TENNESSEE DEPARTMENT OF TRANSPORTATION

Design-Build

Book 2 Contract

Timber Bridge Bundle One

Haywood and Lauderdale Counties, Tennessee

DB Contract# **DB2506**

Final RFP: October 2025

Addendum #1: October 2025

Addendum #2: November 2025

Addendum #3: December 2025 (Conformed)

Addendum #4: January 2026

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DESIGN-BUILD CONTRACT

This Design-Build Contract is entered into by and between the State of Tennessee, acting by and through the Department of Transportation (the "Department") and [Enter name of Design-Builder] (the "Design-Builder"), (collectively, the **"**Parties**"**) as of the Effective Date of the Contract.

RECITALS

WHEREAS, the Department requires the improvements for the project known as the Timber Bridge Bundle One design-build project (the "Project") more particularly described in **Book 3 (Project Specific Information)**. The Project will be funded with state dollars, thereby requiring that the Design-Builder adheres to all pertinent state, federal, and local requirements; and

WHEREAS, the Parties intend for the Contract to be a lump-sum Contract, obligating the Design-Builder to perform all work necessary to complete the Project by the deadlines specified herein, for the Contract Amount, subject only to certain specified limited exceptions. To allow the Department to budget for the Project and to reduce the risk of cost overruns, the Contract includes restrictions affecting the Design-Builder's ability to make claims for an increase to the Contract Amount or an extension of the Completion Deadlines. The Department may require additional related work within the general vicinity of the Project, which, if required, shall be included in the Project and added to the Contract by Change Order; and

WHEREAS, the Department requires a Design-Builder competent to perform all work necessary to complete the Project in accordance with the terms and conditions of the Contract and able to do so within the Contract Time allocated herein. If the Design-Builder fails to complete the Project within the time limitations set forth in the Contract, then the Department will suffer substantial losses and damages. The Contract therefore provides that a deduction shall be made from monies due the Design-Builder, not as a penalty, but as Liquidated Damages, as stated in **Book 3 (Project Specific Information)**, if such completion is delayed; and

WHEREAS, Design-Builder asserts that it is competent and prepared to perform all work necessary to complete the Project in accordance with the terms and conditions of the Contract, and that it is able to do so within the Contract Time allotted herein; and

WHEREAS, the Department is authorized under Section 54-1-119 of the Tennessee Code Annotated to enter into this Contract.

NOW, THEREFORE, in consideration of the mutual promises contained herein, and for other good and valuable consideration, the Department and the Design-Builder agree as follows.

AGREEMENT

1 GENERAL CONTRACT PROVISIONS, DEFINED TERMS, AND GENERAL SCOPE OF WORK

1.1 Incorporation of Recitals

The foregoing Recitals incorporated herein and made a part hereof for all purposes as if fully set forth constitute additional promises or representations and warranties of the Parties.

1.2 Contract Documents

The Contract Documents, made a part hereof for all purposes as if fully set forth, are intended to reflect the complete understanding of the Parties concerning their respective rights and responsibilities under the Contract.

1.3 Effective Date

The Contract shall become effective on the date on which each Party has signed this Contract and all approvals have been obtained (the “Effective Date”).

1.4 The Contract

The Contract, which includes this **Book 2 (Design-Build Contract)** and all other Contract Documents, forms the entire agreement between the Parties.

1.5 Defined Terms and Acronyms

Defined terms and acronyms utilized in this **Book 2 (Design-Build Contract), Book 3 (Project Specific Information)**, and in the other Contract Documents are either set forth in the Department’s *Design-Build Standard Guidance*, or defined in the text accompanying the term.

1.6 Applicable Version of Law or Standard

All work shall be performed pursuant to the applicable law and in accordance with the standards in effect at the time of the RFP issuance, including addenda, unless otherwise specified in the Contract or by amendment.

1.7 Minimum Contract Requirements

1.7.1 Department Supplied

Among the Contract, the Department has mandated certain Contract requirements from which the Design-Builder may not deviate in the scope of the work, except as instructed by the Department. The Department has also established certain minimum Contract requirements that set a minimum standard of performance or quality that the Design-Builder must meet or exceed in performance of the Contract.

1.7.2 Design-Builder Supplied

The Design-Builder has established certain minimum Contract requirements located in Exhibit A (Design-Builder’s Technical Proposal), consisting of those provisions of its Proposal that meet or exceed minimum

Contract requirements established by the Department and upon which the Department has relied in awarding the Contract to the Design-Builder.

Any non-standard Department specification or provision shall be considered the Design-Builder-supplied Contract provisions and requires Department Review and Approval, which will obligate the Design-Builder within this the Contract.

1.7.3 Management Plans

Pursuant to the *Design-Build Standard Guidance* and Section 2 of **Book 3 (Project Specific Information)**, the Design-Builder shall submit a Project Management Plan (PMP).

1.8 Right-of-Way/Utility Coordination Services

Right-of-Way (ROW) acquisition and Utility Coordination services are expected under this Contract. **Book 3 (Project Specific Information)** provides additional information on ROW services, ROW acquisition cost, and/or Utility Coordination services to be completed by the Department versus what the Design-Builder shall complete.

1.9 Design Services

The design services required under the Contract shall include, at a minimum, each of the following:

- Performance of all design services, including, but not limited, to all services and Work detailed in **Book 3 (Project Specific Information)**; and
- Performance of all other engineering design services required under the Contract and/or otherwise necessary to complete the work in accordance with all Contract requirements.

All Design Documents and Design Reviews shall be provided by the Design-Builder and performed in accordance with the Design Review schedule established in the Critical Path Method (CPM) Schedule, and in accordance with all Contract requirements.

All design services to be performed under the Contract are appurtenant to construction services being provided by the Design-Builder.

1.9.1 License Requirements; Standard of Care

Whether the Design-Builder is a design professional, has a design professional as a member or on staff, or will otherwise provide an outside source to perform the services of a design professional, all design services (whether constituting the practice of architecture, the practice of engineering, the practice of surveying, or the practice of other design services) referred to in this Contract shall be provided by duly licensed and competent design professionals employed or otherwise retained by the Design-Builder.

The design professionals currently designated to provide such design services are listed in Subsection 3.4. All design services shall be performed by a design professional of the appropriate professional discipline in accordance with the degree of skill and care ordinarily used by competent practitioners of the same professional discipline under similar circumstances, taking into consideration the contemporary state of the practice and the project conditions.

1.9.2 Design Documents

The Design-Builder shall generate and provide to the Department all Design Documents. The Design-Builder shall make a comprehensive design check and Design Review at the following five (5) stages of design development, stated in more detail within *Design-Build Standard Guidance*:

- Definitive design;
- Interim design;
- Readiness-for-Construction Plans, Readiness-for-Construction Specification, and quantity estimates;
- Working Plans; and
- As-Built Plans.

1.9.2.1 Readiness-for-Construction Plans and Specifications

Upon completion of the Definitive Design Reviews, Working Plan Design Reviews, Interim Design Reviews (if any), and Readiness-for-Construction Design Reviews, as specified in the *Design-Build Standard Guidance*, the Design-Builder shall finalize the Readiness-for Construction Plans and Specifications. In performing these services, the Design-Builder shall meet the following requirements:

- Readiness-for-Construction Plans and Specifications shall comply with all applicable Laws and all Contract requirements.
- Readiness-for-Construction Plans and Specifications shall be a complete, fully coordinated, integrated package, without any significant modifications or further clarifications required.
- The Design-Builder shall file all documents required for the approval of Authorities having jurisdiction over the Project, shall obtain all necessary permits not obtained by the Department, and shall pay for all associated fees, including application, filing, plan review, and appeal fees.
- The Design-Builder shall provide the Department with written certification and all Design Documents required for the Readiness-for-Construction certification, in accordance with *Design-Build Standard Guidance*.
- The Design-Builder shall submit to the Department all documentation and Design Quality Records required under the *Design-Build Standard Guidance*.
- The Design-Builder shall submit to the Department As-Built Plans and the Design-Builder Specifications, compiled and organized in accordance with all Contract requirements that incorporate all changes in the design and construction of the Project.
- The Design-Builder shall prepare and deliver to the Department all As-Built Plans, the Design-Builder Specifications, and other Design Documents, information, and data required under the Contract to be provided to the Department.

1.9.2.2 Value Engineering Cost Proposals

During development of the Design Documents, the Design-Builder and the Department may collaborate on identifying, evaluating, and implementing value engineering cost proposal (VECP) options in accordance with the *Design-Build Standard Guidance*. The Design-Builder's development of the Design Documents and completion of the Readiness-for-Construction Plans and Specifications shall not preclude further identification and implementation by the Design-Builder and the Department of additional cost reduction options during construction. VECPs adopted by the Department will be implemented through Change Orders pursuant to the *Design-Build Standard Guidance*.

1.10 Construction Services

The construction services required under the Contract shall include, at a minimum, each of the following:

- Performance of all construction services, including, but not limited to, all services and Work detailed in **Book 3 (Project Specific Information)**;
- Protection of environmental resources, including plant and animal life and associated habitats; and
- Performance of all other construction services required under the Contract and/or otherwise necessary to complete the work in accordance with all Contract requirements.

The Design-Builder shall provide all necessary work to furnish to the Department complete, fully functional road improvements specified in the *Design-Build Standard Guidance*, capable of being fully utilized for the purposes described in the Contract and constructed in compliance with all Contract requirements. The Design-Builder shall perform the construction services as follows:

- The Design-Builder shall supervise and administer all construction activities in accordance with Contract requirements.
- In the event of the existence of any dispute between the Parties under the Contract, the Design-Builder shall continue to perform in accordance with the Contract terms and seek resolution in accordance with the *Design-Build Standard Guidance*.
- The construction work shall be of good quality, free from faults and defects, and in conformance with all Contract requirements. At its own expense, the Design-Builder shall correct construction work that does not conform to these requirements.
- The Design-Builder shall utilize new materials and equipment in the work, unless otherwise specified in the Contract.
- The Design-Builder shall pay all taxes, fees, and costs associated with the acquisition of tools, equipment, materials, and the performance of the work, in accordance with the *Design-Build Standard Guidance*.
- The Design-Builder shall keep the work location and its vicinity free from accumulation of waste materials and rubbish caused by the Design-Builder's operations.
- The Design-Builder shall deliver to the Department all notices regarding completion of the work pursuant to *Design-Build Standard Guidance,* including notifying the Department when the work or an agreed upon portion thereof has been completed.
- The Design-Builder shall maintain, on the work location, a copy of all approved Management Plans, environmental permits, approved design documents, project records, the entire Contract, and any other document required in accordance with the *Design-Build Standard Guidance.*
- As the Project constitutes "Highway construction" utilizing Federal funds, the Design-Builder shall comply with any federal requirements and appropriate Department Special Provisions as provided by the *Design-Build Standard Guidance* and **Book 3 (Project Specific Information)**, respectively.
- Consistent with the *Design-Build Standard Guidance*, the Design-Builder shall be fully responsible for initiating, maintaining, and supervising safety precautions and programs in connection with the work, including, but not limited to, taking reasonable precautions to ensure the safety of, and prevention of damage, injury, or loss to:

- Employees of the Department present on or in the vicinity of a work location, employees of the Design-Builder and other persons performing work on or in the vicinity of a work location, and other persons, including the traveling public, who may be affected;
- Materials and equipment to be incorporated into the Project;
- Portions of the Project under construction or completed; and
- Other property within or adjacent to a work location.

- The Design-Builder shall be liable for damage to or loss of property at work locations and on private property affected by the Design-Builder's activities, pursuant to the *Design-Build Standard Guidance*. This subparagraph shall in no way affect the applicability or coverage of the bonds and insurance required under Section 7 of this Contract.

1.11 Quality Management Services

Quality Management services shall include performance, at a minimum, of all activities and obligations, including preparation of all documentation, described in the *Design-Build Standard Guidance*, and as otherwise necessary to ensure that the work is performed in accordance with all Contract requirements.

1.12 Project Management Services

Project management services shall be integrated with the design services and construction services described herein and in **Book 3 (Project Specific Information)** and shall include, at a minimum, the following:

- Project Controls (including Risk Management, Scheduling, Design and Construction Quality Management, Reporting, and Document Management).
- Design and construction management;
- Contract management;
- Safety management; and
- Traffic management.

2 GENERAL STANDARDS FOR PERFORMANCE OF THE WORK

2.1 Good Faith

The Design-Builder shall provide and perform all design services, Quality Management, project management, and construction services in good faith and as expeditiously as is consistent with the applicable standards of skill and care ordinarily exercised by members of the profession under similar conditions and circumstances and of the orderly prosecution of the work.

2.2 Performance Standards

Where specific performance standards for any aspect of the work have been established in the Department Special Provisions as stated in Appendix B, pursuant to **Book 3 (Project Specific Information)**, the work shall be performed so as to meet or exceed such standards.

2.3 Critical Path Method (CPM) Schedule

The CPM Schedule establishes the schedule and deadlines for Contract performance, with which the Design-Builder must comply. The CPM Schedule, as it may be modified during the course of the Project pursuant to the *Design-Build Standard Guidance* and **Book 3 (Project Specific Information)** shall

anticipate and accommodate such periods of time as may be required for the Department's review of Design Documents, and for approval by Authorities having jurisdiction over the Project of any required submissions, including but not limited to, applications for permits and environmental impact evaluations. Since time is of the essence in the Design-Builder's successful completion of its assignment, the Design-Builder agrees to begin work on each work location immediately after receiving authorization from the Department to proceed with its work efforts.

2.4 Review and Comment, or Acceptance

The Department's consideration, Review and Comment, or Acceptance of any matters, or the Department's authorization of any action, will not be deemed or construed as relieving the Design-Builder of its sole responsibility for, and its complete and exclusive control over, the means, methods, sequences, and techniques for performance of the work in accordance with the terms of the Contract.

2.5 Extra Work to be Provided by the Design-Builder

The Design-Builder shall perform Extra Work in accordance with the *Design-Build Standard Guidance*.

3 RELATIONSHIP AND ROLES OF THE PARTIES

3.1 Independent Entity

The Design-Builder is an independent entity and not an officer, employee, or agent of the Department.

3.2 Department Representative and Contact Information

The Department's representative for this Project is:

Derek Link
Construction Division Representative

Address: Tennessee Department of Transportation
300 Benchmark Place
Jackson, Tennessee 38301

E-mail: derek.link@tn.gov

Telephone Number: 731-935-0145 Fax Number: N/A

3.3 Design-Builder Representative

The Design-Builder's representative for this Project is:

[Enter Design Builder's Project Manager Name]
Design-Builder's Project Manager

Address: [Enter Design-Builder Name]
[Enter address line 2, Physical Address]
[Enter City, State, and Zip Code]

E-mail: [Enter e-mail address]

Telephone Number: [XXX-XXX-XXXX] Fax Number: [XXX-XXX-XXXX]

3.4 Key Personnel and Design Professionals

The Design-Builder's Key Personnel, Design Professionals, shall perform the functions established under the Contract for the duration of the Contract and are listed below.

3.4.1 Key Personnel

Design-Builder's Project Management Personnel (Level "1" Personnel) shall consist of the following:

Design-Builder Project Manager: _____

Design Manager: _____

Construction Manager: _____

Safety Manager: _____

Quality Manager: _____

3.4.2 Design Professionals

The Design-Builder's design professionals (Level "2" Personnel) shall consist of the following:

Utilities Design Engineering/Coordination Supervisor: _____

Design Lead Engineer – Structures: _____

Design Lead Engineer – Geotechnical: _____

Hydraulics Design Lead _____

Water Quality Permits Lead: _____

ROW Lead: _____

Erosion Prevention/Sediment Control Inspector: _____

3.5 Substitution of Key Personnel and/or Design-Professionals

The Parties agree that each Key Personnel, Design Professional, and Subcontractor is unique, and that the Department has relied upon their qualifications in selecting the Design-Builder to perform the Contract. Therefore, the Design-Builder shall not replace any Key Personnel or Design Professional during the term of the Contract. Notwithstanding the foregoing, in those limited circumstances in which the Department elects to consider substitutions, the process shall be governed by the provisions of the *Design-Build Standard Guidance*.

