




STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
STRATEGIC TRANSPORTATION INVESTMENTS DIVISION
SUITE 1000, JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-1402
(615) 741-2208

BUTCH ELEY
DEPUTY GOVERNOR &
COMMISSIONER OF TRANSPORTATION

BILL LEE
GOVERNOR

MEMORANDUM

TO: Mr. Shane Hester, Director
Region 3 Project Development

FROM: Mr. Steve Allen, Director
Strategic Transportation Investments Division

SA

DATE: November 14, 2022

SUBJECT: Local Bridge Transportation Investment Report (TIR)
Proposed Bridge from Sadler Ct. to Oakland St. over CSX
Davidson County, PIN 132029.00

This memo is to inform those involved with the development of the subject project about the approved Bridge Transportation Investment Report (TIR). This memo is being provided for your use in determining priorities, establishing future scheduling, and initiating further development of the project. Please coordinate with the Program Development and Scheduling Office to ensure the correct adjustments are made to PPRM's termini, scope of work, length, and project descriptions to support the recommended improvements in this memo.

This TIR was completed as a result of a funding partnership with the Nashville Department of Transportation (NDOT) and needs to proceed into further preliminary engineering development. NDOT has held public meetings and has coordinated with TDOT to determine bridge location and typical section.

If you should have any questions, please do not hesitate to contact Mr. Steve Allen at (615) 741-2208 or by email at Steve.Allen@tn.gov.

SA/KS

Attachment

Mr. Shane Hester
November 14, 2022
Page Two

Cc: Mr. Preston Elliot
Mr. Will Reid
Mr. Jeff C. Jones
Mr. James Kelley
Mr. David Layhew
Mr. Dan Pallme
Mr. Mike Brown
Mr. Ted Kniazewycz
Mr. Jeff Hoge
Mr. Ronnie Porter
Mr. Stacy Morrison
Mr. Jay Lanius
Mr. Matt Meservy
Ms. Susannah Kniazewycz
Mr. Shaun Armstrong
Mr. Jonathan Wellemeyer
Mr. Jonathan Russell
Mr. Lee Smith
Ms. Veda Nguyen
Ms. Tammy Sellers
Mr. Brandon Chance
Mr. Jim Waters
Mr. Frederick Miller
Mr. Jon Zirkle
Ms. Sharon Schutz
Ms. Melissa Portell
Mr. Konner Spradlin
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Bridge Transportation Investment Report

Summary of Improvements

PIN 132029.00

Davidson County

Proposed Bridge from Sadler Ct. to Oakland St. – Bridge over CSX

Bridge ID: N/A

FEATURE CROSSED AND ENVIRONMENTAL CONSTRAINTS:

It is recommended to close the at-grade railroad crossing along Sadler Ave. to vehicular traffic due to trains stopping at the crossing and blocking traffic. To provide connectivity back to the main road network, three (3) options were considered. Option 1 and Option 2 would extend Sadler Ave. to the north to connect it with Caden Dr. Each of these options would require a bridge to cross over the CSX railroad line. Option 1 would cost approximately \$5,660,000 and Option 2 would cost approximately \$7,810,000. Both options would require partial or full acquisition of multiple businesses and may require the acquisition of multiple houses to achieve the desired clearance over CSX railroad. Option 3 would extend Oakland St. to the north and provide a bridge over the CSX railroad line to tie into Sadler Ct. The approximate cost of Option 3 would be \$2,970,000. It is expected one house will be acquired but others may be able to remain in place with the use of retaining walls. All three (3) alignments can be seen in this report.

Option 3 is the preferred alternative due to its cost effectiveness and the expected limited impacts. Construction of the bridge should be carefully coordinated with CSX. There are no known archaeological resource concerns in the project area. The location has not been surveyed for archaeological resources, and a survey will be required. There are no previously identified National Register listed or eligible properties in the area of potential effects (APE). However, there are multiple resources that are over fifty years in age, so a survey will be required. There are no known hazmat sites, Section 4(f), or Section 6(f) issues at this location. The bridge project spans an area outside of the 500-year flood level.

TRAFFIC AND TYPICAL SECTION:

The route has a base year 2027 Annual Average Daily Traffic (AADT) of 400 and a design year 2047 AADT of 440. A design speed of twenty-five (25) mph was assumed for this project. The route is classified as an Urban Local Road and Standard Drawing RD11-TS-1A was used for design considerations. Under these conditions, the typical section for the approach and bridge calls for two (2) ten (10) foot travel lanes with three (3) foot shoulders. Curb and gutter and a five (5) foot sidewalk will be constructed on the western side of the proposed new alignment. A walkway fence will be installed on top of the concrete parapets along the proposed bridge.

PROPOSED IMPROVEMENTS AND MAINTENANCE OF TRAFFIC:

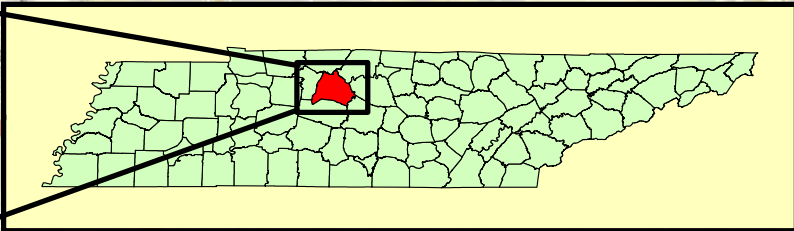
The proposed bridge is to be a single (1) span steel bridge at approximately seventy-five (75) degree skew with the railroad. The bridge will have an out-to-out width of 35 feet 4 inches based on the above recommendations. An eight (8) foot minimum protective barrier fence shall be mounted on top of the bridge railings. Consultation should include offering Nashville the opportunity to enhance the aesthetics of the fencing above chain link standard. The minimum vertical clearance for the proposed structure will be twenty-three (23) feet from the top of the existing rail. TDOT recommends closing the at-grade crossing along Sadler Ave. Any closure will require additional coordination between NDOT and CSX. The project will extend approximately 60 feet from the structure to the north and 100 feet to the south to tie into Sadler Ct. and Oakland St. respectively.

