



**STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION**

CONSTRUCTION DIVISION
SUITE 700, JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-1402

CLAY BRIGHT
COMMISSONER

BILL LEE
GOVERNOR

September 11, 2020

Re: ADDENDUM #2
Contract No.: DB2001
County: Williamson

To Whom It May Concern:

This addendum revises the RFP Contract Book 1, 2, and 3. 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,

A handwritten signature in blue ink that reads "Lia Obaid".

Lia Obaid, P.E.
Assistant Director of Construction
Construction Division

**DESIGN-BUILD
RFP CONTRACT BOOK 1
INSTRUCTIONS TO
DESIGN-BUILDERS (ITDB)
TENNESSEE DEPARTMENT OF TRANSPORTATION**

**INTERSTATE 65 INTERCHANGE AT BUCKNER ROAD IN
SPRING HILL, TN**

WILLIAMSON COUNTY- TENNESSEE

CONTRACT NUMBER: DB2001



July 17, 2020

Addendum #1 August 21, 2020

Addendum #2 September 11, 2020

The Design-Builders shall not contact stakeholder staff regarding the RFP content or the requirements for the Project. Stakeholder staff includes employees of the Department, city(ies) and county(ies) in which the Project or any part of it are located.

Prohibited communications do not include contact with regulatory/county/city/utility officials for the limited purpose of obtaining information regarding available detour routes and conditions associated with such use or regulatory/county/city guidelines.

5. PROCUREMENT SCHEDULE/SUBMITTAL DEADLINES

The Procurement Schedule and submittal deadlines are set out below. The Department will not consider requests on any submittal received by the Department after the deadline for its submittal date stated below. The Department will not consider requests on any submittals pertaining to an Addendum after the deadline established in the Addendum.

Confidential (One on One) Meetings with Each Proposer	<i>Week of August 3, 2020</i>
Deadline for Submittal of Alternate Technical Concepts	<i>On or before September 1418, 2020 4:00 p.m., CT.</i>
Deadline for Response to Alternate Technical Concepts	<i>September 28, 2020 4:00 p.m., CT.</i>
Deadline for Submittal of Initial DDI Design, Lighting, and Right-Of-Way Acquisition(Exhibit)	<i>October 916, 2020</i>
Deadline for Response Initial DDI Design, Lighting, and Right-Of-Way Acquisition(Exhibit)	<i>October 1623, 2020</i>
Deadline for Submittal of Question Requests, and Requests for QPL Determination	<i>October 23, 2020 4:00 p.m., CT.</i>
Technical Proposal and Price Proposal Due Date and Time	<i>November 13, 2020 4:00 p.m., CT.</i>
Price Proposal Opening	<i>December 18, 2020 9:00a.m., CT.</i>
Anticipated Award of Design-Build contract, or rejection of all proposal	<i>On or before January 8, 2021</i>
Anticipated Issuance of Initial Notice to Proceed	<i>January 22, 2021</i>

The Department will not consider any late Proposals. Proposals received after the Proposal Due Date will be returned to the unopened. The Department will not consider any Proposal modifications submitted after the Proposal Due Date. Nor will the Department acknowledge Proposal withdrawals submitted after the Proposal Due Date. Any such attempted withdrawal will be ineffective.

If the Design-Builder does not submit a Proposal by the Due Date and the Department chooses to issue a new, revised, or modified RFP, the Proposal will be considered non-responsive to the requirements set forth herein. As a result, the Design-Builder will not be eligible to respond to any additional RFP requests from the Department on this project.

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

109-04.50 Design-Build ROW Services

- Appraisal
- Acquiring
- Public meetings, if required

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
- Guardrail and Median Barrier

203-50 Construction of Haul Road

- Maintenance/Access Road
- Haul Road

204-05.50 Design-Build Geotechnical

- Borings
- Geotechnical Investigations
- Any Sinkholes

209-01.50 Design-Build Environmental Management

- EPSC measures, EPSC installation
- EPSC inspections
- Permit Acquisitions
- **Mitigation of Streams and Wetlands**

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)

