



# TENNESSEE DEPARTMENT OF TRANSPORTATION

## **Design-Build RFP**

### **Book 1 Instructions to Proposer (ITP)**

### **I-40 Resurfacing and Rehabilitation**

From Levee Road Overhead to Hollywood Street Overhead  
Shelby County, Tennessee

Project Identification Number (PIN): 130352.00

State Project Number: 79I040-S1-011

Federal Project Number: NH-I-40-1(370)

DB Contract# DB2501

March 2025

Addendum # 1 April, 2024-2025

Addendum # 2 May 2025

Addendum #3 June 2025

- Construction Staking

105-01.55 Design-Build Design Services

(All Design Activities shall be included in this item.)

- Definitive Design and Reviews
- Readiness-for-Construction Plans and Reviews, Specification and quantity estimates
- Working Drawings
- As-Built Plans and Reviews

105-08.20 Design-Build Contract Management

- Project Administration
- Project progress (scheduling)
- Contract progress submittals for payment

~~109-10.01 Trainee~~

- ~~▪ Trainee at the unit price \$0.80 per hour for each hour approved training provided, as indicated in SP1240~~

203-01.95 Design-Build Grading & Roadways

- Road and Drainage excavation
- Borrow excavation (rock)
- Borrow excavation (other than solid rock)
- Undercutting

204-05.50 Design-Build Geotechnical

- Borings
- Geotechnical Investigations
- Sinkholes

209-01.50 Design-Build Environmental Management

- EPSC measures, EPSC installation
- EPSC inspections
- Permit Acquisitions

301-50.50 Design-Build Pavement

- Any aggregate base
- Any Bituminous Plant Mix Base (HM) (A, BM-2, Etc.)
- Any Bituminous Concrete Surface (HM) (D, E)
- Treated Permeable Base Or Lean Concrete Base
- Any Portland Cement Concrete Pavement ( $\leq$  10 in. Thickness)
- Any Portland Cement Concrete Pavement ( $>$  10 in. Thickness)



TENNESSEE DEPARTMENT OF TRANSPORTATION

**Design-Build**

**Book 3 Project Specific Information**

**I-40 Resurfacing and Rehabilitation**

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Shelby County, Tennessee

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shall provide hydraulic calculations (including spread calculations) to the Department for deviations to existing.

### **3.3 Deviations/Exceptions**

All proposed modifications to the Simplified Functional Plans require an Alternative Technical Concept (ATC) subject to Department approval. The Design-Builder shall not request more than six (6) ATCs per week. The Design-Builder is responsible for any impacts resulting in deviations from the Simplified Functional Plans.

Roadway component geometric configurations shall be designed to provide adequate drainage and prevent hydroplaning. Cross slopes shall be as shown on the Simplified Functional Plans.

Deviations from horizontal (greater than 1.0 foot), cross slope (any change) and vertical alignment (greater than 1.5 4.0 foot) as shown on Simplified Functional Plans will require an Alternative Technical Concept (ATC) with Department concurrence. Any vertical alignment deviations:

- Shall not create low points near existing bridge (N. McLean Blvd), overhead sign bridges, cantilevered sign structures and shall meet existing vertical clearance.
- Shall not require modification to the existing concrete median barrier between I-40 Sta 223+15.18 to Sta 230+00.00

No design exceptions will be allowed without Department approval.

### **3.4 Guardrail**

The proposed guardrail, including any anchor system, shall be installed quickly to minimize traffic exposure to any hazard. Guardrail shall be removed and replaced in accordance with the January 2021 edition of TDOT Standard Drawings and TDOT Standard Specifications.

All permanent and temporary safety appurtenances (sign supports, guardrail, etc.) shall meet current TDOT standards and shall have all required Department certification documents.

The Design-Builder shall propose an AASHTO Manual for Assessing Safety Hardware (MASH) compliant TL-3 guardrail attachment to bridge ends (and retaining walls if applicable) detail. This attachment detail shall be submitted prior to installation for the Department's Review and Approval. All new guardrail and end terminals shall be MASH-compliant TL-3 and be on the Department's Qualified Products List. All temporary and permanently installed guardrail segments shall meet MASH TL-3 standards. New guardrail segments should be installed to shield fixed objects including non break-away supports in the clear zone.

### **3.5 Pavement Markings**

The Design-Builder shall prepare pavement marking plans for the Department's Review and Approval. Pavement markings shall be constructed for the initial phase of construction. The design and installation of permanent pavement markings shall be in strict accordance with the current edition of the Manual on Uniform Traffic Control Devices (MUTCD), TDOT Roadway Design Guidelines, TDOT Standard Drawings, TDOT Standard Traffic Operations Drawings, TDOT Traffic Design Manual, and the current edition of the TDOT Standard Specifications. All pavement marking removal on final surfaces shall be accomplished by water blasting or another non-marring method. Any damage to the pavement surface caused by the selected method shall be removed and replaced at the Design-Builder's expense.