COST ESTIMATE:

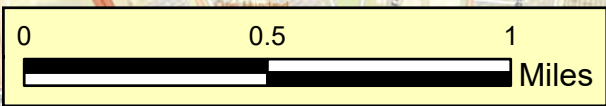
The cost for the estimated construction, right-of-way, and preliminary engineering for this bridge replacement is approximately \$2,970,000. Approximately 0.28 acres of right-of-way is expected to be acquired for this project including one (1) house. Below is the cost estimate breakdown along with a five (5) year inflated cost estimate based on 5% per year:

COST ESTIMATE SUMMARY (2022)						
PIN	Project Type of Work	Preliminary Engineering:	Right-of-Way:	Utilities:	Construction:	Total Project Cost (2022):
132029.00	New Bridge	\$ 218,000	\$ 538,000	\$ 30,000	\$ 2,180,000	\$ 2,970,000

INFLATED COST ESTIMATE SUMMARY						Report Type:	Bridge Replacement
No. of Years	Year	Preliminary Engineering:	Right-of-Way:	Utilities:	Construction:	Total Inflated Project Cost	
5	2027	\$ 278,000	\$ 687,000	\$ 38,300	\$ 2,780,000	\$ 3,790,000	



PROPOSED BRIDGE

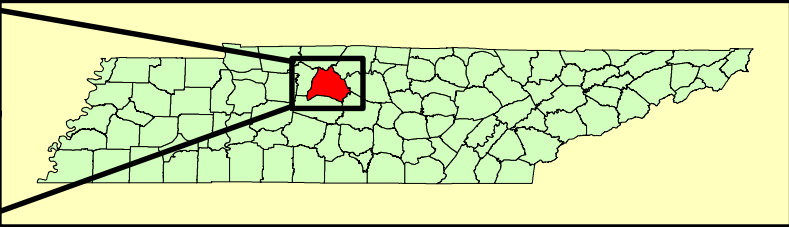


Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community. Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



AREA MAP
PROPOSED BRIDGE FROM SADLER CT
TO OAKLAND ST.
DAVIDSON COUNTY
PIN: 132029.00





Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri, China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

