STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
Construction division
SUITE 700, JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TN 37243
(615) 741-2848

JOHN C. SCHROER
COMMISSIONER

BILL HASLAM
GOVERNOR

March 13, 2018

ADDENDUM #1

Re: I-440, Widening from I-40 to I-24
Davidson County
Contract No. DB1701

To Whom It May Concern:

This addendum revises the RFP Contract Book 1,2, and 3. Also, this addendum revises SP108B. Attached are the revised sheets.

You must acknowledge this addendum by completing the "Addendum Letter Acknowledgement form C and the Technical Proposal Signature Page (Form TPSP) within your Technical Proposal. It is the bidder's responsibility to notify all affected manufacturers, suppliers and subcontractors of this change.

Sincerely,

Lia Obaid

Assistant Director of Construction
Construction Division

DESIGN-BUILD
RFP CONTRACT BOOK 1
INSTRUCTIONS TO
DESIGN-BUILDERS (ITDB)

TENNESSEE DEPARTMENT OF TRANSPORTATION

I-440, Widening from I-40 to I-24,
Project includes removing and replacing existing pavement

Davidson County- TENNESSEE

CONTRACT NUMBER: DB1701

January 12, 2018

Addendum #1 March 13, 2018

IMPORTANT: The number of Calendar Days "B" and the number of Weekend Closures "C" is to be placed in the Price Proposal. Failure to enter a value for "B" and "C" will make the Proposal irregular and be cause for rejection.

Calendar days will be charged in accordance with the Contract and time charges will begin on the date shown on the initial NTP letter. Time charges will continue until work is complete, including punch list items, on the Project by the Department in accordance with the Contract.

No time adjustments will be allowed for:

- Adverse weather conditions;
- The time required to Review and Approve Shop Drawings;
- The time required to review VECPs;
- The time to process Change Orders or plan revisions requiring additional Review and Approval;
- The time to complete work not on the CPM Schedule;
- Any delays typically encountered during a Project regardless of the source.

Time adjustments may be considered for:

- The time for plan revisions requiring additional Review and Approval if the Design-Builder was unable to work on the controlling item of work without revised plans or shop drawings;
- The time for ordering and delivery of materials for Extra Work directed by the Department that affects the CPM Schedule;
- Delays encountered due to a catastrophic event, beyond the control of the Design-Builder, that the Department determines adversely affected the progress of work.

"C" – Only value can be scored for reducing the amount of weekend closures needed for the I-440 through lanes, I-65 through lanes and four left turning fly-over ramps in the vicinity of I-440 and I-65 interchange as specified in SP108B. The specified weekend closures for other ramps for repairs of Murphy Rd, West End Ave, Hillsboro Pike, Nolensville Pike and I-440/I-65 right turning ramps are not applicable for calculation above.

The Department reserves the right to reject any or all Proposals, to waive technicalities, or to advertise for new Proposals, if, in the judgment of the Department, the best interests of the public will be promoted thereby. In putting together their Proposals, the Design-Builder should keep in mind and address the Project goals stated herein.

C. RELATIVE WEIGHTS ALLOCATED TO TECHNICAL AND PRICE PROPOSALS

The selection method to be utilized for this Project is "Meets Technical Criteria (A+B+C)". The Technical Proposal will be evaluated on the pass/fail and technical evaluation factors identified herein. A Proposal must achieve a **Pass** rating for RC I, II, III, and IV. The Department shall first determine whether the Proposals are responsive to the requirements

DESIGN-BUILD
RFP CONTRACT BOOK 2
CONTRACT

TENNESSEE DEPARTMENT OF TRANSPORTATION

Interstate 440, Widening from I-40 to I-24,
Project includes removing and replacing existing pavement

Davidson County- TENNESSEE

CONTRACT NUMBER: DB1071

January 12, 2018

Addendum #1 March 13, 2018

STATE OF TENNESSEE

REVISED 3/13/2018

(January 12, 2018)
Interstate 440
Davidson County

Contract #: DB1701

SPECIAL PROVISION

REGARDING

PROJECT COMPLETION AND LIQUIDATED DAMAGES

The project shall be completed in its entirety on or before August 31, 2021.

At least one lane in each direction shall be maintained on I-440 nightly between 8:00 P.M. and 5:00 A.M. On all other interstates, only a single lane closure in each direction will be allowed nightly between 8:00 P.M. and 5:00 A.M. During daytime hours between 5:00 A.M. and 8:00 P.M. the Design-Builder shall maintain at least two or more lanes in each direction on I-440.

Temporary interstate(s) travel lane and ramp lane closures shall be allowed nightly between 8:00 P.M. and 5:00 A.M. For each hour, or portion thereof, in which the temporary lane closure is not completed and open to traffic, the sum of **$7,500** per hour per lane shall be deducted from the monies due the Design-Builder, not as a penalty, but as liquidated damages.

Temporary lane closures on local streets shall only be allowed nightly between 8:00 p.m. and 5:00 a.m. For each hour, or portion thereof, in which the temporary lane closure is not completed and open to traffic, the sum of **$2,300** per hour per lane shall be deducted from the monies due the Design-Builder, not as a penalty, but as liquidated damages.

In addition to temporary lane closures, the Design-Builder will be allowed full weekend closures of I-65, I-440 at I-65 interchange ramps, and other I-440 interchange ramps as specified in RFP Book 3. A weekend is defined as between Friday at 8:00 P.M. to Monday at 5:00 A.M. outside of the holidays and major events discussed in RFP Book 3.

For each hour, or portion thereof, in which the I-65 full weekend closure is not completed and open to traffic, the sum of **$10,000** per hour per lane shall be deducted from the monies due the Design-Builder, not as a penalty, but as liquidated damages.

For each hour, or portion thereof, in which the full ramp lane weekend closure is not completed and open to traffic, the sum of **$7,500** per hour per lane shall be deducted from the monies due the Design-Builder, not as a penalty, but as liquidated damages.

Rolling roadblocks are permitted during blasting operations, the erection/construction of overhead signs and setting of bridge beams. These roadblocks shall be conducted by law enforcement agencies specified in Special Provision in RFP Book 2. Rolling roadblocks will not be allowed along I-65.

