TRANSPORTATION PLANNING REPORT

SPECIAL BRIDGE REPLACEMENT PROGRAM

HILLWOOD BOULEVARD (05501)
Bridge over CSX RR & Richland Creek in Davidson County,
PIN 107669.00

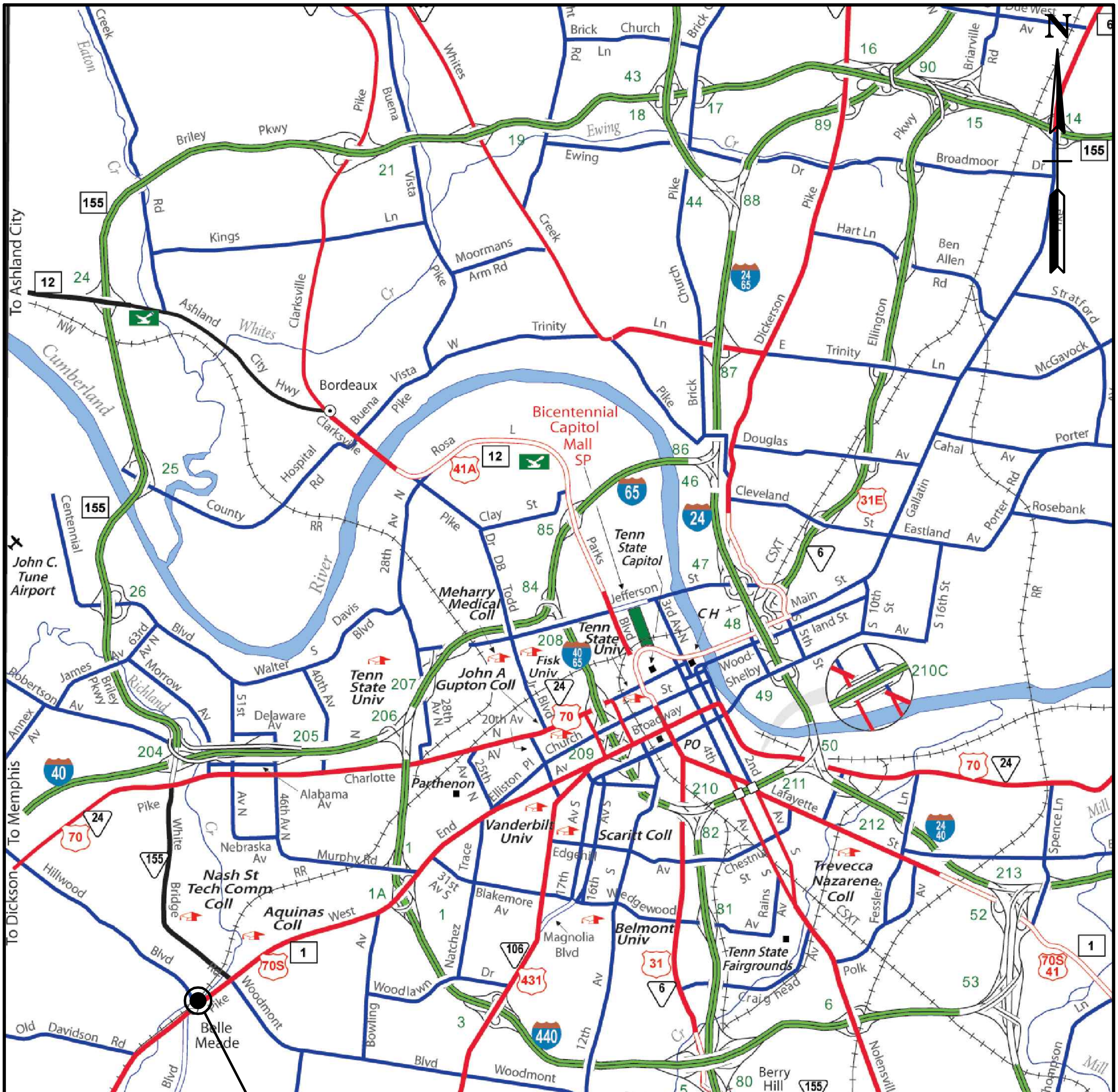
PREPARED BY CLINARD ENGINEERING ASSOCIATES, LLC
FOR THE TENNESSEE DEPARTMENT OF TRANSPORTATION
PROJECT PLANNING DIVISION