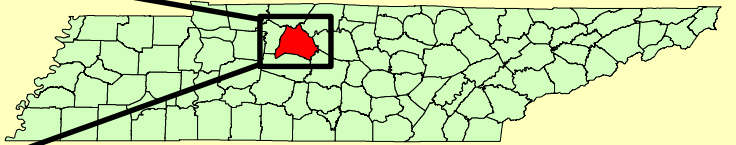


LOCATION MAP
PROPOSED BRIDGE FROM SADLER CT
TO OAKLAND ST.
DAVIDSON COUNTY
PIN: 132029.00

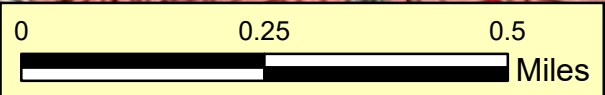




DAVIDSON COUNTY



PROPOSED BRIDGE

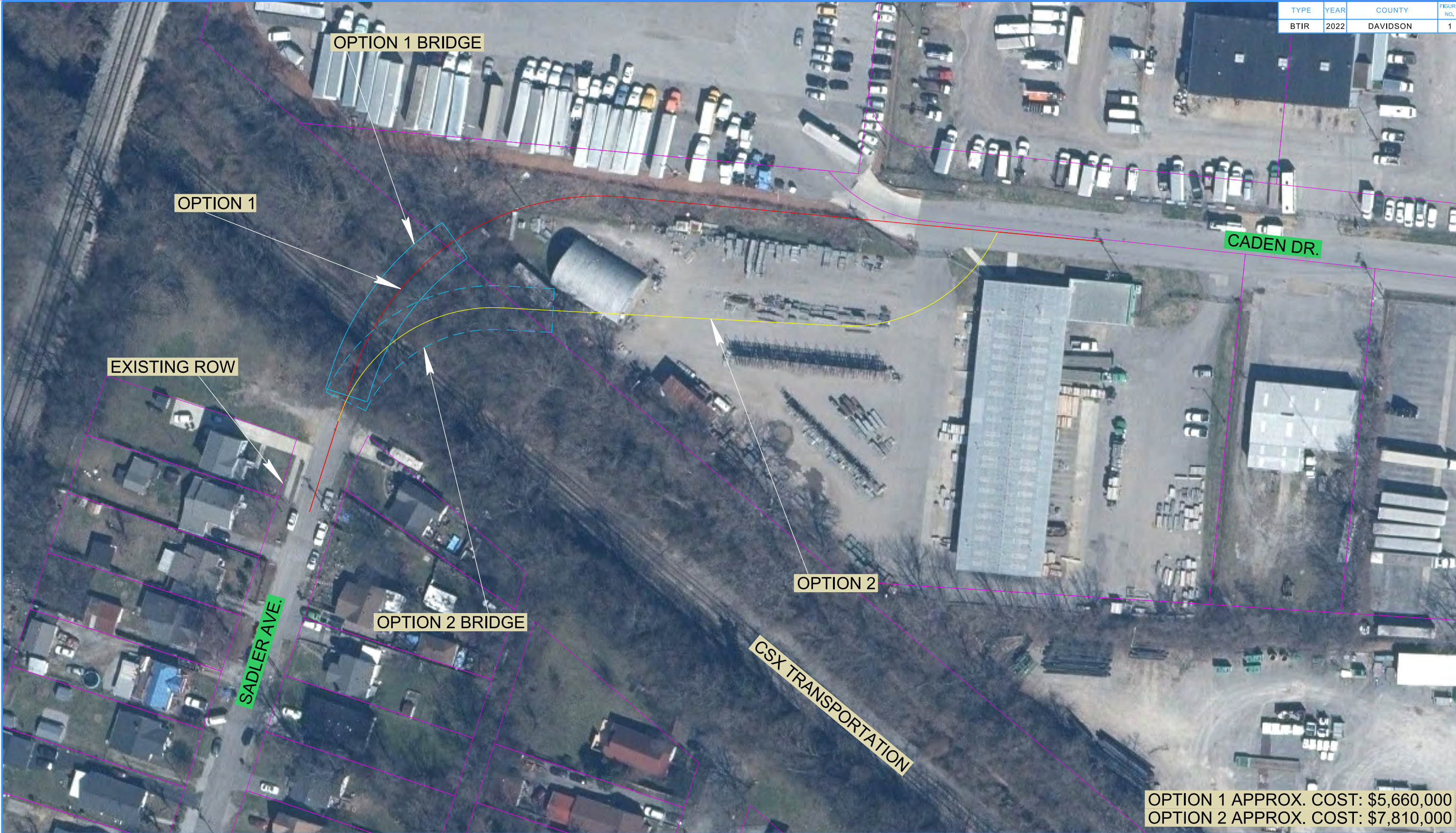


Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community, Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community, Copyright © 2013 National Geographic Society, i-cubed



TOPOGRAPHIC MAP
PROPOSED BRIDGE FROM SADLER CT
TO OAKLAND ST.
DAVIDSON COUNTY
PIN: 132029.00





OPTION 1 APPROX. COST: \$5,660,000
 OPTION 2 APPROX. COST: \$7,810,000



BRIDGE TRANSPORTATION INVESTMENT REPORT

OPTION 1 AND 2
 OF548 (SADLER AVE. EXTENSION)
 DAVIDSON COUNTY

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 S.T.I.D.

FIGURE 1
 OF548
 BRIDGE OVER
 CSX RAILROAD



10/21/2022 7:41:35 AM X:\Projects\Davidson\Sadler Ave Bridge over CSX RR\Microstation\Conceptual Layouts\SHT_02 - Curved Option.dgn

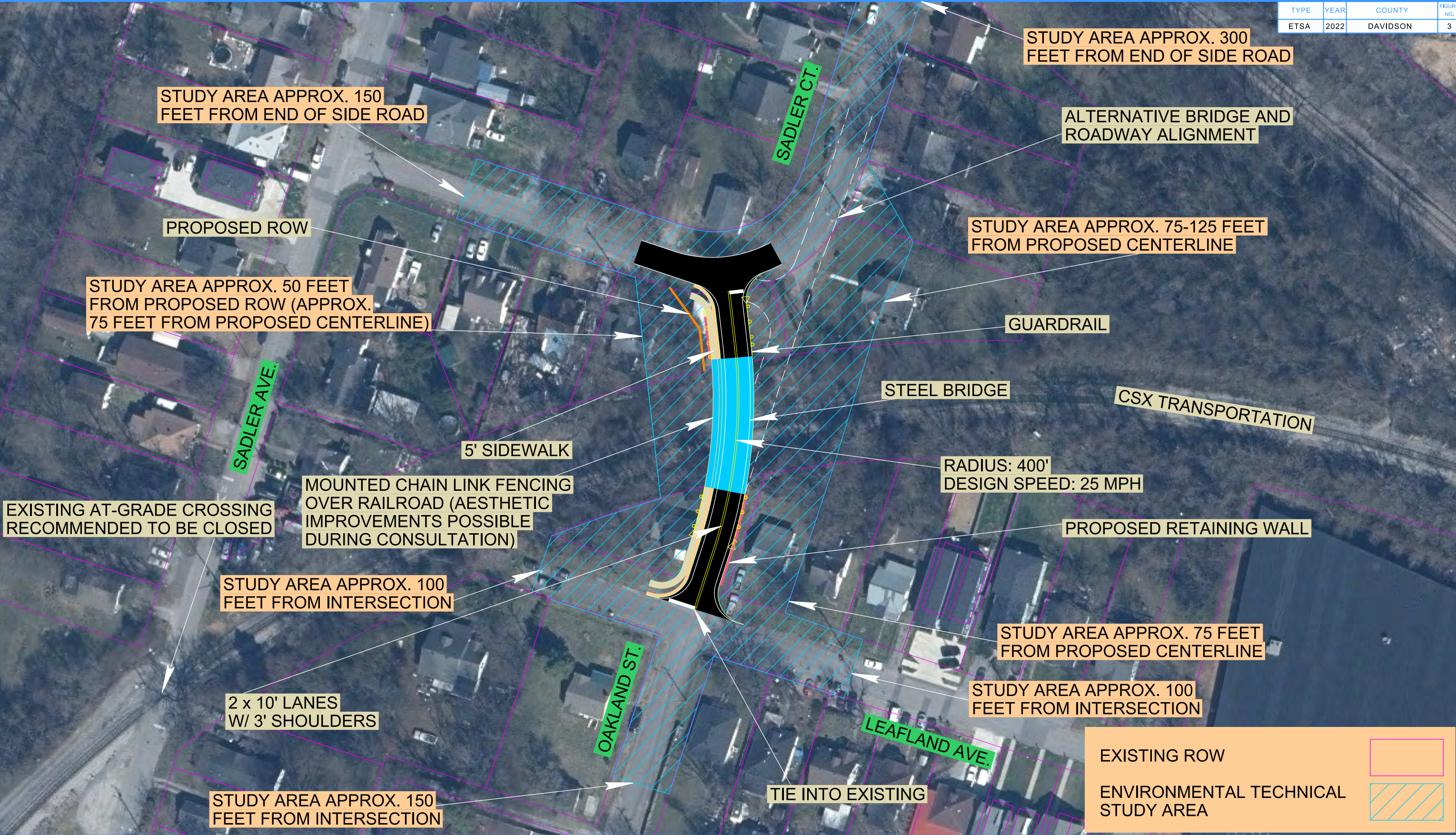


BRIDGE TRANSPORTATION INVESTMENT REPORT

OPTION 3
OF549 (OAKLAND ST. EXTENSION)
DAVIDSON COUNTY

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
S.T.I.D.