Blasting within the project limits shall not occur on a Sunday. Blasting shall be permitted between 9:00 A.M. and 2:00 P.M. If necessary for the public's protection from blasting, the Design-Builder may close traffic lanes in the vicinity of blasting site up to 15 minutes in any one-hour period. For each **15 minute** period, or portion thereof, in excess of the allotted 15 minute period that any traffic lane remains closed, the sum of **$3,750** per lane shall be deducted from the monies due the Design-Builder, not as a penalty, but as liquidated damages.

The table below summarizes the liquidated damages referenced above.

Route Name/Type	Temporary Lane Closures Liquidated Damages	Full Weekend Closure Liquidated Damages	Rolling Roadblock Liquidated Damages
I-440	$7,500 per hour per lane	N/A	$3,750 per 15 min. per lane
I-65	$7,500 per hour per lane	$10,000 per hour per lane	N/A
Interchange Ramps	$7,500 per hour per lane	$7,500 per hour per lane	N/A
Local Streets including State Routes	$2,300 per hour per lane	N/A	N/A

Noise Barriers

The Design-Builder shall complete construction of any new noise barrier within 90 days of the start of demolition of an existing noise barrier wall or cutting of trees whichever occurs first, unless prior approval is received by the Department. Failure to complete construction within the allowed 90 calendar days will result in liquidated damages of **$1,000** per day until noise barrier construction is complete. Noise barrier construction and/or repairs shall only be conducted during daytime hours not earlier than 8:00 A.M. and no later than 7:00 P.M. For each hour, or portion thereof, in which the noise barrier construction and/or repairs continue (outside the daytime hours allotted), the sum of **$500** per hour per noise barrier shall be deducted from the monies due the Design-Builder, not as a penalty, but as liquidated damages.

Potholes

The Design-Builder shall mitigate potholes greater than or equal to 1 square foot and 1.25 inches deep or an equivalent volume of size, shape and location that presents a hazard to the traveling public within 24 hours of discovery or notification. Failure to complete pothole mitigation within the 24-hour period will result in the sum of **$1,000** per occurrence per day (or portion thereof) until pothole mitigation is complete. These deductions are not penalties but are liquidated damages.

The following sections summarize the liquidated damages associated with ITS field device and supporting infrastructure downtime.

Fiber Network

The contractor shall ensure continuous operation of the fiber optic lines affected by construction activities. Temporary disconnect of communication shall not exceed forty-eight hours. Failure to restore communication within the allowed forty-eight hours will result in liquidated damages of **$500** per hour until communication is restored.

Dynamic Message Signs (DMS)

The contractor shall ensure continuous operation of the dynamic message signs (DMS) affected by construction activities. Temporary loss of DMS operation during construction activities shall not exceed

thirty calendar days. Failure to restore full operation within the allowed thirty calendar days will result in liquidated damages of **$500** per day/per DMS until full operation of the DMS is restored. Full operation is defined as the DMS being installed, integrated with TMC software, and accessible/controllable by TMC personnel. If necessary, multiple DMS may be down at the same time.

Critical CCTV Cameras

CCTV cameras #29, #53, #56, and #70 located near or within project limits are considered critical CCTV cameras due to being in high incident areas. The contractor shall ensure continuous operation of the critical CCTV cameras affected by construction activities. Temporary loss of critical CCTV camera operation during construction activities shall not exceed forty-eight hours. Failure to restore full operation within the allowed forty-eight hours will result in liquidated damages of **$500** per hour/per CCTV camera until full operation of the camera is restored. Full operation is defined as the CCTV camera being installed, integrated with TMC software, and accessible/controllable by TMC personnel. If necessary, multiple CCTV cameras may be down at the same time.

Non-Critical CCTV Cameras

All CCTV cameras not defined as critical are considered non-critical CCTV cameras. The contractor shall ensure continuous operation of the non-critical CCTV cameras affected by construction activities. Temporary loss of non-critical CCTV camera operation during construction activities shall not exceed fourteen calendar days. Failure to restore full operation within the allowed fourteen calendar days will result in liquidated damages of **$500** per day/per CCTV camera until full operation of the camera is restored. Full operation is defined as the CCTV camera being installed, integrated with TMC software, and accessible/controllable by TMC personnel. If necessary, multiple CCTV cameras may be down at the same time.

Radar Detection System (RDS)

The contractor shall ensure continuous operation of the radar detection systems (RDS) affected by construction activities. Temporary loss of RDS operation during construction activities shall not exceed fourteen calendar days. Failure to restore full operation within the allowed fourteen calendar days will result in liquidated damages of **$500** per day/per RDS until full operation of the RDS is restored. Full operation is defined as the RDS being installed, integrated with TMC software, and accessible/controllable by TMC personnel. If necessary, multiple RDS may be down at the same time.

The table below summarizes the liquidated ITS related damages referenced above.

ITS Device Type	Allowable Down Time	Liquidated Damages
Fiber	48-Hours	$500 per hour
DMS	30 Calendar Days	$500 per day per DMS
Critical CCTV	48-Hours	$500 per hour per CCTV
Non-Critical CCTV	14 Calendar Days	$500 per day per CCTV
RDS	14 Calendar Days	$500 per day per RDS

The liquidates damage deductions specified in Subsection 108.09 of the Standard Specifications, as amended, for failure to complete the project on or before August 31, 2021, shall apply for the project. For each calendar day after August 31, 2021, that all work specified in the contract; except for vegetation establishment and punch list items; is not complete, a sum of money equal to **$15,000** per Calendar Day shall be deducted from monies due to the Design-Builder, not as a penalty, but as agreed compensation

for damages resulting from the Design-Builder's delay in completion of construction operations on the Department and road users. The liquidated damage amount is calculated based on Department related traffic control and maintenance costs, detour costs, and daily road user costs, as applicable.

The Design-Builder waives any defense as to the validity of any disincentives stages in the Contract, the Specifications, or this Special Provisions, and assessed by the Department against the Design-Builder on the grounds that such disincentives are void as penalties or are not reasonably related to actual damages.

Where provisions of this Special Provision conflict with Subsection 108.09 of the Standard Specifications, as amended, this Special Provision prevails.

