE 2

FED. ROAD SEC. NO.	STATE		FEDERAL FUNDS	SHEET NO.	TOTAL SHEETS
7	KY.		ALT.	8	268

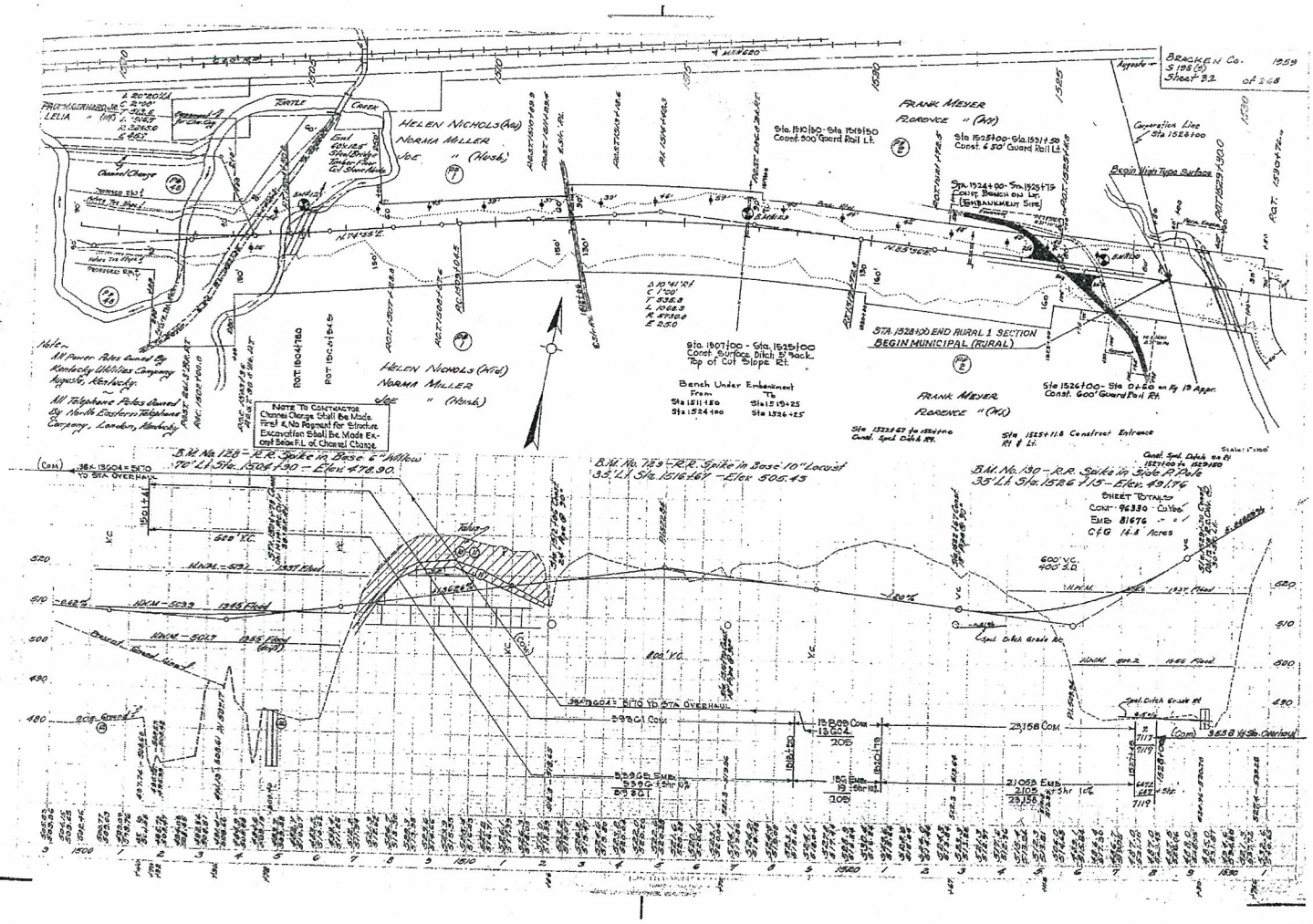
BEACHLEY CO. C-198(6)

HEMPHT - PRINCETON ROAD

PIPE SUMMARY

ITEM				LIN. FT.				
				RURAL PART 1	PRINCIPAL	RURAL PART 2	TOTAL RURAL	TOTAL PROJECT
CULVERT PIPE								
15"	Alternate	A	Reinforced Concrete Class III	—	728	—	—	728
	Alternate	B	16 Gage B.C.C.M.	—	728	—	—	728
18"	Alternate	A	Reinforced Concrete Class III	162	1104	3080	3242	4346
	Alternate	B	16 Gage B.C.C.M.	162	1104	3080	3242	4346
24"	Alternate	A	Reinforced Concrete Class III	92	1495	466	558	2053
	Alternate	B	14 Gage B.C.C.M	92	1495	466	558	2053
30"	Alternate	A	Reinforced Concrete Class III	—	332	228	228	560
	Alternate	B	14 Gage B.C.C.M	—	332	228	228	560
36"	Alternate	A	Reinforced Concrete Class III	—	—	156	156	156
	Alternate	B	12 Gage B.C.C.M	—	—	156	156	156
42"	Alternate	A	Reinforced Concrete Class III	—	96	268	268	364
	Alternate	B	12 Gage B.C.C.M	—	96	268	268	364
48"	Alternate	A	Reinforced Concrete Class III	—	—	188	188	188
	Alternate	B	12 Gage B.C.C.M	—	—	188	188	188
ENTRANCE PIPE								
15"	Alternate	A	Reinforced Concrete Class III		350	1100	1100	1450
	Alternate	B	16 Gage B.C.C.M		350	1100	1100	1450
18"	Alternate	A	Reinforced Concrete Class III		50	100	100	150
	Alternate	B	16 Gage B.C.C.M		50	100	100	150

Such pipe culverts as may be specifically designated by the Engineer on construction shall be built using Camber in the flow line of the culvert as directed. No additional payment will be allowed for this work.