Approved by: Ed Cole — Chief of Env. & Pln. — 8/4/09 Date

Paul Degges — Chief Engineer — 8/14/09 Date

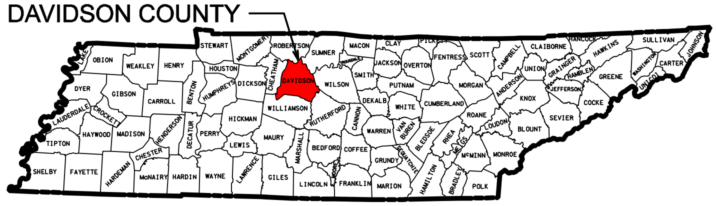
REVISION

Recommended by:	INITIALS	DATE	Recommended by:	INITIALS	DATE
TRANS. DIRECTOR PLANNING DIVISION	SA	7-13-09	TRANS. DIRECTOR PLANNING DIVISION		
TRANS. DIRECTOR ENV. PLN. AND PERMITS	SBH	7/13/09	TRANS. DIRECTOR ENV. PLN. AND PERMITS		
ENG. DIRECTOR DESIGN DIVISION		7/17/09	ENG. DIRECTOR DESIGN DIVISION		
ENG. DIRECTOR STRUCTURES DIVISION	ELD	7/28/09	ENG. DIRECTOR STRUCTURES DIVISION		
TRANS. DIRECTOR PROG. DEV. DIVISION		7/28/09	TRANS. DIRECTOR PROG. DEV. DIVISION		
ASSISTANT CHIEF ENGINEER		7/29/9	ASSISTANT CHIEF ENGINEER		
ASSISTANT CHIEF OF ENV. & PLN.		07/30/09	ASSISTANT CHIEF OF ENV. & PLN.		