In the event the Department approves a substitution request, the Department retains the right to strictly enforce this Section 3.5 in the event of future requests for substitution. No individual substitution approval or pattern of substitution approvals shall constitute a waiver of this requirement. Should the Department, in its sole discretion, elect to authorize a substitution, such authorization shall not relieve the Design-Builder of its sole responsibility under the Contract to complete all work and deliver the Project in accordance with all Contract requirements.

4 DATE OF COMMENCEMENT AND COMPLETION OF SERVICES

4.1 Time for Performance

The Contract shall take effect on the Effective Date and shall be performed by the Parties according to its terms, unless earlier terminated, until Final Acceptance by the Department in accordance with the *Design-Build Standard Guidance***.**

4.2 Commencement of Services

The Design-Builder is authorized to commence the work within the Contract for post-award submittals pursuant to the *Design-Build Standard Guidance*. The Design-Builder shall not perform any services beyond post-award submittal until the issuance of first Notice to Proceed (NTP) and for each subsequent phase requiring a Review and Approval NTP.

4.3 Completion Dates

The Design-Builder shall complete all work to be done under the Contract, except for punch list and plant/vegetation establishment, by [Enter date based on proposed B:Calendar Days but not later than Enter Date] (the “Contract Completion Date”).

5 COMPENSATION

5.1 Contract Amount

The Department agrees to compensate the Design-Builder for all work performed under the Contract for a fixed price of $[**Enter** Contract Amount] (the “Contract Amount”). The Contract Amount includes the entire cost of completing the Project in accordance with all Contract requirements as contemplated by the Parties under the Contract, and further includes all contingencies and the Design-Builder’s overhead and profit.

5.2 Progress Payments

The Department shall make progress payments to the Design-Builder in accordance with the *Design-Build Standard Guidance*. Progress payments shall be based upon the Design-Builder’s Schedule of Items, which shall include the cost of all work. The Department’s payment of progress payments shall not be deemed by either Party to constitute Acceptance or Approval of any Pay Item covered by such payment, or a waiver of a claim or demand for repair of any defects therein.

5.3 Adjustments to the Contract Amount

The Contract Amount shall only be adjusted through issuance of properly authorized Change Orders.

5.4 Payments for Extra Work

The Department will make payments for Extra Work in accordance with the provisions of the *Design-Build Standard Guidance***.**

5.5 Deductions from Monies Due

The Department may deduct from monies due or to become due the Design-Builder, as follows:

- Amounts representing price adjustments authorized under the provisions specified in **Book 3 (Project Specific Information)**;

- Amounts representing recoupment of damages, including, but not limited to, Liquidated Damages as stated in **Book 3 (Project Specific Information)**;
- Amounts assessed by Authorities (e.g., fines and penalties) for which the Design-Builder is responsible under the terms or the Contract or by law;
- Amounts the Department is compelled by court order or other legal mandate to withhold and/or tender to Authorities or third parties; and
- Any other amounts authorized under the Contract or by law to be deducted.

6 CHANGES IN THE WORK

Changed work and Extra Work shall be authorized by the Department only under the circumstances set forth in, and pursuant to the terms of, the *Design-Build Standard Guidance*. The Design-Builder shall not begin performance of any Changed work or Extra Work until the Department has issued a properly authorized Change Order, and the Design-Builder shall perform all such work strictly in accordance with the terms of the Change Order.

7 INSURANCE AND BONDING REQUIREMENTS

7.1 Insurance Requirements

During the term of the Contract, the Design-Builder shall maintain in full force, at its own expense and from insurers holding a current certificate of authority to transact the business of insurance in the State of Tennessee, all of the insurance coverages required under the *Design-Build Standard Guidance* and this Section 7.1.

- **Commercial General Liability:** The Design-Builder agrees to maintain commercial general liability insurance to be no less than $1,000,000 per occurrence, $2,000,000 general aggregate limit, and $2,000,000 completed operations aggregate.
- **Professional Liability:** The Design-Builder, being an independent contractor, agrees to maintain professional liability (errors and omissions) insurance in such an amount (**$1,000,000 minimum**) and form as are agreeable to the Department.
- **Railroad Protective Insurance:** The Design-Builder agrees to maintain any coverage as may be required by the railroad as a condition of the railroad's consent for entry into railroad facilities or property.
- **Automobile Liability Insurance:** The Design-Builder agrees to maintain automotive liability insurance to be a combined single limit per policy period of not less than $2,000,000 per accident or shall be scheduled under the excess or umbrella liability policies. Subcontractors' policies shall have a combined single limit of no less than $1,000,000 per accident.
- **Worker's Compensation:** The Design-Builder agrees to maintain and shall require all Subcontractors (of all tiers) to obtain and maintain a policy or policies of insurance providing workers' compensation statutory benefits and employer's liability in conformance with the laws of the State.
- **Umbrella or Excess Liability Insurance:** The Design-Builder agrees to maintain an umbrella or excess liability insurance to provide total per occurrence and aggregate limits of not less than $3,000,000 (including limits provided in any primary policy), that will provide bodily injury, personal

injury and property damage liability coverage at least as broad as the primary coverages set forth above, including commercial general liability in excess of the amounts set forth herein.

7.2 Bonding Requirements

During the term of the Contract, the Design-Builder shall maintain in full force, at its own expense and from Sureties licensed to do business in Tennessee and listed on the United States Department of the Treasury Financial Management Service list of approved bonding companies (Circular 570), Performance and Payment Bonds in the full Contract Amount. The Parties understand and agree that the obligation of the Design-Builder's Surety for the faithful performance of the Contract shall include not only all construction, but also the performance of all design services under the Contract.

7.3 Indemnification

The Design-Builder shall, at all times, observe and comply with all applicable federal, state and local laws, ordinances and regulations and shall indemnify and hold harmless the State of Tennessee and all of its officers, agents and servants against any claim of liability or assessment of fines or penalties arising from or based upon the Design-Builder's and/or its employees' or agents' violations of any such law ordinance or regulation.

The Design-Builder shall hold harmless and indemnify the Department for all claims and damages which result from the failure of the Design-Builder to perform its engineering and design duties in conformance with the reasonable standard of care within the State of Tennessee. Said indemnification shall include, but not be limited to, costs for the redesign of plans and the preparations of new specifications as well as the costs for repairs to the construction work itself.

The Design-Builder shall be responsible for any and all injury or damage to persons or to property arising from the prosecution of the work and due to any act, omission, neglect or misconduct in its manner or method of prosecuting the work or due to its non-execution of the work or due to defective work or materials. The Design-Builder shall indemnify and hold harmless the State, the Department, and all of its officers, agents, and employees from all suits, actions or claims of any character arising from the Design Builder's acts or omissions in the prosecution of the work, use of unacceptable materials in constructing the work, infringement of patent, trademark or copyright, or claims for Workers' Compensation.

If any such suit, action or claim is filed, the Department may retain from the monies due to the Design-Builder under this Contract a sum deemed sufficient by the Department to protect the Department from loss therefrom. Upon resolution of the suit, action or claim, any remaining retained funds will be released.

These requirements of indemnification shall be a continuing obligation of the Design-Builder and shall survive the termination of the Contract regardless of cause.

8 OWNERSHIP AND USE OF WORK PRODUCT OF THE DESIGN

All work product of the Design-Builder arising from performance of the Contract shall be the exclusive property of the Department, as more particularly provided for under the *Design-Build Standard Guidance*.

Plans, specifications, and any maps prepared or obtained under the terms of this Contract shall be delivered to and become the property of the Department pursuant to the *Design-Build Standard Guidance*. Basic design notes and sketches, charts, computations, all original drawings, and other data prepared or obtained under this Contract shall be made available, upon request, to the Department without restriction or limitation of their use.

9 PROJECT RECORDS

9.1 Financial and Other Project Records

The Design-Builder shall maintain complete Project Records as described in the *Design-Build Standard Guidance*, in the manner required under the terms of the Contract. The Design-Builder shall keep full and detailed accounts and exercise such controls as may be necessary for proper financial management of the Project. The accounting and control systems shall be satisfactory to the Department.

9.2 Record Retention Period

The Design-Builder shall retain and preserve all Project Records in accordance with the process described in the *Design-Build Standard Guidance* and for a period of 5 years after final payment, or for such longer period as may be required by law (the “Record Retention Period”).

9.3 Access to Records

The Department, the Department’s representatives, and FHWA (if applicable) shall be afforded reasonable and regular access to the Project Records for the duration of the Contract and the Record Retention Period. This requirement to make Project Records available to the Department shall be a continuing obligation of the Design-Builder and shall survive the termination of the Contract regardless of cause.

9.4 Subcontract Record Retention Requirements

The Design-Builder shall require each Subcontractor to retain its Project Records for the Record Retention Period, and to provide equivalent access to Project Records to the Department, the Department’s representatives, and FHWA (if applicable). The Design-Builder shall require each Subcontractor to include in lower-tier subcontracts the same Project Record retention and access requirements.

9.5 Location

The Design-Builder shall maintain all Project Records at the locations required under the terms of the Contract for the duration of the Contract. Subsequent to Contract completion, the Project Records shall be maintained for the Record Retention Period with suitable security, protection against damage and casualty loss, and access to the Department and FHWA (if applicable).

10 TERMINATION OR SUSPENSION

10.1 Termination for Convenience and No Fault; Payment

The Contract may be terminated for convenience by the Department in accordance with Department Standard Specifications, as amended. In such case, the Department will make payment in accordance with the *Design-Build Standard Guidance*. However, the amount to be paid to the Design-Builder shall in no event exceed the Contract Amount.

10.2 Termination for Cause; Amounts Payable

The Contract may be terminated by the Department for default in accordance with Department Standard Specifications, as amended, and the *Design-Build Standard Guidance*. In addition to the acts listed in the above documents the following shall also be considered defaults for which the Contract may be terminated:

- The Design-Builder or its Design Professionals no longer hold the licenses or certificates required to perform the work or any portion thereof;

- The Design-Builder so fails to perform any agreed-upon portion of the work or Contract item or applicable standard of care as to materially affect the Design-Builder's performance under the Contract in accordance with its terms, and such breach, default, or failure is not cured within the requirements of the *Design-Build Standard Guidance*; or
- The Design-Builder made knowing or reckless misrepresentations, concealed facts, or failed to disclose information in Design-Builder's Proposal. Such shall constitute fraudulent inducements and shall entitle the Department to recover reliance damages, in addition to any other available remedies to which it may show itself entitled.

In case of termination for cause, the Department will make payment consistent with the payment provisions included in the *Design-Build Standard Guidance* and at the Department's option, including payment for materials left on hand, in accordance with Department Standard Specifications, as amended.

10.3 Contract Notice of Contract Termination

The Department may terminate the Contract, in whole or in part, immediately upon notice to the Design-Builder, or at such later date as the Department may establish in such notice, in accordance with Department Standard Specifications, as amended.

10.4 Quality of the Work

In the event of the Department's termination of the Contract, regardless of reason, the Design-Builder shall remain responsible for the quality of the work performed through the date of termination.

10.5 Litigation

In the event of litigation instigated by the Design-Builder in accordance with the Contract or by the Department for breach of contract or fraudulent inducement, the Department may pursue both recoupment and set-off in addition to its other available remedies.

11 ENUMERATION OF CONTRACT

The Contract includes the following:

1. ***BOOK 2 (DESIGN-BUILD CONTRACT);***
2. ***BOOK 3 (PROJECT SPECIFIC INFORMATION);***
3. ***DESIGN-BUILD STANDARD GUIDANCE AND ADDENDUM;***
4. ***THE DEPARTMENT STANDARD SPECIFICATIONS;***
5. ***THE DEPARTMENT SUPPLEMENTAL SPECIFICATIONS;***
6. ***THE DEPARTMENT DESIGN GUIDELINES AND ADDENDUM;***
7. ***THE DEPARTMENT CONSTRUCTION CIRCLULAR LETTERS;***
8. ***THE DEPARTMENT STANDARD DRAWINGS;***
9. ***THE DEPARTMENT MATERIAL AND TEST STANDARD OPERATING PROCEDURES;***
10. ***EXHIBIT A (TECHNICAL PROPOSAL);***
11. ***CHANGE ORDERS;***
12. ***FORCE ACCOUNT WORK ORDERS;***

13. ***WRITTEN ORDERS AND AUTHORIZATIONS ISSUED BY THE DEPARTMENT;***
14. ***ALL OTHER PROGRAMMATIC PLANS OR ANY OTHER DOCUMENTS; IN ANY FORM, REQUIRED TO BE SUBMITTED TO THE DEPARTMENT PURSUANT TO THE TERMS OF APPLICABLE CONTRACT.***
15. ***ALL MATERIAL INCLUDED BY REFERENCE IN ANY OF THE ABOVE DOCUMENTS.***

12 ORDER OF PRECEDENCE

All Contract Documents are intended to be complementary. Conflicts, if any, will be resolved utilizing the following descending order of precedence.

1. ***BOOK 3 (PROJECT SPECIFIC INFORMATION) AND ADDENDA;***
2. ***BOOK 2 (DESIGN-BUILD CONTRACT), including the Special Provisions listed in Appendix B;***
3. ***THE DEPARTMENT SUPPLEMENTAL SPECIFICATIONS;***
4. ***THE DEPARTMENT STANDARD SPECIFICATIONS;***
5. ***THE DEPARTMENT DESIGN GUIDELINES AND ADDENDUM;***
6. ***THE DEPARTMENT STANDARD DRAWINGS;***
7. ***DESIGN-BUILD STANDARD GUIDANCE;***
8. ***THE DEPARTMENT CONSTRUCTION CIRCLULAR LETTERS;***
9. ***ALL OTHER PROGRAMMATIC PLANS OR ANY OTHER CONTRACT DOCUMENTS;***
10. ***ALL MATERIAL INCLUDED BY REFERENCE IN ANY OF THE ABOVE DOCUMENTS.***

13 DESIGN-BUILDER CERTIFICATIONS AND DISCLOSURES

13.1 Nondiscrimination

The Design-Builder shall follow the nondiscrimination provisions as provided in this **Book 2 (Design-Build Contract)**.

13.2 Reserved

13.3 Illegal Immigrants

The Design-Builder shall attest to the Illegal Immigrant provisions as provided in Form AT in Appendix C. The Contract includes a completed/executed Form AT in Appendix C.

13.4 Certification Regarding Debarment, Suspension, and Other Responsibility Matters – Primary Covered Transactions

The Design-Builder shall follow the debarment, suspension, and other responsibility matters provisions as provided in this **Book 2 (Design-Build Contract)**.

13.5 Certification for Grants, Loans, and Cooperative Agreements

The Contract includes a completed/executed Form LC in Appendix C.

The Design-Builder agrees that if any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any federal agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with this Contract, the Design-Builder shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

13.6 Reserved

14 MISCELLANEOUS PROVISIONS

14.1 Employment of Department Workers

The Design-Builder shall not engage, on a full, part-time, or other basis during the period of this Contract, any professional or technical personnel who are or have been at any time during the period of the Contract in the employ of the Department, except regularly retired employees, without the written consent of the Department.

14.2 Covenant Against Contingent Fees

The Design-Builder warrants that it has not employed or retained any company or person other than a bona fide employee working solely for the Design-Builder to solicit or secure this Contract, and that it has not paid or agreed to pay any company or person, other than a bona fide employee working solely for the Design-Builder, any fee, commission, percentage, brokerage fee, gifts, or any other consideration, contingent upon or resulting from the award or making of this Contract. For breach or violation of this warranty, the Department shall have the right to deduct from the Contract Amount or consideration, or otherwise recover, the full amount of such fee, commission, percentage, brokerage fee, gifts, or contingent fee.

14.3 Energy Policy and Conservation Act

Under this Contract, the Design-Builder shall give due consideration to and, as applicable, comply with the standards, orders, and requirements relating to energy efficiency contained in the Department energy conservation plans issued in compliance with the Energy Policy and Conservation Act (P.L. 94-165).