**DESIGN-BUILD
RFP CONTRACT BOOK 2
DESIGN-BUILD CONTRACT**

TENNESSEE DEPARTMENT OF TRANSPORTATION

**INTERSTATE 65 INTERCHANGE AT BUCKNER ROAD IN
SPRING HILL, TN
WILLIAMSON COUNTY- TENNESSEE**

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APPENDIX B

SPECIAL PROVISIONS

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S T A T E

O F

T E N N E S S E E

September 10, 2020

January 1, 2015

SPECIAL PROVISION

REGARDING

PROHIBITION ON CERTAIN TELECOMMUNICATION AND VIDEO

SURVEILLANCE SERVICES OR EQUIPMENT

Installation of telecommunication and video surveillance equipment, services or systems shall contain no components from providers as listed in Title 2 Code of Federal Regulations (CFR) Part 200.216.

The prohibition on certain telecommunication and video surveillance services or equipment regulation in Title 2 CFR 200.216 shall apply to this contract. Take all necessary and reasonable steps in accordance with Title 2 CFR 200.216 to ensure that no prohibited telecommunication and video surveillance services or equipment are included in any of the work in this contract. As defined in Title 2 CFR 200.471, the regulation provides clarity that the telecommunications and video surveillance costs associated with Title 2 CFR 200.216 are unallowable for services and equipment from the providers.

It is prohibited from installing equipment, services, or systems that use covered telecommunications equipment or services from providers described in section 889 of the National Defense Authorization Act for Fiscal Year 2019 (NDAA 2019).

As described in section 889 of the NDAA 2019, "covered telecommunications equipment or services" means:

- Telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities);
- Video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities);
- Telecommunications or video surveillance services provided by such entities or using such equipment; or
- Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country. The term "covered foreign country" means the People's Republic of China.

Any prohibited equipment installed must be removed and replaced at the contractor's expense with acceptable equipment.

**DESIGN-BUILD
RFP CONTRACT BOOK 3
PROJECT SPECIFIC INFORMATION**

TENNESSEE DEPARTMENT OF TRANSPORTATION

**INTERSTATE 65 INTERCHANGE AT BUCKNER ROAD IN
SPRING HILL, TN
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1.2 PROJECT GOALS

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

- Minimize inconvenience to the public during construction.
- Provide a management system or approach that ensures the requirements of the Project will be met or exceeded.
- Provide a high-quality project that minimizes future maintenance.
- Provide a solution consistent with the Department's Roadway and Structures Design Standards.
- Adhere to local, state, and federal environmental regulations and/or permits that are required in executing and/or completing the Project.
- Incorporate Best Management Practices (BMPs) to control sediment, storm water runoff/discharge, or other environmental parameters that are established for the Project.
- Implement innovative solutions to maximize the return on taxpayer investment by reducing costs or improving quality of the transportation system.
- Complete construction no later than September 30, 2023.
- Incorporate safety and positive drainage into all aspects of design and construction with the ultimate goal of zero incidents and accidents.
- Provide a visually pleasing finished product.
- Meet or exceed the DBE goal as described in Section 1.4.

1.3 DEPARTMENT PROVIDED MATERIALS

Plans and/or the Department supplied material are available for download on the Department's project website:

<https://www.tn.gov/tdot/tdot-construction-division/transportation-construction-alternative-contracting/i-65-interchange-at-buckner-rd>

The following materials are provided by the Department:

- Supplemental Safety and Health Plan requirements as amendment to Section 2.5.5. of the Design-Build Standard Guidance;
- Survey Data File in Microstation (for information only);
- The National Environmental Policy Act (NEPA) documentation was processed as a D List Categorical Exclusion (CE) under 23 CFR 771.117(d) and was approved by FHWA on February 12, 2020;
- NEPA Environmental Commitments – Green Sheet dated February 12, 2020;
- Interchange Access Request (IAR) for Interstate 65 at Buckner Road Extension was conceptually approved by FHWA on February 14, 2018 and an IAR Modification was approved by FHWA on February 15, 2019;
- Roadway Functional Plans (for information only);
- Signing and Striping Exhibit (~~for information only~~);
- Bridge Functional Plans (for information only);

