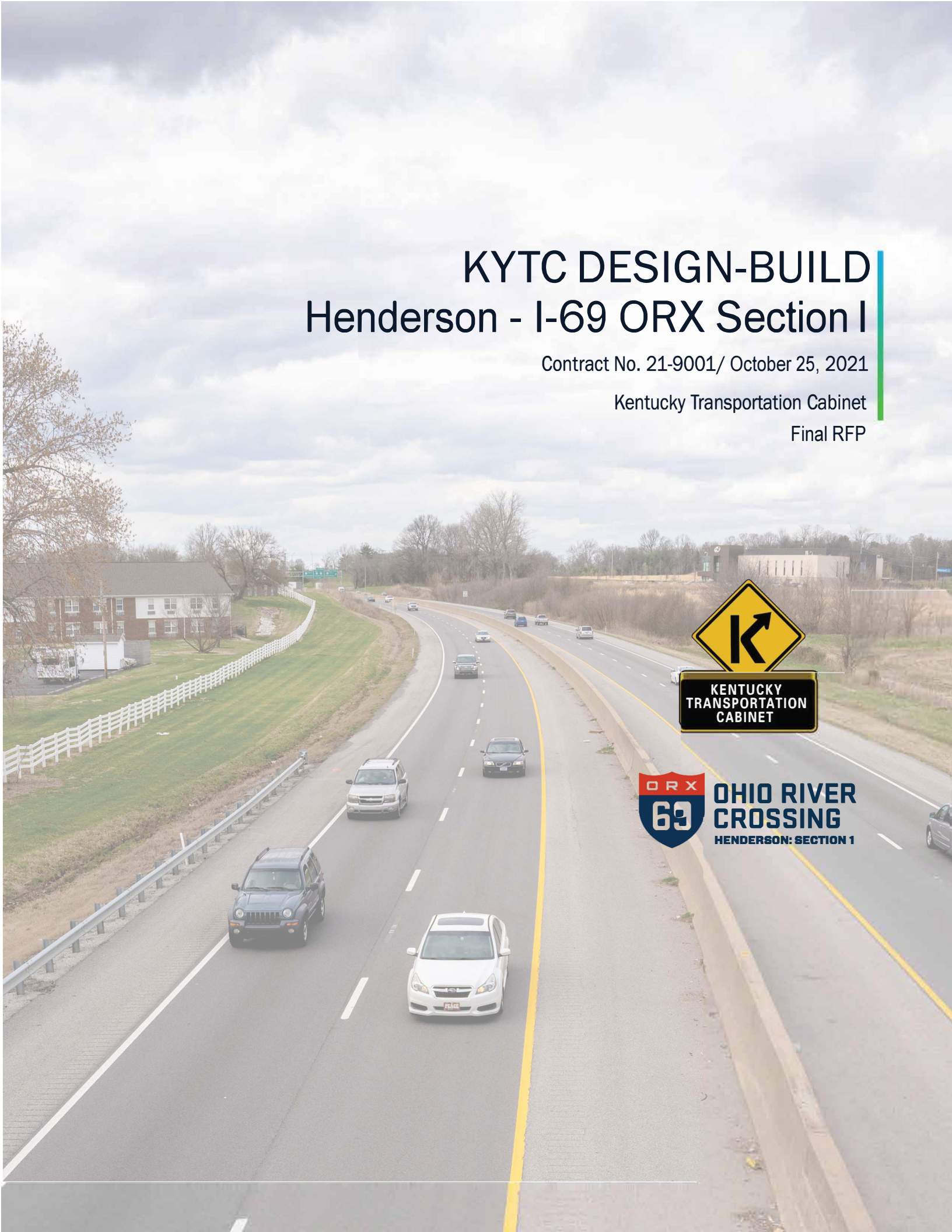
KYTC DESIGN-BUILD
Henderson - I-69 ORX Section I

Contract No. 21-9001/ October 25, 2021

Kentucky Transportation Cabinet

Final RFP



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ABBREVIATIONS

AASHTO	*See 2019 KYTC Standard Specifications*
ACI	*See 2019 KYTC Standard Specifications*
ATC	Alternative Technical Concept
BU	Buildable Unit
CCTV	Closed Circuit Television
CFR	*See 2019 KYTC Standard Specifications*
CLOMR	Conditional Letter of Map Revision
CPM	Critical Path Method
CPT	Cone Penetration Test
CSX	CSX Railroad
DBE	*See 2019 KYTC Standard Specifications*
DBT	Design-Build Team
DMS	Dynamic Message Sign
EEO	Equal Employment Opportunity
EIS	*See 2019 KYTC Standard Specifications*
EPD	Escrowed Proposal Documents
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Administration
FHWA	*See 2019 KYTC Standard Specifications*
HDGM	Highway Design Guidance Manual
HMG	Henderson Municipal Gas
HMPL	Henderson Municipal Power and Light
HVAC	Heating, Ventilation, Air Conditioning
HWU	Henderson Water Utility
ITP	Instructions to Proposers
ITS	*See 2019 KYTC Standard Specifications*
KDOW	Kentucky Division of Water
KMZ	Keyhole Markup language Zipped
KRS	*See 2019 KYTC Standard Specifications*
KY	Kentucky
KYDOH	Kentucky Department of Highways
KYTC	*See 2019 KYTC Standard Specifications*

LOMR	Letter of Map Revision
LRFD	Load and Resistance Factor Design
MBPS	Mega-Bits Per Second
MUTCD	*See 2019 KYTC Standard Specifications*
NEPA	*See 2019 KYTC Standard Specifications*
NTCIP	National Transportation Communications for ITS Protocol
OSHA	*See 2019 KYTC Standard Specifications*
PDF	Portable Document Format
PIP	Public Information Plan
PPM	Pre-Proposal Meeting
RFP	Request for Proposal
RID	Reference Information Documents
ROD	*See 2019 KYTC Standard Specifications*
ROW	Right-of-Way
SOQ	Statement of Qualifications
TCP	*See 2019 KYTC Standard Specifications*
TMP	Traffic Management Plan
TP	Technical Provision
TRIMARC	*See 2019 KYTC Standard Specifications*
USACE	United States Army Corps of Engineers
VMS	*See 2019 KYTC Standard Specifications*

DEFINITIONS

Alternative Technical Concept (ATC)	A change to the Project Scope that provides a solution that is equal to or better than the required scope as determined by KYTC.
Alternate Pavement Bid Adjustment	An adjustment to the Price Proposal to account for projected out-year life-cycle costs to the Cabinet.
Appendix	One of the Appendices to the Instruction to Proposers.
Attachment	One of the Attachments to the Technical Provisions.
Award	*See 2019 KYTC Standard Specifications*.
Awards Committee	A committee of KYTC representatives that are responsible for establishing an overall proposal score and selecting the winning Design-Build Team for this project.
Basic Project Configuration	The Project Scope in its entirety and elements of the conceptual plans, as indicated in Section 6 of the ITP. The Technical Proposal must be consistent with the Basic Project Configuration subject only to such changes approved by KYTC in accordance with Alternative Technical Concept procedures defined in the ITP.
Bid Bond	The security furnished to KYTC to guarantee that the winning Bidder shall enter into the Contract under the terms at which they Bid.
Bid Documents	The documents included with the Project's advertisement (ITP, TP, Attachments, and Appendices) and the RFP Q &A and Project's RFQ.
Bid Express	KYTC's Secure Internet Bidding site for DBTs to retrieve bid files and electronically submitting the bid packet.
Buildable Unit	Buildable Units are portions of the projects which may be designed, reviewed and built with only limited controls and assumptions coming from the design of other portions of the project, and as further defined in Section 9 of the TP.
Certificate of Eligibility	Certificate of Eligibility as provided in regulations published by the Department according to KRS 176.140
Change Order	*See 2019 KYTC Standard Specifications*
Completion Date	*See 2019 KYTC Standard Specifications* "Specified Completion Date"
Contract	*See 2019 KYTC Standard Specifications*
Contract Documents	Documents that comprise the Contract.
Contract Notes	Additional Contract requirements included in Appendix B to the ITP.
DBE Utilization Plan	See ITP Appendix C
Department	*See 2019 KYTC Standard Specifications*

Design-Build Team (DBT)	The team comprised of the lead construction firm in charge of the portion of the DBT that physically constructs the Project, and the lead design firm in charge of the portion of the DBT that prepares design documents – drawings, specifications, calculations, records, reports, or other documents based on Contract requirements
Design Executive Summary (DES)	The record of engineering decisions related to the project.
Engineer	*See 2019 KYTC Standard Specifications*
Escrowed Proposal Documents	All documentary information used in preparation of its best value proposal for cost for the Project, and as further defined in Section 8.3.1 of the ITP.
Final Plans	Final Plans, prepared in accordance with the RFP and KYTC Guidance Manuals.
Geometric Layout Sheets	Reference Information Documents that define interchange geometry used for the Basic Project Configuration.
Governing Regulations	The regulations as described in Section 8.1 of the RFP.
Hub Office	A location established by the DBT to co-locate the DBT's key management, design, construction, quality and compliance functions, and KYTC's management, oversight and compliance staff.
I-69 Conversion Section	A 2.4-mile segment of existing US 41 from the existing end of I-69 south of KY 425 running, to north of KY 351 to the existing US 41 bridges over CSX RR.
Interim Hub Office	A temporary location where the DBT and KYTC can communicate and interact until the Hub Office facility is established.
Key Personnel	As defined in Section 4.3.1.3 of the RFQ
KYTC	*See 2019 KYTC Standard Specifications*
KYTC Project Manager	KYTC's authorized representative for the Project.
Mandatory Standards	As described in Section 6.1 of the RFP
Non-working Hours	Periods of time when the DBT does not have work crews actively performing construction operations at the site.
Price Proposal	The Proposal submittal by the DBT that includes the price for which the DBT offers to perform the work described in the Contract Documents.
Progress Schedule	As described in Section 108 of the Standard Specifications
DBT Project Manager	The DBT's Project Manager
Project Scope	Documents detailing requirements of the Project, which is part of this RFP and shall be made part of any Contract entered into between the DBT and KYTC.

Proposed Project Completion Date	DBT's proposed date for completion submitted with their Proposal, which if they are successful, becomes the Completion Date
Proposer	The entity submitting a Proposal to KYTC to perform the advertised work.
Reference Information Document (RID)	Documents provided by KYTC for informational purposes only.
Released for Construction Plans	Design Documents that have been submitted with all required certifications and received a final design review by KYTC.
Request for Proposal(s) (RFP)	The documents supplied to the shortlisted DBTs. The RFP describes the Project in detail, outlines the procurement process, forms the basis for the final Proposals, and is an element in the Contract.
Request for Qualifications (RFQ)	The document that outlines a proposed Design Build project and requests that parties interested in bidding on the contract provide a SOQ for consideration.
Right-of-Way (ROW)	*See 2019 KYTC Standard Specifications*.
Schedule of Values	A list of construction items, materials, or work activities that make up design and construction of the work with a cost value
Scoring Committee	Representatives of KYTC charged with evaluating and scoring the responsive Technical Proposals for the RFP.
Setting Date	The date of issuance of the Final RFP.
SharePoint	KYTC's secure internet submittal site for the transfer of documents between the DBTs and KYTC.
Significant Project	As used in Standard Specifications Section 112.03.12
Statement of Qualifications (SOQ)	A document submitted by a Proposer detailing the Proposer's capabilities and Project understanding.
Stipend	A fee that shall be paid to any unsuccessful but responsive Short Listed DBT for its Proposal to the RFP. No Stipend shall be paid for the SOQ.
Technical Proposal	The first submittal of a prospective DBT for the RFP that includes but is not limited to the proposed design, method of construction, and procedures for addressing the environmental requirements of the Project.
Utility Agreement	One of several possible types of agreements between KYTC and a utility company, or between the DBT and a utility company, as described in Section 19 of the RFP.
Working Day	*See 2019 KYTC Standard Specifications*

PART 1 – INSTRUCTIONS TO PROPOSERS

1. PROJECT IDENTIFICATION

TABLE 1.1 - PROJECT IDENTIFICATION	
Contract No.	21-9001
State Project #	FD52 051 0069 148-154
County	Henderson
Route	I-69

1.1. PROJECT SCHEDULE

The submittal process shall involve a 3-step process (Statements of Qualifications, Technical Proposal, and Price Proposal). Below is a schedule of dates for the submittal:

TABLE 1.2 – SCHEDULE	
DATE	**SUBMITTAL**
June 16, 2021	Issue Draft #1 Request for Proposal (RFP)
July 7-8, 2021	1st Alternative Technical Concept One-on-One Meeting
July 12, 2021	Issue RFP Draft #2
July 20, 2021	Utilities Coordination Meetings
August 4-5, 2021	2nd Alternative Technical Concept One-on-One Meeting
August 9, 2021	DBE/MBE Matchmaker
August 9, 2021	Issue RFP Draft #3
September 1-2, 2021	3rd Alternative Technical Concept One-on-One Meeting
September 6, 2021	Issue RFP Draft #4
September 29-30, 2021	Pre-Proposal Meeting
October 8, 2021	Deadline for ATC Submittals

TABLE 1.2 – SCHEDULE	
DATE	**SUBMITTAL**
October 22, 2021	KYTC Final ATC Responses
October 25, 2021	Final RFP Issued (Setting Date)
November 1, 2021, 4 PM ET	Deadline for Pre-Bid Questions
November 8, 2021, 4 PM ET	Last Date for KYTC Responses to Pre-Bid Questions
November 14, 2021	Last Date for KYTC to Issue Addenda
November 15, 2021, 2 PM ET	Technical and Price Proposals Due
December 15, 2021	Apparent Best Value DBT announced (Public Opening)
December 29, 2021	Project Award
October 31, 2025	Project Completion

1.2. PROJECT-RELATED INFORMATION

The following information is available for review and use by the Design-Build Team (DBT) in the online archive at the following location:

RFP Documents [LINK]

RFP Reference Information Documents (RIDs) [LINK]

The RIDs may be updated during the procurement period if additional information becomes available. The RIDs are included in the RFP for the purpose of providing information that is in KYTC's possession to proposers. KYTC has not determined whether the RIDs are accurate, complete or pertinent, or of any value to proposers. The DBT may rely on certain signed and sealed RIDs and other RIDs as described listed in Table 1.3 below. Except to the extent expressly set forth in Table 1.3 below, the RIDs will not form a part of the Contract between KYTC and the DBT. KYTC makes no representation, warranty or guarantee as to, and shall not be responsible for, the accuracy, completeness, or pertinence of the RIDs, and, in addition, shall not be responsible for any conclusions drawn from them, except as provided in Table 1.3.

KYTC Standard Specifications Section 104.02.03 includes provisions that define when Differing Site Conditions exist. When a potential Differing Site Condition is discovered, the DBT must clearly establish such condition could not have been reasonably anticipated by a review of all information provided in the RIDs, whether or not included in Table 1.3, or by the DBTs own investigation of the site during the proposal or any other publicly available site information that existed prior to the Setting Date.

TABLE 1.3

REFERENCE INFORMATION DOCUMENTS INCORPORATED IN THE CONTRACT DOCUMENTS FOR PURPOSES OF DBT RELIEF

RFP Section	Documents	DBT Can Rely On
TP 12	ROW Acquisition Schedule for parcel availability (Attachment TP 12.1)	Dates shown in Schedule
TP 12	ROW Plans	Limits of ROW for the Project
TP 13	Traffic Analysis Memorandum: I-69 Ohio River Crossing Section 1, Henderson, KY May 12, 2021	Existing and forecast traffic volumes
TP 17	Structural Design Guidance Manual with markups 10-20-211.pdf	Entire document
TP 17	Advance Situation Folders - Bridges	Type and span configuration for new bridges
TP 18	Boring Logs and Summary Data Reports	Boring Log Data at the location where the boring was drilled.
TP 18	Cone Penetration Test (CPT) Data	CPT data at the location where the CPT test was performed
TP 18	Laboratory Test Data	Results at the location where the test samples where obtained.

2. PRE-PROPOSAL MEETING

KYTC intends to conduct a one-on-one Pre-Proposal Meeting (PPM) with each DBT on the dates set forth in Table 1.2. The meetings will be in person at a location to be determined, and virtual attendance by key DBT staff will be permitted.

The intention of the PPM discussion is to ensure the DBTs are preparing Technical Proposals that will meet the Project requirements and be generally acceptable to KYTC. The PPM discussion is intended to enable the DBT to ask confidential questions concerning the DBT's specific approach to the Project and to allow KYTC to provide feedback on those questions prior to the DBT submitting their Technical Proposal. KYTC's verbal feedback, comments, voiced concerns, and answered questions concerning the DBTs approach to the project shall be non-binding.

The PPM shall be two hours in length, one hour for presentation by the DBTs of their Project approach and one hour for questions and discussions.

The following general agenda provides the minimum elements of each DBT's Project approach that shall be presented and addressed during the PPM presentation and discussions.

- Summary of Design Approach
- Summary of Construction Approach
- Innovations (other than ATCs)
- Design and Construction Schedule
- Project Risks
- DBE Plan
- Changes to any Commitments made in the SOQ

At least five Working Days in advance of scheduled meetings, the DBTs shall provide a detailed agenda to KYTC so that the Cabinet can have the required subject matter experts available for the meeting.

3. ADDENDA PROCESS

Addenda to this solicitation may be necessary prior to the closing date and will be furnished to all prospective DBTs prior to receipt date and to all DBTs determined to be eligible for award if after receipt date.

All questions prior to the award shall be submitted electronically on Form B (see Appendix A) to:

Name: Rachel Mills, PE
Director, Division of Construction Procurement

All DBT submittals shall be electronic and uploaded to KYTC's secure SharePoint submittal site. Each DBT will receive separate instructions for accessing their exclusive SharePoint submittal site. No telephone, oral or email requests will be considered. RFP Comments included on Form B must:

- be listed separately
- must not identify the DBT in the body of the comment
- are sequentially numbered
- specifically reference the relevant RFP section and page number, unless it is a general question
- address a single issue per RFP Comment
- clearly indicate why the RFP Comment has been made
- conspicuously identify whether the DBT views its question or comment as confidential or proprietary in nature by beginning the question with the word "CONFIDENTIAL". The question should explain why the DBT considers the question to be confidential.

KYTC's responses to confidential questions are non-binding. DBT shall submit the question non-confidentially if they want a binding response.

KYTC reserves the right to disagree with the DBT's assessment regarding confidentiality of information in the interest of maintaining a fair process. Under such circumstances, KYTC will inform the DBT and may allow the DBT to withdraw the question or clarification request, rephrase it, or have the question or clarification request answered non-confidentially or, if KYTC determines that it is appropriate to provide a general response, KYTC will modify the question or clarification request to remove information that KYTC determines is confidential.

After uploading Form B to SharePoint, DBT's shall send an email to Rachel Mills, P.E., Director, Division of Construction Procurement, at I69DBSection1@ky.gov, formally transmitting the submittal, with a link to the submitted file. No telephone or oral requests will be considered.

KYTC intends to provide responses to RFP comments that KYTC deems to be general in nature, material or not otherwise adequately addressed in the RFP within a reasonable time following receipt, except that KYTC intends to respond individually to those questions or communications identified by a DBT and deemed by KYTC as containing confidential information. KYTC may rephrase RFP comments as it deems appropriate and may consolidate similar comments. KYTC may issue multiple sets of responses at different times during the procurement process.

Addenda to this solicitation may be necessary prior to the Technical Proposal submittal date and will be furnished by email to all prospective DBTs.

4. DESIGN-BUILD TEAM

4.1. PREQUALIFICATION

As detailed in the Request for Qualifications (RFQ) and the DBT's Statement of Qualifications (SOQ), it is a requirement of the RFP that the Design Build Team (DBT) consist of a KYTC pre-qualified Contractor who has engaged the services of KYTC pre-qualified design consultant(s) to perform all work required in this RFP. If the design consultant(s) submitted does not meet all the required qualifications, KYTC may reject the DBT's proposal. All sub-consultants and subcontractors utilized by the DBT on this project shall be pre-qualified to perform work for KYTC or their services shall not be allowed.

To respond to a project listed in this RFP the project team must be prequalified in the specified areas by the response due date of the advertisement. If there are questions concerning design prequalifications, contact Mr. Eric Pelfrey, PE at (502) 564-4555. See section 4.1.2 for additional information. For questions regarding contractor pre-qualifications, contact Rachel Mills PE at 502-564-3500. See section 4.1.1 for additional information. Responses that do not have all mandatory areas of prequalification fulfilled will be returned.

4.1.1. CONTRACTOR PREQUALIFICATION

Consistent with Section 102.01 of Kentucky's 2019 Standard Specifications for Road and Bridge Construction ("Standard Specifications") all organizations and individuals bidding on Department projects and accepting subcontracts on Department of Highways ("Department") projects shall apply for and receive Department prequalification and possess a Certificate of Eligibility as provided in regulations published by the Department according to KRS 176.140.

As part of the Technical Proposal provided by the DBT, the DBT shall identify the members of the Team that are to perform the following major work items of work:

Major Work Items	Qualifications for Bidder
(1) Grade and Drain	A
(2) Asphalt Pavement	C2
(3) Concrete Pavement	B
(4) Bridges over 100ft Span	E3
(5) Demolition	E4 or I27

In order to be registered as an eligible bidder for the project, all construction team members for the DBT that are to be used for major work items shall be prequalified by KYTC and possess a Certificate of Eligibility prior to submission of the Technical Proposal response to this RFP. Organizations and individuals providing other services shall be prequalified by KYTC and possess a Certificate of Eligibility prior to performing the work.

4.1.2. PROFESSIONAL SERVICES PREQUALIFICATION

The DBT shall provide all necessary services to design and construct all permanent and temporary portions of the project, inclusive of relocating all affected utilities. Work shall conform to current KYTC, federal, and AASHTO standards, practices, policies, guidelines and specifications where applicable. Additional documents identified within the scope of work shall be provided under separate cover as part of the Contract Documents. KYTC standards, practices, policies, guidelines and specifications shall control in case of a conflict. The standard of care for all such services

performed or furnished under this Agreement shall be the care and skill ordinarily used by members of the engineering profession practicing under similar conditions at the same time and locality.

As part of the Technical Proposal provided by the DBT, the DBT shall identify the members of the Team that are to perform the following items of work:

Geotechnical	Engineering Services
Highway Design	Rural Roadway Design
Highway Design	Urban Roadway Design
Highway Design	Surveying
Utility Design	Utility Preconstruction Coordination
Structure Design	Spans Under 500 Ft

The following pre-qualifications are not required with the submittal of a Technical Proposal response to this RFP. Should any of these design services be needed, the awarded DBT shall utilize team members with KYTC pre-qualifications in place prior to performing the work.

Geotechnical	Laboratory Testing Services
Geotechnical	Drilling Services
Utility Design	Communication
Utility Design	Electric Level 2
Utility Design	Gas Level 1
Utility Design	Water and Sewer Level 1
Utility Design	Water and Sewer Level 2
Utility Design	Utility Construction Inspection
Traffic Operations	Traffic Engineering Services
Traffic Operations	Electrical Engineering Traffic Signal Services

The DBT shall be aware that changes to the preliminary design documents may require the DBT to be prequalified in additional areas. Design firms shall be sufficiently staffed and capable of performing the required work on this Contract. These design firms may be subcontractors responsible for the design and engineering of the project.

There may be multiple consultants working for the DBT. However, one consultant shall be designated as the Lead Designer. The DBT shall include qualified engineers and surveyors to be in direct responsible charge of engineering and surveying endeavors and who are professionally registered in the state of Kentucky. Designs prepared for the project shall be signed and stamped by a licensed Kentucky Professional Engineer. To qualify for selection, interested DBTs shall be prequalified through KYTC for the performance of the work. Licensure shall be acquired prior to performing any work when prequalification requires work be performed by a licensed individual. Services requiring prequalification may only be performed by firms prequalified for those services at the time of performance of the services.

5. RESTRICTIONS ON PARTICIPATION IN DESIGN-BUILD CONTRACTS

To facilitate this procurement, various rules have been established and are described in the following paragraphs. Refer to Appendix B – Contract Notes for specific instructions.

5.1. CAMPAIGN FINANCE LAW STATEMENT PURSUANT TO KRS 45A.110 AND KRS 45A.115

Each member of the DBT shall certify through Bid Express that neither he/she nor any member of his/her immediate family having an interest of ten percent (10%) or more in any business entity involved in the performance of this project, has contributed more than the amount specified in KRS 121.056 (2), to the campaign of the gubernatorial candidate elected at the last election preceding the date of this solicitation. Each member of the DBT further swears under the penalty of perjury, as provided by KRS 523.020, that neither he/she nor the company which he/she represents, has knowingly violated any provisions of the campaign finance laws of the Commonwealth, and that the award of a contract to him/her or the company which he/she represents shall not violate any provisions of the campaign finance laws of the Commonwealth.

A Commonwealth of Kentucky sworn statement regarding campaign financing laws shall be completed and signed by an authorized agent of the DBT and submitted with the Price Proposal by November 15, 2021.

5.2. CONFLICT OF INTEREST

The DBTs certify through Bid Express, by the signatures of duly authorized representatives, that they are legally entitled to enter into this solicitation and Contract and that they shall not be violating, either directly or indirectly, any conflict of interest statute under KRS Chapters 45A or 11A or ethical provisions under KRS Chapter 11A. Forms shall be signed and submitted by an authorized agent of the DBT with the Price Proposal on November 15, 2021.

5.3. NO CONTINGENT FEES

No person or selling agency shall be employed or retained or given anything of monetary value to solicit or secure this Contract, excepting bona fide employees of the DBT or bona fide established commercial or selling agencies maintained by the DBT for the purpose of securing business. For breach or violation of this provision, the KYTC shall have the right to reject the proposal, annul the Contract without liability, or, at its discretion, deduct from the Contract price or otherwise recover the full amount of such commission, percentage, brokerage or contingent fee or other benefit.

5.4. RESTRICTIONS ON COMMUNICATION WITH KYTC STAFF

From the date of advertisement of the RFP until a Contract is awarded, Proposers are not allowed to communicate with any KYTC staff concerning this project except:

A. Via written questions to those specified in Section 3.
B. As outlined in the Alternate Technical Concept process in Section 6.1.

For violations of this provision, the KYTC may reject the proposal.

5.5. PROPOSAL PREPARATION

The DBT shall follow any pertinent sections of this RFP, in the preparation of the proposal. Failure to provide any of the data required may result in the proposal being excluded from further evaluation.

5.6. PAYMENT AND CONDITIONS OF STIPEND

Subject to the conditions of the RFP, KYTC will provide a payment of $225,000 to each non-selected, responsive, DBT. The term "payment" as used in this section shall mean $225,000.

By submitting its Technical Proposal for this project, the DBT forms a Contract and agreement with KYTC for its technical proposal, conceptual design, and any approved Alternate Technical Concepts, whether submitted with the technical proposal or not. Furthermore, by submitting its Technical Proposal for this project, the DBT acknowledges that it is eligible for payment if the DBT's proposal is not selected. The payment shall be payable by the KYTC to the DBT after KYTC enters into Contract with the successful DBT, unless payment is waived by the unsuccessful DBT.

The payment shall be due only if the DBT submits a Technical Proposal that is responsive to the RFP as defined herein. The payment shall be full and final consideration for all documents submitted in the Technical Proposal and Approved Technical Concepts. Except for that intellectual property developed apart from or prior to DBT commencing work on the Technical Proposal for this project, KYTC shall retain an undivided joint interest in all rights and intellectual property submitted with the Technical Proposal.

If Technical Proposals have been submitted, but the KYTC does not Award the Contract, all responsive DBTs shall receive a payment, unless payment is waived by the DBT. If the KYTC withdraws the Contract prior to Technical Proposal submission, no payment shall be made.

An unsuccessful DBT, who otherwise qualifies for the payment, may elect to waive the payment within 10 days of the KYTC's Award decision and retain its rights to its Technical Proposal and approved Alternate Technical Concepts. By accepting payment of the Stipend, DBTs agree to waive all claims and causes of action against the KYTC related to the project in any way.

5.7. DISPOSITION OF PROPOSALS

All proposals, approved concepts, and preliminary plans become the property of the Commonwealth of Kentucky unless an unsuccessful DBT waives the Stipend payment to retain its rights to its technical proposal and Alternate Technical Concepts as identified in Section 5.6. The successful proposal shall be incorporated by reference into the resulting Contract.

5.8. BONDING REQUIREMENTS

A 5% bid proposal guaranty per Section 102.09 of the Standard Specifications submitted through Bid Express shall be required to bid this project.

5.9. DBT RESPONSE AND PROPRIETARY INFORMATION

The KYTC shall not disclose any portion of any proposal prior to Contract Award to anyone outside the KYTC, other than representatives of the federal government, if required, and the members of the Awards Committee or their designates. After a contract is awarded in whole or in part, the KYTC shall have the right to duplicate, use, or disclose all proposal data, except proprietary data as described below, submitted by DBTs in response to this solicitation as a matter of public record. Although the KYTC recognizes the DBT's possible interest in preserving selected data which may be part of a proposal, the KYTC shall treat such information as provided by the DBT pursuant to Kentucky's Open Records Act, KRS 61.870 et seq.

Information areas which normally might be considered proprietary shall be limited to individual personnel data, customer references, selected financial data, formulae, and financial audits, which if disclosed would permit an unfair advantage to competitors. If a proposal contains information in these areas that a DBT declares proprietary in nature, each sheet containing such information shall

be clearly designated as proprietary at the top and bottom of the page and shall be submitted under separate cover marked "PROPRIETARY DATA". Proposals containing information declared by a DBT to be proprietary, either in whole or in part, outside the areas listed above, may be deemed unresponsive to the solicitation and may be rejected.

Except as provided in Section 5.6 the KYTC shall have the right to use all ideas, or adaptations of those ideas, contained in any proposal received in response to the solicitation. Selection or rejection of the proposal shall not affect this right.

5.10. PROPOSAL ADDENDA AND RULES FOR WITHDRAWAL

Prior to the date specified for receipt of offers, a submitted proposal may be withdrawn by submitting a written request for its withdrawal to the Director of the Division of Construction Procurement. Withdrawal of the proposal by the DBT shall forfeit any payment of the Stipend that the DBT may have been entitled to receive.

The KYTC shall accept addenda, revisions, or alterations to its proposal from any DBT until close of business (c/o/b) on the due date. The KYTC shall not accept any unsolicited addenda, revisions, or alterations to any proposal after the c/o/b on the due date. If the KYTC issues an addendum to the solicitation after c/o/b on the due date, then any DBT may respond. A DBT's response shall precisely respond to the contents of the Commonwealth's addendum.

The KYTC reserves the right to request clarification or additional information.

5.11. DISADVANTAGED BUSINESS ENTERPRISE (DBE) PROGRAM

It is the policy of the Kentucky Transportation Cabinet ("the Cabinet") that Disadvantaged Business Enterprises ("DBE") shall have the opportunity to participate in the development and performance of highway construction projects financed in whole or in part by Federal Funds in order to create a level playing field for all businesses who wish to contract with the Cabinet. To that end, the Cabinet will comply with the regulations found in 49 CFR Part 26, and the definitions and requirements contained therein shall be adopted as if set out verbatim herein.

The Cabinet, consultants, contractors, subcontractors, and sub-recipients shall not discriminate on the basis of race, color, national origin, or sex in the performance of work performed pursuant to Cabinet contracts. The contractor shall carry out applicable requirements of 49 CFR 26 in the award and administration of federally assisted highway construction projects. The DBT will include this provision in all its subcontracts and supply agreements pertaining to contracts with the Cabinet.

Failure by the DBT to carry out these requirements is a material breach of its Contract with the Cabinet, which may result in the termination of the Contract or such other remedy as the Cabinet deems necessary.

5.11.1. DBE GOAL

The DBE goal established for this Contract is 10% of the total value of the Contract.

The DBT shall exercise all necessary and reasonable steps to ensure that DBEs participate in at least the percent of the Contract as set forth about as goals for this Contract.

5.11.2. OBLIGATION OF THE DBT

Each member of the DBT shall designate and make known to the KYTC a liaison officer who is assigned the responsibility of effectively administering and promoting an active program for utilization of DBEs.

Contractors are encouraged to use the services of banks owned and controlled by minorities and women.

Further conditions for DBE participation are outlined in Appendix C– Federal Notes Design Build Projects.

5.12. PROTESTS

The Secretary of the Kentucky Transportation Cabinet, or his designee, shall have authority to determine and resolve protests and other controversies of actual or prospective DBTs in connection with the solicitations or selection for award of a contract.

Any actual or prospective DBT, who is aggrieved in connection with solicitation or selection for award of a contract, may file a protest with the Secretary of the Transportation Cabinet. A protest or notice of other controversy shall be filed promptly, and in any event within two calendar weeks after such aggrieved person knows or should have known of the facts giving rise thereto. All protests or notices of other controversies shall be in writing to:

Secretary, Transportation Cabinet
c/o State Highway Engineer
200 Mero Street; 6th Floor
Frankfort, KY 40622

The Secretary of the Kentucky Transportation Cabinet shall promptly issue a decision in writing. A copy of that decision shall be mailed or otherwise furnished to the aggrieved party and shall state the reason for the decision. The decision by the Secretary of the Kentucky Transportation Cabinet shall be final.

5.13. EQUAL EMPLOYMENT OPPORTUNITY ACT

The Equal Employment Opportunity Act of 1978 applies to all State government projects with an estimated value exceeding $250,000.

The consultants for the selected DBT must submit the following documents in accordance with the requirements of the RFP—EEO-1: Employer Information Report, Affidavit of Intent to Comply, Employee Data Sheet and Subcontractor Report or a copy of the Kentucky EEO Approval Letter issued by the Finance and Administration Cabinet, Office of EEO and Contract Compliance.

A. The consultants for the selected DBT may obtain copies of the required EEO documents from the Finance and Administration Cabinet's Office of Equal Employment Opportunity Contract Compliance website at the following address: https://finance.ky.gov/offices/Pages/equalOpportunity.aspx
B. The consultants for the selected DBT must advise each subconsultant with a subcontract of more than $500,000 of the subconsultant's obligation to comply with the KY EEO Act. Further, the selected consultant is responsible for compiling EEO documentation from their subconsultants and submitting the documentation to the Finance and Administration Cabinet, Office of EEO and Contract Compliance.
C. Failure to complete, sign and submit all required documents will delay the award/ contract modification process as incomplete submissions will not be processed.
D. Pursuant to KRS 45.610(2), the Finance and Administration Cabinet, Office of EEO and Contract Compliance reserves the right to request additional information and/or documentation and to conduct on-site monitoring reviews of project sites and/ or business facilities at any point for the duration of any contract which exceeds $500,000 to ascertain compliance with the Act and such rules, regulations and orders issued pursuant thereto.

E. All questions regarding EEO forms or contract compliance issues must be directed to the Finance and Administration Cabinet, Office of EEO and Contract Compliance via e-mail: Finance.ContractCompliance@ky.gov or via telephone: (502) 564-2874.

KYTC will notify the Finance and Administration Cabinet, Office of EEO and Contract Compliance about any Change Order that increases the value of a contract above $500,000. At a minimum, this notice shall include the contract number, contract amount and contact information for the selected consultant. The Office of EEO and Contract Compliance will contact the selected consultant for required information.

The Finance and Administration Cabinet will maintain a list of approved vendors. This Web-based list will be available to State agencies and the general public. The Finance and Administration Cabinet will not accept compliance certifications from the federal government or other states. Only forms developed by the Finance and Administration Cabinet, Office of EEO and Contract Compliance will be accepted and processed. The Finance and Administration Cabinet will not pre-approve vendors. Unsolicited submittals will not be processed nor will unsolicited submittals be returned to the vendor. The Finance and Administration Cabinet, Office of General Counsel will contact KYTC General Counsel about any selected consultant that fails to comply with the Act. Finance and KYTC will determine the appropriate course of action for noncompliant selected consultants.

The requirements of 41 CFR Part 60 shall apply to this Contract and the DBT shall submit EEO Certification with its Proposal. In addition, within 30 days of Award of Contract, the DBT shall file Standard Form 100 (EEO-1) with KYTC's Division of Construction Procurement, unless the DBT has submitted the form within 12 months preceding the date of the Award.

Further conditions are outlined in Appendix D.1 – Non-Discrimination and Appendix D.2 – Affirmative Action.

5.14. PREVAILING WAGES

See Appendix E – Prevailing Wages for applicable requirements. It is understood and agreed to by the DBT that the Prevailing Wage Schedule for compensation to employees for the work categories and occupations for the county for which this project is located shall be strictly adhered to.

5.15. VIOLATION OF TAX AND EMPLOYMENT LAWS

KRS 45A.485 requires the DBT to reveal to the KYTC, prior to the award of a contract, any final determination of a violation by the DBT within the previous five (5) year period of the provisions of KRS Chapters 136, 139, 141, 337, 338, 341, and 342. These statutes relate to the state sales and use tax, corporate and utility tax, income tax, wages and hours laws, occupational safety and health laws, unemployment insurance laws, and workers compensation insurance laws, respectively.

To comply with the provisions of KRS 45A.485, the DBT shall report any such final determination(s) of violation(s) to the KYTC by providing the following information regarding the final determination(s): the KRS violated, the date of the final determination, and the state agency which issued the final determination.

KRS 45A.485 also provides that, for the duration of any contract, the contractor shall be in continuous compliance with the provisions of those statutes which apply to the contractor's operations, and that the contractor's failure to reveal a final determination as described above or failure to comply with the above statutes for the duration of the contract, shall be grounds for the KYTC's cancellation of the contract and disqualification of the contractor from eligibility for future state contracts for two years. (For purposes of this RFP, the term "contractor" in this document and any referenced document shall mean the DBT.)

DBT shall identify one of the following in its Price Proposal submitted on November 15, 2021.

A. The DBT has not violated any of the provisions of the above statutes within the previous five (5) year period.
B. The DBT has violated the provisions of one or more of the above statutes within the previous five (5) year period and has revealed such final determination(s) of violation(s). A list of such determination(s) is attached.

5.16. FHWA 1273

This Highway Improvement Project shall be under the laws and regulations of the Commonwealth. This is a Federal-aid highway Contract and all federal laws and regulations, including FHWA-1273 and Civil Rights must be complied with by the DBT.

The DBT shall outline, undertake and complete the work as described in the Contract Documents in a manner consistent with Appendix F - FHWA Form 1273 and all applicable State and Federal laws and regulations.

5.17. ACCESS TO RECORDS

The contractor, as defined in KRS 45A.030 (9) agrees that the contracting agency, the Finance and Administration Cabinet, the Auditor of Public accounts, and the Legislative Research Commission, or their duly authorized representatives, shall have access to any books, documents, papers, records, or other evidence, which are directly pertinent to this contract for the purpose of financial audit or program review. Records and other prequalification information confidentially disclosed as part of the bid process shall not be deemed as directly pertinent to the Contract and shall be exempt from disclosure as provided in KRS 61.878(1)(c). The contractor also recognizes that any books, documents, papers, records, or other evidence, received during a financial audit or program review shall be subject to the Kentucky Open Records Act, KRS 61.870 to 61.884. In the event of a dispute between the contractor and the contracting agency, Attorney General, or the Auditor of Public Accounts over documents that are eligible for production and review, the Finance and Administration Cabinet shall review the dispute and issue a determination, in accordance with Secretary's Order 11-004.