DESIGN-BUILD

PROJECT SPECIFIC INFORMATION

TENNESSEE DEPARTMENT OF TRANSPORTATION

Interstate 440, Widening from I-40 to I-24,
Project includes removing and replacing existing pavement

Davidson County- TENNESSEE

CONTRACT NUMBER: DB1701

January 12, 2018
Addendum #1 March 13, 2018

The Design-Builder responsibilities in accordance with the scope of work of the Project for I-440, widening from I-40 to I-24 in Davidson County shall include without limitation the following:

- Removing and replacing the existing concrete pavement including travel lanes and shoulders with asphalt pavement along the +/- 7.6-mile corridor.
- Removing the existing elevated grass median and widening portions of the +/- 7.6-mile corridor to the inside to provide an additional travel lane in each direction.
- Widening will require a median barrier wall with modifications to existing drainage structures and proposed drainage improvements.
- Widening of mainline bridges and performing bridge repairs.
- Performing concrete ramp repairs.
- Two ramp queue safety projects. Those projects include ramp widening, raised concrete islands, traffic signal upgrade/replacement, signing and striping as depicted on the ROW plans (including signal timing provided by Department).
- Construction of new noise walls, replacements and repairs of (noise) walls.
- Removing the lighting in the median and replace with new poles along the outside shoulders on both sides of I-440.
- Replacing of all I-440 guardrail with new barriers, end terminals and guardrail.
- Determining all utility conflicts / relocations, and cost. Coordination shall include any and all necessary utility agreements when applicable.
- Upgrading ITS (Radar and CCTV) located along I-440.
- Relocating median fiber and fiber/conduit on bridges.
- Removing existing cantilever sign structures and replacing with overhead span sign structures and adjusting signing on structures.
- Performing rock fall mitigation and landscaping activities.
- Responsible for all erosion prevention and sediment control designs and implementation.
- Preparing all documents necessary to obtain the (environmental) permits if required.
- The Design-Builder shall comply with approved NEPA documents.

1.5 Project goals

The following goals have been established for the Project **(not listed in any specific order)**:

a) Minimize inconvenience to the public during construction.
b) Provide a management system or approach that ensures the requirements of the Project will be met or exceeded.
c) Provide a high-quality project that minimizes future maintenance.
d) Provide a solution consistent with the Department's Roadway Design Standards.
e) Adhere to local, state, and federal environmental regulations and/or permits that are required in executing and/or completing the Project.
f) Incorporate Best Management Practices (BMPs) to control sediment, storm water runoff/discharge, or other environmental parameters that are established for the Project.

	Design-Builder shall verify the data before utilizing it in the design of the project.
2.2.i	**For Project No. 1:** Existing vertical clearances between the existing roadway (entire roadway width including the full shoulder width) and all existing overhead structures along I-440 shall maintain a minimum 16' vertical clearance (or existing pre-construction clearance if less than 16') during the construction phase of the project. This requirement shall include all temporary roadway surfaces used during construction. All proposed vertical clearances between the proposed roadway (entire roadway width including the full shoulder width) and all retained existing overhead structures shall be a minimum of 16'. The minimum vertical clearance for the I-440 bridges to be widened (Lealand Lane, Craig Avenue, and I-65 (including ramps) is 16'-6". The Design-Builder shall submit plans as outlined in the TDOT Design Guidelines to the TDOT Structures Division for Grade Approval.
2.2.j	**For Project No. 1:** The Design-Builder will be responsible for the design and construction of all proposed overhead structures within the Project limits. The Design-Builder shall ensure minimum vertical clearance as defined in the TDOT Design Guidelines is provided. The Design-Builder shall submit plans as outlined in the TDOT Design Guidelines to the TDOT Structures Division for Grade Approval.
2.2.k	**For Project No 1:** To facilitate and expedite securing a R/R agreement for structures crossing a railroad, the Design-Builder shall provide all necessary and pertinent information as outlined in the TDOT Design Guidelines to the State Railroad Coordinator in the preliminary design phase.
2.2.l	**For Project No. 1:** The Design-Builder shall be responsible for preparation of final signed and sealed construction plans used to construct the proposed improvements. They shall be prepared in accordance with TDOT's Design Guidelines and the previous design standards referenced in this section. If the Design-Builder deems that additional ROW is needed outside of the secured ROW, they will be responsible for the additional environmental technical studies needed for re-evaluation of the NEPA document, ROW appraisals and acquisitions, utilities coordination/relocation and any permits.
2.2.m	**For Project Nos. 2 and 3:** The Design-Builder shall be responsible for preparation of final signed and sealed construction plans in accordance with TDOT's Design Guidelines and to construct the proposed improvements. If the Design-Builder wishes to change the horizontal or vertical alignment or deems that additional ROW is needed outside of the secured ROW, they will be responsible for the additional environmental technical studies needed for re-evaluation of the NEPA document, ROW appraisals and acquisitions, utilities coordination/relocation and any permits.
2.2.n	**For Project Nos. 2 and 3:** The Design-Builder will be responsible for the design and construction of all structures within the Project limits. The Design-Builder shall ensure minimum vertical clearance as defined in the TDOT Design Guidelines is provided.
2.2.o	**For Project Nos. 1, 2 and 3:** The ramp construction and closures shall be phased in accordance with Special Provision 108B. Access to all side roads shall be maintained during construction.
2.2.p	**For Project Nos. 2 and 3:** The Design-Builder shall be required to construct the proposed traffic signal systems (including but not limited to cabinet, controller, traffic signal heads, wiring, detection equipment, conduit and pull boxes, traffic signal poles and associated traffic signal timing and all other materials and methods specified in the signal plans to provide a fully functional and operational traffic signal) as detailed and specified in the traffic signal plans located as an Appendix A in this **Contract Book 3 (Project**