- TDOT Structural Design Memorandums SMO-05 dated July 28, 2016, SMO-31 dated October 31, 2014, and SMO-55 dated November 24, 2014;
- TDOT Bridge Plans Notes dated March 11, 2020;
- Buckner Road Traffic Data developed by the Department's Project Planning Division, dated November 14, 2019;
- Interstate 65 at Buckner Road Interchange Traffic Data, dated January 8, 2020.
- Preliminary Report of Geotechnical Exploration, dated December 4, 2019 (for information only);
- Pavement design (see Appendix A), dated January 10, 2020;
- TDOT 2017 *Procedures for Providing Offsite Waste and Borrow on Construction Projects* (May 15, 2017 edition);
- Lighting Specifications;
- Bridge Aesthetics Renderings;
- **Typical Structural Repair Details;**
- **Pedestrian Barrier Rail Details;**
- City of Spring Hill Resolution 20-47;
- Vissim Template File;
- City of Spring Hill Traffic Systems Specifications; and
- Generic Bridge Load rating assignment letter (for information only).

The Design-Builder shall verify existing survey and provide all updated surveys, mapping, plans, verification of existing utilities, investigation, survey data file, and analysis required for completion of the work.

By submitting a response to this RFP, the Design-Builder acknowledges and agrees that TDOT does not make any warranties or representations as to the accuracy or completeness of the provided survey and geotechnical data. The Design-Builder shall bear the risk for any changes in its design or construction resulting from its failure to verify the survey and geotechnical data provided by the Department.

The Design-Builder shall adhere to all commitments stated in the NEPA document. The Design-Builder shall acknowledge that materials furnished by the Department are preliminary and provided solely to assist the Design-Builder in the development of the project design. The Design-Builder shall be fully and totally responsible for the accuracy and completeness of all work performed under this contract and shall hold the Department harmless and shall be fully liable for any additional costs and all claims against the Department which may arise due to errors, omissions and negligence of the Design-Builder in performing the work required by this contract.

1.4 DBE GOAL

The assigned DBE goal for this Project is 14.0%.

The Design-Builder shall exercise all necessary and reasonable steps to ensure that DBEs participate in at least the percent of the total project cost as set forth above as the goal. The Design-Builder shall make good faith efforts in achieving this goal and shall comply with all requirements of 49 CFR part 26.

- Crossover Angle: 40 – 50 degrees
- Lane widths: 15'
- Tangent length through crossover: 50' minimum
- Design Vehicle: WB-67
- Vertical Clearance: 17'-0" minimum over the ultimate number of lanes and shoulders of Interstate 65 described in Section 3.2 for the bridge over Interstate 65.
- Low points on sag curves shall not be located on bridges or pavement at bridge ends.

Typical Section Requirements for Buckner Road

The typical section for Buckner Road shall be designed for an Urban Arterial using Std. Dwg. RD11-TS-6A and modified using Std. Dwg. MM-TS-2 and MM-TS-3. The typical section consists of two 12' lanes in each direction except as noted below:

- Beginning 1,440' west of the intersection of the crossover tangents on the western side of Interstate 65 and extending east to the crossovers, the typical section shall consist of three 12' lanes in each direction.
- Within and between the crossovers, the lanes shall be 15' wide. The eastbound crossover shall carry three lanes through the western crossover and across the bridge over Interstate 65 after which it will split to carry two lanes on Buckner Road and two lanes to Ramp CC. The westbound crossover shall carry three lanes through the western crossover, two of which must be carried across the bridge over Interstate 65, after which it will split to carry two lanes on Buckner Road and two lanes to Ramp DD.

Grass strips (15' on the left and 11' on the right looking forward on survey) shall be provided. Grass strips and side slopes shall be permanently stabilized by seeding with mulch or sodding in accordance with Part 8 of the Standard Specifications.

Concrete barriers (~~54"~~see provided details on project website) shall be constructed to allow for a center 12' shared-use path on the bridge over Interstate 65.

The typical section shall include Type 6-33 curb and gutter on each side. A 14' raised grass median with 2' inside shoulders shall be constructed along Buckner Road beginning as close as possible to the end of the taper for the WB Buckner Road to SB Buckner Lane left turn lanes and extending to the crossover on the western side of Interstate 65. The raised median and 2' inside shoulders shall begin again at the crossover on the eastern side of Interstate 65 and extend to Lewisburg Pike. **Grass median shall be permanently stabilized by sodding.**

Buckner Road shall be constructed to accommodate the turn lanes described in the table below. The intersection at EB Buckner Road and Lewisburg Pike will be constructed for three total lanes, but only one turn lane in each direction will be striped.

