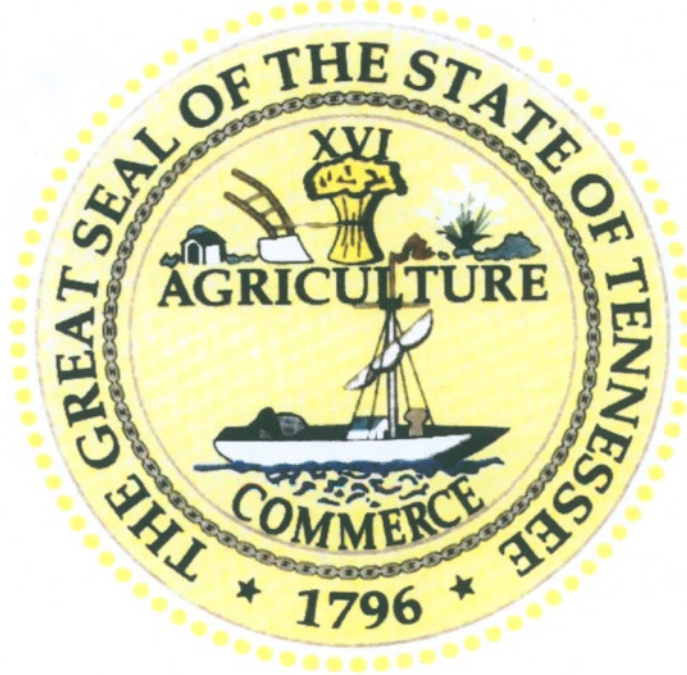


TRANSPORTATION PLANNING REPORT

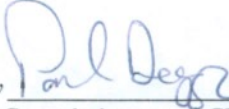
Special Bridge Replacement Program

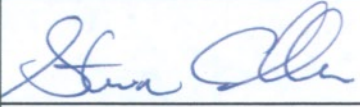

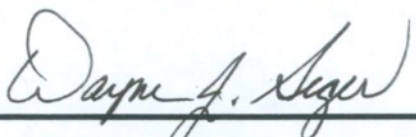
LOCAL ROUTE 0A297 – FORGE ROAD
BRIDGE OVER FORGE CREEK @ L.M. 1.86
JOHNSON COUNTY
PIN: 010716.00



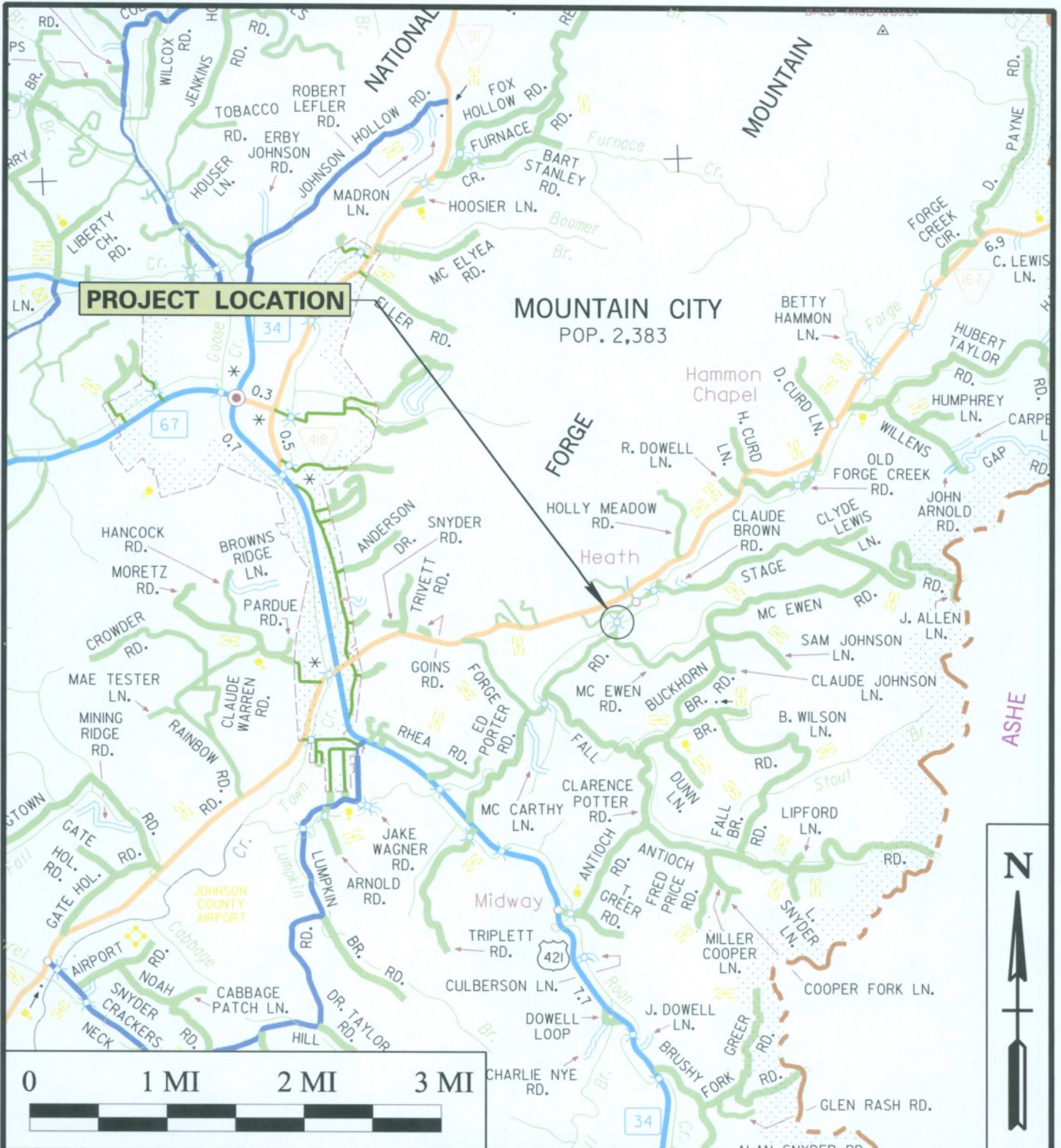
PREPARED BY
PROJECT PLANNING DIVISION
TENNESSEE DEPARTMENT OF TRANSPORTATION

Approved by:  Date: _____
Chief of Environment and Planning

Approved by:  Date: 6/21/13
Deputy Commissioner and Chief Engineer

Approved by:	Signature	DATE
Transportation Director Project Planning Division		6-5-13
Engineering Director Design Division		6-10-13
Engineering Director Structures Division		6-12-13