	Specific Information).
2.2.q	**For Project Nos. 1, 2 and 3:** The Pavement Design Report for this Project has been developed by the Department. Proposed asphalt and concrete pavements on Project Nos. 1, 2, and 3 will be constructed utilizing the pavement designs provided in this report. The Pavement Design Report and minimum criteria for pavement related Alternative Technical Concepts are located as an Appendix A in this **Contract Book 3 (Project Specific Information)**.
2.2.r	**For Project Nos. 1, 2 and 3:** The Design-Builder shall identify the need for any special roadway design details (i.e. any special drainage structures, rock embankment, rock plating, special guardrail, retaining walls, concrete barrier designs, etc.) and shall provide special design drawings.
2.2.s	**For Project Nos. 1, 2 and 3:** All Design Documents and Design Reviews shall be provided by the Design-Builder and performed in accordance with the Design Review schedule established in the Critical Path Method (CPM) Schedule, and in accordance with contract requirements.
2.2.t	**For Project Nos. 1, 2 and 3:** The Design-Builder shall ensure that all applicable "General and Special Notes" found in Section VI of the current edition of the State of Tennessee Department of Transportation Design Division Roadway Design Guidelines are adhered to during construction.
2.2.u	**For Project Nos. 1, 2 and 3:** Roadway component geometric configurations shall be designed to provide adequate drainage and prevent hydroplaning. Cross slopes shall be in accordance with the requirements of the roadway section.
2.2.v	**For Project Nos. 1, 2 and 3:** Design-Builder shall not dispose of any material within interchanges (Murphy Rd., West End Avenue, Hillsboro Pike/21st Avenue, I-65, and Nolensville Road) and their infield areas located within the Project and in all four (northwest, southwest, northeast and southeast) quadrants of the intersection of Granny White Pike and Gale Lane on the north side of I-440. Excess material used within the project limits shall meet the requirements specified in the most current version of the Tennessee Department of Transportation Standard Specifications for Road and Bridge Construction. The Design-Builder shall obtain pre-approval (after NTP) from the Department before disposing of any excess material within the right-of-way. The placing of any excess material shall not impact any existing trees on the project. Any material wasted off-site shall be done in accordance with TDOT's - Procedures for Providing Offsite Waste and Borrow on Construction Projects (2017).
2.2.w	**For Project Nos. 1, 2 and 3:** Borrow and waste disposal areas shall be located in non-wetland areas and above the 100-year, Federal Emergency Management Agency floodplain. Borrow and waste disposal areas shall not affect any Waters of the State/U.S. Unless these areas are specifically covered by an ARAP, 404, or NPDES permit, obtained solely by the Design Builder.
2.2.x	**For Project Nos. 1, 2 and 3:** The NEPA document has been approved by FHWA and is included on the Project Website. The commitment sheets and the study area are referenced in these documents. The Design-Builder shall adhere to all requirements included in the NEPA document. If the Design-Builder's design footprint extends beyond the study area, they will be responsible for the additional environmental technical studies and to provide plans for re-evaluation of the NEPA document. No additional time will be allotted to the Project schedule for the Department's preparation of the NEPA document

	re-evaluation and FHWA approval.
2.2.y	**For Project Nos. 1, 2 and 3:** All proposed roadway slopes shall be sodded.
2.2.z	**For Project Nos. 1, 2 and 3:** Upon completion of the Project, the Design-Builder shall provide the Alternative Contracting Office a transmittal letter, an electronic copy (CAD and signed PDF's) of the As-Built drawings, and final foundation type, including footing elevations and lengths of individual piles, prior to final payment of funds to the Design-Builder. The Professional Engineer in charge of the development of the Project plans shall place his seal, including signature and date, on the right side of the title sheet. All plans sheets shall contain the seal, including signature and date, of the Professional Engineer in charge of its development. The As-Built Plans and the Design-Builder Specifications following construction completion shall incorporate any changes to the Readiness-for-Construction Design Review Plans and Specifications, changes made during construction as well as all utility locations within ROW. As indicated in the Design-Build Standard Guidance: https://www.tn.gov/DB Standard Guidance

2.3 Ramps

Req. No	Requirement text
2.3.a	Remove and repair concrete ramp pavement at locations shown in I-440 Concrete Ramps Repair Report located as an Appendix A in this **Contract Book 3 (Project Specific Information)**. Concrete pavement repairs 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*.
2.3.b	Ramp repair and replacement work shall be performed in a manner as to require no concrete joints in the ramp travel lane.
2.3.c	All existing ramp striping and marking (in their entirety) shall be removed and replaced with new contrast striping and marking.
2.3.d	The approximate locations of concrete ramp paving to asphalt transitions are shown in the revised preliminary plans.
Paving/Resurfacing (Applicable for Ramp Safety Projects)	
2.3.e	For non-curb sections of roadway, the Design-Builder shall attach a device to the screed of the paver such that material is confined at the end gate and extrudes the asphalt material in such a way that results in a consolidated wedge-shape pavement edge of approximately 25 to 30 degrees as it leaves the paver (measured from a line parallel to the pavement surface.) The device shall meet the requirements that are currently set forth in Special Provision 407SE.
2.3.f	Traffic will be allowed to temporarily drive on the milled surface of the roadway under the following conditions only: - The milled surface is fine textured. The fine texture shall be obtained by a milling machine utilizing a milling head with teeth spacing of 3/8" or less operating at less than 80 feet per minute. - The surface shall be swept and cleaned of all loose materials. - The difference in elevation between the milled surface and the adjacent lane shall

	not exceed 1 1/2 inches. - The milled surface shall be paved within 72 hours. - Rain or inclement weather is not expected or forecasted within 48 hours after milling. - All applicable signing is installed in accordance with the current edition MUTCD. Signing shall include motorcycle warning signs (TN-64) placed in advance of any milled areas. - If raveling or deterioration of the milled surface is occurring while traffic is driving on the milled surface, then this practice will not be allowed and paving shall be completed immediately after milling. - Only one lane in each direction shall have a milled surface at one time.

2.4 Marking

Req. No	Requirement text
2.4.a	The Design-Builder shall prepare pavement marking plans for the Department's concurrence. 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 Design Guidelines, TDOT Standard Drawings, TDOT Standard Traffic Operations Drawings, TDOT Traffic Design Manual, and the current edition of the TDOT Standard Specifications.
2.4.b	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. The Design-Builder shall have the option of using reflectorized paint installed to permanent standards at the end of each day's work and then installing the permanent markings after the paving operation is completed.
2.4.c	Contrast striping shall be used for all permanent striping on concrete pavement/structures along I-440. A Special Provision will be provided by addendum.
2.4.d	See Signage and Marking Roll Plot as provided on the Project Website for guidance.