FIGURE 2
OF549
BRIDGE OVER
CSX RAILROAD



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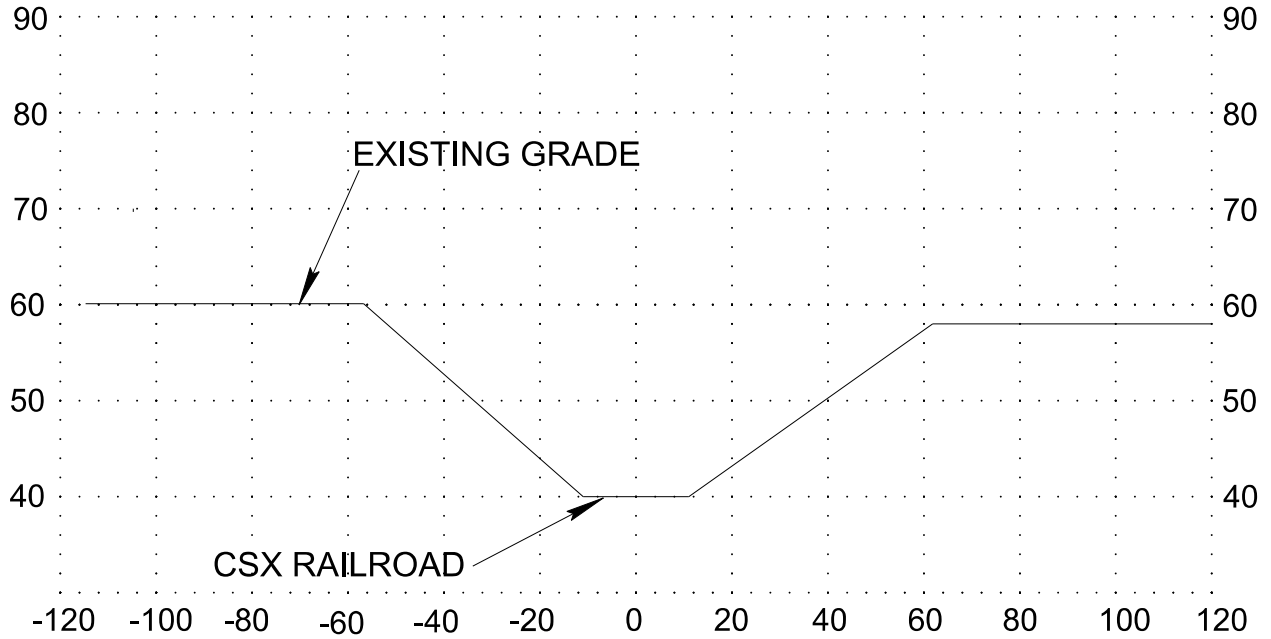
ENVIRONMENTAL TECHNICAL STUDY AREA

OPTION 3
OF549 (OAKLAND ST. EXTENSION)
DAVIDSON COUNTY

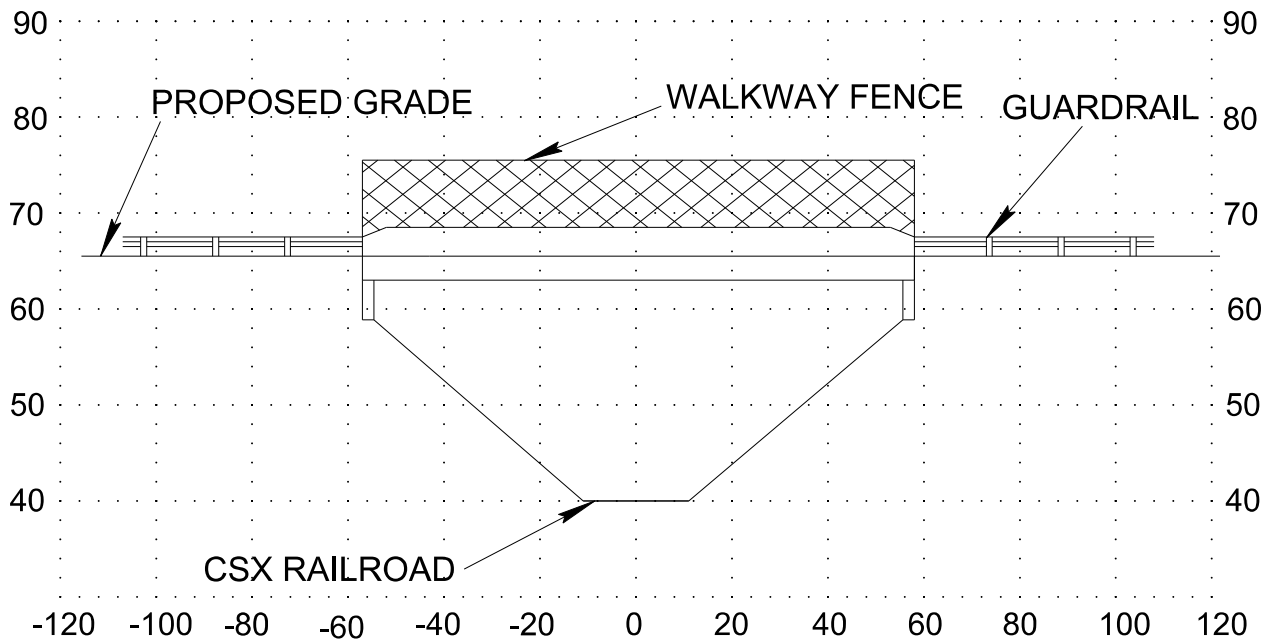
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
S.T.I.D.