14.4 Additional Employment Regulations

The Design-Builder shall comply with the Vocational Rehabilitation Act of 1973 as approved by Congress on September 26, 1973, herein incorporated by reference, which prohibits employment discrimination against physically handicapped persons. Further, the Design-Builder shall comply with Section 2012 of the Vietnam Era Veterans Readjustment Act of 1974 which requires the Design-Builder to take affirmative action to employ and advance in employment qualified veterans of the Vietnam Era.

14.5 Copyrighting

The Design-Builder shall be prohibited from copyrighting any papers, reports, forms, or other material which is a part of any work under this Contract without written approval from the Department. Publication rights to any documents produced are reserved by the Department.

14.6 Governing Law; Jurisdiction; Venue

The Design-Builder is assumed to be familiar with and observe and comply with those federal, state, and local laws, ordinances, and regulations in any manner affecting the conduct of the work and those instructions and prohibitive orders issued by the Department and federal government regarding fortifications,

military, and naval establishments and other areas. The Design-Builder shall observe and comply with those laws, ordinances, regulations, instructions, and orders in effect as of the date of this Contract.

This Contract shall be governed by and construed in accordance with the laws of the State of Tennessee. The Design-Builder agrees that it will be subject to the exclusive jurisdiction of the courts of the State of Tennessee in actions that may arise under this Contract. The Design-Builder acknowledges and agrees that any rights or claims against the Department or its employees hereunder, and any remedies arising there from, shall be subject to and limited to those rights and remedies, if any, available under TCA § 9-8-101 through 9-8-407.

14.7 Contract Interpretation

Notwithstanding anything in the Contract to the contrary, no field explanations or interpretations provided by the Department at any meetings, and no comments by the Department on Design Documents or Construction Documents, shall be deemed, construed or interpreted to (a) amend, supersede or alter the terms, requirements, limitations or meaning of any Contract Document or (b) release or relieve the Design-Builder from full responsibility for the design of the Project in accordance with the Contract. However, written interpretive engineering decisions from the designated Department contact person(s) pursuant to the Contract may be relied upon to provide information and interpretations of ambiguous or uncertain requirements set forth in the Contract.

14.8 Notices

Notices to be given hereunder shall be given in writing by personal delivery, facsimile, e-mailing or mailing the same, postage prepaid, to the Design-Builder or the Department at the addresses or numbers set forth in Sections 3.2 and 3.3, or as either Party may hereafter indicate pursuant to this Section. Any notice delivered by facsimile and email shall be deemed to be received when confirmation of successful transmission is generated by the transmitting machine. Any notice so mailed, personally delivered, facsimile or e-mail transmission shall be the sole responsibility of the Design-Builder to track and confirm receipt by the Department and shall be confirmed by telephone notice to the Department for the Project. Any notice shall be effective as to the Design-Builder upon delivery into the possession of one of the Design-Builder's designated management personnel, and as to the Department, upon delivery to the Department. Regular, day-to-day communications may be transmitted through one of the methods set forth above, in person, by e-mail, or by other similar electronic transmission.

14.9 Disclosure of Tax Identification Number

The Design-Builder shall provide its federal tax identification number to the Department. The tax identification number provided pursuant to this authority will be used for the administration of state, federal, and local tax law.

14.10 Severability

The Parties agree that if any term or provision of the Contract is declared by a court of competent jurisdiction to be illegal or otherwise invalid, the validity of the remaining terms and provisions shall not be affected, and the rights and obligations of the Parties shall be construed and enforced as if the Contract did not contain the particular term or provision held to be invalid.

14.11 No Waiver

The failure of the Department to enforce any provision of the Contract shall not constitute a waiver by the Department of that provision or any other provision of the Contract.

14.12 Media Contacts; Confidentiality

Unless otherwise specifically authorized in writing, the Design-Builder shall provide no news release, press release, or any other statement to a member of the news media regarding this Project without the Department's prior written authorization. The Design-Builder shall require this clause within all Subcontractors agreements.

14.13 Organizational Conflicts of Interest

The Design-Builder shall identify all relevant facts relating to past, present, or planned interest(s) of the Design-Builder's (including the Major Participants, proposed Design-Builder members, and their respective chief executives, directors, and Key Personnel) which may result, or could be viewed as, an organizational conflict of interest in connection with this Project.

The Design-Builder shall disclose:

1. Any current contractual relationships with the Department (including identification of the Department contract number and project manager);
2. Present or planned contractual or employment relationships with any current Department employee;
3. Any current relationships between the Major Participants, Key Personnel, and/or Design Professionals of the Design-Builder on other Department projects (including identification of the Department contract number and project manager); and
4. Any other circumstances that might be considered to create a financial interest in the Contract by any current Department employee if the Design-Builder is awarded the Contract.

The Design-Builder must also disclose any current contractual relationships where the Design-Builder is a joint venture. The foregoing is provided by way of example and shall not constitute a limitation on the disclosure obligations.

For any fact, relationship, or circumstance disclosed in this Section 14.13, the Design-Builder must identify steps that have been or will be taken to avoid, neutralize, or mitigate any organizational conflicts of interest.

All Organizational Conflicts of Interest shall be addressed on Form COI in Appendix C.

14.14 The Department's Insurance

The State of Tennessee is self-insured, and such insurance shall cover the Department's operations and activities under the Contract.

14.15 Joint Ventures and Partnerships

If the Design-Builder is a joint venture or a partnership, each joint venture member or partner is executing this Contract on behalf of both itself and the Design-Builder, and each joint venture member or partner and Design-Builder shall be jointly and severally liable under this Contract.

14.16 Merger Clause

The Contract constitutes the entire Contract between the Parties on the subject matter addressed herein. The terms of this Contract cannot be waived or amended, in any manner whatsoever, except by written instrument signed by the Parties and containing all required State of Tennessee approvals. Any waiver, if made, shall be effective only in the specific instance and for the specific purpose given. There are no understandings, agreements, or representations, oral or written, regarding this Contract except as contained or incorporated by reference herein.

THIS CONTRACT is executed in three (3) original copies, of which one is to be delivered to the Design-Builder, and the remainder to the Department.

The Design-Builder's authorized representative, by his/her signature below, hereby acknowledges that he/she has read this Contract, understands it, and can affirm that the Design-Builder agrees to be bound by its terms and conditions. This Contract may be executed in several counterparts, each of which shall be an original, and all of which shall constitute but one and the same instrument.

IN WITNESS WHEREOF, the Parties have executed this Contract, which shall be effective as of the Effective Date.

Design-Builder Name: _____

_____	_____	_____
Company Officer Signature	Printed Name and Title	Date

State of Tennessee
Department of Transportation

This Contract is accepted this _____ day of _____ , _____ , and

Is effective on the _____ day of _____ , _____ .

_____
Will Reid, Commissioner

_____
Leslie South, General Counsel
Approved as to Form and Legality

APPENDIX A

SUPPLEMENTAL SPECIFICATIONS TO THE STANDARD SPECIFICATIONS

The following, revised as noted, incorporates the Supplemental Specifications by reference for bidding and Project design and construction purposes. These Supplemental Specifications may be obtained from the Department's website at:

https://www.tn.gov/tdot/tdot-construction-division/transportation-construction-division-resources/2021-standard-specifications.html

Supplemental Specifications to the Standard Specifications Revision Date

Supplemental Specification to Section 100	----------	01/08/2025
Supplemental Specification to Section 200	----------	07/14/2025
Supplemental Specification to Section 300	----------	08/28/2024
Supplemental Specification to Section 400	----------	12/26/2024
Supplemental Specification to Section 500	----------	12/27/2023
Supplemental Specification to Section 600	----------	01/08/2025
Supplemental Specification to Section 700	----------	12/26/2024
Supplemental Specification to Section 900	----------	12/26/2024

APPENDIX B

SPECIAL PROVISIONS

The following table incorporates the Special Provisions by reference for bidding and Project design and construction purposes. These Special Provisions may be obtained from the Department's website at:

https://www.tn.gov/tdot/tdot-construction-division/transportation-construction-division-resources/construction-special-provisions.html

With the exception of the Special Provisions included below the table, the date of the Department's last RFP addendum shall establish the "revision date" for each of the following Special Provisions.

Title	SP#
Unbalanced Bids	102B
Employing and Contracting with Illegal Immigrants	102I
Specifications for Road and Bridge Construction	102LC
Prohibition of Certain Telecommunications & Video Surveillance Services or Equipment	106B
Water Quality and Storm Water Permits	107FP
Project Completion and Liquidated Damages	108B
Payment Adjustment for Fuel	109A
Price Adjustment for Bituminous Material	109B
Removal of Asbestos Containing Materials (ACM)	202ACM
Reinforced Soil Slopes	205RSS
Section 411 – Asphalt Concrete Surface (Hot Mix)	411C
Retaining Walls	624
Drilled Shaft Specs	625
Removal and Disposal of Litter	719A
Right-of-Way Mowing	806
Dynamic Pile Testing	930PDA
Equal Employment Opportunity	1230
Debarment, Suspension, etc.	1275

Title	SP#
Labor (State Projects Only)	1280
Non-Discrimination in Employment	1290
State Wage Rates	AA-ST RATES

S T A T E **OF** **T E N N E S S E E**

(Rev. 1-3-13) January 1, 2021

SPECIAL PROVISION
REGARDING
PAYMENT ADJUSTMENT FOR FUEL

This special provision covers the method of payment adjustment for fuel price increases or decreases. Payment adjustments will be made in monthly increments based on the estimated fuel consumed on major items of work, the estimated price per gallon of fuel at the time of letting, and the percentage change of the Producer Price Index for Light fuel oils, Series ID Number WPU0573, published by the U.S. Department of Labor, Bureau of Labor Statistics.

The estimated price per gallon of fuel for this contract is **$2.35.**

The December 2025 Price Index (Ib) for light fuel oils shall be used for this contract. Adjustments will be based on the price index in effect for the month in which the item was installed.

Fuel consumption for payment adjustment shall be based on the following:

Item Number	Description of Work	Gallons per unit	Unit of measure
203	Any Road and Drainage Excavation	0.25	Cubic Yard
203	Any Borrow Excavation (Rock)	0.36	Cubic Yard
203	Any Borrow Excavation (Other than Solid Rock)	0.25	Cubic Yard
203	Any Borrow Excavation (Rock)	0.16	Ton
203	Any Borrow Excavation (Other than Solid Rock)	0.11	Ton
203-05	Undercutting	0.25	Cubic Yard
203	Any Embankment (in-place)	0.25	Cubic Yard
303, 309, 312	Any Aggregate Base	0.79	Ton
313, 501	Treated Permeable Base or Lean Concrete Base	0.10	Square Yard
307	Any Bituminous Plant Mix Base (HM)	2.98	Ton
411	Any Bituminous Concrete Surface (HM)	2.98	Ton
501	Any Portland Cement Concrete Pavement		
	≤ 10 in. thickness	0.25	Square Yard
	> 10 in. thickness	0.30	Square Yard

No payment adjustment for fuel shall be made on any item of work which is not listed above.

No payment adjustment for fuel shall be made unless the price index varies 5% or more from the index indicated in this Special Provision.

Where the price index varies 5% or more, the payment adjustment will be made as follows:

$PA = [(Ic \div Ib) - 1] \times Fe \times Fp$

Where:

PA =Payment Adjustment (may be plus or minus)
Ic =Index for Current Month
Ib =Index for Bidding
Fe =Estimated Fuel in Gallons used based on above table and work paid for during adjustment month. [∑ (Pay quantity x Gallons per unit)= Fe]
Fp = Fuel Price for Bidding

The Project Engineer will compute the payment adjustment for fuel on work sheets similar to the one attached and will furnish a copy of the calculations upon request to the prime contractor and approved subcontractors.

Upon the expiration of the allocated working time, as set forth in the original contract or as extended by Change Order, payment adjustments for fuel will continue to be made only when the "Index for Current Month" is **less** than the "Index for Bidding" and varies 5% or more.

Payment adjustment, for fuel provided after the expiration of the allocated working time and where the “Index for Current Month” **exceeds** the “Index for Bidding”, will **not** be made until after the contract records have been approved by Final Records (FR)/Materials & Tests (MT) and a Final Estimate is ready to be processed. Upon contract record approval by FR/MT, fuel payment adjustments shall be calculated for each month where the allocated working time has expired, the “Index for Current Month” **exceeds** the “Index for Bidding”, and the indices vary 5% or more. The calculation of the fuel payment adjustment shall be made using the “Index for Current Month” or the “Index for Contract Completion Date” in accordance with the following formulas:

The “Index for Contract Completion Date” is the fuel index in effect on the allocated Contract Completion date or the completion date as extended by Change Order.

“Index for Current Month” is **less** than “Index for Contract Completion Date”

$PA = [(Ic \div Ib) - 1] \times Fe \times Fp$

“Index for Current Month” is **greater** than “Index for Contract Completion Date”

$PA = [(Icd \div Ib) - 1] \times Fe \times Fp$

Where:

PA = Payment Adjustment (may be plus or minus)

Ic = Index for Current Month
Ib = Index for Bidding
Icd= Index for Contract Completion Date (or as extended by Change Order)
Fe = Estimated Fuel in Gallons used based on above table and work paid for during adjustment month. [∑ (Pay quantity x Gallons per unit)= Fe]
Fp = Fuel Price for Bidding

Payment Adjustment for fuel will be made under:

Item No.	Description	Pay Unit
109-01.01	Payment Adjustment for Fuel	Dollar

Monthly Payment Adjustment for Fuel Worksheet

Project No._____ Contract No._____

County_____

Fuel Price (Fp)_____Price Index Bidding (Ib)_____Current Price Index (Ic) _____

Index for Contract Completion Date (or as extended by Change Order) (Icd)_____

Estimate Period: Work Performed_____Adjustment Paid_____
(Month/Yr)

Item	Unit	Quantity		Fuel Factor		Total Fuel
_____	____	_____	x	_____	=	_____
_____	____	_____	x	_____	=	_____
_____	____	_____	x	_____	=	_____
_____	____	_____	x	_____	=	_____
_____	____	_____	x	_____	=	_____
_____	____	_____	x	_____	=	_____
_____	____	_____	x	_____	=	_____
_____	____	_____	x	_____	=	_____
_____	____	_____	x	_____	=	_____
_____	____	_____	x	_____	=	_____
_____	____	_____	x	_____	=	_____
_____	____	_____	x	_____	=	_____
_____	____	_____	x	_____	=	_____
_____	____	_____	x	_____	=	_____
_____	____	_____	x	_____	=	_____

Total Fuel for Month (Fe)_____

$PA = [(Ic \div Ib) - 1] \times Fe \times Fp$
$PA = [(Icd \div Ib) - 1] \times Fe \times Fp$

S T A T E **O F** **T E N N E S S E E**

(Rev. 05-16-16) January 1, 2021
(Rev. 04-01-19)
(Rev. 11-08-19)
(Rev. 3-2-23)

SPECIAL PROVISION

REGARDING

PAYMENT ADJUSTMENT FOR BITUMINOUS MATERIAL

This Special Provision covers the method of payment adjustment for bituminous materials.

100% Virgin Bituminous Material

A payment adjustment will be made to compensate for increases and decreases of 5% or more in the contractor's bituminous material cost. The normal bid items in the contract covering the bituminous material shall not be changed. Payment adjustments (+/-) shall be paid under "Payment Adjustment for Bituminous Material" and calculated as described herein:

A "Basic Bituminous Material Index" will be established by the Tennessee Department of Transportation prior to the time the bids are opened. This "Basic Bituminous Material Index" is the average of the current quotations on P.G. 64-22 from suppliers furnishing asphalt cement to contractors in the State of Tennessee. These quotations are the cost per ton f.o.b. supplier's terminal.

The "Basic Bituminous Material Index" for this project is **$588.46** per ton.

The "Monthly Bituminous Material Index" is also established on the first day of each month by the same method. A payment adjustment shall be made provided the "Monthly Bituminous Material Index" varies 5% or more (+/-) from the "Basic Bituminous Material Index".

