



**STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION**

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

**JOHN C. SCHROER**  
COMMISSIONER

**BILL HASLAM**  
GOVERNOR

**MEMORANDUM**

**TO:** Rick Pack, Transportation Manager II  
Program Development and Scheduling Office

**FROM:** Chris Armstrong, Transportation Manager I *CA*  
Project Planning Division

**DATE:** December 21, 2012

**SUBJECT:** Transportation Planning Report, Special Bridge Replacement Program

REGION	PIN	COUNTY	ROUTE	TERMINI
3	117328.00	Marshall	Local Route 0A261	Bridge over Hatchett River

I am enclosing a copy of the subject report bearing the signatures of the appropriate department personnel. In addition, a PDF file of the Transportation Planning Report (TPR) will be available on the Planning Office TPR Database, PPRM and Transportal.

This report is being provided for your use in determining priorities, establishing future scheduling, and initiating further development of the project.

If you need further information, please contact me.

CBA:lr

EC: Paul Degges, Adetokunbo Omishakin, Jeff Jones, Carolyn Stonecipher, Steve Allen, Jim Moore, David Layhew, Wayne Seger, Tanisha Hall, Liza Joffrion, Jeff Hoge, Mike Tugwell, Jennifer Lloyd, John Moore, Kip Mayton, Bill Hart, Terry Gladden, Terry Leatherwood, Angie Midgett, Jon Zirkle, Deborah Fleming, Teresa Estes, Kelly Henshaw,  
[TDOT.EnvironmentalDoc@tn.gov](mailto:TDOT.EnvironmentalDoc@tn.gov), File

CC/Enc: Sara Brown (South Central Tennessee RPO Coordinator), Gary Fottrell (FHWA)

# TRANSPORTATION PLANNING REPORT

## SPECIAL BRIDGE REPLACEMENT PROGRAM

LOCAL ROUTE 0A261 – HATCHETT HOLLOW ROAD  
BRIDGE OVER HATCHETT CREEK AT LOG MILE 0.12  
CORNERSVILLE, MARSHALL COUNTY  
PIN: 117328.00



PREPARED BY  
THE CORRADINO GROUP  
FOR THE  
TENNESSEE DEPARTMENT OF TRANSPORTATION  
PROJECT PLANNING DIVISION

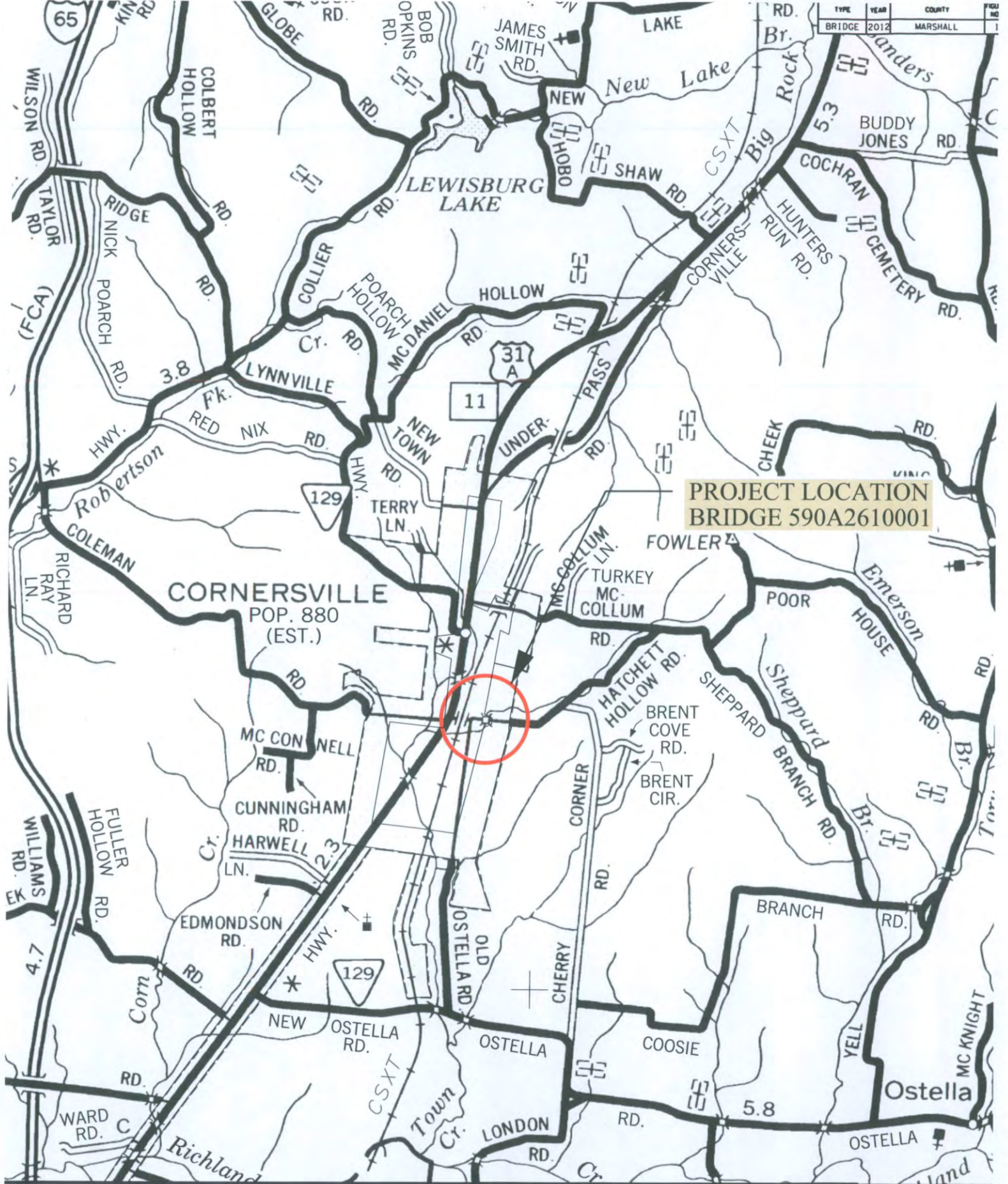
Approved by [Signature] Date 11/19/12  
Chief of Environment and Planning

Approved by [Signature] Date 12/19/12  
Deputy Commissioner and Chief Engineer

APPROVED BY:	SIGNATURE:	DATE:
Transportation Director Project Planning Division	<u>[Signature]</u>	10-26-12
Engineering Director Design Division	<u>[Signature]</u>	10-29-12
Engineering Director Structures Division	<u>[Signature]</u>	11-13-12

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





TYPE	YEAR	COUNTY	FIG. NO.
BRIDGE	2012	MARSHALL	1

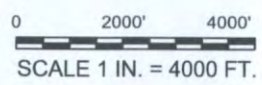
**PROJECT LOCATION  
BRIDGE 590A2610001**