FIGURE 3
OF549
BRIDGE OVER
CSX RAILROAD

EXISTING PROFILE



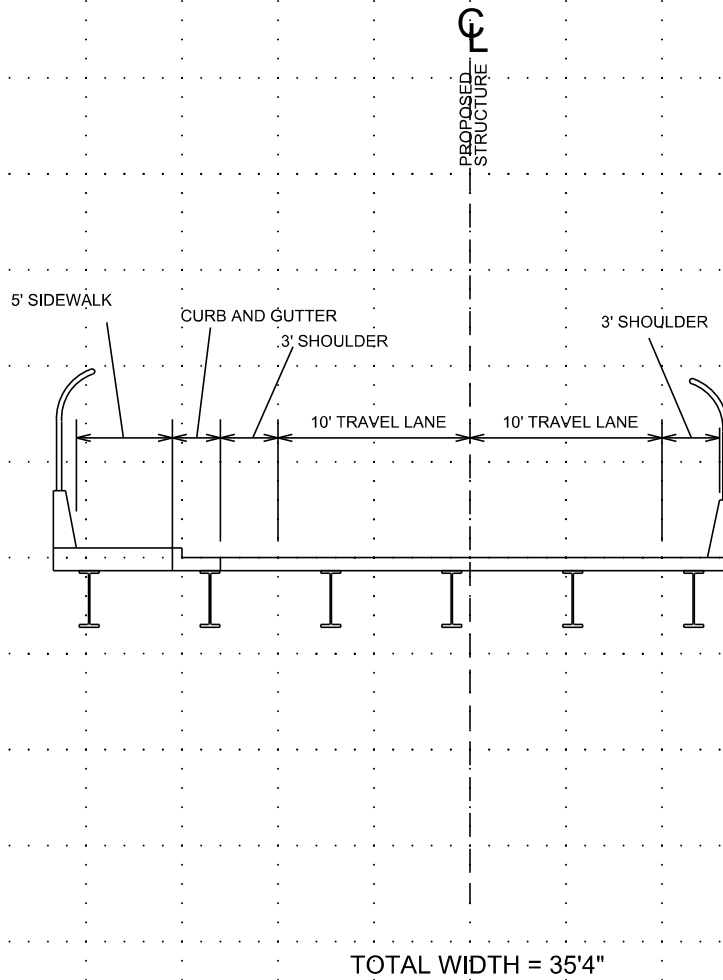
PROPOSED PROFILE



BRIDGE PROFILES

0F549 (OAKLAND ST. EXTENSION) DAVIDSON COUNTY
BRIDGE OVER CSX RAILROAD

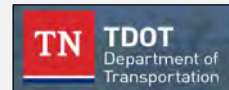
PROPOSED STRUCTURE



TYPICAL SECTION
0F549 (OAKLAND ST. EXTENSION) DAVIDSON COUNTY
BRIDGE OVER CSX RAILROAD

COST ESTIMATE SUMMARY

Route:	0F549
Termini:	L.M. 0.00 to L.M. 0.06
Scope of Work:	New Bridge over CSX Railroad
Project Type of Work:	New Bridge
County:	Davidson
Length:	0.06 Miles
Date:	May 27, 2022
Estimate Type:	Concept



DESCRIPTION	LOCAL	STATE	FEDERAL	TOTAL
	0%	0%	0%	
Construction Items				
Removal Items	\$0	\$0	\$0	\$0
Asphalt Paving	\$0	\$0	\$0	\$69,700
Concrete Pavement	\$0	\$0	\$0	\$0
Drainage	\$0	\$0	\$0	\$39,200
Appurtenances	\$0	\$0	\$0	\$39,900
Structures	\$0	\$0	\$0	\$1,090,000
Fencing	\$0	\$0	\$0	\$2,400
Signalization & Lighting	\$0	\$0	\$0	\$0
Railroad Crossing	\$0	\$0	\$0	\$0
Earthwork	\$0	\$0	\$0	\$105,000
Clearing and Grubbing	\$0	\$0	\$0	\$61,000
Seeding & Sodding	\$0	\$0	\$0	\$1,100
Rip-Rap or Slope Protection	\$0	\$0	\$0	\$31,900
Guardrail	\$0	\$0	\$0	\$21,700
Signing	\$0	\$0	\$0	\$1,500
Pavement Markings	\$0	\$0	\$0	\$600
Maintenance of Traffic	\$0	\$0	\$0	\$71,900
Mobilization	5%	\$0	\$0	\$76,800
Other Items and Annual Inflation	10%	\$0	\$0	\$161,000
Const. Contingency (Structures Not Included)	30%	\$0	\$0	\$205,000
Const. Eng. & Inspec.	10%	\$0	\$0	\$198,000
Construction Estimate		\$0	\$0	\$2,180,000
Interchanges & Unique Intersections				
Roundabouts		\$0	\$0	\$0
Interchanges		\$0	\$0	\$0
Right-of-Way & Utilities				
	LOCAL	STATE	FEDERAL	TOTAL
	0%	0%	0%	
Right-of-Way		\$0	\$0	\$538,000
Utilities		\$0	\$0	\$30,000
Preliminary Engineering				
	LOCAL	STATE	FEDERAL	TOTAL
	0%	0%	0%	
Prelim. Eng.	10.0%	\$0	\$0	\$218,000
Total Project Cost (2022)	\$	- \$	- \$	\$ 2,970,000