5.18. NOT USED

5.19. REGISTRATION WITH THE SECRETARY OF STATE BY A FOREIGN ENTITY

Pursuant to KRS 45A.480(1)(b), an agency, department, office, or political subdivision of the Commonwealth of Kentucky shall not award a state contract to a person that is a foreign entity required by KRS 14A.9-00 to obtain a certificate of authority to transact business in the Commonwealth (“certificate”) from the Secretary of State under KRS 14A.9-030 unless the person produces the certificate within fourteen (14) days of the bid or proposal opening. Therefore, foreign entities shall submit a copy of their certificate with their solicitation response. If the foreign entity is not required to obtain a certificate as provided in KRS 14A.9-010, the foreign entity shall identify the applicable exception in its solicitation response. Foreign entity is defined within KRS 14A.1-070.For all foreign entities required to obtain a certificate of authority to transact business in the Commonwealth, if a copy of the certificate is not received by the contracting agency within the time frame identified above, the foreign entity’s solicitation response shall be deemed non-responsive or the awarded contract shall be cancelled.

Businesses can visit https://www.sos.ky.gov/Pages/default.aspx to register with the Secretary of State.

5.20. EXECUTIVE BRANCH CODE OF ETHICS

See Appendix G – Executive Branch Code of Ethics for restrictions relating to former KYTC employees.

5.21. CERTIFICATION REGARDING RESPONSIBILITY MATTERS

If Federal Funds are used, in accordance with Federal Acquisition Regulation 52.209-5, the Vendor shall certify with bid response, that to the best of its knowledge and belief, the Vendor and/or its Principals is (are) not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any State or Federal agency. "Principals", for the purposes of this certification, means officers, directors, owners, partners, and persons having primary management or supervisory responsibilities within a business entity (e.g., general manager, plant manager, head of subsidiary, division, or business segment, and similar positions).

5.22. REQUIRED AFFIDAVIT FOR BIDDERS OR PROPOSERS

In accordance with KRS 45A.110 and KRS 45A.115, neither the bidder or Proposer as defined in KRS 45A.070(6), nor the entity which he/she represents, has knowingly violated any provisions of the campaign finance laws of the Commonwealth of Kentucky, and the award of a contract to the bidder or Proposer or the entity which he/she represents will not violate any provisions of the campaign finance laws of the Commonwealth. The Proposer must adhere to the following:

A. The bidder or Proposer swears and affirms under penalty of perjury that, to the extent required by Kentucky law, the entity bidding, and all subcontractors therein, are aware of the requirements and penalties outlined in KRS 45A.485; is properly authorized under the laws of the Commonwealth of Kentucky to conduct business in this state; is duly registered with the Kentucky Secretary of State to the extent required by Kentucky law; and will remain in good standing to do business in the Commonwealth of Kentucky for the duration of any contract awarded.
B. The bidder or Proposer swears and affirms under penalty of perjury that, to the extent required by Kentucky law, the entity bidding, and its affiliates, are duly registered with the Kentucky Department of Revenue to collect and remit the sales and use tax imposed by KRS Chapter 139, and will remain registered for the duration of any contract awarded.
C. The bidder or Proposer swears and affirms under penalty of perjury that the entity bidding is not delinquent on any state taxes or fees owed to the Commonwealth of Kentucky and will remain in good standing for the duration of any contract awarded.
D. The bidder or Proposer swears and affirms under penalty of perjury that the entity bidding, is not currently engaged in, and will not for the duration of the contract engage in, the boycott of a person or an entity based in or doing business with a jurisdiction with which Kentucky can enjoy open trade, as defined in Executive Order No. 2018- 905.
E. The bidder or Proposer swears and affirms that the entity bidding, and all subcontractors therein, have not violated any of the prohibitions set forth in KRS 11A.236 during the previous ten (10) years, and further pledge to abide by the restrictions set forth in such statute for the duration of the contract awarded.

6. PROJECT DESCRIPTION, MANDATORY REQUIREMENTS, AND ALTERNATIVE TECHNICAL CONCEPTS

This project is part of a larger program to provide cross-river system linkage and connectivity between I-69 in Indiana and I-69 in Kentucky that is compatible with the National I-69 corridor. The purpose of this project is to complete the Section 1 of the I-69 Ohio River Crossing project in Henderson, County. Section 1 includes:

- Upgrades to a 2.4-mile portion of the existing US 41 from KY 425 to the US 41 bridge over CSX railroad bridge north of KY 351, which will be redesignated as I-69, including reconstruction of the KY 351 interchange, removal of the KY 2084 interchange and ramp improvements at the Audubon Parkway, and
- Construction of a 2.9-mile new alignment section of I-69 from the CSX railroad bridge north of KY 351, running north and east to the intersection with US 60 near Tillman-Bethel Road and the US 60 bridge over CSX, including construction of new interchanges at US 41 and US 60. KYTC will allow alternative pavement designs for new or reconstructed pavements.

Basic Project Configuration—the most important characteristics of the Project as defined and/or illustrated in the RFP, including any permitted deviations thereto contained in the Design-Builder's Proposal. Basic Configuration elements include the following:

- Number of intersections/overpasses/underpasses;
- Number of highway lanes;
- Minimum vertical clearances;
- Number, location, and types of interchanges;
- Number and type of signalized intersections; and
- Right-of-Way limits

Any material change from the Basic Configuration must be approved by KYTC.

The mandatory requirements for the project are as follows:

A. Upgrades to an existing 2.4-mile segment of US 41 as required to convert it to I-69, from KY 425 to the existing US 41/CSX railroad underpass.
B. Removal of the partial KY 2084 interchange
C. Reconstruction of the existing KY 351 interchange.
D. Full construction of a new 2.9-mile segment of I-69 from the existing US 41/CSX railroad underpass to US 60.
E. Construction of a graded segment of future I-69 from US 60 to a point approximately 1.4 miles to the north.
F. Construction of a new I-69/US 41 Interchange, providing for continuous movements for I-69 to US 41 NB, US 41 to I-69 SB and US 41 to I-69 NB.
G. Construction of a new I-69/US 60 Interchange.
H. Realignment of existing US 60 from Wathen Lane to Morris Drive.

KYTC's Project goals are:

- Deliver the Project with zero lost-time incidents
- Deliver the Project at or below budget.
- Provide high quality design and construction
- Minimize impacts to local businesses, property owners, utilities and railroads

KYTC has determined the last acceptable Completion Date for the project shall be October 31, 2025. If the project is not completed by the Completion Date identified in the DBT's proposal, per Section

108.09 of the Standard Specifications, liquidated damages shall be applied for each calendar day including weekends and holidays. Contrary to current specifications, liquidated damages will be assessed even when seasonal or temperature limitations prohibit the DBT from working on the controlling item.

6.1. MANDATORY STANDARDS

It is the responsibility of the DBT to acquire and utilize the necessary manuals that apply to the design and construction work required to complete this Project. Unless specified otherwise, all Mandatory Standards listed or referenced within the RFP shall be interpreted as the current edition adopted by KYTC on or before the Setting Date. The KYTC standards and design manuals take precedence over others listed unless noted otherwise in the Contract Documents.

6.2. ALTERNATIVE TECHNICAL CONCEPT (ATC)

6.2.1. DEFINITION

An Alternative Technical Concept (ATC) is a change to the Project Scope that provides a solution that is equal to or better than the required scope as determined by KYTC. The ATC process allows for innovation, increased flexibility, time reductions, and cost savings to deliver the best value for the public. Where the Contract Documents reference specific patented, proprietary material; or semi-finished or finished article, product, or item for incorporation into the work, the DBT may submit an ATC for approval of an alternative material, article, product, or item that meets or exceeds the requirements and intent of the Contract work, provided that the material, article, product, or item is equal or better in quality, performance, life cycle, and function, based upon documented engineering analysis. ATCs are not intended to replace pre-bid questions.

KYTC will not consider any proposed ATCs that will:

- change the type of interchange at KY 351 which provides roundabouts at the junctions with KY 2084, the I-69 southbound ramp terminals and the I-69 northbound ramp terminals,
- change the type of interchange at relocated US 60, which provides roundabouts at the junctions with the I-69 southbound ramp terminals and the I-69 northbound ramp terminals,
- use precast culverts in areas where culvert installation will not impact traffic.
- preclude the complete removal of the existing KY 2084 interchange,
- require a reduction in pavement design life,
- require a reduction in design speed,
- require a reduction in number of lanes, lane widths or shoulder widths,
- increase the amount of time for Substantial Completion.

ATCs that, if implemented, would require further environmental evaluation or reevaluation of the Project, may be allowed, provided that the DBT bears the schedule and cost risk associated with such additional environmental evaluation. If the DBT is not able to obtain all approvals necessary to implement the ATC, the DBT will be obligated to design and construct the Project in accordance with existing approvals without additional cost or extension of time.

6.2.2. SUBMISSION REQUIREMENTS

DBTs may submit ATC documents for consideration by the KYTC beginning June 16, 2021. KYTC will review all ATCs submitted by the Deadline for ATC Submittals. Each ATC may include multiple issues

to be considered by KYTC. The DBTs shall clearly identify each individual portion of the ATC proposal that is a proposed change to the Project Scope.

A DBT shall submit electronic files of the ATC as follows:

A. One (1) electronic searchable singe file PDF which does not restrict printing or copying text, images, and other content.
B. One (1) electronic password protected single file PDF which restricts copying of text, images, and other content.

All DBT submittals shall be electronic and uploaded to KYTC's secure SharePoint submittal site. Each DBT will receive separate instructions for accessing their exclusive SharePoint submittal site. After uploading submittals to SharePoint, DBT's shall send an email to Rachel Mills, P.E., Director, Division of Construction Procurement, at I69DBSection1@ky.gov, formally transmitting the ATC, with a link to the uploaded file. No telephone or oral requests will be considered.

Alternative Technical Concepts shall be received no later than 4:00 p.m., Eastern Time, on the Deadline for ATC Submittals. The KYTC shall reject any ATC received after aforementioned date and time. In order to be considered, the ATC PDF file shall be electronically signed with date stamp by an authorized representative of the DBT.

The electronic submittal shall be addressed to:

Rachel Mills, PE, Director
Division of Construction Procurement
200 Mero Street
Frankfort, KY 40622r

The cover of the document shall be marked:

Alternate Technical Concept for
Henderson County I-69
Item No. 2-1088.2
CID No. 21-9001
Design-Build: FY 2021 Design-Build #1

6.2.3. EVALUATION OF ATCs

ATCs are approved by KYTC at its discretion and the KYTC reserves the right to reject any ATC submitted. KYTC shall attempt to evaluate all ATCs and ATC reconsiderations within 10 Working Days of receipt. However, this timeframe cannot be guaranteed, particularly for complex or unusual concepts. KYTC shall not consider any change that would require excessive time or cost for review, evaluation, or investigation.

6.2.4. CONTENTS

ATCs shall contain the following information detailed below. Incomplete ATC submittal packages shall be returned by KYTC without review or comment. They may be resubmitted before the deadline for ATC submittals.

Description

A detailed description of the ATC including specifications and conceptual drawings.

Usage

A description of where and how the ATC would be used on the project.

Deviations

References to all requirements in the Project Scope that are inconsistent with the proposed ATC, an explanation of the nature of these deviations, and a request for approval of such deviations.

Analysis

An analysis justifying the ATC and clearly demonstrating why modifications or revisions to requirements of the Project Scope are equal or better and should be allowed. Include information on how the ATC meets or exceeds the project goals.

Traffic and Safety Impacts

A discussion of the impacts the ATC will have on vehicular traffic and safety, including an operational analysis, if relevant.

Maintenance of Traffic Impacts

A discussion of the impacts the ATC will have on maintenance of traffic during construction including any impacts on other roadways due to diversion of traffic on proposed or potential detour.

Environmental Impacts

A discussion of how the ATC is in accordance with the approved Environmental Documents and permits.

Right-of-Way

A discussion of decreased or additional Right-of-Way acquisition needed to implement the proposed ATC.

Utilities

A discussion of decreased or additional utility (public and private) impacts as a result of ATC implementation.

Maintenance

A discussion of the long-term maintenance of the proposed ATC.

History

When applicable, a detailed description of other projects on which the proposed ATC has been used, including contact information (name, title, phone number, address, and email) for project owners that can confirm ATC implementation.

Inspection

Any additional testing and inspection requirements.

Schedule

A discussion of project schedule impacts, including design, construction, Right-of-Way acquisition, utility relocation, and permitting issues.

6.2.5. ONE-ON-ONE MEETINGS

Each short-listed DBT shall be permitted to request one-on-one pre-ATC meetings with KYTC to discuss potential ATCs. Meetings will last no more than two hours. The location of the meetings will be determined by the nature of the ATC. The meetings will be held once every four weeks on Wednesdays and Thursdays beginning July 7/8, 2021 through September 1/2, 2021. Short-listed DBTs shall submit a request for a meeting by the Friday in advance of the proposed meeting date. The request must include the issues that the DBT wishes to discuss and/or a general description of the involved ATC concepts in enough detail for the KYTC to select appropriate individuals to attend the meeting. KYTC attendees may participate by teleconference or videoconference. One purpose of one-on-one meetings is to provide DBTs with a general overview of the KYTC's assessment of a proposed ATC's viability. No final decisions will be made. Verbal communications, including one-on-one meetings, will be considered non-binding. Discussions during one-on-one meetings shall be confidential.

6.2.6. KYTC RESPONSE

KYTC shall review all ATCs and respond with one of the following determinations:

A. The ATC is approved and may be included in the DBT's Technical Proposal.
B. The ATC is approved subject to conditions. The ATC may be included in the DBT's Technical Proposal provided that all approval conditions have been met. Failure to clearly demonstrate that all conditions have been met may render the DBT's Technical Proposal non-responsive.
C. The ATC is not approved in its present form, but may be resubmitted for reconsideration. The reconsideration request must address all KYTC comments, questions, and concerns. Reconsideration requests must meet all ATC submission and content requirements.
D. The ATC is not approved. Inclusion of the ATC in the Technical Proposal will render the Technical Proposal non-responsive.
E. The proposal is not an ATC.

The KYTC may, at its discretion, request additional information or clarification regarding a proposed ATC and/or conduct one-on-one meetings with DBTs to discuss their ATC. Verbal communications regarding ATC proposals shall be considered non-binding.

6.2.7. INCORPORATION INTO TECHNICAL PROPOSAL

The DBT may incorporate zero, one, or more approved ATCs (or conditionally approved ATCs, if all conditions are met) into their Technical Proposal. The Technical Proposal must clearly state which ATCs have been incorporated and indicate what, if any, conditions are met. Approved ATCs shall be clearly shown on the Technical Proposal plans. The Price Proposal shall reflect all incorporated ATCs.

6.2.8. DISCLOSURE

If, during evaluation of an ATC proposal, the KYTC becomes aware of a deficiency in the Project Scope that would have an impact on the ability of DBTs to make a best value offer, KYTC may, at its discretion, issue an addenda to correct this deficiency.

Other than as listed in the above paragraph, all conversations related to ATC proposals between the KYTC and DBTs shall be kept confidential during the bidding process. ATC proposals may be made public after the payment of the Stipend has been tendered and/or upon Contract execution or as

required by Kentucky's Open Records Act. All documents received by the KYTC are subject to KRS 61.870 to 61.884, also known as the Open Records Act, and are subject to release unless a statutory exception exists that exempts the documents from public release. If any information in an ATC or Technical Proposal is to be treated as "confidential or proprietary," the DBT must identify each and every occurrence of the information within the Proposal by:

A. Listing the page numbers of every occurrence of the "confidential or proprietary" information on the cover sheet submitted with the ATC or Technical Proposal; and
B. Placing an asterisk before and after each line of the ATC or Technical Proposal that contains "confidential or proprietary" information. "Confidential or proprietary" may include trade secrets.

Prior to Award, KYTC shall not share with, or convey to, any person the information provided by the DBT, unless disclosure is required by law or the DBT gives prior written approval for such disclosure. In the event the KYTC is required to disclose any information the DBT considers confidential or proprietary, pursuant to applicable law, KYTC shall notify the DBT in writing prior to disclosing such information. KYTC shall use reasonable efforts to give notice of disclosure at least three days in advance of release. However, upon Award, all information provided to KYTC that was used in the evaluation of the Bids will be considered a public record unless the DBT refuses to accept a Stipend (non-selected DBTs) or Contract Award (selected DBT). KYTC shall not be obligated to maintain in confidence any information that is not confidential or proprietary including information that: (1) is already known by the state, (2) is or comes into the public domain through no fault of the state, (3) is independently developed by the state, or (4) comes to the state from a third party in a manner not in violation of any obligation of confidentiality by such third party to the DBT. Kentucky law generally requires that documents that contain both confidential and non-confidential information be disclosed with confidential information redacted.

7. PROPOSAL SUBMISSION AND SELECTION CRITERIA

For determination of the successful bidder, the DBT shall be required to submit KYTC two separate bidding packages for the project at the same time. The first package shall be a Technical Proposal and the second package shall be a Price Proposal. The Scoring Committee will evaluate the Technical Proposal and provide a Technical Proposal score to the Awards Committee. The KYTC's Project Awards Committee will open the Price Proposals, establish an overall proposal score and select the winning Design Build Team for this project and the award will be made accordingly. The Price Proposals will be opened on December 15, 2021. The intent is to award the project by the end of the calendar year however KYTC reserves the right to hold the price until April 1, 2022.

All properly submitted proposals from proposers allowed to submit a proposal shall be accepted by the KYTC. However, the KYTC reserves the right to request necessary amendments which may become part of the DBT's proposal; reject all proposals; reject any proposal that does not meet mandatory requirements; or cancel this solicitation, in the best interest of the KYTC. For comparison purposes, the Awards Committee shall prepare a cost estimate based upon information provided by the DBT in the proposal submittal. For acceptance purposes, the KYTC may use this estimate to accept or reject any or all proposals.

The KYTC also reserves the right to waive minor irregularities in proposals providing such action is in the best interest of the KYTC. If the KYTC waives minor irregularities, such waiver shall in no way modify the solicitation requirements or excuse the DBT from full compliance with the specifications and other contract requirements if the DBT is awarded the contract.

The Scoring Committee members shall evaluate and score the Technical Proposal. This evaluation shall be based on the information contained in the DBT's Technical Proposal concerning the information outlined below.

7.1. TECHNICAL PROPOSAL

A DBT shall electronically submit the Technical Proposal as follows:

A. One electronic searchable single file PDF which does not restrict printing or copying text, images and other content.
B. One electronic password protected single file PDF which restricts copying of text, images and other content.

The Technical Proposal shall be received no later than 2:00 p.m., Eastern Time, on November 15, 2021. The KYTC shall reject any proposal received after aforementioned time and date and return it unopened to the DBT. In order to be considered, the Proposal shall be signed by an authorized representative of the DBT.

All DBT submittals shall be electronic and uploaded to KYTC's secure SharePoint submittal site. Each DBT will receive separate instructions for accessing their exclusive SharePoint submittal site. After uploading submittals to SharePoint, DBT's shall send an email to Rachel Mills, P.E., Director, Division of Construction Procurement, at I69DBSection1@ky.gov, formally transmitting the submittal, with a link to the uploaded file.

The submittal shall be addressed to:

Rachel Mills, P.E.,
Director, Division of Construction Procurement
200 Mero Street, 3rd Floor
Frankfort, KY 40622

The outside cover of the document shall be marked:

Technical Proposal for
Henderson County I-69
Item No. 2-1088.20
CID No. 21-9001
Design-Build: FY 2021 Design Build #1

7.1.1. INCORPORATION OF TECHNICAL PROPOSAL

All Technical Proposal elements that exceed the requirements of the Bid Documents (i.e., can reasonably be interpreted as offers to provide higher quality items or additional services) shall be incorporated by reference into the awarded DBT's Contract requirements.

7.1.2. TECHNICAL PROPOSAL EVALUATION

The Technical Proposal Score will represent 30 percent of the total score and will be determined based on the evaluation criteria listed below. The Technical Proposal shall be developed using narratives, tables, charts, plots, drawings, and sketches as appropriate. The purpose of the Technical Proposal is to document the proposed DBT's understanding of the Project; its selection of appropriate design criteria; and its approach for completing all design, Right-of-Way acquisition, utility relocation, quality management, and construction activities.

A DBT may submit only one proposal. The format and content are as specified. Alternate proposals shall not be allowed. Each proposal shall be prepared simply and economically, providing a straightforward, concise description of the DBT's ability to meet the requirements of this solicitation. Colored displays or promotional materials shall receive no evaluation credit. Emphasis shall be on completeness and clarity of content. The KYTC retains the right to request, receive and consider additional information and clarifications throughout the evaluation process.

The Technical Proposal shall be evaluated on how well each of the following items in Table 7.1 is addressed:

Table 7.1 – TECHNICAL PROPOSAL EVALUATION CRITERIA

Part	Evaluation Criteria	Maximum Points
A	Project Schedule, Organization and Management	20
B	Roadway Design Concepts	20
C	Bridges, Structures, and Geotechnical Concepts	15
D	Construction (includes Construction Management Plan, Quality Plan, and Safety Plan)	20
E	Utility Coordination and Relocation Plan	15
F	DBE Plan	10
	TOTAL	100

The Technical Proposal shall be organized in parts as indicated.

Technical Proposal content requirements are found in the following sections as well as within the Project Scope.

Part A – Project Schedule and Management Plan

Project Schedule

Include a detailed general schedule to clearly demonstrate the DBT approach for completing the project by October 31, 2025:

A. Begin Utility Relocation Dates (include all overhead and underground, including dates for critical shutdowns or "switchovers")
B. Proposed Buildable Units for the project
C. Final Plans-in-Hand and Drainage Inspection Date(s) (by Buildable Unit)
D. Maintenance of Traffic Plan Submittal Date
E. Submittal of Review Plans Date
F. Final Plan Submittal Date (see also "Buildable Units" Section 15)
G. KYTC Submittal Review Periods
H. Construction Start Date(s)
I. Date of Completed Utility Relocation

The proposed schedule shall carry forward and be integrated to each section of the Technical Proposal.

Project Management Plan

Demonstrate an integrated team approach between the team members including the contractors, designers, subcontractors, DBE firms, and KYTC. Describe how the DBT will conform to Paragraph 2 of section 108.01 of the Standard Specifications.

Provide a project organization chart for the Project, showing the relationships between DBT Management and Key Personnel shown on the chart and the functional relationships with other critical participants on the DBT. The chart shall also indicate how the DBT intends to divide the Project into work segments to enable optimum construction performance.

Demonstrate that the DBT has the capability to effectively communicate and coordinate with the KYTC public information team.

Describe the DBT's concept of design management, utility relocation and construction management and how they interrelate with the other elements of the DBT's organization for the Project. Identify a staffing plan including specific responsible personnel and organizational units. Describe how the DBT will perform design checking and deliver quality plans.

At a minimum, the Technical Proposal shall address personnel assigned to manage project design and construction development in the following areas:

A. DBT Project Manager*
B. DBT Design Project Manager*
C. DBT Construction Manager*
D. DBT Roadway Lead (Design)*
E. DBT Structural Lead (Design) *
F. Design Quality Manager
G. MOT Lead (Design)
H. Utility Manager
I. Geotechnical Lead (Design)

J. Drainage Lead (Design)
K. Traffic Lead (Design)
L. Quality Control Manager for Construction Materials
M. Roadway Construction
N. Bridge Construction
O. Drainage and Environmental Construction
P. Maintenance of Traffic
Q. Public and Project Safety
R. Utility Adjustment Manager
S. Utility Construction Inspector
T. Environmental Compliance Manager
U. Environmental/Permits/Erosion Control**
V. Schedule Representative (Project Development and Construction)
W. DBE/EEO Coordinator

* Must be the same as those previously submitted with the Statement of Qualifications. Key Personnel may not at any time be removed, replaced, or added without written approval of KYTC. Requests for removal, replacements, and additions shall be submitted in writing. To qualify for approval, the written request shall document that the qualifications of the proposed replacement or addition will be equal to or better than those of the Key Personnel submitted in the SOQ.

**Can be the same as the Environmental Compliance Manager assigned to manage design development.

DBT Experience on Projects of Similar Scope

Describe the qualifications and experience of the individuals assigned to these tasks, specifically how they have performed these tasks on previous projects and how they will collaborate for the I-69 ORX Section 1. Qualifications and experience information is not required for key staff whose information was included in the Statement of Qualifications. Include information relative to each individual's familiarity with the proposed project and similar projects.

Provide a detailed report of all current projects being worked on by the above listed DBT staff and identify all areas where individuals will have significant responsibilities outside of the I-69 ORX Section 1 project.

Individuals must be currently employed by a member of the DBT.

KYTC shall use the following criteria in Table 7.2 to distribute Project Schedule and Management Plan points.

TABLE 7.2 DISTRIBUTION OF POINTS – PROJECT SCHEDULE AND MANAGEMENT PLAN		
Part	Component of Project Schedule and Management Plan	Percentage of Proposed Points
A.1	Project Schedule	40
A.2	Project Management Plan	40
A.3	DBT Experience on Projects of Similar Scope	20
	TOTAL	100

Part B – Roadway Design Concepts

The design approach indicated in the Technical Proposal shall reflect a single unified design concept for the Project and shall demonstrate:

A. An understanding of the Project criteria, scope, and mandatory elements for the project;
B. That the proposed design meets KYTC's general and project specific criteria, including ROW concepts;
C. That the proposed design meets project goals

KYTC will use the following criteria in Table 7.3 to distribute Roadway Design Concepts points.

TABLE 7.3 DISTRIBUTION OF POINTS – ROADWAY DESIGN CONCEPTS		
Part	Component of Roadway Design Concepts	Percentage of Proposed Roadway Design Concepts Points
B.1	US41/Pennyrile Conversion Segment	5
B.2	KY 351 Interchange, including Streetscape Design	25
B.3	US 41 Interchange, including Kimsey Lane	25
B.4	KY 3690 (Future I-69) Segment, including Detention Basins and North End Grading	20
B.5	US 60 Interchange, including Relocated US 60 and Tillman-Bethel Road	25
	TOTAL	**100**

Part C – Bridges, Structures and Geotechnical Concepts

Structures, and geotechnical concepts are critical components of the I-69 ORX Section 1 project. The Project includes multiple bridge structures and the potential for various retaining wall structures. At a minimum, the Technical Proposal shall address the following issues:

New Bridge Construction

A. An understanding of the Project criteria, scope, and mandatory elements for the project;
B. That the proposed design meets KYTC's general and project specific criteria,
C. That the proposed design meets project goals.
D. Describe any specific design features that would reduce the need for maintenance or would make inspection/maintenance procedures more efficient, safer, and/or less costly.
E. Discuss solutions to manage the risks associated with proposals based on limited design information.

Miscellaneous Structures, Rehab and Retaining Walls

A. An understanding of the Project criteria, scope, and mandatory elements for the project;
B. That the proposed design meets KYTC's general and project specific criteria;
C. That the proposed design meets project goals;

Geotechnical Challenges

A. Describe how the DBT will perform and manage the geotechnical challenges associated with the project
B. Discuss settlement of embankments and ways the DBT intends to address.
C. List expected geotechnical issues anticipated and the anticipated approach that will be used to resolve those issues. Indicate if any of the proposed solutions will require additional maintenance or monitoring during the life of the facility. Indicate if the proposed solution(s) will restrict future construction adjacent to the structures, including installation and repair of utilities.
D. Indicate the experience of the geotechnical engineer and the contractor in designing and installing the proposed geotechnical solutions and foundation systems identified above. State if geotechnical specialty subcontractors are proposed for design and/or installation of the geotechnical solutions or foundation systems.

Bridge Removals

A. Describe how bridge removals will be phased with roadway and bridge construction. Describe maintenance of traffic and pedestrian access considerations, any work over traffic, stream protections, and potential utility impacts.

KYTC will use the following criteria in Table 7.4 to distribute Bridges, Structures, and Geotechnical Concepts points.

TABLE 7.4 – DISTRIBUTION OF POINTS FOR BRIDGES, STRUCTURES AND GEOTECHNICAL CONCEPTS

	Component of Bridges, Structures, and Geotechnical Concepts	Percentage of Proposed Points
C.1	New bridge construction	50
C.2	Miscellaneous Structures, Rehab and Retaining Walls	20
C.3	Geotechnical Challenges	20
C.4	Bridge removals	10
	TOTAL	100

Part D – Construction

The Technical Proposal shall address the following construction issues:

Construction Sequencing and Logistics

A. Provide a brief narrative description of the DBT's overall plan for constructing the Project. Describe the construction concept that will be used for each construction phase. Specifically describe how traffic will be maintained. Describe in general the anticipated construction work for each phase.
B. Provide a narrative description of the DBT's proposed major Buildable Units (Section 9) and how these will be constructed in the phasing described above.

C. Provide a schedule showing when the major Buildable Units will be constructed. Discuss project risks and approach to address risks.
D. Describe the DBT's plans and procedures to ensure timely deliveries of materials to achieve the project schedule. Include information with respect to anticipated fabrication times. Also describe anticipated staging areas needed.

Construction Quality Control

A. Describe the DBT's approach to construction quality control. Describe the relationship between the construction, inspection, materials sampling testing, and acceptance functions.
B. Describe plan for relaying material certifications and documentation to KYTC as materials are delivered to project, e.g., when a delivery contains materials for more than one structure.

Coordination with Utilities, Permitting, and MOT

A. Demonstrate that the DBT has considered Right-of-Way acquisitions, utility coordination, permitting, constructability, and maintenance of traffic activities in determining the proposed construction schedule.

Safety

A. Describe the safety considerations specific to this Project. Discuss the firm's overall approach to safety.

KYTC shall use the following criteria in Table 7.5 to distribute construction points:

TABLE 7.5 - DISTRIBUTION OF POINTS FOR CONSTRUCTION

Part	Component of Construction	Percentage of Construction Points
D.1	Construction Sequencing and Logistics	40
D.2	Construction Quality Control	20
D.3	Coordination with Utilities, Permitting, and Maintenance of Traffic	20
D.4	Safety	20
	TOTAL	100

Part E – Utility Coordination and Relocation Plan

Both public and private utilities are present throughout the footprint of the I-69 ORX Section 1 project. The DBT shall be required to coordinate with the utility companies, minimize conflicts with existing utilities when beneficial to the project, and arrange for any utility relocations determined necessary.

The Technical Proposal shall address the following utility issues:

A. Describe the proposed coordination with utility owners.
    a. Big Rivers Transmission Line
    b. Henderson Municipal Gas (HMG)

c. Henderson Municipal Power and Light (HMPL)
d. Other Utilities – AT&T, Kentucky Wired, KYNERGY, HWU, etc.

B. Describe any critical utility relocations impacts and the DBT's plans for mitigating potential delays.
C. Describe the DBT's plan for identifying, locating and mitigating the potential impacts of discovering unidentified utilities.

KYTC shall use the following criteria in Table 7.6 to distribute Utilities points.

Table 7.6 – DISTRIBUTION OF POINTS FOR UTILITIES		
Part	Component of Utility Coordination and Relocation Concepts	Percentage of Proposed Utilities Points
E.1	Utility Coordination/Relocation Plan	100

Part F – Disadvantaged Business Enterprise (DBE) Plan

Contractors shall include the following certification in the Technical Proposal. PROPOSALS SUBMITTED WHICH DO NOT INCLUDE CERTIFICATION OF DBE PARTICIPATION WILL NOT BE ACCEPTED. These bids will not be considered for award by the Cabinet and they will be returned to the bidder.

> "The Proposer certifies that it will secure participation by Disadvantaged Business Enterprises ("DBE") in the amount of 10% percent of the total value of this Contract and that the DBE participation will consist of both a project development component and a construction component and that the DBE participation will be in compliance with the requirements of 49 CFR."

The Technical Proposal shall include a preliminary DBE Utilization Plan that meets the requirements of ITP Appendix C – DBE Utilization Plan and describes the DBT's approach to achieving the project's goal of 10% DBE participation in the overall value of design and construction work. The intent is to ensure all participation counted toward fulfillment of the DBE goals is: (i) real and substantial; (ii) actually performed by viable, independent, DBE-owned firms; and (iii) in accordance with the spirit of the applicable laws and regulations. DBE payments and commitments shall be separate and distinct and cannot be transferred or combined in any matter.

A. The Preliminary DBE Utilization Plan shall describe the general approach of the DBT to meeting the DBE utilization goal for the Project and complying with the DBE requirements of the Agreement as defined in Appendix C.

TABLE 7.7 – DISTRIBUTION OF POINTS FOR DBE PLAN		
Part	Component of DBE Plan	Percentage of Proposed DBE Plan Points
F.1	DBE Certification	Pass / Fail
F.2	DBE Utilization Plan	100

7.1.3. TECHNICAL PROPOSAL SCORING

The following Table 7.8 provides a general indication of anticipated scoring of each evaluation criteria. A minimum Technical Proposal score of 50 is required for the technical proposal to be considered responsive.

TABLE 7.8 – GENERAL SCORING CRITERIA		PERCENT OF MAXIMUM SCORE
Excellent (E)	• Proposal demonstrates an approach with unique or innovative methods of approaching the proposed work with an exceptional level of quality. • Proposal contains *many significant strengths and few minor weaknesses, if any*. • There is very little risk that the Proposer would fail to satisfy the requirements of the design-build contract.	90-100
Very Good (VG)	• Proposal demonstrates an approach offering unique methods of approaching the proposed work with very good level of quality. • Proposal contains *many strengths that outweigh the weaknesses*. • There is little risk that the Proposer would fail to satisfy the requirements of the design-build contract. Weaknesses, if any, are very minor and can be readily corrected.	70-89
Adequate (A)	• Proposal demonstrates an approach that meets RFP requirements and/or objectives and that offers an adequate level of quality. • Proposal contains *strengths that are balanced by the weaknesses*. • There is some probability of risk that the Proposer may fail to satisfy some of the requirements of the design-build contract. Weaknesses are minor and can be corrected.	50-69
Fair (F)	• Proposal demonstrates an approach that has some deficiencies in RFP requirements and/or objectives. • Proposal contains *weaknesses that are not offset by the strengths.* • There are questions about the likelihood of success and there is a risk that the Proposer may fail to satisfy the requirements of the design-build contract. There are significant weaknesses and very few strengths.	30-49
Poor (P)	• Proposal demonstrates an approach that does not meet the stated RFP requirements and/or objectives, lacked essential information, is conflicting, is unproductive, and/or increases KYTC's risk. • Proposal contains *many significant weaknesses and very minor strengths*, if any. • There is not a reasonable likelihood of success and a high risk that the Proposer would fail to satisfy the requirements of the design-build contract.	0-29

7.1.4. FORMAT OF TECHNICAL PROPOSAL

The Technical Proposal is limited to 40 pages 8.5" by 11" which shall include the information requested in this solicitation. The Technical Proposal must conform to the following format:

A. Each page must be 8.5" x 11" with single-space type no smaller than 11-point font. Pages may contain graphics and photographs where applicable.
B. All pages shall be numbered with a footer depicting, at a minimum, Proposer's name and page number (Proposer – Page X of XX). Margins shall be at least 1" all around. Deviations from formatting requirements may result in rejection of the Technical Proposal.
C. Covers front and back are allowed as well as a transmittal letter; however, information on the outside covers and transmittal letter may not be used for evaluating the proposal. The insides of the front and back covers must be left blank. No writing, photos, graphs, etc., will be allowed on the inside of covers.
D. Tabs between pages may be used; however, other than identification on the tab, the tab page must be blank. No writing, photos, graphs, etc., will be allowed on the tab pages other than section identification.
E. No additional information beyond that required for the Technical Proposal as described in this Section 7.1 may be attached or made reference to via webpage or other means.
F. The DBT may provide unlimited 11" by 17" pages for supporting details and graphics (i.e., organization chart, flow charts, tables, schedules, plan sheets, profiles, etc.). Such 11" by 17" sheets may contain captions, labels and other similar text, but shall not only contain text. 11"x17" sheets that contain primarily text with limited graphics will be counted as two 8.5" x 11" pages.

The Technical Proposal shall include preliminary plans in accordance with the following:

Preliminary plans (plan and profile views) shall be completed at a readable minimum scale of 1"=100' on either 36" x 96" roll plots or 11"x17" sheets for plans, and 11" x 17" sheets for cover page, index, notes, typical sections, cross sections, etc.), all in PDF format. The DBTs are encouraged to be as concise as possible. Roadway plans shall meet the content requirements of Preliminary Line and Grade stage plans in accordance with Section 203 of the KYTC *Highway Design Manual* and shall at a minimum include the following:

A. Layout Sheet – including the name of the DBT, a project map and an index of sheets
B. Typical Sections -- shall be provided for each roadway and ramp that reflect the provided options for either asphalt and/or concrete pavement
C. Plan Roll Plots showing the following design items:
    a. North arrow, graphic scale and road names clearly labeled
    b. Stationed alignments for each roadway and ramp with index stations, curve points and curve data labeled (with proposed superelevation rates to be provided). Indicate the intended design speed for each horizontal curve.
    c. Directional arrows indicating travel direction for each existing and proposed lane
    d. Major drainage features and storm sewer layout shown and labeled for size
    e. Begin and End Construction labels
    f. Roadside barrier and end treatment locations and types
    g. Limits of Disturbance shown and labeled
    h. Proposed Right-of-Way location and access control fencing locations and limits
    i. Proposed bridges, situation-size drainage structures and retaining walls shown and labeled

   j. Intersection skew angles, turning radii, any non-standard lane widths, etc. to convey the proposed intersection layout
   k. Limits of paving and limits of earthwork

D. Profile Roll Plots showing the following design items:
   a. Profile scale and road names clearly labeled
   b. Existing ground lines and proposed profile grade lines shown and labeled
   c. Key features intersected along the profile (such as roadways or streams) labeled
   d. Labels for proposed grades and vertical curves
   e. Calculated sight distance values for each sag and crest vertical curve and the corresponding design speed accommodated by each vertical curve
   f. High water data for crossed and adjacent waterways
   g. Proposed drainage structure crossings shown and labeled for size
   h. Proposed bridges (with substructure unit locations) shown and labeled for proposed number of spans, proposed beam type, span lengths and proposed vertical clearance to be provided
E. Conceptual-Stage Maintenance of Traffic Plans (typical sections for construction stages at critical locations, plans, profiles, construction phasing details, proposed traffic control devices, proposed construction staging areas, proposed access points, etc.) sufficient to convey the DBT's proposed maintenance of traffic concept
F. Cross Sections for each roadway and ramp at 100-foot intervals or less. Label the cross sections sheets to enable easy correlation to the plans and profiles.

Plan and profiles may be shown adjacently on the same roll plot if desired.

Bridge plans for each bridge shall include:

A. Layout Sheet, showing plan and profile and including pier type, abutment type, wingwall type and expected foundation types and depths
B. Typical Section
C. Construction Phasing details (as applicable)

Also provide an electronic KMZ file showing:

- construction limits and proposed ROW
- edge of pavement
- edge of shoulder
- horizontal alignments
- centerline stationing
- barriers
- bridge deck limits
- pier locations
- abutment locations
- All relative information proposed and existing

7.2. PRICE PROPOSAL

The total price offered by the DBT for its Proposal is for all work specified in the Contract is referred to herein as the "Price Proposal". The Price Proposal shall be organized to correspond to the items listed in this section, and shall be submitted electronically, separate from the Technical Proposal through Bid Express. (See Appendix B – Contract Notes).