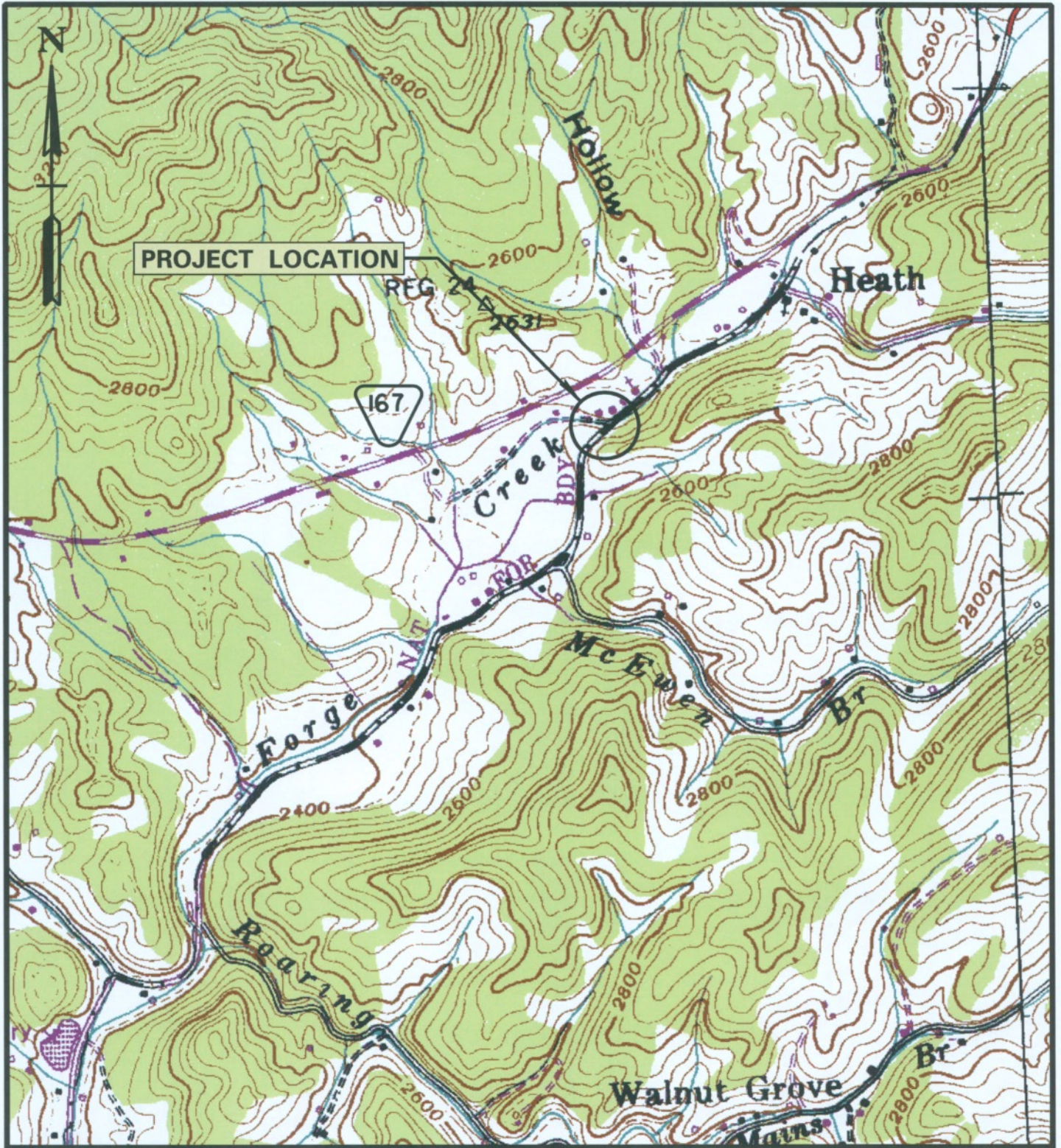
This document is covered by 23 USC § 409 and its production pursuant to fulfilling public planning requirements does not waive the provisions of § 409.



PROJECT LOCATION

MOUNTAIN CITY
POP. 2,383

AREA MAP
ROUTE 0A297 JOHNSON COUNTY
FORGE ROAD
BRIDGE OVER FORGE CREEK @ L.M. 1.86
BRIDGE ID 460A2970003

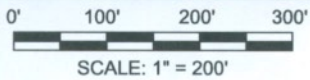


PROJECT MAP

**ROUTE 0A297 JOHNSON COUNTY
 FORGE ROAD
 BRIDGE OVER FORGE CREEK @ L.M. 1.86
 BRIDGE ID 460A2970003**



PROJECT LOCATION



AERIAL MAP
ROUTE 0A297 JOHNSON COUNTY
FORGE ROAD
BRIDGE OVER FORGE CREEK @ L.M. 1.86
BRIDGE ID 460A2970003

**TRANSPORTATION PLANNING WORKSHEET
BRIDGE REPLACEMENT ANALYSIS, NEEDS, AND COSTS**

County: Johnson Route: Local Route 0A297 Log Mile: 1.86
 Feature Crossed: Forge Creek System: Local
 Functional Class: Local Road Bridge ID: 460A2970003