**TRANSPORTATION PLANNING REPORT**

**HATCHETT HOLLOW RD. (0A261)  
L.M. 0.12 BRIDGE 590A2610001  
MARSHALL COUNTY**

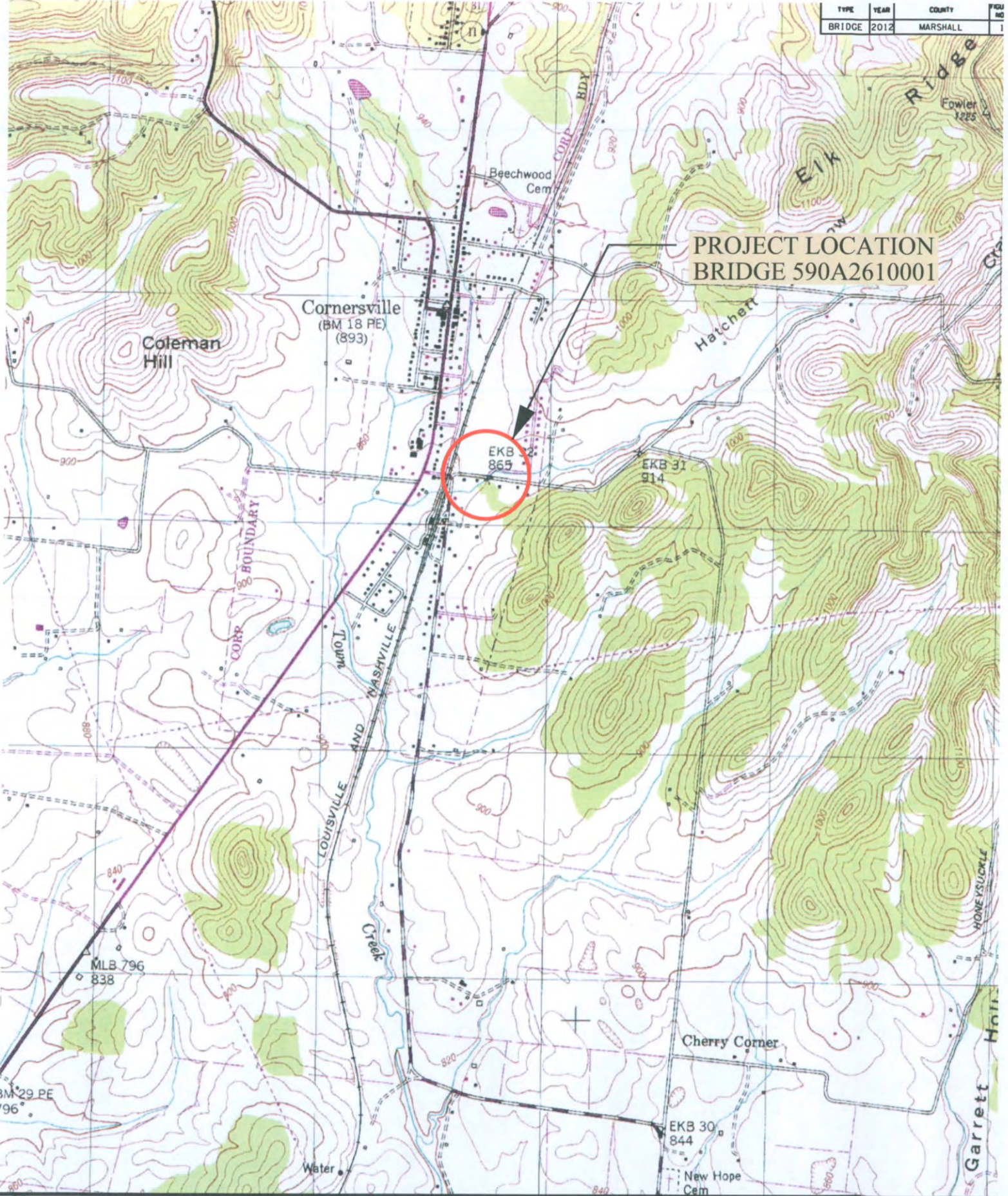
STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION  
PROJECT PLANNING DIVISION

**LOCATION  
MAP**





TYPE	YEAR	COUNTY	FIG. NO.
BRIDGE	2012	MARSHALL	1



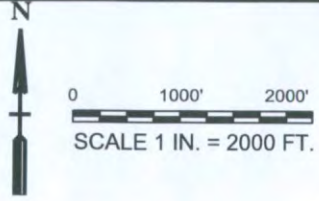
**PROJECT LOCATION  
BRIDGE 590A2610001**

**TRANSPORTATION PLANNING REPORT**

**HATCHETT HOLLOW RD. (0A261)  
L.M. 0.12 BRIDGE 590A2610001  
MARSHALL COUNTY**

STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION  
PROJECT PLANNING DIVISION

**PROJECT  
MAP**





TYPE	YEAR	COUNTY	FIG. NO.
BRIDGE	2012	MARSHALL	1



**PROJECT LOCATION  
BRIDGE 590A2610001**



0 150' 300'  
SCALE 1 IN. = 300 FT.

**TRANSPORTATION PLANNING REPORT**

**HATCHETT HOLLOW RD. (0A261)  
L.M. 0.12 BRIDGE 590A2610001  
MARSHALL COUNTY**

STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION  
PROJECT PLANNING DIVISION

**AERIAL  
MAP**



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

County: Marshall Route: Hatchett Hollow Rd. (0A261) Log Mile: 0.12  
 Feature Crossed: Hatchett Creek System: Local Route  
 Functional Class: Rural/Local Bridge ID: 590A2610001

**EXISTING CONDITIONS**

2016 AADT: 280 App. Cross Section: 16'/20'/36' No. Lanes: 2  
 Approach Alignment: Tangent Year Built: 1970 Load Limit: 15 Tons  
 Width (out to out): 19' Sidewalks: Right -- Left -- Length: 25'  
 No. Spans: Approach: -- Main: 2  
 Substructure: Concrete Box Vertical Clearance: 3'6" Sufficiency Rating: 61.4  
 Other: An active waterline and an abandoned cable television line are attached to the south side of the bridge.

**PROPOSED IMPROVEMENTS**

STANDARDS FROM RD01-TS- 1A Type of Work: Replace  
 Design Year: 2036 Design AADT: 340 Terrain Level ADL (F): -- (R): --  
 Project Length: 525 ft Bridge Length: 25 ft Approach Length: 500 ft  
 Design Speed (MPH): 20 MPH Posted Speed (MPH): 15 MPH  
 Approach Width:\* 20'/20'/As Required Bridge Width (O to O): 25.5 ft No. Lanes: 2  
 Right-of-Way Required: 5 Tract(s) Structure Type: Concrete Box  
0.2 Acres

**MAINTENANCE OF TRAFFIC**

Temporary Detour:  Temporary Runaround:  Stage Construct:   
 Alternate Route: Old Ostella Rd., Cherry Corner Rd., Turkey McCollum Rd.

Remarks: Local officials noted on the site visit that a detour is the most desirable construction option. The roadway is heavily utilized by school traffic. Local officials noted a desire for summer construction to be open for the school year. The existing box is in a low point, allowing for the grade to be raised with minimal impact to adjacent property.