2.5 Guardrail and Barriers

Req. No	Requirement text
2.5.a	All guardrails and impact attenuators along I-440 and I-440 ramps shall be removed and replaced. The Design-Builder shall only remove sections of existing guardrail as specified in the Design-Builder plans and existing guardrail in other locations shall not be removed to rework shoulders or flatten slopes until the Department concurs in the necessity of removal due to construction requirements and appropriate warning devices are installed. 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 current editions of Department Standard Drawings and Department Standard Specifications, as amended, Section 909. Guardrail is to be complete in place before the mainline roadway is opened to traffic. All permanent and temporary safety appurtenances (sign supports, guardrail, barrier rail, impact attenuators, etc.) shall meet current Department standards and shall have all required Department certification documents. These safety appurtenances shall be galvanized with no colored powder coating finishes.

	resurfacing limits, which is not being affected by any proposed drainage work.
2.7.h	The Design-Builder shall video inspect and verify existing drainage systems are clean, operable and structurally adequate. Drainage pipes meeting any of the following conditions shall not be considered structurally adequate and will require replacement: **Concrete pipe:** Transverse cracks that are open greater than 1/8" with efflorescence and/or rust staining; spalling at numerous locations; extensive cracking; full or partial pipe collapse, or joints with more than a 1" gap between them. **Corrugated metal pipe:** Extensive heavy rust; deep pitting throughout the invert; distorted pipe with span dimensions up to 15% greater than design; full or partially collapsed pipe. **Plastic pipe:** Wall crushing; pipe deflection more than 15% from original shape, splitting of the pipe. Any repairs, replacements, debris removal and/or deficiencies shall be corrected by the Design-Builder.
2.7.i	Within the Project limits there are eight (8) major outfalls that will be used to discharge the surface runoff from the I-440 ROW limits. These include the following: 1. An existing 72-inch drainage tunnel at STA. 1047+34.54 (MM 1.2), 68.33-foot Rt. which collects runoff from the CSX tracks to the west and Richardson Avenue to the southeast. Ultimately, the storm sewer drains to the south and empties into Richland Creek. 2. A storm system that becomes an open channel under I-440 at STA. 1099+68 (±) (MM 2.2) and is a tributary of Richland Avenue that travels to the south. 3. An existing 54-inch storm sewer system at STA. 1134+18.44 (MM 2.8), 437.38-foot Rt. which collects runoff east of the Hillsborough Pike interchange and ultimately discharges to the south on Hillsboro Pike at Sharondale Drive. 4. An existing 6-foot x 5-foot reinforced concrete box culvert storm sewer at STA. 1198+91.86 (MM 4.0), 144.81-foot Rt., which discharges to the west of Lealand Lane Avenue which is a tributary of the West Fork of Browns Creek. 5. Existing twin 10-foot x 5-foot reinforced concrete box culverts at I-440 STA. 1206+65 (±) (MM 4.2). 6. Three (3) – 14-foot x 18-foot concrete slab bridge culverts that carries Browns Creek under the I-440/ I-65 interchange at STA. 1231+00 (±) (MM 4.6). 7. Three (3) – 8-foot x 6-foot reinforced concrete box culverts that carries East Fork Creek under the I-440/ I-65 interchange at STA. 1248+60 (±) (MM 5.0). 8. An existing 54-inch storm sewer system that outlets to an existing trunk line along Glenrose Avenue at STA. 1351+50 (±) (MM 6.9), 120-foot Lt.
2.7.j	The Department's Drainage Manual specifies a 50-year design storm for all new (and existing to remain) storm sewer systems. It is the Department's intent to salvage as much of the existing system as possible. SUE videos for informational purposes only of the existing storm systems have been reviewed and several sections of pipe require replacement due to condition. The pipe segments to be replaced shall include, but not be limited, to the following: 1) 30" RCP from Sta. 1099+63.79, 74.43' RT to Sta. 1100+14.00, 0.00' RT; 2) 65"x40" horizontal oval concrete pipe from Sta. 1103+67.15, 20.15' RT to Sta. 1109+14.67, 83.62' RT;

3.2 Location Specific Scope of Work

3.2.1 EB & WB Bridges Over Charlotte Avenue

Req. No	Requirement text
3.2.1.a	Perform deck repairs (as referenced per TDOT Deck survey and verified by Design-Builder). Overage of repair quantity (beyond the quantities in the deck survey) shall be paid (with prior approval) as defined in RFP Book 3 Chapter 13.5.
3.2.1.b	Replace concrete pavement at bridge ends (reference TDOT Standard Drawing STD-1-5).
3.2.1.c	Apply a thin epoxy overlay to bridge deck and concrete pavement at bridge ends.
3.2.1.d	Texture coat top and traffic face of parapets. The color shall be white, AMS STD-595 color No. 37886.
3.2.1.e	Perform repairs to spalled, delaminated, or cracked concrete areas on parapets (reference TDOT Bridge Inspection Report and verified by Design-Builder).

3.2.2 EB & WB Bridges Over CSX Railroad (near Charlotte Avenue)

Req. No	Requirement text
3.2.2.a	Perform deck repairs (reference TDOT Deck survey and verified by Design-Builder). Overage of repair quantity (beyond the quantities in the deck survey) shall be paid (with prior approval) as defined in RFP Book 3 Chapter 13.7.
3.2.2.b	Replace concrete pavement at bridge ends (reference TDOT Standard Drawing STD-1-5).
3.2.2.c	Apply a thin epoxy overlay to bridge deck and concrete pavement at bridge ends.
3.2.2.d	Add a Department and CSX approved fence to parapets per Department and CSX requirements.
3.2.2.e	Texture coat top and traffic face of existing parapets. The color shall be white, AMS STD-595 color No. 37886.
3.2.2.f	Design and construction activities shall be in accordance with the Special Provision 105C Protection of Railroad Property, Railroad Flagging and Insurance requirements as included in **Contract Book 2 (Design-Build Contract)**.