EXISTING CONDITIONS

2017 AADT: 340 App. Cross Section: 18'/22'/48' No. Lanes: 2
 Approach Alignment: Tangent Year Built: 1955 Load Limit: H14
 Width (out to out): 24.2' Sidewalks: Right -- Left -- Length: 36'
 No. Spans: Approach: -- Main: 2
 Substructure: Slab Bridge Vertical Clearance: 8.7' Sufficiency Rating: 33.4
 Other: None

PROPOSED IMPROVEMENTS

STANDARDS FROM RD01-TS- 1A Type of Work: Replace
 Design Year: 2037 Design AADT: 400 Terrain Mount. ADL (F): -- (R): --
 Project Length: 400' Bridge Length: 38 ft Approach Length: 150 ft
 Design Speed (MPH): 30 Posted Speed (MPH): None
 Approach Width: 18' / 22' / As Req'd Bridge Width (O to O): 27.5 ft No. Lanes: 2
 Right-of-Way Required: 0.1 acre Tract(s) 2 Structure Type: Box Bridge

MAINTENANCE OF TRAFFIC

Temporary Detour: Temporary Runaround: Stage Construct:
 Alternate Route: Both access points for Forge Road will remain open. Closing the road at the bridge will not cause
 lose of access to any homes or businesses on Forge Road. Brown Road's access (adjacent to bridge) to Forge Road
 can be closed during construction since it has access to SR 167. Nelson Chapel Family Life Center will lose vehicle
 access to its recreation building across the street during construction. There is a ped bridge with parking still available
 to the recreation building. See Detour Map (Page 13) to view the detour route.

Remarks: _____

ESTIMATED COST

Right-of-Way: \$20,000 Approaches: \$74,400 Structure: \$137,300
 Preliminary Engineering: \$35,200 Utilities: \$25,000 Misc./Cont.: \$80,400
 Mobilization: \$14,400 Total: \$386,700

Remarks: The existing alignment will be maintained and the grade are to be raised 0.5 ft with atotal roadway width of
 24 feet total, with two 10' lanes and two 2' shoulders in order to meet the design standards according to RD01-TS-1.

A small amount of ROW will be required for this bridge replacement project.

Field Investigation by: Randy Plummer (Reg. 1 Design), Bailee Young (Reg. I Intern), Bob Ellen (Johnson Co. Hwy. Dept.)
 Barry Bishop (Johnson Co. Rdwy. Super.), David Duncan, Mike Gilbert, Terrance Hill (Planning)

Route:	Forge Road (0A297)
Description:	Bridge Replacement over Forge Creek @ L.M. 1.86
County:	Johnson
Length:	400 Feet
Date:	June 4, 2013

<u>DESCRIPTION</u>	<u>STATE</u>	<u>LOCAL</u>	<u>FEDERAL</u>	<u>TOTAL</u>
Right-of-Way	\$ -	\$ 4,000	\$ 16,000	\$ 20,000
Clearing and Grubbing	\$ -	\$ 1,000	\$ 4,000	\$ 5,000
Earthwork	\$ -	\$ -	\$ -	\$ -
Railroad Crossing or Separation	\$ -	\$ -	\$ -	\$ -
Drainage	\$ -	\$ 320	\$ 1,280	\$ 1,600
Utilities	\$ -	\$ 6,800	\$ 27,200	\$ 34,000
Structures	\$ -	\$ 24,600	\$ 98,200	\$ 122,800
Pavement Removal	\$ -	\$ 600	\$ 2,200	\$ 2,800
Paving	\$ -	\$ 7,200	\$ 28,900	\$ 36,100
Roadway and Pavement Appurtenances	\$ -	\$ -	\$ -	\$ -
Retaining Walls	\$ -	\$ -	\$ -	\$ -
Topsoil	\$ -	\$ -	\$ -	\$ -
Seeding	\$ -	\$ -	\$ -	\$ -
Sodding	\$ -	\$ -	\$ -	\$ -
Rip-Rap or Slope Protection	\$ -	\$ 900	\$ 3,600	\$ 4,500
Fencing	\$ -	\$ -	\$ -	\$ -
Signing	\$ -	\$ -	\$ -	\$ -
Pavement Markings	\$ -	\$ 100	\$ 300	\$ 400
Lighting	\$ -	\$ -	\$ -	\$ -
Signalization	\$ -	\$ -	\$ -	\$ -
Guardrail	\$ -	\$ 2,700	\$ 10,900	\$ 13,600
Other Construction Items (15%)	\$ -	\$ 7,200	\$ 28,900	\$ 36,100
Maintenance of Traffic	\$ -	\$ 2,000	\$ 8,000	\$ 10,000
Mobilization (5%)	\$ -	\$ 2,900	\$ 11,500	\$ 14,400
CONSTRUCTION COST (rounded)	\$ -	\$ 60,300	\$ 241,000	\$ 301,300
Engineering and Contingency (10%)	\$ -	\$ 6,000	\$ 24,100	\$ 30,100
TOTAL CONSTRUCTION COST (rounded)	\$ -	\$ 66,300	\$ 265,100	\$ 331,400
Preliminary Engineering (10%)	\$ -	\$ 6,600	\$ 26,500	\$ 33,100
PROJECT COST¹ (rounded)	\$ -	\$ 72,900	\$ 291,600	\$ 364,500

¹ For estimating future project costs, a compounded inflation rate of 10 % should be applied from the date of this estimate.