**ESTIMATED COST**

Right-of-Way: \$35,000 Approaches: \$146,000 Structure: \$102,000  
 Preliminary Engineering: \$35,000 Utilities: \$20,000 Misc./Cont.: \$33,000  
 Mobilization: \$15,000 Total: \$386,000

Remarks: The lane widths are to be increased from 8 ft. to 10 ft. The elevation of the roadway is to be increased 3 ft. The horizontal alignment is to remain the same. Local officials noted a detour was acceptable.  
 Field Investigation by: Taylor Brandon & Scott Stiles (City of Cornersville); Glendy Tyus, Lisa Reaney, Casey Pounders, Scott Johnson, Mike Gilbert, Terry Arnold (TDOT); Richard Sullivan & Jon Storey (Corradino)



Route:	A0261 (Hatchett Hollow Road)
Description:	Special Bridge Replacement Program L.M. 0.12
County:	Marshall
Length:	
Date:	October 16, 2012

<u>DESCRIPTION</u>	<u>LOCAL</u>	<u>STATE</u>	<u>FEDERAL</u>	<u>TOTAL</u>
Right-of-Way	\$ 7,000	\$ -	\$ 28,000	\$ 35,000
Clearing and Grubbing	\$ -	\$ -	\$ -	\$ -
Earthwork	\$ 1,000	\$ -	\$ 2,000	\$ 3,000
Railroad Crossing or Separation	\$ -	\$ -	\$ -	\$ -
Drainage	\$ -	\$ -	\$ -	\$ -
Utilities	\$ 4,000	\$ -	\$ 16,000	\$ 20,000
Structures	\$ 20,000	\$ -	\$ 82,000	\$ 102,000
Pavement Removal	\$ 2,000	\$ -	\$ 7,000	\$ 9,000
Paving	\$ 8,000	\$ -	\$ 31,000	\$ 39,000
Roadway and Pavement Appurtenances	\$ -	\$ -	\$ -	\$ -
Retaining Walls	\$ -	\$ -	\$ -	\$ -
Topsoil	\$ -	\$ -	\$ -	\$ -
Seeding	\$ -	\$ -	\$ -	\$ -
Sodding	\$ -	\$ -	\$ -	\$ -
Rip-Rap or Slope Protection	\$ -	\$ -	\$ -	\$ -
Fencing	\$ -	\$ -	\$ -	\$ -
Signing	\$ 1,000	\$ -	\$ 5,000	\$ 6,000
Pavement Markings	\$ -	\$ -	\$ 1,000	\$ 1,000
Lighting	\$ -	\$ -	\$ -	\$ -
Signalization	\$ -	\$ -	\$ -	\$ -
Guardrail	\$ 1,000	\$ -	\$ 5,000	\$ 6,000
Pay Item Quantity Adjustment (15%) <sup>1</sup>	\$ 7,000	\$ -	\$ 26,000	\$ 33,000
Maintenance of Traffic	\$ 10,000	\$ -	\$ 40,000	\$ 50,000
Mobilization (5%)	\$ 3,000	\$ -	\$ 12,000	\$ 15,000
CONSTRUCTION COST (rounded)	\$ 64,000	\$ -	\$ 255,000	\$ 319,000
Engineering and Contingency (10%)	\$ 6,000	\$ -	\$ 26,000	\$ 32,000
TOTAL CONSTRUCTION COST (rounded)	\$ 70,000	\$ -	\$ 281,000	\$ 351,000
Preliminary Engineering (10%)	\$ 7,000	\$ -	\$ 28,000	\$ 35,000
<b>PROJECT COST <sup>2,3</sup>(rounded)</b>	<b>\$ 77,000</b>	<b>\$ -</b>	<b>\$ 309,000</b>	<b>\$ 386,000</b>

<sup>1</sup> For estimating purposes pay items are adjusted for fluctuation of cost based on quantity.

<sup>2</sup> For estimating future project costs, a compounded inflation rate of 10% should be applied from the date of this estimate.

<sup>3</sup> Local agency is responsible for a 20% match (80:20 funding).



County: Marshall  
Route: A0261 (Hatchett Hollow Road)

Item	Quantity	Unit	2011 Unit Cost	Sub-Total	Total Cost	Rounded Cost	Description/Quantity Calculation
<b>Right-of-Way</b>							
	0.2	Lump Sum	N/A		\$ 35,000	\$ 35,000	0.2 Acres, 5 Tracts: see separate calculations
<b>Clear and Grubbing</b>							
201-01	0.2	Acres	\$ 1,000.00		\$ 200	\$ -	Area inside prop. R.O.W.
<b>Earthwork</b>							
203-01	0	CY	\$ 3.56	\$ -			Excavation (Cut)
203-03	1000	CY	\$ 2.51	\$ 2,510			Borrow (Fill)
		Total			\$ 2,510	\$ 3,000	
<b>Pavement Removal</b>							
202-03.01	1000	SY	\$ 9.48	\$ 9,480	\$ 9,480	\$ 9,000	
<b>Drainage</b>							
607-05.02	0	FT Pipe	\$ 56.59	\$ -			24" pipe assumed length of project (C&G)
611-12.02	0	Catchbasins	\$ 2,682.51	\$ -			Type 12 CB 4-8' depth, 1 every 300' on each side of the street affected
607-09.02	0	FT Pipe	\$ 125.01	\$ -			48" pipe assumed at each stream crossings
611-12.02	0	Medianbasin	\$ 2,682.51	\$ -			1 every 800' when have a median, estimate same price as catchbasins
607-03.02	0	Medianpipe	\$ 42.17	\$ -			18" pipe every 800', length = 80'
		Total			\$ -	\$ -	
<b>Utilities</b>							
		Lump Sum	N/A	\$ 20,000	\$ 20,000	\$ 20,000	See separate calculations
<b>Structures</b>							
	637.5	SF	\$ 150.00	\$ 95,625			Estimate for simple bridges
	450	SF	\$ 15.00	\$ 6,750			Estimate for bridge removal
		Total			\$ 102,375	\$ 102,000	
<b>Railroad Crossing or Separation</b>							
	0	Each	\$ 50,000.00	\$ -			common equipment
	0	FT	\$ 200.00	\$ -			per foot runaround
	0	SF	\$ 70.00	\$ -			vehicular bridge
	0	SF	\$ 200.00	\$ -			RR bridge
	0	LF	\$ 200.00	\$ -			at grade pad
	0	Each	\$ 50,000.00	\$ -			gates and signals
		Total			\$ -	\$ -	



County: Marshall  
 Route: A0261 (Hatchett Hollow Road)

Item	Quantity	Unit	2011 Unit Cost	Sub-Total	Total Cost	Rounded Cost	Description/Quantity Calculation
<b>Paving</b>							
	0	SF	\$ 5.96	\$ -			arterial street asphalt paving - see separate calcs
	8700	SF	\$ 3.51	\$ 30,534			local street asphalt paving - see separate calcs
	0	SF	\$ 7.44	\$ -			concrete ramp - see separate calcs
	0	SF	\$ 3.17	\$ -			arterial and ramp asphalt shoulder - see separate calcs
	0	SF	\$ 1.94	\$ -			local street shoulder - see separate calcs
	0	SF	\$ 1.24	\$ -			city street overlay - see separate calcs
406-04.02	0	SY	\$ 27.20	\$ -			High friction surface treatment
401-01.02	8700	SY	\$ 0.95	\$ 8,265			Cold planing (milling) asphalt pavement
		-15% Factor		\$ -			Widening Reduction Factor (if widening, cost = 85% of total paving )
		Total			\$ 38,799	\$ 39,000	Note: Doubled due to grade change and extra pavement for the lifts.
<b>Roadway and Pavement Appurtenances</b>							
701-01.01	0	SF	\$ 2.71	\$ -			4" Sidewalks
702-03	0	FT	\$ 189.72	\$ -			Curb and Gutter concrete cost, 0.06409 CY/LF (DWG RP-NMC-10) Unit price in CY
202-03	0	SY	\$ 4.41	\$ -			Removal of Sidewalk
202-08.1	0	LF	\$ 2.62	\$ -			Removal of Curb
604-01.01	0	CY	\$ 345.62	\$ -			4" Island
701-02.01	0	SF	\$ 16.38	\$ -			Handicap Ramp (Retrofit)
					\$ -	\$ -	
<b>Retaining Walls</b>							
	0	SF			\$ -	\$ -	See pg 41-42 TDOT Retaining Structures Manual
<b>Maintenance of Traffic</b>							
	2	Each	\$ 25,000.00		\$ 50,000	\$ 50,000	MOT estimated high due to lifts required in asphalt to maintain April Lane. Estimate \$25,000 per existing road crossed
<b>Topsoil</b>							
203-07	0	CY	\$ 14.48		\$ -	\$ -	
<b>Seeding</b>							
801-01	0	SF	\$ 22.68		\$ -	\$ -	sq. ft to be seeded/1000 x 1.25 = units. Unit price in units