3.2.3 EB & WB Bridges Over Lealand Lane

Req. No	Requirement text
3.2.3.a	Widen bridges to match proposed approach roadways resulting in a single bridge.
3.2.3.b	Match superelevation of approach roadway on widened portion of bridge.
3.2.3.c	Maintain a minimum 4 ½" concrete deck.
3.2.3.d	Maintain a 16-foot, 6-inch minimum vertical clearance.
3.2.3.e	Place a 51-inch concrete median barrier (reference TDOT Standard Drawing STD-1-3SS).

	to prevent ground disturbance. Any damage to vegetated areas outside the limits of construction shall be repaired at the Design-Builder's expense. These areas are to be returned to their pre-construction state as directed and concurred with by the Department.
3.3.m	The Design-Builder shall notify the Department and all adjoining properties and stakeholders thirty (30) days prior to proposed noise barrier wall clearing, demolition or construction. Noise barrier construction shall only be conducted during daytime hours not earlier than 8:00 A.M. and no later than 7:00 P.M.
3.3.n	If a proposed noise barrier wall cannot be constructed prior to demolishing an existing noise barrier wall, the Design-Builder shall begin construction of new noise barrier walls within thirty (30) days of the start of demolition of an existing sound barrier wall or cutting of trees whichever occurs first, unless otherwise approved by the Department. The Design-Builder shall complete construction of any new sound barrier wall intended to replace an existing sound barrier wall which was acting as a screen for adjacent properties within 90 days from the start of demolition of the existing sound barrier wall or cutting of trees whichever occurs first, unless otherwise approved by the Department. Once work commences on an individual noise barrier wall, the Design-Builder shall continue construction operations until the wall is complete, unless otherwise approved by the Department. Design-Builder shall provide temporary 6' high chain link fencing for access control during noise barrier replacement.
3.3.o	All proposed noise barrier walls shall be absorptive.

3.4 Noise Barrier Walls (Repairs)

Req. No	Requirement text
3.4.a	The Design-Builder shall repair the existing noise walls on the I-440 corridor in accordance with the Noise Walls Inspection Report and Preliminary Plans as included on the Project Website and with the Special Provision 718NB Absorptive Barriers as included in **Contract Book 2 (Design-Build Contract)**. The Design-Builder shall be required to perform a design level investigation and report to validate and augment the wall repair information included in this RFP. The report shall be submitted within the proposal. The Department will utilize the design level investigation reports to determine final wall repair areas. These final wall repair areas will be distributed to the Design-Builders for bidding purposes. The Design-Builder shall submit their investigative report not later than 3-12-2018 to the Department. The final wall areas will be distributed to the Design-Builders no later than 3-31-2018.
3.4.b	The wall repairs modifications shall comply with the Department's specifications and shall be aesthetically uniform in accordance with the existing noise walls. Noise barrier repairs shall only be conducted during daytime hours not earlier than 8:00 A.M. and no later than 7:00 P.M.
3.4.c	Upon completion of the Project, the Design-Builder shall provide TDOT Structures Division a final revised set of plans for all walls. The plans shall be delivered on CD (each sheet an individual PDF file).
3.4.d	Only the minimum amount of vegetation necessary for the repair of the walls may be removed as directed by the Department. Where possible, stumps and roots are to remain to prevent ground disturbance. Any damaged to vegetated areas outside the limits of

	Association (NFPA) 70.
4.b	All existing light standards located in the raised grass median along I-440 shall be removed. New lighting standards and luminaires shall be designed to replace any existing lighting removed by the Design Builder to assure that I-440 has adequate lighting to meet TDOT standards. All existing lighting located on the outer edges of pavement shall remain in place unless shown otherwise on Lighting Roll Plots.
4.c	The Design-Builder shall submit lighting photometrics for proposed roadway lighting sections (including underpass lighting) to the Department for concurrence prior to ordering materials or beginning construction/installation.
4.d	High mast lighting will not be allowed under this contract to prevent excessive light pollution in residential areas. All existing high mast poles located at the I-65 and I-40 interchanges shall remain in place.
4.e	If the Design-Builder elects to remove the lighting system prior to construction, temporary lighting will be required at all locations where existing lighting is taken out of service. All temporary lighting shall be provided in accordance with TDOT standards.
4.f	The Design-Builder shall not allow light pollution/light hindrance into residential areas during construction.
4.g	All wiring shall be concealed underground in 2-inch schedule 40 PVC rigid conduit.
4.h	The ground wire shall be run inside conduit within structures, shall be colored green and have THW insulation.
4.i	Existing foundations shall be removed a minimum of six inches below grade.
4.j	Light standards shall be round tapered poles. Length shall be determined by required mounting height.
4.k	All proposed roadway light standards shall be designed in accordance with the requirements of the latest edition of the Standard Specifications For Structural Support For Highway Signs, Luminaires and Traffic Signals published by the American Association of State Highway and Transportation Officials.
4.l	The Design-Builder shall coordinate with ~~TDOT Traffic Operations and~~ Nashville Electric Service to determine the proposed lighting fixture type (i.e. mast arm, offset, etc.) to be used on the project and any specific design parameters.
4.m	All proposed roadway light standards shall be mounted on bases with an access door. Transformer bases shall meet AASHTO specifications and have FHWA approval. Standards shall aluminum with transformer bases.
4.n	Bracket arms (if used) shall be round tapered truss type with strap mounting and lengths as scheduled. Bracket arm upsweep shall be the same for all light standards of the same type.
4.o	See Lighting Roll Plot as provided on the Project Website for guidance in regard to proposed lighting facilities.