PROJECT LOCATION

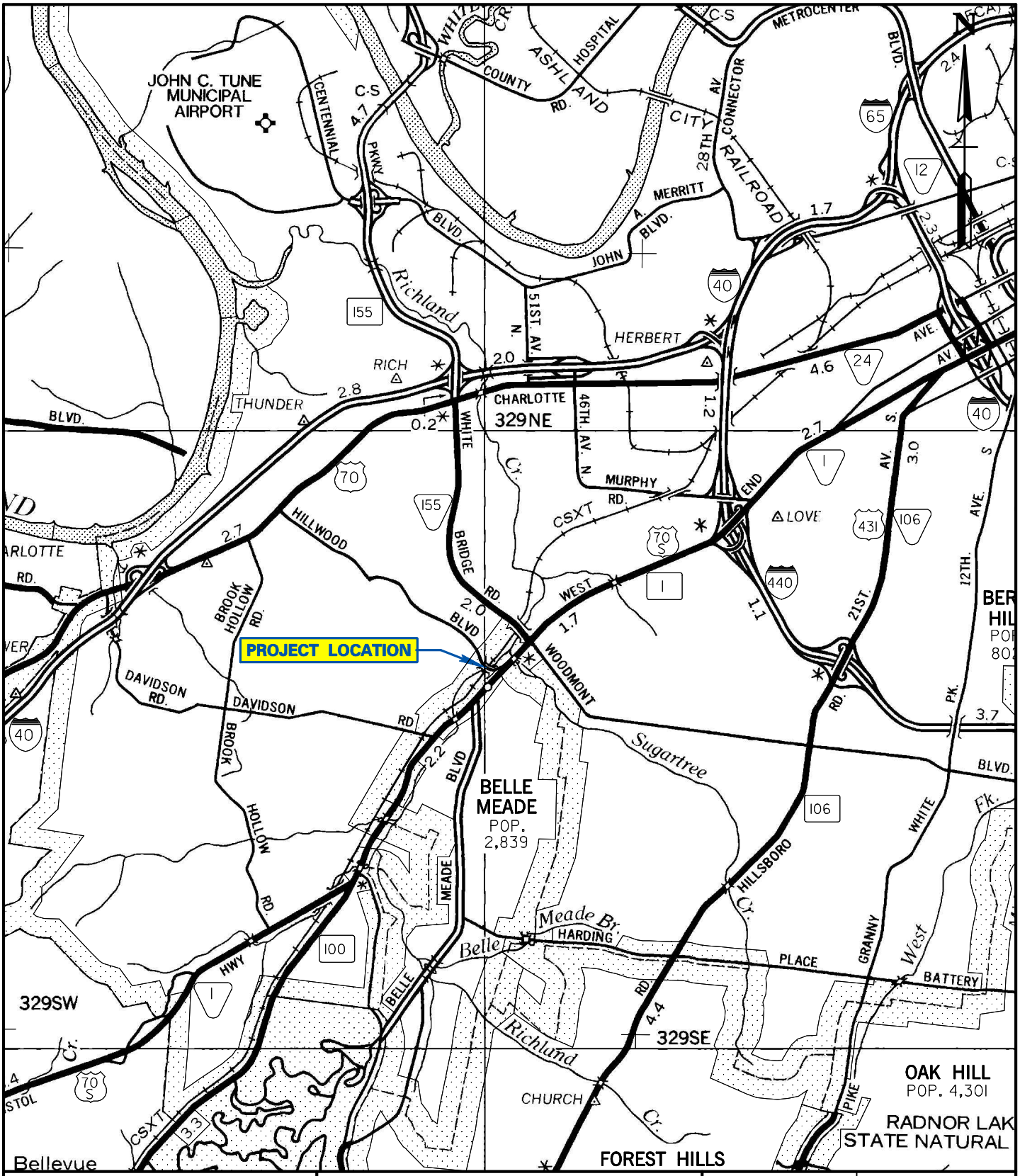
DAVIDSON COUNTY



TDOT

VICINITY MAP

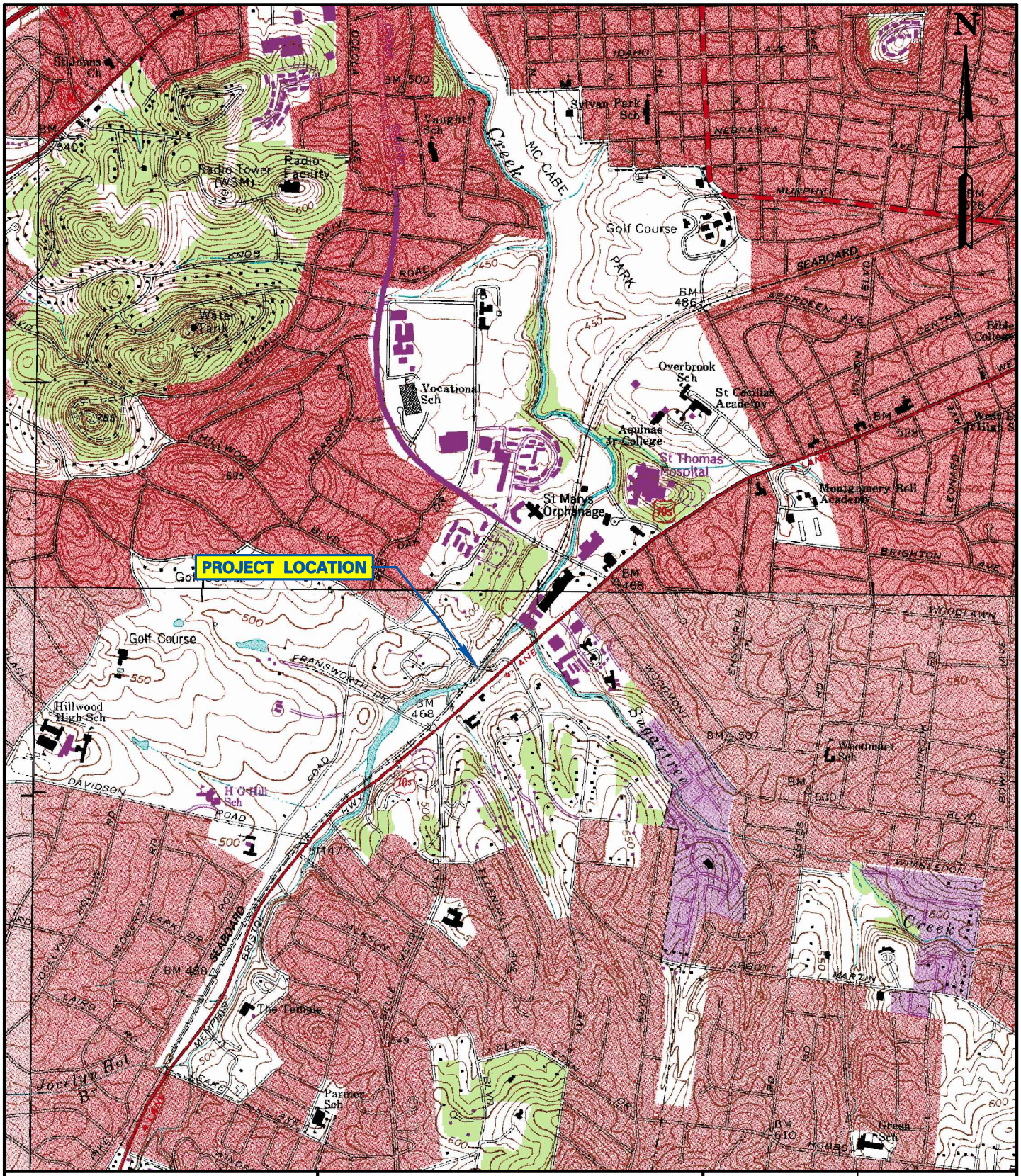
DRAWN BY:	CHECKED BY:
BNG	TMC
PIN # 107669.00	
SCALE: 1"= 10 MILE	DATE: 03-03-09