Where the price index varies 5% or more (+/-), the payment adjustment will be made as follows:

PA = [Ic - Ib] x T

Where:

PA =	Price Adjustment for Adjustment Month
Ib =	Basic Bituminous Material Index
Ic =	Monthly Bituminous Material Index
T =	Tons bituminous material for Adjustment Month

Payment adjustment will be applied to all asphalt cement, asphalt emulsion, or bituminous material used for paving on this project.
Upon the expiration of the allocated working time, as set forth in the original contract or as extended by Change Order, payment adjustments for bituminous material will continue to be made when the "Monthly Bituminous Material Index" varies 5% or more (+/-) from the "Basic Bituminous Material Index".

The calculation of the bituminous payment adjustment shall be made using the "Monthly Bituminous Material Index" or the "Bituminous Material Index for Contract Completion Date" in accordance with the following formulas:

The "Bituminous Material Index for Contract Completion Date" is the Monthly Bituminous Material Index in effect on the allocated Contract Completion Date or on the completion date as extended by Change Order.

The "Monthly Bituminous Material Index" is **less** than the "Bituminous Material Index for Contract Completion Date".

PA = [Ic - Ib] x T

The "Monthly Bituminous Material Index" is **greater** than the "Bituminous Material Index for Contract Completion Date".

PA = [Icd - Ib] x T

Where:

PA =	Price Adjustment for Adjustment Month
Ib =	Basic Bituminous Material Index
Ic =	Monthly Bituminous Material Index
Icd =	Bituminous Material Index for Contract Completion Date (or as extended by Change Order)
T =	Tons

FOR REFERENCE ONLY

SiteManager or spreadsheet calculates the price adjustment based on the actual amount of asphalt cement (residue) in the emulsion using the following percentages:

-tack coats and shoulder sealants (e.g., SS-1, SS-1h, CSS-1, Css-1h)	63% residue
-prime coats (e.g., AE-P)	54% residue
-scrub seals and microsurfacing (e.g., CQS-1HP)	65% residue
-chip seals (e.g., CRS-2, CRS-2P)	69% residue
-hot in-place recycle (ARA-3P)	63% residue

Mixes Containing Recycled Bituminous Material

The quantity of virgin asphalt cement in tons subject to payment adjustment in recycled mixes shall be the product of the total tons of each mix multiplied by the difference between (1) the percent of asphalt cement specified for bidding purposes and (2) the percent of asphalt cement obtained from the recycled asphaltic material (RAP) used in each mix. No payment adjustment under this special provision for increases and decreases in the contractor's cost for virgin asphalt cement in recycled mixes will be allowed for asphalt cement content in excess of the percent specified for bidding purposes, as all payment adjustments for asphalt cement in the mix design of recycled mixes in excess of the percent of asphalt cement specified for bidding purposes will be made in accordance with the Standard Specifications.

No payment adjustment for bituminous material containing RAP shall be made unless the "Monthly Bituminous Material Index" varies 5% or more (+/-) from the "Basic Bituminous Material Index" indicated in this Special Provision.

Where the price index varies 5% or more (+/-), the payment adjustment will be made as follows:

$$PA = [Ic - Ib] \times \frac{[BA - RA]}{100} \times Tm$$

PA = Price Adjustment for Adjustment Month
Ib = Basic Bituminous Material Index
Ic = Monthly Bituminous Material Index
BA = Percent asphalt specified for bidding purposes
RA = Percent asphalt obtained from recycled asphaltic material used in each mix
Tm = Tons asphalt mix for adjustment month

Upon the expiration of the allocated working time, as set forth in the original contract or as extended by Change Order, payment adjustments for bituminous material containing RAP will continue to be made when the "Monthly Bituminous Material Index" varies 5% or more (+/-) from the "Basic Bituminous Material Index".

The calculation of the bituminous payment adjustment shall be made using the "Monthly Bituminous Material Index" or the "Bituminous Material Index for Contract Completion Date" in accordance with the following formulas:

The "Bituminous Material Index for Contract Completion Date" is the Monthly Bituminous Material Index in effect on the allocated Contract Completion Date or on the completion date as extended by Change Order.

The "Monthly Bituminous Material Index" is **less** than the "Bituminous Material Index for Contract Completion Date".

$$PA = [Ic - Ib] \times \frac{[BA - RA]}{100} \times Tm$$

The "Monthly Bituminous Material Index" is **greater** than the "Bituminous Material Index for Contract Completion Date".

$$PA = [Icd - Ib] \times \frac{[BA - RA]}{100} \times Tm$$

Where:

PA =	Price Adjustment for Adjustment Month
Ib =	Basic Bituminous Material Index
Ic =	Monthly Bituminous Material Index
Icd =	Bituminous Material Index for Contract Completion Date (or as extended by Change Order)
BA =	Percent asphalt specified for bidding purposes
RA =	Percent asphalt obtained from recycled asphaltic material used in each mix
Tm =	Tons asphalt mix for adjustment month

S T A T E **OF** **T E N N E S S E E**

County: Lauderdale
and Haywood Counties
Contract No. DB2506

SPECIAL PROVISION

REGARDING

LANE CLOSURE AND PROJECT COMPLETION LIQUIDATED DAMAGES

All temporary lane closures and road closures on Interstates, State Routes and local streets must be approved by the Department in advance. Requests for road and temporary lane closure approvals must be sent to the Department at least seven (7) calendar days in advance.

The Design-Builder shall be allowed a full closure of one hundred twenty (120) Calendar Days for **each** of the Bridges 29, 30, 31, 32, 41, 46, 49, 50, and 51 to complete its related construction Work and to reopen the bridges to traffic at each location. The closure time shall start once the respective bridge is closed and shall end when the bridge is opened back up to traffic (the listed bridges "Bridge Opening Date"). If the Design-Builder fails to open the respective bridge by the Bridge Opening Date, a sum of money equal to $2,000.00 per Calendar Day shall be deducted from monies due to the Design-Builder, not as penalty, but as Liquidated Damages.

The Design-Builder shall be allowed two hundred (200) Calendar Days to complete its related construction Work and have both Bridges 47 and 48 fully open to traffic (the Bridge 47 and 48 "Bridge Opening Date"). If the Design-Builder fails to open both bridges by the Bridge Opening Date, a sum of money equal to $2,000.00 per Calendar Day shall be deducted from monies due to the Design-Builder, not as penalty, but as Liquidated Damages.

Additionally, temporary lane closures on the identified state routes may be allowed, as approved by the Department. A minimum of one lane (with flagging controls) shall be maintained at all times.

All lane closures and operations must be coordinated with other construction contracts in the area and additionally meet the requirements of Section 9.4.4 of Book 3.

The Project shall be completed in its entirety, except for the plant establishment and punch list (defined as a listing of instructions for correction of unsatisfactory work, in whole or in part, after an inspection by the Department prior to final acceptance and clean-up not requiring lane closures), on or before the **Contract Completion Date.** The required Work included to achieve the Contract Completion Date minimally involves that all bridge locations have met their respective Bridge Opening Dates and all bridges are open to traffic. Section 9.4.1 of Book 3 describes the process to obtain Final Acceptance and full relief from maintenance for each bridge location and the overall Project.

For each calendar day after the Contract Completion Date, that all Work specified in the Project is not complete, a sum of **$3,200.00** per day shall be deducted from monies due the Contractor, not as a penalty, but as liquidated damages. The liquidated damage deductions specified in Subsection 108.09 of the Standard Specifications, as amended, for failure to complete the Project on or before the Contract Completion Date, shall not apply to this Project.

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

APPENDIX C

DESIGN-BUILD CONTRACT FORMS
APPENDED TO BOOK 2 (DESIGN-BUILD CONTRACT)

Form Name	Form Designation
Attestation Regarding Personnel Used in Contract Performance	Form AT
Conflict of Interest Disclosure Statement	Form COI
Contract Payment and Performance Bond	Form CP&PB
Lobbying Certificate	Form LC
Technical Proposal Signature Page	Form TPSP

TENNESSEE DEPARTMENT OF TRANSPORTATION

Design-Build

Book 3 Project Specific Information

Timber Bridge Bundle One

Haywood and Lauderdale Counties, Tennessee

Project Identification Number (PIN): 136185.00

State Project Number: R4SVAR-S1-049

DB Contract# **DB2506**

Final RFP: October 2025

Addendum #1: October 2025

Addendum #2: November 2025

Addendum #3: December 2025 (Conformed)

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1 GENERAL

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

The order of precedence of this Book 3 (Project Specific Information) with the other Contract Documents is described in Book 2 (Design-Build Contract).

The definition of terms corresponding with this Book 3 (Project-Specific Information) are found in the Department's *Standard Specifications for Road and Bridge Construction* (TDOT Standard Specifications) and *Design-Build Standard Guidance* (DB Standard Guidance) in effect 30 days prior to the Proposal due date, unless specifically stated herein. The Design-Builder shall use the most current version of any listed standard or reference as of 30 days prior to the Proposal due date, unless expressly stated otherwise in the Contract Documents.

1.1 General Project Description; Scope of Work

The Design-Builder shall perform all surveying (including a bathymetric survey), design, construction, administration, project management, and other necessary services/work (e.g., hydraulic analysis, geotechnical, haul road implementation) required to construct the Timber Bridge Bundle One (the "Project") in accordance with the Contract Documents (the "Work").

This Project includes the replacement of eleven (11) bridges and related roadway Work in Haywood and Lauderdale Counties (as listed in Table 1 and depicted on Figure 1 below).

Table 1: Bridge Numbers and Locations

Bridge #	Bridge Concept Report PIN	Current PIN	State Route	Feature Intersected	Span	Current Bridge Rating
29	134873.00	136185.02	SR087	LAGOON CREEK	single	Fair/Posted
30	134874.00	136185.03	SR087	BRANCH	single	Fair/Posted
31	134876.00	136185.04	SR180	OVERFLOW	single	Fair/Posted
32	134877.00	136185.05	SR180	OTTER CREEK	single	Poor/Posted
41	134848.00	136185.01	SR087	BRANCH	single	Fair/Posted
46	134856.00	136185.08	SR087	DRAINAGE DITCH	single	Fair/Posted
47	134857.00	136185.09	SR087	BRANCH	single	Poor/Posted
48	134858.00	136185.10	SR087	BRANCH	single	Fair/Posted
49	134859.00	136185.11	SR087	BRANCH	single	Poor/Posted
50	134860.00	136185.12	SR087	BRANCH	single	Fair/Posted
51	134862.00	136185.13	SR371	BRANCH	single	Fair/Posted

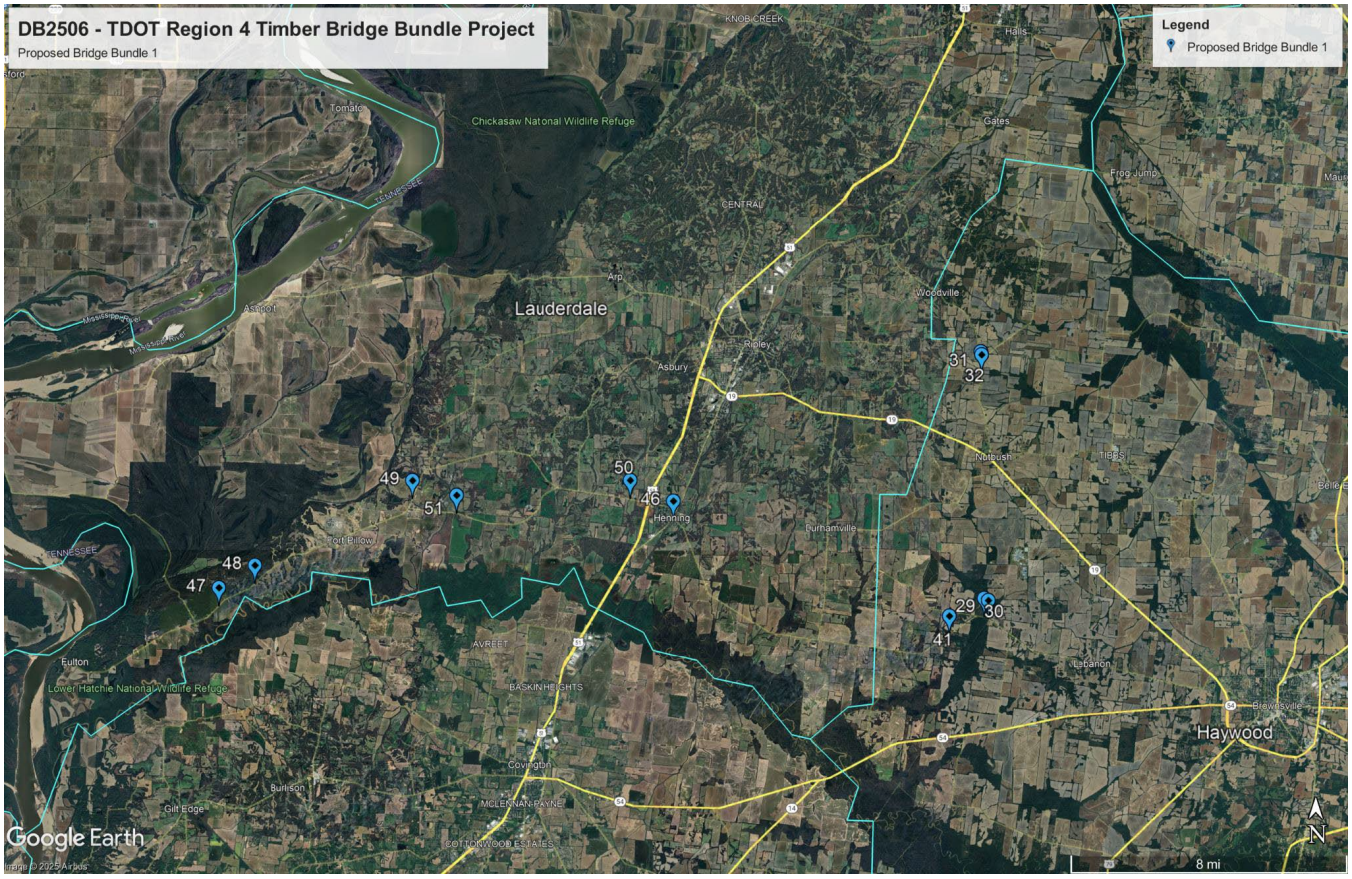

Figure 1: Bridge Location Map

The Project lengths at each bridge replacement location are shown on the Base Technical Concepts for each bridge location (the "Project Limits"). The roadway grade will be transitioned at the ends of the bridge replacements to tie-in to the existing roadway. Bridges 31 & 32 and 29 & 30 are close in proximity such that the proposed roadway improvement encompasses both bridges.

The Design-Builder's general responsibilities with respect to the Work include:

- Meet or exceed minimum Project design criteria for all improvements as defined in Section 3 and Attachment B.
- Removal, disposal, and replacement of the existing bridges meeting or exceeding the bridge design criteria as defined in Section 4.
- Remove and replace all guardrail necessary for construction of the roadway approaches to meet the Project design criteria.
- Full-depth reconstruction of all existing asphalt pavement within the Project Limits in accordance with Section 3.9 and Attachment A.
- Replace or repair/modify drainage structures impacted by the Project and install proposed drainage improvements within the Project Limits.
- Coordinate with utility owners, as necessary, to confirm and resolve the Design-Builder's dispositions (e.g., protect-in-place, avoid, relocate) for each utility that may be impacted by the Design-Builder's Design Documents and construction Work.
- Install new roadway signs and sign structures within the Project Limits.
- Maintain traffic control during the construction Work, including maintaining detour signs where needed.
- Acquire necessary construction and water quality permits to perform the Work.

- Meet all environmental commitments and perform environmental services in accordance with the approved TEER Document.
- Acquire necessary ROW to perform the Work based on the Design-Builder's Design Documents.

1.1.1 TDOT's and Design-Builder's Responsibilities

The following Table 2 and Table 3 list the general responsibilities for the Department and Design-Builder for the Project. A more detailed description of the Work is included within the various sections of this Contract Book 3 (Project-Specific Information).