LOCATION	NUMBER OF TURN LANES	STORAGE LENGTH (FT)
WB Buckner Road to NB Buckner Lane	1	150
WB Buckner Road to SB Buckner Lane	2	750
EB Buckner Road to SB Lewisburg Pike	1	170

TDOT Roadway Design Guidelines. The Design-Builder shall submit plans as outlined in the TDOT Roadway Design Guidelines to the TDOT Structures Division for Grade Approval.

The Design-Builder shall ensure that all proposed overhead sign structures are of sufficient height so as to not adversely affect the sight distance for crossover signals.

The Design-Builder shall identify the need for any special roadway design details (i.e. any special drainage structures, rock embankment, retaining walls, concrete barrier designs, etc.) and shall provide special design drawings to the Department for Review and Acceptance.

The geometric configurations of all roadway components shall be designed to provide adequate drainage and prevent hydroplaning (during construction and when complete). Cross slopes shall be as shown on the applicable RD11 Standard Drawing for each route. The Design-Builder shall provide hydraulic calculations (including spread calculations) to the Department for review and acceptance.

The Design-Builder shall mill and overlay existing Interstate 65 as described in the Pavement Design Report (Appendix A). The mill and overlay limits shall be determined as follows:

- The southern log mile for the beginning of the mill and overlay section for both NB and SB Interstate 65 shall be the southernmost log mile for the beginning of the auxiliary lane taper for either Ramp B or Ramp D (whichever is furthest south)
- The northern log mile for the end of the mill and overlay section for both NB and SB Interstate 65 shall be the northernmost log mile for the end of the auxiliary lane taper for either Ramp A or Ramp C (whichever is furthest north)

Transitions from asphalt to concrete pavement along ramps shall occur at the end of the gore area with the joint placed radial to the ramp baseline.

The Design-Builder's Definitive Design Plan submittal(s) shall include traffic control plans.

Design of intersections must provide for future construction of cross walks and meet ADA requirements for future sidewalk and shared multi-use path. **The Design-Builder's plans shall indicate the locations of future ramps, cross walks, pedestrian push-buttons, and sidewalks/multi-use paths within the crossover limits for the Department's concurrence. These areas shall be marked "By Others" in the Design-Builder's plans. The conduit and pull boxes (see Section 5.0) to be installed shall also be identified in the Design-Builder's plans.**

If temporary construction activities disturb the existing pavement or pavement markings beyond the limits defined in Section 3.1, the Design-Builder shall extend the mill and overlay and restriping limits to include those areas.

The Design-Builder shall use 3:1 slopes or flatter with necessary recovery area to limit the amount of guardrail installed along Buckner Road. The use of 2:1 slopes along Buckner Road should be used based on Case II slopes as applicable within the interchange access control and only by approved Alternate Technical Concept along Buckner Road.

Where overhead sign supports fall on the side slopes outside the ROW, the Design-Builder's design shall accommodate a notch in the proposed ROW to provide a ten (10) foot perimeter around the overhead sign support foundation.

3.3 DEVIATIONS AND EXCEPTIONS

All proposed modifications require an Alternative Technical Concept (ATC) subject to Department approval. The Design-Builder shall not request more than eight ATCs.

Deviations from the Functional Plans horizontal alignment (greater than 10.0 feet) for **Buckner Road, Interstate 65, all ramps, or Lewisburg Pike** will require an ATC with Department approval. The Design-Builder is responsible for any impacts resulting from deviations from the Functional Plans. ATCs shall identify the limits of Segment Nos. 1, 2, and 3 identified in Section 3.1 for approval by the Department.

The Design-Builder shall identify and label any adjustments made to the taper locations and/or typical sections identified in Section 3.2 or the Functional Plans in their ATC submittal for approval by the Department.

No ATC will be considered that:

- Changes the interchange configuration from a diverging diamond;
- Changes the pavement design from that shown in Appendix A;
- Requires earthmoving or other ground disturbing activities including staging of heavy equipment, excavation of borrow materials, and vegetation removal below the natural ground surface in the areas designated as “Approximate Sensitive Environmental Area” identified in the Functional Plans;
- Places the eastern crossover in such a manner that access to Tract ~~1833~~ or 34 is lost; or
- Proposes the elimination of or reduction in width of the grass strips.