BRACKEN Co.
Sheet 32
HELEN NICHOLS (Ad)
NORMA MILLER
JOE " (Husb)
FRANK MEYER
FLORENCE " (Wf)
Sta. 1510+50 - Sta. 1519+50
Const. 900' Guard Rail Lt.
Sta. 1525+00 - Sta. 1531+50
Const. 650' Guard Rail Lt.
Sta. 1524+00 - Sta. 1525+75
Const. Bench on Lt.
EMBANKMENT SITE
Correction Line
Sta 1528+00
Begin Wish Type Surface
Sta. 1507+00 - Sta. 1525+00
Const. Surface Ditch & Back Top of Cut Slope Rt.
Bench Under Embankment
From
Sta 1511+50
Sta 1524+00
To
Sta 1519+25
Sta 1526+25
STA. 1528+00 END RURAL 1 SECTION
BEGIN MUNICIPAL (RURAL)
Sta 1524+00 - Sta 0+00 on Fy 13 Appr.
Const. 600' Guard Rail Rt.
Sta 1525+11.8 Construct Entrance Rt & Lt.
All Power Poles Owned By Kentucky Utilities Company Augusta, Kentucky.
All Telephone Poles Owned By North Eastern Telephone Company, London, Kentucky.
NOTE TO CONTRACTOR
Channel Change Shall Be Made First & No Payment for Structure Excavation Shall Be Made Except Below F.L. of Channel Change.
B.M. No. 128 - R.R. Spike in Base 6" Willow 70' Lt. Sta. 1504+90 - Elev. 478.90.
B.M. No. 129 - R.R. Spike in Base 10" Locust 35' Lt. Sta. 1516+60 - Elev. 505.45
B.M. No. 130 - R.R. Spike in Side P. Pole 35' Lt. Sta. 1526+15 - Elev. 491.76
SHEET TOTALS
CONT - 96330 - Cu Yds
EMB 81676
C&G 16.8 Acres
Scale: 1" = 50'
Const. Spal. Ditch Grade Rt.
Spal. Ditch Grade Rt.
Spal. Ditch Grade Lt.
Channel Change Line
800' VC
600' VC
400' SD
Sta. 1504+90 = Sta. 1504+90 To Sta. Overhaul
Sta. 1516+60 = Sta. 1516+60 To Sta. Overhaul
Sta. 1526+15 = Sta. 1526+15 To Sta. Overhaul
59361 Cont
13,809 Cont
13,604
205
23,158 Cont
5390 Emb
5390 Emb
21,053 Emb
2105
23,158

APPENDIX E: KYTC Bridge and Culvert Inspection Reports

012C00003N

KYTC Bridge Inspection Report

Summary:

Inspection Date: 2/22/2010
Inspector: GCOCHRAN (23)
Primary Type: Substandard (12 Months)

Types of Inspections Performed:

National Bridge Inventory:	Y
Element:	Y
Fracture Critical:	N
Underwater:	N
Other Special:	N

Inspector Signature:

District Review Date: 2/24/2010
District Reviewer: BSEITER (55)

IDENTIFICATION

Bridge ID (8):	012C00003N MAP BRIDGE	**District Number:**	6
Route Carried (7):	LONG SRETCH RD	**County (3):**	23 Bracken
Mile Point:	0.48	**Feature Intersected (6):**	TURTLE CREEK
Location (9):	.1 MI N OF JCT KY 8	**Road Name:**	LONG SRETCH RD
Structure Description:	62.99 Foot - Single Span Steel Truss - Thru		

NBI CONDITION

Deck (58):	7
Superstructure (59):	6
Substructure (60):	4
Culverts (62):	N
Channel/Protection (61):	7

SCHEDULE TAB

Schedule:	Required (Y/N)		Last Date		Frequency	Next Date
NBI (90):			2/22/2010	(91):	6 mos	8/22/2010
Fracture Critical (92A):	N	(93A):	2/1/2006	(92A):	mos	2/1/2008
Underwater (92B):	N	(93B):	1/1/1901	(92B):	mos	1/1/1901
Other Special (92C):	N	(93C):	2/1/2006	(92C):	mos	1/1/1901
Elemental:	NA				6 mos	8/22/2010

Load Rating and Posting

Truck Type	Typ I	Typ II	Typ III	Typ IV	Gross
Recomm. Posting:	12	12	12	12	12
Field Posting:	12	12	12	12	12

Posting Status (41): P Posted for load
Signs Posted: Cardinal: N Non-Cardinal: Y

WATERWAY

Scour Critical (113):	8
Observed 113 Rating:	U
Waterway Adeq. (71):	6

DECK/WEARING SURFACE

Deck Type (107):	1 Concrete-Cast-In-Place							
Wearing Surface/Protective System (108):	Type:	1	Membrane:	0	Protection:	0		
Traffic Safety Features (36):	Bridge Rail:	0	Transition:	0	Appr. Rail:	0	Rail Ends:	0
Overlay:	N							
Overlay Type:	-1							
Overlay Thickness:	0.00							

Vertical Clearances

Minimum Vertical Overclearance (53):	99.99
Minimum Vertical Underclearance (54):	0.00
Maximum Vertical Clearance (10):	99.99
Minimum Vertical Clearance:	

Sufficiency Ratings

SR: 23.90 **SD/FO:** 1 Structurally Deficient

Element Condition State Data

Elm/Env	Description	Units	Total Qty.	Qty. CS1	Qty. CS2	Qty. CS3	Qty. CS4	Qty. CS5
112/1	Unpnt Stl Stringer	LF	184.50	184.50	0.00	0.00	0.00	0.00
121/3	P/Stl Thru Truss/Bot	LF	0.00	0.00	0.00	0.00	0.00	0.00
12/3	Bare Concrete Deck	SF	738.00	738.00	0.00	0.00	0.00	0.00

012C00003N

KYTC Bridge Inspection Report

Summary:

Inspection Date: 2/22/2010
Inspector: GCOCHRAN (23)
Primary Type: Substandard (12 Months)

Types of Inspections Performed:

National Bridge Inventory:	Y
Element:	Y
Fracture Critical:	N
Underwater:	N
Other Special:	N

Element Condition State Data

Elm/Env	Description	Units	Total Qty.	Qty. CS1	Qty. CS2	Qty. CS3	Qty. CS4	Qty. CS5
126/3	P/Stl Thru Truss/Top	LF	0.00	0.00	0.00	0.00	0.00	0.00
152/3	Paint Stl Floor Beam	LF	42.00	0.00	0.00	0.00	0.00	42.00
215/3	R/Conc Abutment	LF	12.50	0.00	4.50	8.00	0.00	0.00
217/3	Other Mtl Abutment	LF	46.50	0.00	22.50	24.00	0.00	0.00
312/3	Enclosed Bearing	EA	4.00	0.00	0.00	4.00	0.00	0.00
359/3	Soffit Smart Flag	EA	1.00	1.00	0.00	0.00	0.00	0.00
361/1	Scour Smart Flag	EA	1.00	0.00	1.00	0.00	0.00	0.00
362/1	Traf Impact SmFlag	EA	1.00	1.00	0.00	0.00	0.00	0.00
601/1	MisAlign/ot of plane	EA	1.00	1.00	0.00	0.00	0.00	0.00
605/1	Transitions	EA	1.00	0.00	0.00	1.00	0.00	0.00
610/1	Chan Drift	EA	1.00	0.00	1.00	0.00	0.00	0.00

Element Condition State Data

Str Unit	Elm/Env	Description	Description
1	112/1	Unpnt Stl Stringer	Steel Stringers- Note that this structure is in backwater area of the Ohio River and at normal pool channel is only a few inches from bottom of structure at all times. During time of this inspection channel was approximately 8.0 inches from bottom of lower chord element; therefore any structural elements (abutments, deck soffit area, STEEL STRINGERS, steel floor beams, bearings, etc.) that require entering channel and or under structure for review could not be and were not viewed for inspection at this time. Depth of channel remains unknown. Underwater dive inspection is needed and should be considered as soon as possible. (02/05/2009 and 02/22/2010) Only exterior fascia of exterior most steel stringers could be viewed for inspection at this time. Note that both exterior stringer elements have vertical welds located at mid span area, which is splicing steel members together. Location of splice welds should be closely watched during inspections. (See Photos)
1	121/3	P/Stl Thru Truss/Bot	Truss Bottom Chord- As determined by KYTC Central Office Load Analysis Staff, structural elements throughout Steel Pony Truss are no longer functioning as a load carrying unit and was not inspected at this time. (02/05/2009 and 02/22/2010)
1	12/3	Bare Concrete Deck	Deck- Note that this structure had old timber planking deck design removed during the year of 2007 and a new cast-in-place concrete deck placed during project (approximately 5" to 7" in depth). Hairline diagonal cracking was found in random locations typical throughout deck surface area. Note that this structure is in backwater area of the Ohio River and at normal pool channel is only a few inches from bottom of structure at all times. During time of this inspection channel was approximately 8.0 inches from bottom of lower chord element; therefore any structural elements (abutments, DECK SOFFIT AREA, steel stringers, steel floor beams, bearings, etc.) that require entering channel and or under structure for review could not be and were not viewed for inspection at this time. Depth of channel remains unknown. Underwater dive inspection is needed and should be considered as soon as possible. (02/05/2009 and 02/22/2010) (See Photos)
1	126/3	P/Stl Thru Truss/Top	Truss Top Chord- As determined by KYTC Central Office Load Analysis Staff, structural elements throughout Steel Pony Truss are no longer functioning as a load carrying unit and was not inspected at this time. (02/05/2009 and 02/22/2010)

012C00003N

KYTC Bridge Inspection Report

Summary:

Inspection Date: 2/22/2010
Inspector: GCOCHRAN (23)
Primary Type: Substandard (12 Months)

Types of Inspections Performed:

National Bridge Inventory:	Y
Element:	Y
Fracture Critical:	N
Underwater:	N
Other Special:	N