PAY ITEM SUMMARY

TDOT PAY ITEM	TDOT DESCRIPTION	UNIT	TOOL QUANTITIES	ADDITIONAL QUANTITIES	TOOL QUANTITIES + ADDITIONAL QUANTITIES	Statewide UNIT COST	TOTAL COST
							← Unit Cost Trends with Quantities
Pavement Removal							PAVEMENT REMOVAL TOTAL (ROUNDED) \$
							-
Asphalt Roads							
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	729		729	\$ 38.68	\$ 28,190.97
307-(01, 02, 03), 01	ASPHALT CONCRETE MIX (All Grades) (BPMB-HM) GRADING A	TON	115		115	\$ 107.78	\$ 12,434.73
307-(01 & 02 & 03), 08	ASPHALT CONCRETE MIX (ALL GRADES) (BPMB-HM) GRADING B-M2	TON	98		98	\$ 167.36	\$ 16,442.75
402-01	BITUMINOUS MATERIAL FOR PRIME COAT (PC)	TON	1		1	\$ 807.84	\$ 972.98
402-02	AGGREGATE FOR COVER MATERIAL (PC)	TON	4		4	\$ 87.58	\$ 380.73
403-01	BITUMINOUS MATERIAL FOR TACK COAT (TC)	TON	1		1	\$ 747.73	\$ 500.08
411-01.07	ACS MIX (PG64-22) GRADING E SHOULDER	TON	16		16	\$ 147.88	\$ 2,392.25
411-(01 & 02 & 03), 10	ACS MIX(ALL GRADES) GRADING D	TON	48		48	\$ 172.99	\$ 8,315.40
							PAVING TOTAL (ROUNDED) \$
							69,700
Concrete Roads							CONCRETE RAMPS AND ROADWAYS TOTAL (ROUNDED) \$
							-
Drainage							
607-05.02	24" CONCRETE PIPE CULVERT (CLASS III)	LF	342		342	\$ 86.55	\$ 29,630.89
611-12.02	CATCH BASINS, TYPE 12, > 4' - 8' DEPTH	EA	1		1	\$ 4,727.84	\$ 2,371.48
611-14.02	CATCH BASINS, TYPE 14, > 4' - 8' DEPTH	EA	0		0	\$ 8,964.99	\$ 2,248.42
611-42.02	CATCH BASINS, TYPE 42, > 4' - 8' DEPTH	EA	0		0	\$ 5,541.90	\$ 631.78
710-02	Aggregate Underdrains (with pipe)	LF	602		602	\$ 7.10	\$ 4,271.90
							DRAINAGE TOTAL (ROUNDED) \$
							39,200
Appurtenances							
701-01.01	CONCRETE SIDEWALK (4")	SF	1806		1806	\$ 9.37	\$ 16,916.18
702-03	CONCRETE COMBINED CURB & GUTTER	CY	22		22	\$ 470.50	\$ 10,168.46
711-05.70	32IN SINGLE SLOPE CONCRETE BARRIER WALL	LF		230	230	\$ 55.52	\$ 12,769.60
							ROADWAY AND PAVEMENT APPURTENANCES TOTAL (ROUNDED) \$
							39,900
Earthwork & Mineral							
105-01	CONSTRUCTION STAKES, LINES AND GRADES	LS	1		1	\$ 28,655.30	\$ 28,655.30
203-01	ROAD & DRAINAGE EXCAVATION (UNCLASSIFIED)	CY	3372		3372	\$ 17.42	\$ 58,757.88
203-02.01	BORROW EXCAVATION (GRADED SOLID ROCK)	TON	159		159	\$ 35.06	\$ 5,577.96
203-03	BORROW EXCAVATION (UNCLASSIFIED)	CY	757		757	\$ 16.15	\$ 12,233.52
							EARTHWORK & MINERAL TOTAL (ROUNDED) \$
							105,300
Structures							
N/A	New Bridge (Steel Girder)	SF	4060		4060	\$ 250.00	\$ 1,014,875.00
604-07.01	RETAINING WALL	SF	550		550	\$ 143.98	\$ 79,187.75
							STRUCTURES TOTAL (ROUNDED) \$
							1,094,100
Interchanges and Unique Intersections							INTERCHANGES AND UNIQUE INTERSECTIONS TOTAL (ROUNDED) \$
							-
Lighting & Signalization							
							LIGHTING & SIGNALIZATION TOTAL (ROUNDED) \$
							-
Guardrail							
705-01.01	GUARDRAIL AT BRIDGE ENDS	LF	100	50	150	\$ 66.52	\$ 9,977.76
705-06.01	W Beam GR (Type 2) Mash TL3	LF	60		60.192	\$ 20.07	\$ 1,208.05
705-06.20	Tangent Energy Absorbing Term Mash TL-3	EA	4		4	\$ 2,626.00	\$ 10,504.00
							GUARDRAIL TOTAL (ROUNDED) \$
							21,700
Seeding and Sodding							
801-01	SEEDING (WITH MULCH)	UNIT	19		19	\$ 27.26	\$ 512.76
801-01.07	TEMPORARY SEEDING (WITH MULCH)	UNIT	14		14	\$ 22.31	\$ 314.74
801-02	SEEDING (WITHOUT MULCH)	UNIT	14		14	\$ 17.70	\$ 249.70
							SODDING TOTAL (ROUNDED) \$
							1,100
Maintenance of Traffic							
N/A	Traffic Control	LS	1		1		\$ 71,419.20
712-02.02	INTERCONNECTED PORTABLE BARRIER RAIL	LF	15		15	\$ 30.18	\$ 454.15
							MAINTENANCE OF TRAFFIC TOTAL (ROUNDED) \$
							71,900
Signs							
Not Listed	Signs (Construction)	LS	1		1	\$ -	\$ 1,500
							SIGNING TOTAL (ROUNDED) \$
							1,500
Pavement Markings							
716-13.06	Spray Thermo P.M. (40 mil 4")	LM	0.3		0.3	\$ 1,654.23	\$ 565.75
							PAVEMENT MARKINGS TOTAL (ROUNDED) \$
							600
Fencing							
707-01.11	Chain Link Fence (6 Foot)	LF		230	230	\$ 10.03	\$ 2,306.90
							FENCE TOTAL (ROUNDED) \$
							2,400.00
Rip-Rap							
709-05.05	Machined Rip-Rap (Class A-3)	TON	800		800	\$ 39.85	\$ 31,880.00
							RIP-RAP & SLOPE PROTECTION TOTAL (ROUNDED) \$
							31,900.00
Clearing and Grubbing							
201-01	Clearing and Grubbing	LS		1	1	\$ 60,931.51	\$ 60,931.51
							CLEAR AND GRUBBING TOTAL (ROUNDED) \$
							61,000.00
Railroad At-Grade Crossing							RAILROAD CROSSING OR SEPARATION TOTAL (ROUNDED) \$
							-
Utilities							
N/A	Overhead Distribution	LM	0.04		0.04	\$ 750,000	\$ 30,000
							UTILITIES TOTAL (ROUNDED) \$
							30,000.00
Right-of-Way							
N/A	Right-of-Way	LS	1		1	\$ -	\$ -
							RIGHT-OF-WAY TOTAL (ROUNDED) \$
							-