Johnson

Local Route 0A297
LM 1.86 (Bridge Replacement)

Pay Item Summary

TDOT PAY ITEM	TDOT DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
-	Right-of-Way	LS	LS	\$ 20,000.00	\$ 20,000
RIGHT-OF-WAY TOTAL (ROUNDED)					\$ 20,000
201-01	Clearing and Grubbing	LS	LS	\$ 5,000.00	\$ 5,000
CLEAR AND GRUBBING TOTAL (ROUNDED)					\$ 5,000
203-03	Borrow Excavation (Unclassified)	LS	LS	\$ 1,700.00	\$ 2,800
EARTHWORK TOTAL (ROUNDED)					\$ 2,800
202-03.01	Removal of Asphalt Pavement	SY	444	\$ 5.20	\$ 2,309
415-01.02	Cold Planing Bituminous Pavement	SY	222	\$ 1.84	\$ 408
PAVEMENT REMOVAL TOTAL (ROUNDED)					\$ 2,800
209-08.02	Temporary Silt Fence (w/ backing)	LF	400	\$ 4.00	\$ 1,600
DRAINAGE TOTAL (ROUNDED)					\$ 1,600
	Above Ground Utilities	LF	2400	\$ 10.00	\$ 24,000
770-18.10	35FT Wood Pole	EA	2	\$ 5,000.00	\$ 10,000
UTILITIES TOTAL (ROUNDED)					\$ 34,000
	Removal of Existing Bridge	SF	871.2	\$ 15.00	\$ 13,068
	Box Bridge	SF	1,045	\$ 105.00	\$ 109,725
STRUCTURES TOTAL (ROUNDED)					\$ 122,800
--	Full Depth Paving	TON	213.8	\$ 96.00	\$ 20,525
411-03.10	ACS Mix (PG76-22) Grading D	TON	16.2	\$ 96.00	\$ 1,555
403-01	Bituminous Material for Tack Coat (TC)	TON	0.2	\$ 511.00	\$ 102
303-01	Mineral Aggregate, TY A Base, Grading D	TON	661.6	\$ 21.00	\$ 13,894
PAVING TOTAL (ROUNDED)					\$ 36,100
712-01	Traffic Control	LS	\$ 10,000	\$ 10,000.00	\$ 10,000
MAINTENANCE OF TRAFFIC TOTAL (ROUNDED)					\$ 10,000
716-11.01	Spray Thermo Pvmt Mrkng (4" Line)	LM	0.20	\$ 1,834.00	\$ 367
PAVEMENT MARKINGS TOTAL (ROUNDED)					\$ 400
705-04.05	Guardrail Terminal (Type-In-Line)	EACH	2	\$ 535.00	\$ 1,070
705-01.04	Metal Beam Guard Fence (Guardrail)	LF	76	\$ 55.46	\$ 4,215
705-04.04	Type 21 End Terminal	EACH	2	\$ 2,100.00	\$ 4,200
705-01.01	Guardrail at Bridge Ends	LF	45	\$ 62.00	\$ 2,790
705-02.50	Shop Curved Guardrail	LF	40.0	\$ 32.00	\$ 1,280
GUARDRAIL TOTAL (ROUNDED)					\$ 13,600
709-05.06	Machined Rip-Rap (Class A-1)	TON	150	\$ 30.00	\$ 4,500
RIP-RAP OR SLOPE PROTECTION TOTAL (ROUNDED)					\$ 4,500



**STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION**

PROJECT PLANNING DIVISION
SUITE 1000, JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-1402
(615) 741-2208

JOHN C. SCHROER
COMMISSIONER

BILL HASLAM
GOVERNOR

MEMORANDUM

TO: Project Planning Office

FROM: David Duncan, Roadway Specialist II
Conceptual and NEPA Planning Office

DATE: June 4, 2013

SUBJECT: TPR Field Review (Special Bridge Replacement Program)
Local Route 0A297 Bridge over Forge Creek
Log Mile 1.86
Johnson County

A field review was held for the above-mentioned project on June 6, 2012.

The existing structure is a two-span slab bridge with an out-to-out width of 24.2 feet. The overall bridge length is 36 feet with approximately 8.8 feet for the vertical clearance. The sufficiency rating for this bridge is 33.4. The 10-year and 100-year discharges and depths of flow for the drainage basin were determined using the appropriate regression equations. It was determined that the 100-year flow depth is 11.7 feet and the 10-year flow depth is 8.7 feet.

The proposed alignment for this structure will remain on the existing centerline and will be designed to meet TDOT design standard RD01-TS-1 for a design speed of 30 mph (AADT 400 to 1500, Mountainous). The proposed structure will be wider than the existing; therefore, it is estimated that a small amount of ROW will be required for this project and relocation of utility poles which are adjacent to the structure (See Images – Pages 19 - 29). Due to no indications of overtopping and surrounding mountainous terrain it is being recommended that the existing clearance remain the same. In order to maintain the existing clearance the grade will need to be raised approximately 6 inches (0.5 foot).

The route has a base year (2017) AADT of 340 and a design year (2037) AADT of 400. The bridge over Forge Creek will consist of an out-to-out width of 27.5 feet with two (2)

nine (9) feet lanes and two (2) feet shoulders in order to meet design standard RD01-TS-1 for mountainous terrain. The length of the entire project will be approximately 400 feet. It is being recommended that the proposed structure be a concrete box bridge with a total length of thirty-eight (38) feet. The proposed vertical clearance will be approximately nine (9) feet.

It is being recommended with the consent of Mountain City that Forge Road and Brown Road be closed within the Project Area since both roads have additional access to SR 167. It is recommended that Forge Road be closed to through traffic from Brown Road to McEwen Road. Detouring traffic will not result in loss of access to any homes or businesses, and it will not cause any significant delays (See Detour Map – Page 13). However, the vehicle access to the recreation building for Nelson Chapel Family Life Center will be lost during construction. A pedestrian bridge downstream of the project area will still be available to use during construction.

The required approach work, utility relocations, estimated replacement, and preliminary engineering costs for this bridge are approximately \$364,500. The required local match of twenty (20) percent of the total proposed project cost is estimated to be \$72,900.

DD

cc: file

CHECK LIST OF DETERMINANTS FOR LOCATION STUDY

If any of the following facilities or ESE categories are located within the project area or corridor, place an "x" in the blank opposite the item. Where more than one alternate is to be considered, place its letter designation in the blank.