Table 2: Division of Responsibilities for Bridges 31 & 32

	TDOT	Design-Builder
Survey	Drone Lidar (as a Reference Document provided and subject to the limitations of use detailed in Section 1.3)	Field Survey, Bathymetric Survey
Roadway & Bridge Plans	Base Technical Concept (including the Roadway Line & Grade Plans and Bridge Preliminary Plans (as a Reference Document provided and subject to the limitations of use detailed in Section 1.3))	Advancing and finalizing the roadway and bridge Plans per the *DB Standard Guidance*
Right-of-Way (ROW)	Existing ROW, ROW Footprint, and ROW Acquisition responsibilities as listed in Section 6.1.	Additional ROW coordination and acquisition responsibilities (if the Design Builder's Design Documents require a change to the ROW footprint compared to the Base Technical Concept)
Environmental Permits	Environmental Boundaries Reports (EBRs), permit sketches, permit applications, and obtaining the necessary water quality permits listed in Table 10 (which **does not** include the Design-Builder's responsibilities for obtaining its TDEC NPDES CGP permit for both bridges)	- Amended water quality permit applications and responsibilities to obtain noted permits (if the Design-Builder's Design Documents change the impacts to the permittable features compared to the Base Technical Concepts) - NPDES Permit
Geotechnical	Boring data (as a Reference Document provided and subject to the limitations of use detailed in Section 1.3)	Geotechnical investigation and reports to support the Design-Builder's Design Documents
Hydraulics	N/A	Hydrology & hydraulic design and reports
Utilities	Utility Coordination Plans, Utility Relocation Plans, and completing Concurrent Utility Adjustments as listed in Table 7.	Utility coordination, as needed (notably if the Design-Builder's Design Documents change the utility impacts to the utilities compared to the Base Technical Concept)

Table 3: Division of Responsibilities for Bridges 29, 30, 41, 46, 47,48, 49, 50, and 51

	TDOT	Design-Builder
Survey	State Lidar (as a Reference Document provided and subject to the limitations of use detailed in Section 1.3)	All survey
Roadway & Bridge Plans	Base Technical Concepts (as a Reference Document provided and subject to the limitations of use detailed in Section 1.3)	Advancing and finalizing the Roadway and Bridge Plans per the *DB Standard Guidance*
Right-of-Way	Existing preliminary ROW based on deed research considering the Base Technical Concept (as a Reference Document provided and subject to the limitations of use detailed in Section 1.3)	Definitive Design Plan (as revised) and all ROW acquisition responsibilities as listed in Section 6.2
Environmental Permits	EBR and initial water quality permit assessments (for information only)	Water quality permit sketch development, permit applications, and TDEC NPDES CGP permit as listed in Section 8.3.2
Geotechnical	Boring data (as a Reference Document provided and subject to the limitations of use detailed in Section 1.3)	Geotechnical investigations and reports
Hydraulics	N/A	Hydrology & hydraulic design & reports
Utilities	List of utility owners that have responded to the Department's early notify process (as a Reference Document provided and subject to the limitations of use detailed in Section 1.3)	Utility Coordination Plans, Utility Relocation Plans, and completing or coordinating any required utility adjustment per Section 7.2.

1.2 Project Goals

The Project goals are as follows:

1. Limit the duration for each road/bridge closure and related detour.
2. Minimize project cost and overall schedule duration for replacing all eleven (11) bridges.
3. Limit right-of-way, water quality permit/stream mitigation, and utility impacts at each bridge location.

1.3 Reference Documents

Information for all eleven (11) bridges and other Department-supplied materials have been included as Reference Documents, published on the Department's Project website.
tdot.tn.gov/Applications/Documents?pathName=%5CConstruction%5CDesign_Build%5CDB2506

The Design-Builder shall acknowledge that the Reference Documents are preliminary and provided solely to assist the Design-Builder in the development of its Design Documents. The Design-Builder shall be fully responsible for the accuracy and completeness of all Design Documents and related Work performed under this Contract.

The Design-Builder shall be fully liable and hold the Department harmless for any additional costs and all claims against the Department that may arise due to any Department errors or omissions in the Reference Documents or due to the errors, omissions, or negligence of the Design-Builder in performing the Work required by this Contract.

The Reference Documents include:

- Drone survey data files for Bridges 31 & 32 only, including ORD files (datum adjusted)
- The TEER Document
- Environmental Boundary Report (EBR)
- Environmental Technical Study Area (ETSA)
    - The .dgn files will be sent to the Design-Builder upon receipt of an executed CAD Disclaimer form (provided on the Project website) to the TDOT point of contact listed in Section 1.5 of Book 1 (Instructions to Proposers).
- The Base Technical Concepts
    - The Base Technical Concepts are provided for information only; the scope of the Project listed in the Contract Documents takes precedence.
    - The .dgn files will be sent to the Design-Builder upon receipt of an executed CAD Disclaimer form (provided on the Project website) to the TDOT point of contact listed in Section 1.5 of Book 1 (Instructions to Proposers).
- Bridge Concept Reports for all eleven (11) bridges
- Asbestos Reports
- Utility Early Notification Letters
- Geotechnical Boring Data
- DB2506 Bridge 31 and 32 ROW details.dgn as the “Planned ROW Limits”
    - The .dgn file will be sent to the Design-Builder upon receipt of an executed CAD Disclaimer form (provided on the Project website) to the TDOT point of contact listed in Section 1.5 of Book 1 (Instructions to Proposers).

The Design-Builder shall establish datum adjusted survey control tied to the Tennessee Geodetic Reference Network (TGRN) in accordance with TDOT Survey Manual Section 2.1. The existing coordinates, dimensions, and elevations used in the Reference Documents are provided for information only. The Design-Builder shall verify all existing elevations, dimensions, and horizontal and vertical alignments in the field. This shall include elevations at interfaces of existing and proposed pavement, drainage features, structures, and grading limits. The Design-Builder shall be responsible for all surveys, including those relating to the work and utilities and including locating the Planned ROW Limits established by the Department to perform the work. The Design-Builder shall provide survey control to the Department prior to submission of its Definitive Design.

1.4 Construction Engineering Inspection

The Department will be responsible for Construction Engineering Inspection (CEI) work and Quality Acceptance Testing.

2 PROJECT MANAGEMENT

The Design-Builder shall prepare and administer a Project Management Plan (PMP) containing the Design-Builder's approach to managing the design and construction activities of the Project in accordance with the *DB Standard Guidance* and the specific requirements defined herein.

The PMP shall contain, at a minimum, the following component parts:

- Organizational Structure and Staffing Plan
- Critical Path Method (CPM) Initial Project Schedule (IPS)
- Quality Management Plan (as listed in Section 2.3)
- Public Relations and Public Information Plan (PIP)
- Records Management Plan

Within 30 Days of Contract Award, the Design-Builder shall meet with the Department at the Post-Award Meeting to discuss the development of the components of the PMP for Review and Acceptance by the Department prior to the start of any Work.

The Design-Builder shall use its Proposal as a foundation to prepare the PMP and its component plans/parts. The Design-Builder shall implement all elements of the PMP over the duration of the Project.

The Design-Builder shall use an agreed-to e-plans software for the Project. All Project submittals shall be in Adobe pdf and native file format and include an email with the transmittal letter to the Department to initiate review of all submittals.

2.1 Organizational Structure and Staffing Plan

The Design-Builder shall prepare an Organizational Structure and Staffing Plan to ensure the appropriate number of qualified staff are employed by the Design-Builder to perform the Work in a manageable and safe manner.

The plan shall identify the Key Personnel and key management staff, including Level "1" Personnel and Level "2" Personnel identified in the Design-Builder's Statement of Qualifications (SOQ) and Proposal, respectively (minimally those staff listed in Section 3.4 of Contract Book 2).

The Design-Builder shall provide an organizational chart that graphically represents the hierarchy and functional interaction of the Key Personnel and indicates the functional responsibilities of each staff member. The organization shall be monitored, and the chart updated and provided to the Department when changes to the Design-Builder's organizational chart occur.

The Design-Builder shall provide to the Department, within 15 calendar days after the initial Notice to Proceed (NTP), a list of the contacts (and contact details) of Key Personnel on site and Key Personnel on call who are available 24 hours per day during the execution of the Work.

The Design-Builder shall include a procedure for a structured and managed replacement of Key Personnel, as requested for Department approval, on the Design-Builder's Project team.

Any licenses or certifications that are required to meet the requirements of the Request for Qualifications (RFQ) and Request for Proposals (RFP) shall be in place by the time the initial NTP is issued.

2.2 Project Schedule and Cost Management

2.2.1 CPM Schedule Requirements

For review at the Post-Award Meeting, the Design-Builder shall prepare a Critical Path Method (CPM) Initial Project Schedule (IPS), in accordance with the Department's Circular Letter 108.03.C, TDOT Standard Specifications, Chapter 3 of the DB Standard Guidance, and the requirements described herein.

2.2.1.1 Initial, Baseline, and Monthly Schedule Submittals

In accordance with Chapter 2 and 3 of the DB Standard Guidance, the Design-Builder shall use the preliminary CPM schedule submitted with its Proposal as a foundation to prepare the CPM IPS and shall submit it to the Department for Review and Acceptance. Acceptance of the CPM IPS by the Department shall be a condition for starting any Work per Section 3.2.1 of the DB Standard Guidance.

Following acceptance of the CPM IPS, the Design-Builder shall submit its Baseline Schedule in accordance with the Department's Circular Letter 108.03.C. Review comments made by the Department on the Baseline Schedule shall not relieve the Design-Builder from compliance with the Contract.

The Design-Builder shall submit an updated CPM Schedule monthly for the Department's Review and Comment in accordance with Department's Circular Letter 108.03.C, TDOT Standard Specifications, and Chapters 3 and 9 of the DB Standard Guidance. Monthly progress payment requests and CPM updates are due ten (10) calendar days prior to the estimate cutoff date. Each month, the Design-Builder shall provide a narrative with each CPM Schedule submittal that includes:

- A detailed description of the status of the Project and changes to the CPM Schedule;
- Identification of strategies for mitigation of Project risks or issues impacting the CPM Schedule (describing constraints and discussing contingencies);
- How the proposed Project phasing, sequence of Work, and allocation of resources enable the Design-Builder to progress the Work to achieve completion of the Project in accordance with Contract requirements, including completion of the Contract Completion Date(s);
- How the phasing ensures timely deliveries of materials to achieve the CPM Schedule milestones;
- Identification of categories of Work performed by Design Builder's own direct labor force and those performed by Subcontractors;
- Pay Item activities and all Work included in the Pay Item activities corresponding to totals as reflected on the Schedule of Items; and
- Any other requirements from the Department's Circular 108.03.C, TDOT Standard Specifications, and Chapters 3 and 9 of the DB Standard Guidance.

Acceptance by the Department shall not be construed to imply approval of any particular method or sequence of construction or to relieve the Design-Builder of providing sufficient materials, equipment, and labor, including subcontractors, to guarantee completion of the Project in accordance with all Contract requirements. The Department's acceptance shall not be construed to modify or amend the Contract, Project milestones, Interim Completion Date(s) (as applicable), or the Contract Completion Date.

Furthermore, the Department's acceptance of any schedule update does not relieve the Design-Builder of responsibility for the accuracy or feasibility of the CPM Schedule, does not modify the Contract, will not be construed as an endorsement or validation of the Design-Builder's plan, and does not guarantee that the Project can be performed or completed as scheduled. The Department's acceptance of the CPM Schedule

in no way attests to the validity of the assumptions, logic constraints, dependency, relationships, resource allocations, resource availability, manpower and equipment, or any other aspect of the means and methods of performing the Work.

In all, the Design-Builder shall remain solely responsible for the scheduling, sequencing, planning, and execution of the Work to meet the Project milestones, Interim Completion Date(s) (as applicable), the Contract Completion Date(s), and all other Contract requirements.

2.2.1.2 PROJECT CPM SCHEDULE REQUIREMENTS

In addition to the requirements from the Department's Circular Letter 108.03.C, TDOT Standard Specifications, and the DB Standard Guidance, the CPM Schedule shall detail adequate planning and execution of the Work, allow the Design-Builder and Department an opportunity to evaluate the progress of the Work, and shall follow the applicable categories within the Schedule of Items and other cost control systems, including the Progress Payment process.

The CPM Schedule shall include all major activities of Work required under the Contract, in sufficient detail to evaluate design and construction progress. The CPM Schedule shall not contain open-ended activities, except for the first and last activity in the CPM Schedule. The Design-Builder shall provide adequate time in the CPM Schedule for all parties involved with the Project to complete their work, including submittal and procurement activities, inspections, and testing. The Design-Builder shall include in the CPM Schedule the work of subcontractors, vendors, suppliers, utilities, railroads, permitting agencies, the Department, and all other parties associated with the Project. The CPM Schedule may be utilized to facilitate the Department's Construction Engineering and Inspection (CEI) and Quality Assurance/Acceptance (QA) activities.

Failure by the Design-Builder to include any element of its Work or the work of others required for completion of the Project will not excuse the Design-Builder from completing the Project by the Contract Completion Date(s).

The scheduling software employed by the Design-Builder shall be compatible with the current and any future scheduling software used by the Department. The Department's current software is *Oracle Primavera P6 (v 18.8)*. The software shall be compatible with the electronic file version of the CPM Schedule that can be loaded or imported by the Department using the Department's scheduling software with no modifications, preparation, or adjustments.

The CPM Schedule shall show the order in which the Design-Builder proposes to complete the Work, the time frame which it will start the major items of work, and the critical features of such work (including procurement of materials, plant, and equipment). The CPM Schedule shall include, at a minimum, the following items:

- Controlling items of Work, major Work, and activities to be performed;
- Seasonal weather limitations;
- Land disturbance restrictions;
- Phase duration or milestone events, based on selected option as applicable; and
- Specified Contract Completion Date(s) from the Contract.

The CPM Schedule shall be time and cost loaded, depicting Pay Items and subordinated activities and their respective prices (distributed over time) in accordance with the DB Standard Guidance. The Design-Builder shall assign a percentage of the Pay Item Cost to each activity in the proposed CPM Schedule that reflects an accurate percentage value to each activity based on estimated costs plus associated profit and overhead. The profit and overhead assigned to the individual activities shall be equal to or less than the

mark-up applied to the Work when establishing the Contract Amount. The CPM Schedule shall be in a suitable scale to indicate graphically the total percentage of Work scheduled to be completed at any time.

2.2.1.3 SUBMITTAL REQUIREMENTS

In addition to the requirements of Section 2.7 of the DB Standard Guidance, Design-Build submittals shall be scheduled and submitted based on the approved CPM Schedule. The Design-Builder shall include all review submittals and any resubmittals in the CPM Schedule in order for the Department to appropriately allocate resources for performing the reviews and to track and document any possible schedule impacts.

Ten (10) business days shall be allocated in the CPM Schedule for activities requiring the Department's Review and Acceptance or Review and Comment, unless otherwise indicated in a Special Provision or third-party review. In accordance with the DB Standard Guidance, submittals requiring the Department's Review and Acceptance shall be limited to two concurrent submittals per Division unless indicated otherwise by the TDOT Project Manager.

All submittals required to be reviewed and approved by third-party stakeholders shall be tracked individually. Each such submittal shall have separate activities that track submittal development, required reviews, and revisions required by third-party stakeholders, the Department, or the Design-Builder.

The Design-Builder may submit up to, and the Department will review, no more than ten (10) concurrent submittals, in the aggregate. Submittals are deemed concurrent to the extent that the Department's review period for such submittals under this Section either entirely or partially overlap. Whenever the Department is in receipt of excess concurrent submittals, the Design-Builder may establish (by written notice to the Department) an order or priority for processing the Design-Builder's five priority submittals, and the Department may extend the review periods for the remaining submittals under the Department's reasonable discretion.

2.2.1.4 TIME ADJUSTMENTS

Notwithstanding any other provision to the contrary, no time adjustments will be allowed for:

- Adverse weather conditions (e.g., weather days should be accounted for in the CPM Schedule);
- The time required for the Department's review and response to any initial submittal and any required resubmittal to resolve the Design-Builder noncompliance or nonconformance with the Contract Documents;
- The time required to review value engineering cost proposals (VECPs);
- The time to process Change Orders or plan revisions requiring additional Department or other agency review and/or approval;
- The time to complete any Work that the Design-Builder did not account for in its CPM Schedule as required by the Contract Documents (including time to correct all defects, deficiencies, or errors and time to address any other non-compliance with the provisions of the Contract);
- Work that could have been re-sequenced or rescheduled to avoid delays; or
- Any delays typically encountered during a Project regardless of the source.