TDOT

LOCATION MAP

DRAWN BY:	CHECKED BY:
BNG	TMC
PIN # 107669.00	
SCALE: 1"= 1 MILE	DATE: 03-03-09

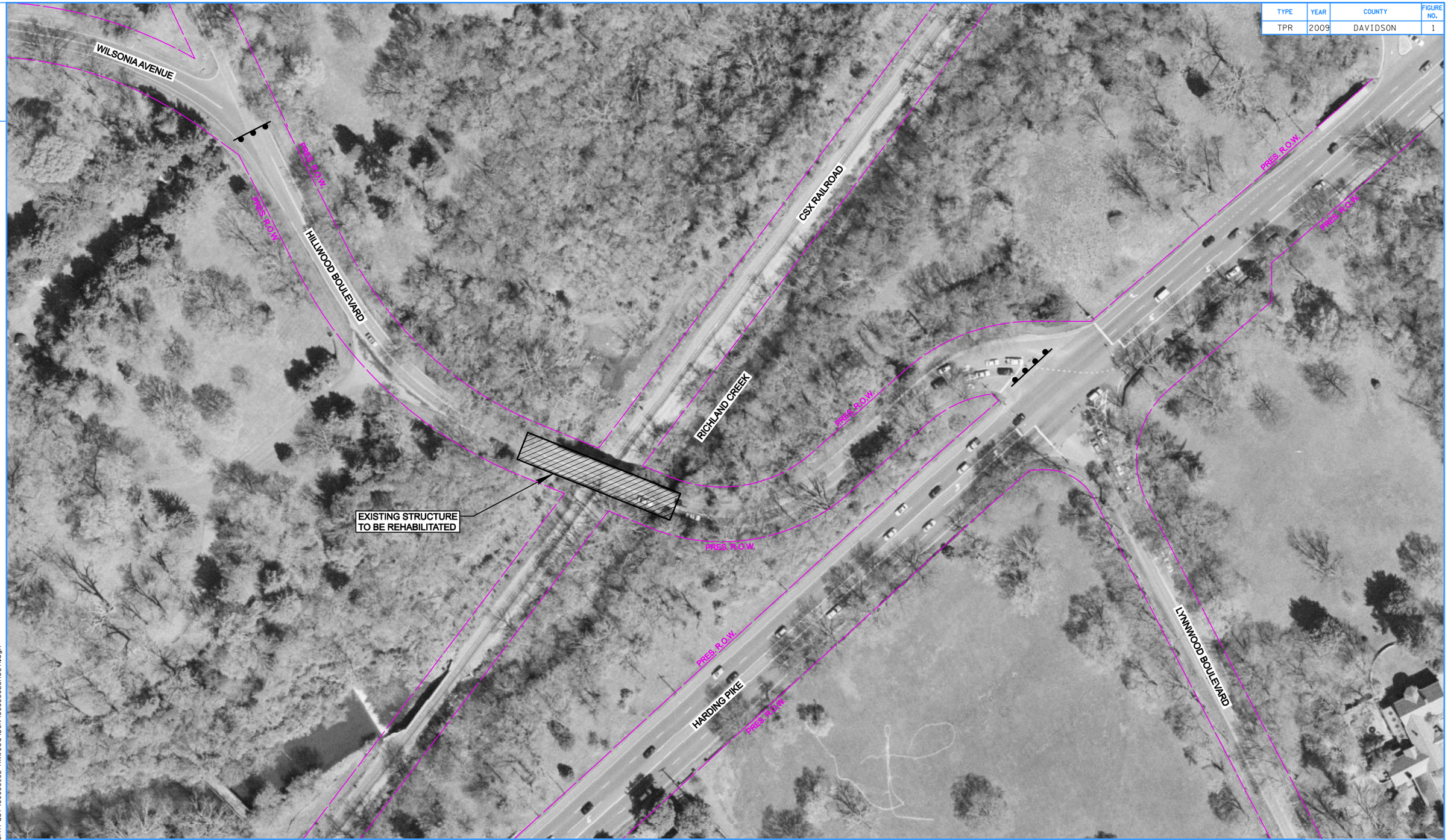


TOPOGRAPHY MAP

DRAWN BY:	CHECKED BY:
BNG	TMC
PIN # 107669.00	
SCALE: 1"= 2000'	DATE: 03-03-09

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

TYPE	YEAR	COUNTY	FIGURE NO.
TPR	2009	DAVIDSON	1



0′ 100′ 200′ 300′

N

TRANSPORTATION PLANNING REPORT
SPECIAL BRIDGE REPLACEMENT PROGRAM

HILLWOOD BOULEVARD (05501)
REHABILITATION OF BRIDGE OVER CSX RR & RICHLAND CREEK
LM 0.09
DAVIDSON COUNTY

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
PROJECT PLANNING DIVISION

FIGURE 1
HILLWOOD BLVD.
L.M. 0.09

6/23/2009 10:01:04 AM
P:\2008\08050 TDOT PLANNING Contract\08050.02 Hillwood\DGN\08050002Sheet1.dgn

TRANSPORTATION PLANNING WORKSHEET

BRIDGE REPLACEMENT ANALYSIS, NEEDS, AND COSTS

County Davidson Route Hillwood Boulevard (05501) Log Mile 0.09

Feature Crossed CSX RR & Richland Creek System Local

Functional Class Urban Collector Bridge I.D. 190D8960001

EXISTING CONDITIONS

2013 ADT 6,930 App. Cross Section 22' / 28' / 60' No. Lanes 2

Approach Alignment Horizontal Curves on both approaches Year Built 1925 ± Load Limit None

Width (curb to curb) 26.8' Sidewalks: Right N/A Left N/A Length 177'

No. Spans: Approach 0 Main 5

Substructure Concrete Vertical Clearance 20' - 8" Sufficiency Rating 39.6

Other: Light poles located on both approaches and Fiber Optic cable in the area. Sanitary Sewer line located along CSX Railroad. No visible utilities located on or above the existing structure.

PROPOSED IMPROVEMENTS STANDARDS FROM RD01-TS- 1 Type of Work Rehabilitation

Design Year 2033 ADT 8,730 DHV 960 ADL (F) - (R) -

Length of Project Structure Length 177' Design Speed (MPH) 30

Approach Width 22' / 28' / Existing Bridge Width 31.5' No. Lanes 2

Right-of-Way Required 0 Tracts Temporary Detour Yes

Alternate Route See Detour Map Sheet for available Detour Routes

Remarks: Existing Bridge will be rehabilitated and widened approximately one foot. Minimal work will be necessary on the approaches and will most likely be limited to re-paving activities and guardrail installation. Any work on the bridge over the CSX Railroad line should be coordinated with CSX officials. Metro Public Works and the City of Belle Meade have indicated that they will be involved throughout the rehabilitation process.