1. Agricultural land usage	X
2. Airport (existing or proposed)	
3. Commercial area, shopping center	
4. Floodplains	X
5. Forested land	
6. Historical, cultural, or natural landmark	
7. Industrial park, factory	
8. Institutional usages	
a. School or other educational institution	
b. Church or other religious institution (Cemetery)	
c. Hospital or other medical facility	
d. Public building, e.g., fire station	
e. Defense installation	
9. Recreation usages	
a. Park or recreational area	
b. Game preserve or wildlife area	
10. Residential establishment	X
11. Urban area, town, city, or community	
12. Waterway, lake, pond, river, stream, spring	X
Permit required:	
Coast Guard	
Section 404	X
TVA Section 26a review	X
NPDES	X
Aquatic Resource Alteration	X
13. Other	
14. Location coordinated with local officials	X
15. Railroad crossings	
16. Hazardous materials site	

**TENNESSEE DEPARTMENT OF TRANSPORTATION
PROJECT PLANNING DIVISION**

PROJECT NO.: _____ ROUTE: Forge Rd. (0A297)
 COUNTY: Johnson CITY: Mountain City
 PROJECT PIN NUMBER: 010716.00
 PROJECT DESCRIPTION: Special Bridge Replacement Program
Bridge over Forge Creek
L.M. 1.86

DIVISION REQUESTING:

MAINTENANCE PAVEMENT DESIGN
 PLANNING STRUCTURES
 PROG. DEVELOPMENT & ADM. SURVEY & DESIGN
 PUBLIC TRANS. & AERO. TRAFFIC SIGNAL DESIGN
 OTHER
 YEAR PROJECT PROGRAMMED FOR CONSTRUCTION: _____
 PROJECTED LETTING DATE: _____

TRAFFIC ASSIGNMENT:

BASE YEAR		DESIGN YEAR					DESIGN ROADWAY % TRUCKS	DESIGN AVERAGE DAILY LOADS		
AADT	YEAR	AADT	DHV	%	YEAR	DIR.DIST.	DHV	AADT	FLEX	RIGID
340	2017	400	44	11	2037	65-35	1	2		

REQUESTED BY: NAME Michael Gilbert DATE 4/12/12
 DIVISION Planning
 ADDRESS 10th Floor
J.K. Polk Bldg

REVIEWED BY: TONY ARMSTRONG Tony Armstrong DATE 4-20-12
 TRANSPORTATION MANAGER 1
 SUITE 1000, JAMES K. POLK BUILDING

APPROVED BY: DUDLEY DANIEL Dudley Daniel DATE 20 Apr 12
 TRANSPORTATION MANAGER 2
 SUITE 1000, JAMES K. POLK BUILDING

COMMENTS:

This Traffic Based on [24 hour] Machine Count, (April 2012). The Future Traffic is based on Growth Rate from the ADAM Computer Program.

DHV'S ARE NOT REQUIRED FOR SIDE ROADS LESS THAN 1000 AADT.

NOTE: FOR BRIDGE REPLACEMENT PROJECTS, ADLs ARE NOT REQUIRED FOR ADTs OF 1000 OR LESS AND PERCENTAGE OF TRUCKS OF 7% OR LESS.
 SEE ATTACHMENTS FOR TURNING MOVEMENTS AND/OR OTHER DETAILS.

FILE NO.	PROJECT PLANNING DIVISION
STATE	TENNESSEE
COUNTY	JOHNSON
YEAR	2012
TYPE	BRIDGE
FIGURE NO.	1



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
PROJECT PLANNING DIVISION

BRIDGE REPLACEMENT
FORGE ROAD (0A297) L.M. 1.86
BRIDGE ID: 460A2970003
JOHNSON COUNTY



TENNESSEE D.O.T.
PROJECT PLANNING DIVISION
FILE NO.

S:\Projects\Johnson\Forge Rd (0A297)\Bridge over Forge Creek (L.M. 1.86)\Information\Proposed Alignment 0A297.dgn

TYPE	YEAR	COUNTY	ROUTE NO.
BRIDGE	2012	JOHNSON	2



FILE NO. ---
 TENNESSEE D.O.T.
 PROJECT PLANNING DIVISION

OPEN ACCESS

OPEN ACCESS

OPEN ACCESS

PROJECT LOCATION
CLOSE ROAD

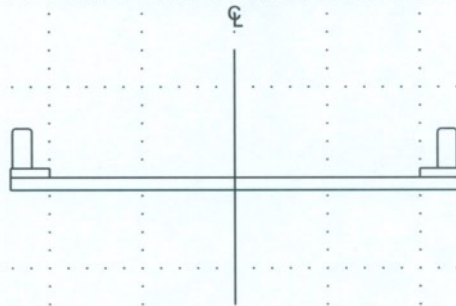
CLOSED TO THROUGH TRAFFIC



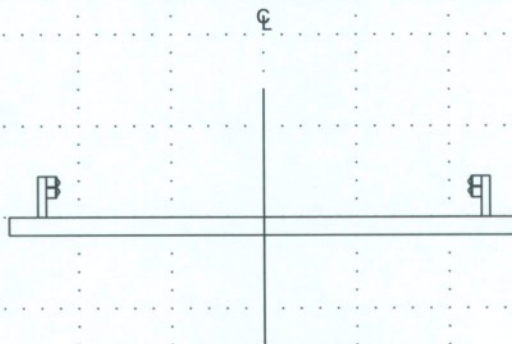
DETOUR MAP
 FORGE ROAD 0A297
 L.M. 1.86
 JOHNSON COUNTY

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 PROJECT PLANNING DIVISION
 FIGURE 2
 0A297
 L.M. 1.86

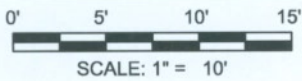
EXISTING STRUCTURE



COMPLETED PROPOSED STRUCTURE



TOTAL WIDTH = 27.5'



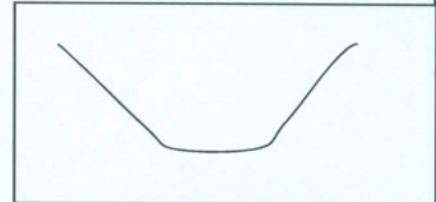
STAGE CONSTRUCTION DETAIL
LOCAL ROUTE 0A297 JOHNSON COUNTY
BRIDGE OVER FORGE CREEK @ L.M. 1.86
BRIDGE ID: 460A2970003