BRIDGE TRANSPORTATION INVESTMENT REPORT (TIR)

DAVIDSON COUNTY
0F549 (OAKLAND ST.)

LOCATION			
Bridge #:		Feature Crossed:	CSX Railroad
Road Name:	Oakland St.	Log mile:	
Route ID:	0F549	System:	Urban, Local
City:	Nashville	Functional Class:	Local Roads
County:	Davidson	PIN:	132029.00

ROADWAY		
	Existing	Proposed
Design Standard		RD11-TS-1A
Route Characteristics		
AADT:	400	440
AADT Year:	2027	2047
Terrain:	Rolling	Rolling
No. Lanes:		2
Speed(Posted):		25
Speed (Design):		25
Approach Character.		
Lane Width (ft):		10
Shoulder Width (ft):		3
ROW Width (ft):		Approx. 65' minimum
ROW Tracts Affected		2
ROW Required (acre)		0.28
Cross Section Width (ft):		20/26/65
Approach Length (ft):		60' north and 100' south
Alignment:		New Alignment
Grade:		
Surface Material:		Asphalt
Sidewalks (R/L):		5' on western side
App. Lower Than Structure		Yes
Utilities (list)		Overhead Distribution
Utilities to be Relocated		Overhead Distribution
Comments		Bridge on New Alignment

BRIDGE TRANSPORTATION INVESTMENT REPORT (TIR)

DAVIDSON COUNTY
0F549 (OAKLAND ST.)

STRUCTURE		
	Existing	Proposed
Bridge Characteristics		
Year Built		
Load Limit		
Sufficiency Rating		
Structure Type		Steel
Structures in Channel		No
Length (ft)		Approx. 115'
No. Spans (App./Main)		1 main span
Width (curb to curb) (ft)		26'
Width (o to o) (ft)		35'4"
Sidewalks on Structure		Yes
Vert. Clearance (ft)		23' min. over top of rail
Superstructure Depth (in)		
Girder Depth (in)		
Finish Grade-Low Girder (in)		
High Water Marks		
Bridge Rail Type		Single Slope Concrete Parapet
Bridge Rail Height (ft)		3'
Indication Overtopping		
Local Scour		
Obstructions		
Other Structures		
Comments		Bridge requires walkway fence to be installed on top of the single slope concrete parapets. Recommend closing at-grade crossing on Sadler Ave. once proposed structure is completed.

BRIDGE TRANSPORTATION INVESTMENT REPORT (TIR)

DAVIDSON COUNTY
0F549 (OAKLAND ST.)

CHANNEL	
Drainage Area (sq. miles)	
10 Year Discharge Rate (Q10) cfs	
50 Year Discharge Rate (Q50) cfs	
100 Year Discharge Rate (Q100) cfs	
CHANNEL	
Depth (ft)	
Width of Normal Flow (ft)	
Depth of Normal Flow (ft)	
Skew of Channel with Roadway	
Type of Material in Stream Bed	
Type of Vegetation on Banks	
Are Channel Banks Stable	
Signs of Stream Aggradation	
Signs of Stream Degradation	
Drift or Drift Potential	
Comments	
FLOODPLAIN	
Skew Same as Channel	
Symmetrical About Channel	
Approx. Floor Elevations	
Type of Vegetation in Floodplain	
Any Buildings in Floodplain	
Flood Information From Locals	
Comments	
MAINTENANCE OF TRAFFIC	
Method of Maintaining Traffic	on site detour
Description	Traffic will continue to the existing at-grade crossing on Sadler Ave. to cross the railroad. Once the proposed bridge has been completed, the at grade crossing is recommended to be closed.
Comments	

**TENNESSEE DEPARTMENT OF TRANSPORTATION
STRATEGIC TRANSPORTATION INVESTMENTS DIVISION**

PROJECT NO.: _____ ROUTE: OAKLAND ST.
 COUNTY: DAVIDSON CITY: NASHVILLE
 PROJECT PIN NUMBER: 132029.00
 PROJECT DESCRIPTION: BRIDGE AND APPROACHES OVER THE CSX RAILROAD CONNECTING
OAKLAND STREET AND SADLER COURT.