County: Marshall  
Route: A0261 (Hatchett Hollow Road)

Item	Quantity	Unit	2011 Unit Cost	Sub-Total	Total Cost	Rounded Cost	Description/Quantity Calculation
<b>Sodding</b>							
803-01	0	SY	\$ 2.08		\$ -	\$ -	
<b>Signing</b>							
	3	Mile	\$ 2,000.00	\$ 6,000.00			\$1000/mile rural or \$2000/mile urban (or \$250/sign for
713-13.02	0	SF	\$ 11.62	\$ -			0.08" Sheeting
713-13.03	0	SF	\$ 12.79	\$ -			0.10" Sheeting
713-11.01	0	LB	\$ 2.64	\$ -			"U" Post
713-11.02	0	LB	\$ 3.94	\$ -			"P" Post
713-02.21	0	LF	\$ 4.74	\$ -			Sign post delineation enhancement
713-15.02	0	Each	\$ 20.57	\$ -			Remove Existing Signs
					\$ 6,000	\$ 6,000	
<b>Pavement Marking</b>							
716-13.06	0.5	L.M.	\$ 1,687.17	\$ 766.90			Edgelines & Centerlines, Spray Thermo 40 mil (4")
716-13.06	0	L.M.	\$ 2,030.80	\$ -			Edgelines & Centerlines, Spray Thermo 60 mil (4")
716-12.01	0	L.M.	\$ 3,274.92	\$ -			Edgelines & Centerlines, Enhanced Flatline Thermo (4")
716-02.05	16	LF	\$ 10.94	\$ 175.04			Stop Lines
716-13.04	0	LM	\$ 2.01	\$ -			4" Dotted Line ( Spray Thermo 60 mil)
716-14.01	0	L.M.		\$ -			Profiled Thermo Audible
716-02.13	0	SF	\$ 9.50	\$ -			Crosswalk
716-02.06	0	Each	\$ 132.99	\$ -			Turn Lane Arrow
716-01.21	0	Each	\$ 25.31	\$ -			Snowplowable Markers (bi-direction)
716-01.22	0	Each	\$ 27.38	\$ -			Snowplowable Markers (mono-direction)
713-02.14	0	Each	\$ 31.22	\$ -			Flexible Delineator (white)
713-02.20	0	SF	\$ 14.00	\$ -			Roadside Obstacle Delineation
713-02.21	0	Each		\$ -			Delineation of Utility Poles
					\$ 942	\$ 1,000	
<b>Lighting</b>							
714-08.09	0	Each	\$ 7,768.86		\$ -	\$ -	
<b>Signalization</b>							
	0	Each	\$ 100,000.00		\$ -	\$ -	per signalized interseccion
<b>Fence</b>							
707-01.11	0	LF	\$ 8.57		\$ -	\$ -	Chain Link 6'



County: Marshall  
 Route: A0261 (Hatchett Hollow Road)

Item	Quantity	Unit	2011 Unit Cost	Sub-Total	Total Cost	Rounded Cost	Description/Quantity Calculation
<b>Guardrail</b>							
705-02.02	97.5	LF	\$ 16.11	\$ 1,571			Guardrail (End Terminals Not Included in Price)
705-04.07	0	Each	\$ 2,119.59	\$ -			Guardrail Terminal (Type 38)
705-04.09	0	Each	\$ 1,055.94	\$ -			Type 38 Earth Pad
705-11.09	4	Each	\$ 1,200.00	\$ 4,800			Guardrail Terminal (Type 21)
705-04.04	0	Each	\$ 1,982.61	\$ -			Guardrail Terminal (Type In Line)
706-01	0	LF	\$ 1.29	\$ -			Guardrail Removed
711-05.70	0	LF	\$ 69.45	\$ -			Median Barrier (single slope concrete barrier wall)
705-04.21	0	LF	\$ 4.59	\$ -			Guardrail Delineation Enhancement
		Total			\$ 6,371	\$ 6,000	
<b>Rip Rap or Slope Protection</b>							
709-05.06	0	Ton	\$ 24.43		\$ -	\$ -	1.5 ft deep, 1.75 Tons/CY
<b>Total:</b>						<b>\$ 271,000</b>	





**STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION  
NASHVILLE, TENNESSEE 37243-0350**

**MEMORANDUM**

**To:** Project Planning Division

**From:** Jonathan Storey, PE  
The Corradino Group

**Date:** October 19, 2012

**Subject:** TPR Field Review (Special Bridge Replacement Program)  
Hatchett Hollow Road (0A261) Bridge over Hatchett Creek  
Log Mile 0.12, Bridge ID 590A2610001  
Cornersville, Marshall County, TN  
PIN 117328.00

A field review was held for the above referenced project on July 6, 2012. Those in attendance included:

Name	Agency	Phone	E-mail
Scott Stiles	City of Cornersville	931-293-4482	
Taylor Brandon	City of Cornersville	931-293-4482	<a href="mailto:cville@marshalltn.com">cville@marshalltn.com</a>
Glenda Tyus	TDOT Planning	615-741-1816	<a href="mailto:Glenda.Tyus@tn.gov">Glenda.Tyus@tn.gov</a>
Lisa Reaney	TDOT Planning	615-741-0967	<a href="mailto:Lisa.Reaney@tn.gov">Lisa.Reaney@tn.gov</a>
Casey Pounders	TDOT R.O.W.	615-350-4214	<a href="mailto:Casey.Pounders@tn.gov">Casey.Pounders@tn.gov</a>
Scott Johnson	TDOT Design	615-350-4263	<a href="mailto:Scott.Johnson@tn.gov">Scott.Johnson@tn.gov</a>
Mike Gilbert	TDOT Planning	615-741-0772	<a href="mailto:Michael.Gilbert@tn.gov">Michael.Gilbert@tn.gov</a>
Terry Arnold	TDOT Design	615-350-4274	<a href="mailto:Terry.Arnold@tn.gov">Terry.Arnold@tn.gov</a>
Jonathan Storey	The Corradino Group	615-372-6972	<a href="mailto:jstorey@corradino.com">jstorey@corradino.com</a>

The existing structure consists of a two barrel concrete box culvert (2 @ 12 foot x 3 foot). The overall bridge length is twenty-five (25) feet with approximately 3.5 feet for the vertical clearance. The out-to-out bridge width is nineteen (19) feet. The sufficiency rating



for this bridge is 61.4. 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 10-year flow depth is 4.3 feet and the 100-year flow depth is 5.8 feet. Both of these depths are higher than the available vertical clearance of 3.5 feet. Local officials noted the bridge overtops with heavy rainfall.

The proposed alignment for this structure will remain on the existing centerline and will be designed to meet the TDOT design standard RD01-TS-1A for a Design Speed of 20 miles per hour with a posted speed limit of 15 miles per hour. As per TDOT Hydraulic Design Section recommendations, the grade will be increased approximately three (3) feet to accommodate the design-year flows. The bridge is located in a low point of Hatchett Hollow Road, allowing the approach lengths to be reduced while attaining the grade increase. Due to its close proximity to the subject bridge, the grade of April Lane will need to be increased at its intersection with Hatchett Hollow Road. Hatchett Hollow Road will be closed during construction of the bridge to expedite the construction time and minimize cost. Acceptable detour routes utilizing Old Ostella Road, Cherry Corner Road, Turkey McCollum Road, and State Route 11 are available. The length of detour will be dependent upon the origin and destination of the motorist. However, it is estimated that the maximum detour length is three (3) miles. Access to April Lane must be maintained at all times during construction of the bridge due to there being no other outlet for this dead-end roadway. Local officials noted Hatchett Hollow Road is heavily utilized by school traffic. Therefore, it is the local official's preference that construction occurs during the summer, when school is out of session.