The Department may consider time adjustments for:

- The time for plan revisions requiring additional third-party or other agency (i.e., non-Department) review and/or approval if the Design-Builder is unable to work on the controlling item of work without revised plans or shop drawings;

- The time for ordering and delivery of materials for extra work as directed by the Department that affects the CPM Schedule;
- Delays encountered due to a force majeure event as defined in Section 108.07B of the TDOT Standard Specifications that is beyond the control of the Design-Builder that the Department determines adversely affected the progress of the Work.

In accordance with Section 2.7 of the DB Standard Guidance, submittals must be stamped into the Department-designated contact office before 12:00 p.m. CST to start the review period that day. If submittals are received after 12:00 p.m. CST, the review period will begin on the following business day. The review period includes only the Department workdays.

2.2.2 Schedule and Cost Controls

The Design-Builder shall develop procedures for schedule and cost control on the Project, including the cost control and schedule management system to be used to control and coordinate the Work.

The cost-control approach shall include a description of the proposed approach for calculating progress performance for preparing the monthly payment requests using the Pay Item activities, Schedule of Items, and the CPM Schedule. The Design-Builder shall include a procedure for re-scheduling its Work to achieve schedule recovery objectives and how these objectives will be enforced with its workforce and Subcontractors.

2.2.3 Liquidated Damages for Failure to Meet Completion Deadline

The Design-Builder shall complete the Project within the time limitations set forth in Book 2 (Design-Build Contract) and Special Provision 108B.

If the Design-Builder fails to achieve a Bridge Opening Date or fails to complete Substantial Completion by the Contract Completion Date, then the Department will suffer substantial losses and damages. Special Provision 108B provides the daily sum that shall be deducted from monies due the Design-Builder, not as a penalty, but as Liquidated Damages, if a Bridge Opening Date or the Contract Completion Date are delayed.

2.3 Quality Management Plan

The Design-Builder shall establish and implement a Quality Program and prepare a Quality Management Plan in accordance with Section 2.5 of the DB Standard Guidance and the requirements described herein. The Quality Management Plan shall include:

- Design Quality Management Plan (DQMP);
- Construction Quality Management Plan (CQMP);
- Environmental Compliance Plan (ECP); and
- Safety and Health Plan (S&H Plan).

The Department expects the Design-Builder to implement Quality Program improvements over the Project's duration. It is of the utmost importance that the Design-Builder involves its staff and partners with the Department to ensure overall Project satisfaction. The Department will strive for an oversight role in the Quality Program for the Project; however, this will only be possible if the Design-Builder's Quality Program exhibits sufficient staff and sound processes and practices that place quality design and workmanship above production and/or cost by all team members.

2.3.1 Design Quality Management Plan (DQMP)

The Design Quality Management Plan (DQMP) shall conform to the requirements of Section 5 of the DB Standard Guidance and describe:

- Quality roles and responsibilities of the Design-Builder's design Quality Team, including the Design Quality Manager (DQM) and Design Manager;
- Procedures for implementing the design work;
- Design development, submittal, and design review process for preparation of final signed and sealed construction plans and specifications used to construct the Project (the Readiness-for-Construction Plans and Specifications);
- Processes and procedures for the Department's Review and Acceptance of necessary submittals prior to starting any design work; and
- Quality control and quality assurance procedures for ensuring the quality of design work and conformance, including design-quality checks and certifications, and independent design reviews prior to submittal for the Department's Review and Acceptance.

The DQMP shall provide all Design Documents and perform design reviews in accordance with the design review schedule established in the CPM Schedule and in accordance with Contract requirements.

The Design Engineer or Manager shall be responsible for design quality control and ensuring that the design submittals and design reviews are performed in accordance with the DQMP and the Contract Documents. In accordance with Section 2.5.2 of the DB Standard Guidance, the DQM shall provide an independent review and certify that the Design Documents comply with all Contract requirements (QA/QC Stamps) prior to requesting Review and Acceptance by the Department. Failure by the Design-Builder to perform its Quality Management function will result in the immediate rejection of the Design Documents and the Design-Builder shall revise and resubmit. Additional review comments may be added to the resubmission by the Department.

The DQMP shall describe how nonconformances are identified and tracked, how resolutions to nonconformances are developed, and how the actions taken to correct nonconformances are documented, either in Design Documents or construction records and reviewed or re-inspected. This section will apply to both design and construction of the Project. The Design Engineer who signed the applicable Design Documents shall review and approve all resolutions of nonconformances that require design changes, repairs, or rework.

The DQMP shall describe the corrective and preventive actions the Design-Builder will take upon the identification of actual or potential major and systemic nonconformances, identified internally or by the Department. The Design-Builder shall advise the Department when corrective action has been implemented so that the Department may verify implementation, should the Department so choose. This section will apply to both design and construction of the Project.

The DQMP shall be submitted for the Department's Review and Acceptance prior to starting any design work.

2.3.2 Construction Quality Management Plan (CQMP)

The Construction Quality Management Plan (CQMP) shall describe the quality roles and responsibilities of the Design-Builder's construction Quality Team and procedures for implementing the construction work in accordance with Chapter 7 of the DB Standard Guidance.

Although the Department will provide CEI and QA testing, the Design-Builder is responsible for ensuring the quality of the work and shall prepare procedures in the CQMP for quality control of materials and how the Design-Builder plans to inspect the Project to ensure compliance with the Contract Documents. The Design-Builder shall guarantee and provide full cooperation in relation to the Department's CEI and QA audits, reviews, request for information etc.

The Construction Manager shall be responsible for quality control during construction and ensuring that quality control testing and inspections are performed in accordance with the CQMP and the Contract Documents.

In accordance with Section 2.5.3 of the DB Standard Guidance, the Design-Builder shall provide a Construction Quality Manager (CQM) to oversee, manage, certify, and perform construction Quality Management activities. The CQM shall independently review the submittals for the Department, and upon completion shall certify to the Department that the information is accurate and complete. The CQM shall certify that all Work Product has been checked and/or inspected by the Quality Team and that all work complies with the Contract Documents. The CQM shall also certify to the Department that the CQMP and all measures, protocols, and procedures provided therein, are functioning properly and are being followed.

The CQMP shall be submitted for the Department's Review and Acceptance prior to starting any construction work.

2.3.3 Environmental Compliance Plan (ECP)

The Design-Builder shall prepare an Environmental Compliance Plan (ECP) in accordance with Section 2.5.4 of the DB Standard Guidance.

2.3.4 Safety and Health Plan (S&H Plan)

The Design-Builder shall prepare a Safety and Health Plan (S&H Plan) in accordance with Section 2.5.5 of the DB Standard Guidance.

2.4 Public Relations and Public Information Plan

The Design-Builder shall comply with Section 7.4.5 of the DB Standard Guidance and address the following Project-specific requirements.

2.4.1 Internal and External Communications

The Design-Builder shall describe the internal and external communication process between the Design-Builder and the Department's staff, external stakeholders, third parties, and public affected by the Work.

The Design-Builder shall provide all information required for communication purposes. The communication activities are primarily intended for the Department and Department staff (internal stakeholders), but shall also focus on neighboring public and communities, companies and organizations, emergency services, Haywood County, Lauderdale County, surrounding communities, environmental agencies, railroads (as applicable), impacted utilities, and other external services.

The focus of Project/construction communication shall support the following goals:

- Ensure that the entire Project is executed in the least disruptive and positive manner possible for the Department, external stakeholders, and the traveling and local public;
- Maintain the best possible long-term relations with all relevant external stakeholders; and
- Ensure that the Work is performed in the most effective and efficient way.

2.4.2 Handling Complaints

The Design-Builder shall process complaints that result from performing the Work, whether received directly or through the Department to the Design-Builder, as soon as possible in a proactive way.

- The Design-Builder shall notify the Department within two hours after receiving a complaint and inform the Department of what actions will be taken to resolve the cause of the complaint.
- The Design-Builder shall keep a complete and updated complaint register of all complaints received, addressed directly to the Design-Builder or through the Department.
- The complaint register shall include all relevant information in relation to the complaint (who, when received, contents), the actions planned concerning the complaint, the person(s) responsible for the communication, and the status of the complaints (open, closed), which shall be available to the Department upon request.

The Design-Builder shall coordinate all public communication with the Department.

2.4.3 Information for Project Website

The Design-Builder shall coordinate with the Department and provide Project-related information to the Department at least monthly and at least two (2) weeks in advance of significant events or milestones for Review and Approval, including:

- Contact information,
- Project maps,
- Current Project activities and progress,
- Timing of roadway closures and openings,
- Road closure maps (with noted detours and route alternatives) for each impacted bridge location,
- Newsletters and meeting materials, and
- Calendar of, and announcements for, meetings and special events.

2.4.4 Liaison with the Media

Unless otherwise authorized in writing by the Department, the Design-Builder shall provide no news release, press release, or any other statement to a member of the news media regarding this Project. The Design-Builder shall require this clause to be within all Subcontractor agreements.

2.5 Records Management Plan

The Design-Builder shall describe its procedures for managing and maintaining Project record documents in accordance with Sections 5.2.11 and Chapter 7 of the DB Standard Guidance and the Project-specific requirements described herein.

The Department will perform a combination of audits, reviews, and inspections to assess whether the Design-Builder's integrated project management responsibilities and its PMP are functioning properly and determine whether its records and information are reliable and up to date.

Submitted at the time listed in the DB Standard Guidance, the Design-Builder shall provide the TDOT Alternative Delivery Office a transmittal letter, an electronic copy (CAD and signed PDFs) of the As-Built

Plans and final foundation type, including footing elevations and lengths of subsurface foundational elements, prior to final payment of funds to the Design-Builder.

The Professional Engineer in charge of the development of the Project's Plans and specifications shall place his/her seal, including signature and date, on the right side of the title sheet. All plan sheets shall contain the seal, including signature and date, of the Professional Engineer in charge of its development.

The As-Built Plans and the Design-Builder Specifications (following construction completion) shall incorporate any changes to the Readiness-for-Construction Plans and Specifications, changes made during construction Work, as well as all utility locations within right-of-way (ROW) as described in the DB Standard Guidance.

Submitted at the time listed in the DB Standard Guidance, the Design-Builder shall provide the Department's Structures Division a final revised set of As-Built Plans and final design calculations for all structures (bridges, walls, etc.). The Design-Builder shall also conduct and submit a load rating analysis report for each new bridge that is constructed. The Plans shall be delivered electronically via a cloud-based platform as agreed to by the Department. Bridge Plans and design calculations shall not be bundled and must be sent as individual files labeled "Bridge Plans Only" and "Bridge Design Calculations Only," respectively, for each bridge on the Project.

3 ROADWAY

The Design-Builder shall design and construct the roadway infrastructure to include all roadway approaches and tie-in Work within the respective Project Limits at each bridge location listed in Table 1.

3.1 Standards and References

The Design-Builder shall design and construct the roadway and drainage infrastructure to adhere to following standards.

- *TDOT Roadway Standard Drawings*
- *TDOT Roadway Design Guidelines – PDN*
- *TDOT Roadway Design Documents – PDN* (and Instructional Bulletins)
- *TDOT Drainage Manual*
- *TDOT Design Procedures for Hydraulic Structures*
- *TDOT Traffic Design Manual*
- *TDOT Standard Traffic Operations Drawings*
- *TDOT Supplement to the Standard Highway Signs*
- *TDOT Design CADD Standards*
- TDOT Standard Specifications
- *TDOT Survey Manual*
- The Department accepted *AASHTO Policy on Geometric Design of Highways and Streets,* AASHTO Roadside Design Guide, and *Manual on Uniform Traffic Control Devices (MUTCD)*

OpenRoads Designer (ORD) shall be used in the development of 3D parametric modeling to provide model-centric design deliverables. The Design-Builder shall use ORD in accordance with requirements and guidelines provided on the Department's website: ORD (tn.gov)

3.2 Design Requirements

TDOT has developed the roadway design criteria for Design-Builder use on this Project (see Attachment B) in accordance with TDOT's *Roadway Design Guidelines – PDN*. The Design-Builder shall design and construct so that the:

- All driveway, field entrance, and intersection connections shall meet minimum sight distance requirements.
- Field entrances shall be a minimum 14 feet wide to accommodate agricultural equipment.
- The proposed ROW line is set at 15 feet (minimum) outside of the toe of the proposed slope along the State Route as shown in the Planned ROW Limits.

Bridges 29 & 30 – Traffic lanes shall be 11 foot wide with 4-foot minimum width shoulders at a minimum 55 MPH design speed on State Route 87 over Lagoon Creek (L.M. 3.61) (Bridge 29) and 55 MPH on State Route 87 over Branch (L.M. 3.47) (Bridge 30). The Bridge 29 and Bridge 30 Project Limits are not continuous between each bridge location. The Work to tie-in to the existing roadway shall avoid impacting the culvert approximately 200 feet west of Bridge 29.

Bridges 31 & 32 – Traffic lanes shall be 11 foot wide with 4-foot minimum width shoulders at a minimum 50 MPH design speed on State Route 180 over Otter Creek (L.M. 2.61) (Bridge 31) and on State Route 180 Overflow (L.M. 2.74) (Bridge 32).

Bridge 41 – Traffic lanes shall be 11 foot wide with 4-foot minimum width shoulders at a minimum 55 MPH design speed on State Route 87 over Branch (L.M. 2.30).

Bridge 46 – Traffic lanes shall be 11 foot wide with 4-foot minimum width shoulders at a minimum 30 MPH design speed on State Route 87 over Drainage Ditch (L.M. 20.76).

Bridge 47 – Traffic lanes shall be 11 foot wide with 2-foot minimum width shoulders at a minimum 55 MPH design speed on State Route 87 over Branch (L.M. 5.18).

Bridge 48 – Traffic lanes shall be 11 foot wide with 2-foot minimum width shoulders at a minimum 60 MPH design speed on State Route 87 over Branch (L.M. 6.42).

Bridge 49 – Traffic lanes shall be 11 foot wide with 4-foot minimum width shoulders at a minimum 60 MPH design speed on State Route 87 over Branch (L.M. 11.75).

Bridge 50 – Traffic lanes shall be 11 foot wide with 4-foot minimum width shoulders at a minimum 55 MPH design speed on State Route 87 over Branch (L.M. 19.11).

Bridge 51 – Traffic lanes shall be 11 foot wide with 4-foot minimum width shoulders at a minimum 55 MPH design speed on SR 371 over Branch (L.M. 1.39).

The Design-Builder shall prepare final signed and sealed construction plans used to construct the Project, including:

- Prepare the plans in accordance with TDOT *Roadway Design Guidelines – PDN* and the previous design standards referenced in this section.
- Identify the need for any special roadway design details (i.e., any special drainage structures, special ditches, rock embankment, retaining walls, concrete barrier designs, etc.) and provide special design drawings to the Department for Review and Comment.
- Ensure that all applicable “General and Special Notes” found in Section IX of the current edition of the TDOT *Roadway Design Guidelines – PDN* and Instructional Bulletins (IBs) are included in the Design Documents and are adhered to during construction.

The Design-Builder shall design the geometric configurations of all roadway components to provide adequate drainage and prevent hydroplaning (when complete). Design-Builder shall design and construct all cross slopes in accordance with the requirements of the roadway typical section (see Attachment B). The Design-Builder shall provide hydraulic calculations (including spread calculations) to the Department.

3.3 Environmental Technical Study Area (ETSA)

The ETSA for each bridge is provided in the respective ETSA .dgn files in the Reference Documents. Changes to the ETSA limits or Work outside of the ETSA limits shall be governed by the requirements in Section 8.

3.4 Waivers and Exceptions

The following design waivers and exceptions are acceptable for use on this Project:

- The design waivers will be allowed for the minimum vertical design speeds for Bridge 29, 46, 49, and 51, which may be reduced to 45 MPH, 20 MPH, 45 MPH, and 30 MPH, respectively.
- A design exception for 11' lane widths and 4' shoulder width will be provided for Bridge 50.