ESTIMATED COST

Right-of-Way	$0	Approaches	$155,000	Structure	$836,325
Preliminary Engineering	$149,000	Utilities	$5,000	Total	$1,145,325

Remarks:

Field Investigation by: Steve VanCleave, William Horton, Tom Clinard, Phil Clinard (Clinard Engineering)

See the TPR Memo included in this report for additional names.

BRIDGE TPR COST ESTIMATE
Hillwood Boulevard (05501) @ LM 0.09
Over CSX RR & Richland Creek

County: **Davidson** **Pg. 1 of 1**
Bridge No.: **190D8960001**
Date **3/27/09**

Pavement @ 6" depth (3" Black base, 1.75" binder, 1.25" Surface)									
((length x	width x)	/ 9 sf/sy) x	$ unit price						
400	30		$ 27.00						$ 36,000
Guardrail at Bridge Ends			180	ft @	$ 50.00	L.F.			$ 9,000
Guardrail Terminal Anchors			4	@	$ 1,500.00	each			$ 6,000
Type III Barricade			80	ft @	$ 45.00	L.F.			$ 3,600
Construction Signing			145	sf @	$ 35.00	per sf			$ 5,075
Warning Lights			4	@	$ 75.00	each			$ 300
Traffic Signal Modifcation (Harding Rd & Hillwood Blvd)									$ 25,000
Traffic Control (lump sum)									$ 15,000
Pavement Removal									
((length x	width x)	/ 9 sf/sy) x	$ unit price						
400	30		$ 9.50						$ 12,667
Erosion Control (lump sum)									$ 9,500
Mobilization at 10%									$ 12,214
						Subtotal			$ 134,356
Miscellaneous and Contingencies at 15%									20,153
						Total Approaches (rounded)			**$ 155,000**
Rehab Exist Bridge:	((length x	width x)	x $ unit price						
	177	31.5	$ 150.00						$ 836,325
Removal of Ex. Br.	0	0	$ -						$ -
						Total Structures (rounded)			**$ 836,325**
Right-of-Way Cost	0	Tracts		@	$ 5,000	avg. per tract			$ -
						Total R.O.W. (rounded)			**$ -**
Utilities	Light Poles	2	@	$ 2,500	each		$ 5,000		
	UG Fiber	0	ft @	$ 45	per ft		$ -		
						Total Utilities (rounded)			**$ 5,000**
						Preliminary Engineering at 15% (rounded)			**$ 149,000**
Total								**$**	**1,145,325**

MEMORANDUM

DATE: March 27, 2009

TO: TDOT Project Planning Division

FROM: Clinard Engineering Associates, LLC

SUBJECT: TPR Field Review (Special Bridge Replacement Program)
Hillwood Boulevard over CSX RR & Richland Creek
Log Mile 0.09
Davidson County, Tennessee

A field review was held for the above-mentioned project on March 3, 2009 at the Belle Meade City Hall with the following people in attendance:

Name	Organization	Title	Phone #	Email
Christopher Armstrong	TDOT Project Planning	Transportation Planner 4	615-741-3216	Christopher.Armstrong@state.tn.us
Ed Wasserman	TDOT Structures Division	Civil Engineering Director	615-741-3351	Ed.Wasserman@state.tn.us
Beth Reardon	City of Belle Meade	City Manager	615-297-6041	breardon@citybellemeade.org
George Bartlett	City of Belle Meade	Public Works Director	615-297-6041	gbartlett@citybellemeade.org
Renee Jackson	Metro Public Works	Bridge Program Manager	615-566-0940	renee.jackson@nasvhville.gov
Billy Davis	Metro Public Works	Staff	615-862-8750	billy.davis@nashville.gov
Scarlett Miles	Metro Historical Commission	Staff	615-862-7970	scarlett.miles@nashville.gov
Tara Mielnik	Metro Historical Commission	Staff	615-862-7970	Tara.mielnik@nashville.gov
Tom Clinard	Clinard Engineering Associates, LLC	Project Manager, Partner	615-370-6079	tclinard@clinardengineering.com
Phil Clinard	Clinard Engineering Associates, LLC	Partner	615-370-6079	pclinard@clinardengineering.com

The existing structure is a concrete bridge, with five spans and an out-to-out total width of thirty (30) feet. The overall bridge length is one hundred and seventy-seven (177) feet. The sufficiency rating for this bridge is 39.6 based upon the latest inspection performed on July 17, 2007.

During a meeting held February 12, 2008 involving, TDOT, City of Belle Meade, Metro Public Works and various Metro Council officials, discussions of the project focused on the historic nature of the existing bridge and the heightened local interest from area residents on preserving the look of the existing bridge and maintaining the aesthetics of this gateway.