Hatchett Hollow Road is functionally classified as a Rural Local Route and has a base year (2016) AADT of 280 vehicles per day (vpd) and a design year (2036) AADT of 340 vpd. The bridge over Hatchett Creek will consist of an out-to-out width of twenty-five and a half (25.5) feet to accommodate a proposed approach roadway width of twenty (20) feet. It is recommended to include two (2) ten (10)-foot lanes. On both approaches of the bridge, the roadway will transition to match the existing sixteen (16)-foot roadway cross section. The proposed structure is a double twelve-foot by six-foot (2 @ 12'x6') concrete slab culvert. It could be considered to utilize a precast structure to expedite construction. The proposed vertical clearance of six (6) feet is above the calculated 100-year flow depth of 5.8 feet. Approximately 0.2 acres of right-of-way will be acquired due to the increase in roadway width and grade. There are utilities attached to the structure, including an active water line and an abandoned cable television line. The water line will be replaced.

The required approach work, utility relocations, estimated replacement, right-of-way, and preliminary engineering costs for this bridge are approximately \$386,000. The City of Cornersville will be responsible for matching funds of twenty percent (20%), which is equal to \$77,000.

JHS

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	
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	X
12. Waterway, lake, pond, river, stream, spring	X
Permit required:	
Coast Guard	
Section 404	X
TVA Section 26a review	
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: 99109-1453-04 ROUTE: Hatchett Road  
 COUNTY: Marshall CITY: Comersville  
 PROJECT PIN NUMBER: \_\_\_\_\_  
 PROJECT DESCRIPTION: Bridge over Hatchett River on Hatchett Road  
L.M. 0.12

**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
280	2016	340	48	14	2036	65-35	1	2		

REQUESTED BY: NAME Glenda Tyus DATE 5.10.12  
 DIVISION Project Planning  
 ADDRESS 10th Floor, JKP Bldg  
Nashville, TN 37243

REVIEWED BY: TONY ARMSTRONG Tony Armstrong DATE 5.14.12  
 TRANSPORTATION MANAGER 1  
 SUITE 1000, JAMES K. POLK BUILDING

APPROVED BY: DUDLEY DANIEL Dudley Daniel DATE 15 May 12  
 TRANSPORTATION MANAGER 2  
 SUITE 1000, JAMES K. POLK BUILDING

**COMMENTS:**

This Traffic is based on 2003 Bridge Count from ADAM. The Future Traffic Count is based on the Growth Rate from the ADAM Computer Program.

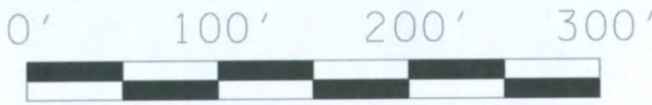
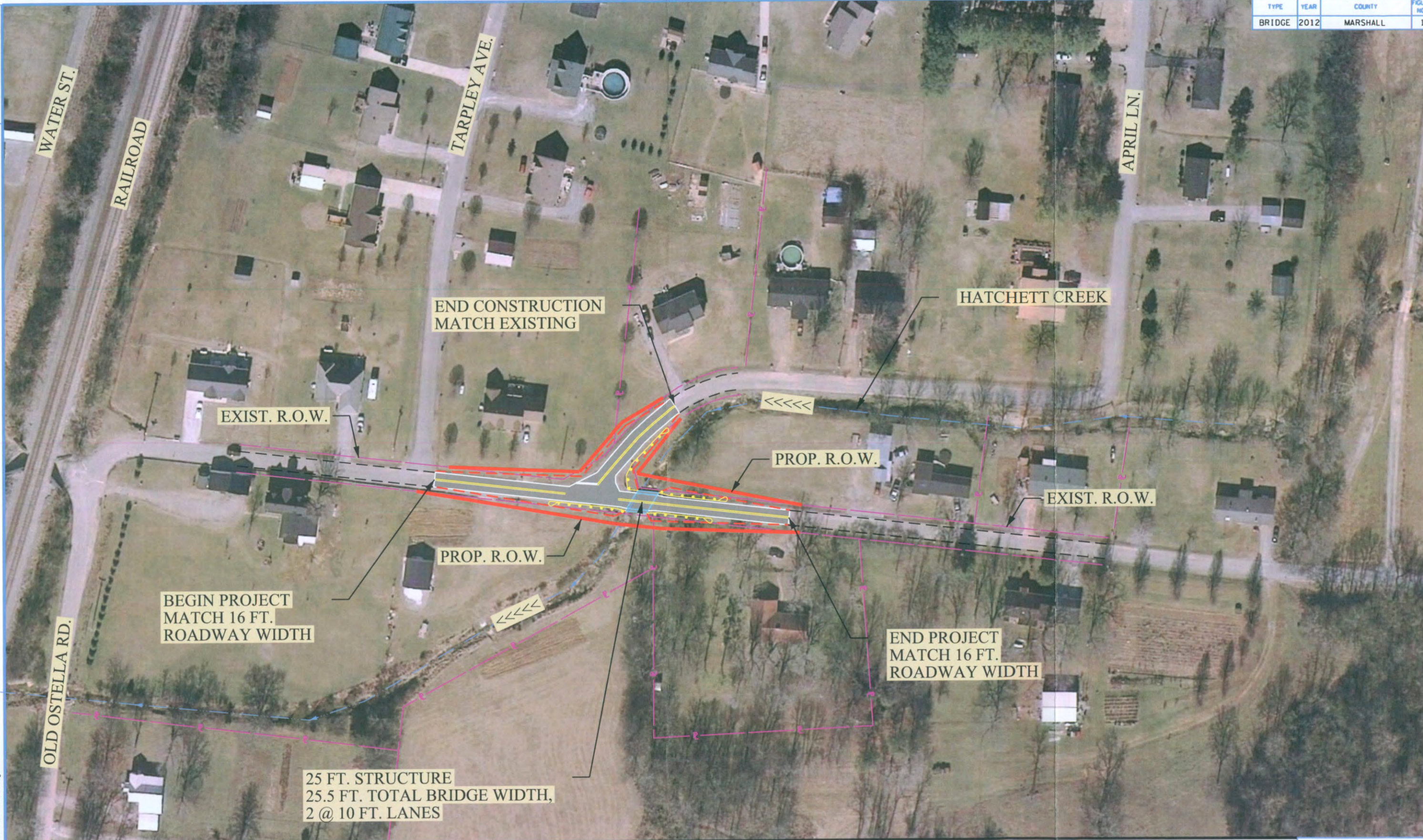
**DHV'S ARE NOT REQUIRED FOR SIDE ROADS LESS THAN 1000 AADT.**

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 (REV. 4/10/12)