Element Condition State Data

Str Unit	Elm/Env	Description	Description
1	152/3	Paint Stl Floor Beam	Floor Beams- Note that this structure is in backwater area of the Ohio River and at normal pool channel is only a few inches from bottom of structure at all times. During time of this inspection channel was approximately 8.0 inches from bottom of lower chord element; therefore any structural elements (abutments, deck soffit area, steel stringers, STEEL FLOOR BEAMS, bearing, etc.) that require entering channel and or under structure for review could not be and were not viewed for inspection at this time. Depth of channel remains unknown. Underwater dive inspection is needed and should be considered as soon as possible. (02/05/2009 and 02/22/2010) During construction rehab project in the year of 2007 of new steel stringer element placement, note that floorbeam's at top flanges were notched out (cut) at bearing union of stringer to floorbeam locations. Center stringer is the only stringer that appears to be bearing on top flange of floorbeam elements. Areas need to be closely watched during inspections.
1	215/3	R/Conc Abutment	Concrete Abutments- Note that this structure is in backwater area of the Ohio River and at normal pool channel is only a few inches from bottom of structure at all times. During time of this inspection channel was approximately 8.0 inches from bottom of lower chord element; therefore any structural elements (ABUTMENTS, deck soffit area, steel stringers, steel floor beams, bearings, etc.) that require entering channel and or under structure for review could not be and were not viewed for inspection at this time. Depth of channel remains unknown. Underwater dive inspection is needed and should be considered as soon as possible. (02/05/2009 and 02/22/2010) Rating for this abutment is for what could be viewed for inspection this date (Top Most Section). (See Photos)
1	217/3	Other Mtl Abutment	Stone Abutments- Note that this structure is in backwater area of the Ohio River and at normal pool channel is only a few inches from bottom of structure at all times. During time of this inspection channel was approximately 8.0 inches from bottom of lower chord element; therefore any structural elements (ABUTMENTS, deck soffit area, steel stringers, steel floor beams, bearings, etc.) that require entering channel and or under structure for review could not be and were not viewed for inspection at this time. Depth of channel remains unknown. Underwater dive inspection is needed and should be considered as soon as possible. (02/05/2009 and 02/22/2010) Rating for this abutment is for what could be viewed for inspection this date (Top Most Section Only). Top edge of random stone masonry abutment is showing deterioration throughout with stone displacement detected in random areas. (See Photos)
1	312/3	Enclosed Bearing	Bearings- Note that this structure is in backwater area of the Ohio River and at normal pool channel is only a few inches from bottom of structure at all times. During time of this inspection channel was approximately 8.0 inches from bottom of lower chord element; therefore any structural elements (abutments, deck soffit area, steel stringers, steel floor beams, BEARINGS, etc.) that require entering channel and or under structure for review could not be and were not viewed for inspection at this time. Depth of channel remains unknown. Underwater dive inspection is needed and should be considered as soon as possible. (02/05/2009 and 02/22/2010)
1	359/3	Soffit Smart Flag	Soffit- Note that this structure is in backwater area of the Ohio River and at normal pool channel is only a few inches from bottom of structure at all times. During time of this inspection channel was approximately 8.0 inches from bottom of lower chord element; therefore any structural elements (abutments, DECK SOFFIT AREA, steel stringers, steel floor beams, bearings, etc.) that require entering channel and or under structure for review could not be and were not viewed for inspection at this time. Depth of channel remains unknown. Underwater dive inspection is needed and should be considered as soon as possible. (02/05/2009 and 02/22/2010)
1	361/1	Scour Smart Flag	Scour- Scour conditions at this structure remain unknown at this time. Note that this structure is in backwater area of the Ohio River and at normal pool channel is only a few inches from bottom of structure at all times. During time of this inspection channel was approximately 8.0 inches from bottom of lower chord element; therefore any structural elements (abutments, deck soffit, steel stringers, steel floor beams, etc.) that require entering channel and or under structure could not be and were not viewed for inspection at this time. Depth of channel remains unknown. Underwater dive inspection is needed and should be considered as soon as possible. (02/05/2009 and 02/22/2010)
1	362/1	Traf Impact SmFlag	Traffic Impact- As determined by KYTC Central Office Load Analysis Staff, structural elements throughout Steel Pony Truss are no longer functioning as a load carrying unit and was not inspected at this time. (02/22/2010) Past inspection notes were left in place from past inspection reports and are as follows: Several vertical members showing traffic impact damage. Random panel point vertical showing repair by threaded rod placed as a new vertical member. (See Photos)

012C00003N

KYTC Bridge Inspection Report

Summary:

Inspection Date: 2/22/2010
Inspector: GCOCHRAN (23)
Primary Type: Substandard (12 Months)

Types of Inspections Performed:

National Bridge Inventory:	Y
Element:	Y
Fracture Critical:	N
Underwater:	N
Other Special:	N

Element Condition State Data

Str Unit	Elm/Env	Description	Description
1	601/1	MisAlign/ot of plane	Out-of-Plane- As determined by KYTC Central Office Load Analysis Staff, structural elements throughout Steel Pony Truss are no longer functioning as a load carrying unit and was not inspected at this time. (02/22/2010) Past Inspection notes were left in place from past inspection reports and are as follows: Pony Truss bowstring members showing moderate to heavy misalignment (out-of-plane) throughout. (See Photos)
1	605/1	Transitions	Transitions- Note that both the rear and forward approach transitions to structure are causing unwanted impact on structure from traffic flow. Cast-in-place concrete design to newer deck is ramping traffic onto structure. (See Photos)
1	610/1	Chan Drift	Channel Drift- Note that a moderate amount of channel drift debris was found hung on under side of structure during time of inspection. (See Photos)

BRIDGE.Notes

*During the year of 2007 this structure had a new concrete deck placement (5" to 7" in depth) and new steel stringer floor beam elements placed throughout. Note that this construction was performed by unknown forces with unknown design. Since last inspection a load analysis (performed by KYTC Central Office Staff) has determined that Pony Truss is no longer functioning as load carrying unit, but does still remain in place. Under that determining, structural elements of Pony Truss structure as well as element descriptions Traffic Impact and Out-of-Plane were not considered in this inspection at all; therefore 123.0 LF of Pony Truss structural elements were zeroed out (0.001) during this inspection with impact to truss and out-of-plane not considered. (02/22/2010)

Work Candidates

Inspector Candidates:

Candidate ID:	Status	Priority	Assigned	Action	Elem	Date Recommended
012-C00003N-1	Approved	High	Unassigned	60	0	2/22/2010
012-C00003N-2	Approved	High	Unassigned	60	0	2/22/2010
012-C00003N-3	Approved	High	Unassigned	31	610	2/22/2010
012-C00003N-4	Approved	High	Unassigned	31	605	2/22/2010

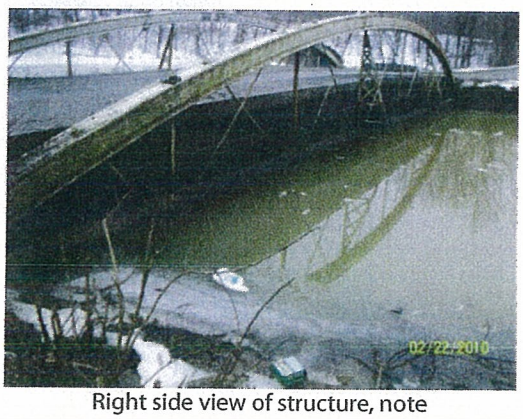
012C00003N (02/22/2010)
Forward to Rear

012C00003N

Weight Limit Sign at the forward approach (10 tons)

Vertical misalignment noted in Pony Truss Elements

Approach transition at the forward location



Right side view of structure, note clearance between lower chord and surface of stream

012C00003N

Left side view of structure, note channel drift debris

Rear to Forward

Transportation Cabinet
Division of Operations

TC 71-118
Rev. 1/96

6

BRIDGE INSPECTION REPORT

Reviewed By:
Review Date:

Two Yr ☐ Substd ☐ Underwater ☑ In-Depth ☐ Fracture Critical ☐

Project No: 12-0008-B00007 NBI-Location: KY 8 over Turtle Creek - Bracken County

Structure Description Double Barreld 14 x 14 R.C.B.C.