7.2.1. PRICE PROPOSAL

Provide a password protected electronic copy of Form PP (Price Proposal) included in Appendix H – Form PP – Price Proposal. The Price Proposal shall bear the (digital) signature(s) by an authorized employee of the Proposer.

Price Proposals are qualified based on Sections 7.1 and 7.2 and evaluated on the basis of Section 7.3. The final Price Proposal shall be a Lump Sum Bid dollar amount.

The apparent best value DBT shall submit an initial Schedule of Values within 5 Working Days from announcement of the apparent best value DBT showing a complete breakdown of the lump sum bid item established for this project. In order to document how the lump sum bid price was determined, the DBT shall supply, using standard KYTC bid item codes whenever possible, all work items, quantities, units, and prices to support the lump sum bid submitted. Any non-standard bid items used shall be thoroughly explained in the bid proposal. The breakdown shall include all materials to be used in the work and shall be in sufficient detail to provide KYTC with a means to check partial payment requests. The Schedule of Values shall be developed using the current version of Estimator software by Info Tech Inc., Gainesville, FL, 32608, or an equivalent program approved by KYTC. The DBT shall provide any necessary training and license needed for KYTC to use the software. Submit the Estimator file in the Version required by KYTC.

7.2.2. BID BOND

Provide a Bid Bond. Each Proposer shall submit a Bid Bond with its Proposal in the amount of at least five percent of the Proposal Price, issued by a surety meeting the requirements of the Contract. Contrary to the Specifications only electronic Bid Bond submittals will be accepted. Proposals that fail to include a Bid Bond in compliance with this subsection shall be deemed non-responsive and shall be rejected by KYTC.

This bond shall be submitted with the Price Proposal and will not be opened until completion of the review of the Technical Proposals.

7.2.3. SUBMITTAL REQUIREMENTS

The Price Proposal packet shall include the Form PP - Price Proposal (see Appendix H) and an updated Acknowledgement of Receipt of proposal addenda, Form AOR (see Appendix I).

Lump Sum Bid:

This Price Proposal packet shall be submitted utilizing the electronic bidding software outlined in Section 102.08.02 of the Standard Specifications. This bid shall be entered through Bid Express by 2:00 PM (EST) November 15, 2021. Any Price Proposal that fails to meet the deadline or delivery requirement shall be rejected and returned to the DBT without having been opened, considered, or evaluated. KYTC shall not be responsible for a late Bid due to failure of the DBT to allow sufficient time for delivery of the Price Proposal.

A bid file for the project will be placed on the Bid Express site by October 15, 2021.

KYTC shall not open the Price Proposal packet file until the completion of the evaluation of the Technical Proposals.

7.3. VALUE-BASED FORMULA USED FOR SELECTION

Scoring of the responsive Technical Proposal and Price Proposal plan shall be combined using a normalized weighted formula as follows:

SB = 100 [0.30 (TB/TH) + 0.70 (PL/PB)]

Where:

PB = DBT's Price Proposal (Adjusted Project Cost from Form PP)

PL = Lowest Price Proposal (all DBTs) (Adjusted Project Cost from Form PP)

TB = DBT's Technical Proposal Score

TH = Highest Technical Proposal Score (all DBTs)

The DBT's overall score (SB) shall be rounded to a tenth of a point. Rounding of Scores to the nearest tenth of a point shall be accomplished by the round-up method: e.g., 75.45, 75.46, 75.47, 75.48, and 75.49 would be rounded up to 75.5; and 75.41, 75.42, 75.43, and 75.44 shall be rounded to 75.4. The DBT with a responsive Technical Proposal and the highest overall score shall be recommended to the KYTC Awards Committee for Contract Award. In the event that two or more DBTs achieve the same rounded final score (SB), the "tied" DBT with the lowest Price Proposal (PB) shall be recommended to the KYTC Awards Committee for Contract Award. The KYTC Awards Committee has final authority to determine the best interests of the KYTC in awarding (or not awarding) the Contract.

PART 2 – TECHNICAL PROVISIONS

8. GENERAL PROVISIONS FOR THE SCOPE OF THE WORK

The DBT shall provide for the engineering services, design, and preparation of detailed construction plans for the construction of the proposed project. The DBT shall also provide services as described in Section 12 for the acquisition of Right-of-Way necessary to construct the proposed project and shall provide for the relocation of utilities impacted by the proposed project as described in Section 19. Further, the DBT shall provide for the furnishing of materials, construction and completion in every detail of all the work described in this RFP in order to fulfill the intent of the contract.

8.1. GOVERNING REGULATIONS

All services, including but not limited to survey, design and construction work, performed by the DBT and all subcontractors, shall be in compliance with the current editions as of the Setting Date for all applicable KYTC and AASHTO Design Standards, KYTC Department of Highway's Standard Specifications for Road and Bridge Construction and Supplemental Specifications, KYTC Standard Drawings and Sepias, KYTC Guidance Manuals, KYTC Special Notes and Special Provisions, and the KYTC Design, Construction and Technical Memos. Where there are conflicts between AASHTO design requirements and KYTC design requirements, the KYTC requirements shall govern.

Each of the documents provided as part of the Request for Proposal are intended to be complementary and to describe and provide for a complete agreement. In the event of any conflict among the Contract Documents, the order of precedence shall be set forth as follows:

1) Change Orders and Addenda to the RFP
2) Questions and Answers
3) This RFP, ITP Appendices and TP Attachments
4) KYTC Special Notes and Special Provisions
5) KYTC Standard Drawings and Sepias
6) KYTC Department of Highway's Standard Specifications for Road and Bridge Construction and Supplemental Specifications
7) AASHTO design requirements
8) DBT's Technical Proposal Commitments

As a part of the DBT's Technical Proposal submittal, a detailed general schedule outlining the items listed in Section 7.1.2.1 of the RFP shall be submitted. A comprehensive schedule detailing all project milestone dates shall be prepared for Department review and approval in accordance with the CPM Special Note. This schedule shall show all major design, Right-of-Way, utility and construction activities, including KYTC review periods, and the critical path to completion. The comprehensive Progress Schedule required for this Project is the CPM schedule. The CPM schedule format shall be as described in the CPM Special Note in Attachment 8-1. The DBT shall designate a Schedule Representative who shall be responsible for coordinating with the Engineer during the preparation and maintenance of the schedule and throughout execution of the entire contract.

The fact that the bid items for this design-build project are general rather than specific shall not relieve the DBT of the requirement that all work performed and all materials furnished shall be new and in reasonable conformity with the specifications. The DBT's consultant shall reference in the plans the appropriate Specifications item number for all work to be performed and all materials to be furnished.

It shall be the responsibility of the DBT to acquire and utilize the necessary KYTC manuals that apply to the design, Right-of-Way, utility, and construction work required to complete this project.

8.2. LUMP SUM BID ITEMS

For this project, a single "all-inclusive" Lump Sum bid item is to be utilized. The components that are to be incorporated in this bid item are described throughout the RFP and shall include but are not limited to:

A. Right-of-Way Acquisition Services
B. Utility Management and Relocation
C. Grade and Drain
D. Asphalt Paving
E. Concrete Paving
F. ITS Systems
G. Signing
H. Lighting
I. Structures

The DBT shall provide supplemental cost information and supporting documentation of those costs for each of the components listed. The sum of the individual component costs shall equal the value of the "all-inclusive" single lump sum bid item for the project. Certain aspects and requirements for each of these items are discussed in the following sections. Some components are discussed in multiple sections due to the nature of the work involved. As stated previously, the intent of this "all-inclusive" single lump sum bid item is to incorporate all features of the project into this bid item. Please be advised that three percent (3%) of the total lump sum bid price shall be used as the demobilization cost for this project.

The DBT shall provide, for the Department's approval, a Schedule of Values. The Schedule of Values will provide the payment associated with each segment of the DBT's CPM Schedule. Progress payments shall be made based upon the monthly submittal of the DBT CPM based Schedule of Values, as approved by the Department. KYTC will not process progress payments for the project until the Schedule of Values is approved by KYTC.

The DBT will provide an estimated quantity of items to the Department for each CPM segment of work. KYTC standard bid item codes shall be used whenever possible. Where KYTC standard bid items are not available; a thorough explanation of all non-standard items is required. All work items, quantities, and units will be used to meet the requirements of the KYTC's Material Quality Assurance processes. All work performed and all materials furnished by the DBT shall conform to all KYTC specifications. The DBT's Consultant shall reference in the plans the appropriate Construction and Material Specifications Item Number for all work to be performed and all materials to be furnished.

8.3. BASIS OF PAYMENT

All items covered by Specifications, Supplemental Specifications, Proposal and Special Provision notes with unit price as a basis of payment shall be included in the Lump Sum bid item established for the project. All costs for work and services, with the exception of certain costs subject to allowances or not-to-exceed quantities which are discussed elsewhere in this RFP, shall be included in the lump sum item for the Project.

"In progress" payments for the project shall be made utilizing the supplemental cost information included in the Schedule of Values supplied for each of the components identified as parts of the "all inclusive" single Lump Sum bid item. KYTC personnel shall track and measure the completed individual items within the Schedule of Values to determine the amounts of the actual "in progress" payments.

Price adjustments for liquid asphalt and fuel, as detailed in Section 109.07 – PRICE ADJUSTMENTS of the Standard Specifications, shall be applicable for this project. Payments shall be based on actual quantities placed per day rather than estimated values and the base "index" values used to determine price adjustments shall be based on the values posted for the first of the month in the month when the DBT Price Proposals are submitted to KYTC.

Price adjustment for select steel items shall be applicable for this project. See Attachment 8.3 Special Note for Price Adjustment for Steel.

8.3.1. ESCROWED PROPOSAL DOCUMENTS

Concurrently with the execution of the Contract, the DBT shall deliver to KYTC one copy (either hard copy or electronic thumb drive) of all documentary information used in preparation of its best value proposal for cost for the Project (the "Escrowed Proposal Documents" or "EPD"), but excluding documents relating to other projects which may have been referenced by DBT in determining the proposal price. The EPD have been transferred to a locked fireproof cabinet in a locked room in the DBT's offices. The cabinet will have two locks, with one key held by DBT and the other key held by KYTC. Concurrently with approval of each Change Order, if appropriate, one copy of all documentary information used in preparation of the Change Order shall be added to the EPD. The EPD will be held in such cabinet or otherwise maintained subject until all of the following have occurred: (a) 180 days have elapsed after expiration or earlier termination of the warranties, (b) all disputes regarding the Contract have been settled, and (c) final payment on the Contract has been made by KYTC and accepted by DBT.

Review of EPD

KYTC shall be entitled to review all or any part of the EPD in order to satisfy itself regarding the applicability of the individual documents to any matters at issue regarding best value proposal for the project as well as Change Orders that may arise during the course of the project. The EPD shall be available during business hours for joint review by DBT and KYTC in the resolution of disputes or in connection with an audit (if the EPD is the subject of an audit). KYTC shall be entitled to review all or any part of the EPD in order to satisfy itself regarding the applicability of the individual documents to the matter at issue. KYTC shall be entitled to make and retain copies of such documents as it deems appropriate in connection with any such matters, provided that KYTC has executed and delivered to DBT a confidentiality agreement specifying that, except as required by law or court order, all proprietary information contained in such documents will be kept confidential, that copies of such documents will not be distributed to any third parties other than KYTC's agents, attorneys and experts, and other dispute resolvers hereunder, and that all copies of such documents (other than those delivered to dispute resolvers) will be either destroyed or returned to the depository (or to DBT if the EPD have been returned to it) upon final resolution of the negotiations or Disputes. The foregoing shall in no way be deemed a limitation on KYTC's discovery rights with respect to such documents. Nothing in this Section 8.3 shall prohibit KYTC from producing such documents it believes, in its discretion, it is required to produce in response to a request pursuant to the Kentucky Open Records Act or as otherwise required by law or court order. Nothing in this Section 8.3. shall restrict KYTC's rights to use the Design Documents and Technical Proposal Documents as provided for elsewhere in the Contract Documents.

Property of DBT

The EPD are, and shall always remain, the property of DBT, subject to KYTC's right to review the EPD as provided herein. KYTC acknowledges that DBT considers that the EPD constitute trade secrets or proprietary information. This acknowledgment is based upon KYTC's understanding that the information contained in the EPD is not known outside DBT's business, is known only to a limited extent and by a limited number of employees of DBT, is safeguarded while in DBT's possession, and may be valuable to DBT's business strategies, assumptions and Intended means, methods and techniques. KYTC further acknowledges that DBT expended money in developing the information included in the EPD and further acknowledges that it would be difficult for a competitor to replicate the information contained therein. KYTC acknowledges that the EPD and the information contained

therein are being provided to KYTC only because it is an express prerequisite to award of the Contract.

Representation and Warranty

DBT represents and warrants that the EPD provided concurrently with the best value proposal documents constitute all of the information used in the preparation of Its best value proposal and agrees that no other proposal preparation information will be considered in resolving disputes. DBT also agrees that the EPD are not part of the Contract and that nothing in the EPD shall change or modify the Contract.

Contents of EPD

The EPD shall clearly itemize the estimated costs of performing the Work required by the best value proposal and the Contract Documents. All Work shall be separated into sub-items as required to present a complete and detailed estimate of all costs. Crews, equipment, quantities and rates of production shall be detailed. Estimates of costs shall be further divided into DBT's usual cost categories such as direct labor, repair labor, equipment ownership and operation, expendable materials, permanent materials and subcontract costs as appropriate. Plant and equipment and indirect costs shall also be detailed in DBT's usual format. DBT's allocation of plant and equipment, indirect costs, contingencies, markup and other items to each direct cost item shall be clearly identified. The EPD shall include all assumptions, quantity takeoffs, rates of production, DBT internal equipment rental rates and progress calculations, quotes from subcontractors, consultants and suppliers, memoranda, narratives and all other information used by DBT to arrive at the cost for the best value proposal or Change Order price, as applicable.

Format of EPD

DBT shall submit the EPD in the format actually used by DBT in preparing its Best Value Proposal. It is not intended that DBT perform any significant extra work in the preparation of these documents prior to the due date for the best value proposal. However, DBT represents and warrants that the EPD related to the proposal documents have been personally examined prior to delivery to escrow by an authorized officer of DBT and that they meet the requirements of Section 8.3.1 and are adequate to enable a complete understanding and interpretation of how DBT arrived at its best value proposal. DBT further represents, warrants and covenants that the EPD related to each Change Order will be personally examined prior to delivery to escrow by an authorized officer of DBT and that they meet the requirements of Section 8.3.1 and will be adequate to enable a complete understanding and interpretation of how DBT arrived at its Change Order price.

Compilation of Index

Within ten Working Days after the date the “Notice To Proceed” is issued by KYTC (if not performed prior to Contract execution) and within ten Working Days after approval of any Change Order, representatives of KYTC and DBT shall review the EPD or supplemental EPD, as appropriate, to determine whether it is complete, and shall organize the EPD or supplemental EPD, as appropriate, and label each page so that it is obvious that the page is a part of the EPD and so as to enable a person reviewing the page to determine where it can be found within the EPD. The representatives shall also compile an index listing each document included in the EPD or supplemental EPD, as appropriate, and briefly describing the document and its location in the EPD. KYTC shall have the right to retain a copy of the Index. In the event that, following the initial organization, KYTC determines that the EPD is incomplete, KYTC may request DBT to supply data to make the EPD complete. DBT shall provide all such data within three Working Days of the request, and at that time

it will be date stamped, labeled to identify it as supplementary EPD Information, and added to the EPD. DBT shall have no right to add documents to the EPD except upon KYTC's request.

Confidentiality

The EPD shall at all times be treated as proprietary and confidential information and shall be used only for purposes described in Section 8.3.1. DBT shall label any EDP that DBT considers to be exempt from disclosure pursuant to the Kentucky Open Records Act. At DBT's request, confidentiality agreements shall be executed and delivered to DBT by KYTC's employees or agents who review or have access to the EPD.

8.4. FINAL PAYMENT

In addition to the normal requirements in Sections 105.12 and 109 of the Standard Specifications, the DBT shall prepare and submit the following prior to the request for final payment:

A. All original project files and notes utilized in the preparation of the survey, design and construction of the project.
B. As-Built Plans in PDF and ArcGIS format previously approved by the Engineer.

8.5. PRE-DESIGN-PRECONSTRUCTION CONFERENCE

The DBT shall attend a mandatory Pre-Design-Preconstruction Conference to be scheduled upon award in accordance with Section 108.03 of the Standard Specifications.

8.6. KYTC CONTACTS

All communication during design and construction shall be with KYTC's Project Manager. All submittals identified elsewhere in this document shall be simultaneously sent to the KYTC's Project Manager and to the other KYTC personnel if designated by the KYTC Project Manager.

KYTC Project Manager: Emily Deason, P.E.
Phone Number: (270) 824-7080
Email Address: Emily.Deason@ky.gov

8.7. ENTRY ON PRIVATE PROPERTY

Prior to performing any project development work, the awarded DBT shall send notification letters utilizing a template to be provided by KYTC, indicating the date and duration of entry to any affected property owners no less than forty-eight (48) hours nor more than thirty (30) days prior to the date of entry. The DBT shall forward copies of all notification letters distributed to KYTC. Any subsequent claims for compensation due to damages incurred during the project development phase shall be negotiated between the DBT and the affected property owners.

8.8. PROJECT HUB OFFICE AND FIELD OFFICE

8.8.1. PROJECT HUB OFFICE – GENERAL

The DBT shall establish a Project Hub Office (Hub Office) within 90 days of Notice to Proceed and within 1.5 miles of the KYTC Project Office at 1970 Barrett Court, Henderson, KY 42420, or as approved by KYTC. The purpose of the Hub Office is to consolidate and/or co-locate the DBT's key management, design, construction, quality and compliance functions and KYTC's management, oversight and compliance staff in order to facilitate the teamwork, communications, and interaction called for by the Contract Documents and necessary to assure a successful Project.

KYTC intends to secure office space for their own personnel at 1970 Barrett Court, Suite 100, Henderson, KY 42420. There is currently available space at that property should the DBT elect to establish their Hub Office location there. An information sheet about the available space will be emailed to each DBT.

INTERIM PROJECT HUB OFFICE

Until the final Hub Office is established, the DBT shall establish an Interim Hub Office (e.g., at the designer's office or DBT's local office) within 30 days from the NTP in order to facilitate early communications and interaction between the staffs of the DBT and KYTC. The Interim Hub Office is not required to be in proximity of the Project. The amount of office space including accommodation of KYTC staff in the Interim Hub Office shall be as mutually agreed to by the DBT and KYTC during the initial Hub Office coordination meeting.

DBT STAFF AT THE HUB OFFICE

At a minimum, the principal location of the DBT's managers and Key Personnel are expected to be in the Hub Office along with support staff relative to their functions.

It is left to the discretion of the DBT as to whether detailed design production activities of the Project are located at the Hub Office. If any portion of the design is not accomplished at the Hub Office, it is expected that the Key Personnel and design discipline leads shall be responsible for all necessary coordination at the Hub Office.

It is required that all design reviews, DBT's design discipline (subject area), all meetings called for by the Contract Documents, and all coordination and other activities requiring KYTC's consultation be held in the Hub Office unless otherwise mutually agreed.

8.8.2. THE HUB OFFICE FACILITY

THE DBT'S RESPONSIBILITIES

The DBT shall be responsible for its own all-inclusive management, insurance, and costs of all capital, lease agreements, janitorial services, and maintenance of electrical, HVAC, plumbing, telephone systems, fax machines, copiers, computer systems, and equipment including any maintenance contracts; costs of supplies including but not limited to, paper for printers, copiers, and fax machines; ink cartridges; utilities; consumables (paper towels, pens, pencils, tape, etc.); and incidentals described elsewhere to permit the efficient and uninterrupted operation of the Hub Office. All facilities and build-outs/fit-outs shall be constructed and maintained in accordance with Federal, State, and local building codes. The DBT shall provide security for the Hub Office, including protection of the building or space within a building against theft 24 hours per day, and is responsible for loss of property of KYTC or personal property of employees of KYTC housed therein due to fire, theft, or related causes; however, the DBT is not responsible for non-job related personal property. Protection shall include a continually monitored security and alarm system.

In addition to the responsibility to maintain all internal Hub Office spaces and equipment, the DBT shall be responsible for (either directly or through a building manager depending on facility arrangements) the maintenance of the immediate grounds and landscaping and the removal of snow and ice, including the supply and application of deicing or ice melting agents, from parking areas and walks in a timely manner to ensure safe passage to and from the Hub Office.

After the design phase of the project is complete, the DBT may elect to reduce the size of their Hub office or combine it with the field office(s) provided sufficient office space remains for the required DBT's and KYTC's managerial, construction, and environmental compliance personnel.

HUB OFFICE ACCOMODATIONS

If the DBT elects to secure office space at 1970 Barrett Court, Henderson, KY 42420, the following will be required:

- The DBT shall provide one conference room (enclosed) at nominal 12 feet x 25 feet (300 SF) to hold all reviews and meetings. Provide dimmable lighting with a minimum 60-inch flat panel monitor with VGA/HDMI accessibility, and an overhead projector with drop down screen. Conference room table shall have one chair for every 25 SF of conference room space and a conference table of sufficient size to accommodate chairs.

If the DBT elects to secure office space at a location other than, 1970 Barrett Court, Henderson, KY 42420, the following will be required:

1) The DBT shall provide the following shared common space and equipment for DBT and KYTC use, adequate and appropriate for the efficient operations of the entire Hub Office
   - One conference room (enclosed) at nominal 12 feet x 25 feet (300 SF), to hold all reviews and meetings. Provide dimmable lighting with a minimum 60-inch flat panel monitor with VGA/HDMI accessibility, and an overhead projector with drop down screen. Conference room table shall have one chair for every 25 SF of conference room space and a conference table of sufficient size to accommodate chairs;
   - Kitchen/Break Area facility including refrigerator with freezer compartment, microwave, and sink;
   - Male and female bathrooms; and
   - Printers, copiers, facsimile machines, plotters, etc. and associated paper supplies (DBT may elect to locate some of this equipment in KYTC's allocated spaces).
   - All required furniture for conference rooms.
2) The DBT shall provide, at a minimum, office space adequate for its intended purpose, to include:
   - Access and security lighting in immediate areas of and exterior to the Hub Office, including but not limited to parking areas, walkways, hallways, and entrances;
   - An HVAC system for adequate heating and air conditioning throughout the general working areas, office spaces, and conference rooms, thermostatically controlled to ensure an even Hub Office temperature distribution;
   - Appropriate furnished and installed furnishings (new or refurbished and in good condition) for one enclosed, lockable office and four "hotel" cubicles, dedicated as KYTC places, including desks, tables, chairs, bookshelves, file cabinets, etc.;
   - Adequate parking facilities for the Hub for 10 KYTC visitors. The parking facility shall consist of a hard pavement with clearly identified parking spaces.

COMPUTER SUPPORT REQUIREMENTS

The DBT shall provide a dedicated communication line between the necessary client sites as well as between the Hub Office and the Internet. Provide Wi-Fi through broadband internet connection with a minimum speed of 100 MBPS. KYTC will be responsible for providing computer equipment for their personnel. DBT shall provide all hard network wiring and power to each office, cubicle and conference room available to KYTC personnel.

REPLACEMENT

In case of fire, theft, or breakdown, all furnishings and equipment involved shall be repaired or replaced by the DBT within 48 hours of the incident. If the Hub Office facility is destroyed or rendered unusable for any reason, the DBT shall coordinate with KYTC with the intent of replacing (temporarily and/or permanently) the facility, furnishing, equipment, and functions as soon as practical.

8.8.3. FIELD OFFICES

If DBT elects to establish a construction field office or offices, the DBT shall provide appropriate space and parking to accommodate the KYTC on-site field oversight personnel. The field office shall include copy machines, printers, internet service, adequate heating and air conditioning, parking, security, etc. In each established field office, the DBT shall provide one enclosed, lockable office and 2 "hotel" cubicles, dedicated as KYTC places, including desks, tables, chairs, etc. All costs of the field offices shall be borne by the DBT.

8.8.4. HUB AND FIELD OFFICE COORDINATION MEETING

Within two weeks after NTP, the DBT shall schedule a meeting with KYTC to coordinate plans for both the interim and permanent Hub Offices and possible construction field office(s), including the integration, accommodation, and incorporation of KYTC's requirements.

8.9. CONSTRUCTION REQUIREMENTS

The DBT shall provide experienced field staff to follow through with the construction of the project in a safe and expedient manner (KYTC Specification 107.01.01). The DBT shall provide for the furnishing of materials, construction, and completion in every detail of all the work described in this RFP in order to fulfill the requirements of the contract. KYTC intends to engage a consulting firm to assist with Construction Engineering Inspection (CEI) services. While the DBT will be responsible for construction quality, KYTC will be responsible for construction inspection, quality assurance, and acceptance testing similar to what it would do on a typical design-bid-build project. See Section 6.0 *Project Description, Mandatory Requirement,* Section 8.0 *General Provisions* and the following for further details.

The contractor is advised that other KYTC construction projects are in the area and work shall be coordinated per Specification 105.06.

KYTC will appoint a KYTC Project Manager who will supervise a crew of engineers and inspectors to oversee the construction work. The KYTC Project Manager and inspectors will oversee the work according to KYTC Specifications for Roads and Bridges and the Division of Construction Guidance Manual. Field sampling and testing will be conducted according to the Division of Materials Sampling and Testing Manual and the Kentucky Methods.

Partnering will be part of this project between the Department and the Contractor (KYTC Specification 105.06). The DBT will provide a field engineer who will liaison with the KYTC and provide full cooperation of the prime and his subcontractors to include suppliers.

Project schedule requirements are listed elsewhere, and the schedule will be updated every pay period and provided with the pay estimate.

9. BUILDABLE UNITS

Definition: Buildable Units are portions of the projects or preparatory work, which may be designed, reviewed and built with only limited controls and assumptions coming from the design of other portions of the project. Often a Buildable Unit will be defined by a geographic area within the plan, but it may also be defined by types of work or construction stages which may require or permit similar, nearby work to be divided into separate Buildable Units. All Buildable Units shall summarize the materials required to construct that portion of the project. The summary shall include the Specifications Item Number, and a description of the materials to be used.

General: The DBT may break the project work into two or more separate BU which may be progressed through design and construction with minimal or known effect on each other and/or which may be dealt with sequentially such that sufficient data is available for design and review of each BU. In order that the design and construction of one BU may proceed without significant approved information from an associated BU, the DBT may develop and propose assumptions which will allow for the first BU to proceed through design and/or construction. These assumptions shall be submitted for review and comment but their accuracy and effort upon the final design are the sole responsibility of the DBT. Should error in these assumptions result in additional work, remedial work or other changes to assume an acceptable design or should they result in the need to remove work and substitute additional work, the DBT shall be responsible for all such costs including, removal of unacceptable materials from the site, modification, additional work, repairs, etc. as necessary to produce an acceptable result.

If the DBT elects to develop Buildable Units, the DBT shall prepare, for review by the Department, a table of Buildable Units for the project with each BU described in detail. This table of Buildable Units will be approved, or comments given, within 10 Working Days after the submission. If the table is approved, the DBT shall modify the Progress Schedule to show a separate group of activities for BU and these activities shall encompass all of the design and construction work in each BU. Work activities shall be further separated in the Progress Schedule to show a meaningful completion status (e.g. separate activities comprising the placement of a bridge deck on steel beams shall describe; shoring, form building, steel placement, placement of conduit and joints, pouring concrete, forming parapets, pouring or slip forming parapets, provision of membranes, provision of wearing surfaces, curing, repair, form removal, cleaning, etc.).

The Final Plans submission shall specifically be identified by the Buildable Unit code. If the design of a BU requires input information from an adjacent or related BU, the source for that information in previously approved plans shall be cited or the DBT shall provide an estimated value of the data. The input data shall also be carefully identified. In the same way any assumption, calculations or results from the stage and BU which are used as input to another BU to verify previous assumptions. Should assumptions not match values calculated later, the DBT shall re-analyze all affected components and determine appropriate changes. Should those elements have already been constructed, the DBT shall recommend repairs, adjustments, modifications or replacement of the existing work as necessary to comply with the scope of work. All costs for re-design, re-submission, modifications, removals, disposal of materials and new work needed to remedy the project and bring it to compliance shall be borne by the DBT and no time extensions shall be approved for this.

10. PLAN SUBMITTALS AND REVIEW REQUIREMENTS

10.1. GENERAL REQUIREMENTS

The DBT shall be responsible for the professional quality, technical accuracy and adherence to the Governing Regulations listed in Section 8.1 of this document, for all plan submittals required under this contract.

For each Buildable Unit the DBT shall submit electronic design review submittals as required in the Technical Provisions.

Concurrent design and construction submittals shall be limited to twenty (20) submittals of any type. All submissions shall be shown on the required Progress Schedule. KYTC shall have 10 Working Days from receipt to review and provide comment. This review time shall be shown on the required Progress Schedule. Following the review, the Department will return to the DBT marked plans and written comments noted 'ACCEPTED', 'ACCEPTED AS NOTED' or 'NOT ACCEPTED'. The DBT shall correct errors, incorporate changes, perform investigations and make related changes to the plans and supporting documents prior to submitting Released for Construction (RFC) plans.

If at any given time KYTC is in receipt of more than twenty (20) concurrent Submittals in the aggregate that are subject to KYTC's review and comment or acceptance, KYTC may extend the applicable period for it to act to that period in which KYTC can reasonably accommodate the Submittals under the circumstances. No such extension shall entitle DB Contractor to an adjustment to the Price or Completion Date or form the basis of any other Claim. DBT may establish by written notice to KYTC an order of priority for processing such concurrent Submittals; and KYTC will comply with such order of priority.

The DBT shall immediately notify the Department of any apparent discrepancy between the various design and construction manuals and the Basic Project Configuration shown in the conceptual documents.

Unless stated otherwise, review comments do not revise the scope or intent of the project and do not constitute a request for changes beyond the current contracted Scope of Services.

In the event the Department determines that any required submission is incomplete, contains inaccuracies which preclude a meaningful review, or does not adhere to the Governing Regulations listed in Section 8.1 of this document, the Department will advise the DBT of the deficiencies and direct the DBT to revise and resubmit the design package. No time extension shall be granted as a result of such action. The Department will schedule a review meeting or issue review comments as appropriate.

In the event the DBT believes that any review comment, or orders issued by the Department, require a change to the scope of the agreed work, the DBT shall first contact the Department for clarification and shall, within 10 Working Days of receipt of the comments or orders, provide written notice to KYTC concerning the reasons why the DBT believes the scope has been changed.

MAJOR DESIGN DECISION

Separate submittals for concurrence with major design decisions are required. Major design decisions involve significant utility relocation, unforeseen acquisition of ROW, traffic operation or geometric decisions that involve two or more viable solutions, and any other decision that impacts the public, operation of the facility or future maintenance.

When the DBT becomes aware of the need for additional decisions during the course of the design, they shall advise KYTC in writing.

10.2. FINAL PLANS IN HAND REVIEW SUBMISSION

Each Final Plans review submittal shall include relevant:

- Design drawings;
- Design calculations;
- Design reports;
- Electronic files
- Standards and Specifications including General Notes;
- Copies of KYTC's approval of deviations from design standards and approved Design Exceptions;
- Design Manager certification that the design meets all applicable requirements of the Contract Documents, applicable Law and Governmental Approvals, that all required Governmental Approvals and Utility Owner approvals required for design have been obtained, and that ROW Certifications have been filed for all parcels within the buildable unit being submitted for review;
- Design Quality Manager certification that the design has been checked in accordance with the approved QMP and the design documents incorporate all of the submittal review comments from previous submittals.

DBT shall obtain KYTC review and written concurrence with the Design Manager's and Quality Manager's certifications prior to issuing the Released for Construction documents. KYTC's acceptance of the Design Manager's and Quality Manager's certifications of compliance shall not constitute approval of the design or subsequent construction, nor will it relieve DB Contractor of its responsibility to meet the requirements specified herein. Irrespective of whether KYTC provides DBT with the authority to begin construction on items, elements, or phases of the Work prior to completion of the design for the entire Project, DBT shall bear the responsibility to assure that construction meets the requirements of the Contract Documents, applicable law, and Governmental Approvals.

10.3. RELEASED FOR CONSTRUCTION PLANS

After the review comments for the final plan review submission have been complied with, and following acceptance or conditional acceptance of the design documentation, the DBT shall prepare plan sets for use during construction. All review comments shall have been resolved in writing by the DBT to satisfaction of KYTC before DBT electronically submits the construction plans. Each plan sheet shall have its last revised date noted on the sheet and clearly marked 'Released for Construction'. Physical construction shall not begin until the plans marked 'Released for Construction by the DBT Project Manager are delivered to KYTC. KYTC will comment on these plans within 10 Working Days of their submission by the DBT Project Manager. No time extensions will be approved by KYTC if the plan distribution is not completed, and project delays occur as a result.

11. ENVIRONMENTAL AND HAZARDOUS MATERIALS

11.1. ENVIRONMENTAL DOCUMENTS

National Environmental Policy Act (NEPA) clearance via an Environmental Impact Statement (EIS) and Record of Decision (ROD) has an approval date of September 16, 2021. See Section 11.7 regarding Environmental Commitments.

The Draft EIS, published in December 2018 is provided in the Reference Information Documents. The project approval will be based on the plans presented in this proposal. Any impacts outside of the identified disturbance areas have not been cleared under the NEPA process. If the Design Build Team chooses to pursue impacts outside of the identified area, it is their sole responsibility to conduct the necessary field work and complete any necessary coordination to obtain environmental clearances, including updates to the environmental document. Additionally, anyone conducting work or fieldwork for any of the clearances will need to be on KYTC's list of approved consultants for the appropriate areas. As part of the environmental clearance for the project, several commitments were made for the project, as outlined below.

11.2. THREATENED AND ENDANGERED SPECIES

KYTC prepared a Biological Assessment (BA) addressing the project's potential impact on threatened and endangered (T&E) species. The US Fish and Wildlife Service issued a Biological Opinion (BO) on December 17, 2020, concurring with the recommendations in the BA and establishing the commitments required to satisfy Section 7 of the Endangered Species Act. Both documents are included in the Reference Information Documents. Commitments related to T&E species are included in Section 11.7 below.

Failure to comply will result in violation of the Endangered Species Act. Any questions regarding this requirement shall be directed in writing to:

Danny Peake, Director
Division of Environmental Analysis
200 Mero Street
Frankfort, KY 40601

11.3. HAZARDOUS MATERIALS

One potential hazardous/contaminated material site has been identified within the project limits at Palmer's Market (parcel #P213) at 1850 2nd Street in Henderson. A Phase I Environmental Site Assessment was prepared and is included in appendix I-1 of the Draft EIS in the RIDs. A Phase II Environmental Site Assessment has been prepared and is included in the RIDs. The soil analytical results show that Ethylbenzene was detected in boring B-1 slightly above its non-restricted Kentucky Regional Screening Level (RSL) at a depth of 8 to 12 feet below ground level. Therefore soils (8 to 12 feet below ground level) around boring B-1 will need to be properly disposed of as a non-hazardous special waste; if they are impacted within the proposed construction disturbance limits and cannot be used within the footprint of Parcel 213. All other soil samples analyzed in soil borings B-2 and B-3 did not exhibit concentrations above non-restricted RSLs including soils in boring B-1 at 0 to 8 feet below ground level.

KYTC is unaware of any additional hazardous or contaminated materials within the project limits. However, the DBT is advised that any hazardous materials or contaminated areas encountered as a part of the design and construction of the project shall be the responsibility of the DBT to identify and take the appropriate steps to coordinate with KYTC for disposal of said materials in accordance with all laws and regulations.

The DBT shall prepare a Contaminated Materials Management Plan (CMMP) to address the methodologies to be employed by the DBT to minimize the disturbance of contaminated materials and to coordinate with KYTC for disposal of any contaminated materials encountered by the DBT as the result of the DBT's design and construction. KYTC shall retain status as "generator" of all wastes regulated under federal RCRA and applicable state laws. It shall be the DBT's responsibility to identify, and coordinate with KYTC to handle, manage and, if necessary, dispose of, all contaminated materials in accordance with all applicable local, state and federal regulations. It is understood that wherever practicable, contaminated materials shall be managed on the construction site.

Under most circumstances, KYTC will complete disposal of hazardous materials using KYTC forces within 14 calendar days. In the event that disposal extends beyond 14 calendar and delays are caused to the controlling item of the critical path schedule, or the DBT is required to perform disposal of the hazardous material, a supplemental agreement will be executed with the DBT according to section 104.03 of the Standard Specifications.

DBT shall have both the responsibility and authority to conduct any additional environmental assessment and/or testing it deems necessary to identify, and coordinate with KYTC to handle, manage, transport and dispose of contaminated materials encountered during construction, within the confines of local, state and federal environmental statutes, regulations and ordinances All environmental data collected shall be retained for KYTC review and be made available, if requested.

The DBT shall be solely responsible for the health and safety of its own employees with regard to contaminated materials. DBT shall be liable for any loss or damage incurred by its employees or third parties as a result of its management, handling or improper disposal of contaminated materials. DBT shall indemnify KYTC for any damages incurred there from.

DBT shall assure that all contaminated materials requiring off-site disposal are coordinated with KYTC to be transported and disposed of in accordance with applicable local, state and federal laws in a regulated facility approved by KYTC. The DBT shall be responsible for manifesting and gaining approval for disposal of each shipment of contaminated materials designated for disposal at a regulated facility. DBT shall retain copies of all manifests and associated documentation for review by KYTC upon request.

Section 11.3 for hazardous materials shall not apply to asbestos materials present in buildings or structures to be demolished. Section 11.3 shall only apply to the abatement of underground hazardous materials.

11.4. ASBESTOS COMPLIANCE

The DBT will be responsible for meeting the requirements of the 10 Day Notice with the Kentucky Division for Air Quality (DAQ). DEP form 7036 shall be completed and filed with the Owensboro Regional DAQ Office located at 3032 Alvey Park Drive W., Suite 700, Owensboro, KY 42303 at least 10 Working Days prior to all bridge structure removals. KYTC will provide the results of the Asbestos inspection and laboratory results to be included with the notice. If there are no documents stating otherwise, the bidders should assume there are no asbestos containing materials that will in any way affect the work.

11.5. ARCHAEOLOGICAL CLEARANCE

By Contract Award, archaeological surveys will have been completed on the entirety of the ROW. If the DBT chooses to pursue impacts outside of the identified area, it must first coordinate with KYTC DEA to determine additional requirements. Any additional survey, documentation and/or coordination shall be the DBT's sole responsibility.

11.6. ENVIRONMENTAL PERMITS

The table below lists the permits anticipated to be required for the project and the DBT's responsibility for each. The permits to be obtained by KYTC will be provided by the dates shown in the Permit Status table (TP Attachment 11.6).