TYPE	YEAR	COUNTY	FIG. NO.
BRIDGE	2012	MARSHALL	1

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



TRANSPORTATION PLANNING REPORT

HATCHETT HOLLOW RD. (0A261)  
L.M. 0.12 BRIDGE 590A2610001  
MARSHALL COUNTY

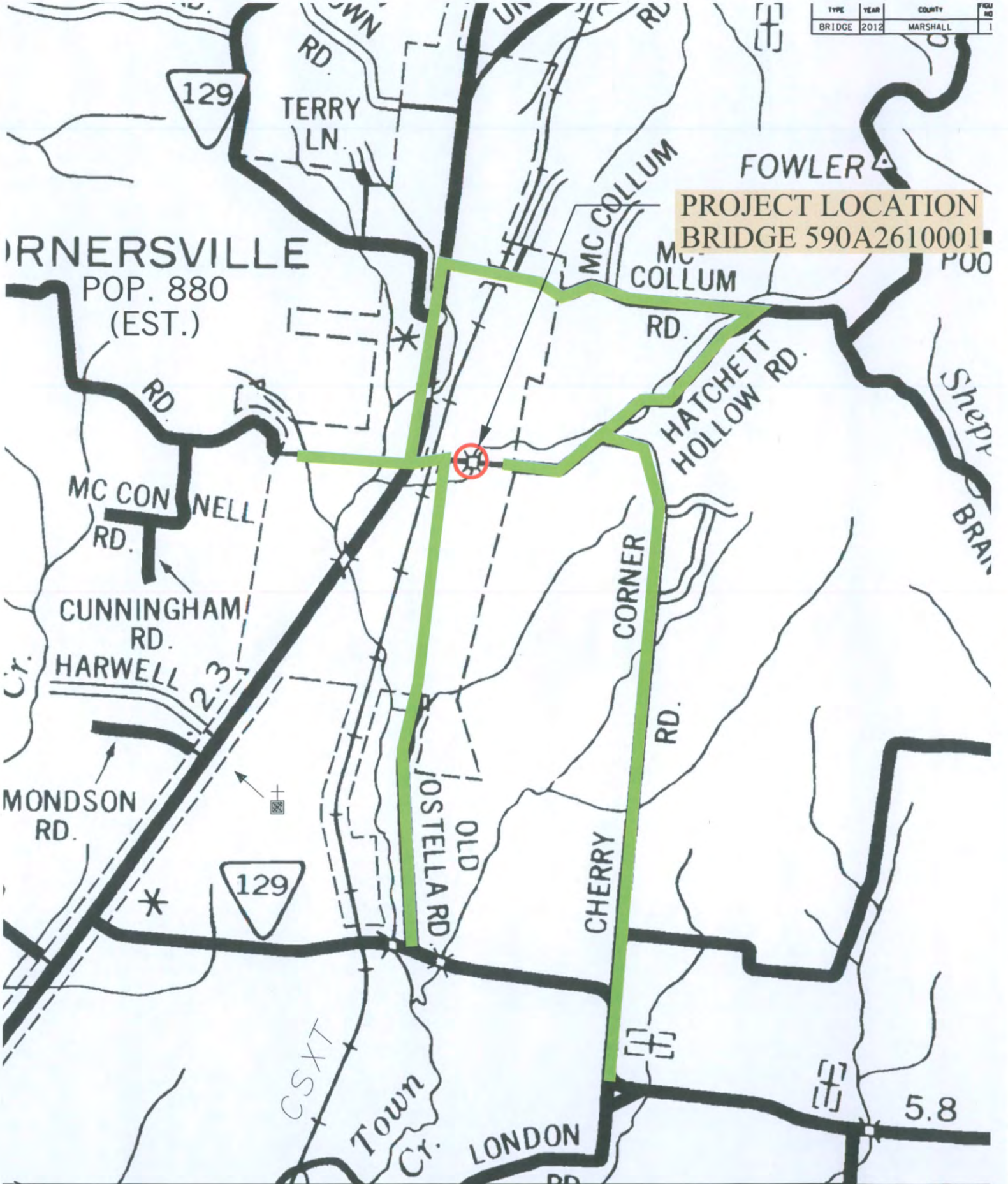
STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION  
PROJECT PLANNING DIVISION

FIGURE 1  
RT. 0A261  
L.M. 0.12

10/16/2012 4:49:00 PM  
H:\044\NO 17\dgn\hatchett hollow Plan Sheet.dgn



TYPE	YEAR	COUNTY	FIG. NO.
BRIDGE	2012	MARSHALL	1



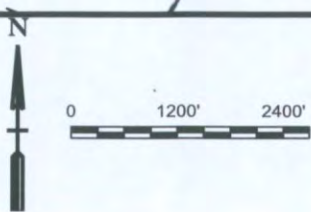
**PROJECT LOCATION**  
**BRIDGE 590A2610001**

TRANSPORTATION PLANNING REPORT

HATCHETT HOLLOW RD. (0A261)  
 L.M. 0.12 BRIDGE 590A2610001  
 MARSHALL COUNTY

STATE OF TENNESSEE  
 DEPARTMENT OF TRANSPORTATION  
 PROJECT PLANNING DIVISION

DETOUR  
 MAP



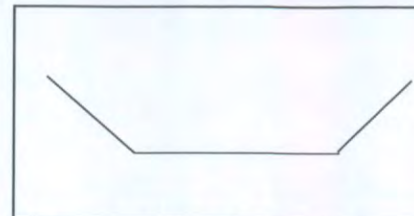


### SITE INSPECTION

INSPECTION MADE BY: Jon Storey, PE BRIDGE ID: 590A2610001 COUNTY: Marshall  
 Date: 6/26/11 Route Name: Hatchett Hollow Rd. (0A261) Stream Name: Hatchett Creek @ L.M. 0.12

#### CHANNEL

Approx depth and width of channel: Horizontal: 18' Vertical: 4.5'  
 Depth of normal flow: 6" In Reservoir:  Yes  No  
 Depth of Ordinary High Water: 3'  
 Type of material in stream bed: Bedrock  
 Type of vegetation on banks: Low Growth  
 "N" factor of the channel: 0.04  
 Are channel banks stable:  Yes  No  
 If the streambed is gravel: D<sub>30</sub> = -- D<sub>85</sub> = --  
 Skew of the channel with the roadway: 60°



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.: Short Grass (0.030) Right U.S.: Short Grass (0.030)  
 Left D.S.: Short Grass (0.030) Right D.S.: Short Grass (0.030)  
 Are roadway approaches lower than the structure?  Yes  No  
 Are there any buildings in the floodplain?  Yes  No  
 Approx. floor elevations: 865'  
 Flood information from local residents:  
 (elevations & dates) Water has been observed to overtop roadway.



Floodplain Sketch

#### EXISTING STRUCTURE

Length: 25' No. of spans: 2 Structure type: Concrete Culvert No. of lanes: 2 Skew: 60°  
 Width (out to out): 19' Width (curb to curb): 18' Approach:  paved  graveled  
 Sidewalks on Structure:  Yes  No Bridgerail type: Concrete/ W Beam G.R. Bridgerail height = 1'10"  
 Superstructure depth: 8" Finished Grade to low girder = n/a (Box) Girder depth = n/a (Box)  
 Are any substructures in the channel?  Yes  No Vertical Clearance = 3'6"  
 Indications of overtopping: City of Cornersville official noted the roadway does overtop.  
 High water marks: None observed, drought conditions during site visit  
 Local scour:  Yes,  No  
 Any signs of stream  aggradation or  degradation? None  
 Any drift or drift potential?  Yes,  No  
 Any obstructions (pipes, stock fences, etc.)? None.