No design exceptions shall be allowed.

3.4 GUARDRAIL AND BARRIERS

The proposed guardrail, including any anchor system, shall be installed prior to opening traffic. Existing guardrail within the construction limits shall be upgraded to current standards. Guardrail shall be removed and replaced in accordance with the TDOT Standard Drawings and the January 2015 edition of TDOT *Standard Specifications*.

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

All existing and new guardrail, guardrail attachments to bridge ends and/or concrete barriers, and end terminals within the project limits shall be MASH-compliant TL-3 and be on the Department’s Qualified Products List.

The Design-Builder shall construct a median refuge as shown on Standard Drawing MM-CR-4 at the crossover locations to allow for future pedestrian facilities along Buckner Road. The 51” single slope barrier on the bridge over Interstate 65 shall extend off the bridge toward the median refuge. The 51” single slope barrier shall transition to a 6” curb over a distance of fifty (50) feet as it approaches the median refuge ramp.

The Design-Builder shall construct concrete barrier walls in accordance with the S-SSMB series of TDOT Standard Drawings.

Required guardrail and concrete barrier locations shall conform to the Design Guidelines, TDOT Standard Drawings, and/or the AASHTO *Roadside Design Guide*. All proposed guardrail along Buckner Road shall be placed at the location required to accommodate the future sidewalk and multi-use path (see Standard Drawing S-PL-6). Right-of-way shall be notched such that proposed guardrail and terminals are within the proposed right-of-way.

3.5 DRAINAGE

The Design-Builder shall be responsible for design and construction of the entire stormwater management system within the Project limits and shall adhere to the latest edition of the TDOT *Drainage Manual*. The Design-Builder shall utilize a 10-yr frequency for the stormwater system design, a 50-yr frequency for crossings where Q50 is less than 500 cfs and 100-yr for crossings and encroachments for which Q50 is greater than 500 cfs. The design storm is the storm at which the flood elevation equals the roadway overtopping elevation. If design storm is greater than 100 year then 100-yr event should be reported. The Design-Builder shall utilize a 50-yr frequency for stormwater system design along Interstate 65.

All stormwater runoff that flows through the Project, whether originating within or outside of the Project, must be accounted for in the design of the Drainage System. The project drainage shall function independently of adjacent projects. Inlets and ditches shall not drain onto or through existing or future roads or drainage systems excluding the culverts along Interstate 65.

The analysis, design, and construction of all components of the stormwater management system shall address the interim conditions during construction of the Project and the final design. Where not otherwise instructed by the TDOT Design Guidelines, TDOT Drainage Manual, TDOT Standard Drawings, TDOT Design Procedures for Hydraulic Structures 2012, or Permit requirements, the Design-Builder shall design interim open channels to collect and convey without damage, and to confine within any temporary roadside ditches or swales, stormwater flow using a 2-year design frequency. Interim design shall be based on the interim land cover and corresponding Manning coefficients.

The drainage system shall have adequate capacity to convey all stormwater through the project without any adverse impacts to upstream and/or downstream adjacent properties.

The Design-Builder shall embed culverts for aquatic organism passage for all streams in accordance with the requirements of FHWA Hydraulic Engineering Circular 26, "Culvert Design for Aquatic Organism Passage".

All new culverts and pipes for closed drainage system shall have a slope of not less than 0.5%.

The Design-Builder shall slip line the existing 66" CMP culvert beneath Interstate 65 (just south of the Functional Plans interchange location) in accordance with Special Provision 607G without reducing hydraulic capacity.

The Design-Builder shall replace the existing 60" CMP culvert beneath Lewisburg Pike (south of the intersection of Buckner Road with Lewisburg Pike). The replacement structure shall be sized in accordance with the TDOT *Drainage Manual*.

The Design-Builder shall inspect the existing culverts within the project limits that are to remain to ensure that they are clean, operable, and structurally adequate. Any concrete spall or crack repairs or scour repairs shall be performed by the Design-Builder. Any debris in the culverts or near the culvert inlet/outlet shall be removed by the Design-Builder. All repairs shall be completed per Department guidelines and meet the full approval of the Engineer.