It was determined, due to potential impacts of any widening of the bridge and approaches, that the proposed improvements would be limited to rehabilitation with a slight increase in the bridge width from 26.75 feet to 28 feet, to meet the Standard Drawing RD01-TS-1. A design exception may still be necessary. It is anticipated that minimal approach work will be necessary, with only guardrail installation and minor repaving/restriping needed on the roadway approaches.

Due to the narrow existing width of the bridge and the alignment of Hillwood Boulevard, rehabilitation/construction would be best accomplished by closing the road and detour existing traffic to an alternate route such as: Hillwood Blvd to Post Road to White Bridge Road to Harding Road. It was agreed that adequate detour routes are available for local motorists as shown in the attached Detour Map. The existing traffic signal located at the intersection of Hillwood Boulevard and Harding Road will need to be altered during the road closure to temporarily remove any phases involving the Hillwood Boulevard approach.

At the request of the City of Belle Meade and Metro Public Works, photographs are shown below which represent two types of alternative guardrails that could be utilized for this project (weathered steel / timber). As the project continues through the environmental and design phases, ample time exists for all parties to discuss and select the guardrail type which is best suited based upon the context of the area.

Coordination with the TDOT, the TN-SHPO, City of Belle Meade, Metro Public Works and CSX will continue throughout the project development process with continued opportunity for public input.

TDOT will consult with the TN-SHPO throughout the project development process in order to avoid adverse effects pursuant to Section 106 of the Historic Preservation Act of 1966. Depending on the design and the amount of original materials that will have to be replaced, it is possible that the Section 106 effects to the bridge could be considered adverse and would result in a Section 4(f) use. If that is the case, TDOT will work with the TN-SHPO and all involved parties to minimize and mitigate adverse effects.

Based upon the required approach work, estimated rehabilitation cost, and preliminary engineering for this project it is estimated that the total construction cost for is approximately $1,145,325.

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	X
4.	Floodplains	X
5.	Forested land	X
6.	Historical, cultural, or natural landmark	X
7.	Industrial park, factory	
8.	Institutional usages	
	a. School or other educational institution	X
	b. Church or other religious institution	X
	c. Hospital or other medical facility	X
	d. Public building, e.g., fire station	X
	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
	(Belle Meade / Nashville, TN)	
12.	Waterway, lake, pond, river, stream, spring	X

(Permit required:	Coast Guard	
	Section 404	X
	TVA Section 26a review	
	NPDES	
	Aquatic Resource Alteration	X

13.	Other	
14.	Location coordinated with local officials	X
15.	Railroad crossings	X
16.	Hazardous materials site	

TENNESSEE DEPARTMENT OF TRANSPORTATION
PROJECT PLANNING DIVISION

PROJECT NO.: 99106-1401-94 ROUTE: HILLWOOD BLVD. (05501)
COUNTY: DAVIDSON CITY: NASHVILLE
PROJECT PIN NUMBER: 107669.00
PROJECT DESCRIPTION: BRIDGE REHABILITATION PROJECT: BRIDGE NO. 1900896001 HILLWOOD BLVD., BRIDGE OVER CSX RAILROAD AND RICHLAND CREEK AT L.M. 0.09 LOCATED BETWEEN HARDING ROAD AND CHARLOTTE PIKE.

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
6,930	2013	8,730	960	11	2033	65-35	1	1		

REQUESTED BY: NAME CHRIS ARMSTRONG DATE 12/18/08
DIVISION PROJECT PLANNING
ADDRESS 1000 JAMES K. POLK BLDG.
NASHVILLE, TN 37243

REVIEWED BY: TONY ARMSTRONG Tony Armstrong DATE 1-13-09
TRANSPORTATION MANAGER 1
SUITE 1000, JAMES K. POLK BUILDING

APPROVED BY: BILL HART Bill Hart DATE 1/13/09
TRANSPORTATION MANAGER 2
SUITE 1000, JAMES K. POLK BUILDING

COMMENTS:

THIS TRAFFIC BASED ON 2002 SPECIAL BRIDGE COUNT AND 1 SPECIAL CLASSIFICATION COUNT (JAN.09). FUTURE TRAFFIC BASED ON THE GROWTH RATE FROM THE NASHVILLE MPO COMPUTER ASSIGNMENT MODEL.

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

NOTE: FOR BRIDGE REPLACEMENT PROJECTS, ADLs ARE NOT REQUIRED FOR AADT's OF 1000 OR LESS AND PERCENTAGE OF TRUCKS OF 7% OR LESS.
SEE ATTACHMENTS FOR TURNING MOVEMENTS AND/OR OTHER DETAILS. (REV. 9/20/07)

ROAD CLOSURE STATEMENT

DATE: 12/17/07

Susan B. Ralph
Transportation Planner 4
505 Deaderick Street
James K. Polk Building
Suite 600
Nashville, TN 37243-0341

RE: Project Identification Number: 107669.00
Hillwood Blvd, Bridge over CSX RR & Richland Creek (LM 0.09)

Dear Ms. Ralph:

The City of Belle Meade;

X Please be advised that the Agency hereby agrees to the closing of any roads connected with the referenced project if such closing is deemed necessary by the Department.

X Please be advised that the Agency agrees to sign and maintain an appropriate detour route during construction.