Permanent pavement line markings shall be thermoplastic installed to permanent standards at the end of each day's work. Short, unmarked sections shall not be allowed. Temporary pavement markings shall be paint or tape. On the final surface, the Design-Builder shall have the option of using temporary pavement markings installed to permanent standards at the end of each day's work and then installing the permanent markings after the paving operation is completed. All pavement markings beyond the immediate work area that are affected by the Work shall be reapplied to permanent standards.

### **3.6 Signing**

The Design-Builder shall prepare signage plans for the Department's Review and Approval prior to Ordering if impacted due to ATCs or construction activities. Signs shall be constructed for the initial phase of construction. In addition, the Design-Builder shall ensure all signs beyond the project limits are consistent with new alignments and travel lanes.

The design and installation of permanent roadway signs shall be in strict accordance with the current edition of the MUTCD, TDOT Roadway Design Guidelines and TDOT Standard Drawings, the current edition of the Standard Highway Signs, the TDOT Supplement to the Standard Highway Signs, the current edition of the TDOT Standard Specifications, and TDOT Traffic Design Manual.

After the permanent sign locations have been staked, but prior to ordering any material for supports, there shall be a field review and acceptance by the Department.

All existing sign footings shall be removed six inches (6") below ground line.

The Design-Builder shall verify all support lengths at the site prior to erection.

All sign sheeting shall be Type 3 Prismatic or better. All existing signs that do not meet the retro-reflectivity requirements shall be replaced. All yellow reflective warning signs shall be fluorescent yellow.

All permanent signing plans; signing layouts, sign schedules, & miscellaneous detail sheets shall be reviewed by the Department prior to ordering and construction/installation.

All existing post-mounted signing shall be removed and replaced with new sign faces and new breakaway Supports.

### **3.7 Ground Survey**

The ground survey including survey control is provided by the Department (see Project website). The Design-Builder shall verify the ground survey and survey control before utilizing in the design of the Project. In addition, the Design-Builder shall be responsible for field surveys and support activities, such as, but not limited to, geotechnical investigations, ROW stakeout, construction stakeout, etc. If the Design-Builder's design footprint extends beyond the limits of the survey provided by the Department, the Design-Builder shall be responsible for securing the necessary additional survey. All field survey activities shall be performed in accordance with the latest version of the TDOT Survey Manual and any other applicable design standards previously referenced

### **3.8 Pavement Design**

The proposed Pavement Design Schedule for this Project has been developed in the Simplified Functional Plans. The minimum pavement designs for the proposed asphalt pavements shall meet the following requirements:

- 20 – year initial design life

- Estimated ~~30,000,000~~ 17,000,000 Equivalent Single Axle loads
- Minimum AASHTO Structural Numbers
  - SN = ~~5.436 5.185~~ 5.136

The Design-Builder may propose an ATC for pavement design that must meet the above requirements. All vertical clearances to overhead sign structures and bridges shall not be reduced from the existing clearances.

### 3.9 Ramps

The Design-Builder should remove concrete ramp pavement and replace with asphalt at locations shown Simplified Functional Plans. The Design-Builder ~~should remove curb on the two loop ramps~~ shall remove curbs on the three Loop Ramps (Ramps N, H & D) as indicated in the Simplified Functional Plans. Concrete pavement replacements shall adhere to the latest editions of all appropriate TDOT Roadway Standard Drawings, TDOT Design Guidelines and Instructional Bulletins, TDOT Drainage Manual, TDOT Traffic Design Manual, AASHTO Policy on Geometric Design of Highways and Streets, and Manual on Uniform Traffic Control Devices. An ATC may be proposed for ramp replacement that meet adequate ramp tie in requirements.

~~Ramp replacement work shall be performed in a manner as to require no concrete joints in the ramp travel lane.~~ Currently TDOT does not anticipate any locations within the project area where removal and replacement of concrete pavement is necessary.

All impacted ramp striping and marking shall be removed and replaced with new contrast striping and marking.

## 4 ENVIRONMENTAL

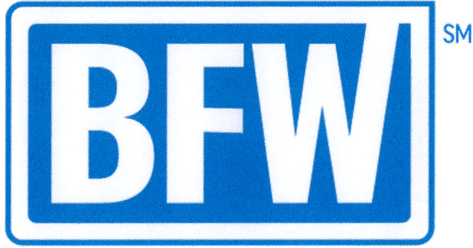
The Department has obtained a Categorical Exclusion (“NEPA Document”) for this project. The NEPA Document is located on the Project website. No project commitments are included in the NEPA Document.

The Design-Builder shall refer to the NEPA Document for a complete description of the limits of the Project. If the Design-Builder’s design footprint or construction limits extend beyond the limits described therein and as shown in the Simplified Functional Plans, including permanent and/or temporary easements, the Design-Builder shall be responsible for the reevaluation of the required environmental documents. No additional time will be allotted to the Project schedule for the Design-Builder’s reevaluation and/or preparation of revised environmental documents, TDOT Environmental Division staff’s Review and Approval of any additional environmental documents, agency coordination, and subsequent FHWA approval, as required.