SITE INSPECTION

INSPECTION MADE BY: David Duncan BRIDGE ID: 460A2970003 COUNTY: Johnson
 Date: 7/13/12 Route Name: 0A297 Stream Name: Forge Creek @ L.M. 1.86

CHANNEL

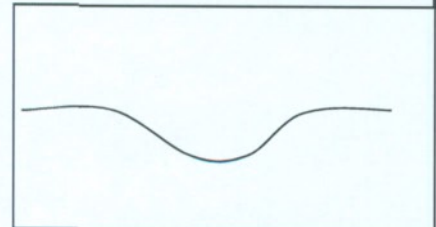
Approx depth and width of channel: Horizontal: 36' Vertical: 1'
 Depth of normal flow: 1' In Reservoir: Yes No
 Depth of Ordinary High Water: 1'
 Type of material in stream bed: Gravel and Stone
 Type of vegetation on banks: Grass
 "N" factor of the channel: 0.03
 Are channel banks stable: 0 Yes No
 If the streambed is gravel: D₃₀ = -- D₈₅ = --
 Skew of the channel with the roadway: 55°



Channel Shape Sketch

FLOODPLAIN

Is the skew same as the channel? Yes No
 Is it symmetrical about the channel? Yes No
 Type of vegetation in the floodplain and "N" factors
 Left U.S.: Grass (0.035) Right U.S.: Grass (0.035)
 Left D.S.: Grass (0.035) Right D.S.: Grass (0.035)
 Are roadway approaches lower than the structure? Yes No
 Are there any buildings in the floodplain? Yes No
 Approx. floor elevations: --
 Flood information from local residents:
 (elevations & dates) --



Floodplain Sketch

EXISTING STRUCTURE

Length: 36' No. of spans: 2 Structure type: Slab Bridge No. of lanes: 2 Skew: 55°
 Width (out to out): 24.2' Width (curb to curb): 20' Approach: paved graveled
 Sidewalks on Structure: Yes No Bridgerail type: Concrete Parapet Bridgerail height = 2.7
 Superstructure depth: 3.40 Finished Grade to low girder = 0.7 Girder depth = 0.7
 Are any substructures in the channel? Yes No Vertical Clearance = 8.7' ft
 Indications of overtopping: None
 High water marks: Low Chord
 Local scour: Yes, No
 Any signs of stream aggradation or degradation? Damage to the pier. (See Images)
 Any drift or drift potential? Yes, No
 Any obstructions (pipes, stock fences, etc.)? Debris built up around inlet.

PROPOSED STRUCTURE

Replacement Rehabilitate Widening New Location
 Bridge length: 38 ft Bridge type: Box Bridge Span arrangement: 2 @ 18 x 9 Skew: 55°
 Bridge width: 27.5 ft Sidewalks: None Design Speed (MPH): 30 ADT (2037) = 400
 Proposed grade: Raise 0.5' Proposed alignment: Maintain Existing
 Method of maintaining traffic: Stage construction On site detour Close road Shift Centerline
 Cost of proposed Structure: \$105 per ft² X 38 / 27.5 length (ft) / width (ft) Cost = \$109,700
 Cost of bridge removal: \$15 per ft² X 36 / 24.2 length (ft) / width (ft) Cost = \$13,100
 Detour structure: Type and size = None Cost = \$0

Total Structure Cost = \$122,800

**Bridge TPR Flow Calculations
For Hydrologic Area 2
Area > 300 Acres**

County: Johnson
 Bridge ID: 460A2970003
 Route: 0A297
 Feature Crossed: Forge Creek
 Log Mile: 1.86

By: DD
 Date: 7/13/12
 PIN: 010716.00

DRAINAGE BASIN

Measurement from quad = 7,693 acres
 Contributing Drainage Area, CDA = acres/640 = 12.02 sq. mi.

USGS REGRESSION EQUATIONS FOR FLOW

$Q_2 = 207(CDA)^{0.725} =$ 1,256 cfs
 $Q_5 = 344(CDA)^{0.715} =$ 2,036 cfs
 $Q_{10} = 444(CDA)^{0.711} =$ 2,601 cfs
 $Q_{25} = 578(CDA)^{0.708} =$ 3,361 cfs
 $Q_{50} = 682(CDA)^{0.706} =$ 3,946 cfs
 $Q_{100} = 788(CDA)^{0.705} =$ 4,548 cfs

DEPTH OF FLOW EQUATIONS

10-Year Flood Depth = $5.33(CDA)^{0.197} =$ 8.7 ft
 100-Year Flood Depth = $7.43(CDA)^{0.181} =$ 11.7 ft