Sincerely,

Beth Reardon

Title City Manager
City of Belle Meade

Date:
12/17/07

KARL F. DEAN
MAYOR

File
Davidson
10766900

METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY

April 8, 2009

DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING
750 SOUTH FIFTH STREET
NASHVILLE, TENNESSEE 37206
615-862-8760

Mr. Van Stovall, Transportation Planner
State of Tennessee Department of Transportation
Office of Local Programs
James K. Polk Building, Suite 600
Nashville, TN 37243-0341

RE: Hillwood Blvd. Bridge over CSX RR and
Richland Creek (LMO.09) – PIN 10766900
Federal Project No. BRZE-9312(69)

Dear Mr. Stovall:

Please be advised that The Metropolitan Government of Nashville and Davidson County hereby agrees to the closing of any roads connected with the referenced project, if the Department deems such closing necessary. However, it is a requirement under Metro Code that the Metro Public Works Permit Office review and issue permits for such activities to notify all emergency and public agencies. Metro Public Works would request that these activities be coordinated with our Permit Office at 862-8782.

If you have any questions, please contact us.

Sincerely,
The Department of Public Works

Mark Macy, P.E.
Director of Engineering

MM/WLD/BG

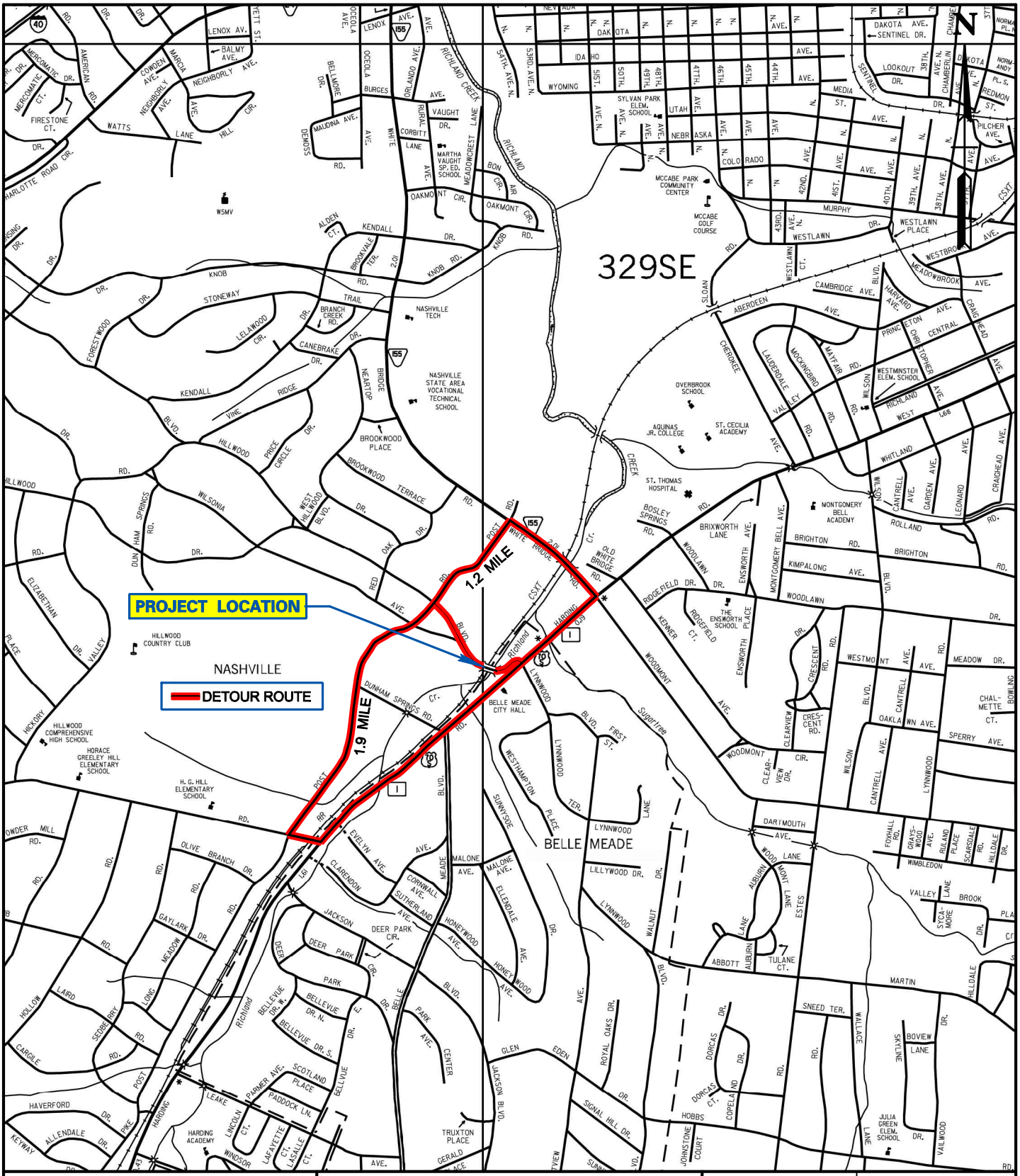
Enclosure

Copy: John W. Lynch
Beth Reardon, City of Belle Meade
Ed Wassermann, TDOT
Teresa Estes
Buddy Hall, Permit Office
Renee Jackson
Billy Davis