	Temporary construction easement: 35,989 square feet Any easements required to construct the Project for the EB and WB bridges over CSX railroad (near Charlotte Avenue) shall be in the name of the Department. If the design builder requires additional area for construction purposes on this bridge it will be the Design Builders responsibility to acquire the additional easements following the Uniform Act and the TDOT ROW Manual. The Design Builder must also utilize pre-qualified appraisers/review appraisers and acquisition firms from the Department's pre-qualified list. TDOT can't move forward with the acquisition of the easements until the Design Builder provides final bridge plans. ~~It will take up to 15 months from final bridge plans to complete the railroad agreement and acquisition of easements. This is only an estimate of the time frame required and could take longer.~~ The Design-Builder shall be responsible for submitting all required documents through the Department to obtain the required railroad agreements. The railroad has agreed to accept the required documents for individual crossings. The railroad is requesting no coordination during the procurement phase. Any easement required to construct the Project shall be in the name of the Department. If needed the Design-Builder shall provide information as directed by the Engineer. Work on the bridges over the CSX railroad (near I-65 and near Glenrose Avenue) cannot commence until the Department has executed railroad agreements. The process of acquiring the railroad agreements cannot begin until the Design Builder provides the Department final bridge plans. It will take up to 15 months to execute these agreements; however this is an estimate and acquiring these agreements may take longer.
ROW	
7.b	The Design Builder shall ensure that all proposed work is completed within existing right-of-way limits utilizing any measures necessary. If the Design Builder deems that ROW and/or easement acquisitions are unavoidable, the Design Builder will be responsible for all ROW and easement activities including but not limited to appraisals, appraisal reviews, and acquisitions.
7.c	The Design-Builder, acting as an agent on behalf of the Department, shall provide ROW acquisition services for the Project. ROW acquisition services shall include certified title reports, appraisal, appraisal review, negotiations, relocation assistance services, property management services, parcel closings and all related activities. All appraiser/s, appraisal reviewer/s and acquisition/relocation firms shall be selected from the Department's ROW Office's pre-qualified list. The Department will retain authority for approving just compensation, relocation benefits and claims administrative settlements, court settlements and court awards. The Department must issue a NTP with ROW Acquisition to the Design-Builder prior to any offers being made to acquire the property. This represents a hold point in the Design-Builder's Baseline Schedule. The Department must also issue a NTP with Construction to the Design-Builder once the property has been acquired prior to commencing construction on the property. This also represents a hold point in the Design-Builder's Baseline Schedule. The Department will be responsible for the actual purchase price paid to a landowner for ROW, including fee simple, or any and all easements, and for any relocation assistance payments.

11.r	The EPSC plan shall be updated by the Design-Builder whenever EPSC inspections indicate, or where State or Federal officials determine EPSC measures are proving ineffective in eliminating or significantly minimizing pollutant sources or are otherwise not achieving the general objectives of controlling pollutants in storm water discharges associated with the construction activity.
11.s	The accepted EPSC plan shall require that EPSC measures be in place before clearing, grubbing, excavation, grading, culvert or bridge construction, cutting, filling or any other earthwork occurs, except as such work may be necessary to install EPSC measures.
11.t	EPSC measures shall be installed and functional prior to any earth moving operations, and shall be maintained throughout the construction period except as such work may be necessary to install EPSC measures.
11.u	The Design-Builder shall establish and maintain a proactive method to prevent litter and construction wastes from entering Waters of the State/United States these materials shall be removed from stormwater exposure prior to anticipated storm events or before being carried offsite by wind, or otherwise prevented from becoming a pollutant source for stormwater discharges. After use, materials used for EPSC shall be removed from the site by the Design-Builder.
Maintenance During Construction Work	
11.v	The Design-Builder shall maintain the Project from November 01, 2018 through the remainder of the Design-Build period in a manner that provides a safe and reliable transportation system. The Design-Builder shall be fully responsible for maintenance as required by the Department's Standard Specification for Road and Bridge Construction, section 104.05 Maintenance During Construction.
11.w	Until November 01, 2018 the Department will reasonably perform the type of routine maintenance of each Element Category (e.g., pavement, marking, drainage, culverts, berms etc.) of the existing improvement which normally occurs in the Department's highway maintenance and repair program. The Department is not obligated to extend the Residual Life of any Element through reconstruction, rehabilitation, restoration, renewal, or replacement.
11.x	***ROW Mowing & Litter Removal*** The Design-Builder shall deliver a ROW Mowing & Litter Removal service which when completed provide a consistent vegetation height and a clean non-littered appearance from November 01, 2018 through the remainder of the Design-Build period. See Special Provision No. 806 regarding Contract Mowing. Special Provision No. 719A regarding Removal and Disposal of Litter and Special Provision No. 107AQ regarding the mandatory cessation of mowing operations for action days and air quality alerts for further details. It shall be the Design-Builders responsibility to mow and pick up litter on the full ROW from fence to fence including the median and on top of all bluffs and elevated sections of each Mowing and Litter Cycle. Annually there will be a minimum of seven (7) Mowing & twenty-six (26) Litter Cycles. The Engineer shall direct the Design-Builder with the exact dates for the annual Mowing & Litter Cycle. Failure to complete mowing or litter pick up the Department shall withhold progress payment from the Design-Builder until satisfactory completion.

	locations to be used during construction. - Description of how the ROW and adjacent roads and properties will be maintained and protected, including the intended measures to be used to mitigate and minimize noise, vibration, light, dust, erosion/run-off and local road damage.
12.1.d	The Design-Builder shall provide two 12' travel lanes in each direction with a 2' shoulder on either side of the travel way during construction. The shoulder width, for temporary traffic control, shall be measured from the edge of the travel way to the top face of the temporary portable barrier rail. This temporary traffic control layout shall apply to the entire project unless otherwise specified in sections 12.1.e and 12.1.f of the RFP document.
12.1.e	The Design-Builder shall provide two 11' travel lanes in each direction with a 2' shoulder on either side of the travel way during construction. The shoulder width, for temporary traffic control, shall be measured from the edge of travel way to the top face of the temporary portable barrier rail. This temporary traffic control layout shall apply to the following station ranges: - STA 1036+00 (approx.) to STA 1081+00 (approx.) - STA 1109+00 (approx..) to STA 1155+00 (approx.) - STA 1215+00 (approx.) to STA 1234+00 (approx.) - STA 1250+00 (approx..) to STA 1266+00 (approx.)
12.1.f	The Design-Builder shall provide two 12' travel lanes in each direction with a 4' shoulder on either side of the travel way during construction. The shoulder width, for temporary traffic control, shall be measured from the edge of travel way to the top face of the temporary portable barrier rail. This temporary traffic control layout shall apply to the following station ranges: - STA 1234+00 (approx.) to STA 1250+00 (approx.)
Temporary Lane/Road closure	
12.1.g	All temporary lane closures and complete closures on I-440, I-65 and local streets must be approved in advance. For closures on I-440, I-65 and ramps, request for concurrence must be sent to the Department seven (7) calendar days in advance of the proposed closure. For local street closures, request for concurrence must be sent to the Department and Metropolitan Nashville and others per RFP Book 3 section 12.1.e. Request for complete closures shall also include proposed detour routes and detour signing details. Local streets (non State Routes) will not be allowed as detour routes for I-440 and I-65 traffic.
12.1.h	No less than seven (7) days prior to the closure of the road, the Design-Builder shall notify the following individuals or agencies completely describing the affected roads and the approximate duration of the construction: these parties include, but are not limited to: i) local law enforcement office, ii) local fire department, iii) ambulance service, iv) U.S. Postal Service, v) local road superintendent, vi) railroad company (if applicable), vi) Metropolitan Nashville and Davidson Country's Parks and Recreation Department (if applicable) and vii) local school superintendent.
12.1.i	There will be periods when the Design-Builder will not be allowed to have any type of closures due to holidays as specified in subsection 104.04 of the Standard Specification and major events listed below. Major events and known periods when lanes cannot be