AREAS

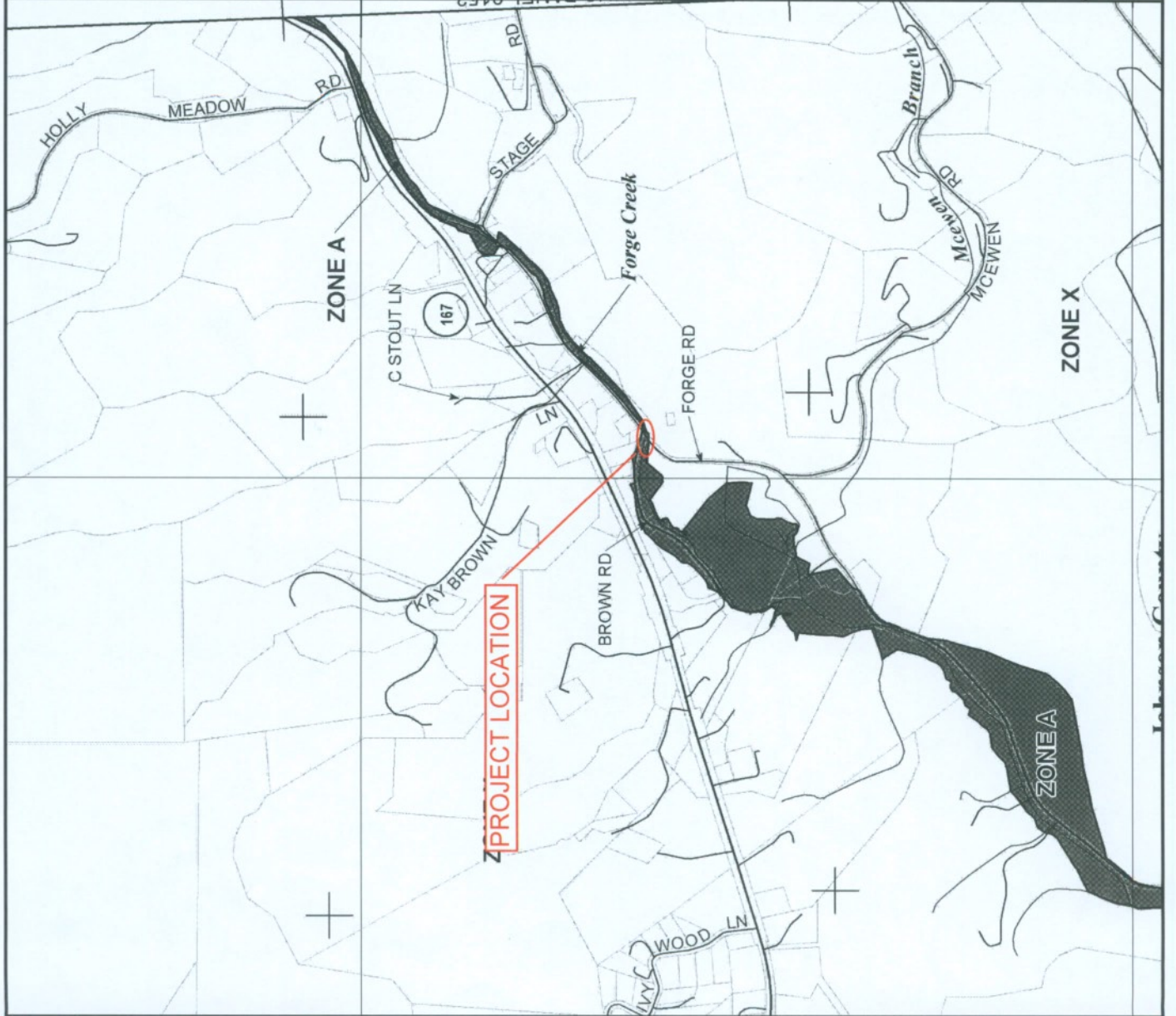
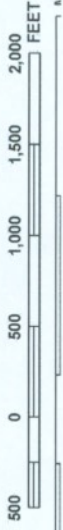
Existing Area Below Low Chord = 566 ft²
 Proposed Area Below Low Chord = 570 ft²
 Proposed 10-Year Flood Area, $A_{10} =$ 183 ft²
 Proposed 100-Year Flood Area, $A_{100} =$ 303 ft²

VELOCITIES

Proposed 10-Year Flood Velocity, $V_{10} = Q_{10}/A_{10} =$ 14.2 fps
 Proposed 100-Year Flood Velocity, $V_{100} = Q_{100}/A_{100} =$ 15.0 fps



MAP SCALE 1" = 1000'



NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0135C

FIRM
FLOOD INSURANCE RATE MAP
JOHNSON COUNTY,
TENNESSEE
AND INCORPORATED AREAS

PANEL 135 OF 275
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
JOHNSON COUNTY 470230 0135 C

Notice to Users: 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.

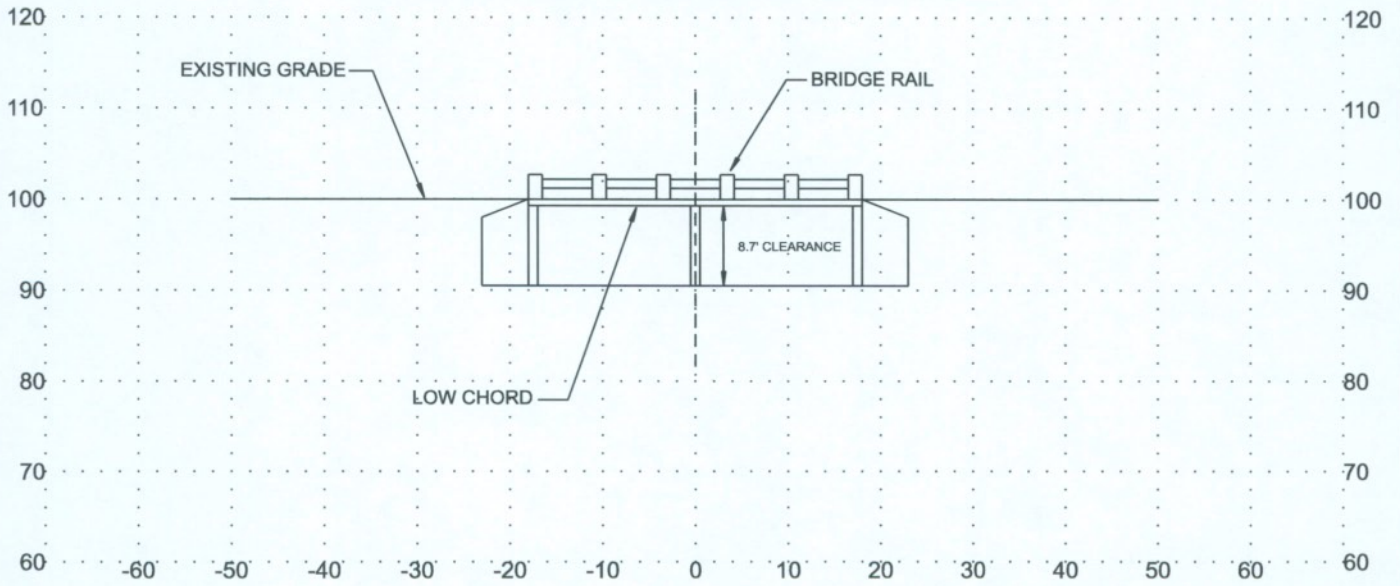
MAP NUMBER
47091C0135C
EFFECTIVE DATE
JUNE 16, 2009