4.0 STRUCTURES SCOPE OF WORK

The Design-Builder shall be responsible for the design and construction of all structures within the Project limits including the bridge over Interstate 65, interstate ramp bridge(s), retaining walls, and box/slab bridges, as further described below.

4.1 BRIDGE DESIGN REQUIREMENTS

New bridges shall be designed and detailed using the AASHTO Load and Resistance Factor Design (LRFD) Bridge Design Specifications, current edition, the AASHTO Guide Specifications for LRFD Seismic Bridge Design, Second Edition (2011) with all interims, and the TDOT Structures Division Structural Memorandums.

Proposed Accelerated Bridge Construction (ABC) methods shall be submitted to the Department through an ATC for approval by the Department.

Precast, prestressed Girders shall be continuous for live loads. The final concrete beam strength shall be between 5,000 psi and 10,000 psi. If structural steel girders are used, they shall be designed continuous for all loads. Structural steel shall be A709 Grade 50W. Concrete for the bridge deck shall be Class "DS" ($f'_c = 4000$ psi) and meet the requirements of the Standard Specifications. The minimum slab thickness shall be 8" and all slab steel shall be epoxy coated. Concrete for substructures shall be Class "A" ($f'_c = 3000$ psi) and meet the requirements of the Standard Specifications. Other types of concrete required by the design from the Design-Builder shall meet the minimum design strength requirements and also the requirements of the Standard Specifications or any applicable Supplemental Specification or Special Provision.

All bridges shall be designed for HL-93 live loading. The bridge design shall include 35 pounds per square foot (psf) for a future wearing surface.

Bridge deck surface finish shall be in accordance with Method 3 of Article 604 of the Standard Specifications.

Pavement at bridge ends (See Standard Drawing STD-1-5) is required at all bridges.

End of bridge drains will not be allowed in the Pavement at Bridge Ends.

Abutments shall be of integral construction to eliminate joints at bridge ends.

The Design-Builder shall perform a hydraulic analysis for bridge deck drainage and shall meet the criteria in the TDOT *Design Procedures for Hydraulic Structures*.

The Design-Builder shall submit shop drawings in accordance with the requirements set forth in the Standard Specifications for Road and Bridge Construction for bridge components, erection plans and calculations for concurrence by the Department. The shop drawings and erection plans shall be submitted in a timely manner allowing ten (10) business days for the Department's review.

Should the Design-Builder elect to use drilled shafts, they shall be constructed according to Special Provision 625 Drilled Shaft Specifications.

The new structure over Interstate 65 shall be wide enough to incorporate the full roadway width as presented in Section 3.2 (five 15-foot lanes, 2' outside shoulders, 1' inside shoulders, 12' future shared-use path, two STD-1-1SS parapets, and two ~~51" single slope barrier half walls pedestrian barriers~~). See

project website for pedestrian barrier details. The new structure shall provide a minimum of 17'-0" of vertical clearance as described in Section 3.2.

New ramp bridge(s) shall be wide enough to incorporate the full roadway width as presented in Section 3.2 and two STD-1-1SS parapets.

Deck drains (if needed) shall be as shown on STD-1-2SS and follow the requirements of the TDOT *Design Procedures for Hydraulic Structures 2012*. Deck drains shall not discharge onto current or future lanes or shoulders of Interstate 65. If used, a closed drainage system shall not be placed outside of the exterior bridge girders. For the bridge over Interstate 65, the calculated spread may encroach into the outermost travel lane so long as at least twelve feet of the outermost lane remains. For all other bridges, the spread shall be limited to the shoulder.

All guardrail (including guardrail terminal, anchor and hardware) shall be MASH TL-3 compliant.

Should the Design-Builder elect to construct bridges on Buckner Road in lieu of the box bridges shown in the Functional Plans, they shall be of sufficient width to accommodate the future sidewalk and multi-use path. The area denoted as "grass strip" in Section 3.2 shall be constructed as a sidewalk with STD-11-1 parapets.

All exposed concrete surfaces shall receive an applied texture coated finish of Mountain Grey (AMS STD-595 color No. 36440), except that the top and side of the bridge rail facing traffic shall receive a white finish (AMS STD-595 color No. 37886).

