



**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

November 9, 2020

Re: ADDENDUM #5
Contract No.: DB2001
County: Williamson

To Whom It May Concern:

This addendum revises the RFP Contract Book 1 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 black ink, appearing to read "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

Addendum #3 September 29, 2020

Addendum #4 October 12, 2020

Addendum #4 November 9, 2020

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~~

203-50.50 Construction of Access Road

- Access Road

Note, Item No. 203-50.50 shall include all costs associated with providing access to Tracts 17 and 32 per Contract Book 3 Section 3.11. If it is determined during ROW acquisition that this item is not needed, the Department will reduce the lump sum contract amount by the amount bid for Item No. 203-50.50.

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

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

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

Addendum #3 September 29, 2020

Addendum #4 October 12, 2020

Addendum #4 November 9, 2020

1.0 GENERAL

This **Contract Book 3 (Project-Specific Information)** contains the requirements and conditions by which the Design-Builder shall design and construct the Project, except for any portions of the work that may be stipulated within this **Contract Book 3 (Project-Specific Information)** to be performed by the Tennessee Department of Transportation (TDOT, or “the Department”).

The order of precedence of **Contract Book 3 (Project-Specific Information)** with the other contract documents is described in **Contract Book 2 (Design-Build Contract)**. TDOT will utilize electronic contracts for this project.

The Definition of Terms corresponding with this **Contract Book 3 (Project-Specific Information)** can be found in the *Tennessee Department of Transportation Standard Specifications for Road and Bridge Construction (January 1, 2015 edition)* and/or *Design-Build (DB) Standard Guidance: https://www.tn.gov/content/dam/tn/tdot/construction/design-build_projects/Design-Build_Guidance_01-31-17.pdf*.

1.1 PROJECT DESCRIPTION

The proposed project shall include the design and construction of a new diverging diamond interchange on Interstate 65 at L.M. 2.62 in Spring Hill, Williamson County, TN and roadway (Buckner Road) extensions to near the existing intersection with Buckner Road at Buckner Lane to the west and Lewisburg Pike (US-431/SR-106) to the east (See Figure 1 – Location Map). The project shall include:

- Construction of Buckner Road Extensions to existing Buckner Road and Lewisburg Pike (US-431/SR-106) from Interstate 65;
- Construction of a new diverging diamond interchange and associated on- and off-ramps to Interstate 65 including a new bridge over Interstate 65;
- Mill and overlay of Interstate 65 as described in Section 3.2 and Appendix A;
- Construct grass strips to accommodate future sidewalk and shared-use path along Buckner Road;
- Replacing all substandard guardrail and terminals within the project limits;
- Construction of all required drainage structures, bridges, box bridges, and/or channel relocations;
- New signals at Lewisburg Pike and at the diverging diamond interchange;
- Construct new access control fencing as described in Section 3.2;
- Right-of-way (ROW) acquisition;
- Preparing all documents necessary to obtain all permits required;
- All erosion prevention and sediment control designs and implementation;
- Traffic maintenance and management during all phases of construction;
- Pavement markings and signage;
- Maintenance as described in Section 12 and in the *DB Standard Guidance*;
- Complete interchange lighting;
- Other structures (retaining walls, overhead sign structures, etc.) as needed to complete the project; and
- Project and Quality management.
- Construct an access road as described in Section 3.11

- 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 September 2, 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; Single Slope Bike & Pedestrian Median Barrier Wall Details;~~
- Median Island Details;
- City of Spring Hill Resolution 20-47;
- Pavement Evaluation Report;
- Culvert Inspection Reports;
- 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%.