	closed include but not limited to: - CMA Fest, Tennessee Titans Home Games, Rock n Roll Nashville Marathon, Vanderbilt Homecoming, TSU Homecoming. - No ramp closures at the 21st Ave/Hillsboro Road Interchange or lane closures in the same area (approx. Brightwood to Woodlawn) on the I-440 from Thanksgiving until New Years. - No closures or work on local roads that would impede the Rock n Roll Nashville Marathon route or motoring public before, during, and after the race event.
12.1.j	Weekend closures of I-65 through lanes and four left turning fly-over ramps (I-65 southbound to I-440 eastbound, I-65 northbound to I-440 westbound, I-440 westbound to I-65 southbound and I-440 eastbound to I-65 northbound) at the I-440 and I-65 interchange and State Route 6 will be allowed. Up to four (4) non-holiday/non-major event weekend closures for removal and installation of the I-440 bridge components over I-65 and ramp repairs will be allowed. Limits of I-440, I-65 and ramp closures shall be installed in a manner to not disrupt right turning ramps between I-65 and I-440 as well as between I-440 and I-65. During this full weekend closure, no other temporary lane closures or full ramp closures will be allowed on the project. Weekend closures, including detour routes, shall be submitted to the Department a minimum of fourteen (14) days prior to closure.
12.1.k	Weekend closures of other ramps for the repairs of the Murphy Rd, West End Ave, Hillsboro Pike, Nolensville Pike, I-440/I-24 and I-440/I-65 right turning ramps will be allowed. The Design-Builder will be allowed to close ramps at multiple interchanges on the same weekend however a. no individual ramp can be closed for more than two (2) total weekends b. and ramps on adjacent interchanges along the same travel direction of I-440 cannot be closed on the same weekend c. and ramps on I-440/I-24 and I-440/I-65 along the same travel direction of I-440 cannot be closed on the same weekend. Weekend closures, including detour routes, shall be submitted to the Department a minimum of fourteen (14) days prior to closure.
12.1.l	The Design-Builder shall notify the Department and the local governmental agency responsible for traffic control maintenance at least one day in advance of the cold planing activity at signalized intersections where detector loops are on the pavement. The maintaining agency will then be responsible for disconnecting the loop detectors and making any necessary timing adjustments in the signal controller prior to the construction.

12.2 Temporary Marking, Detours, Lane Shifts and Median Cross-overs

Req. No	Requirement text
12.2.a	Temporary marking shall adhere to guidance outlined in Section IV of current edition of the Department's Design Division Roadway Design Guidelines for pavement markings. The minimum temporary pavement marking width shall be 8-inches. All temporary pavement markings shall be at a minimum painted.
12.2.b	Temporary pavement line markings on intermediate layers of pavement shall be reflective tape or reflectorized paint installed to permanent standards at the end of each day work. Short, unmarked sections shall not be allowed.

12.2.c	The temporary pavement marking on detours, lane shifts and median cross-overs shall be installed and maintained to the same standards as for permanent markings on the main roadway. These markings shall be in place prior to allowing traffic onto the pavement.
12.2.d	All access, service and frontage roads shall be constructed with a minimum of one (1) course of base material before traffic is interrupted on existing roads.
12.2.e	Before opening detours, lane shifts and/or median cross-overs to traffic, the transitional markings on the existing roadway must be in place. All existing markings in the area of these transitional markings shall be obliterated and all existing raised pavement markers shall be removed to eliminate conflicting markings.
12.2.f	All temporary lane shifts and median crossovers shall be paved, striped, signed and the vertical panels are to be in place before it is opened to traffic.
12.2.g	Contrast striping shall be used for temporary striping on concrete pavement located along I-440 and ramps. Further details will be provided by a forthcoming addendum.

12.3 Temporary Signage

Req. No	**Requirement text**
12.3.a	All temporary signage shall be in accordance with TDOT Standard Specifications for Road and Bridge Construction, TDOT Standard Drawings, TDOT Standard Traffic Operations Drawings, TDOT Traffic Design Manual, TDOT Design Guidelines, TDOT Work Zone Safety and Mobility Manual, and the latest edition of the Manual of Uniform Traffic Control Devices.
Changeable Message Signs	
12.3.b	A minimum of 20 Changeable Message Signs shall be used in addition to advance warnings signs to notify the motoring public. The locations of these Changeable Message signs shall be reviewed by the Department. Overage of Changeable Message Signs (beyond the minimum 20) shall be paid (with prior approval) as defined in RFP Book 3 Chapter 13.7
Emergency signage	
12.3.c	All existing "emergency reference markers" and "hospital signs" shall be maintained within full view of the motoring public throughout all phases of construction.
Tourist Oriented Directional Signs (TODS)	
12.3.d	All existing "Tourist Oriented Directional Signs" shall be maintained within full view of the monitoring public throughout all phases of construction.
Detour and construction signage	
12.3.e	All detour and construction signing shall be in strict accordance with the current edition of the MUTCD.