The Reference Documents include the approved design waivers and the approved design exception.

These design waivers and design exceptions are minimum expectations, and changes to the design waivers or design exceptions will not be allowed without the Department's approval. No additional design waivers or exceptions will be allowed without the Department's approval.

3.5 Safety Appurtenances

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

Specific to guardrail, Design-Bulder shall:

- Remove and replace all guardrail in accordance with the TDOT Standard Specifications and TDOT Standard Drawings. The road shall remain closed until all guardrail is installed in accordance with the plans and specifications.
- Propose an AASHTO Manual for Assessing Safety Hardware (MASH) compliant TL-3 guardrail attachment to bridge ends (and retaining walls, if applicable) detail. Design-Builder shall submit the attachment detail prior to installation for the Department's Review and Approval. All new guardrail and end terminals shall be MASH-compliant TL-3 and be on the Department's Qualified Products List (QPL).

3.6 Drainage

The Design-Builder shall analyze, design, and construct the entire stormwater management system within the Project Limits, including bridges, stormwater conveyances (open-channel and closed-conduit), stormwater inlets, and stormwater collection systems in accordance with the Department's *Drainage Manual*.

- All stormwater runoff that flows through the Project, whether originating within or outside of the Project Limits, must be accounted for in the design of the drainage system.
- The analysis, design, and construction of all components of the stormwater management system shall address the interim conditions during design and construction of the Project.

3.6.1 Drainage Design Requirements

The Design-Builder shall use a 50-year design storm for all new (and existing to remain) storm sewer systems in accordance with the Department's *Drainage Manual*.

- For any structure with a Q_{50} that exceeds 500 cfs, the *Design Procedures for Hydraulic Structures* shall be followed.
- All drainage systems shall be designed to convey the 50-year storm without overtopping of any existing or proposed drainage or transportation elements.

The Design-Builder shall design culvert and pipe outfalls, channels, and ditches (including special ditches) within the Project Limits in accordance with the requirements of the Department's *Drainage Manual*. Design-Builder shall design and construct:

- Appropriate energy dissipation devices at culvert outlets to prevent scouring.
- Appropriate channel linings such that erosion within and downstream of the channels and ditches is minimized.
- Energy dissipation devices to fit within the existing ROW.

The Design-Builder shall provide aggregate pipe underdrains as specified in the pavement design and shall provide appropriate outlets for the underdrains as specified by the TDOT Standard Drawings.

The Design-Builder shall re-establish drainage in situations where sedimentation has changed the flow line from the existing profile. No Work should be done to Waters of the State or US, which might appear to be a ditch, without proper permits.

The Design-Builder shall provide erosion control for the Work per the guidelines specified in the Department's *Drainage Manual* and this Book 3.

The Design-Builder shall design the drainage system to accommodate construction staging. Spread requirements for temporary traffic control may be reduced to a 5-year storm event; however, permanent conditions must meet the requirements of the Department's *Drainage Manual*. The design shall include temporary erosion control, sediment basins, and other Best Management Practices (BMPs) needed to satisfy NPDES, local municipality, and other regulatory requirements. All environmental commitments related to drainage design and erosion control shall be included as "notes" on the plans for each stage of the construction Work.

3.6.2 Existing Drainage Systems

The design of stormwater management facilities shall be compatible with existing or any known proposed improvements to drainage systems on adjacent properties and shall preserve existing drainage patterns.

If existing drainage patterns must be altered due to a temporary or permanent aspect of the design, the Design-Builder shall provide documentation of any/all impacts to upstream/downstream and/or adjacent properties and/or road crossings for Department's Review and Approval prior to alteration of existing drainage patterns. The Design-Builder shall collect survey data for all upstream/downstream/adjacent properties that are impacted, such as road crossing information, structure damage elevations, and channel cross sections (at a minimum), which shall be used in support of hydraulic calculations for the offsite drainage systems. The Design-Builder shall provide the engineering analyses and certifications to the Department for Review and Approval prior to performing the alteration.

The Design-Builder shall inspect and verify that existing drainage systems to remain are clean, operable, and structurally adequate. The Design-Builder shall complete any repairs, replacements, debris removal, and/or deficiencies as a result of designing and constructing the Project.

The Design-Builder shall analyze existing storm drainage systems to remain, culverts (boxes and cross pipes), and open channels within the Project Limits that are impacted by the Design Documents.

The Design-Builder shall replace or supplement any pipes or culverts that are deemed hydraulically or structurally deficient in the existing condition or as a result of this Project.

3.6.3 Hydraulic Design File Report for Hydraulic Structures

The Design-Builder shall prepare a Hydraulic Design File (HDF) Report and any other required documentation for all existing and/or proposed bridge-class structure crossing sites for the design storm. All aspects of the drainage design must meet all criteria listed in the latest edition of the TDOT *Design*

Procedures for Hydraulic Structures, the Department's *Drainage Manual*, and any environmental commitments identified in the TEER Document.

A hydraulic model shall be included for all structures and include a 1D hydraulic model using HEC-RAS or 2D hydraulic model using HEC-RAS or SMS-SRH2D of the 'no-bridge', existing structure, and proposed structure conditions for flood events up to the 500-year flood.

The HDF Report shall include detailed calculations with electronic and printed copies of the computer software input and output files, as well as a discussion about hydrologic and hydraulic analyses and reasons for the design recommendations. At a minimum, for each bridge-class crossing or structure, the HDF Report shall include:

- Correspondence in chronological order.
- Maps that depict a portion of the county map or city map, 7.5-minute USGS quadrangle (preferably color), and FEMA NFIP map.
- Hydraulic report summary.
- Photographs per the requirements of TDOT *Hydraulic Manual*, Chapter 10. Include aerial photographs if available.
- Analysis:
  - Discharge calculations
  - Frequency discharge relationship
  - Stage discharge relationship
  - Supporting hydraulic information (previous flood studies, gauge data, etc.)
  - Existing structure analysis with cross sections plotted (if applicable)
  - Natural water surface model with no bridge or road fill
  - Proposed structure analysis, with cross sections plotted and any alternatives
  - Existing, proposed, and no-bridge output tables
  - Scour analysis, if applicable
  - Deck drainage analysis
  - On-site inspection report
  - Other information

Where multiple structures occur on a single project, the correspondence section should not be repeated. The cover of the design file shall include the Project description, PIN, and/or Project number as indicated in Department schedules. Also, each stream crossing station, stream name, and associated bridge identification number (if available) shall be indicated on the cover. Survey data shall be included in the file for future reference.

Design-Builder shall submit the HDF for the Department's Review and Comment.

3.7 Pavement Markings

The Design-Builder shall prepare pavement marking Plans and install the pavement markings in accordance with the Department standards and the following requirements.

- The design and installation of permanent pavement markings shall be in strict accordance with the *Manual on Uniform Traffic Control Devices (MUTCD)*, *TDOT Roadway Design Guidelines – PDN*, TDOT Standard Drawings, *TDOT Standard Traffic Operations Drawings*, *TDOT Traffic Design Manual*, and the TDOT Standard Specifications.
- All pavement marking removal on final surfaces shall be accomplished by water blasting or another non-marring method.

- Any damage to the pavement surface caused by the selected method shall be removed and replaced at the Design-Builder's cost and time.

3.8 Signing

The Design-Builder shall determine if any existing signs can be reused and/or shall design and install new signage within the Project Limits. The Design-Builder shall prepare signage Plans prior to ordering and installing all signs in accordance with the MUTCD, *TDOT Roadway Design Guidelines – PDN, TDOT Standard Drawings*, the *Standard Highway Signs*, the *TDOT Supplement to the Standard Highway Signs*, the TDOT Standard Specifications, and *TDOT Traffic Design Manual*. All permanent signing Plans, signing layouts, sign schedules, and miscellaneous detail sheets shall be coordinated as follows prior to ordering and construction/installation.

- After the permanent sign locations have been staked, but prior to ordering any material for supports, the Design-Builder shall lead a field review for acceptance by the Department.
- For existing signs to be discarded, the existing sign footings shall be removed to six inches (6") below the ground line.
- The Design-Builder shall verify all support lengths at the site prior to erection.
- The Design-Builder shall install 511 Signs during the installation of the construction signage, as per Traffic Memorandum No. 2509, which can be found in the Reference Documents.

All sign sheeting shall be Type 3 Prismatic or better. All new signs shall meet the retro-reflectivity requirements. All yellow reflective warning signs shall be fluorescent yellow.

3.9 Pavement

The Design-Builder shall provide full-depth reconstruction of the asphalt pavement at any location where the Design-Builder vertically or horizontally realigns, adjusts (e.g., raises a grade), or removes and replaces a portion of the roadway cross section within the Project Limits. The pavement Work shall include a full-depth reconstruction of the entire roadway section between Bridges 31 and 32 (the noted Project Limits for that bridge location). No transitional pavement section is required between the existing and proposed pavement.

All reconstructed pavement shall apply the pavement design(s) provided in Attachment A and the *TDOT Roadway Design Guidelines – PDN*. The Design-Builder's CPM Schedule shall include time for installing tack coat and prime coat per the application rates in the *TDOT Roadway Design Guidelines – PDN* and TDOT Standard Specifications.

4 STRUCTURES

The Design-Builder shall provide all design and construction Work necessary to replace each of the bridges listed in Table 1.

4.1 Standards and References

The Design-Builder shall design and construct the bridges to adhere to the following structural standards.

- *TDOT Structural Design Guidelines*
- AASHTO *Load and Resistance Factor Design (LRFD) Bridge Design Specifications*
- AASHTO *Guide Specifications for LRFD Seismic Bridge Design*
- TDOT Design Procedures for Hydraulic Structures

4.2 Design and Construction Requirements

The Design-Builder shall design, detail, and construct all new bridges using the AASHTO *Load and Resistance Factor Design (LRFD) Bridge Design Specifications* and the AASHTO *Guide Specifications for LRFD Seismic Bridge Design* with all interims as well as the current practices and policies of the TDOT Structures Division. This includes designing the new bridges to meet Seismic Design Category (SDC) C requirements per the *TDOT Structural Design Guidelines*.

The Design-Builder shall reference and adhere to the TDOT Standard Specifications for construction materials and methods.

Concrete for the bridge deck and substructures shall meet the requirements of the TDOT Standard Specifications and TDOT Structural Design Guidelines. Class A concrete in pavement at bridge ends shall have surface aggregate in accordance with Article 903.24 of the TDOT Standard Specification. Other types of concrete required shall meet the minimum design strength requirements, in addition to the requirements of the TDOT Standard Specifications or any applicable Supplemental Specification or Special Provisions.

The Design-Builder shall design all bridges for HL-93 live loading increased by 10% increase (multiplied by 1.1). The bridge design shall include 35 pounds per square foot (psf) for a future wearing surface.

The bridge rail shall be MASH TL-3 compliant as shown on TDOT Standard Drawing STD-1-1SS, except that Bridge 46 will use the STD-11-1 bridge rail on one side with the proposed sidewalk.

All bridges shall have pavement at bridge ends per TDOT Standard Drawing STD-1-5 and STD-10-2.

Concrete finishing shall be in accordance with Section 604.21 of the Standard Specifications. Additional texture finishing requirements shall adhere to Section 11 of the *TDOT Structural Design Guidelines* regarding application, coloring, and finishing. For each bridge, these requirements include that:

- Class I finish followed by an applied texture finish shall be used in lieu of a Class II finish.
- No texture finish shall be applied prior to completion of paving and hauling operations at a bridge site.
- The front face and top of each parapet shall have the applied texture finish (white, AMS-STD-595A, color number 37886).
- The back face of the parapet to the inside edge of the bottom of the fascia beam shall have an applied texture finish (gray, AMS-STD595A, color number 36440).

- In addition to those surfaces, all exposed surfaces of the wingwalls, abutments, and exterior portions of the endwalls shall receive an applied texture finish (gray, AMS-STD-595A, color number 36440).
- Before applying any texture finish, all surfaces shall be completely cleaned of all debris and foreign material.

The Design-Builder shall use containment screens or other measures as necessary to prevent any texture coating from entering environmental features. Containment measures shall be approved by the Department and consistent with the NPDES construction general permit.

The Department's Tri-Star State Emblem is not required for use on these bridges.

The Design-Builder shall perform a hydraulic analysis for bridge deck drainage and shall meet the criteria in the TDOT *Design Procedures for Hydraulic Structures*. Deck drains, as needed, shall be in accordance with the details shown on TDOT Standard Drawing STD-1-2SS. Bridge deck drains may discharge directly into the stream only if allowed in the permits.

The Design Builder shall adhere to all permits, FEMA, and hydraulic design criteria when designing bridges, culverts, and culvert extensions. As noted in Section 3, the Design-Builder shall reference the Department's *Drainage Manual* and *Design Procedures for Hydraulic Structures*. Design Builder shall use FHWA scour publication HEC-18, and FHWA's Hydraulic Engineering Circular 21 "Design of Bridge Deck Drainage," and Hydraulic Engineering Circular 22, "Urban Drainage Design Manual". Hydraulic designs for all structures shall include a 1D hydraulic model using HEC-RAS or 2D hydraulic model using HEC-RAS or SMS-SRH2D of the 'no-bridge', existing structure, and proposed structure conditions for flood events up to the 500-year flood. TDOT's hydrologic procedure requires evaluating the recommended flow rates from StreamStats, any nearby stream gages, and any existing flows published in a FEMA Flood Insurance Study. The Design-Builder shall determine flow rates following this procedure and increase the established flow rates by 10% to account for current hydrological conditions. The Design-Builder shall submit a hydraulic design to the Department for Review and Comment, which shall be sealed by a Professional Engineer licensed in Tennessee. The bridge hydraulic design shall meet the FEMA requirements for the proposed 100-year flood elevation and meet the Department's backwater requirements for a 50-year design flood. Excavation below natural ground elevation for the purpose of flood storage or adding hydraulic capacity to the bridge shall not be allowed.

The Design-Builder shall submit shop drawings in accordance with the requirements set forth in the TDOT Standard Specifications for bridge components, erection plans, and calculations for concurrence by the Department.

Should the Design-Builder elect to use drilled shafts, the Design-Builder shall construct each drilled shaft according to Special Provision 625, Drilled Shaft. Design-Builder shall prepare all drilled shafts to accommodate cross-hole sonic logging (CSL) testing per the *TDOT Structures Design Guidelines*. Additionally, 3D tomography will be required for shafts that are six feet in diameter and larger per Special Provision Section 625.51.

The proposed low girder elevation shall be equal to or greater than ***the higher of*** 1) the 50-year flood elevation plus 1' ***or*** 2) the 100-year flood elevation. However, the proposed finished grade of the structure shall be equal to or exceed the existing finished grade. The 50-year and 100-year flood elevations shall be determined by the Design-Builder's hydraulic analysis, as concurred to by the Department.

For Bridges 29, 30, and 46, the proposed low girder elevation shall be equal to or greater than the existing low girder elevation. The proposed finished grade of the structure shall be equal to or exceed the existing finished grade.

All bridges shall be single span structures with bridge lengths being equal or greater than existing. Lengths shall be set such that stable embankment slopes can be established per *TDOT Design Procedures for Hydraulic Structures*.

TDOT Structural Design Guidelines SDG 5 states that 90 days after detensioning is the earliest time a beam can receive a full depth continuity diaphragm. The Design-Builder may request to reduce the 90-day cure time to a minimum of 60 days. Successful documentation and design notes shall be required with the submission of the beam shop drawings.

Semi-integral abutments are prohibited without prior approval from the Department. If needed, the 3-foot standard height for abutment beams may be increased up to a maximum 5-foot height to accommodate any additional grade changes based on the Design-Builder's hydraulic analysis.

4.3 Removal of Existing Structure

The Design-Builder shall remove and dispose of all existing bridge infrastructure and related materials in accordance with this Section 4.3 and Section 9.6, including any asbestos containing materials as documented in the respective Asbestos Reports. The Design-Builder shall dispose of all roadway and bridge materials, except for the precast concrete channel beams for Bridge 29 (38S80460001), Bridge 47 (49SR0870013), Bridge 48 (49SR0870017), Bridge 49 (49SR0870025), and Bridge 51 (49SR0872003), which the Design-Builder shall salvage and stockpile per Section 202 of TDOT Standard Specifications. The Design-Builder shall contact the Department to coordinate concrete channel beam salvage and storage. For Bridge 29, only the interior precast concrete channel beams shall be salvaged and stockpiled.