3.0 ROADWAY SCOPE OF WORK

The roadway shall be designed to adhere to the latest editions of all ~~appropriate~~-applicable TDOT Roadway Standard Drawings, TDOT *Roadway Design Guidelines* and Instructional Bulletins, TDOT *Drainage Manual*, TDOT *Traffic Design Manual*, TDOT *Design CADD Standards*, TDOT *Survey Manual* and the Department accepted American Association of State Highway and Transportation Officials (AASHTO) *Policy on Geometric Design of Highways and Streets*, and *Manual on Uniform Traffic Control Devices* (MUTCD). Diverging Diamond Interchange design shall be based on the 2018 American Association of State Highway and Transportation Officials (AASHTO) *Policy on Geometric Design of Highways and Streets* and FHWA *Diverging Diamond Interchange Informational Guide*.

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 incorporated into the plans.

The Design-Builder shall be responsible for preparation of final signed and sealed definitive design and construction plans used to construct the proposed improvements.

The Design-Builder shall provide separate Definitive Design and Construction plans sets for each segment identified in Section 3.1 (ie. LIC No. 1, Interchange, and LIC No. 2).

Microstation and Geopak shall be used in the preparation of CADD and design files.

3.1 GENERAL

The Project shall consist of the following segments:

Segment No. 1 (LIC No. 1): Buckner Road Western Extension (PIN 128576.01)

This segment consists of the construction of the Buckner Road Western Extension beginning 250’ east of the intersection of existing Buckner Road and Buckner Lane and extending east approximately 3,650’ just west of Aenon Creek on new alignment to the western limit of the C.A. ROW for Segment 2. Buckner Road in this segment varies from four to six lanes (two or three in each direction). The City of Spring Hill is undergoing two separate projects to widen Buckner Lane as follows:

- Project No. 1 will widen Buckner Lane to the north between existing Buckner Road and Thompson Station Road. This project will include improvements to the intersection at Buckner Road and Buckner Lane. The Design-Builder shall tie its construction to the eastern end of the seven-lane section constructed as part of this project which will extend 250’ east along the proposed Buckner Road centerline from the intersection with the existing Buckner Lane centerline. The Design-Builder shall ensure that the turn lanes along Buckner Road described in Section 3.2 are provided.
- Project No. 2 will widen Buckner Lane to the south between existing Buckner Road and Duplex Road.

The Design-Builder shall be required to coordinate its design and construction efforts with the City and the designers and contractors of the two projects described above.

Segment No. 2: New Interchange at Interstate 65 (PIN 128576.00)

This segment consists of the construction of a new fully access controlled diverging diamond interchange on Interstate 65 at L.M. 2.62. The western terminus for Segment No. 2 is measured approximately 1,000

required tapers and transitions. The typical section will vary from three 12' lanes with two 8' shoulders (6' paved) to two 12' lanes with 3' shoulders (1' paved). North of the intersection with Buckner Road, the Design-Builder shall construct a 180' long right turn lane and all required tapers and transitions. The typical section will vary from four 12' lanes with two 8' shoulders (6' paved) to two 12' lanes with 3' shoulders (1' paved).

Additional Design Requirements

The Design-Builder shall construct six-foot tall chain link CA fence at the following locations:

- Western Approach: Beginning at the western terminus of Segment 2 and extending east along Buckner Road and Ramps A and B to tie in with the existing controlled access fence on Interstate 65.
- Eastern Approach: Beginning at the eastern terminus of Segment 2 and extending west along Buckner Road and Ramps C and D to tie in with the existing controlled access fence on Interstate 65.

The CA fence and proposed ROW shall be offset from the toe of slope along the ramps a distance of 20' (see Note 4 on Standard Drawing RD11-TS-5 for freeways).

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 is provided throughout the duration of construction and upon completion of the project as defined in the 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.

The Owner of Tract 15 is installing steel casings to accommodate future water and sewer lines for future development. These casings will extend between the toes of slopes shown in the Functional Plans. They will be located at STA 112+02 and 112+32 of Buckner Road with a top of casing elevation of 778.50 and skewed 90 degrees with the Buckner Road centerline. The Design-Builder's vertical profile shall be sufficient to provide a minimum of two feet of cover between the casing and the pavement base stone.