To ensure compliance with the Categorical Exclusion (CE) obtained for this project, any deviations from the horizontal alignment as shown on the Simplified Functional Plans will require an ATC with Department approval.

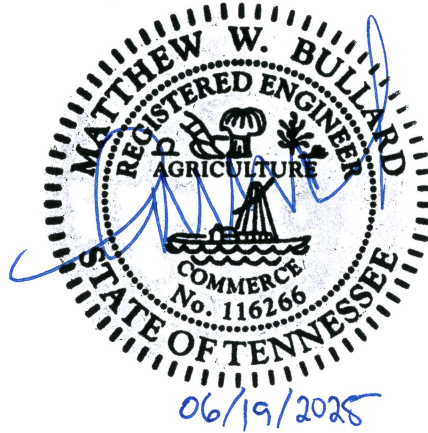
### 4.1 Permitting

No environmental water quality permits are anticipated for the Project. If the Design-Builder proposes to make changes to the Simplified Functional Design that result in impacts to any environmental features, the Design-Builder shall be responsible for procuring permit(s) and acquiring any mitigation credits, if applicable, for those changes.



June 19, 2025

Mr. Sammie McCoy, PE  
Tennessee Division Manager  
Benesch  
574 Franklin Road, Suite 300  
Franklin, TN 37069



Re: **Pavement Design Recommendations**  
**I-40 Memphis Alternative Delivery Pavement Rehabilitation**  
**Memphis, Shelby County, Tennessee**

Dear Mr. McCoy

Bacon Farmer Workman Engineering & Testing, Inc., has completed the requested pavement design recommendations for the aforementioned project. The appended Table provides our recommended pavement design options. We appreciate the opportunity to serve you and look forward to future association with you on this and other projects. If you have questions concerning this report, please call our office.

Sincerely,

**BACON | FARMER | WORKMAN**  
ENGINEERING & TESTING, INC.

Matt Bullard, P. E.  
Tennessee Regional Manager

Attachment: Pavement Design Options and Recommendations



## PAVEMENT DESIGN OPTIONS AND RECOMMENDATIONS

The following tables were developed based on traffic and subgrade information only. Other design considerations including but not limited to the final roadway grade are beyond the scope of this document. These tables do not include details of Tack Coat and Prime Coat layers that will need to be incorporated into the final pavement design. No subgrade improvements were taken into consideration for the following pavement sections.

### OPTION 1: FULL DEPTH REMOVAL AND REPLACEMENT

LAYER	THICKNESS-IN	DESCRIPTION	TDOT ITEM NO.
ASPHALTIC CONCRETE SURFACE-	1.25	ACS MIX PG76-22 GRADING D	411-03.01
BITUMINOUS PLANT MIX BASE	2	ACS MIX PG76-22 GRADING B-M2	307-03.08
BITUMINOUS PLANT MIX BASE	7.5 (placed in two lifts)	ACS MIX PG76-22 GRADING A	307-03.01
BITUMINOUS PLANT MIX BASE	3.5	ACS MIX PG76-22 GRADING A-S	307-01.22
MINERAL AGGREGATE BASE	12	MINERAL AGGREGATE TYPE 'A' BASE GRADING D	303-01

### OPTION 2: PAVEMENT OVER RUBBLEIZED CONCRETE\*

LAYER	THICKNESS-IN	DESCRIPTION	TDOT ITEM NO.
ASPHALTIC CONCRETE SURFACE-	1.25	ACS MIX PG76-22 GRADING D	411-03.01
BITUMINOUS PLANT MIX BASE	2	ACS MIX PG76-22 GRADING B-M2	307-03.08
BITUMINOUS PLANT MIX BASE	7 (placed in two lifts)	ACS MIX PG76-22 GRADING A	307-03.01
BITUMINOUS PLANT MIX BASE	4	ACS MIX PG76-22 GRADING A-CRL	307-01.22
IN-PLACE RUBBELIZED CONCRETE	MINIMUM OF 10		

*\*Note: If the existing concrete pavement is removed and processed into "Mineral Aggregate Base", that base layer must have a minimum vertical dimension (thickness) of 11 inches.*

### GENERAL LOOP RAMP SHOULDER DESIGN\*\*

LAYER	THICKNESS-IN	DESCRIPTION	TDOT ITEM NO.
BITUMINOUS SURFACE-(Shoulder)	1.25	ACS MIX PG64-22 GRADING E	411-01.07
BITUMINOUS BINDER	2	ACS MIX PG64-22 GRADING B-M2	307-03.08
MINERAL AGGREGATE BASE	8	MINERAL AGGREGATE TYPE 'A' BASE GRADING D	303-01

*\*\*Note: This pavement design was intended for emergency use only. Overnight truck parking will result in pavement distress.*