TABLE 11.1 – ENVIRONMENTAL PERMIT RESPONSIBILITY			
Permit	Applicable Activity	Permitting Agency	Responsibility
Clean Water Act – Section 404	Dredge/fill in Waters of the US	USACE	KYTC will obtain permit. DBT responsible for any modifications.
Clean Water Act – Section 401 Water Quality Certification	Dredge/fill in Waters of the US	KDOW	KYTC will obtain permit. DBT responsible for any modifications.
Kentucky Pollutant Discharge Elimination System (KPDES)	Ground Disturbance/ Pollutant Discharge	KDOW	Design-Build Team will be responsible.
No-Rise Certification	Construction in a Floodplain	KDOW/Local Floodplain Administrator	KYTC will obtain permit. DBT responsible for any modifications.
Dam Permit	Detention Basin (impoundment of > 25 acre-feet)	KDOW	KYTC will obtain permit. DBT responsible for any modifications.
Conditional Letter of Map Revision	Modification to Designated Floodway	FEMA	KYTC will obtain CLOMR permit based on 30% plans. DBT will be required to meet (or improve) that BFE. LOMR responsibility – KYTC.
FAA Permit	Tall structures (Bridge Towers, Big Rivers transmission towers – TBD)	FAA	Design-Build Team will be responsible for permit for any applicable structures.

11.7. ENVIRONMENTAL COMMITMENTS

The ROD (see Reference Information Documents) includes a full list of commitments from the NEPA process. The commitments listed in TP Attachment 11.7 are included in the ROD. The DBT shall be responsible for ensuring the project's compliance with all environmental commitments noted as the DBT's responsibility in listed in TP Attachment 11.7.

The DBT shall be responsible for developing and maintaining a commitment tracking matrix, to be included as an appendix to their monthly report.

The DBT shall also be responsible for compliance with any additional commitments associated with changes to the project footprint and/or impacts.

12. RIGHT-OF-WAY (ROW)

12.1. DESIGN BUILD (DB)-GENERAL REQUIREMENTS RIGHT-OF-WAY ACTIVITIES

KYTC will acquire all right of way and easements as shown on the RFP plans by the dates shown in the ROW Acquisition Schedule (Attachment TP 12.1). A ROW Status Report is also included in the RIDs, for each parcel in the project, for information only. The project has sufficient right of way to perpetually maintain the permanent features of the proposed project as shown on the RFP plans. KYTC will be responsible for the clearance/demolition of buildings that are within any right of way purchased by KYTC.

If additional working room is needed by the DBT to construct the project, they shall first pursue a Consent and Release from the property owner for the additional area. If a Consent and Release cannot be obtained or if the DBT alters the RFP plan that would require additional right of way to maintain the permanent features of the proposed project, the DBT is to follow the Right of Way Procedures as outlined in the following sections.

All acquisition services costs for additional right of way and/or easements for their own innovations or approved ATCs, including all associated schedule risks, shall be the responsibility of the DBT. KYTC will pay the actual costs for the purchase of any required parcels and any relocation costs for parcels identified as a part of the Technical Proposal and included in the Price Proposal (Form PP) KYTC reserves the right to withhold posting court awards if the amount is greater than 200% of the appraised value. Any additional right-of-way identified subsequent to submittal of the Technical and Price Proposals will be entirely the responsibility of the DBT, including purchase and relocation cost.

The following sections outline the DBTs responsibilities for acquisition of any additional right of way that is required for their design.

Right-of-Way must be acquired and cleared in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and the KYTC Right-of-Way Guidance Manual, Appraisal Guidelines Manual and Relocation Assistance Manual. KYTC will submit a Right-of-Way certification in accordance with 23 CFR 635.309(p) when requesting FHWA's authorization.

The DBT shall submit in the proposal an executed certification that he or she will follow the Kentucky Transportation Cabinet Division of Right-of-Way and Utilities Right-of-Way Guidance Manual, the Uniform Act and Regulation in 49 CFR part 24 and comply with the Civil Rights act (Title IV) and all other pertinent Federal and State Rules and Regulation with regard to Right-of-Way activities. The selected consultant agrees that upon request, staff will be available to assist in responding to FHWA or State inquiries or citations.

All elements of the Right-of-Way Process shall be performed with discretion and confidentiality. The acquisition of private property for public use is a serious matter. Those in government charged with managing and implementing property acquisition programs have the responsibility to the government body and to the public to ensure that such Right-of-Way programs are executed professionally and fairly. All Right-of-Way documents, including the appraisal report, offer letter, and relocation assistance shall not be shown to, read to, permitted to be read by, or lent to a person other than those DBT Right-of-Way Team in discharge of the official business of the Division of Right-of-Way and Utilities. The DBT shall not disclosure or discuss confidential information about any parcel or owner(s) of a parcel. The DBT Right-of-Way Team shall be the only persons to discuss confidential information and then shall only discuss with KYTC Division of Right-of-Way Personnel.

KYTC will monitor any such real property acquisition activities to assure compliance with State and Federal law and requirements as is responsible for informing the DBT of all such requirements and for imposing sanctions in cases of material non-compliance. (23 CFR 710.201 Subpart B)

The DBT shall be responsible for determining actual Right-of-Way needs (including easements for drainage, erosion control, utility relocations, and maintenance of traffic) that their design requires. The DBT shall stake and flag all existing and proposed Right-of-Way and easements needed in the field prior to the start of construction. The DBT shall maintain these markings throughout the duration of the project.

The DBT team may be responsible for all or any of the following: appraisals; appraisal reviews; negotiations; purchase price, if applicable; relocation assistance; project management; titles and closings; property management and other related Right-of-Way activities. Only a pre-qualified Right-of-Way consultant firm shall conduct Right-of-Way services.

The decision to advance a ROW segment to the construction stage shall not impair the safety or in any way be coercive in the context of 49 CFR 24.102(h) with respect to unacquired or occupied properties on the same or adjacent segments of project ROW.

KYTC may choose not to allow construction to commence until all property is acquired and relocations have been completed; or, KYTC may permit the construction to be phased or segmented to allow ROW activities to be completed on individual properties or a group of properties, with ROW certifications done in a manner satisfactory to KYTC for each phase or segment.

When relocation of displaced persons from their dwellings has not been completed, the grantee or design-builder shall establish a hold off zone around all occupied properties to ensure compliance with ROW procedures prior to starting construction activities in affected areas. The limits of this zone should be established by KYTC prior to the design-builder entering onto the property. There should be no construction-related activity within the hold off zone until the property is vacated. The design-builder must have written notification of vacancy from KYTC prior to entering the hold off zone. (23 CFR 710.309 (2) Subpart C) Contractor's activities must be limited to those that the grantee determines do not have a material adverse impact on the quality of life of those in occupied properties that have been or will be acquired.

KYTC will provide a ROW project manager who will serve as the first point of contact for all ROW issues.

12.2. SOFTWARE REQUIREMENTS FOR RIGHT-OF-WAY BY THE DBT

The DBT shall employ software that is compatible with the software in use by KYTC, or fully transferable to the KYTC system. The DBT must supply and maintain a web-based, parcel-by- parcel database that incorporates the fields and information required by KYTC. The DBT must maintain and participate in the KYTC Right-of-Way and Utilities current database system for appraisal, appraisal review and acquisitions, and any other required Right-of-Way tracking system required by KYTC or otherwise agreed to by the parties. The database shall be fully accessible to persons authorized by KYTC.

12.3. SCOPING

Scoping Meeting – a scoping meeting shall be required prior to any Right-of-Way activity.

The DBT shall prepare a Right-of-Way Acquisition Plan and schedule prior to the start of any right of way activities. The Right-of-Way Acquisition Plan shall be submitted to KYTC for approval prior to beginning any of the activities identified in the plan. The Right-of-Way Acquisition Plan shall clearly present the DBT’s methodology to be used to secure the Right-of- Way needed to construct the

Project. The Right- of-Way Acquisition Plan shall set forth DBT's organization, including names, titles and qualifications of Project Right-of-Way personnel, integration of the Project Right-of-Way schedule into the Project Schedule, interface between

Design and Project Right-of-Way activities, documentation and reporting, quality control procedures, and quality review standards. The DBT shall follow the current scoping guidelines for the Division of Right of Way and Utilities.

The DBT is advised that for scheduling purposes, KYTC will be allowed up to 30 Calendar Days to process payments to respective property owners once the acquisition/relocation process has been completed and submitted to KYTC for execution.

Project Report – It will be the responsibility of the DBT to compile and complete the Project Report prior to scoping. The Report shall summarize in detail all relocations, i.e. residential, non-residential, miscellaneous moves, and outdoor advertising. (A pre-qualified person shall write the Project Report).

The DBT shall provide a Right-of-Way cost estimate on appropriate KYTC forms for all related cost of Right-of-Way acquisitions and relocations.

12.4. APPRAISAL SECTION

All appraisals and appraisal reviews shall be completed in accordance with the Uniform Act and KYTC's Division of Right-of-Way and Utilities Appraisal Guidelines Manual. The DBT shall select appraisers from KYTC's list of approved fee appraisers and review appraisers.

12.5. TITLES AND CLOSING SECTION

All title and closing attorneys shall be selected from the Office of Legal Services approved list.

Titles-shall be completed on the approved form TC 11-18. The chain of title shall be searched back at least 35 years and submitted on a title report. In the event title is defective prior to the 35-year requirement further title research shall be completed. Copies of all referenced and applicable documents shall be included within the title report. The DBT shall, at its own cost, review each title report to ensure that it complies with the format required by the Division of Right-of-Way and Utilities.

Ensure that all project Right-of-Way shall be acquired in fee simple absolute or easement interest, free and clear of any and all liens and encumbrances. Title to the project Right-of-Way shall be in the name of the Commonwealth of Kentucky, for the benefit and use of the Transportation Cabinet.

Closings- Prepare the escrow agreement and closing documents, including a closing memorandum identifying all parties involved in the closing, and listing all documents to be executed and/or delivered in connection with the closing. Prior to closing, a title update is required. Cause to be delivered to KYTC the original recorded deed.

12.6. ACQUISITION SECTION

All acquisitions shall be completed in accordance with the Uniform Act and KYTC's Division of Right-of-Way and Utilities Guidance Manual.

12.7. RELOCATION/PROPERTY MANAGEMENT SECTIONS

All relocations/property management shall be completed in accordance to the Uniform Act and KYTC's Division of Right-of-Way and Utilities Relocation Assistance Manual and Right-of-Way Guidance Manual

12.8. CONDEMNATION SECTION

If the DBT and landowner cannot reach an agreement and negotiations reach an impasse, the DBT shall advise KYTC that the DBT has elected to commence acquisition of the property through condemnation procedures. The DBT shall not be permitted to commence any condemnation action through statutory procedure without the express written consent of KYTC Division of Right-of-Way and Utilities. Consent may be withheld by KYTC at their sole and absolute discretion. In the event KYTC withholds consent and delays are caused to the controlling item of the critical path schedule, the department will consider an extension of Contract time.

13. ROADWAY LOCATION AND DESIGN

See the Governing Regulations listed in Section 8.1 of this document.

13.1. SURVEY

All project survey requirements shall be in accordance with Chapter 300 - SURVEYING of the KYTC *Highway Design Manual*. Surveying / Staking for construction shall be according to Section 201 - STAKING of the Standard Specifications; except that KYTC shall not provide any of the services described in Sections 201.03.01 or 201.03.02. Those items of work shall be provided by the DBT. Placement of proposed Right-of-Way monuments, in accordance with KYTC standards, shall be required on this project. Placement of all proposed Right-of-Way monuments shall be performed by a Professional Engineer or Land Surveyor, with a current license in the Commonwealth of Kentucky as determined by the Kentucky State Board of Licensure for Professional Engineers and Land Surveyors. Costs associated for this item shall be borne by the DBT.

The DBT shall provide the following items prior to final acceptance of the As-Built Plans:

A. Listing of all new monumentation set (horizontal and vertical) in graphic and tabular format on Coordinate Control Sheets included in the As-Built Plans.
B. Copies of all deeds, plats, maps, and other written evidence used to establish points related to the project including summaries of all parole evidence acquired as part of the survey operation.

13.2. FUNCTIONAL CLASSIFICATION OF ROADWAYS

Roadway design for the project shall be performed using the following functional classifications:

• I-69 Conversion Section and KY 3690 (Future I-69)	Urban Interstate
• KY 2084	Urban Minor Arterial
• KY 351 (Second Street) (west of Proposed I-69)	Urban Principal Arterial
• KY 351 (Zion Road) (east of Proposed I-69)	Urban Minor Arterial
• Van Wyk Road	Rural Local
• Kimsey Lane (west of Existing US 41)	Urban Minor Collector
• Kimsey Lane (east of Existing US 41)	Rural Minor Collector
• Existing and re-aligned US 41	Urban Freeway Expressway
• US 60 (KY 414 (Wathen Lane) to Morris Drive)	Urban Minor Arterial
• US 60 (Morris Drive eastward)	Rural Minor Arterial
• Tillman-Bethel Road	Rural Local
• New County Road (from Bowling Lane)	Rural Local

I-69 Conversion Section and KY 3690 (Future I-69) interchange ramp designs shall be prepared according to the standards established by the KYTC *Highway Design Manual*.

13.3. DESIGN SPEED CRITERIA

Roadway design for the project shall be performed using the following minimum design speeds:

• I-69 Conversion Section and KY 3690 (Future I-69)	60 mph
• KY 2084	45 mph
• KY 351 (Second Street) (west of Proposed I-69)	35 mph
• KY 351 (Zion Road) (east of Proposed I-69)	45 mph
• Van Wyk Road	25 mph

- Kimsey Lane (west of Existing US 41) 25 mph
- Kimsey Lane (east of Existing US 41) 25 mph
- US 41 45 mph
- US 60 (KY 414 (Wathen Lane) to Morris Drive) 45 mph
- US 60 (Morris Drive eastward) 55 mph
- Tillman-Bethel Road 25 mph
- New County Road (from Bowling Lane) 25 mph

I-69 Conversion Section and KY 3690 (Future I-69) interchanges ramps shall be designed for at least 70 percent of the freeway design speed at all ramp entries and ramp exits. Ramp design speed on the ramp proper for diagonal and directional ramps shall not be less than 30 mph. Design speed for loop ramps shall not be less than 30 mph.

13.4. INTERCHANGE DESIGN REQUIREMENTS

As part of this project, the DBT shall provide the following interchange designs:

- Audubon Parkway Interchange – Modifications to the existing interchange to include:
  - Addition of an auxiliary lane on northbound I-69 between the KY 425 northbound entrance ramp and the northbound I-69 exit ramp to eastbound Audubon Parkway
  - Extension of the westbound Audubon Parkway to southbound I-69 ramp to meet current design standards
  - Extension of the westbound Audubon Parkway to northbound I-69 ramp to meet current design standards
- KY 2084 Interchange – Complete removal of this interchange and reconstruction of KY 2084 to provide for two-direction travel along the existing KY 2084 from Airline Road (KY 812) to KY 351.
- KY 351 Interchange – Reconstruction of this interchange in a manner that eliminates the existing I-69 northbound exit loop ramp to KY 351 and that provides two-lane roundabouts at the KY 351 junctions with KY 2084, and two-lane ramp terminals for the I-69 southbound the I-69 northbound exit ramps. KY 351 roundabouts shall be spaced no closer than 300 feet (as measured between the outer edges of the circulatory roadways), shall be designed according to the KYTC Highway Design Manual Section HD-902.4. and shall accommodate a WB-67 design vehicle. An auxiliary lane / roundabout by-pass lane shall be provided on the southbound exit ramp from I-69 that travels along KY 351 westbound and terminates as a right-lane-must-turn-right condition into the Henderson County Schools entrance north of and opposite KY 2084.
- US 41 Interchange – Construction of a new system interchange that can be converted in the future into a service interchange without major reconstruction. The I-69 northbound to US 41 northbound ramp and the US 41 southbound to I-69 southbound ramp shall both be designed in a manner such that ramp traffic has continuous movement and does not significantly slow or stop on the ramps. The US 41 southbound to I-69 southbound ramp shall be two lanes and shall be designed for at least a 45-mph design speed. The two-lane ramp shall merge into I-69 southbound in accordance with AASHTO *A Policy on Geometric Design of Highways and Streets* Figure 10-55 A1. KYTC approves this ramp entrance concept, however the DBT must include this as a revision to the GLS, fully detailing the merge geometrics and transitions, with their 30% preliminary design submittal, and shall include an operational analysis and information supporting their recommended design, which is subject to KYTC review and approval. The I-69 northbound to US 41 northbound ramp shall be two-lanes and be designed for at least a 30-mph design speed. Positive

separation by concrete median barrier shall be provided between opposing traffic on adjacent ramps.

- Relocated US 60 Interchange – Construction of a new service interchange that provides a pair of two-lane roundabouts in dumbbell or dog bone layout at the Relocated US 60 junctions with the I-69 southbound ramp terminals and the I-69 northbound ramp terminals. US 60 roundabouts shall be spaced no closer than 300 feet (as measured between the outer edges of the circulatory roadways), shall be designed according to the KYTC Highway Design Manual Section HD-902.4, and shall accommodate a WB-67 design vehicle. The roundabouts shall be designed and graded for all current and future ramp movements, but only the south-side ramp connections shall be paved as part of this contract. The DBT shall construct the KY 3690 (Future I-69) / US 60 grade separation bridge(s) as part of this contract. The Tillman–Bethel Road intersection shall be constructed as a roundabout with a diameter equal to the roundabouts specified at the ramp terminals and shall be designed to accommodate a WB-67 design vehicle. The Tillman-Bethel Road approach shall be designed with a grade no steeper than 6 percent. An eastbound right-turn taper and right-turn lane with a turn lane length of at least 215 feet shall be provided on US 60 at Morris Drive.

Interchange Geometric Layout Sheets have been prepared for the KYTC Basic Project Configuration designs at the KY 351, US 41 and US 60 interchanges and have been submitted to KYTC for review and approval. KYTC has granted approval for the three Geometric Layout Sheets. The DBT is responsible for submitting revised Geometric Layout Sheets for any revisions due to their design, whether allowed as design refinements or as ATCs.

13.5. GEOMETRIC DESIGN CRITERIA

Geometric design criteria used by the DBT shall follow guidance provided in the current editions of AASHTO's *A Policy on Geometric Design of Highways and Streets* and the KYTC *Highway Design Manual* for the roadway classifications and design speeds listed above and using the 2045 forecasted traffic volumes provided in The RIDs, *Ohio River Crossing, Henderson: Section 1 Traffic Analysis Memorandum, dated May 12, 2021*. Level terrain shall be assumed for determining maximum and minimum design values. An 8 percent maximum superelevation rate shall be used by the DBT for rural roadway conditions and a 4% maximum superelevation rate shall be used for urban roadway conditions. Low-speed urban criteria shall be used by the DBT for Kimsey Lane and Van Wyk Road. Clear zone distances shall be determined by the DBT according to AASHTO's *Roadside Design Guide*, current edition.

Entrance grades shall be designed as flat as practical within the entrance tie-down distances available but shall not exceed 12 percent in steepness. If the DBT proposes to utilize a steeper grade than 12 percent, then it must be approved by the Engineer.

A Design Executive Summary (DES) has been prepared for the KYTC Basic Project Configuration and has been submitted for KYTC approval. If the DBT proposes any changes or design exceptions to the geometric criteria listed in the DES for the roadways within the project, and if those proposed changes are approved as part of the ATC review process, then the DBT shall modify or prepare a new DES that shall be submitted to KYTC for approval.

13.6. TYPICAL SECTIONS

The DBT shall provide the following minimum typical sections for the roadways and ramps on the project:

- Northbound I-69 Auxiliary Lane between the KY 425 northbound entrance ramp and the northbound I-69 exit ramp to eastbound Audubon Parkway: Widening to provide one 12-foot travel lane, 12-foot shoulder (10-foot paved).
- Audubon Parkway Ramps A and C: Widening to provide one variable width (12-foot minimum) travel lane, 8-foot shoulder (6-foot paved)
- I-69 Conversion Section: Four-lane divided freeway with minimum 36-foot depressed median (6:1 or flatter median slopes, but not flatter than 8:1), two 12-foot southbound traffic lanes, two 12-foot northbound traffic lanes, 12-foot outer shoulders (10-foot paved), 6-foot median shoulders (4-foot paved).
- KY 351: Five-lane urban roadway with a 15-foot median lane, two 12-foot traffic lanes in each direction, 2-foot curb and gutter each side, minimum 3-foot planting strip (verge) each side, 5-foot future sidewalk on the north side, 8-foot shared use path on the opposite south side, 2-foot border strips past the sidewalk and shared-use pedestrian paths on both sides. For streetscaping purposes (see Section 20.1), increase the verge width on the south side from the minimum 3-foot width to a 6 to 8-foot width in areas that are not constrained by right-of-way or other existing conditions. Provide an 8-foot verge width on the south side of KY 351 beneath any proposed overhead bridges.
- I-69/KY 351 Interchange Ramps: 15-foot travel lane for single-lane ramps, 12-foot lanes for two-lane ramps, 6-foot left-side shoulder (4-foot paved), 8-foot right-side shoulder (6-foot paved). The existing northbound loop exit ramp shall be removed and not replaced as part of the DBT's proposed design.
- KY 2084: Two-lane rural roadway with one 11-foot lane in each direction, 6-foot shoulders (4-foot paved).
- KY 3690 (Future I-69) (starting immediately north of the US 41 Interchange): Four-lane divided freeway with minimum 36-foot depressed median (6:1 or flatter slopes, but not flatter than 8:1), two 12-foot southbound traffic lanes, two 12-foot northbound traffic lanes, 12-foot outer shoulders (10-foot paved), 6-foot median shoulders (4-foot paved).
- US 41 (northwest of proposed interchange): Four-lane divided freeway with 8-foot median with concrete median barrier separator, two 12-foot southbound traffic lanes, two 12-foot northbound traffic lanes, 12-foot outer shoulders (10-foot paved), 2.75-foot or larger inner paved shoulders.
- I-69/US 41 Interchange Ramps: 15-foot travel lane for single-lane ramps, 12-foot lanes for two-lane ramps, 6-foot left-side shoulder (4-foot paved), 8-foot right-side shoulder (6-foot paved).
- Kimsey Lane: Two-lane rural roadway with one 11-foot lane in each direction, 5-foot shoulders (3-foot paved).
- Van Wyk Road: Two-lane rural roadway with one 11-foot lane in each direction, 4-foot shoulders (2-foot paved).
- Merrill Trail Extension (Multi-Use Path near US 41): 10-foot paved width and with other features and dimensions conforming to design guidance provided in AASHTO's *Guide for the Development of Bicycle Facilities,* current edition.
- Relocated US 60 Urban Section:
    - From connection to Existing US 60 near Wathen Lane to western roundabout: Five-lane urban roadway with a 14-foot median lane, two 12-foot traffic lanes in each direction, 2-foot curb and gutter each side, 3-foot planting strip each side, 5-foot sidewalks on each side, 2-foot border strips past the sidewalks on both sides.

  - Between ramps roundabouts: Four-lane urban roadway with a 4-foot barrier median, 2-foot shy distances each side of barrier median, two 12-foot traffic lanes in each direction, 2-foot curb and gutter each side, 3-foot planting strip each side, 5-foot sidewalks on each side, 2-foot border strips past the sidewalks on both sides.
  - East of the eastern ramps roundabout to Tillman-Bethel Road roundabout: Four-lane urban roadway with a 4-foot barrier median, 2-foot shy distances each side of median barrier, two 12-foot traffic lanes in each direction, 2-foot curb and gutter each side, 3-foot planting strip each side, 5-foot sidewalks on each side, 2-foot border strips past the sidewalks on both sides.
  - East of Tillman-Bethel Road to Morris Drive: Two-lane urban roadway with one 12-foot traffic lane in each direction, 2-foot curb and gutter each side, 3-foot planting strip each side, 5-foot sidewalk on the south side, grading for a future 5-foot sidewalk on the north side, 2-foot border strips past the sidewalks on both sides.
- Relocated US 60 Rural Section (east of Morris Drive): Two-lane rural roadway with one 12-foot lane in each direction, 8-foot shoulders (4-foot paved).
- KY 3690 (Future I-69) / Relocated US 60 Interchange Ramps: 15-foot travel lane for single-lane ramps, 12-foot lanes for two-lane ramps, 6-foot left-side shoulder (4-foot paved), 8-foot right-side shoulder (6-foot paved).
- Tillman-Bethel Road and Old US 60 Connectors: Two-lane rural roadway with one 12-foot lane in each direction, 4-foot shoulders (2-foot paved).
- New County Road (from Bowling Lane): Two-lane rural roadway with one 10-foot lane in each direction, 4-foot shoulders (2-foot paved).
- Parcel 609 Entrance: One 12-foot paved lane, 4-foot earth shoulders.
- Parcel 106 Entrance: One 18-foot paved lane
- Pond maintenance drive: One 18-foot gravel lane

The DBT shall provide safe roadside designs for each roadway and ramp with minimal use of guardrail and appropriate clear zone distances per AASHTO's *Roadside Design Guide*, current edition. Provide foreslopes of sufficient width to drain the pavement section and convey stormwater runoff. Provide embankment slopes on all roadways and ramps that are 2:1 or flatter or as dictated by geotechnical conditions. Utilize the flattest embankment and cut slopes possible as permitted by the available Right-Of-Way to minimize the need for guardrail. Use of guardrail will not be permitted to protect traffic from slopes unless traversable slope limits cannot be developed within the project ROW, or unless required to protect motorists from objects within the clear zone. For guardrail locations that have long, steep (>= 3:1) embankment slopes or slopes with highly erodible soils, install wedge curb constructed of concrete with steel reinforcement.

13.7. DESIGN EXCEPTIONS

The following design exception was submitted for review and approval for the KYTC Basic Project Configuration:

- Pennyrile Conversion Section – Permission to use the existing 3.75-foot wide northbound median paved shoulder in lieu of a recommended 4-foot paved shoulder.

The above design exception has been approved by KYTC.

The DBT shall advise KYTC of any of its proposed design features that do not meet the minimum design criteria. Due to the sensitive nature of the approval process for a design exception, it is a requirement that all DBT proposed design exceptions be submitted in writing to KYTC for

consideration no less than 45 days prior to submittal of the Technical Proposal. A detailed explanation of the justification for the proposed design exception shall be provided with this request. All competing DBTs will be made aware of the design exception request as well as KYTC approval or disapproval of the proposed design exception in writing. KYTC does not intend to approve design exceptions after the Contract is awarded unless extreme and unforeseen circumstances may be demonstrated. The safety of the traveling public shall not be compromised by a design exception.

The following items need to be individually discussed for any DBT-requested design exception:

A. Amount and character of traffic
B. Type of project (e.g. new construction, 3R)
C. Crash history relevant to the exception request
D. Specific information pertinent to the type of exception being requested (i.e. deferral of bridge widening requests should address structural and functional adequacy of existing bridge and project a future time for widening, etc.)
E. Underlying reason(s) for requesting the design exception
F. Effects, if any, the proposed design exception shall have on other standards (i.e. a design speed exception would affect requirements for grade, curvature, sight distance, etc.)
G. Effects of the proposed design exception on the safety and operation of the facility
H. Comparative cost of attaining full standards (phrases such as obtaining the standard would be too "costly" or beyond the scope of the project are of little value to KYTC in making a decision)
I. Future improvements and their relation to the requested design exception
J. Any features which would tend to mitigate the deviation from the design standard

13.8. SECTION IS NOT BEING USED

13.9. FENCING

Right-of-Way fencing is required along all fully controlled access Right-of-Way on this project. The DBT shall provide new access control Right-of-Way fencing at the KY 2084 interchange removal area and along the new cross-country freeway construction section to KY 3690 (Future I-69) Sta. 4043+58 (left) and Sta. 4046+35 (right) at the Parcel 627 northern property line. In addition, the DBT shall provide new in-kind replacement Right-of-Way fencing at all locations where the existing Right-of-Way fencing must be removed to complete the construction. Right-of-Way fencing locations shall be designed according to the KYTC Highway Design Manual and Standard Drawings.

The DBT shall be responsible for removing existing Right-of-Way fencing at those locations where it conflicts with the proposed design developed by the DBT.

The DBT shall also construct 4-foot tall woven wire fencing around the perimeter of each detention basin constructed for the project. The fencing and gates shall conform to the requirements of SECTION 721 – FENCE of the *Standard Specifications* and the *Standard Drawings*. Install the perimeter fencing near the top of bank of the basins. Install one 12-foot wide gate for each 1000 feet of perimeter fencing at locations to be designated by the Engineer.

Pedestrian fencing for the Relocated US 60 bridges over KY 3690 (Future I-69) and CSX Railroad shall be black vinyl coated chain link fence fabric according to Section 817 – CHAIN LINK FENCING MATERIALS of the Standard Specifications.

13.10. ADDITIONAL DESCRIPTION OF REQUIRED WORK AND SPECIAL PROVISIONS

Clearing and Grubbing Limits – The DBT shall provide clearing and grubbing of all areas of the proposed Right-Of-Way except for any areas of the KY 2084 interchange area designated in Section 22.1 for selective clearing and any areas designated by the Engineer not to be cleared. Provide clearing and grubbing of the proposed Right-Of-Way northward to the Parcel 627 northern property line at KY 3690 (Future I-69) Sta. 4045+43.

Northbound KY 3690 (Future I-69) Freeway End Configuration at US 60 Exit Ramp – The northern terminus of KY 3690 will be at US 60 at the completion of Section 1. All KY 3690 northbound traffic must be directed to use the US 60 exit ramp through the use of signing and striping. To achieve this the DBT shall provide the following items:

- Signing and striping for a left lane drop in advance of the US 60 northbound exit ramp per MUTCD Sections 2C.42 and 3B.09.
- FREEWAY ENDS 1 MILE and FREEWAY ENDS ½ MILE signs (MUTCD W19-3).
- ALL TRAFFIC MUST EXIT signs (MUTCD W19-5) placed adjacent to the US 60 Exit panel guide signs.
- Striping to guide the northbound KY 3690 traffic from the right lane into the US 60 exit terminal.
- Temporary Concrete Barrier Wall Type 9T and delineators placed across the KY 3690 northbound pavement just north of the exit ramp to prevent vehicular access to the grading/drainage-only section. The barrier wall shall be offset 4' from the left edge of the left lane drop and shall remain in place upon the completion of Section 1 and become the property of KYTC.

Limits of KY 3690 (Future I-69 Grading and Drainage) –In addition to the grading, drainage and surfacing required for construction and paving of the project roadways and ramps, the DBT shall provide grading and drainage of the KY 3690 (Future I-69) typical section from KY 3690 Sta. 3950+00, the end of freeway paving, northward to KY 3690 Sta. 4030+00, the limits of grading/drainage. At the Sta. 4030+00, ramp the earthwork down at a 4 horizontal to 1 vertical or flatter slope to meet the existing ground. Positive drainage shall be maintained to the roadside ditches to alleviate ponding. As part of the grading/drainage-only work between Stations 3950+00 and 4030+00, the DBT shall also grade and drain the future southbound I-69 exit ramp to US 60 and the future northbound entrance ramp from US 60 to I-69 for the proposed ramp typical section. Grading and drainage shall include all aspects of normal roadway construction (clearing, earthwork, ditching, bridge construction, box culvert and pipe construction, median inlets, erosion control, etc.), except for surfacing and guardrail, as required by the *Standard Specifications*. Within the grading/drainage-only section, grade and drain mainline and ramps to an elevation 4-inches above the final subgrade elevation to allow for future trimming and fine-grading. Pavement subgrade treatment, such as chemical modification, shall not be required for the grading/drainage-only segments of KY 3690 and the two ramps north of US 60. In addition to seeding the roadway slopes and other disturbed areas, the DBT shall also seed and protect all areas of future pavement on the grading/drainage-only segments of KY 3690 and the two ramps.

New County Road (from Bowling Lane) – The DBT shall construct and pave the New County Road beginning at the Bowling Lane northeast edge of pavement at a point approximately 2,500 feet northwest of the Bowling Lane/Tillman-Bethel Road intersection, then proceeding with roadway construction in a north-northeast direction and ending at a point 220 feet northeast of the Parcel 630/Parcel 633 property line. As part of the New County Road construction, the DBT shall construct and pave a cul-de-sac or "T"-type turnaround suitable for use by an SU design vehicle at or near the northeastern end of the new roadway; construct barricade guardrail across the end of roadway with

Terminal Sections No. 1 on each guardrail end; erect STOP, DEAD END and other appropriate signage; and erect end of roadway object markers behind the barricade guardrail.

Ground Restoration -- All areas disturbed along active residential, commercial and institutional properties shall be restored using sod. Sod all earth areas from the back of curb to the limits of disturbance for the entire disturbed width of any residential property containing a habitable structure, for the entire disturbed width of any commercial property containing an active commercial business, and for the entire disturbed width of any active institutional property such as a school. Restore all other disturbed areas using seeding and protection. Sod is not required inside the control of access Right-of-Way fencing adjacent to freeways. Areas inside the Right-of-Way fencing shall be restored in accordance with Section 212 of the Standard Specifications.

Structural Aesthetic Treatments -- Except for the faces of bridge barriers immediately adjacent to vehicles, all exposed vertical concrete surfaces on the proposed I-69 bridges over KY 351 that are in excess of 30 inches in height and 48 inches in width shall receive an architectural treatment. The architectural treatment shall be submitted by the DBT for review and approval by the Engineer but shall be of the "Simulated Wave" pattern with at least a ¾-inch reveal. The architectural treatment shall be surrounded by a 4-inch wide chamfered smooth border.

KY 351 Streetscape/Aesthetic Treatments – See Section 20.

Approach Roadway Designs -- Approach roads and commercial entrances may require reconstruction as a part of this project. Existing pavement widths and profile grades on approaches shall be maintained or improved upon (i.e.: wider and/or flatter). This may require work off the existing Right-of-Way and in accordance with Section 12 of this document.

Removal of Existing Pavements -- The DBT shall remove any existing pavements that are not utilized in its proposed design except for pavements on cut-off roadways that will have maintenance responsibility transferred to the City of Henderson or Henderson County. The DBT shall coordinate with the Engineer to determine the disposition of existing pavement areas. For those areas of unneeded pavement designated for removal, the DBT shall remove the pavement and provide replacement soil cover, grading, seeding and protection for those areas.

Intelligent Compaction -- Intelligent compaction of soils, aggregates and asphalt mixtures shall be used on this project along with paver-mounted temperature profiles and E-ticketing as described in the following Construction Special Notes provided as Attachments 13.10:

- Special Note for HMA Electronic Delivery Management System (HMA e-Ticketing)
- Special Note for Intelligent Compaction of Asphalt Mixtures
- Special Note for Compaction of Aggregate Bases and Soils
- Special Note for Paver Mounted Temperature Profiles

Intelligent compaction will be for mainline (I-69, US 41, and US 60) and ramps pavements only, but not for local roads, trails, etc.. Section 400 of the Standard Specifications shall apply for all other asphalt pavements.

13.11. ADDITIONAL CONSIDERATIONS

In developing the roadway design, gravity retaining walls should be used by the DBT as a last resort to minimize Right-of-Way impacts.

Mainline lanes and shoulders shall be designed so that the edge of pavement is above the 1% AEP WSE (100-year storm event) for the entire project. Bottom of subgrade shall be above the 2% AEP WSE (50-year storm event) for the entire project.

13.12. ROADWAY PLANS REVIEW SUBMISSIONS

For each Buildable Unit, the DBT shall submit detailed design plans as per the KYTC *Highway Design Manual*, and supporting calculations, for review. Design submissions shall include preliminary (30%), interim (60% to 90%), final (100%), RFC and as-built plans.

14. DRAINAGE

This section applies to all new, widened or realigned segments of I-69, US-41, US-60, KY-351, KY-2084 and other new, widened or realigned local roads, and excludes conversion segments of US-41 that are not being widened or realigned.

14.1. DRAINAGE FOLDERS REQUIRED

Drainage design submittals shall follow the Drainage Submittal Guidelines listed on the KYTC Drainage Design Website: https://transportation.ky.gov/Highway-Design/Pages/Drainage-Folder.aspx; and preliminary and final drainage folders shall be prepared and submitted following the policies and procedures set out in the KYTC *Drainage Manual*. Separate drainage folders may be submitted for review for distinct subsections of the project.

14.1.1. CANOE CREEK DETENTION FACILITIES

The Canoe Creek Detention Facilities shall be designed to mitigate any Canoe Creek floodplain rises that will occur due to the construction of the project, to reduce the peak flow discharge of Canoe Creek downstream of US-41, and to provide fill and topsoil material for the project's construction. The following are the minimum design requirements for new detention facilities:

A. The minimum detention basin combined volume shall meet all the following:
   - Provide 1-for-1 replacement of flood storage capacity in the Canoe Creek floodplain to compensate for all fill placed within the floodplain below the 100-year flood elevation
   - Satisfy the FEMA 100-year no-rise criteria
   - Provide an additional 20 percent excess capacity in the basin to reduce existing downstream flooding risks in the City of Henderson.

   The DBT shall perform final hydraulic modeling to demonstrate that the basin provides the minimum detention basin volume.

B. All design shall use the FEMA updated floodplain model (HEC-RAS 2D) in the RID documents as the effective model for hydrology and hydraulics of the detention facilities.

C. The preliminary basin design in the RID documents will be submitted with the CLOMR application prior to Contract Award. If significant changes to the shape, volume, and location are made as part of the final design process that increase flooding impacts, a revised CLOMR permit may be required, and if so, the revised permit will be the responsibility of the DBT.

D. Do not use underground storage or underground detention systems.

E. Design of the basins shall follow the KDOW Engineering Memorandum No. 5 (Structure Class A).

F. Comply with Kentucky Division of Water Dam requirements for all detention basins constructed with a berm or artificial barrier.

G. A Dam Construction Permit will be required from KDOW prior to installation of the basins' outlet works as discussed in Section 11.6. If berms or artificially barriers are not constructed

and the water levels contained in the ponds are not above the level of the existing ground, then a Dam Construction Permit will not be required.

H. Determine design infiltration rates by field testing in accordance with KYTC and KDOW requirements.

I. Do not consider infiltration in detention facility routing and sizing calculations.

J. Route stormwater flows along the bottom of the detention basins. Provide low-flow channel slope to maximize the potential to completely drain the facility. The low-flow channel shall be developed with sinuosity as to mimic more natural conditions.

K. Grade the detention basins to drain toward the low-flow channel to maximize the potential to completely drain the detention facility.

L. The basin primary outfall shall discharge to Canoe Creek. Assume detention basins are empty prior to the 100-year event. Include a principal outlet for each basin sized to control outflows such that the basins empty in no less than 48-hours. Hydrographs from the updated effective 2D model may be used to design the proposed principal spillway(s) for the proposed ponds.

M. The basins shall have an irregular shape.

N. No additional ROW will be provided for the basin location.

O. Access to the existing HWU sewer lines needs to be provided. A 24-ft wide, 6-inch thick gravel access road is required along the existing sewer line that separates the two basins.