The Design-Builder shall plan and schedule all work, submittals, and reviews necessary to obtain the Department's written acceptance of sealed Definitive Design Plans for the portion of the project affected by the relocation of the AT&T line and private easement no later than May 1, 2021. The Design-Builder shall allow for 18 months after Definitive Design acceptance in their CPM schedule for the relocation process of the AT&T line.

A construction easement shall be acquired for all driveways and field entrances. This easement shall be offset approximately 10' from toe of slope of the driveway or field entrance.

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:

The typical section for the access road to Tracts 17 and 32 shall be designed per Std. Dwg. RD11-TS-1 using a design speed of 20mph. The typical section shall consist of two 10' lanes with no shoulders.

A median opening along Buckner Road shall be provided at the intersection with the access road. The intersection of the access road shall fall outside of the controlled access fence.

The pavement design for the access road shall be Mix Type IV as described in Table 3-3 of the TDOT Design Guidelines.

The pavement markings for the access road shall be provided according to Section 4 of the TDOT Design Guidelines and TDOT Standard Drawings.

The access road shall end with a cul-de-sac with a ninety-six foot minimum outside diameter.

A private driveway to Tract 17 and a field entrance to Tract 32 shall be provided.

The Design-Builder shall be responsible for preparing any additional environmental technical studies and completion of the NEPA document reevaluation(s) if its design falls outside the construction limits shown in the NEPA document.

The Design-Builder shall be responsible for preparing and obtaining required permits.

The Design-Builder's access road design shall be submitted with the Initial 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). This submittal shall include the horizontal alignment, vertical alignment, and proposed ROW acquisition areas.

The access road shall intersect Buckner Road at a ninety (90) degree angle.

The alignment of the access road shall be parallel and adjacent to the CA fence and located beyond the CA fence but within the proposed ROW. The northern boundary for the proposed ROW for the access road shall be the CA fence. The southern boundary shall be determined as described on Standard Drawing RD11-TS-1. The Design-Builder shall provide access to Tracts 17 and 32, but minimize the amount of acquisition of Tract 33.

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 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 pedestrian barriers adjacent to the shared-use path, excluding the top 6", shall receive a dry-stack stone finish that shall be stained as described below. The vertical face of the pedestrian barriers 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 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 handrail shown on the Single Slope Bike & Pedestrian Median Barrier Wall (see project website) shall be painted black.

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).

The Design-Builder shall be responsible for active management of signals and operations until final acceptance of the Project. During this time, the final signal timing will be implemented and modified to provide optimal traffic signal operations.

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.

All signal poles and mast arms, including the poles and mast arms supporting the signs with flashers along Lewisburg Pike, shall be powder coated black.

The control cabinet for the signal at Lewisburg Pike shall be placed on the southwest quadrant of the intersection within the proposed ROW.

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 15.2.2 of the TDOT Traffic Design Manual. Along Buckner Road, lighting shall extend for a distance of 1,000' measured in each direction from the crossover intersections.

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. In residential areas, the Design-Builder shall shield or consider less glare values ("0 to 3" out of 5) to avoid light trespass.

~~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 in the City of Spring Hill Proprietary Item List. Other items listed in this letter shall not be used. Offset lighting on ramps and Interstate 65 shall be per TDOT standards. The mounting height for high mast and offset lighting should be governed by the photometric analysis. However, the minimum requirements are 100' for high mast and 40' for offset poles. In case of a difference between TDOT Standards and Specifications and MTEMC standards, TDOT standards and specifications shall control.

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.

All lighting designs shall use the illuminance method. The average maintained horizontal illuminance for R3 pavement classification for Interstate 65 is 0.9 (+/- 0.1). Refer to Chapter 15 of the Traffic Design Manual.

Photometric values (minimum, average/minimum, and maximum/minimum) for the interstate system shall be 0.2, 3:1, and 6:1, respectively.

The recommended values of the manufacturer shall be used for the total LLF. However, the total LLF cannot be less than 0.85 for LED.

Proposed lighting design or files shall have "beginning of light" and "end of light" labels.

Lighting shall not be placed in the medians along Buckner Road.