#### PROPOSED STRUCTURE

Replacement  Rehabilitate  Widening  New Location  
 Bridge length: 25 ft Bridge type: Box Culvert Span arrangement: 2 @ 12'x6' Skew: 60°  
 Bridge width: 25.5 ft Sidewalks: None Design Speed (MPH): 30 ADT ( 2036 ) = 340  
 Proposed grade: Raise Grade 3' Proposed alignment: Same Location  
 Method of maintaining traffic:  Stage construction  On site detour  Close road  Shift Centerline  
 Cost of proposed Structure: \$150 per ft<sup>2</sup> X 25 / 25.5 length (ft) / width (ft) Cost = \$95,600  
 Cost of bridge removal: \$15 per ft<sup>2</sup> X 25 / 18.0 length (ft) / width (ft) Cost = \$6,800  
 Detour structure: Type and size = Road Closure Cost = \$50,000  
**Total Structure Cost = \$152,400**



**Bridge TPR Flow Calculations  
For Hydrologic Area 3  
Area > 100 Acres**

County: <u>Marshall</u>	By: <u>JHS</u>
Bridge ID: <u>590A2610001</u>	Date: <u>6/27/12</u>
Route: <u>Hatchett Hollow Rd. (0A261)</u>	PIN: <u>117328.00</u>
Feature Crossed: <u>Hatchett Creek</u>	
Log Mile: <u>0.12</u>	

**DRAINAGE BASIN**

Measurement from quad = 570 acres  
 Contributing Drainage Area, CDA = acres/640 = 0.89 sq. mi.

**USGS REGRESSION EQUATIONS FOR FLOW**

$Q_2 = 348(CDA)^{0.661} =$  322 cfs  
 $Q_5 = 555(CDA)^{0.650} =$  515 cfs  
 $Q_{10} = 700(CDA)^{0.646} =$  649 cfs  
 $Q_{25} = 885(CDA)^{0.643} =$  821 cfs  
 $Q_{50} = 1020(CDA)^{0.642} =$  946 cfs  
 $Q_{100} = 1160(CDA)^{0.642} =$  1,076 cfs

**DEPTH OF FLOW EQUATIONS**

10-Year Flood Depth =  $4.45(CDA)^{0.246} =$  4.3 ft  
 100-Year Flood Depth =  $5.91(CDA)^{0.224} =$  5.8 ft

**AREAS**

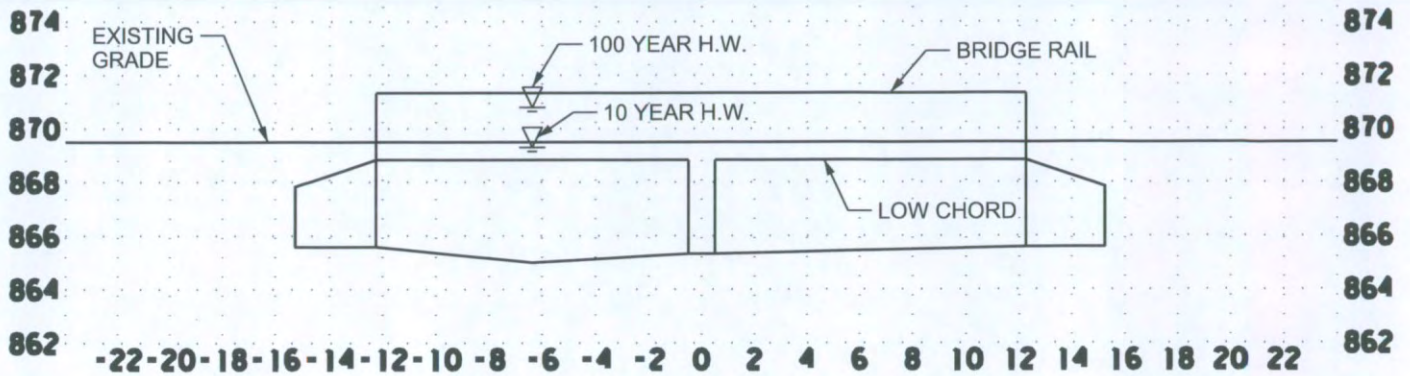
Existing Area Below Low Chord = 82 ft<sup>2</sup>  
 Proposed Area Below Low Chord = 147 ft<sup>2</sup>  
 Proposed 10-Year Flood Area,  $A_{10} =$  95 ft<sup>2</sup>  
 Proposed 100-Year Flood Area,  $A_{100} =$  130 ft<sup>2</sup>

**VELOCITIES**

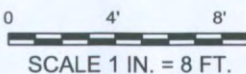
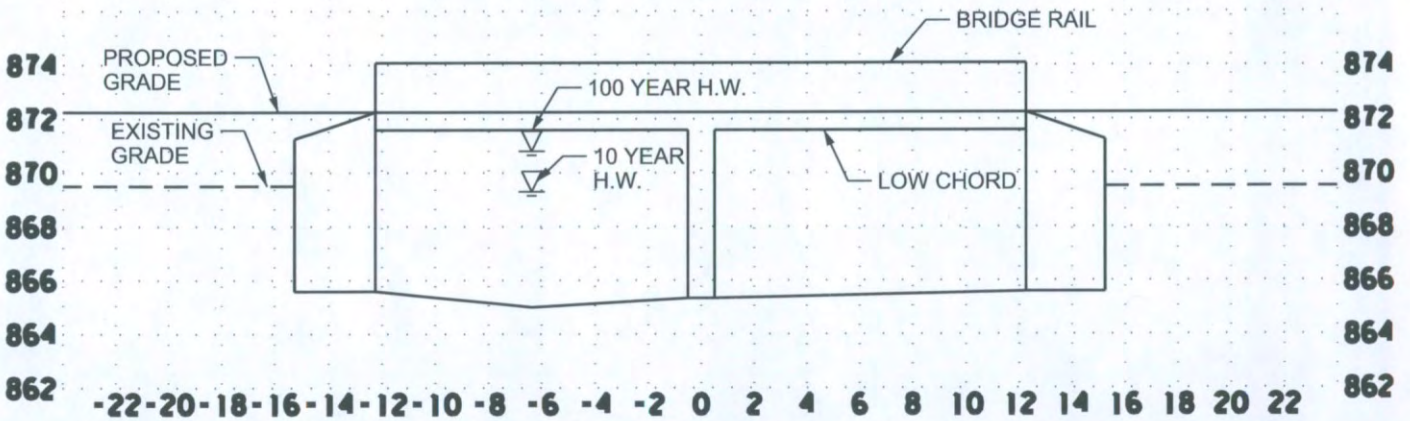
Proposed 10-Year Flood Velocity,  $V_{10} = Q_{10}/A_{10} =$  6.8 fps  
 Proposed 100-Year Flood Velocity,  $V_{100} = Q_{100}/A_{100} =$  8.3 fps