P. Provide maintenance access to each detention facility as follows:

1. Provide an 18-foot-wide, 6-inch thick gravel maintenance access driveway from the nearest paved surface along the south side of the easterly detention facility to connect with the 24-foot maintenance access road described above in 14.1.1.O. Location and layout require approval by the Department.
2. Do not exceed 10 percent grade at any location for access driveway grades.
3. Provide a safe turn-around location for maintenance vehicles.
4. Ensure that the location and design of each access does not impair or reduce the functionality of the overall drainage system.
5. Provide an access ramp with a slope no steeper than 6:1 (H:V) and a width of 12 feet for each detention facility.

Q. Landscape proposed basins with wetland seeding mix per the Henderson Water Utility specifications.

R. Reference Section 13.9 FENCING for fencing requirements around basins.

S. Provide an Operations and Maintenance Manual for the detention facilities.

14.1.2. CULVERTS

A. Design culverts to meet the following maximum headwater elevation criteria at the design event:

1. Design per the KYTC Drainage Manual and FHWA's HDS-05, Third Edition, "*Design of Highway Culverts*".
2. For culverts within a FEMA mapped floodplain, do not increase the water surface elevation more than allowable for the 100-year event.

B. All culverts located within the proposed new 100-year floodplain limits shall use the updated FEMA floodplain model (HEC-RAS 2D) as the effective model for hydrology and hydraulics of culverts.

C. Size I-69 cross culverts between Stations 3965+00 to 3990+00 to provide 50% additional hydraulic capacity above that required by the KYTC Drainage Manual.
D. Do not install inlet pipe invert lower than the outlet pipe invert in culverts.
E. The minimum height and width for box culverts is 4 feet.
F. Cast in place and precast concrete culverts or pipe culverts with a total width of 16 feet or less shall be single cell. Wider culverts shall have no more than two cells.
G. Precast concrete culverts may be used only where culvert installation will cause disruption to traffic. Cast in place culverts shall be used in all areas where culvert installation will not impact traffic.
H. PVC or HDPE pipe shall not be used for pipe culverts.
I. Headwalls for pipe culverts up to 42 inches in diameter shall be sloped and mitered. See TP Attachment 14.1.
J. Culverts and headwalls shall be extended past the clear zone or protection measures shall be included.
K. Existing culverts shall be cleaned and video inspected by the DBT for damage, deterioration, leaking joints, etc. Culvert Condition and Evaluation Reports shall be prepared by the DBT and submitted to KYTC for review. Any scope for recommended and agreed to repairs may be added to the DBT's Contract by Change Order.
L. A single barrel structure is required for the culvert crossing of the Canoe Creek tributary at US 60.
M. Set culvert inverts to match existing channel flowline where practicable.
    1. Provide riprap adjacent to aprons at the culvert entrance and exit.
    2. If culverts outlet directly to the Canoe Creek Detention Facilities they shall be placed a minimum of 1-foot above the bottom of the basin toe of slope.

14.1.3. CANOE CREEK TRIBUTARY CHANNEL

Proposed widening of the existing Canoe Creek Tributary channel west of I-69 and immediately north of US 60 will be required in order to maintain no-rise conditions.

A. All Canoe Creek basin drainage design shall use the updated FEMA floodplain model (HEC-RAS 2D) as the effective model for hydrology and hydraulics of the US 60 channel and facilities.
B. Grading within the existing channel shall only occur along the east bank of the Canoe Creek Tributary channel within the project ROW.
C. Grading of the channel shall expand the flow capacity of the channel to meet no-rise conditions but grading shall occur above the natural thalweg of the existing channel.

14.1.4. STORMWATER QUALITY

Temporary construction stormwater quality management shall be in accordance with the KPDES Permit.

Post construction Stormwater Quality Best Management Practices (BMPs) shall be designed in accordance with the KYTC individual stormwater permit (KYS000003) and the KYTC *Stormwater Post-Construction Best Management Practices Menu.* KYTC has coordinated with the local MS4 agency, which is the Henderson Water Utility (HWU). The DBT shall incorporate HWU's local requirements into the design, where feasible and not in conflict with KYTC's design practices.

14.1.5. CHANNEL DESIGN

KYTC Drainage Manual Chapter DR 500 shall be used to design all channels. Channels shall be checked for shear forces and lining shall follow FHWA's HEC-15, Third Edition, "Design of Roadside Channels with Flexible Linings", which shall supersede KYTC Drainage Manual DR 500 in this case.

14.1.6. STORM DRAIN DESIGN

KYTC Drainage Manual Chapter DR 700 and FHWA's HEC-22, Third Edition, "Urban Drainage Design Manual" shall be used to design the storm drain design including inlets and storm sewers.

PVC or HDPE pipe shall not be used for storm drains.

15. MAINTENANCE OF TRAFFIC (MOT)

See the Governing Regulations listed in Section 8.1 of this document. The DBT shall submit an approach for MOT for the project that incorporates the elements listed below as well as propose any innovative ideas that may expedite the work. A Traffic Management Plan (TMP) shall be submitted by the DBT for review and approval by KYTC (TMP form can be found on the KYTC Highway Design Web Page). The TMP may be submitted for review for distinct subsections of the project.

15.1. GENERAL

All MOT procedures shall be in accordance with the *Manual on Uniform Traffic Control Devices* (*MUTCD*), except when the KYTC *Standard Drawings* or *Standard Specifications* are more restrictive, the KYTC documents shall govern. The posted speed limit on any road within the project limits may be reduced during construction by 10 MPH with approval from the Engineer. The KY 425, Audubon Parkway, KY 2084, KY 351, US 41 and US 60 interchanges ramp infields may be used as contractor staging areas for conducting work on the project. Double fine signing shall be installed in accordance with KYTC Standard Drawings and KYTC Traffic Operations Memo No. 01-20.

All temporary signing, including portable changeable message signs, shall be provided by the DBT for this project. Traffic control signage plans shall be submitted to the Engineer for approval prior to erecting any temporary signs. The DBT shall provide at least six portable changeable message signs for simultaneous use during construction. The DBT shall provide a queue analysis to the Engineer for each proposed lane closure on US 41, I-69 and Audubon Parkway and advance queue warning systems for excessive (greater than or equal to one mile) queue lengths on those same freeways.

This project is a Significant Project pursuant to Section 112.03.12 of the *Standard Specifications*. The DBT shall designate a qualified Work Zone Traffic Control Supervisor as the Project Traffic Coordinator. As part of the Traffic Management Plan prepared for the project, the DBT shall be responsible for preparation of materials for the Public Information Plan (PIP) in advance of and for the duration of construction on the project. PIP efforts shall include, but not be limited to:

- Development of a project contacts list that includes newspapers, radio, television, and other interested parties
- Development of social media posts and coordination of approvals and distribution with KYTC's District 2 Public Information Officer to the interested parties
- Development of materials for the Department's project website
- Use of portable changeable message signs at visible locations to convey upcoming traffic changes

15.2. MOT RESTRICTIONS

No lane closures shall be allowed on the I-69 Pennyrile Conversion section, Existing US 41, KY 2084, KY 351 or US 60 during observance of any holidays identified in Section 101 of the *Standard Specifications*. Under special circumstances, KYTC reserves the right to restrict the use of lane closures due to unforeseen special events.

In principle, the DBT shall maintain the current lane configurations (or better) on each project roadway for the life of the project, including access to all adjoining properties. Lane closure restrictions are provided below. Suggestions for additional working hours may be proposed by the DBT to KYTC as a part of the DBT project proposal. Provisions in Section 112.03.15 of the *Standard Specifications* shall apply for non-compliance with the Contract traffic control requirements.

I-69 Pennyrile Conversion Section and Existing US 41 -- The DBT shall provide two 11-foot minimum width temporary travel lanes in each direction and no less than 2-foot temporary minimum width

shoulders. Traffic on US 41 shall be separated by channelizers/tubular markers when traffic is maintained on the same roadbed. Lane closures on the I-69 Pennyrile Conversion section and Existing US 41 shall only be permitted between the hours of 9:00 AM to 3:00 PM and 7:00 PM to 6:00 AM CST.

An exception to the minimum shoulder widths for Existing US 41 stated above will be permitted only at the Existing US 41 twin bridges over Van Wyk Road and North Fork of Canoe Creek. At those bridges, shoulder widths may be reduced such that four temporary lanes and a 2-foot median separator will fit within the existing bridge deck width. The narrowed shoulder widths on the bridge decks shall be transitioned back to the 2-foot temporary minimum width shoulders away from the bridges as soon as practicable.

During construction of the new auxiliary lane northbound between KY 425 and the Audubon Parkway, US 41 can be closed to one 11-foot lane with 3-foot shoulders in the northbound direction. Work shall be active and ongoing during this phase of work or two lanes of travel shall be re-established. If the Contractor is not actively working in this section for more than 3 days then two 11-foot lanes shall be re-established.

Any pavement dig-outs or overhead bridge work required or proposed on US 41 between KY 425 and KY 351 can be constructed while maintaining one 11-foot lane. Work shall be active and ongoing on a daily basis during this phase of work or two lanes of travel shall be re-established. If the Contractor is not actively working in this section for more than 3 days then two 11-foot lanes and 2-foot shoulders shall be re-established. Long term lanes closures for this work shall not extend in the northbound direction beyond 1,500 feet south of the KY 351 interchange.

All work on the I-69 Pennyrile Conversion section and Existing US 41, except traffic control operations and final pavement markings, shall be conducted behind temporary concrete barrier wall as identified in the *Standard Drawings*. A lane closure for separation shall be in place during temporary concrete barrier wall placement. Access to and from the work zone adjacent to the freeway shall be at the beginning or end of the string of barrier wall or at approved entrance / exit points to be designed and submitted by the DBT to the Engineer for review and approval. Construction operations on the I-69 Pennyrile Conversion section and Existing US 41 using shoulder closures without temporary concrete barrier wall are prohibited unless they are in place less than one work shift in duration and positive separation from traffic of at least 11 feet is provided. Temporary Raised Pavement Markers, Type IVA as identified in Section 112 – MAINTENANCE AND CONTROL OF TRAFFIC DURING CONSTRUCTION of the *Standard Specifications* shall be required when freeway traffic lanes are temporarily relocated outside of their normal position. Delineators for barriers shall be required on temporary concrete barrier wall according to Section 509 – TEMPORARY CONCRETE MEDIAN BARRIERS of the *Standard Specifications*. For removal of bridge elements above the I-69 traveled way during permitted lane closure hours, provide advance warning using changeable message signs and a signed detour route using State-maintained roadways.

Rolling closures will be allowed for overhead work in 15-minute intervals. Rolling closures for overhead work may only be performed during the hours of 11:00 PM to 5:00 AM CST. Rolling closures must follow the requirements in the MUTCD and KYTC standards, in addition to a minimum of 1 law enforcement officer, in a marked police car with blue lights flashing, per lane.

KY 425 over US 41 (I-69) – The DBT shall maintain one lane in each travel direction at all times during bridge deck repairs (051B00137L and 051B00137R). Complete the work using part-width construction using temporary concrete barrier wall to protect traffic. All work shall be completed within a 60 calendar day time period.

Adams Lane over US 41 (I-69) – The DBT shall maintain one alternating lane of travel on Adams Lane at all times during bridge deck repairs (051B0069N). Complete the work using part-width

construction using temporary concrete barrier wall to protect traffic. All work shall be completed within a 60 calendar day time period. Lane closures for repairs to the Adams Lane bridge shall not be in operation at the same time as lane closures for bridge deck repairs to the KY 812 (Airline Road) bridge over US 41 (I-69).

Audubon Parkway over US 41 (I-69) – The DBT shall maintain one lane in each travel direction at all times during bridge deck repairs (051B0073L and 051B0073R). Complete the work using part-width construction using channelization devices to protect traffic. All work shall be completed within a 30 calendar day time period.

KY 812 (Airline Road) – The DBT may close Airline Road to traffic for bridge deck repairs (051B00111N) for a period not to exceed 90 calendar days, extending no more than 30 days outside of the summer school recess period. The closure shall be limited to the roadway segment between Dove Trail Drive and Garden Mile Road. The DBT shall provide two-week advance notice signing and an Engineer-approved signed detour route using State-maintained roadways during the closure period. The Airline Road closure shall not be in operation at the same time as lane closures on Adams Lane or at the same time as lane closures on KY 351.

KY 2084 – The DBT shall provide one lane in each direction during Non-working Hours. Paved and unrestricted access at least 12 feet wide to the Henderson Fire Department Station 2, located at 191 Highway 2084 South, shall be provided at all times.

KY 351 –. No lane closures shall be permitted on KY 351 during on-site school instruction days from 7:00 a.m. to 8:00 a.m. and from 3:00 p.m. to 4:00 p.m. CST. The entrance for school will be maintained for bus and pedestrian traffic during on-site school instruction days from 7:00 a.m. to 8:00 a.m. and from 3:00 p.m. to 4:00 p.m. CST. The DBT shall complete KY 351 reconstruction, including tie-ins to the I-69 ramps, excluding overhead work and utility relocations, during 15-month continuous time period. The DBT shall provide a signed detour route for KY 351 traffic following State-maintained roadways when placing bridge beams and for other overhead work that requires temporary road closure.

KY 351 Ramps – Ramp closures to facilitate ramp construction at the KY 351 interchange will be considered by KYTC if certain conditions are met. Ramps A (SB US 41 to KY 351), C (KY 351 to NB US 41) and D (KY 351 to SB US 41) may each be closed for construction during the school recess period in the summer for a period not to exceed 21 calendar days per ramp. None of those ramps may be closed at the same time, and the KY 2084 ramps must be in operation during the KY 351 ramp closure(s). Prior to any ramp closure, the DBT shall provide a detour signing plan using State-maintained roadways, level of service traffic analysis calculations for any intersections along the proposed detour route that would experience a temporary increase in traffic during the ramp closure, and any other necessary temporary traffic control measures (temporary pavement, temporary traffic signals, etc.) to the Engineer for review. If ramp closure and the detour route is approved by the Engineer, the DBT shall provide motorists with advance warning signage at least two weeks in advance of the ramp closure date, detour route signing, and prompt removal of the detour route signing when no longer needed. Ramp C shall not be closed to traffic until Ramp B (southeast quadrant) is completed and open to traffic, allowing the existing loop ramp to be closed.

Van Wyk Road – The DBT shall provide one lane in each direction during all Non-Working Hours, except that a road closure, not to exceed 14 days in duration, shall be permitted to complete construction on Van Wyk Road. The DBT shall provide two-week advance notice signing and a signed detour route for Van Wyk Road during the closure period. The DBT shall provide a signed detour route for Van Wyk Road traffic when placing bridge beams and for other overhead work that requires temporary road closure.

Kimsey Lane – When Kimsey Lane is open to traffic, the DBT shall provide one lane in each direction during all Non-Working Hours. Kimsey Lane may be closed to through traffic to enable completion of the US 41 interchange. The DBT shall provide two-week advance notice signing and road closed ahead signing for Kimsey Lane during the closure period. The DBT shall maintain access to the electric substation on Kimsey Lane at all times.

US 60 -- The DBT shall provide one lane in each direction during all Non-Working Hours. No lane closures shall be permitted on US 60 from 7:00 a.m. to 8:30 a.m. and from 4:00 p.m. to 5:30 p.m.

Tillman-Bethel Road -- The DBT shall provide one lane in each direction during all Non-Working Hours.

Construction operations on roadways other than the I-69 Pennyrile Conversion section and Existing US 41 may be allowed without temporary concrete barrier wall during daylight hours provided any resulting temporary drop-off conditions and signing requirements are adequately addressed.

PAVEMENT EDGE DROP OFFS

Do not allow a pavement edge between opposing directions of traffic or lanes that traffic is expected to cross in a lane change situation with an elevation difference greater than 1½". Place Warning signs (MUTCD W8 -11 or W8 -9A) in advance of and at 1500' intervals throughout the drop-off area. Dual post the signs on both sides of the traveled way. Wedge all transverse transitions between resurfaced and un-resurfaced areas which traffic may cross with asphalt mixture for leveling and wedging. Remove the wedges prior to placement of the final surface course.

Protect pavement edges that traffic is not expected to cross, except accidentally, as follows:

- Less than 2" - No protection required.
- 2" to 4" - Place plastic drums, vertical panels, or barricades every 50 feet. During daylight working hours only, the Engineer will allow the Contractor to use cones in lieu of plastic drums, panels, and barricades. Wedge the drop-off with DGA or asphalt mixture for leveling and wedging with a 1:1 or flatter slope in daylight hours, or 3:1 or flatter slope during nighttime hours, when work is not active in the drop -off area.
- Greater than 4" - Protect drop-offs greater than 4 inches within 10 feet of traffic by placing drums, vertical panels, or barricades every 50 feet. The Engineer will not allow the use of cones in lieu of drums, vertical panels, or barricades for drop-offs greater than 4". Place Type III Barricades directly in front of the drop-off facing oncoming traffic in both directions of travel. Provide warning signs as shown on the Standard Drawings or as directed by the Engineer. Excavations directly adjacent to traffic (with no positive separation), shall be limited to 500 feet in length. The intent of this requirement is to keep the temporary "wedging operation" in close to the active work area to promote safety for the motorist.

In areas where pavement is to be removed adjacent to a traffic lane without a barrier wall, work shall proceed continuously so that traffic is exposed to a drop-off for the minimum amount of time necessary to bring the pavement back up to existing grade. Barrel spacing shall be 50 feet and appropriate lighting shall be utilized to illuminate the area during nighttime operations. Place Type 3 barricades in the closed lane in advance of the work zone.

Pedestrians and Bicycles - Protect pedestrian and bicycle traffic as directed by the Engineer.

Guardrail Installation – All areas from which guardrail is removed shall be protected by a shoulder closure or other method approved by the Engineer until the new guardrail is installed.

All temporary striping shall be temporary paint, and all striping removal shall be performed by water-blasting. Temporary tape may only be used for short segments and durations with the approval of the Engineer. The final surface course shall be striped for the final lane configuration. Cold joints will not be permitted on the surface course. Water-blasting will not be permitted on the final surface course. Prior to final completion, a mill and fill of the surface course will be required on all existing pavement with temporary markings at any point of construction.

The DBT shall submit its MOT plan to KYTC for review and approval. The MOT plan may be submitted for review by Buildable Units.

The DBT shall be assessed liquidated damages based on the following schedule of values for failure to comply with ramp closure, lane closure, and rolling closure time restrictions:

1) From 1 to <15 minutes beyond allowable time limits: $500

2) From 15 to <30 minutes beyond allowable time limits: $1,000

3) From 30 to <45 minutes beyond allowable time limits: $2,000

4) From 45 to <60 minutes beyond allowable time limits: $4,000

5) 60 minutes $5,000. Each 15 minute increment over 60 minutes: $1250.

15.3. MAINTAIN PAVEMENT

Contrary to Section 105.11 of the *Standard Specifications*, the DBT will be required to perform pothole patching using hot mix asphalt, placed and compacted. If hot mix asphalt is unavailable, cold mix asphalt will be allowed. Upon the "begin construction date for a buildable unit" as identified in the DBT's CPM schedule approved by KYTC, the DBT shall be responsible for routine pothole patching and repair of any pavements used to maintain traffic for that segment.

Prior to beginning construction for a project segment, KYTC and the DBT shall conduct a review of the project segment and any major deficiencies shall be patched by KYTC prior to the DBT accepting responsibility for the segment. Upon beginning construction on a project segment, the DBT shall be responsible to patch all roadways, both interstate, ramps, and local streets within the construction limits of the project segment. The contractor shall be responsible for pothole patching in both directions of the I-69 Conversion Section and Existing US 41 freeway between I-69 Mile Point 148.4 and US 41 Mile Point 15.7; and KY 2084, KY 351, Van Wyk Road, Kimsey Lane, US 60 and Tillman-Bethel Road throughout the project length and any other pavements encompassed by the project, including signed detours.

The DBT shall inspect and repair issues as necessary, and significant spot issues shall be repaired within 24 hours of notice for the safety and protection of the traveling public and their property. Temporary, quick repairs may be needed. Other, more extensive repairs may need to be scheduled in order to provide a more permanent preventative repair that will last throughout the winter. Maintaining the pavement within the project limits shall be considered a component of the overall traffic control plan and shall be subject to Section 112.03.15 A (Long-term stationary work) of the *Standard Specifications*, except that only the prescribed dollar values in that section shall be used in lieu of the project liquidated damage rate.

The DBT shall consider snow and ice removal throughout the project as a part of the development of the traffic control plan (TCP). TCP plans which inhibit the removal of snow and ice during routine KYTC snow and ice removal operations may be rejected. Removal of snow and ice will be the responsibility of KYTC. The DBT will not be able to claim delays or compensation due to the time and amount of snow and ice removal required.

In addition, all existing guardrail must be maintained at the existing functionality throughout the duration of the project once the notice to begin work is issued. If repairs are made by KYTC after notice to begin work is issued, the DBT will be responsible for upkeep of those segments in the condition of the new repair. New guardrail must be maintained until Final Acceptance.

15.4. LIGHTING

Contrary to Section 105.11 of the Standard Specifications, roadway lighting shall be maintained by the DBT during construction. Roadway lighting shall be maintained by the DBT on the I-69 Conversion Section and Existing US 41 (between I-69 Mile Point 148.4 and US 41 Mile Point 15.7), KY 2084 (within the project limits) and KY 351 (within the project limits). Existing or proposed lighting must remain burning throughout the entire timeline of the project from the date Notice to Begin Work is distributed until the Project Completion notice is issued. If the existing or proposed lighting cannot remain burning, temporary lighting shall be provided that meets the design parameters of the existing lighting.

In order to maintain the lighting system, the successful bidder may need to investigate and or perform work in areas outside the work. Maintaining the lighting system shall require the successful bidder to perform any work necessary to ensure all lights remain burning. All necessary work shall be performed according to Section 716 – ROADWAY LIGHTING SYSTEMS of the *Standard Specifications*. In the event that maintaining the lighting system requires new poles, transformer bases or light arms, KYTC will provide those at no cost to the DBT; however, all other materials and devices necessary to maintain the lighting shall be provided by the DBT. Maintaining the lighting system shall be considered a component of the overall traffic control plan and shall be subject to Section 112.03.15 A (Long-term stationary work) of the *Standard Specifications*, except that only the prescribed dollar values in that section shall be used in lieu of the project liquidated damage rate.

15.5. EXISTING RUMBLE STRIPS AND SHOULDERS

Traffic shall not be maintained on existing rumble strips nor will traffic be permitted to straddle existing rumble strips at any point of the project. All existing rumble strips shall be milled out and refilled and shoulders shall be strengthened as necessary prior to maintaining traffic on any existing shoulders. The DBT shall maintain cores of the existing shoulder and provide recommended improvements for approval. The DBT shall be responsible for maintaining the existing shoulder without rutting throughout the project duration. Prior to final completion, the existing rumble strips shall be reinstalled to their initial configuration or as prescribed in the project plans. All items in Section 15.5 shall be within the DBTs project cost.

16. PERMANENT TRAFFIC CONTROL

16.1. PAVEMENT MARKINGS AND DELINEATORS

The DBT shall provide all or replace all pavement striping, intersection markings, lane markings, and delineator posts within the project limits in accordance with the MUTCD and applicable KYTC standards. The DBT shall provide striping plans no later than the final plan submittal stage for review and approval by KYTC. The DBT shall also provide inlaid pavement markers on I-69, KY 3690 (Future I-69), KY 351, US 41 and US 60 according to Section 712 – PAVEMENT MARKERS of the Standard Specifications. The DBT shall be responsible for removal of existing pavement marker castings that conflict with the proposed design and permanent patching of the resultant holes with Fibercrete, for concrete pavements (or a KYTC-approved equal) and leveling and wedging, asphalt binder, or asphalt surface for asphalt pavements.

16.2. SIGNING

The DBT shall design, fabricate and install all permanent signage for the project according to the HDGM, MUTCD and Sections 715, 832 and 833 of the Standard Specifications. In determining minimum alphabet sizes for signs per MUTCD Section 2E.32 Interchange Classification, KY 425, Audubon Parkway, KY 351 and US 41 interchanges shall be considered major interchanges, and US 60 shall be considered an intermediate interchange. Existing signage along existing US 41 from KY 425 north to the CSX overpass may remain if the signage is applicable, in good condition and requires no modifications. All modified and relocated signage must be new. All proposed new sign trusses shall be of new construction. Proposed new signs may be installed on existing sign trusses if the DBT determines that the existing sign structures meet the requirements of Section 17.6.2. Existing sign structures that do not meet the requirements of Section 17.6.2 shall be replaced. The DBT shall submit permanent signing plans as early as possible, but no later than the final plan submittal stage for review and approval by KYTC.

The DBT shall notify the following contractor when work begins on Specific Service (Logo) Signs:

Kentucky Logos, Inc.
2129 Commercial Drive
Suite C
Frankfort, KY 40601
(800) 469-5646
(859) 227-0802

The DBT shall design, fabricate and install logo signing on I-69 and KY 3690 (Future I-69) at the KY 351, US 41 and US 60 interchanges in the same manner as the other permanent signing for the project. All modified and relocated logo signage must be new except for the existing logo panels. The existing logo panels may be removed and affixed to the new panel signs. If any existing logo signs are to be out of service for more than one work shift, they shall be temporarily relocated at the same functional location by the DBT, with the approval of the Engineer.

16.3. TRAFFIC SIGNALS

Design, materials procurement, construction and implementation of any DBT proposed temporary or permanent traffic signals for the project shall be addressed as part of the DBT bid proposal. KYTC will not supply any traffic signal poles or other traffic signal system components as part of this project. Traffic data for use in the design of signalized intersections has been provided in the RIDs, Ohio River Crossing, Henderson: Section 1, Traffic Analysis Memorandum, dated May 12, 2021. The

DBT shall provide traffic signal plans for KYTC review and approval. Traffic signal plans shall include recommendations for signal timing.

16.4. ROADWAY LIGHTING

Design, construction and implementation of roadway lighting for the project shall be addressed as part of the DBT bid proposal. If roundabouts are used in the DBT's proposed design, roundabout lighting design shall conform to the American National Standard Institute's Illuminating Engineering Society RP-8-18 Recommended Practice for Design and Maintenance of Roadway and Parking Facility Lighting. All lighting shall be designed according to the KYTC Traffic Operations Guidance Manual. KYTC requires that all designs be done in AGI32 and be 3D for high mast and 2D for conventional lighting. All new luminaires shall be designed with LED and shall meet the requirements stated in the KYTC Standard Specifications.

Roadway lighting is addressed for each roadway as follows:

- I-69 Conversion Section / Audubon Parkway Interchange – High mast lighting is currently in place at the I-69 / Audubon Parkway interchange. For any portions of the existing lighting system disturbed by the DBT's work, replace the lighting system in kind. Submit lighting plans for KYTC review and approval for the extended ramp lanes and for any poles shifted from their existing locations to demonstrate that adequate illumination levels are being provided per the lighting standards.
- I-69 Conversion Section / Existing KY 2084 Interchange -- Existing mast arm roadway lighting is in place along the KY 2084 southbound auxiliary lane and exit ramp. The DBT shall remove all existing lighting for the KY 2084 interchange including lighting along the KY 2084 southbound auxiliary lane and exit ramp. Existing mast arm roadway lighting is also in place along the KY 2084 northbound ramps slated for removal. The DBT shall disconnect the service and remove those existing roadway lighting poles and electric conduits when no longer needed for maintenance of traffic.
- KY 2084 – Existing mast arm roadway lighting is in place at various locations along the west side of KY 2084 that may be incorporated into the proposed lighting system for the roundabout at KY 351. The DBT shall provide roadway lighting design and construction for reconstructed KY 2084 at this location that meets current KYTC standards. Submit lighting plans for KYTC review and approval to demonstrate that adequate illumination levels are being provided per the lighting standards.
- I-69 Conversion Section / KY 351 Interchange – The DBT shall provide roadway lighting design and construction for the proposed I-69 / KY 351 Interchange that meets current KYTC standards. Conventional (not high mast) lighting shall be used on all ramps and along mainline I-69 necessary to appropriately illuminate the interchange. The DBT shall submit plans for KYTC review and approval of the proposed roadway lighting.
- KY 351 – The DBT shall replace the existing roadway lighting along KY 351 within the project limits. Conventional roadway lighting (not high mast) that meets current KYTC standards shall be provided at all roundabout locations along KY 351. In addition, roadway lighting that uses antique light posts and fixtures that mimic those in place along Second Street (see the I-69 ORX KY 351 Streetscape Booklet Update V5 in the RIDs) shall be provided by the DBT along both sides of KY 351 from the KY 2084 intersection eastward to the eastern limits of the KY 351 construction. Decorative antique light post spacing shall not exceed the similar existing decorative light post spacing in place further west along Second Street. Under bridge lighting shall be required for vehicles and pedestrians. The KYTC-maintained KY 351 ramps and roundabouts lighting system and the City-maintained KY 351 decorative lighting system shall be designed as independent lighting systems for operations and maintenance

purposes. The DBT shall submit plans for KYTC review and approval of the proposed roadway lighting. The lighting levels provided by the proposed KY 351 decorative lighting shall be considered and incorporated into the KY 351 interchange roundabout lighting plans.

- I-69 / US 41 Interchange – The DBT shall provide high mast roadway lighting design and construction for the proposed I-69 / US 41 Interchange that meets current KYTC standards. The DBT shall also provide pedestrian lighting design and construction for any trail tunnel(s) used for Merrill Trail, the Merrill Trail Extension and the adjacent parking area (See Section 22.4). This would include any transition lighting for the trail tunnel. The parking lot, Merrill Trail Extension and tunnel lighting shall be designed as a separate circuit from the US 41 interchange lighting. The DBT shall submit plans for KYTC review and approval of the proposed roadway lighting.
- I-69 / US 60 Interchange – The DBT shall provide high mast roadway lighting design and construction for the proposed I-69 / US 60 Interchange that meets current KYTC standards. Roadway lighting design by the DBT shall address roadway lighting along Relocated US 60 400 feet from the roundabout yield bars and all four ramps of the proposed interchange, including the two future north-side ramps. Make provisions in the roadway lighting design (such as wire sizing, number of circuits, number of conduits, junction boxes, etc.) to accommodate future lighting construction during the future I-69 ORX Section 2 construction contract. Clearly identify the limits of current lighting construction and future lighting construction in the plans. Roadway lighting construction by the DBT shall address only Relocated US 60, the two south-side ramps and the roundabout intersections to be constructed under this contract. The DBT shall submit plans for KYTC review and approval of the proposed roadway lighting.

17. STRUCTURES

GENERAL STRUCTURES SCOPE

General scope of work is defined as replacement of and construction of new bridges as necessary to accommodate traffic lanes and shoulders as shown in the proposed typical sections and the Design Executive Summary. The project includes the construction of nine (9) new bridges along with several structure removals, including the reconstruction of the KY 351/US 41 interchange, and new interchanges at US41 and US60. There is a pedestrian tunnel to be design/built at US 41. Several reinforced concrete box culverts will be extended or constructed with the project.

The lists below are contingent upon approval of the final design. Stations given are approximate.

Bridges will be replaced or newly constructed at the following locations:

A. I-69 NB and SB over Van Wyk Road (I-69 Station 3805+20)
B. I-69 NB and SB over Canoe Creek (I-69 Station 3815+15)
C. US 41 over I-69 (I-69 Station 3831+00)
D. I-69 Northbound and Southbound over KY351 (I-69 Station 3760+50)
E. US 60 over I-69 (US 60 Station 183+24)
F. US 60 over CSX Railroad (US 60 Station 196+01)

Structures will be removed at the following locations:

A. US 41 Bridges over Van Wyk Road
B. US 41 NB Bridge over Canoe Creek
C. KY 2084 Entrance Ramp over US 41
D. KY 2084 Connector over US 41 Exit Ramp
E. US 41 NB and SB over KY 351
F. Kimsey Lane over US 41
G. US60 over CSX Railroad

Miscellaneous Structures

A. Multi-use Path tunnel (14’ Width) under US 41 Connector.

Existing Bridges are listed in a table in Section 17.3.26 which will need latex overlays, joint elimination/repairs, and other maintenance work. The DBT shall examine each structure to make a determination of the amount of work involved based upon the scope listed in the table. Special Notes are included in the Attachments. The Div. of Structural Design Guidance Manual also includes information for the repairs.

17.1. DESIGN AND CONSTRUCTION REQUIREMENTS OF STRUCTURES

Mandatory Standards for the Project are discussed in Section 6. For structural components not addressed by the standards listed below, other guidelines or specifications that reflect currently accepted industry practice may be used as agreed by KYTC. KYTC Manuals, Standards, and Transmittal memoranda are available on the KYTC website and shall be used as of the date of this document. The *Structural Design Guidance Manual with markups 10-20-21.pdf* (SDGM) that is included in the RIDs is considered a Mandatory Standard for this project and replaces any other version that is published by the Division of Structural Design. Special Notes as provided in the Attachments will take precedence over all other specifications and codes.

When structures are proposed that are not adequately addressed in the AASHTO Specifications, the DBT shall submit their approach, with proposed standards to be used, for KYTC approval prior to proceeding with the design of the structure.

For cases where AASHTO Specifications conflict with the governing KYTC Design Manuals, Transmittals, or Standards, the governing KYTC Design documents shall take precedence. The codes and standards shown below are listed in order of governing precedence and are to be used for the design and construction of structures, unless superseded elsewhere:

A. Structural Design Guidance Manual with markups 10-20-21.pdf
B. KYTC Standard Drawings
C. KYTC Standard Specifications for Road and Bridge Construction
D. Kentucky Bridge Inspection Procedures Manual
E. Foundation Design KYTC Geotechnical Guidance Manual and KYTC Transmittal Memorandums issued by the Division of Structural Design
F. AASHTO Guide Specifications for LRFD Seismic Bridge Design
G. AASHTO LRFD Bridge Design Specifications, U.S. Customary Units
H. AASHTO LRFD Bridge Construction Specifications, U.S. Customary Units
I. AASHTO Standard Specifications for Highway Bridges
J. AASHTO/AWS D1.5 Bridge Welding Code
K. AASHTO Manual for Bridge Evaluation
L. ACI 207.1 R-96, “Mass Concrete”
M. ACI 305, R-99, “Hot Weather Concreting”
N. ACI 306, R-02, “Cold Weather Concreting”
O. AASHTO Guide Specifications for Bridge Temporary Works
P. AASHTO Policy on Geometric Design of Highways and Streets (Green Book)
Q. AASHTO Roadside Design Guide
R. AASHTO Model Drainage Manual
S. FHWA Manual of Uniform Traffic Control Devices (MUTCD)
T. FHWA Technical Advisory on Uncoated Weathering Steel in Structures, October 3, 1989
U. AASHTO Manual for Assessing Safety Hardware (MASH)

17.2. STRUCTURE PLANS SUBMITTAL REQUIREMENTS

17.2.1. DESIGN STANDARDS

The structure plans shall be developed in accordance with the SDGM. STRUCTURAL PLANS SUBMITTAL

Submittals required for every structure shall be Advanced Situation Folder, Preliminary Plans, Final Plans and Released for Construction Plans. Once each submittal has been reviewed and suggested changes have been resolved the DBT may proceed to the next step with the approval of KYTC.

Format and Content of Advanced Situation Folder

The format and content of the Advanced Situation Folder shall be in accordance with the SDGM.

Format and content of 30% Plan Submittal.

Preliminary Plans shall be at a level of approximately 30% complete. They shall contain, at a minimum, the following:

Plan Assembly – The preliminary plans shall include at a minimum the following:

A. Title Sheet, showing the vicinity map of the project indicating the bridge location, an index of sheets and a listing of the standard drawings.
B. Layout Sheet, showing the following:

a. Bridge Plan and Profile. An elevation showing the type of beams or girders shall be shown. Bearing details shall be shown.
b. As applicable, abutment type, wingwall type, pier type and expected foundation depths. Critical datum elevations may be estimated to the nearest tenth of a foot.
c. Typical Section showing centerline of survey, traffic configuration, construction phasing details as applicable, slab thickness, beam types, depths and spacing.

C. Plan and Profile sheets for route over, and route under if applicable.
D. General Notes Assembly – The following shall be included with the 30% plan submittal:
   a. Preliminary General Notes for specifications, design load, design method, foundation pressure, and materials design specifications, if they are to be non-standard
   b. Estimate of Quantities with separate totals for the substructure and the superstructure. An extended cost estimate is not required.
   c. List of special conditions of loading and material specifications not covered in the AASHTO Design specification.
E. Geotechnical Report with Seismic Hazard Evaluation and proposed seismic design code if applicable.
F. General Notes Assembly – The following shall be included with the 30% plan submittal:
   a. preliminary General Notes for specifications, design load, design method, foundation pressure, and materials design specifications, if they are to be non-standard
   b. Estimate of Quantities with separate totals for the substructure and the superstructure. An extended cost estimate is not required.
   c. List of special conditions of loading and material specifications not covered in the AASHTO Design specification

Preliminary Retaining Wall plans shall contain a wall layout with a summary of expected wall and foundation types.

Preliminary Drainage Structure (Culvert) Plans shall include a master plan showing type, size, and location of each structure.

Format and Content of Final Plan Submittal.

Final Plans. The submittal of the Final Plans shall include the following:

A. A table of contents of all items included in the submittal
B. An electronic 11"x17" sizes pdf file of the Final Plans for review
C. One electronic 8 ½" x 11" pdf file of the structure design calculations. Calculations shall be in the form noted in the KYTC Structural Design Guidance Manual SD-206-2
D. One electronic 8 ½" x 11 sized pdf file of the applicable special notes
E. Load Rating Calculations, if applicable, as noted in Section 17.6.2 of this document

Plans Released for Construction

Once the Final plans have been reviewed and suggested changes have been resolved the DBT will be notified of approval by KYTC and Final Plans will be Released for Construction.

Documents requiring a P.E. Seal

In accordance with KYTC Structural Design Guidance Manual Section SD-206-2, the following documents require the signature and seal of a civil engineer licensed in the state of Kentucky:

A. The title sheet of each set of RFC bridge plans for which a drawing number has been assigned for each separate location
B. The front sheet of each culvert plan for which a drawing number has been assigned for each separate location

C. The first sheet of each retaining wall plans for which a drawing number has been assigned for each separate location.
D. The first sheet of each individual set of final design calculations for both bridges and culverts
E. The first sheet of final specifications and special notes when they are non-standard or have been especially prepared

17.2.2. EXISTING STRUCTURES IDENTIFICATION AND DATA

Plans for existing bridges, culverts, and other structures, if available, can be found in the Project RID.

17.3. STRUCTURE DESIGN CRITERIA

The DBT shall provide and verify all pertinent information needed to facilitate the design and construction of all bridges and culverts. This includes, but is not limited to the following:

17.3.1. GENERAL STRUCTURE DESIGN CRITERIA

The criteria in this section apply to all structures on the project both new or existing being widened or extended.

The proposed final structures shall not have a negative hydraulic performance of the stream they cross when compared to the proposed concept shown in the contract plans. The Preliminary Hydraulic Scour Analysis Reports, if available, may be found in the RID. The DBT shall be responsible for the hydraulic and scour reports in the Advanced Situation Folder and for performing the final hydraulic and scour analysis consistent with the final design.

All bridges shall be designed for infinite fatigue life.

17.3.2. BRIDGE AESTHETICS

Aesthetics is required on this project in accordance with Section 13 and 20 of this document. See Section 17.6.1 below.