Federal Emergency Management Agency

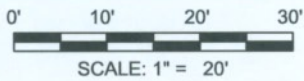
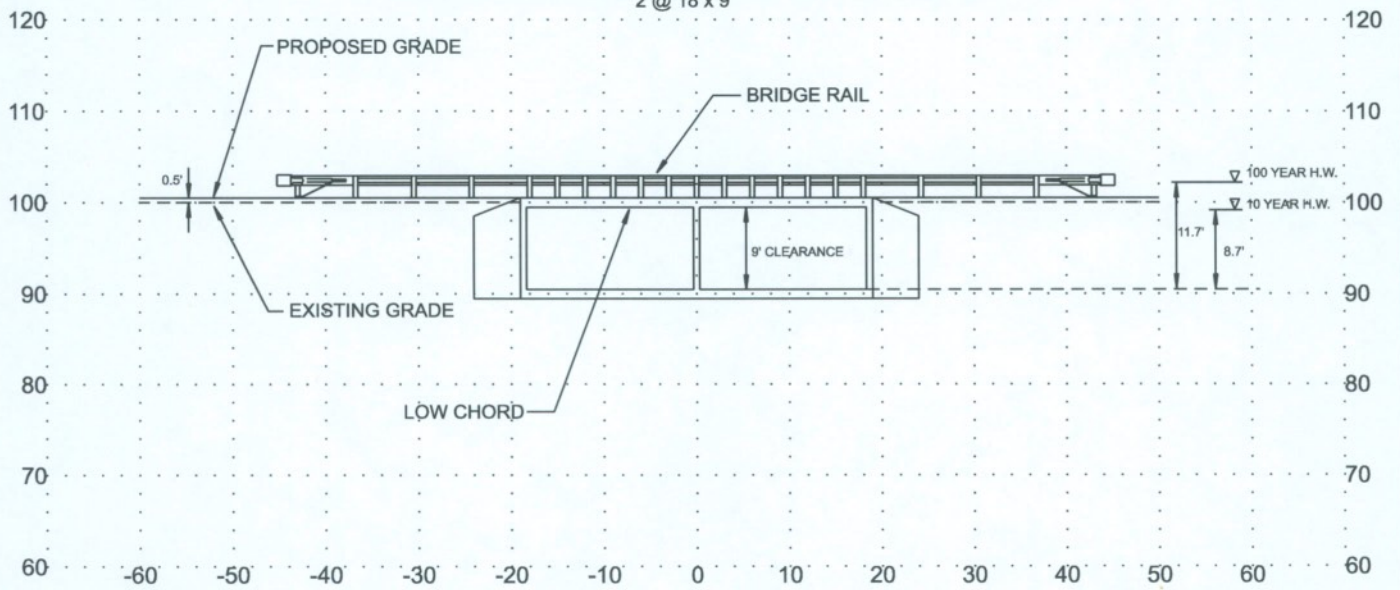
This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program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

EXISTING STRUCTURE (OUTLET)



PROPOSED STRUCTURE (OUTLET)

2 @ 18 x 9



BRIDGE SECTIONS
 LOCAL ROUTE 0A297 JOHNSON COUNTY
 BRIDGE OVER FORGE CREEK @ L.M. 1.86
 BRIDGE ID 460A2970003

Johnson County – 0A297 Bridge over Forge Creek @ L.M. 1.86
Bridge ID: 460A2970003



COUNTY# / BRIDGE# / LOG MILE



CONCRETE PARAPET

Johnson County – 0A297 Bridge over Forge Creek @ L.M. 1.86
Bridge ID: 460A2970003



WESTBOUND APPROACH (LOOKING WEST)



WESTBOUND APPROACH (LOOKING EAST)

Johnson County – 0A297 Bridge over Forge Creek @ L.M. 1.86
Bridge ID: 460A2970003



EASTBOUND APPROACH (LOOKING WEST)



EASTBOUND APPROACH (LOOKING EAST)

Johnson County – 0A297 Bridge over Forge Creek @ L.M. 1.86
Bridge ID: 460A2970003



BROWN ROAD (LOOKING NORTH)



BROWN ROAD (LOOKING SOUTH)

Johnson County – 0A297 Bridge over Forge Creek @ L.M. 1.86
Bridge ID: 460A2970003



DOWNSTREAM



DOWNSTREAM (LEFT)

Johnson County – 0A297 Bridge over Forge Creek @ L.M. 1.86
Bridge ID: 460A2970003



DOWNSTREAM (RIGHT)



UPSTREAM

Johnson County – 0A297 Bridge over Forge Creek @ L.M. 1.86
Bridge ID: 460A2970003



UPSTREAM (RIGHT)



UPSTREAM (LEFT)

Johnson County – 0A297 Bridge over Forge Creek @ L.M. 1.86
Bridge ID: 460A2970003



VEHICLE ACCESS TO REC BUILDING (LOOKING NORTH)



VEHICLE ACCESS TO REC BUILDING (LOOKING SOUTH)

Johnson County – 0A297 Bridge over Forge Creek @ L.M. 1.86
Bridge ID: 460A2970003



INLET



OUTLET

Johnson County – 0A297 Bridge over Forge Creek @ L.M. 1.86
Bridge ID: 460A2970003



DAMAGED SUBSTRUCTURE



CRACKING IN THE ABUTMENT

Johnson County – 0A297 Bridge over Forge Creek @ L.M. 1.86
Bridge ID: 460A2970003



VIEW UNDER THE DECK



POSTED WEIGHT LIMIT SIGN