DIVISION REQUESTING:

MAINTENANCE PAVEMENT DESIGN
 S.T.I.D. STRUCTURES
 PROG. DEVELOPMENT & ADM. SURVEY & ROADWAY 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
400	2027	440	44	10	2047	65-35	2	3		

REQUESTED BY: NAME TY TUCKER DATE 5/4/22
 DIVISION S.T.I.D.
 ADDRESS 1000 J. K. POLK BUILDING
NASHVILLE TN 37243

REVIEWED BY: RANDY BOGUSKIE Randy Boguskie DATE 5/12/2022
 TRANSPORTATION MANAGER 1
 SUITE 1000, JAMES K. POLK BUILDING

APPROVED BY: TONY ARMSTRONG Tony Armstrong DATE 5/12/2022
 TRANSPORTATION MANAGER 2
 SUITE 1000, JAMES K. POLK BUILDING

COMMENTS:

FURNISH THE 2027-2047 TRAFFIC DATA.

THIS TRAFFIC IS BASED ON A SPECIAL 24-HOUR MACHINE COUNT [MAY 2022].
 THE DESIGN YEAR TRAFFIC IS BASED ON A 0.5% PER YEAR GROWTH RATE DUE
 TO THE AREA BEING FULLY BUILT OUT. AADT's ARE INCLUDED.

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.

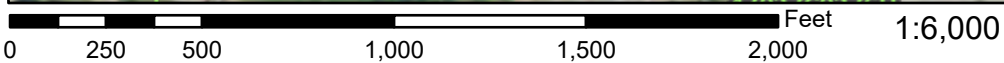
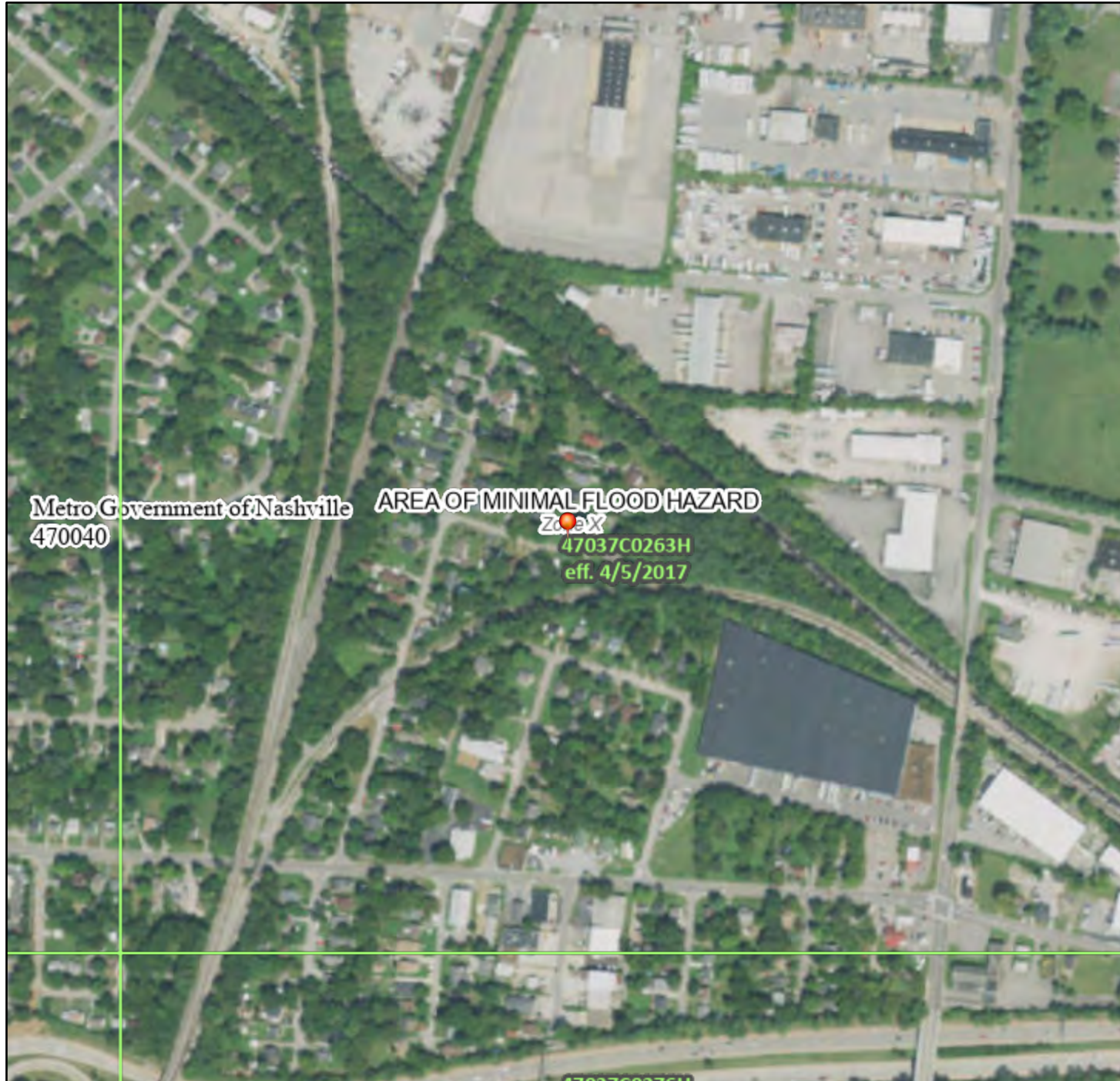
SEE ATTACHMENTS FOR TURNING MOVEMENTS AND/OR OTHER DETAILS.

(REV. 6/9/21)

National Flood Hazard Layer FIRMette



86°45'4"W 36°7'56"N



Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard <i>Zone D</i>
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance
		17.5 Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
MAP PANELS		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Digital Data Available
		No Digital Data Available
		Unmapped
		The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.



This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **5/4/2022 at 3:19 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

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