17.3.3. LIVE LOAD

All newly constructed structures shall be designed using AASHTO LRFD and in accordance with the KYTC Structural Design Guidance Manual. Requirements for the minimum acceptable live load rating may govern the design of these structures. Note KYTC requires an enhanced Live Load above AASHTO requirement and is noted as KYHL 93. See KYTC Structural Design Guidance Manual.

For structures 40 feet long and under, the KY Type 1 Load Rating Truck shall be evaluated as part of the preliminary design, since that loading may govern the design of the structure.

17.3.4. BRIDGE AND CULVERT GEOMETRY

The DBT shall provide and or verify bridge and culvert dimensions, including the following:

Horizontal and Vertical Clearances

The DBT shall verify all that all bridges at grade separations meet KYTC required vertical clearances for the class of roadway being crossed. All KYTC required horizontal clear zone distances shall be met per Section 13 of this document. Abutments and piers will not be allowed within the clear zone, except for median piers. All median piers shall be designed/protected per the KYTC Structural Design Guidance Manual. The vertical clearances listed below shall be met across all driving lanes and paved shoulders. Final clearances will be verified by using LiDAR measurement.

TABLE 17.3.1 REQUIRED VERTICAL CLEARANCE – NEW BRIDGES	
Location	**Vertical Clearance**
I-69 Northbound over KY 351	16'-6"
I-69 Southbound over KY 351	16'-6"
I-69 Northbound over Van Wyk Rd	14'-6"
I-69 Southbound over Van Wyk Rd	14'-6"
US 41 over I-69	17'-0"
US 60 over I-69	17'-0"
US 60 over CSX Railroad	*
US 41 Pedestrian Tunnel minimum vertical clearance	10'—0"
*DBT shall verify these clearances with the CSX Railroad.	

TABLE 17.3.2 REQUIRED VERTICAL CLEARANCE – EXISTING BRIDGES		
Existing Bridge	**Required Vertical Clearance**	**Reported Existing Vertical Clearance***
KY2099 Adams Lane overpass	16'-0"	15.84'
KY 9005 Audubon PW overpass	16'-0"	15.52'
KY 812 Airline Road Overpass	16'-0"	15.55'
US 41/KY 425 Southbound Overpass	16'-0"	15.89'
US 41/KY 425 Northbound Overpass	16'-0"	15.80'
*DBT is responsible for field verification of existing clearance.		

Railroad Clearances

The DBT shall verify that all bridges over or under railroads meet the required vertical and horizontal distances as required by the owner of the respective railroad.

Typical Sections

The DBT shall be responsible for showing on the plans the typical section of the bridge and ensuring it matches the roadway approaches. Lane widths, cross slopes and superelevation, where applicable shall be shown.

Elevations

Plans shall show Elevations for the bridge seats, top of berm, bottom of footing, pile cut-off points, etc. as applicable for each structure.

Roadway Geometry

Plans shall show the roadway stations, grades and elevations along the profile and any horizontal or vertical curve data for the routes over and under.

Construction Elevations

Construction elevations shall be given for the left and right gutter lines, the profile grade line, and along each beam line. Elevations shall be shown for centerline of survey and construction joint locations for phased constructions.

Part Width Construction Dimensions

For bridges with phased construction, dimensions for slab widths, lane widths, temporary or permanent barriers shall be shown relative to the centerline of survey for each phase. Show construction joints relative to centerline of survey. Dimension distance from back side of barriers to drop off.

For culverts

The DBT shall verify the barrel length for both new and extended culverts. Inlet and Outlet flow line elevations, wing lengths and configuration shall be shown.

17.3.5. EARTHQUAKE REQUIREMENTS

DBT shall investigate seismic hazard potential including, but not limited to, liquefaction and lateral spreading at all structure locations prior to beginning structure design. Any structure with potential geotechnical seismic hazards shall be designed to resist earthquakes in accordance with Section 18.1 below and the AASHTO Guide Specifications for LRFD Seismic Bridge Design. Any structure with no potential geotechnical seismic hazards may be designed to resist earthquakes in accordance with the AASHTO LRFD Bridge Design Specifications or the AASHTO Guide Specifications for LRFD Seismic Bridge Design. Submit geotechnical report detailing seismic hazard potential and proposed earthquake design methodology with the preliminary plans. All elements of the structure, including all abutments, piers, and bents, beams, decks, and bearings shall be designed to resist earthquakes in accordance with required code. Seismic movements need not be considered for box culverts and buried structures unless they cross an active fault. Design for $\gamma EQ = 0.5$ for mainline I-69 and $\gamma EQ = 0.0$ for all other ramps and other structures that may cross mainline.

17.3.6. SUPERSTRUCTURES

Acceptable Types of Superstructures

Unless specified otherwise all bridges shall be multi-girder bridges. The following structure types do not require an Alternate Technical Concept:

A. Steel beam I-girder
B. Prestressed Concrete bulb-tee, I-girder, Hybrid beam, box beam
C. Steel or prestressed concrete tub girders
D. Concrete slab without voids
E. Reinforced Concrete T-Beams

Unacceptable Types of Superstructures

A. Utilize Debonding of strands in prestress beams

B. Bridge girders/beams composed of composite material.

C. Timber elements.

D. Fracture critical elements.

Minimum Number of Beam Lines

All bridges, including bridges on ramps, shall have a minimum of 3 beams per the Structural Design Guidance Manual. Bridges and ramps shall be a minimum of 30'-0" from gutter to gutter, regardless of the typical section.

Submittal of Shop Drawings for Beams and Forms

All shop drawings for beams and stay in place metal forms shall be approved by KYTC.

17.3.7. DECKS

General Requirements

All bridge decks shall be 8-inch minimum depth full-depth cast-in-place Class AA concrete and use epoxy coated reinforcement per SD 501-1. Post-tensioned or Pre-Tensioned decks will not be permitted. Stay in place metal forms are permitted for use provided that the valley of the forms is filled with trimmed Styrofoam to eliminate additional dead load from concrete in the valley of the forms. Non-composite side by side box beams are not allowed. Composite side by side box beams may use a 5-inch minimum depth cast in place deck.

Construction Joint Placement

If a longitudinal construction joint must be used in a bridge deck (due to a Maintenance of Traffic or another issue), the designer may place where appropriate. If placement is on top of a PCI Beam, care shall be given not to cast the beam stirrups into the first phase of the concrete deck placement.

Construction Joint Sealing

Contractor shall place an epoxy concrete sealer on top of the deck to seal off all construction joints in the deck. Submit proposed material to the cabinet for approval if not on the List of Approved Materials.

Bonding Existing Concrete to New Concrete

Use a Type V epoxy conforming to Section 826 of the Specifications to bond existing concrete or previously poured and hardened concrete to new concrete.

17.3.8. EXPANSION JOINTS

On new bridges, bridge end expansion joints shall be avoided when possible. Joints shall not be used without approval from KYTC. Joints, if used, shall be sealed from bridge deck surface drainage.

17.3.9. APPROACH SLABS

Approach slabs are required for all new bridges to provide a smooth transition between embankments and bridge structures. Construct approach slabs in accordance with KYTC Standard Drawing Number BGX-017. Alternate approach slab designs will be considered. Alternate approach slabs shall be designed as a structural slab to carry the full design vehicle load when simply supported at each end of the slab.

17.3.10. BARRIER WALLS

General Requirements

All barriers on new structures shall be 40-inch Single Slope Concrete Barriers per KYTC's Standard Drawings. Guardrail transitions tying to these barriers shall use the Thrie-Beam Guardrail Transition TL-3. All substructure units adjacent to roadways or railways shall be analyzed for the vehicular collision requirements of KYTC Division of Structural Design Guidance Manual. All barrier walls must meet MASH testing requirements for the test level required.

Wall Slopes

All front face walls to which traffic may have access to shall be single slope and be crashworthy. This includes, but is not limited to cantilever walls, abutments, and gravity walls.

Median Barrier Walls

Median barrier walls on structures shall match the median barrier wall height on the roadway leading up to the bridge. The median barrier wall shall be doweled into the bridge deck.

Pedestrian /Multiuse Path Barrier Walls on Structures

See KYTC Division of Structural Design Guidance Manual section SD-302 for requirements

17.3.11. DIAPHRAGMS

For diaphragms at the end of a bridge superstructure follow Exhibit 617 of the Structural Design Guidance Manual for special reinforcement. Intermediate diaphragms shall follow the Structural Design Guidance Manual Exhibit 409 or Standard Drawings.

Earthquake design or details may exceed the above reinforcement requirement.

17.3.12. DRAINAGE

The DBT shall determine if bridge deck drainage is required. Drainage shall conform to the requirements of the KYTC Drainage Manual

Welding of scuppers, downspouts, or drainage supports shall not be allowed on main steel members.

If bridge drainage is required, it shall be directed to riprap drainage turnouts located beyond a concrete bridge railing transition and outside of any retaining wall backfill.

17.3.13. SUBSTRUCTURES

The following specifications, standards, and guidance shall apply to the design and construction of Substructures.

Types of Substructure Units

All Abutments, Piers, and Bents shall consist of Reinforced Concrete. Piles may be steel H Piles or Pipe Piles. Predrilling of the pile may be required during construction, but in any case, shall provide that the piling attains the requirements of Section 604.03.02 of the KYTC Standard Specifications. Substructure design shall consider differential loads and deflections including, but not limited to creep and shrinkage. Vertical isolation joints shall be placed as needed to minimize cracking for the staged loading condition. Isolation joints are not required in foundations.

Drilled Shafts

Drilled shafts shall be socketed into rock and designed using the L-Pile computer program for shear and moment. The L-Pile file and output shall be submitted as part of the Final Calculation submittal. Drilled shafts shall conform to Special Note 11-C, and Transmittal Memorandums, and the Structural Design Guidance Manual.

Spread Footings

The bottom of spread footings for roadway crossings shall be embedded into rock a depth of one foot. For stream crossings, the embedment depth shall be two feet. The top of the footing shall be two feet below the ditch line. Geotechnical report may require more.

Mechanically Stabilized Earth (MSE) Wall

MSE Walls shall be designed according to the AASHTO LRFD Bridge Design Specifications, KYTC Structural Design Guidance Manual, and exhibits. See TP Attachment 18.12 - Special Note for Mechanically Stabilized Earth (MSE) Retaining Walls. The design/construction of MSE Walls shall provide a 100 year service life.

MSE walls may be used to support bridge abutment embankments on this project provided the MSE wall is not designed to support any portion of the structure. Pile End Bents must be constructed through the MSE fill. The bridge end bents shall be designed to sit on piles behind the MSE wall and the piling shall extend below the base of the MSE wall. Provisions must be made so that the bridge structure does not pull on the MSE wall straps as it moves by placing all piling within CMP pipes. Bridge substructures must be completely isolated from CMP pipes. No bridge or end bent dead load can be used for MSE wall stability analysis. The MSE walls must be designed to withstand all earthquake loads.

17.3.14. DRILLING AND GROUTNG

Refer to KYTC Structural Design Guidance Manual for drilling and grouting of steel reinforcement. Materials and Construction methods shall meet the requirements of Section 602.03.04 of the KYTC Standard Specifications for Road and Bridge Construction.

17.3.15. BEARINGS

Elastomeric bearings may be used. Bearings shall be from KYTC Standard Drawings BBP-001, BBP-002 and BBP-003 or be a special design using a durometer of 50 or 60. Field welding of a beam or girder to the bearing load plate shall be controlled so that the temperature that the elastomer is subjected to does not exceed 300 degrees Fahrenheit. For fixed substructure units at Integral End Bents, lead plates shall be used as bearing devices.

17.3.16. CANTILEVER RETAINING WALLS

Cantilever Retaining Walls shall be designed in accordance with the KYTC Structural Design Guidance Manual. Individual wall elements shall be designed by the LRFD design method. Walls shall be designed with a minimum factor of Safety of 1.5 against overturning and sliding for service loads. Retaining walls shall be designed to have no uplift on the heel based on service loads.

17.3.17. CRASH WALLS

The following existing structures require crash walls to be added to the center pier. The columns will need to be analyzed and retrofitted per Transmittal Memo 19-03 and the Guidance Manual.

- KY 812 (Airline Rd.) over I69 - (051B00111N)
- KY 9005 (Audubon PW) over I69 - (051B00073R and 051B00073L)
- KY 2099 (Adams Lane) over I69 - (051B00069N)
- KY 425 over I69 - (051B00137R and 051B00137L)

17.3.18. GUARDRAIL CONNECTIVITIY

All guardrail connections to solid structures shall meet current crashworthy standards. This may require special design and construction methods at transitions between the two. Such designs and construction methods shall be approved by KYTC.

17.3.19. MATERIAL PROPERTIES AND STANDARDS

All new structural steel shall be coated with a three-coat system from the KYTC list of approved materials, or galvanized steel, or weathering steel per the KYTC Division of Structural Design Guidance Manual. Structural steel shall be ASTM A709 50W (70W via ATC) for new structures. Structural Steel shall be ASTM A709 Grade 50 for new steel beam lines on the widened structures.

Lightweight concrete is not permitted.

17.3.20. JOINT SEALING WITH MASTIC TAPE

Joints shall be sealed using Mastic Tape as shown in Standard Drawing BGX-022. This standard drawing is applicable to any joint between a bridge element and an adjoining structure, such as a retaining wall, noise wall, or other feature for which backfill is required.

17.3.21. SEALING AND COATING OF CONCRETE STRUCTURES

Seal all new decks per the SPECIAL NOTE FOR SEALING BRIDGE DECKS CONCRETE as seen in Attachments 17.3

Coat concrete surfaces of all new and rehabilitated bridges per the Special Note for Concrete Coating as seen in Attachment 17.1. Plans shall show the limits of coating for superstructure and conform to KYTC Standard Specifications for Road and Bridge Construction Section 601 for limits of masonry coating.

17.3.22. TEMPORARY WORKS DESIGN

The design shall conform to the AASHTO LRFD Bridge Design Specifications and AASHTO Guide Specifications for Temporary Works. 100 percent of the HL-93 design live shall be used. The working drawings and design calculations shall be signed by a PE registered in the state of Kentucky.

The DBT shall be responsible for the construction, maintenance, and removal of all temporary works to support the construction of the project. The DBT is advised that the construction of the temporary works may be subject to the review of other agencies. The DBT shall be responsible for any revisions to permits and shall allow time for agency review. Temporary works shall include but not be limited to falsework, shoring and bridging.

17.3.23. CONDUITS, SIGNS AND LIGHTING

The DBT shall be responsible for the design and placement of conduits, signs, and lighting on all bridges and pedestrian tunnel. The DBT will be responsible for the design and construction of sign support systems. Signs and supports shall conform to Sections 715 and 833 of the Kentucky Standard Specifications for Road and Bridge Construction, Standard designs are available on the KYTC Division of Structural Design website at url address:

https://transportation.ky.gov/StructuralDesign/Pages/Sign-Supports.aspx.

The DBT is responsible for determining the applicability of these drawings and revising them accordingly.

The DBT is responsible for maintaining existing conduits, sign and support systems, and lighting during construction.

For bridges, the DBT shall provide a 3-inch diameter Schedule 80 PVC conduit through barriers, galvanized steel 24inch junction boxes (one at each end of the bridge, at each luminaire, and spaced at no greater than 250 feet along the barrier), and Type A junction boxes at each end of the bridge. See Bridge Standard Drawings. As part of approving the 30% structural plans, KYTC must approve the location and size of the luminaire supports, conduit and junction boxes on the bridge layout.

17.3.24. MATERIAL REQUIREMENTS AND DAMAGE MITIGATION

Materials that do not meet the requirements of the plans or specifications or that are damaged during construction shall be repaired or replaced at the DBT's expense. The DBT shall propose repair or replacement methods and KYTC shall review and must give final approval to the method proposed.

17.3.25. TRAFFIC CONTROL PLAN FOR PHASED CONSTRUCTION BRIDGES

For bridges being constructed in phases, the DBT shall provide a plan for the safe movement of traffic during all phases of construction in accordance with Section 15.2 of this document.

17.3.26. REPAIRS TO EXISTING STRUCTURES

Repairs will be made to the structures at the following locations:

TABLE 17.3.3 – REPAIRS TO EXISTING STRUCTURES

Bridge No.	Location	Required Repairs
051B00137L 051000137R	US 41/KY 425 Beginning of Project	Deck Repairs, 1-¼ inch Latex Overlay, Joints Elimination, Replace 50' of approach concrete pavement each end of each bridge. Abutment Patching, epoxy injection crack repair and concrete coating. Clear and clean bridge site.
051B00069N	Adams Lane	Deck Repairs, 1-¼ inch Latex Overlay, Eliminate Sliding Plates and Replace with Compression Joints. Concrete Coat Barrier Walls. Clear and clean bridge site. Concrete Coating
051B00073L -	Audubon	No Repairs. Deck Sealing Only Clear and clean bridge site. Concrete Coating

TABLE 17.3.3 – REPAIRS TO EXISTING STRUCTURES		
Bridge No.	**Location**	**Required Repairs**
051B00073R	Audubon	Seal Deck, Abutment Patching Clear and clean bridge site. Concrete Coating
051B00111N	KY 812 (Airline Road)	Deck Replacement Clear and clean bridge site. Concrete Coating

DBTs are to include all required bridge maintenance repairs in the lump sum bid. Estimated quantities specifically for concrete patching, deck and crack repairs shown in the RIDs are considered not-to-exceed work items. DBTs shall clearly measure, tabulate and photographically document all such required repairs for these not-to-exceed work items. Should the actual quantities exceed the total amounts shown in the RIDs for all bridges to be repaired, the DBT shall be paid an adjustment at the following unit rates for the actual quantity overrun:

- Item 40101 – Concrete Patching - $195/SF
- Item 24094EC – Partial Depth Patching - $1,000/CY
- Item 08526 - Concrete, Class M for Full Depth Patching – Full Depth Patching - $1,000/CY
- Item 23744EC - Epoxy Injection Crack Repair - $166/LF

Details of the required repairs follow.

Submittals for Repair Work listed in Table 17.3.3: For all bridges, the DBT shall inspect the site and put together a work plan of how the repairs will be completed based upon the work involved, special notes, and details below. That plan shall include maintenance of traffic, time frame of the work, and a layout sheet of the bridge. The layout sheet shall show plan, elevation, and cross section of the bridge with repair location and type indicated. Also include details view of the repairs with any modifications to standards or notes that may be required based upon field conditions. This work plan and layout sheet shall be submitted to KYTC for approval. The DBT's Engineer shall issue RFC plans once that approval is obtained.

Clear and clean the bridge site: In addition to the Standard note for Bridge Cleaning and Preventative Maintenance perform the following.

- Clear, remove, and dispose of all vegetation and debris within the right-of-way and easement areas around existing bridges that will remain in place. The clearing area is limited to the toe of fill slopes. Clear to 50' beyond each end of each bridge.
- Clean all pier and abutment caps of debris along with any median walls and slopes in front of substructure units. Remove any vines or other vegetation from bridge substructures.
- Clean all bridge end drainage boxes.
- Do not place material resulting from the clearing or cleaning on the right-of-way, but remove completely from the project.

51B00137L and 051B00137R: Complete the work using part-width construction per RFP Section 15.2. If there is an existing bridge deck overlay, it shall be removed as part of the work. Joint elimination shall be per Special Note for Eliminating Transverse Joints on Bridges. Replace the approach pavement and shoulders in kind and assure that the approach pavement provides a smooth transition to the deck and accommodates the joint elimination. Otherwise complete any partial and full depth patching of the deck which may be required and complete the latex overlay per

the Special Note. Complete epoxy slurry seal of the gutterlines while coating the barrier walls. Finalize the work with abutment patching using the Special Note for Concrete Patching.

051B00069N: Complete the work using part-width construction per Section 15.2. If there is an existing bridge deck overlay, it shall be removed as part of the work. The sliding plate joints shall be removed and compressions seals installed per Std Drawings BJE-001-14 thru BJE-006 and the Special Note for Replacing Expansion Dams and/or Installing Armored Edges. Otherwise complete any partial and full depth patching of the deck which may be required and complete the latex overlay per the Special Note. Complete epoxy slurry seal of the gutterlines while coating the barrier walls. Finalize the work with asphalt approach pavement on the approaches to accommodate any elevation differences – see Special Note for Asphalt Approach Pavement.

051B00073L and 051B00073R: Complete the work using part-width construction per RFP Section 15.2. Perform deck sealing per the Special Note.

051B00111N: The DBT is responsible for the designing and replacing the bridge deck on Airline Road (Bridge Number 051B00111N, Drawing Number 16934). The Airline Road bridge is 227'-9 ¾" long out-to-out based on original plans consisting of two 17' abutment spans and two 92' main spans. The total bridge length of deck is to be replaced. The DBT shall furnish all labor, materials, tools, and equipment needed to perform this work. The following work is to be performed on the Superstructure of Airline Road (KY 812) and approaches:

- Design and Replace the existing concrete deck. Design and replace the existing bridge deck with a cast-in-place reinforced concrete deck using Class "AA" concrete and epoxy coated steel reinforcement. The existing deck may either be fully removed and replaced or cleaned and prepared to carry the new deck. If cleaned and prepared, due to deterioration of the existing deck, after removal of any asphalt patches or loose material and scarifying, any existing deck concrete and reinforcement that remains in place shall be considered as a stay in place form and non-contributing to the long-term strength of the bridge.

  DBTs are entirely responsible for the design and construction means and methods to ensure that the existing bridge will safely carry the construction loads. The new deck shall be designed to carry all loads acting on the deck and must be made fully composite with the existing box walls, either by doweling reinforcement into the box walls, or by exposing box wall reinforcement and incorporating existing box wall reinforcement into the new deck, or a combination of both. The DBT is responsible for ensuring all substructures can handle proposed loads. A load rating of the substructures will be required if the substructure cannot handle full design loads after the overlay is placed. The substructures are required to meet strength requirements of the code they were originally designed for. Collision loads and design shall be per the SDGM.

  The DBT may use either the original design code or the current code. Use the original design vehicle. The foundation is not intended to be part of the repairs. However, it shall be analyzed for structural capacity. If the substructure is not sufficient to carry the full design load, the DBT shall load rate the substructure for all required load ratings shown in Table 17.1. It is not the responsibility of the DBT to retrofit the substructures that do not meet the posting rating criteria. KYTC may direct the DBT to retrofit the substructures as a change order. Seismic loads are not required to be analyzed for this structure. The foundations do not require evaluation.

- Remove the existing plinth and curb and provide a 40" single slope wall at the appropriate grade elevations on each side.
- Install asphalt approach pavement. Provide a smooth transition to the finished bridge by milling and replacing the existing approach pavement. Fifty feet (50') of pavement transition

length is required for each inch (1") that the final grade of the bridge deck is adjusted from the existing elevation. Refer to the Special Note for Asphalt Approach Pavement contained in this Section of the ITP.

- Provide Guardrail End Connectors at all four corners of the bridge. Install guardrail end connectors according to the Standard Specifications and Standard Drawings RBR 010, RBC-002, RBC-003, RBC-005, and RBC 006. The height of the new guardrail shall match the grade of the new bridge deck/approach. Reset additional guardrail accordingly for the remaining transition length.
- Replace Box Inlet Tops. Box Inlets on each end of the bridge shall be adjusted to match the grade to provide proper bridge end drainage. Remove and replace the reinforced concrete tops of the box inlets. Refer to Standard Drawings RBC-006, and the appropriate Standard Drawing or the Box Inlet Type.
- Adjust Curb. Remove and replace the curb at the bridge ends to match any adjustment to the grade. The adjusted curb shall be a minimum of four inches (4") above the gutter line of the bridge/approach. Refer to Standard Drawing RBC-006.
- Deck Sealant. Seal the new bridge deck in accordance with the Special Note for Sealing Bridge Decks
- Additional Plan Sheets and Drawings. The DBT is responsible for providing detailed calculations, plan sheets, notes, and other drawings detailing this work. Plan sheets beyond those specified in Section 17.3 of the ITP will be required.
- Final Load Rating. The DBT shall perform a bridge load rating analysis on the final bridge per the ITP. Final load ratings shall be at or above posting level.
- Maintain and control traffic - The bridge will be closed during these construction activities. The DBT shall maintain traffic in accordance with Section 15.2 of the Technical Provisions for this Project and with the 2019 KYTC Standard Specifications.
- The DBT shall perform any other applicable work specified as part of this contract.

All construction will be in accordance with the 2019 Kentucky Standard Specifications for Road and Bridge Construction.

17.4. CULVERT DESIGN CRITERIA

17.4.1. GENERAL CRITERIA

Existing box culverts will be extended as part of the widening. When additional fill is required over an existing culvert see KYTC Structural Design Guidance Manual for Light Weight Fill application requirements. See the Special Notes for Lightweight Aggregate Fill, Special Note for Cellular Concrete Fill, or Special Note for Lightweight EPS Foam Block Embankments in Attachment 17.4 for specifications for lightweight fill.

Plans for the existing culverts, if available shall be made available to the DBT in the RID.

17.4.2. GEOMETRIC DESIGN CRITERIA

The Design of new and extended culverts shall be based on the KYTC Structural Design Guidance Manual. The DBT shall be responsible for ensuring, determining, and providing (including but not limited to) the following:

A. The barrel length for new and extended culverts
B. Final inlet and outlet elevations
C. Wing Lengths and elevations
D. Paved inlet depth and elevations

E. Stream acidity consideration

17.4.3. LIVE LOAD - SOIL LOAD

Live load and soil Load shall be distributed to reinforced concrete box culverts in accordance with AASHTO LRFD Bridge Design and the KYTC Structural Design Guidance Manual.

17.4.4. CULVERT FOUNDATION

Culverts on yielding foundations shall have a full bottom slab. Culverts on un-yielding foundations and rigidly supported on solid rock may be supported on separate footings embedded into rock or a full bottom slab. Culverts supported on separate footings are required to have a 6-inch paved bottom. Inlet and outlet aprons are required on all culverts and shall be paved with Class A concrete to the ends of the wing tips 6 inches minimum depth.

Foundations shall be designed as untrenched, and the design shall be consistent the full length of the culvert.

17.4.5. CULVERT ADDITIONAL REQUIREMENTS

A. Flexible (Steel, Aluminum, and/or Composite) culverts are not permitted.
B. Buried Structures with less than 3'-0" of fill shall be covered with a waterproofing membrane meeting the requirements of the Special Note for Waterproofing Membrane.
C. Masonry culverts are not permitted.
D. Timber culverts are not permitted.
E. Buried structures must meet the design criteria and load rating criteria defined above.
F. See Section 14.1 2 for additional culvert design requirements.
G. Where bedrock is considered erodible a full bottom slab or paved invert is required
H. Three-sided structures are not permitted.

17.5. BRIDGE LOAD RATINGS

A load rating shall be performed for the Airline Road bridge and for each bridge that is widened, replaced, or newly constructed. The rating shall be in accordance with the Kentucky Bridge Inspection Procedures Manual and the AASHTO manual for Bridge Evaluation. All available load rating files will be made available to the DBT upon request.

17.5.1. LOAD RATING METHOD

TABLE 17.1 – REQUIRED LOAD RATINGS		
	Route Carried	
Vehicle	Interstate	Non-Interstate
Inventory	R.F. ≥ 1.0	R.F. ≥ 1.0
Operating	R.F. ≥ 1.0	R.F. ≥ 1.0
KY Type 1	20 tons	44 tons
KY Type 2	27 tons	44 tons
KY Type 3	34 tons	44 tons
KY Type 4	40 tons	44 tons

TABLE 17.1 – REQUIRED LOAD RATINGS		
	Route Carried	
Vehicle	Interstate	Non-Interstate
SU 4	34 tons	44 tons
SU 5	R.F. ≥ 1.0	44 tons
SU 6	R.F. ≥ 1.0	44 tons
SU 7	R.F. ≥ 1.0	44 tons
EV 2	R.F. ≥ 1.0	R.F. ≥ 1.0
EV 3	R.F. ≥ 1.0	R.F. ≥ 1.0

For all bridges being replaced or all new bridges, the DBT shall rate the bridges using the Load Resistance Factor Rating (LRFR) method. All new structures shall provide a rating factor greater than or equal to the following limits stated in the Required Load Rating table. Bridges being widened may be rated using the Load Factor Rating Method. For any structure being modified as a part of this project, shall have a load rating which does not require the bridge to be posted.

Axle weights and spacing for analysis vehicles shall be as given in the Kentucky Bridge Inspection Procedure Manual and the FHWA's Load Rating for the FAST Act's Emergency Vehicles memorandum, dated November 3, 2016.

A. The 11 vehicles for Posting ratings are the HL-93 truck, Kentucky Truck Types 1-4, SU4-SU7, and EV2 – EV3
B. The 3 Vehicles for Permit Rating are A254, B375, and C547. The axle weights and spacing for these vehicles are listed below:

TABLE 17.2 – AXLE WEIGHTS AND SPACING FOR PERMIT RATINGS							
Axle	Superload A254		Superload B375		Superload C547		
	Weight (lbs)	Spacing (ft)	Weight (lbs)	Spacing (ft)	Weight (lbs)	Spacing (ft)	Wheel Gage
1	14000	18	15000	16	15000	16	normal distribution
2	20000	4.5	20000	4.5	20000	4.5	normal distribution
3	20000	4.25	20000	4.5	20000	4.5	normal distribution
4	20000	18	20000	14.25	20000	21.25	normal distribution
5	20000	4.5	20000	5	35000	5.75	2-lane distribution
6	20000	4.5	20000	5	35000	16	2-lane distribution
7	20000	39	20000	14	35000	5.75	2-lane distribution
8	20000	4.5	20000	5	35000	14	2-lane distribution
9	20000	4.5	20000	5	35000	5.75	2-lane distribution
10	20000	14	20000	63	35000	50	2-lane distribution
11	20000	4.5	20000	5	35000	5.75	2-lane distribution
12	20000	4.5	20000	5	35000	16	2-lane distribution

TABLE 17.2 – AXLE WEIGHTS AND SPACING FOR PERMIT RATINGS							
Axle	Superload A254		Superload B375		Superload C547		
	Weight (lbs)	Spacing (ft)	Weight (lbs)	Spacing (ft)	Weight (lbs)	Spacing (ft)	Wheel Gage
13	20000		20000	14	35000	5.75	2-lane distribution
14			20000	5	35000	14	2-lane distribution
15			20000	5	35000	5.75	2-land distribution
16			20000	14	35000	13.5	2-lane distribution
17			20000	5	12000	19.5	normal distribution
18			20000	5	20000	4.5	normal distribution
19			20000		20000		normal distribution
Pounds	254,000		375,000		547,000		
Tons	127		187.5		273.5		
Axles	13		19		19		
Length	124.75		194.25		228.25		

When load rating bridges for Posting vehicles, use a live load factor of $\gamma_{LL} = 1.45$.

17.5.2. SUBMITTAL OF LOAD RATINGS

A. A final load rating shall be submitted with the Final Plans Submittal. Should the as-built condition differ from the design as determined by KYTC, the DBT shall be responsible to provide an updated load rating to reflect as-built conditions. The bridge load rating report shall be submitted to KYTC before the bridge is open to traffic in its final configuration.
B. Rating results shall be submitted in tonnage and by rating factor. The permit ratings require only a rating value.
C. The latest edition of Bentley LARS software as the issue date of this document shall be used for bridge ratings. Each bridge load rating submittal shall include the computer files in electronic format, along with calculations for the LARS input.
D. For any bridge that is not compatible with the Bentley LARS software, the DBT shall provide a rating manual. The rating manual shall include a Microsoft Excel compatible spreadsheet in electronic format that can be used to rate the bridge for future permit vehicles (e.g., overweight or superload vehicles). Such vehicles may range up to 600,000 pounds, have as many as 25 axles, with two to eight tires per axle, and have a width of 20 feet, and a length of 200 feet.

17.6. RECONSTRUCTION OF I-69/KY 351 INTERCHANGE

The structures in the I-69/KY 351 interchange shall be new structures.

17.6.1. BRIDGE AESTHETICS AND LANDSCAPING

The City of Henderson has requested the addition of aesthetic features to enhance the appearance of the structures in this location. The DBT shall utilize the aesthetic measures as recommended in *I-69 ORX KY 351 Streetscape Booklet Update V5* in the RIDs. Note that the clear cover of

reinforcement shall be maintained at 2 inches minimum from the closest point of the form liner to the rebar. The form liner concrete thickness on the bridge shall be assumed to be dead load only and not counted for strength purposes.

17.6.2. EXISTING SIGN STRUCTURES

Existing sign structures may remain in place to support new signage provided that the DBT performs a visual inspection, evaluates the condition and capacity of the existing sign structure to accommodate the new signing, and submits the request to reuse the existing sign structure to KYTC for approval. Relocating existing sign structures to new locations will not be permitted.

17.6.3. BICYCLE AND PEDESTRIAN FACILITIES

This interchange shall accommodate bicycle and pedestrian traffic as outlined in the DES and the Advance Situation Folder. The DBT is to coordinate with KYTC and the City of Henderson in the design of these accommodations.

17.6.4. LIGHTING

Lighting is to be a part of the interchange. The plans for the bridge shall show the details of luminaire pedestals or structural attachments and the details of the conduit encasements or structural attachments. See Section 17.3.23 for additional requirements.

17.7. NEW I-69/US60 INTERCHANGE

The structures in the I-69/US60 interchange shall be new.

The design of the bridge on US60 crossing the CSX railroad shall meet the required vertical and horizontal clearances of the owning and operating railroads. The construction of this bridge shall minimize service interruptions.

The DBT shall coordinate the design with the owning and operating railroad. It is the responsibility of the DBT to consult with the railroad in order to ensure compliance with the railroad's standards. These standards may require fencing on the bridge or the concrete slope walls under the bridge. See Section 19 of this document for further requirements for railroad facilities.

Lighting is to be a part of the intersection. The plans for the bridge shall show the details of luminaire pedestals or structural attachments and the details of the conduit encasements or structural attachments. See Section 17.3.23 for additional requirements.

17.8. NOISE WALLS

Noise walls are required at various locations. Noise wall shall be fabricated from precast concrete panels no longer than 40 feet. Panels shall be supported by "H" section precast concrete columns on drilled shafts with anchor bolts cast into the drilled shafts. Use of other types of noise wall shall require KYTC approval. All noise walls within the project limits are to have the same aesthetic treatment as shown in the *I-69 ORX KY 351 Streetscape Booklet Update V5* in the RIDs. The roadway side and back side of all barriers are to have the same aesthetic treatment. Noise wall posts may be smooth.

All work shall be performed in accordance with the Department's latest Standard and Supplemental Specifications and applicable Special Provisions and Standard and Sepia Drawings, except as specified in these notes or elsewhere in this proposal. This work shall consist of the sound barrier wall and foundation design, construction plans for the foundation, shop drawing preparation, and

construction of precast concrete sound barrier walls, including construction of the drilled shaft foundations.

Noise walls shall be designed in accordance with the AASHTO LRFD Bridge Design Specifications and the KYTC Structural Guidance Manual. Noise walls that are adjacent to the paved shoulder shall meet MASH Test Level 4 criteria.

18. GEOTECHNICAL AND PAVEMENT

18.1. GENERAL SCOPE

The intent of this section is to outline the requirements of the DBT to provide the necessary geotechnical investigations to support design of roadway and structures for the project. Design for static and seismic conditions according to KYTC Structural Design and Geotechnical Guidance Manuals, KYTC Transmittal Memoranda, AASHTO LRFD Bridge Design Specifications and FHWA-NHI-11-032 - GEC No. 3. Performance Criteria is established depending on Operational Classification. The structures and embankment for this interstate project shall be classified as Critical. This route must remain open to all traffic after the maximum credible earthquake (MCE) (Kentucky Transportation Center Report KTC-07-07/SPR246-02-6F) and must remain usable to emergency vehicles and for security/defense purposes after a large earthquake, e.g., a 2500 year return period (AASHTO LRFD Bridge Design Specifications, 3.10.5). Per current AASHTO LRFD Bridge Design Specifications, simplified empirical methods for evaluating liquefaction potential are suitable to a maximum soil depth of 75 feet. The DBT shall be responsible for selecting an appropriate liquefaction evaluation/design method from currently available methods.

18.2. AVAILABLE GEOTECHNICAL DATA

Preliminary geotechnical data for use by the DBT for use in preparing cost estimates as well as for use in preparing structure and roadway geotechnical reports is being provided in the RIDs. The structure geotechnical data is concentrated at the end bents to allow for settlement estimates and potential downdrag loads to be estimated for the approach embankments. Cone penetration test (CPT) data is being provided for the use of the DBT. The data may be used to estimate liquefaction potential and associated seismic risks including seismic induced settlement and lateral spreading. DBTs may rely on geotechnical data provided in the RIDs to the extent allowed by Section 1.2 above. The DBT shall obtain all additional data deemed necessary to evaluate seismicity related concerns.

18.3. ACCEPTABLE STRUCTURE FOUNDATION TYPES

Foundations, including abutments, piers, and end bents shall consist of Reinforced Concrete. Piles may be steel H Piles or Pipe Piles. The following foundation types shall be acceptable:

18.3.1. SPREAD FOOTINGS ABUTMENTS AND PIERS

The bottom of Spread footings for roadway crossings shall be embedded into rock a depth of one foot. (1') For stream crossings, the bottom of the footing shall be embedded into rock two feet (2')

18.3.2. PILE FOUNDATIONS

Pile Bent Abutments, and Integral End Bents, Piles and Pile Bent Piers shall use Steel H piles or Pipe piles. Piles shall be embedded into the cap a minimum of 2' or as required by the KYTC Structural Design Guidance Manual and shall be driven to refusal.

18.3.3. DRILLED SHAFTS

Drilled shafts shall be socketed into rock. Drilled shafts shall conform to Special Note 11-C.

18.3.4. MECHANICALLY STABILIZED EARTH WALLS (MSE)

MSE walls used around structures shall be designed and constructed in accordance with Sections 17.3.13 and 18.12. of this document.

18.3.5. CULVERT FOUNDATIONS

Foundations for new culverts shall be designed per Section 17.4.4.

18.4. FOUNDATION INVESTIGATION AND GEOTECHNICAL INVESTIGATIONS

A. All additional geotechnical information needed by the DBT for roadway and foundation investigation and all geotechnical investigations necessary to prepare the design shall be the responsibility of the DBT. Prior to construction, roadway and structure geotechnical reports shall be submitted to the KYTC Geotechnical Branch for approval. The geotechnical data provided with this RFP can be utilized in preparation of geotechnical reports however the additional borings, laboratory testing or analyses required to meet the requirements as outlined in the KYTC Geotechnical Guidance Manual will be the responsibility of the DBT.

B. Timing of submittal of reports and reviews

   a. The subsequent boring plans and reports shall be submitted for review and approval by the Cabinet's Geotechnical Branch.

18.5. BRIDGE GEOTECHNICAL DATA

DBT responsible for obtaining and providing to KYTC the following:

18.5.1. GEOTECHNICAL BORING DATA

Boring logs and summary data reports for the project are provided in the RIDs. The DBT is responsible for providing the necessary analyses and final geotechnical reports in accordance with the KYTC Geotechnical Guidance Manual. The additional borings required to perform the necessary analyses and complete the geotechnical reports for the roadway and bridge structures will be the responsibility of the DBT.