Milepoint: 12.2 Inspectors Initials AAC

Inspector's Signature Date: 10/2/2007

58	DECK	
1	Structural Condition	
2	Wearing Surface	
3	Joints	
4	Drains	
5	Expansion Devices	
6	Curbs, Sidewalks, Medians	
7	Railings	
8	Lighting and/or Utilities	

59	SUPERSTRUCTURE	
1	Stringers, Girders, Beams	
2	Floor Beams	
3	Trusses - Main Members	
3a	Trusses - Bracing, Portals	
4	Bearing Devices	
5	Alignment/Structural Members	
6	Deflection/Vibration under load	
7	Debris on Members	

59A	PAINT CONDITION		
Color:		Date Painted:	

60	SUBSTRUCTURE	
1	Abutments, Wingwalls	
2	Piers and/or Bents:	
3	Alignment and/or Settling	
4	Scour, Erosions	
5	Debris on Seats, Caps	
6	Protection Systems	
7	Abutments, Wingwalls (S.Z.D.)	
8	Piers /or Bents (S.Z.D.)	
9	Alignment or Settling Due to Scour	

61	CHANNEL/CHANNEL PROTECTION	
1	Channel Scour	
2	Embankment Erosion	
3	Drift	
4	Channel Alignment	
5	Vegetation	
6	Erosion	
7	Rip-Rap	

62	CULVERT RETAINING WALLS	
1	Barriers	
2	Wingwalls, Headwalls	
3	Debris	
4	Scour Under Footings (Underwater)	8
5	Erosion At Wingwalls (Underwater)	7
6	Drainage Adequacy (Underwater)	3

10 INVENTORY ROUTE VERTICAL CLEARANCES

Over ft in.
Under ft in.

36. TRAFFIC SAFETY

71	WATER ADEQUACY
72.	APPROACH ROADWAY ALIGNMENT

113	SCOUR CRITICAL BRIDGE RATING	6

108 WEARING SURFACE/PROTECTIVE SYSTEM

Type Membrane Protection

OVERLAY ☐ Yes ☐ No Date:

TYPE: LATEX ☐ P.C.C. ☐ ASPHALT ☐

DEPTH OF ASPHALT

RECOMMENDED LOAD CAPACITIES (tons) I II III IV GROSS

FIELD POSTINGS NE SW I II III IV GROSS

Additional Comments

A series of cracks were noted on all three vertical members and on both roof sections near the mid-point of the culvert. These cracks widened as they approach the culvert floor. The cracks in the west barrel floor measured 3" wide. There is a 2" gap between the northeast wingwall and the headwall and a 3" gap between the southwest wingwall and the headwall. The south end of the east barrel was 60% blocked and the south end of the west barrel ws 60% blocked.

Fuller Mossbarger Scott & May FMSM ENGINEERS

FMSM UNDERWATER BRIDGE INSPECTION FORM

1. Bridge Number: 12-0008-B00007

County: Bracken

Description: KY 8 - Turtle Creek (Structure 35)

Water Body: Turtle Creek

5. Supervisor: AAC **Crew:** JCG, RBC, TCB

Visitors:

Visitors

2. Date Tuesday, October 02, 2007

3. FMSM Project No: LX2006003

4. Weather **Temperature:** 80

☑ Sunny ☐ Partly Cloudy ☐ Other

☐ Cloudy ☐ Windy

Arrive: **Depart:**

Arrive: **Depart:**

6. Bridge Type:

☐ Continuous Plate Girder ☐ Suspension ☐ Reinforced Concrete Beam

☐ Steel Truss ☐ Wood Truss ☑ Other Double Barrel Culvert

7. Element Type:

☑ Reinforced Concrete ☐ Closed Web ☐ Open Web ☐ Steel Piles

☐ Masonry ☐ Timber Piles ☐ Other

8. Foundation Type

☐ Pile with pile cap ☐ Pile without pile cap Pier founded on rock ☐ or soil ☐

☐ Caisson ☐ Spread footing ☐ Other

9. Previous Report Available ☑ **Dates of Report:** 1990, 1995, 2000, 04

Originator: FMSM

10 Construction or As-Built Plans and/or Reports Available ☑ **Dates:** 1959

11 Water surface reference point on Pier or Bridge

Bottom of headwall north end on Barrel B to water surface

Reference Point Elevation: 485.4 **Distance to Water** 1.3 **Water Elevation:** 484.1

12. Pictures Taken

1. North Looking South
2. South Looking North

Fuller Mossbarger Scott & May FMSM ENGINEERS

FMSM UNDERWATER BRIDGE INSPECTION FORM

Bridge Number: 12-0008-B00007

Date: Tuesday, October 02, 2007

GPS Data No Sections Taken

13. Cross Sections:

	5'	10'	25'	50'	100'
☐ Upstream	☐	☐	☐	☐	☐
☐ Downstream	☐	☐	☐	☐	☐

View Point L to R Looking: ☐ Upstream ☐ Downstream

Benchmark Location:

Benchmark Coordinates Northing Easting Elevation

14. Scour:

a. Scour pockets or troughs ☑ No ☐ Yes

b. Footing or Foundation Element Exposed ☑ No ☐ Yes

c. Scour increased since last inspection ☑ No ☐ Yes ☐ No Previous Report Available

d. Comments:

15. Pier/Element Conditions: (see field notes for detailed description)

☑ Biological Growth See notes ☐ Zebra Mussel Growth

☐ Spalling ☐ Honeycombing

☑ Scaling See notes ☐ Reinforcing Steel Exposed

☑ Vertical Cracks ☑ Hairline ☐ Measurable See notes

☐ Horizontal Cracks ☐ Hairline ☐ Measurable

☐ Impact Damage ☐ Minor ☐ Major

☑ Pier Faces not Inspected List Piers Tree blockage of both barrels on south side

Reason for not inspecting Tree debris located in both barrels

☐ Other:

16. Heavy debris located around element ☐ No ☑ Yes, elements Barrel A and Barrel B southside

17. Bottom Conditions:

☑ Silt ☑ Gravel ☐ Boulders ☐ Clay ☑ Debris

☐ Sand ☐ Cobbles ☐ Bedrock, type

Debris:

☑ Sticks ☑ Tree Limbs ☑ Trees ☐ Timbers ☐ Steel Beam

☐ Construction Debris ☐ Waste Concrete ☐ Other:

Fuller Mossbarger Scott & May FMSM ENGINEERS

FMSM UNDERWATER BRIDGE INSPECTION FORM

Bridge Number: 12-0008-B00007

Date: Tuesday, October 02, 2007

18. Inspection Method

☑ Surface Supplied Air ☐ Scuba ☐ Wading ☐ Other

19. Bridge Access

a. **Boat:** ☐ Skiff ☐ Whaler ☐ Jonboat ☐ Monark ☑ Other: Land Access

Ramp: ☐ Concrete ☐ Gravel ☐ Dirt ☐ None ☐ Ramp fee

Locked Through ☑ No ☐ Yes

Distance from ramp to bridge: **Travel time:**

Comments / Directions: Gravel road on the north side of KY 8.

b. **Bank/Shore:** ☑ Grass ☐ Rock ☐ Gravel ☑ Dirt/Mud ☐ Other

20. Boat Traffic

a. Recreational: ☐ Heavy ☐ Moderate ☐ Light ☑ N/A

b. Fishing: ☐ Heavy ☐ Moderate ☐ Light ☑ N/A

c. Barge: ☐ Heavy ☐ Moderate ☐ Light ☑ N/A

Comments:

21. Water Conditions:

Temperature: 75 Degrees F **Visibility:** 0.0

Current: ☐ Heavy ☐ Moderate ☐ Light ☑ None

22. General Comments (Include any unusual conditions encountered):

Fuller Mossbarger Scott & May ENGINEERS

Structure 12-0008-B00007 County Bracken Date 10/2/2007

Description North Looking South Crew AAC, JCG, RBC, TCB

Photos

Fuller Mossbarger Scott & May ENGINEERS

Structure 12-0008-B00007 County Bracken Date 10/2/2007

Description South Looking North Crew AAC, JCG, RBC, TCB

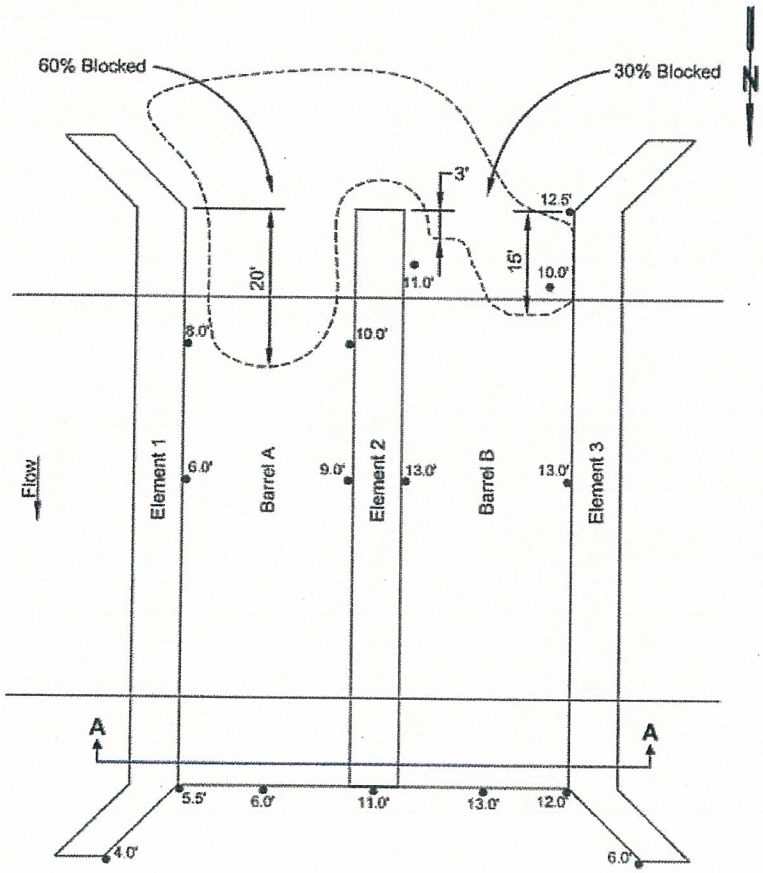
Photos

Fuller Mossbarger Scott & May FMSM ENGINEERS

Structure 12-0008-B00007 **County** Bracken **Date** 10/2/2007

Description Plan View **Crew** AAC, JCG, RBC, TCB

NOTE: All depths refer to depth below water surface at time of inspection



LEGEND

12.3' Sounding Location and Depth Below Water Surface

Flow Direction of Flow

Limits of Debris

Not to Scale

FILENAME: 12-B7-PLAN

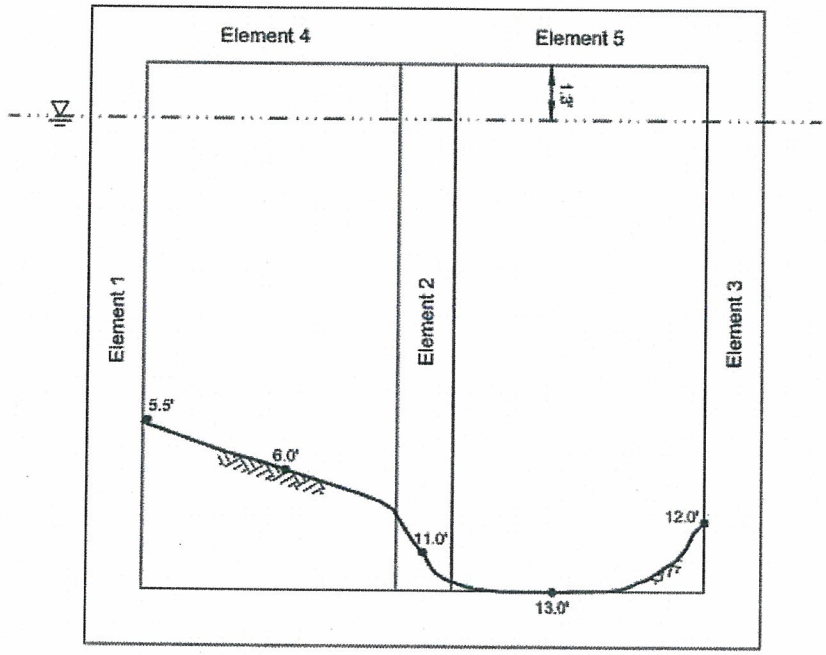
Plan View

Fuller Mossbarger Scott & May FMSM ENGINEERS

Structure 12-0008-B00007 **Element** Culvert **Date** 10/2/2007

NOTE: All depths refer to depth below water surface at time of inspection

Individual Pier Rating



LEGEND

12.3'	Sounding Location and Depth Below Water Surface
Flow	Direction of Flow
	Limits of Debris
	Soil Channel Bottom

Not to Scale

FILENAME: 12-B7-XS-A

Section A-A

Structure 12-0008-B00007 County Bracken Date 10/2/2007

Crew AAC, JCG, RBC, TCB

Turtle Creek Culvert

General Notes

1. There is light scaling on the culvert below the water surface.
2. There is very light biological growth on the culvert below the water surface.
3. The bottom material at the end of the wingwalls consists of soft silt and twigs.
4. The bottom material is rocky extending 10.0 feet off north entrance.
5. The silt extends from the bottom to 5.0 feet of the surface on the east wingwall.
6. There is 6.0 feet of sediment within Barrel A, only 4 to 6 inches of sediment located within Barrel B.

Barrel A

1. There is 2 inches of seperation between the northeast wingwall and headwall.
2. There is a crack located 70.0 feet south of the north face, the crack extends in the transverse direction on Element 1, 2 and 4. The crack varies across the elements from hairline to 1 inch on the east side of Element 2, the maximum penetration is 2 1/2 inches.
3. The diver could not pass all the way through the barrel. The upstream end is blocked approximately 60 percent by debris with a penetration into the culvert of 20 feet.

Barrel B

1. There is a 3 inch gap between southwest wingwall and headwall.
2. The floor is exposed with very little sediment on approximately 90 percent of the culvert.
3. The bottom of the culvert is 13.0 feet below the water surface.
4. There is a crack located 70 feet south of the north face, extending from Element 2 accross Element 5 and down Element 3. The crack varies from hairline across the roof to 6 inches wide at the floor on Element 3 with 6 inches of penetration.
5. At 3 feet off the bottom of the coulvert on the east wall of the culvert is a spall 6 inches tall and 1 foot wide with 3 inches of penetration.
6. The diver could not pass all the way through the barrel. The upstream end is blocked approximately 30 percent by debris with a penetration into the culvert of 35 feet.
7. The roof cracks show some efflorescence and branching.

APPENDIX F: FIRM, Flood Insurance Map

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0044E

FIRM

FLOOD INSURANCE RATE MAP

BRACKEN COUNTY, KENTUCKY

AND INCORPORATED AREAS

PANEL 44 OF 205

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
AUGUSTA, CITY OF	210022	0044	E
BRACKEN COUNTY	210021	0044	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER 21023C0044E

EFFECTIVE DATE SEPTEMBER 16, 2004

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary

0.2% annual chance floodplain boundary

Floodway boundary

Zone D boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.

513 — Base Flood Elevation line and value; elevation in feet*

(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the National Geodetic Vertical Datum of 1929

A — A — Cross section line

23 - - - - - - 23 — Transect line

97°07′30″, 32°22′30″ — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)

4276000 M — 1000-meter Universal Transverse Mercator grid values, zone 17

600000 FT — 5000-foot grid ticks: Kentucky State Plane coordinate system, north zone (FIPSZONE 1601), Lambert Conformal Conic projection

DX5510 X — Bench mark (see explanation in Notes to Users section of this FIRM panel)

● M1.5 — River Mile

MAP REPOSITORY

Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
September 16, 2004

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

MAP SCALE 1" = 500'

250 0 500 1000 FEET

50 0 150 300 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0044E

FIRM
FLOOD INSURANCE RATE MAP
BRACKEN COUNTY, KENTUCKY
AND INCORPORATED AREAS

PANEL 44 OF 205

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
AUGUSTA, CITY OF	210022	0044	E
BRACKEN COUNTY	210021	0044	E