The Design-Builder shall conduct and submit a load rating analysis report for each of the new bridges that are constructed. The load ratings are to be completed using AASHTOWare Bridge Rating (BrR) or CSi Bridge software and submitted with the Bridge Construction Plans for review. The load rating analysis report and BrR-load rating modeling file shall be updated for the as-built conditions with the final as-built plans. For a listing of the specific vehicles to be load rated as well as a description of the report format, see the reference material on the project website.

4.2 BUCKNER ROAD OVER INTERSTATE 65 BRIDGE AESTHETICS

If a bent is required for the Design-Builder's design for the bridge over Interstate 65, the cap shall have a hammerhead appearance similar to that shown in the Functional Plans. The end faces of the bent cap shall include a 3'-0" Tri-Star emblem as shown on the TDOT Standard Drawing STD-8-6. The columns of the bridge bent shall be a minimum width of 6'-0" (measured along interstate 65) with a minimum dry-stack stone finish width of 5'-0" on each column. The areas receiving the dry-stack stone finish shall be stained as described below.

Each abutment wingwall shall receive a dry-stack stone finish that shall be stained as described below. A 2'-0" Tri-Star emblem as shown on TDOT Standard Drawing STD-8-6 shall be included on each wingwall.

The vertical faces of the ~~51" single slope barrier half walls~~ pedestrian barriers adjacent to the shared-use path shall receive a dry-stack stone finish that shall be stained as described below. The vertical face of the pedestrian barriers ~~51" single slope barrier half walls~~ not receiving a dry-stack stone finish shall receive a Mountain Grey finish (AMS STD-595 color No. 36440). All other faces of the pedestrian barriers ~~51" single slope barrier half walls~~ shall receive a white finish (AMS STD-595 color No. 37886).

The exposed face of the retaining walls at the bridge over Interstate 65 shall receive a dry-stack stone finish that shall be stained as described below.

The dry-stack stone form liner used by the Design-Builder shall be approved by the Department and the City of Spring Hill. The maximum relief shall be between 1.5” and 2”. **The minimum relief shall be 1.25”.**

The dry-stack stone finish staining shall conform to the following:

- Coloring material of all surfaces shall be accomplished by using a weather-resistant, water-based acrylic stain. The following are known stain products that are acceptable (provided for information only). There may be similar products from other manufacturer’s that will meet the project requirements:
 - Sherwin Williams H & C
 - Gemite Industries Rainshield
 - Euclid Chemical Tammscoat
 - BASF MasterProtect
- Individual stones shall be stained in a random pattern using a minimum of four different colors.
- Concrete shall be a minimum of 28 calendar days old prior to applying stain.
- All concrete shall be clean, dry, and free of oil, paint, sealers, form release agents, curing compounds (must not contain parafins), salt, efflorescence, etc. Vertical concrete surfaces shall be cleaned in accordance with stain manufacturer’s recommendations. Concrete surface shall dry for a minimum of 24 hours before applying stain.
- Stain shall be applied per manufacturer’s recommendations.
- A minimum of two coats applied at a minimum of 250 square feet per gallon is required.
- Apply under dry conditions only. If it has rained before application, the surface shall be allowed to dry a minimum of 24 hours before staining Do not apply stain if rain is expected within 12 hours following application. When applying stain, air and surface temperature should be between 50 degrees Fahrenheit and 90 degrees Fahrenheit. Air and surface temperature should be a minimum of 50 degrees Fahrenheit and rising. Application is to stop two hours before sunset.

The Design-Builder shall construct a 4’-0” x 4’-0” mock-up demonstrating the dry-stack stone form liner and staining appearance for concurrence by the Department and the City of Spring Hill prior to beginning bridge or retaining wall construction.

4.3 RETAINING WALLS

Retaining walls shall be built in accordance with Special Provision 624, Retaining Walls. The exposed face of all retaining walls (excluding the retaining walls at the Interstate 65 bridge) shall receive an ashlar stone finish approved by the Department. The final locations, lengths, heights, and the beginning and end stations of all walls shall be determined by the Design-Builder.

For cast-in-place concrete retaining walls (excluding the retaining walls at the Interstate 65 bridge), all exposed concrete surfaces shall receive an applied texture coated finish of Mountain Grey (AMS STD-595 color No. 36440).