18.5.2. SEISMIC CONE PENETRATION DATA

Available Cone Penetration Test (CPT) data for the project is provided in the RIDs for use in evaluating the seismic risks for the bridge structures. The DBT shall perform additional CPT borings or other investigative techniques to determine the seismicity related risks for the structure foundations.

18.5.3. LABORATORY TESTING DATA

Laboratory testing data for the project is provided in the RIDs. The DBT is responsible for performing the additional laboratory testing as necessary to support the analyses and complete the final geotechnical reports for the roadway and bridge structures.

18.5.4. BRIDGE APPROACH SETTLEMENT ESTIMATES

Consolidation test data is being provided to allow the DBT to assess the potential consolidation settlement at the bridge end bents. The DBT shall estimate the magnitude and time rate of consolidation settlement and determine appropriate measures for mitigating the consolidation settlement including but not limited to designing foundation elements for downdrag resulting from the settlement, determining required waiting periods as necessary to prevent downdrag loads, measures to minimize the consolidation settlement or measures to accelerate the time rate of settlement. Settlement platforms shall be installed in accordance with current KYTC Standard Drawings and current Standard Specifications as necessary to monitor the magnitude and time rate of settlement of bridge approach embankments.

18.5.5. FOUNDATION RECOMMENDATIONS

Foundations for the structures shall be designed in accordance with the DBT's approved final geotechnical report. The DBT shall complete bridge approach embankments to final grade in time to allow for at least 90% of primary consolidation prior to the project completion date. If piles are not designed for dragdown loads, at least 90% of primary consolidation shall occur prior to pile driving activities, per Section SD-504-2 of the Structural Design Guidance Manual. The percent will be based on analyzing actual settlement platform readings and may differ from the settlement values calculated in design.

Prior to construction, the DBT Geotechnical Engineer shall review the plans and verify that the structure has been designed in accordance with the approved geotechnical report.

18.6. ROADWAY GEOTECHNICAL DATA

DBT responsible for obtaining and providing to KYTC the following:

18.6.1. SLOPE STABILITY ANALYSES TO CONFIRM RIGHT-OF-WAY LIMITS

A limited amount of roadway geotechnical data has been obtained for use by the DBT in preparing a roadway geotechnical report. The DBT Geotechnical Engineer shall perform any the necessary embankment and cut stability analyses to support the design and construction of slopes for the project.

18.6.2. SUBGRADE SOILS STABILIZATION PLAN

Soft subgrade soils are anticipated at the subgrade elevations within cut areas and within embankment foundation soils. The DBT shall provide for lime or cement chemical subgrade stabilization throughout the project, in accordance with Section 208 of the current Standard Specifications. A minimum thickness of twelve (12) inches is required for chemical stabilization. A preliminary CBR of three (3) may be used for preliminary pavement design. The appropriate chemical (lime or cement) and final design CBR shall be based on the final geotechnical investigation by the DBT, approved by KYTC.

18.6.3. EMBANKMENT FOUNDATION STABILIZATION PLAN

The DBT shall provide a plan for remediation of soft embankment foundation soils such as stabilization with crushed stone and geotextile fabric or chemical modification.

18.7. DETENTION BASIN GEOTECHNICAL DATA

DBT responsible for obtaining and providing to KYTC the following:

18.7.1. BASIN EXCAVATION

Much of the embankment for the project will be excavated from detention basins proposed for the project. The DBT shall submit a basin excavation plan for review at least 10 working days prior to commencement of excavation activities.

18.7.2. DEWATERING PLAN

Groundwater and saturated soils are anticipated within the horizontal and vertical limits of the basin excavations. The DBT shall submit a dewatering plan for review at least 10 Working Days prior to commencement of excavation activities.

18.7.3. SOIL MOISTURE CONDITIONING PLAN

Soils excavated from the basin and within other cuts on the project are anticipated to be wet to saturated. The Contractor shall submit a soil moisture conditioning plan at least 10 Working Days prior to commencement of excavation activities. The plan shall provide details on the proposed measures for drying the soils including aerating and/or chemical modification to promote drying. In the event the soils are dry, the DBT shall also provide measures for addition of water and conditioning of the soils to achieve the optimum moisture content for compaction.

18.8. TOPSOIL REMOVAL AND STOCKPILING PLAN

Topsoil removal for the project shall include removal of all organic soil in accordance with Section 204 of the current standard specifications. Prior to removal of topsoil, the DBT shall provide a plan that indicates the any locations where topsoil will be stockpiled or wasted.

18.9. EXCAVATION SUPPORT

Excavations less than 20 feet in depth shall be excavated in accordance with the OSHA excavation handbook and monitored by an OSHA competent person. Excavations greater than 20 feet in depth shall be designed by a licensed Professional Engineer.

18.10. 18.8 CULVERT INVESTIGATION DATA

DBT responsible for obtaining and providing to KYTC the following:

18.10.1. CULVERT BORINGS

Geotechnical data has not been obtained at anticipated culvert locations, the DBT shall perform the necessary drilling, laboratory testing, engineering analyses and geotechnical reports for all required culverts on the project in accordance with the KYTC Geotechnical Guidance Manual.

18.11. SANITARY SEWER CROSSINGS

It is anticipated that the alignment will cross five sanitary sewers. The DBT shall perform the necessary analyses and provide remedial measures to verify that damage to the sewers will not result from either construction traffic or from placement of embankment that might cause settlement to the sewers.

18.12. GEOTECHNICAL, FOUNDATIONS, SLOPES, AND WALLS STANDARDS

A. Design Standards - AASHTO LRFD Bridge Design Specifications to be used and AASHTO Guide Specifications for LRFD Seismic Bridge Design where may be applicable.

B. Precedence of Codes and Specifications when conflicts arise.

C. Design and Subsurface explorations in accordance with KYTC Geotechnical Guidance Manual

D. Foundation Analysis and Design Report to be provided for each structure. The differential settlement between the approach embankment and the structure end bents shall be limited to 1-inch, measured relative to designed roadway grade as shown on the RFC roadway plans. Confirmatory measurements shall be made no sooner than 20 working days prior to Project Completion Notice.

E. Roadway Report for slopes and subgrade design to be provided

F. Subsurface explorations deemed necessary by DBT to be at their expense.

a. Exploration to be done according to KYTC Geotechnical Guidance Manual

G. Foundation Design KYTC Geotechnical Guidance manual and KYTC Transmittal Memorandums issued by the Division of Structural Design

H. Retaining Wall Design – KYTC Geotechnical Guidance Manual

a. Special Notes in Attachments 18.12 where applicable

b. Gravity Retaining Walls constructed according to Standard Drawing BGX- 023 and BGX-024. Variations to be approved by KYTC

c. Gabion baskets not permitted for permanent construction

d. Metal 'bin' walls not permitted for permanent construction

e. Only pre-approved Mechanically Stabilized Walls as indicated in the Special Note for MSE Walls (Attachment 18.12) shall be used.

I. Reinforced soil slopes not to exceed (1) Horizontal to (1) Vertical.

a. Design soils slopes per Publication FHWA-NHI-00-043 – "Mechanically Stabilized Earth" Walls and Reinforced Slopes"

J. Other Requirements

a. Steeper than 2H:1V to be reinforced or otherwise remediated

b. The DBT is to provide review and monitoring of settlement (if necessary) to determine when final pavement can be placed. Evaluate and mitigate settlement in the vicinity of a structure according to the requirements of Design Code (18.12 A), KYTC Geotechnical Guidance Manual, KYTC Structural Design Guidance Manual, and applicable Transmittal Memorandum.

c. Geotechnical instrumentation to remain in place after project completion.

d. Shale not to be used in the upper two feet of subgrade

e. Subgrade to be constructed in accordance with pavement design specifications

f. Specifications for Ponds to be drained: Any ponds located within the project limits shall be drained and mucked out a minimum of 3 feet. This material shall just be limited to final dressing of slopes. Refill shall consist of suitable earth material or Kentucky Coarse #2's, 3's or 23's or as otherwise directed in the approved final geotechnical recommendations by the DBT. The granular material shall be wrapped with the geotextile fabric indicated in the final geotechnical recommendation by the DBT and approved by KYTC.

g. Handling of Deep Organic Soils: Some areas of deep organic soils may be encountered. The organic material shall be removed. This material shall just be limited to final dressing of slopes. Refill shall consist of suitable earth material or Kentucky Coarse Aggregate #2's, 3's or 23's or as otherwise directed in the approved final geotechnical recommendations by the DBT. The granular material shall be wrapped with the geotextile fabric indicated in the final geotechnical recommendations by the DBT and approved by KYTC.

h. Mitigation required for Springs - If springs are encountered during construction proper mitigation procedures shall be followed to allow for positive drainage.

i. Foundation embankment benches are to be constructed according to Standard Drawings RGX-010 and RDP-006. Contrary to Standard Drawing RGX-010, the typical rise height for benching into soil/earth slopes shall be four (4) to six (6) feet. Benches in earth slopes shall be constructed one at a time beginning with the lowest bench, and each bench shall be backfilled prior to excavation of the next bench. If water is encountered during benching, construct a minimum one (1) foot thick drainage blanket as directed by the Engineer,

j. Excavation support and Dewatering Methods: Excavations shall be properly braced/shored to provide adequate safety to people working in or around the excavations. Bracing shall be performed in accordance with applicable federal, state and local guidelines. It shall be anticipated that groundwater will be encountered in excavations.

18.13. PAVEMENT

See Attachment 18.13 for pavement design details. There are multiple sections within the project limits that KYTC will allow alternate pavements to be bid (asphalt or concrete). An Alternate Pavement Bid Adjustment worksheet is included in Appendix H. The Cabinet will require like pavement material for shoulders and driving lanes.

The DBT shall construct KY 3690 (Future I-69) northward to KY 3690 (Future I-69) Sta. 3950+00 for the full width of the KY 3690 typical section through the final pavement surface course. In addition, the northbound exit ramp to Relocated US 60 and the southbound entrance ramp from Relocated US 60 to KY 3690 shall be constructed through the final pavement surface course for their entire lengths. Provide temporary concrete barrier wall, placed as directed by the Engineer, to barricade northbound KY 3690 at the northern limit of paving. The temporary concrete barrier wall shall remain in place at the conclusion of construction and will become KYTC property.

The DBT shall not pave the southbound exit ramp to Relocated US 60 and the northbound entrance ramp from Relocated US 60, but instead shall construct curb and gutter and sidewalks along the radii of the roundabouts and across the paths of the future north side paved ramps.

The DBT shall pave all project roadways to the limits imposed by the DBT's proposed designs. For roadways paved with existing concrete pavement (such as KY 351), replace rather than widen any portions of the existing pavement having joint lines that deviate more than 12 inches from the DBT's proposed lane lines. For asphalt-paved roadways, the DBT shall provide at least 3 inches of asphalt material cover above any longitudinal joints created by widening existing asphalt pavements. Provide edge keys per KYTC standards at all transitions from proposed to existing asphalt pavement. Existing pavement structure shall not be diminished or reduced with the DBT's proposed design.

Edge drains will be required on the new alignment segment of I-69 and along the auxiliary lane between KY 425 and Audubon Parkway. Edge drains will be required for the new US 41 connector, US 60, and KY 351.

Asphalt and concrete pavement ride quality will be measured for this project. See Section 410 of the Standard Specifications for Asphalt Pavement Ride Quality. Category A ride quality requirements shall apply for asphalt pavements. See Section 501 of the *Standard Specifications* for concrete pavement. Category A ride quality requirements shall apply for concrete pavement.

For all full-depth pavement sections on this project the Special Note for Intelligent Compaction for Asphalt Mixtures and Special Note for Paver Mounted Temperature Profiles shall be required. For

full-depth pavement on I-69, KY 3690, US 41, and US 60 the Special Note for Intelligent Compaction for Soil and Aggregate shall also apply.

Use a Material Transfer Vehicle (MTV) according to Sections 403.02.10 and 403.03.05 of the Standard Specifications

Pavement Digouts for Vertical Clearance– The existing pavement on US 41 is a composite pavement with asphalt over unbroken concrete. If the DBT proposes to mill to achieve the required vertical clearance at overhead structures pavement cores in all driving lanes will be required to determine the depth and condition of the existing asphalt. The minimum asphalt pavement depth over existing concrete pavement on US 41/I-69 allowed will be 7.5 inches. If less than 1.5 inches of existing pavement needs to be removed to provide the necessary clearance, at least 1.5 inches of new surface (PG76-22) will be required on the remaining asphalt base. If more than 1.5 inches of existing pavement needs to be removed, at least 3 inches of new asphalt base (PG76-22) and 1.5 inches of new asphalt surface (PG76-22) will be required on the remaining asphalt base. The remaining asphalt base thickness must be a minimum of 3 inches. Any area where the minimum 7.5 inches of asphalt cannot be provided over the existing concrete shall have a full-depth digout. See Attachment 18.13 for the pavement depths required.

For concrete pavement the Special Note for Dowel Bar and Tie Bar Placement in JPC Pavement will apply.

19. UTILITIES

19.1. COMMUNICATIONS

Prior to the awarding of the Contract with Notice to Proceed, the DBTs shall not have any communications with any of the utility owners, operators, employees, or representatives specific to this project, except as coordinated by KYTC or its representatives.

Utility Meetings Prior to Award

KYTC representatives will host "One on One" meetings with utility companies and the short listed DBT's firms. DBT's may request One on One utility meetings no more frequently than monthly, by submitting a question using Form B as described above in Section 3 of this RFP. These meetings may be held virtually or live at the discretion of KYTC and the utility. Each short listed DBT desiring a meeting with a utility shall submit a list of questions and available time frames to KYTC representatives. When feasible, the meeting will be scheduled within 10 Working Days of receiving the written questions. A utility meeting will be scheduled for no more than 90 minutes.

Utility Meetings After Notice to Proceed

After the notice to proceed, the DBT is responsible for holding monthly meetings and otherwise communicating with each utility owner as necessary to accomplish in a timely manner the utility adjustments necessary to construct the project. KYTC or its representatives will be invited to attend all meetings with utilities whether group or individual meetings.

All meetings will be scheduled with 10 Working Days' notice. At least 5 Working Days in advance of each scheduled meeting, the DBT shall provide an agenda for the meeting separately to KYTC and the appropriate utility owner. The DBT shall prepare minutes of all meetings with utility owners and shall keep copies of all correspondence between the DBT and any utility owner. Copies of these meeting minutes shall be forwarded to KYTC representatives for the project files within 5 Working Days following the respective meeting.

19.2. GENERAL REQUIREMENTS

A number of existing utilities are located within or in the vicinity of the Project Right-of-Way, some pursuant to statutory rights and some pursuant to property rights. DBTs are advised it is their responsibility to locate all utilities and take into account impacts the design creates. The DBTs will work directly with KYTC in regard to all utility coordination efforts noted in this document.

This section establishes procedures and requirements for adjusting utilities, if deemed necessary, including such processes as coordination with utility owners, administration of the engineering, construction, and other activities necessary for utility adjustments, and required documentation.

Except for the utilities listed in table 19.1 as (Type 1 Utility Agreements), The DBT shall cause all utility adjustments necessary to accommodate construction, operation, maintenance and/or use of the project, in both its initial configuration and in its ultimate configuration. The DBT shall clearly demonstrate in the schedule prepared for the project how the utility relocation work is to be accomplished. No Contract time extensions shall be granted to the DBT due to relocation of utilities for the project.

The DBT shall be responsible for preparing and executing all necessary agreements with the utility owners impacted by the project except those agreements included in the RID.

Some utility adjustments may be performed by the utility owner with its own forces and/or contractors and consultants (i.e., utility owner-managed); all others shall be performed by the DBT with its own forces and/or contractors and consultants (subject to any approval rights required by the utility owner for those working on its facilities) (i.e., DBT-managed). The allocation of responsibility for the utility adjustment work between DBT and the utility owners shall be specified in the Utility Agreements and in this RFP. These agreements must be reviewed and approved by KYTC.

The DBT's obligations regarding reimbursement to utility owners for all costs of utility adjustment work shall be as set forth in the Utility Agreements prepared for the project by the DBT and in conformance with KYTC's Utility Guidance Manual and Kentucky State Statutes.

19.2.1. WHEN UTILITY ADJUSTMENT IS REQUIRED

A utility adjustment may be necessary to accommodate the project for either or both of the following reasons: (a) a physical conflict between the project and the utility; and/or (b) an incompatibility between the project and the utility based on constructability, future operation, safety, and maintenance. The physical limits of all utility adjustments shall extend as necessary to functionally replace the existing utility, whether inside or outside of the project Right-of-Way. Section 19.2.2. contains provisions that address the acquisition of replacement easements for utilities to be installed outside of the project Right-of-Way.

The utility relocations proposed in this RFP for the KY 351 Interchange shall be constructed. Minor modifications to address the final design will be considered but not guaranteed.

Utilities may remain in their existing locations within the project Right-of-Way if the existing location shall not adversely affect the construction, operation, safety, maintenance and/or use of the project and if the utility is not adversely affected by the project and will remain in compliance with the KYTC Utilities and Rails Guidance Manual and the KYTC Permits Manual. Exceptions to policy will be considered but are not guaranteed to be granted. Exceptions to this policy shall be evaluated on a case-by-case basis by the State Highway Engineer's (SHE) Office and the Federal Highway Administration (FHWA) (if applicable).

19.2.2. CERTAIN COMPONENTS OF THE UTILITY ADJUSTMENT WORK COORDINATION

Coordination

The DBT shall communicate, cooperate, and coordinate with KYTC, the utility owners, and potentially affected third parties, as necessary for performance of the utility adjustment work.

The DBT shall be responsible for all coordination needed to ensure that the required encroachment permits and any other approvals needed from KYTC, or any appropriate regulatory agencies are received and approved by the proper authority prior to any utility relocation work within the public Right-of-Way taking place.

Placement of Utilities

All placement of utility infrastructure shall be in accordance with the 23 CFR 645 Subpart B, KYTC Utilities and Rails Guidance Manual and the KYTC Permits Manual. Exceptions to policy will be considered but are not guaranteed to be granted. Exceptions to this policy shall be evaluated on a case-by-case basis by the State Highway Engineer's (SHE) Office and the Federal Highway Administration (FHWA) (if applicable).

Protection in Place

If an existing utility will not be relocated due to the project, the DBT shall be responsible for protection in place of all such utilities impacted by the project as necessary for their continued safe operation and structural integrity. All protection in place efforts must be approved by the utility and addressed in an agreement between the utility owner and the DBT, and approved by KYTC.

Abandonment and Removal

As applicable to work being performed by the DBT or the utility owner within KYTC Right-of-Way, the DBT shall make all arrangements and perform all work or cause work to be completed necessary to complete each abandonment or removal (and disposal) of a utility in accordance with the approved Utility Agreement and the KYTC Utilities Guidance Manual and the KYTC Permit Manual. The DBT shall obtain governmental approvals and consent from the affected utility owner and any affected landowner(s) or shall confirm that the utility owner has completed these tasks.

Service Lines and Utility Appurtenances

As applicable to work being performed by the DBT, whenever required to accommodate construction, operation, maintenance, and/or use of the project, the DBT shall cause service line adjustments and utility appurtenance adjustments. On completion of these, the DBT shall cause full reinstatement of the roadway, including reconstruction of curb, gutter, sidewalks, and landscaping, whether the utility adjustment work is performed by the utility owner or by the DBT. It will be the responsibility of the DBT to acquire or obtain any necessary rights to enter property outside of the project ROW as needed to restore utility services.

Agreements Between KYTC and Utility Owners

KYTC has agreed to certain utility relocation plans developed by or in coordination with utility owners. These adjustments fall into one of the following categories. DBTs are responsible for constructing Type 1.2 and 1.3 utility adjustments in accordance with the utility relocation plans and specifications contained in the Technical Provisions Attachments.

Type 1.1 Utility Adjustments (Utility Design and Construction performed by Utility under agreement with KYTC). The utility owner performs design and construction of the utility adjustment and is reimbursed by KYTC. These utility adjustments and schedules are identified in RIDs. A DBT Utility Agreement is not required for these adjustments. Final Design Documents prepared by the DBT for the project shall accommodate Type 1.1 Utility Adjustments.

Type 1.2 Utility Adjustments – (Utility Design performed by the utility under agreement with KYTC; Utility construction performed by DBT as part of the project). The utility owner provides the design and the DBT performs the construction of the utility adjustment. KYTC will reimburse the utility owner for design costs, and DBT shall be responsible for the cost of the utility adjustment construction work including coordination, scheduling and traffic control. These utility adjustments, designs and schedules are identified in RIDs. A DBT Utility Agreement is not required for these adjustments. Final Design Documents prepared by the DBT for the project shall accommodate Type 1.2 Utility Adjustments. Should the DBT request any changes to the utility owner provided design, these adjustments will be reclassified as Type 2 Utility Adjustments.

Type 1.3 Big Rivers Transmission Lines – KYTC will provide 60% design plans as RIDs during the procurement period. Final 100% design plans will be provided after Contract award. Following receipt of 100% design plans, the DBT will conduct an open procurement with approved electrical subcontractors and suppliers to perform the relocations per the 100% design plans. DBTs shall

include a lump sum allowance in their bid, as shown in Form PP – Price Proposal, for the cost of the relocation This allowance may only be used to pay the actual costs of the subcontracted and supplier costs for the Big Rivers Transmission Line relocation, with no markup. All other DBT costs, including coordination, scheduling, traffic control and any work they self-perform shall be included in their lump-sum bid and are excluded from the allowance. Should the cost of these relocations exceed the allowance, KYTC will issue a Change Order to reimburse the DBT for the increased cost. Should the actual costs be less than the allowance, KYTC will split the savings with the DBT, 50% for KYTC, 50% for the DBT. The DBT is responsible for coordinating with Big Rivers, scheduling the work, contracting with and paying the subcontractors and suppliers for all related work. KYTC will provide utility inspection and acceptance on behalf of Big Rivers. Final Design Documents prepared by the DBT for the project shall accommodate Type 1.3 Utility Adjustments. Should the DBT request any changes to the 100% design plans, if KYTC agrees, the DBT will be responsible for any additional design costs and any additional construction costs. Any potential construction cost savings will be split as described above in this section.

Agreements Between the DBT and Utility Owners

The DBT shall enter into one or more Utility Agreements with each affected utility owner to define the design, material, construction, inspection, and acceptance standards and procedures necessary to complete utility adjustments, as well as to define the DBT's and the utility owner's respective responsibilities for utility adjustment costs and utility adjustment activities such as design, material procurement, construction, inspection, and acceptance. Utility Agreements will establish deliverables to include relocation drawings, estimates, schedules, site access, maintenance of traffic plans, as pertinent to the agreement type. A Utility Agreement may address more than one utility adjustment for the same utility owner. Additional adjustments may be added to an existing Utility Agreement by a Utility Agreement amendment.

The DBT shall prepare each Utility Agreement using KYTCs standard form or a similar document approved by KYTC. Promptly following issuance of a notice to proceed, the DBT shall begin negotiations with each affected utility owner to reach agreement on one or more Utility Agreements. The DBT shall use good faith efforts to finalize a Utility Agreement with each affected utility owner within a reasonable time period after issuance of NTP. Each Utility Agreement (including the utility adjustment plans attached thereto) shall be subject to KYTC review and comment as part of the Utility Agreement /encroachment permit approval process.

Except as otherwise stated in this Section or in the Agreement, each utility adjustment shall be specifically addressed in a Utility Agreement. The DBT Utility Agreements will be one of the following types:

Type 2 Utility Adjustments (Utility Preliminary design performed by the utility under agreement with KYTC; Final Design and Construction to be under agreement with the DBT). KYTC has entered into a KYTC Utility Agreement with the utility owner that sets forth the allocation of responsibilities with respect to any necessary utility adjustments. The utility owner has also performed preliminary utility adjustment design plans. The preliminary utility adjustment design provides the utility owner’s understanding of the required utility adjustment work based on the Reference Design and includes an estimated cost and schedule. The KYTC Utility Agreements and preliminary utility adjustment design plans are included in the Reference Information Documents. The DTB shall enter into a DBT Utility Agreement and perform final utility adjustment design itself or through a consultant, as specified by the utility owner in the KYTC Utility Agreements. DBT shall perform the utility adjustment work or cause the relocation using a Contractor acceptable to the utility owner as specified in the Utility Agreement. Lists of acceptable consultants and contractors, in addition to applicable utility

adjustment design standards and construction specification for each respective utility owner shall be included in the Utility Agreement. DBT agreements with utility owners must be approved by KYTC.

KYTC will reimburse the utility owner for preliminary design costs, and DBT shall be responsible for the cost of final design and utility adjustment construction work. KYTC will acquire all Replacement Utility Property Interests or other easements identified on the ROW Maps as being interests that KYTC will acquire. If DBT's Final Design requires additional easements or other property interests, DBTs shall reimburse the utility owner for all effort, time, and cost associated with the acquisition of the easement or the other property interest. The DBT Utility Agreement shall include specifics of the Type 2 utility adjustments, including design and construction requirements, utility adjustment Plan review and construction inspection, details of Developer's obligations to reimburse utility owner for costs associated with any additional easements or other property interests, and any Betterments or Enhancements.

Type 3 Utility Adjustments (The Utility Owner performs Design and Construction and will be reimbursed by the DBT). KYTC has received from the utility owner a preliminary utility adjustment design, an estimated schedule and an estimated cost for each Type 3 utility adjustment. These items and an KYTC Utility Agreement that addresses allocation of responsibilities with respect to any necessary utility adjustments are included with the Reference Information Documents. The preliminary design provides the Utility Owner's understanding of the required utility adjustment work based on the Reference Design. The DBT shall coordinate the project final design with the utility owner and negotiate a DBT Utility Agreement. The utility owner will perform the final design and facility adjustments with their internal forces or by their approved contractors. DBT shall reimburse the utility owner for its costs associated with the utility adjustment design, which may include the preliminary and final design, and all construction work. KYTC will acquire all Replacement Utility Property Interests or other easements, or other property interests identified on the ROW Maps as being interests that KYTC will acquire. If DBT's Final Design requires additional easements or other property interests, the DBT shall reimburse the utility owner for all effort, time, and cost associated with the acquisition of the easement or other property interest. The DBT Utility Agreement shall include specifics of the Type 3 utility adjustments, including design and construction requirements, details of the DBT's obligations to reimburse utility owner for costs associated with any additional easements, and any Betterments or Enhancements.

Type 4 Utility Adjustments - (Utility Design and Construction to be under Agreement with the DBT). If any utility has not previously been addressed in the RIDS or the DBT design creates new impacts, the DBT shall be responsible to coordinate with the utility. The cost of design and construction of these relocations will be the responsibility of the DBT to perform or reimburse the utility as agreed upon between the utility owner and the DBT. These agreements must be approved by KYTC.

The following Table 19.1 represents the proposed Utility Agreement types for known utilities within the project area:

TABLE 19.1 – UTILITY ADJUSTMENT TYPES		
Utility Owner	Designer	Adjustment Type (1-4)
Kenergy	In-House	1.1
HCWD	HCWD/HDR	1.2
HWU	HWU/STRAND	1.2
HMG	HMG/Bell Engineering	1.2
HMPL	HMPL/EPUA	1.2
Big Rivers	KYTC	1.3
Crown Castle	GPD	3
Windstream	In-House	3
Spectrum	In-House	3
AT&T	In-House	3
KY Wired	KY-Wired/Ledcor Group	3
Kentucky Utilities	Not affected	N/A
BW Pipeline	Not affected	N/A
Atmos	Not affected	N/A
WFIE-TV	Not affected	N/A

Utility Agreement Amendments

Modification of an executed Utility Agreement or any component thereof shall be addressed using a Utility Agreement amendment. A Utility Agreement amendment may be used only when the allocation of responsibility for the utility adjustment work covered by that Utility Agreement amendment is the same as in the underlying Utility Agreement; otherwise, an additional Utility Agreement and new encroachment permit shall be required.

Each Utility Agreement amendment (including any utility adjustment plans attached thereto) shall be subject to KYTC approval as an amendment to the original encroachment permit.

19.3. ADMINISTRATIVE REQUIREMENTS

19.3.1. STANDARDS

All utility management including coordination and adjustment work shall comply with all applicable laws, KYTC Utilities and Rails Guidance Manual, KYTC Permits Manual, agency encroachment permit requirements, this RFP, regulatory agency approvals, the applicable utility adjustment standards, and the requirements as set forth in the individual utility company standards and specifications noted in the Utility Agreements.

19.3.2. UTILITY ADJUSTMENT MANAGER

The DBT shall provide a Utility Adjustment Manager with appropriate qualifications and experience for the utility adjustment work required for this project.

The Utility Adjustment Manager's (UAM) primary work responsibility shall be the performance of all the DBT's obligations with respect to utility coordination, agreements, and any necessary utility adjustments. The UAM shall be authorized by the DBT to approve all financial and technical modifications associated with utility adjustments and modifications to the Utility Agreements. Except

for Type I Utility Agreements, the DBT shall be responsible for accurate placement of relocated utilities and for utility adherence to all requirements in the KYTC Utility Guidance Manual and the KYTC Permits Manual. The UAM shall coordinate the DBT design with all utilities in a timely manner. Under no circumstance will KYTC be responsible for delays associated with Utility Agreements, permits, or relocations.

19.3.3. REAL PROPERTY MATTERS

The DBT shall provide the services described below in connection with existing and future occupancy of property by utilities.

Acquisition of Replacement Utility Property Interests

In addition to property rights acquired and described in the RIDs and as needed for design alterations to the project design made by the DBT, the DBT shall be responsible for working with each utility owner to obtain all necessary replacement property rights. The DBT shall have the following responsibilities for each acquisition:

A. The DBT shall coordinate with each utility owner and provide all project information needed to identify any utility property interests required, that is not already in place.
B. If the DBT and/or DBT subcontractors assists a utility owner in acquiring a replacement utility property interest, the DBT shall ensure that the following requirements are met:
    a. The files and records must be kept separate and apart from all acquisition files and records for the project Right-of-Way.
    b. The items used in acquisition of replacement utility property interests (e.g., title and encumbrance reports, plats, legal descriptions, appraisals, written evaluations, and owner contact reports) must be separate from the purchase of the project right-of-way.
C. The DBT shall acquire or cause to be acquired, all replacement utility property interests required for its utility adjustments. No betterment in terms of property interest shall be paid for using project funds.

19.3.4. DOCUMENTATION OF REQUIREMENTS

The DBT shall prepare and obtain execution by the utility owner of (and record in the appropriate jurisdiction, if applicable) all agreements including all necessary exhibits and information concerning the project (e.g., reports, plans, and surveys). Each agreement shall identify the subject utility by the applicable encroachment permit Number and shall also identify any real property interests by parcel number or highway station number or by other identification acceptable to KYTC.

19.3.5. RECORDKEEPING

The DBT shall maintain correspondence and communication logs, construction, and inspection records in order to ascertain that utility adjustment work is accomplished in accordance with the terms and in the manner proposed on the approved utility adjustment plans and otherwise as required by the applicable Utility Agreement(s). The DBT may use the modified KYTC Utility Relocation Progress Report.

19.4. DESIGN

19.4.1. DBT'S RESPONSIBILITY FOR UTILITY IDENTIFICATION

Outside of the test-hole data included in the RID information, The DBT bears sole responsibility for ascertaining, at its own expense, all pertinent details of utilities located within the project Right-of-Way

or otherwise affected by the project, whether located on private property or within an existing public right- of-way and to include all service lines. This includes horizontal and vertical locating of utilities.

19.4.2. TECHNICAL CRITERIA AND PERFORMANCE STANDARDS

All design plans for utility adjustment work, whether furnished by the DBT or by the utility owner, shall be consistent and compatible with the following:

A. KYTC Policies and Procedures as set forth in Kentucky's State Utility and Rail Guidance Manual and the, KYTC Permit Utility Accommodation Policy as specified in Kentucky's Permits Manual, and as specified in the approved Utility Agreement.
B. The project as designed and constructed.
C. With all environmental permits for the project.
D. Any utilities remaining in, or being installed in, the same vicinity.
E. All applicable governmental approvals/permits.
F. Private approvals of any third parties necessary for such work.

The DBT shall be responsible for validating that all utility adjustments performed as part of this project adhere to these criteria.

19.4.3. UTILITY ADJUSTMENT PLANS

Utility adjustment plans, whether furnished by the DBT or by the utility owner, shall be signed and sealed by a registered Professional Engineer (PE), if required by the utility owner. These adjustment plans shall be to project scale and show elevations of the utility infrastructure at all crossings of structures and other utilities.

Plans Prepared by DBT

Where the DBT and the utility owner have agreed that the DBT shall furnish a utility adjustment design, the DBT shall prepare and obtain the utility owner's approval of plans, specifications, and cost estimates for the utility adjustment (collectively, "utility adjustment plans") by having an authorized representative of the utility owner sign the plans as "reviewed and approved for construction." The approved utility signatory or office held, must be identified in the Utility Agreement. The utility adjustment plans (as approved by the utility owner) shall be attached to the applicable Utility Agreement and estimate, which shall serve as the appropriate encroachment permit application submitted for KYTC approval. The DBT is responsible for facilitating this process in a manner such that all requirements are adequately addressed, and commitments fulfilled in accordance with all provisions set forth in the Contract Documents.

Unless otherwise specified in the applicable Utility Agreement(s), all changes to utility adjustment plans previously approved by the utility owner (excluding estimates, if the utility owner is not responsible for any costs) shall require written utility owner approval. The DBT shall transmit any KYTC comments to the utility owner and shall coordinate any modification, re-approval by the utility owner, and re-submittal to KYTC as necessary to obtain KYTC approval, as applicable.

Plans Prepared by the Utility Owner

For all utility adjustment plans to be furnished by a utility owner, the DBT shall coordinate with the utility owner as necessary to confirm compliance with the project plans. Utility adjustment plans shall be attached to the applicable Utility Agreement and estimate, which shall serve as the appropriate encroachment permit for KYTC approval. The DBT shall be responsible for coordination with the utility company to ensure that all KYTC comments to the utility owner are adequately addressed in the

design and construction of the project, including, any modification, re-approval by the utility owner and re-submittal to KYTC as necessary to obtain KYTC approval.

Design Documents

All existing utilities and proposed utility adjustments shall be depicted in the project design documents, regardless of whether the utility adjustment plans are prepared by the DBT or by the utility owner. These utility sheets must be to project scale and show elevations of proposed utilities at all crossings of structures and other utilities.

Utility Agreement Submittals

Except for any Type 1 Utility Agreement, each utility adjustment shall be addressed in a Utility Agreement prepared jointly by the DBT and the utility owner and submitted to KYTC for review and comment. The DBT shall coordinate with the utility owner to prepare all components of each Utility Agreement. Completion of the review and approval process for the applicable Utility Agreement, as well as issuance of any required KYTC approvals, shall be required before the start of construction for the affected utility adjustment work.

In its sole discretion, KYTC has the authority to approve the placement of utilities within project Right-of-Way. It shall be the responsibility of the DBT to work with the utility owner to prepare all required documentation to be included with each subsequent Utility Agreement or permit submittal.

The DBT shall arrange for the utility owner to execute each Utility Agreement and subsequent encroachment permit required to do the work on the Project.

Provisions governing the procedure for and timing of Utility Agreement submittals are in Section 19.65 (Deliverables).

All utility adjustments covered by the same initial Utility Agreement may be addressed in a single encroachment permit. Please refer to the KYTC Encroachment Permit Manual for additional information. In general, the Utility Agreement package required for each utility relocation shall include:

Encroachment Permit application (KYTC).

A. Utility agreement (executed between the DBT and the utility owner).
B. Utility adjustment plans and specifications as referenced in the Utility Agreement.
C. Roadway plans and profile and/or structure plans and X- sections clearly indicating existing and proposed utility location. For utilities deemed acceptable to remain in place by the utility owner and the DBT, the location of the utility, both horizontally and vertically, along with any special construction requirements or protection needed to prevent damage to the facility during construction of the project, must be clearly defined.
D. Utility relocation cost estimate as defined in the Utility Agreement including definition and separation of any betterment proposed.
E. One electronically signed complete Utility Agreement package as described herein or as directed by KYTC. Once review and comment is complete, the digitally executed copy shall be returned to the DBT and utility company for their use.

19.5. CONSTRUCTION

19.5.1. GENERAL CONSTRUCTION CRITERIA

All utility adjustment construction performed by the DBT shall conform to the requirements listed below. In addition, the DBT is responsible for verifying that all utility adjustment construction performed by each utility owner conforms to the requirements described below. In case of

nonconformance, the DBT shall be responsible for and cause the utility owner (and/or its contractors, as applicable) to complete all necessary corrective work or to otherwise take such steps as are necessary to conform to these requirements.

A. All criteria identified in Section 19.4 (DESIGN).
B. If any Utilities are crossing under KYTC roadways, they are encased
C. The utility adjustment plans and agency requirements included in the encroachment permit approved by KYTC.
D. Approved Utility Agreement and approved amendments.
E. All project safety and environmental requirements.
F. Erosion prevention and sediment control requirements.
G. Easement acquisition procedures.

19.5.2. INSPECTION OF UTILITY OWNERS' CONSTRUCTION

The DBT shall set forth procedures for inspection of all utility adjustment work performed by utility owners (and/or their contractors) to verify compliance with the applicable requirements described in Section 19.5 (General Construction Criteria). The inspection shall validate that the utility work adheres to the above criteria, is as designed, and conforms to the approved Utility Agreement and any approved amendments.

19.5.3. UTILITY INSPECTION OF DBT CONSTRUCTION OF UTILITY INFRASTRUCTURE

The DBT shall be aware utility facility owners may require a representative from the company to inspect the work performed on that company's facilities during active construction by including such in the Utility Agreement. The required notification time period to have a utility inspector on site must be addressed in the Utility Agreement. The DBT must receive approval from KYTC to begin work without a utility inspector on site.

A. The utility inspector shall have the implicit right to stop the DBT construction of utility facilities by issuing a written stop work order noting the documentation of the cause of work stoppage with specific reference to the utilities standards, KYTC Utility and Rail Guidance and Permits Manuals, TPs, or Utility Agreement. Written notice must also be by email to the UAM.
B. In response to the stop work order, the DBT shall provide a written response to address the issues noted in the stop work order or explanation of compliance to the standard or policy noted.
C. The utility must respond in writing to the DBT's documentation of measures taken to be in compliance requesting approvals to continue construction of the utility within 2 Working Days.
D. The utility has final authority to approve or reject any materials or installation methods outside of the utility standards, or the Utility Agreement.
E. KYTC has the final authority to approve or reject any materials, installation methods, or standards compliance that is not specifically written in the Utilities standards, TPs, or in the Utility Agreement.