RECEIVED
APR 22 2009
Transportation Local
Project Management
Reg 3 - NS/RS

vanstovall

D00 3447



TDOT

DETOUR MAP

DRAWN BY:	CHECKED BY:
BNG	TMC
PIN # 107669.00	
SCALE: 1"= 2000'	DATE: 03-03-09

TPR ON SITE INSPECTION REPORT

FOR RAILROAD CROSSINGS

INSPECTION MADE BY: SV & WH BRIDGE NO.: 190D8960001 COUNTY: Davidson
Date: 1/30/09 Route Name: Hillwood Boulevard (05501) Feature Crossed: CSX RR & Richland Creek

GENERAL SITE DETAILS

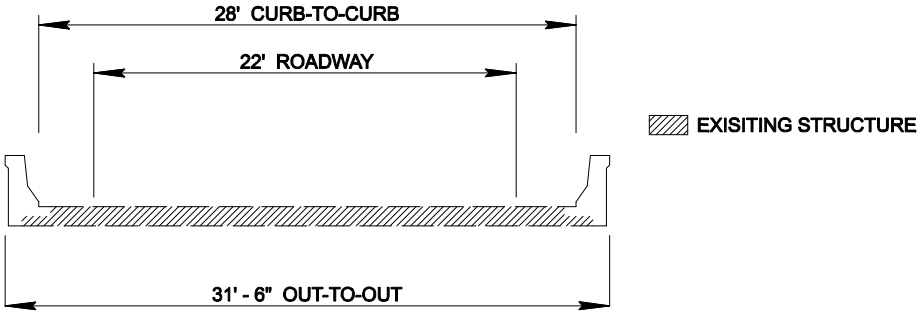
Roadway approach alignment: ☑ Horizontal Curve or ☐ Tangent No. of Lanes: 2 ☑ paved ☐ gravel
Bridge alignment: ☐ Horizontal Curve or ☑ Tangent
Structure clearances (underpass) adequate? Horizontal: ☑ Yes ☐ No Vertical: ☐ Yes ☑ No
Estimate change in grades:
Would relocated centerline improve alignment? ☑ No ☐ Yes, describe
Will maintaining traffic be required? ☑ No ☐ Yes
Intersecting roads affected? ☐ No ☑ Yes, describe Harding Road temporary signal changes needed
Bridge foundations bearing material type: ☐ Soil ☐ Piles ☑ Rock ☐ Unknown

EXISTING STRUCTURE

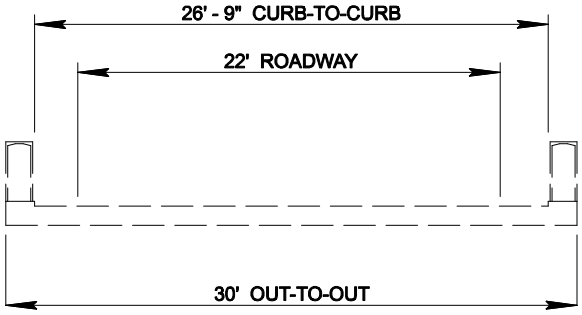
Length: 177' No. of spans: 5 Structure type: CDG No. of lanes: 2 Skew: 75 °
Width (out to out): 29.8' Width (curb to curb): 26.8' Approach: ☑ Paved ☐ Graveled
Sidewalks (left,right): N/A Bridgerail type: Concrete Bridgerail height = 3.1'
Superstructure depth: Finished Grade to low girder = 1' Girder depth = - ☐ Steel ☑ Conc.
Substructure: ☐ Timber ☑ Concrete ☐ (Provide wingwall sketch)
Any Other Structure at site? ☐ Retaining Wall ☐ Sign Support ☐ Signal Posts ☑ Utilities
Comments: Light Poles located on approaches

PROPOSED STRUCTURE

☐ Replacement ☑ Rehabilitate ☐ Widening ☐ New Location
Bridge length: 177' Bridge type: CDG Span arrangement: 5 Skew: 75 °
Bridge width: 31.5' Sidewalks: None Design Speed (MPH): 30 ADT (2033) = 8,730
Proposed grade: Match Existing Proposed alignment: Match Existing
Method of maintaining traffic: ☐ Stage construction ☐ On site detour ☑ Close road ☐ Shift Centerline ___ FT
Cost of proposed Structure: $150 per FT^2 177.0 / 31.5 length (ft) / width (ft) Cost = $836,325
Cost of bridge removal: per FT^2 / length (ft) / width (ft) Cost = $0
Detour structure: Type and size = N/A Cost =
Total Structure Cost = $836,000



PROPOSED IMPROVEMENTS



EXISITING STRUCTURE

TDOT

BRIDGE TYPICALS

DRAWN BY:	CHECKED BY:
BNG	TMC
PIN # 107669.00	
SCALE:	DATE:
NTS	03-03-09

Inlet

Outlet

Upstream

Downstream

Looking Northeast along CSX Railroad from Bridge

Looking Southwest along CSX Railroad from Bridge

Northwest Approach

Southeast Approach

Looking Northwest from Bridge

Looking Southeast from Bridge

Bridge Superstructure