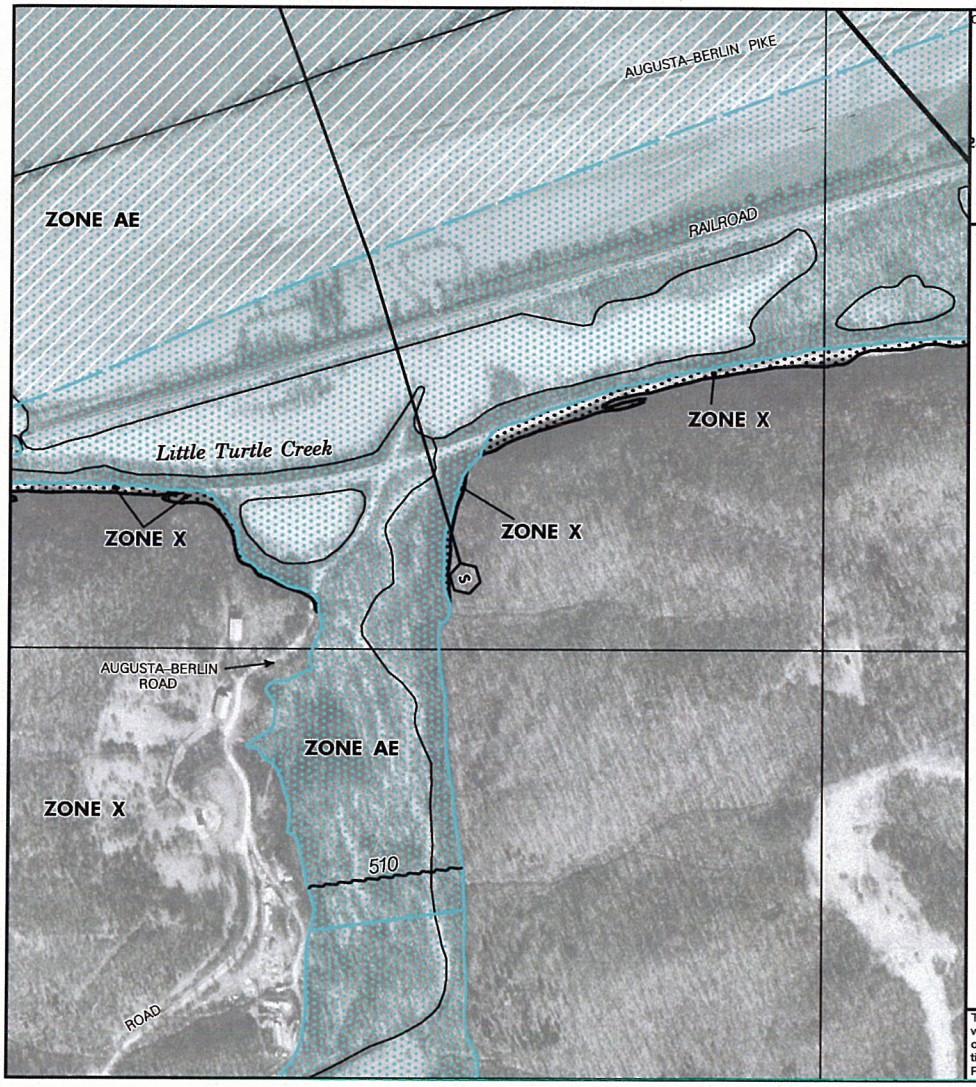
Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
21023C0044E

EFFECTIVE DATE
SEPTEMBER 16, 2004

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



onal Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0044E

FIRM

FLOOD INSURANCE RATE MAP

BRACKEN COUNTY, KENTUCKY

AND INCORPORATED AREAS

PANEL 44 OF 205

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

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APPENDIX G: PVA Map

MAP A1
MAP 050
LONG STRETCH RD
RIVERSIDE DR
FERRY ST
SECOND ST
FOURTH ST
WILLIAMS ST
10
8
13
33
10
10A
11B
12
11
15
14
9
31A
31
32
5
11C
11D
11A
31B
6
6A
8

APPENDIX H: Cost Summaries

CONSTRUCTION COST SUMMARY

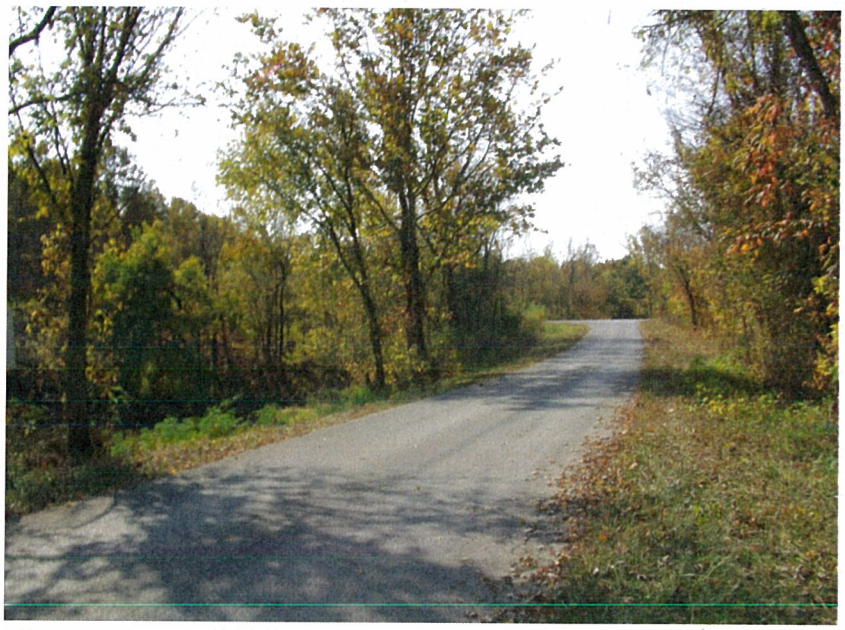
Bridge Length (ft)	Alternate	Total Construction Cost ($)
63	2b	350000
63	2a	411000
63	4	4800000
250	3	10260000

PROJECT COST SUMMARY

Bridge Length (ft)	Alternate	Total Project Cost ($)
63	2b	500000
63	2a	600000
63	4	6687000
250	3	11670000

APPENDIX I: Photographs

Bridge over Turtle Creek looking north



Long Stretch Road Entrance at KY 8

Estimated Single 12 ft X 12 ft Reinforced Concrete Culvert and Double 14 ft X 14 ft Reinforced Concrete Culvert at KY 8

View of Turtle Creek

View of C&O Railroad looking south