19.5.4. SCHEDULE UTILITY ADJUSTMENT WORK

The utility adjustment work (other than construction) may begin at any time following issuance of an encroachment permit number. The DBT should be aware there may be seasonal restrictions on utility outages. These requirements must be included in the agreements with utilities. No time extensions will be granted for any utility company restrictions. The DBT shall not arrange for any utility owner to begin any demolition, removal, or other construction work for any utility adjustment until all of the following conditions are satisfied:

A. The utility adjustment is covered by an executed Utility Agreement (and any conditions to commencement of such activities that are included in the Utility Agreement have been satisfied);
B. Availability and access to affected replacement utility property interests or public Right-of-Way have been obtained.
C. If any part of the construction work for the utility adjustment shall affect the project Right-of-Way, then approvals from KYTC shall be received.
D. The review and comment process has been completed and required approvals have been obtained for the encroachment permit covering the utility adjustment.
E. All governmental and permitting approvals necessary for the utility adjustment construction have been obtained, and any pre-construction requirements contained in those approvals have been satisfied.
F. The DBT has verified that all utility adjustments address the project needs and are not in conflict with one another.
G. The DBT has conducted a preconstruction joint utility meeting to schedule and plan all utility owner adjustments. KYTC shall be invited to attend this meeting.
H. All other conditions to that work stated in the RFP have been satisfied.

Any delays incurred due to utility relocation work, on the project are the responsibility of the DBT. This shall include delays incurred due to utility relocations and unforeseen utility repairs. The DBT shall be responsible for direct coordination with all utility companies involved in the project. The DBT will have to coordinate and work in conjunction with any utility owner, no matter if the DBT is physically relocating features for that utility owner or not. In addition, it may be necessary to phase work to avoid active utilities that ultimately become inactive. Relocation of those utilities that will ultimately become inactive may either be performed by the DBT, or the relocation may need to be performed by the utility owner. Other than utility relocation costs contained in the lump sum bid amount for the project, KYTC will not provide any additional monetary compensation or time extensions for delays caused during the relocation of any utility.

19.5.5. STANDARD OF CARE REGARDING UTILITIES

The DBT shall carefully and skillfully carry out all work impacting utilities and shall mark, support, secure, exercise care, and otherwise act to avoid damage to utilities. At the completion of the work, the condition of all utilities shall be equivalent to their use and function prior to construction except as approved by KYTC and the Utility by agreement.

19.5.6. EMERGENCY PROCEDURES

The DBT shall provide emergency procedures with respect to utility adjustment work. The DBT shall obtain emergency contact information from, and establish emergency procedures with, each utility owner. This shall be part of the DBT's deliverable package to KYTC before construction begins.

19.5.7. UTILITY ADJUSTMENT FIELD MODIFICATIONS

The DBT shall establish a procedure to be followed if a utility adjustment field modification is proposed by either the DBT or a utility owner, after the Utility Agreement (which includes the utility adjustment plans) has been approved. The procedure shall contain, at minimum, the following processes:

A. The utility owner's review and approval of a utility adjustment field modification proposed by the DBT, or the DBT's review and approval of a utility adjustment field modification proposed by the utility owner.

B. Submittal of plans for the proposed utility adjustment field modification to KYTC for its approval.
C. Transmittal of utility adjustment field modifications to the appropriate construction field personnel.
D. Inclusion of any utility adjustment field modifications in the record drawings for the Project.

The DBT shall cause the procedure to be followed for all utility adjustment field modifications, whether the construction is performed by the DBT or by the utility owner.

19.5.8. SWITCHOVER TO NEW FACILITIES

After a newly adjusted utility has been accepted by the utility owner and is otherwise ready to be placed in service, the DBT shall coordinate with, and gain approval from, the utility owner regarding the procedure and timing for placing the newly adjusted utility into service and terminating service at the utility being replaced. The DBT should be aware there may be seasonal restrictions on utility outages. No time extensions will be granted for any utility company restrictions.

19.5.9. RECORD DRAWINGS

The DBT shall provide record drawings to each utility owner for utilities adjusted by the DBT, in accordance with the applicable Utility Agreement(s).

The DBT shall provide As-Built Record Drawings (to project scale and with reference to project design)

to KYTC (regardless of whether design and/or construction of the subject utilities was furnished or performed by the DBT or by the utility owner). These drawings shall show the location of, and label as such, all abandoned utilities and shall show and label all other utilities, whether remaining in place or relocated, located within the project Right-of-Way, or otherwise impacted by the project. The DBT shall provide the record drawings for each adjustment to KYTC not later than 90 days after the utility owner accepts the adjustment.

19.5.10. MAINTENANCE OF UTILITY SERVICE

All utilities shall remain fully operational during all phases of construction, except as specifically allowed and approved in writing by the utility owner. The DBT shall schedule utility adjustment work in order to minimize any interruption of service, while at the same time meeting the project schedule and taking into consideration seasonal demands. Again, the DBT should be aware there may be seasonal restrictions on utility outages. No time extensions will be granted for any utility company restrictions.

Any intentional or accidental disruption of service whether to a main or a service line not previously approved by the utility in writing, due to damage to any utility caused by any of the DBT's operations without three days advance notice to the utility facility owner shall be cause for liquidated damages in the amount of five thousand dollars per day ($5,000//day) per occurrence against the DBT until such a time as the utility facility is restored.

Any cost associated with damage to a utility's infrastructure during construction shall be the responsibility of the DBT.

19.5.11. TRAFFIC CONTROL

The DBT shall be responsible for the coordination of all traffic control made necessary by the utility adjustment work, whether performed by the DBT or by the utility owner. Traffic control for utility adjustments shall be coordinated with, and subject to approval by, the local agency(ies) with jurisdiction. Traffic control shall comply with the guidelines of the MUTCD and of Section 10.4

(Maintenance of Traffic) of this RFP document. Delegation of responsibilities regarding who performs the traffic control operations during the utility adjustment work shall be included in the Utility Agreement.

19.5.12. UNKNOWN UTILITIES

If during construction, the DBT uncovers a utility facility that the respective utility company did not know existed, or has not been addressed in this RFP, the DBT is to bring this to KYTC's attention immediately. KYTC will review the situation with the respective utility company and the DBT to determine the best course of action to minimize impacts to the utility facility and the project schedule. If it is determined by KYTC that establishing the presence of the unknown utility was not possible by the DBT, KYTC may consider this a changed condition and work with the DBT and the utility company to make the appropriate adjustments for cost as part of a Change Order. The project schedule shall only be revised if it can be demonstrated to the satisfaction of KYTC that the unknown utility conflict has materially affected the critical path for the project.

The DBT shall follow the procedures for extra work/Change Orders identified in Sections 104.02 (Alterations of Plans or Character of Work), 108.07 (Determination and Extension of Contract Time), and 109.04 (Extra Work) of the Standard Specifications.

19.6. DELIVERABLES

The DBT shall provide all submittals described in this section to meet the project schedule, taking into account KYTC-designated review and response time. For this Project, KYTC requires 10 Working Days for review, comment, or approval of encroachment permits, provided that all required documentation is included with the encroachment permit submittal. At the sole discretion of KYTC, if it is determined that additional information is required in order to review and process the encroachment permit for approval, the DBT shall revise the encroachment permit application to include the required revisions or missing information as identified by KYTC, and said agency shall have 10 Working Days from the date of re-submittal for review and comment.

19.6.1. DBT'S UTILITY TRACKING REPORT

The DBT shall maintain a utility tracking report in tabular form, listing all utilities located within the project Right-of-Way or otherwise potentially affected by the project. The utility tracking report shall include sufficient information regarding all factors needed to reasonably determine the status of each utility to be relocated as part of the project. The DBT shall submit a monthly utility tracking report to KYTC, including plans, estimates, agreements, critical decision documents, and inspections. The DBT shall facilitate, at a minimum, monthly utility company status meetings to discuss any project issues and to update KYTC on the progress being made on the project.

19.7. RAILROADS

19.7.1. GENERAL REQUIREMENTS

This section defines the criteria required for the Project to accommodate CSX RR with crossings and encroachments.

19.7.2. RAILROAD DESIGN STANDARDS

The DBT shall prepare the final geometric design of the crossing of railroad facilities and/or roadway elements impacting railroad facilities following the FHWA Railroad-Highway Grade Crossing Handbook,

American Railway Engineering and Maintenance-of-Way Association (AREMA), and FHWA Manual on Uniform Traffic Control Devices (MUTCD) and incorporating the usual and customary design standards and operating requirements of CSX. The DBT's design shall minimize service interruptions to CSX. Construction details and specifications shall conform to KYTC standard specifications and the rules, regulations, and requirements of CSX, including those related to safety, fall protection, utility crossings (if required), and protective equipment.

Coordinating Design

The DBT shall coordinate the final design with KYTC for submission to CSX. This coordination shall include meetings and plan submissions and shall address pertinent commentary provided by the railroad. The DBT is expected to fully comply with CSX guidelines and standards to provide a viable final design.

RR Coordination and Construction Costs

KYTC and Big Rivers have entered into agreements with CSX for Preliminary Engineering review of design efforts pertaining to the demolition of the existing US 60 bridge, construction of a new US 60 bridge, and the relocation efforts of the Big Rivers Transmission line. KYTC will enter into a Construction Agreement with CSX for demolition of the existing US 60 bridge and construction of the new US 60 bridge The DBT shall provide KYTC all necessary design documents, other supporting documents, and services to facilitate construction near or within the RR ROW, as specified below in Section 19.7.3.Big Rivers will execute a similar agreement with CSX. The DBT will provide Big Rivers all necessary design documents, other supporting documents, and services to facilitate construction near or within the RR ROW, as specified below in Section 19.7.3. DBT shall provide a copy of all CSX/Big Rivers coordination to KYTC for their records.

The DBT shall be responsible to complete the final design required to obtain the Construction Estimate (Force Account Estimate, FAE) from CSX. KYTC and Big Rivers will submit to CSX the final designs provided by the DBT under these existing CSX agreements and request coordination to transfer to and continue with the DBT to obtain all remaining approvals, FAE, schedule coordination, and any other requirements.

Records

The DBT shall maintain a record of all coordination and construction efforts in relation to the railroad involvement. These records shall be provided in copy to KYTC as completed. Specific documents required are as follows: estimates, design comments, agreements, inspection records, invoices, and Change Orders.

19.7.3. PROJECT WORK AFFECTING RAILROAD OPERATIONS

Where the Project crosses or otherwise impacts CSX property, operations, or facilities, the DBT shall coordinate the access and all activity within RR ROW with CSX. The DBT shall provide KYTC and Big Rivers with all materials and information needed for review and comment. All work, insurance requirements, and other incidentals associated with these matters shall be the responsibility of the DBT and included in the Price Proposal.

Schedule

The DBT shall be responsible for obtaining their own required approvals, permits, and agreements as required for the work, including any railroad related work. The DBT shall be responsible for including and incorporating all railroad related items into the Project schedule. No time delays shall be granted to the DBT for the railroad related work.

Agreement for Construction and Maintenance

Whenever a railroad agreement for construction and maintenance within or near railroad Right-of-Way (hereinafter called the "Construction Agreement") is required, the DBT shall prepare all the documentation required to obtain the Construction Agreement, including any Railroad Agreement documents on behalf of KYTC and the Plans and Specifications, making necessary modifications as required for KYTC to execute the Construction Agreement.

The DBT shall submit the draft Construction Agreement to KYTC for review and comment. After all comments have been incorporated or satisfactorily resolved, the DBT shall submit a complete and final Construction Agreement to KYTC for signature. KYTC shall then execute the agreement with CSX. KYTC shall not be responsible for any schedule delays due to Railroad coordination necessary to obtain an agreement.

Operation Safety

The DBT shall arrange with CSX for railroad flagging as required. These flagging costs shall be estimated and included in the construction agreement. The DBT shall comply with the owning and operating railroad's requirements for contractor safety training prior to performing work or other activities on the owning and operating railroad's property. The DBT is responsible for all flagging costs.

Railroad Right of Entry Agreement

In order to enter the railroad's Right-of-Way to perform the work, the DBT shall secure a Right of Entry Agreement from the railroad and shall coordinate the arrangements of the necessary agreements directly with CSX. Provide copies of all such agreements and documentation to KYTC.The DBT shall cooperate and coordinate with CSX for access by their personnel and their agents to the rail Right-of-Way as necessary for rail maintenance and operations activities.

Insurance Requirements

The DBT shall procure and maintain, prior to working adjacent to and entry upon operating railroad property, insurance policies naming the railroad as named an additional insured.

The DBT shall obtain the following types of insurance:

- Comprehensive General Liability Insurance
- Contractors' Protective Liability Insurance
- Railroad Protective Liability Insurance: The DBT and any contractor shall take out, before work is commenced and to keep in effect until work is completed and accepted, a Railroad Protective Public Liability Policy of Insurance in the name of the Railroad, said policy to be in the form specified in the Federal-Aid Policy Guide 23 CFR, Part 646, Subpart B, issued December 9, 1991, and any subsequent amendments or supplements thereto. The maximum dollar amounts of coverage with respect to bodily injury, death, and property damage, is limited to a combined amount of $5,000,000.00 per occurrence with an aggregate limit of

$10,000,000.00 for the term of the policy. Further, the DBT shall certify that he has Public Liability and Property Damage Insurance in the amounts required by the respective railroad companies for this project. Example insurance requirements are included in the reference documents. The DBT shall verify all insurance requirements with the respective railroads. The policies of insurance specified in this section shall be with a company authorized to do business in the State of Kentucky and/or Indiana as applicable.

- Additional insurance policies as may be required as part of the Railroad Agreement

All insurance policies shall be in a form acceptable to the operating railroad. Copies of all insurance policies shall be submitted and approved by the owning railroad, operating railroad, KYTC and INDOT prior to any entry by the DBT upon railroad property.

19.7.4. CONSTRUCTION REQUIREMENTS

The DBT shall comply with all construction requirements and specifications set forth by the owning and operating railroad.

The DBT shall be responsible for scheduling the work to be completed by the owning and operating railroad as well as the work to be completed by its own forces. The DBT shall be responsible for all costs associated with the railroad force account work.

19.7.5. ADDITIONAL RAILROAD ITEMS

Cost of Reimbursements

The DBT shall be responsible for all reimbursement costs to any railroad company that may be affected by the work, for reimbursing all costs that any involved railroad companies incur in adjusting its facilities or operations to accommodate the work in compliance with all applicable laws and regulations.

Design Criteria in Railroad Right-Of-Way

- The design of any facilities shall conform to the requirements of the owning and operating railroad specifications and the provisions set forth by the Railroad Agreement. All railroad tracks and other railroad property must be protected from damage during the work.
- All bridges over rail facilities shall conform to a minimum vertical clearance over rail facilities of 23 feet 0 inches, or other clearance as approved in the Railroad Agreement.
- All horizontal clearances shall conform to the operating railroad specifications, and crash walls shall be used as required by the operating railroad specifications.
- All roadway substructure elements within 50 feet 0 inches of the center line of tracks shall be designed per American Association of State Highway and Transportation Officials (AASHTO) LRFD collision load requirements.

Monitoring Construction

The DBT shall provide monthly status reports to KYTC.

20. AESTHETICS AND LANDSCAPING

20.1. KY 351 STREETSCAPING

As part of the project, the DBT shall construct streetscape elements along KY 351 as part of the KY 351 interchange reconstruction to visually enhance the entryway into Henderson. The streetscape improvements shall extend from the KY 2084 intersection eastward to the eastern limits of construction along KY 351. KY 351 streetscape design guidelines are detailed in the *I-69 ORX KY 351 Streetscape Booklet Update V5* document in the RIDs. document that includes sections on:

- Conceptual Streetscape Design Guidelines
- Ped/Bike Infrastructure
- Ped/Bike Crossings
- City Gateway Signage
- Pedestrian Nodes
- Aesthetic Lighting
- Enhanced Plantings

The DBT shall include a lump sum allowance, as shown in Form PP – Price Proposal, for the KY 351 Streetscaping, which shall be used solely for streetscaping elements in the KY 351 Right-of-Way within the limits of the project. The DBT shall work with the City of Henderson planning staff to identify those streetscaping elements most desired within the allowance limit. Specifically, those items that qualify for the streetscaping allowance shall include:

- Crosswalk markings or other crosswalk treatments that are in addition to normal KYTC crosswalk markings methods
- City Gateway Signage
- Pedestrian node paving
- Benches, bike racks and litter receptacles
- Landscape plantings, topsoil, fertilizers, mulch and sod

Aesthetic treatments for lighting, walls, abutments and noise walls do not qualify for the allowance and are to be included in the Lump Sum price.

The DBT shall develop the final streetscaping plans and an itemized cost schedule for review and approval by the City of Henderson and KYTC. Streetscaping shall be designed in a manner that does not impair motorist or pedestrian sight lines at key locations such as ramp terminals and roundabouts.

Following approval of RFC plans for KYTC Streetscaping, the DBT shall submit an estimated cost for furnishing and constructing these elements. Eligible costs shall be limited to the actual construction cost for the work, and excludes the cost for design, subcontractor or supplier markups, or other overhead costs. Following negotiations and with KYTC agreement on the cost, should the cost of these improvements exceed the allowance, KYTC will issue a Change Order to reimburse the DBT 50% of the increased costs. Should the actual costs be less than the allowance, KYTC will split the savings with the DBT, 50% for KYTC, 50% for the DBT. The DBT is responsible for coordinating with City of Henderson, submitting for and receiving their plan approval, scheduling the work, contracting with and paying the subcontractors and suppliers for all related work.

21. INTELLIGENT TRANSPORTATION SYSTEMS

21.1. GENERAL SCOPE

I-69 ORX Section 1 focuses on the improvements in Henderson, KY upgrading of US 41, extending from KY 425 to US 60, including a new alignment from US 41 and US 60 with a new US 60 interchange. The goal of ITS in this corridor is to monitor traffic flow and inform motorists of activities / incidents which impact travel during Section 1 construction and MOT while also providing those same benefits during construction and after the opening of the OSX-69 bridge between Henderson, KY and Evansville, IN.

21.2. PROJECT REQUIREMENTS

21.2.1. CAMERAS

ITS – CCTV Sites - The Design Build Team (DBT) shall furnish, install, test, and integrate at the field location, all components required to support a CCTV site and make all power and data connections to provide a fully operational video surveillance system controllable remotely from KYTC or TRIMARC Traffic Operations Centers, per the reviewed ITS Design Plans. CCTV device locations shall be selected to provide 100% comprehensive camera coverage of the Section 1 construction limits. Camera locations shall provide coverage of interchanges/cross streets in Section 1 and fill the areas between as needed to achieve 100% comprehensive coverage. All locations must be reviewed and approved by KYTC/TRIMARC during the design process. All site locations shall provide for safe access for technicians to visit for maintenance and troubleshooting.

The typical CCTV site shall include the following at a minimum:

- AXIS model number P5655-E or approved equivalent
- Field Managed Switch
- Pole base and pole (either 50-foot or 80-foot pole and base, per reviewed design)
- Hybrid lowering device arm to allow for both analog or digital camera assembly
- Composite camera cable
- TREEHAVEN Camera Outdoor Weather Seal
- Surge protection for AC, Data and Video
- Rack Mount UPS unit in cabinet
- NEC labeled and listed 334 model cabinet and cabinet foundation per site location design
- Advanced Grounding System
- Electrical service
- Wireless router for communications

Additional equipment specifics can be found in the KYTC ITS Standards and Specifications Document provided in the Attachment 21.2. The DBT shall ensure CCTV site installations and associated equipment conform to all KYTC and manufacturers standards and specifications. The DBT shall also ensure cameras provide optimum linear coverage and address multiple horizontal levels of roadway and ramps to be constructed. In order to maximize efficiency, devices and resources must be co-located where appropriate. All other components, connectors, hardware, cables, used and spare conduits, etc. required to provide an operational CCTV system are considered incidental to this item. The DBT is responsible for providing a complete installation with turnkey transition to KYTC/TRIMARC following inspection, demonstration of operation and burn in testing.

21.2.2. SMART WORKZONE TRAILERS

Smart Work Zone Trailers - A key role of KYTC and TRIMARC is to support local public safety agencies and transportation organizations through incident management as well at MOT. Variable Message Signs (VMS), (also known as Dynamic Message Signs (DMS)), are a primary means of conveying information to traveling motorists. A Smart Work Zone Trailer for the purpose of this document is a portable VMS/DMS which includes a camera / communications capabilities and is designed with additional batteries and solar charging capability to support the devices. During the long-term construction of Section 1 leading into the construction of the new I-69 Bridge, it will remain vital for KYTC and TRIMARC to effectively monitor traffic in the work zone. Throughout the duration of these projects, a major challenge will be to inform motorists and manage traffic both in and around the construction area. Smart Work Zone Trailers can be used to help support traditional MOT. These recommended assets shall serve as temporary or mobile deployments and shall provide additional flexibility for the extent of the construction Project. The purpose of temporary assets is to sustain ITS support of the Project and to maintain a high level of service to the motoring public. At the beginning of the project, the DBT shall provide to KYTC/TRIMARC, solar-powered Smart Work Zone trailers equipped with a camera, variable message sign, and wireless communication equipment. The software resident on each unit must be NTCIP compliant to allow integration into the KYTC/TRIMARC ATMS System and allow the unit to be remotely controlled, even if the vendor supplies their own control software. The DBT shall provide a minimum of four of these units to monitor traffic and convey critical information to motorists approaching and inside the work zone area. These units, and any subsequent replacement units, shall be new units. When strategically located, these units will provide additional insight to KYTC/TRIMARC and for monitoring traffic movements approaching and throughout the construction area. Ownership of these units will transition to the KYTC/TRIMARC at the completion of the Project and the units must be fully operational at the time of ownership transfer. The DBT shall provide KYTC/TRIMARC with a single point of contact for all communications regarding coordination, placement and repair of these units. KYTC/TRIMARC will coordinate with the DBT, but have final determination where these devices are placed. These devices should be considered above and beyond the portable VMS/DMS devices needed for typical maintenance of traffic plans. Maintenance of these units shall be provided by the DBT throughout the duration of the Project. Replacement units shall be provided by the DBT if a unit becomes inoperable due to damage or the inability to repair or maintain the unit's operation and results in downtime of the unit which exceeds 30 days. Upon notification or awareness of a malfunctioning unit, the DBT shall be responsible for repairing or replacing the unit within 5 Working Days. Liquidated damages may be assessed at the rate of $250 per day for failure to comply with this provision. At a minimum, temporary communications solutions for video from these units must equal or exceed a sustained throughput of 1 fps (frame per second) at a HDTV resolution of 1080p 24 hours a day, 7 days per week through the duration of the project. Other equipment options required are noted in the KYTC ITS Standards and Specifications Document.

21.2.3. VARIABLE MESSAGE SIGNS

Overhead (VMS – Overhead- Single Pole Mount) - The DBT shall include in the ITS design plans a new VMS – Overhead unit on I-69N prior to the Section 1 project area in order to facilitate assistance with MOT for I-69 N traffic approaching the Section 1 construction corridor and later the ORX-69 crossing. All aspects of the design are subject to review and approval by KYTC/TRIMARC. The DBT shall ensure that the design of foundations, mounting structures, and the required VMS – Overhead-Single Pole Mount units are aesthetically and structurally appropriate and comply with any design requirements of the KYTC Division of Traffic Operations and KYTC Division of Structural Design, and must be reviewed for comment by KYTC and TRIMARC as appropriate, prior to construction. The DBT shall provide safe and convenient access for technicians to access the VMS/DMS regardless of the

mounting structure provided without the required use of a bucket truck. The DBT shall also provide safe ingress and egress for technicians to access and park a service truck or bucket truck. If a full width shoulder is unavailable, the DBT shall provide a drive/parking area with a traffic bound base according to section 301 of the standard KYTC specification with compaction made in 2" lifts. After the completion of review and comment process and approval of the ITS Design Plans, the DBT shall furnish and install VMS sign structures, foundation, cabling, power, surge protection, and communication infrastructure for each sign. The DBT shall furnish and install VMS panels and other subsystem components such as VMS controller, uninterrupted power supply, and cabinet and integrate and test the VMS to provide a fully operational VMS subsystem. The unit will require complete demonstration of functionality locally at the site location as well as be controllable from the KYTC and/or TRIMARC Transportation Operations Center. Please note that this unit is anticipated to be a single pole support, overhead installation at a height that is able to provide clear visibility for a minimum of 3 travel lanes of traffic. This VMS installation will also require a CCTV site to serve as a verification camera for the VMS as well as provide a view for traffic monitoring. The KYTC ITS Standards and Specifications Document contains additional requirements and details for VMS – Overhead – Single Pole Mount procurement and delivery.

21.3. SYSTEMS TESTING

ITS System Testing - The DBT shall demonstrate at each device location in the field, the integrity of the installation as well as the operation of the equipment. The DBT shall need to coordinate with KYTC and/or TRIMARC for device IP plan details. The DBT shall be required to test all ITS devices installed in this Project. Tests shall be conducted in the presence of a designated KYTC and/or TRIMARC representative. The DBT shall develop an ITS test "checklist" for conducting tests on new devices in the project area and submit these to KYTC and/or TRIMARC for review and comment. Detailed testing procedures shall be delivered to KYTC for review and comment a minimum of two weeks before any planned testing to allow review and comment. The agreed upon checklist will serve as a general guideline and is not expected to be all encompassing as each site location may have one or more unique features. Checklist for each location shall be completed onsite during the demonstration and inspection while both DBT and KYTC and/or TRIMARC representatives are present. Copies of the completed forms shall be submitted to KYTC and TRIMARC following the field visits and a copy submitted with the project documentation as well. Notice shall be given of the time, date, and place of all tests at least 14 calendar days prior to the date on which a test is planned. If requested, DBT shall postpone any test up to seven calendar days, at no cost to KYTC, to allow for availability of personnel. Turnkey delivery of the final system to KYTC and TRIMARC is required. The DBT shall coordinate with KYTC and TRIMARC for IP addresses, router configurations, network protocols, and device security password schemes prior to deployment of the permanent system or provide configuration services for the DBT. KYTC and/or TRIMARC personnel shall populate and configure the central system software to fully integrate the ITS components into the existing ITS system. Allow a minimum of 15 Working Days in the schedule for this work to be completed. The ITS shall not be considered operational and ready for System Acceptance Testing (SAT) until the system is operating at the TMC using the TRIMARC System software. The DBT shall provide to KYTC and TRIMARC access to all field devices and passwords when the devices are deployed and active. Unless superseded by the DBT's plans, upon completion of testing and the receipt of as-built drawings, all ITS site locations shall be subject to a 30 consecutive day burn-in test. If a device fails during the 30-day burn-in test, TRIMARC personnel shall notify the DBT and, if requested, assist the DBT with testing the device at the field cabinet and the appropriate network communications to determine what caused the problem. The DBT shall then take the agreed upon corrective action and once the device is working correctly, a new 30 consecutive day burn-in test shall begin for that device. A successful burn-in test is required before acceptance for each device.

The ITS devices shall be accepted after:

A. All devices have completed their 30 consecutive day test successfully.
B. All devices have been inspected by KYTC and any noted deficiencies corrected and resolved to the satisfaction of KYTC.
C. Acceptable As-Built drawings have been received in the documentation formats required.
D. All manufacturer provided test equipment has been received.
E. All manufacturer applications, manuals and procedures have been received.
F. Warranties have been transferred to KYTC and/or TRIMARC after substantial completion of the project as defined in the design-build contract.

21.4. DOCUMENTATION

Shop Drawings - All items that are used on this Project shall have shop drawings sent to the Engineer for review and comment. All items shall be reviewed for comment before purchase of said items.

Design Drawings - The DBT, prior to Project review and comment, shall submit ITS design plans including drawings detailing the ITS assets and communications infrastructure. These shall include location, cabinet and contents, utility services and conduit paths, equipment, converters, and any other item used on the Project. ITS design plans shall be developed, discussed and reviewed in coordination with KYTC or their designated representative.

As-Built Drawings - The DBT, at the completion of the Project, shall submit As-Built drawings. As-Built drawings shall be approved and delivered prior to burn-in testing. As-built drawings shall include line-diagrams of the completed system to the port level, including all components and connections, including fiber strand assignments if appropriate. As-Built drawings must be provided in MicroStation format and an electronic copy provided in both MicroStation and pdf formats. Include ORD files for 3D roadway models. As-Built drawings shall include the exact location of all above ground equipment, junction boxes, underground conduit, wire, sensors and other equipment. Drawings shall indicate any changes to the design including changes to the numbers of conductors, wire gage, splices, additional conduit, etc. Conduit locations shall be drawn to scale or shall be dimensioned and referenced to permanent roadway features. Turns in conduit shall be referenced so that the conduit paths may be derived from the As-Built drawings. Existing underground utilities shall be indicated on the drawings. The DBT shall correct any drawings that are deemed unacceptable to the Engineer. Electronic of the drawings shall be submitted. One copy of the drawings shall be submitted to the Engineer. One copy of the drawings shall be submitted to the KYTC Division of Traffic Operations Design Services Branch (see address info in Warranty section below). One copy of the drawings shall be submitted to TRIMARC (see address info in Warranty section below). One copy shall be submitted to the local KYTC District office.

Equipment List - The DBT shall provide an inventory list in Microsoft Excel format to the Engineer containing the following information:

- Type of equipment
- Field location Description
- GPS Coordinates
- Make
- Model
- Serial number
- Date of purchase
- Manufacturer contact information

- Equipment vendor contact information (if different)
- Date of Installation
- Date warranty expires

21.5. WARRANTY

The DBT shall provide a warranty covering defects in workmanship, assembly, fabrication and materials for a minimum of two years from the date of substantial completion for the project as defined in the design-build Contract for all equipment and materials furnished. The DBT shall provide a copy of all equipment warranty information to both the TRIMARC TMC and to the Division of Traffic Operations. The DBT shall provide documentation from the manufacturer that ownership of the warranty is transferred to the following:

TRIMARC
Attn: Todd Hood
901 W. Main Street
Louisville, KY 40202
Todd.Hood@peraton.com

Notification of the warranty transfer must also be submitted to:

Kentucky Transportation Cabinet
Division of Traffic Operations Attn: Ted Swansegar
200 Mero Street
Frankfort, KY 40622
Ted.Swansegar@ky.gov

22. MISCELLANEOUS PROJECT-SPECIFIC

22.1. KY 2084 INTERCHANGE REMOVAL

The DBT shall remove the KY 2084 partial interchange when it is no longer needed for maintenance of traffic. The KY 2084 interchange shall not be removed until reconstruction of the KY 351 interchange is substantially completed and all proposed KY 351 and ramp traffic lanes are open to traffic. In addition, the KY 2084 reconstruction must be ready to accept two-way traffic. Prior to starting KY 2084 interchange removal, the DBT shall prepare a proposed grading plan for the interchange area for submission to the Engineer. Note any utilities designated to remain on the grading plan.

The following ramp references within the KY 2084 interchange area are based on the KYTC archived plans set from 1967 labeled "pj07777". The grading plan shall show removal and disposal of the pavements for Ramps "A", "B" and the (KY 2084) Northbound Lane to the bottom of the pavement subgrade and up to the limit of pavements intended to remain as part of the reconstruction of I-69 and KY 2084. In addition, the grading plan shall show removal of the Northbound Lane bridge over Ramp "B", the removal of the Ramp "A" bridge over I-69 and removal of the bridge embankments. The grading plan shall show proposed contouring with no post-construction slope exceeding 6 horizontal to 1 vertical in any direction. Remove pipe crossdrains under removed pavement sections and re-establish the drainageways as vegetated open channels. Provide positive drainage for the post-construction condition. Do not remove the existing trees within the limits of the former interchange but incorporate them into the proposed grading plan. All luminaire poles, arms and any material obtained from the removal of the overhead truss mounted signs shall become the property of the DBT.

Remove the two-span Ramp "A" bridge over I-69 in its entirety, including the central pier and cellular abutments to a point two feet below finished grade. The DBT shall retain ownership of the removed bridge elements. For removal of bridge elements above the I-69 traveled way during permitted lane closure hours, provide advance warning using changeable message signs and a signed detour route using state-maintained roadways.

Remove the three-span northbound lane bridge over Ramp "B" in its entirety, including the two piers and two abutments to a point two feet below finished grade. The DBT shall retain ownership of the removed bridge elements.

Grade across the removal areas to provide uniform foreslopes and roadside ditches along I-69 per the typical section. Grind paved shoulder rumble strips along existing US 41 where ramp terminals are removed to tie into the existing shoulder rumble strips. A minimum 12-foot usable shoulder, 10-foot paved shall be provided after the ramp terminals are removed.

Provide erosion control and permanent seeding and protection for all disturbed areas. Erect access control fencing for I-69 across the former interchange areas.

22.2. KIMSEY LANE BRIDGE REMOVAL

When no longer needed for maintaining traffic, the DBT shall remove the Kimsey Lane bridge over Existing US 41 and any portions of the roadway approach embankments not needed as part of the DBT's proposed design. Kimsey Lane shall be in its final configuration prior to removal of the existing bridge. Prior to starting removal, the DBT shall prepare a proposed grading plan for the area for submission to the Engineer. Note any utilities designated to remain on the grading plan. Carefully remove the existing guardrail and guardrail end treatments and deliver the removed guardrail to the Henderson County Road Department, 399 Sam Ball Way. Remove the approach

embankments such that the post-construction grading has no slope that is steeper than 6 horizontal to 1 vertical in any direction. Remove pipe crossdrains under removed pavement sections and re-establish the drainageways as vegetated open channels. Provide positive drainage for the post-construction condition. Remove all bridge substructure units (three piers and two abutments) to a point two feet below finished grade. The DBT shall retain ownership of all removed bridge elements, including the bridge safety railings. Provide erosion control and permanent seeding and protection for all disturbed areas.

22.3. MERRILL TRAIL EXTENSION

The DBT shall design and construct an extension of Merrill Trail in the vicinity of the I-69 / US 41 interchange as part of the proposed project. The proposed trail extension shall begin at Existing US 41, shall pass under Existing US 41 and shall connect to the existing trail in the northwest quadrant of the proposed interchange. The proposed trail shall have a minimum paved width of 10 feet. If a tunnel is used under proposed US 41, it shall provide a rectangular clearance envelope having a minimum width of 14 feet and minimum vertical clearance (including to light fixtures) of 10 feet. The structure must be a concrete structure meeting the requirements of Section 17.1 and 17.4 of these Technical Provisions. Other trail features and dimensions shall be designed as a shared use path in accordance with design guidance provided in AASHTO's *Guide for the Development of Bicycle Facilities*. Provide a pavement capable of supporting maintenance vehicles without pavement damage. Provide access control fencing along the portions of the trail that fall within the limits of the proposed access control Right-of-Way. Provide shared use path signing and striping in accordance with the *Manual on Uniform Traffic Control Devices*. Provide bollards or other means at trail entry points to deter undesired vehicle encroachment on the shared use path and with security features that allow temporary removal or lowering to permit access by maintenance vehicles. The City of Henderson will supply and install any wayfinding signing. Provide trail and tunnel lighting as discussed in Section 22.4 below.

22.4. US 41 ADAPTIVE RE-USE AREA

The DBT shall provide design and construction for an adaptive re-use of the Existing US 41 pavement from Van Wyk Road northward to near the existing Kimsey Lane bridge over Existing US 41. Provide a shared use path from Van Wyk Road to the Merrill Trail extension intersection at Existing US 41. The proposed shared use path shall have a minimum paved width of 10 feet. Other shared use path features and dimensions shall be designed in accordance with design guidance provided in AASHTO's *Guide for the Development of Bicycle Facilities*. Provide a pavement capable of supporting maintenance vehicles without pavement damage. Provide shared use path signing and striping in accordance with the *Manual on Uniform Traffic Control Devices*. Provide bollards or other means at shared use path entry points to deter undesired vehicle encroachment on the shared use path and with security features that allow temporary removal or lowering to permit access by maintenance vehicles. Remove any portion of the Existing US 41 bridges over Canoe Creek not used as part of the adaptive re-use design, and retrofit any remaining bridge widths with appropriate barriers, etc. to be suitable for roadway or shared use path use. The City of Henderson will supply and install any wayfinding signing. Resurface all existing pavements used as part of Kimsey Lane and the shared use path with a minimum of 1.5 inches of asphalt surface course. Saw cut and remove any portions of the existing pavements that are not used as part of the proposed design and replace the removed pavement with suitable soil capable of supporting vegetation.

The DBT shall design and construct a parking area convenient to the shared use path that contains a minimum of 46 parking spaces and that allows vehicle circulation within the parking area without requiring vehicles to back up to exit the parking lot. Provide minimum 11-foot width lanes in each travel direction within the parking lot. Parking spaces dimensions shall conform to KYTC Standard

Drawing No. RPX-100. Provide sufficient handicapped accessible parking spaces out of the total number specified to meet local planning and zoning requirements. Provide perimeter curbing or precast vehicle stops with dowels to confine vehicles to the parking lot pavement. Provide concrete handicap ramps and a minimum five-foot wide concrete sidewalk from the handicapped accessible parking spaces to the Merrill Trail extension. Provide parking lot striping, accessibility markings and accessible parking signing. Provide parking lot lighting. The parking lot lighting, Merrill Trail Extension lighting and trail tunnel lighting shall be wired together on a separate circuit from the nearby US 41 interchange lighting.

22.5. EXISTING US 60 BRIDGE OVER CSX RAILROAD REMOVAL

When no longer needed for maintaining traffic, the DBT shall remove the Existing US 60 bridge over CSX Railroad and any portions of the roadway approach embankments not needed as part of the DBT's proposed design. There are utilities in proximity to the roadway in this area. Embankments shall be removed or reshaped to the extent possible while avoiding utility impacts. Carefully remove the existing guardrail and guardrail end treatments and deliver the removed guardrail to the Department as specified in Section 719.03.07 -- Salvaged Material of the *Standard Specifications*. Remove the approach embankments such that the post-construction grading has no slope that is steeper than 6 horizontal to 1 vertical in any direction. Remove pipe crossdrains under removed pavement sections and re-establish the drainageways as vegetated open channels. Provide positive drainage for the post-construction condition. For bridge removal within the limits of CSX Railroad property, coordinate removal operations with CSX Railroad and comply with all CSX requirements. Remove the substructure units (two piers and two abutments) to a point two feet below finished grade. The DBT shall retain ownership of the removed bridge elements. Provide erosion control and permanent seeding and protection for all disturbed areas.

22.6. GUARDRAIL

The DBT shall upgrade all US 41 (formerly Edward T. Breathitt Pennyrile Parkway) mainline guardrail, guardrail end-treatments, bridge pier protection, and bridge railings in accordance with the AASHTO *Roadside Design Guide*, 2011, 4th Edition, as revised in 2012, and the 2016 AASHTO *Manual for Assessing Safety Hardware*. In addition, bridge railings shall meet testing criteria in the 2016 AASHTO *Manual for Assessing Safety Hardware*. All new or replacement bridge railing must meet Test Level 3 crash-test criteria, as a minimum.

In addition, the DBT shall upgrade all guardrail, guardrail connectors to bridge ends, and guardrail end-treatments on KY 2099 (Adams Lane), KY 812 (Airline Road), KY 351 interchange ramps, KY 351 and US 60 within the construction limits or to the end of any existing guardrail assembly that partially falls within the limits of construction but may extend beyond the limits of construction.

Any guardrail and guardrail end treatments within the project limits that are removed shall be carefully handled and delivered to the Department as specified in Section 719.03.07 -- Salvaged Material of the *Standard Specifications*. A Guardrail Delivery Verification Sheet (TC 63-72), which must be completed and signed by the Contractor, KYTC Engineer representative and a Bailey Bridge Yard representative can be obtained at this link:

https://transportation.ky.gov/Organizational-Resources/Pages/Forms-Library-(TC-63).aspx