### EXISTING STRUCTURE (INLET)



### PROPOSED STRUCTURE (INLET)



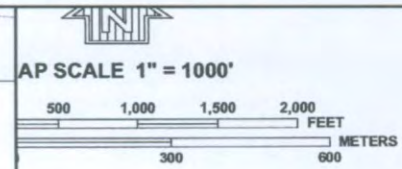
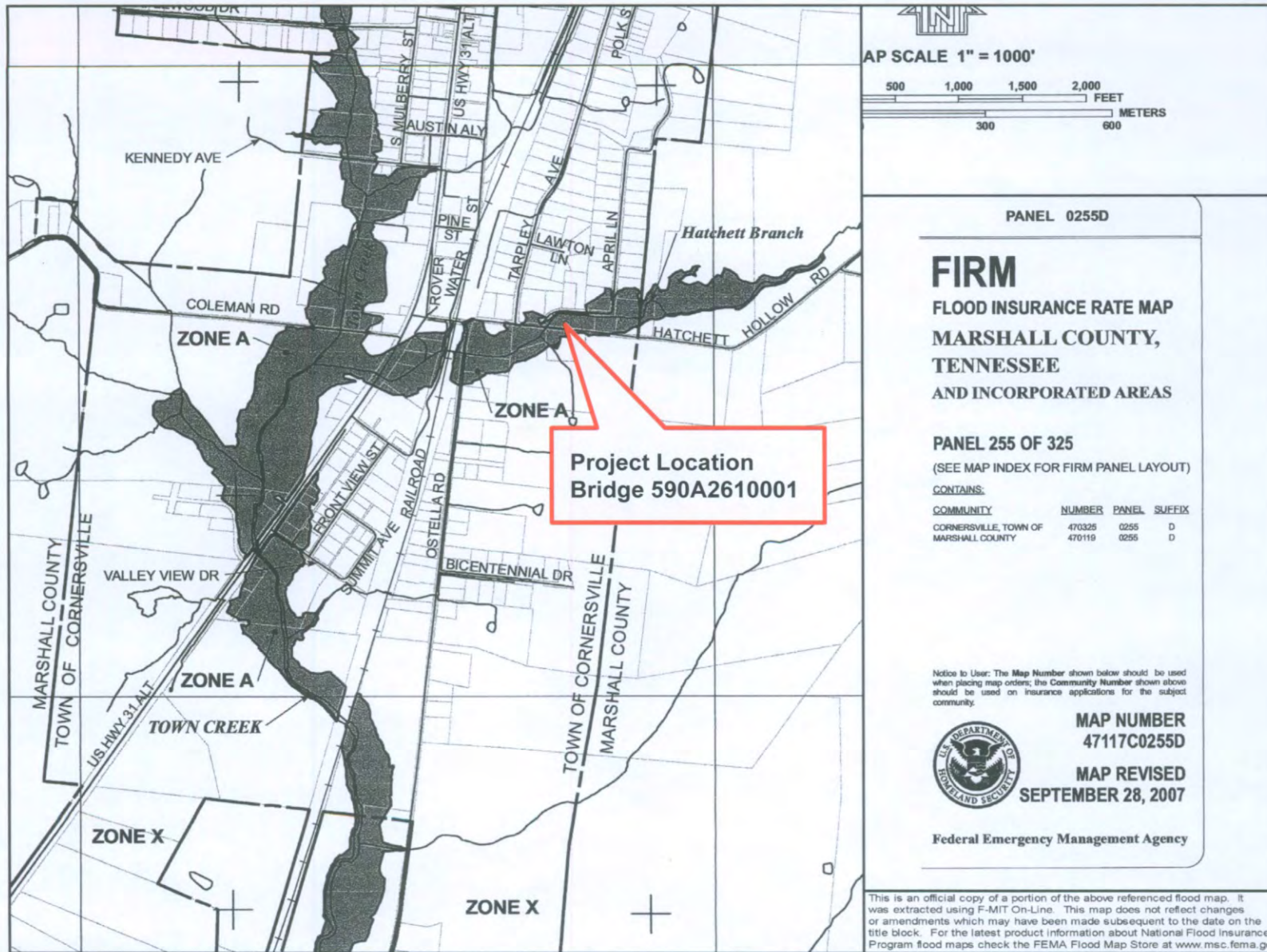
## TRANSPORTATION PLANNING REPORT

HATCHETT HOLLOW RD. (0A261)  
 L.M. 0.12 BRIDGE 590A2610001  
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**BRIDGE  
 SECTIONS**





PANEL 0255D

**FIRM**  
FLOOD INSURANCE RATE MAP  
MARSHALL COUNTY,  
TENNESSEE  
AND INCORPORATED AREAS

PANEL 255 OF 325  
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CORNERSVILLE, TOWN OF	470325	0255	D
MARSHALL COUNTY	470119	0255	D

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.



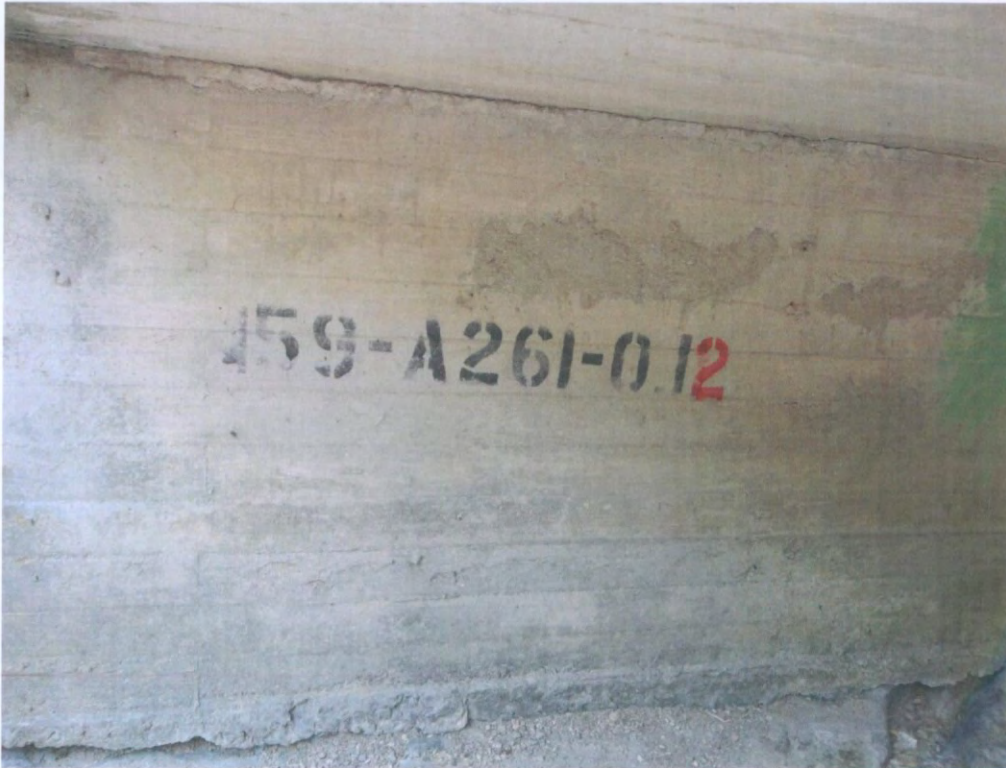
**MAP NUMBER**  
47117C0255D  
**MAP REVISED**  
SEPTEMBER 28, 2007

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](http://www.msc.fema.gov)



PHOTOGRAPHS (7/5/12)



BRIDGE NUMBER

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**INLET SIDE LOOKING SOUTH TOWARDS THE BRIDGE**



**INLET SIDE LOOKING NORTH AWAY FROM THE BRIDGE**

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**OUTLET SIDE LOOKING NORTH TOWARDS THE BRIDGE**



**OUTLET SIDE LOOKING SOUTH AWAY FROM THE BRIDGE**

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**EAST APPROACH LOOKING WEST TOWARDS THE BRIDGE**



**EAST APPROACH LOOKING EAST AWAY FROM THE BRIDGE**

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**WEST APPROACH LOOKING EAST TOWARDS THE BRIDGE**



**WEST APPROACH LOOKING WEST AWAY FROM THE BRIDGE**

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**WEST APPROACH LOOKING NORTH AT APRIL LANE**



**VIEW OF PREVIOUSLY REPAIRED SECTION**

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**VIEW OF UTILITIES ON THE EASTBOUND SIDE OF THE BRIDGE**

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