4.4 BOX/SLAB BRIDGES

All box and slab bridges constructed on the project should be constructed in accordance with the notes and details shown on the TDOT Standard Drawings for LRFD Box Culverts (STD-17 series) unless approved by the Department. Special designs for box curbs will be allowed up to a height of 3’-0” to reduce culvert lengths. The Design-Builder shall provide details of special designs for heights beyond

Traffic signals shall be designed and constructed in accordance with Supplemental Specification 700SS (See **Contract Book 2 (Design-Build Contract)**), Special Provision 700SIG, City of Spring Hill Traffic Systems Specifications, and the TDOT *Traffic Design Manual*.

The Design-Builder shall provide final signal timing settings to the City of Spring Hill at the completion of the Project.

The Design-Builder shall coordinate the signals at the interchange using a fiber optic connection.

5.2 LIGHTING

The Design-Builder shall construct Complete Interchange Lighting (CIL) in accordance with the TDOT *Traffic Design Manual*. The installation shall provide relatively uniform lighting for the interchange through the installation of high mast, standard lighting, and underpass lighting fixtures in the area of the interchange. The area of the interchange is defined as follows:

- Interstate 65 northbound and southbound lanes from northern ramp junctions to the southern ramp junctions.
- All four ramps of the interchange
- Buckner Road from the Interstate 65 southbound terminal intersection to the Interstate 65 northbound terminal intersection

Transition lighting is required beyond the limits described above in accordance with Section 5.2 of the TDOT Traffic Design Manual.

All lighting shall be 4000k LED lighting. The Design-Builder shall prepare lighting designs/plans in accordance with TDOT Standard Specifications for Road and Bridge Construction, TDOT Standard Drawings, TDOT Standard Traffic Operations Drawings, TDOT *Traffic Design Manual*, Chapter 15, and the latest edition to the National Electric Code, National Fire Protection Association (NFPA) 70.

The Design-Builder shall submit a preliminary lighting design with the Initial Design and Right-Of-Way Exhibit Submittal and in the Technical Proposal with Response Category IV (TECHNICAL SOLUTIONS) information with TDOT comments to the initial submittal addressed. See **Contract Book 1 (Instructions to Design-Builders)**. The design package shall include electronic design files using AGI32 software, layout sheets which illustrate the photometrics, and high mast foundation information.

The Design-Builder shall not allow light pollution/light hindrance into residential areas during construction.

Along Buckner Road, the Design-Builder shall use street lighting included in the City of Spring Hill Proprietary Item List provided on the project website. Allowable high mast and wall pack lighting is also provided on the project website. Offset lighting on ramps and Interstate 65 shall be per TDOT standards. In case of a difference between TDOT Standards and Specifications and MTEMC standards, TDOT standards and specifications shall control. ~~The Design-Builder shall only use light fixtures for offset lighting approved by MTEMC. Allowable high mast, offset lighting, and wall packs are provided as reference material on the project website.~~

The Design-Builder shall obtain all permits required for installation of interchange lighting.

No high-mast lighting poles shall be placed outside the interchange quadrants.

The maximum distance between offset or mast arm light poles shall not exceed 250 feet.

The distance between light poles and bridges must be a minimum of 50 feet.

The illuminance method shall be used (Values of Average Maintained Minimum, Average/Min., and Max/Min shall be in accordance with Chapter 15 of the TDOT Traffic Design Manual). Mounting height, placement of proposed poles, and the tilt angles are to be determined by the photometric statistics.

All wiring shall be concealed underground in 2-inch schedule 40 PVC rigid conduit. The conduit shall be installed a minimum depth of 26 inches as measured from finished subgrade.

The ground wire shall be run inside conduit within structures, shall be colored green and have THW insulation.

All proposed roadway light standards shall be designed in accordance with the requirements of the latest edition of the LRFD Standard Specifications for Structural Support for Highway Signs, Luminaires and Traffic Signals published by the American Association of State Highway and Transportation Officials. High-mast foundation calculations (signed and sealed by a Professional Engineer licensed in the State of Tennessee) shall be submitted to the Department.

Underpass connections and bridge lighting connections, if needed for the bridge over Interstate 65, shall be embedded in the bridge structure.