The Design-Builder is prohibited from using blasting to demolish any section of the existing structure.

For demolition of existing bridge infrastructure, the Design-Builder shall submit demolition plans and calculations for the Department's Review and Comment at least 30 days prior to related demolition activities for each bridge location. Treatment of the existing piles shall be in accordance with the TDOT Standard Specifications.

This requirement is in addition to the Design-Builder's submittal of necessary shop drawings and erection plans for the Department's Review and Comment.

4.4 Retaining Walls

If the Design-Builder utilizes retaining walls, each wall shall be built in accordance with TDOT Special Provision 624, Retaining Walls. Mechanically Stabilized Earth (MSE) walls that can be partially inundated are not allowed.

5 GEOTECHNICAL ENGINEERING

The Design-Builder shall perform a design-level geotechnical investigation and engineering to validate and augment the geotechnical information included in the Reference Documents.

5.1 Geotechnical Investigations

The Design-Builder shall perform all geotechnical subsurface investigations and laboratory testing in accordance with the current TDOT *Geotechnical Guidelines*.

- In submitting a Proposal, the Design-Builder acknowledges that it has scoped and priced the appropriate amount and level of the geotechnical investigations and engineering to cover geotechnical risks associated with this Project, including taking on all time and cost risk for any differing site conditions that may be encountered.
- The Design-Builder shall perform a slope analysis for all proposed slopes.
- The Design-Builder shall be responsible for obtaining the borings for all structural support and foundation locations where subsurface information is not sufficient or is warranted by variability in the geology.
    - All borings shall be deep enough to show a complete soil and rock profile to the depth of the foundation supporting layer.
    - Refer to Section 1: Geotechnical Projects with Structural Components, of the current TDOT *Geotechnical Guidelines*.
- The Design-Builder shall collect appropriate field data and samples for geotechnical evaluation of embankments, subgrade, soils, culverts, bridge and retaining wall structures, storm water management structures and ponds, minor structures, including drainage pipes, and any other earth supported structures or elements of highway design and construction relevant to the Project.
    - Refer to Section 2: Geotechnical Projects with Roadway Design Components, of the current TDOT *Geotechnical Guidelines*.

The Design-Builder is solely responsible for undercutting and disposal of unsuitable soils and replacement with suitable material at no additional cost or time to the Department. The need for undercutting shall be determined by the TDOT Resident Engineer.

5.2 Geotechnical Reports

The Design-Builder shall provide geotechnical reports and design and construction summaries that contain pertinent subsurface investigations, tests, and engineering evaluations at least 20 days prior to submittal of the related Design Documents.

Prior to any geotechnical design submittal, as outlined in the TDOT *Geotechnical Guidelines*, the foundation design recommendation reports shall be sealed and signed by a Professional Engineer registered in the State of Tennessee who has completed a minimum of three geotechnical design projects of the scope and complexity similar to that anticipated for this Project, using the LRFD method and in accordance with the latest edition of the AASHTO *LRFD Bridge Design Specifications*.

6 RIGHT-OF-WAY (ROW)

6.1 ROW Acquisition Responsibilities for Bridges 31 and 32

The Department will acquire and provide for the Design-Builder's use (at the Department's costs) the right-of-way (ROW) to construct Bridges 31 and 32 as part of the Planned ROW Limits.

The Department's responsibilities for these two bridges include performing all ROW acquisition activities, including advancing the ROW design (as depicted on the Base Technical Concepts) and completing all title reports and related ROW documentation, appraisals, appraisal reviews, and acquisitions in accordance with Tennessee Uniform Relocation Assistance Act of 1972 and the Uniform Relocation and Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646, as amended by Public Law 100-17).

Table 4 lists the ROW and availability dates that the Department will acquire for Bridges 31 and 32.

Table 4: ROW Acquisitions for Bridges 31 & 32

TRACT NO.	PROPERTY OWNER	AREA TO BE ACQUIRED FEE SIMPLE (ACRES)	CONSTRUCTION EASEMENTS TO BE ACQUIRED (SQ FT)	AVAILABILITY DATE (on or before)
2	Alan and Jennifer Jordan	0.643		March 31, 2027
3	Ray and Dorothy Ables	0.627	439	March 31, 2027
4	William B. Hathcock Revocable Trust	1.552		March 31, 2027
6	Alan and Jennifer Jordan	1.023	1,674	March 31, 2027

If the actual acquisition date extends beyond the anticipated date, the Department will review the Design-Builder's time impact analysis for impacts to the Critical Path that may justify additional Contract Time. If warranted, additional time will be granted to extend the Contract Completion Date, but this extension will be non-compensable.

If the Design-Builder deems additional ROW (including any fee simple, permanent easement, or temporary easement) is needed outside of the limits provided because of changes to the Design-Builder's design, the process detailed in Section 6.4 shall apply.

6.2 ROW Acquisition Responsibilities for Bridges 29, 30, 41, 46, 47, 48, 49, 50, & 51

The Design-Builder shall be responsible for all scope, time, and cost to establish the final ROW limits and perform all necessary ROW acquisition services to acquire the needed ROW to construct Bridges 29, 30, 41, 46, 47, 48, 49, 50, & 51.

6.2.1 Preliminary ROW Impacts

Table 5 lists the preliminary (for information only) tracts and acquisition areas for the noted bridges based on the Base Technical Concept.

Table 5: BTC Preliminary ROW Acquisitions for Bridges 29, 30, 41, 46, 47, 48, 49, 50, & 51

TRACT NO.	PROPERTY OWNER	POTENTIAL FEE SIMPLE (ACRES UNLESS SPECIFIED)	POTENTIAL CONSTRUCTION EASEMENTS (SQ. FT.)
Bridges 29 & 30			
6	Lawrence E. Pruitt and Charles E. Pruitt	0.126	
7	Alfred Evans III and Doris Evans Gates	0.434	
8	Everett Tyus	0.301	
Bridge 41			
1	Patrick Tanner Mann, John Pennington Mann, Elizabeth Kirkpatrick Mann	0.540	517
3	Robert Preston Estes and wife, Sandra A. Estes	0.579	
4	Alma Pinnix Lee	0.263	
5	Alma Pinnix Lee	0.126	
Bridge 46			
4	Illinois Central Gulf Railroad Company	0.403	812
5	Jefferson Carter Coughlan and Jeffery Scott Coughlan	1931 S.F.	
6	Lagenia J. Knox and Christan Lee	575 S.F.	322
7	Danny Hutcherson	362 S.F.	
Bridge 47			
2	Camille Petree	1.404	
Bridge 48			
1	John William Sumrow, JR.	0.668	
4	Andrew Carter Baum and Wife, Leslie Smith Baum	1.015	
Bridge 49			
1	Richard D. Lambirth	0.415	
2	Chris Peyton and Scott Mathis	0.184	
4	Lisa Peyton Pipkin and Chris Peyton	3421 S.F.	
5	Brenda Joyner and Morris Lee Joyner, Jr.	2558 S.F.	
Bridge 50			
3	William C. Winters and Donna J. Winters	0.793	
Bridge 51			
3	Parker Fullen and Michael Fullen Partners	0.371	
4	Parker Fullen and Michael Fullen Partners	0.438	

6.2.2 ROW Acquisition Activities

Using the Final Definitive Design (Final DD) Plans (as accepted by the Department) and in accordance with Section 6.1 of the DB Standard Guidance, the Design-Builder shall act as an agent on behalf of the Department, performing the following ROW acquisition activities that include:

- Submittal of area data sheets and ROW proposal to the local agencies (city and/or county) on the Department's standard form
- Submittal of title report and/or abstract (no older than one hundred and eighty (180) days) and related ROW documentation based on the Definitive Design Plans
- Preparing the ROW estimate (in parallel with preparing the associated utility relocation estimate) so that the Department can authorize ROW funding. The Design-Builder shall allow up to four (4) weeks after the estimate is submitted to receive authorization to move forward
- Supporting TDOT in preparing the Preliminary Group Inspection (PGI) Report
- Completing necessary ROW staking as led by the Design-Builder surveyor
- Completing appraisals and allowing time for TDOT to complete its appraisal reviews. Work includes submittal of necessary market data documentation/studies, photographs, and appraisal reports
- Leading any property owner (or informational ROW sessions) as required by the Department's ROW procedures considering the extent of ROW impacts (see *TDOT ROW Procedures Manual* for additional information)
- Supporting TDOT in preparing the Form 2 in advance of making an offer
- Completing acquisitions (including offers and negotiations)
- Property management services
- Recording deeds and closing

The Design-Builder shall complete all of its ROW activities in accordance with Tennessee Uniform Relocation Assistance Act of 1972, the *TDOT Guidelines for Appraisers,* the *TDOT ROW Procedures Manual*, Section 6.1 of the DB Standard Guidance, and the Uniform Relocation and Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646, as amended by Public Law 100-17).

If an administrative settlement or condemnation is required for any related properties (see Section 6.2.4), the Design-Builder will notify the Department so that the Department may pursue the respective proceedings.

The Department will certify the availability of ROW, including for individual properties, for the Project prior to the ROW being available for the Design-Builder's use. In accordance with TCA 54-5-110 the Design-Builder shall cause its final ROW to be filed and recorded in the office of the Register of Deeds in the associated county. The Design-Builder shall furnish one update of each respective title report; the process of updating the title report shall be performed as part of closing.

Section 6.1 of the DB Standard Guidance provides additional requirements for each activity and the respective ROW NTPs that shall be accounted for in the CPM Schedule.

6.2.3 Prework Procedural and Qualification Requirements

Prior to self-performing or subcontracting any of the above-listed ROW activities, the Design-Builder shall submit a ROW Acquisition Plan (and qualifications) to the Department for concurrence. The plan shall include all items listed in Section 6.1.1 and 6.1.2 of the DB Standard Guidance and shall detail the Design-

Builder's steps and workflow required for certified title reports, appraisals, negotiations, acquisition, and parcel closings.

6.2.4 Condemnation Proceedings and Requirements

The Design-Builder shall recommend tracts for condemnation. When the Design-Builder recommends a tract for condemnation, the request for condemnation must have the necessary supporting documentation attached to properly completed forms as indicated by the Regional ROW Office.

Property acquisition requiring condemnation shall be handled by the State Attorney General's Office. The Department has no control over the timeframe for the condemnation proceedings. The Design-Builder shall anticipate time for condemnation proceedings in accordance with Section 6.2.6. The Design-Builder is solely at risk for any delays for right-of-entry associated with condemnation proceedings.

The Design-Builder shall update the appraisal report(s) on any tract(s) involved in condemnation to "date of possession" when requested to do so by the Department. Appraisal updates shall be completed within sixty (60) days after the request is made in writing by the Department. All such updates shall be in compliance with standards set forth above. The "update" appraisal request may require the Design-Builder to consider and include minor plan revisions and changes in market conditions.

Upon request by the Department, the Design-Builder shall testify in any judicial or arbitration proceeding involving the determination of the value of the property, in support of the opinion of value of any and all of the property included in his/her appraisal report. Further, the Design-Builder agrees to attend, as requested by the Department, any pre-trial conferences, meetings, depositions, etc. related to such proceedings. The Design-Builder shall be compensated for these litigation-related services in accordance with the Expert Valuation Witness Rates in effect at the time the service is rendered. The Expert Valuation Witness Rate Schedule may be adjusted periodically.

6.2.5 Payment Responsibilities

The Department will be responsible for the costs associated with the payment to property owners for negotiated settlements, administrative settlements, and relocation benefits. The Department is also responsible for the costs associated with the payment to be deposited with the court in condemnation cases. In addition, any payments agreed to by the property owner and the Attorney General's Office during the condemnation process either by settlement or through the courts including court costs and any mediation expenses is the responsibility of the Department. The Design-Builder shall be responsible for disbursement of these payments and providing indefeasible title to the Department. All payments shall be made in accordance with the policies and procedures established in the *TDOT ROW Procedures Manual*.

6.2.6 ROW Acquisition Timelines

Once the Final Definitive Design Plans (Final DD Plans) are accepted, the Design-Builder shall account for the following sequential durations (up to 20 months) in its CPM Schedule to complete the ROW acquisition process for each impacted tract. The Design-Builder shall account for the various ROW NTPs detailed in Section 6.1 of the DB Standard Guidance before proceeding to the related steps in the process.

Table 6: ROW Acquisition Timelines

Activity	Estimated Timeframe	Responsible Party
Prepare ROW estimate (in parallel with the utility estimate)	5 weeks	Design-Builder/TDOT (as demarcated in Section 6.2.2)
Prepare the Preliminary Group Inspection (PGI) Report	10 weeks	TDOT
Stake the ROW and perform appraisals (including time for TDOT's appraisal reviews)	5 months	Design-Builder
Make offers to landowners	3 months	Design-Builder
Gain right-of-entry/possession (including time for condemnation if needed)	Up to 9 Months	Design-Builder/TDOT (as demarcated in Section 6.2.2)

Note: The Base Technical Concepts do not anticipate the need for any property relocations. As part of the procurement process, the Design-Builder shall submit an ATC for the Department approval if the Design-Builder design requires any property relocations at any of the bridge locations.

6.3 ROW Limitations

6.3.1 Access and Use

Physical construction shall not commence on any phase, segment, individual properties, or a group of properties until the Design-Builder receives a notice to proceed for construction Work from the Department on each phase, segment, individual properties, or a group of properties. The decision to advance a ROW segment to the construction stage shall not impair safety with respect to unacquired or occupied properties on the same or adjacent segments of ROW.

Definitive Design Plans may be phased or segmented within the final approved plans to allow ROW activities to be reasonably completed on individual properties or a group of properties, thereby allowing certification in a manner satisfactory to the Department for each phase or segment.

The Design-Builder shall provide adequate access to all occupied properties to ensure emergency and personal vehicle access. Utility service must be available to all occupied properties at all times prior to and until acquisition or relocation (if applicable) is completed. Open burning should not occur within 1,000 feet of an occupied dwelling.

The Design-Builder shall maintain a sufficient buffer or hold off zone around parcels that have not been acquired and/or around occupied properties to ensure compliance with ROW procedures prior to starting any construction-related Wok in the affected areas. There should be no construction-related Work within the hold-off zone until the property is acquired and/or vacated. The Department will provide written notification before the Design-Builder can enter the hold-off zone.

6.3.2 Temporary Interest (including Temporary Construction Easements)

The Department does not anticipate the need for any temporary construction easements beyond what is listed in Tables 5 and 6 to complete the Project. Beyond the temporary construction easements the Department is acquiring for Bridges 31 and 32, the Design-Builder shall be responsible for acquisition of listed and any additional Design-Builder's temporary locations or other temporary interests in property which the Design-Builder determines are necessary, desirable, or advisable to complete the Project. Such temporary interests may include rights for temporary Project-specific activities outside the Project ROW,

such as construction work sites, temporary work areas, lay down areas, staging areas, storage areas, stockpiling areas, earth work material borrow sites, equipment parking areas, as well as any property needed for any temporary utility facilities being constructed by the Design-Builder.

As acquired, the Design-Builder shall only use a temporary location or interest for associated Work activities, access to properties, or other facilities. No permanent Project infrastructure, which will be owned and maintained by the Department or any others shall be located within a temporary location or interest.

6.4 Design-Builder's Additional ROW

If the Design-Builder's Design Documents require additional ROW or easements (temporary or permanent easements) for Bridges 31 and 32 or the Project (after completing the ROW process for the other bridge locations), the Design-Builder shall:

1. Obtain a concurring opinion from the Department as to the necessity for said additional ROW.
2. Be responsible for performing all of the required environmental studies, reports, and public involvement activities to comply with the TEER requirements and obtain any required governmental approvals, including environmental approvals.
3. Be responsible for coordinating with all adverse impacts to utility owners caused by Design-Builder's proposed additional ROW.
    a. Any utility rights acquired will require a replacement of rights. Design-Builder shall be responsible for acquiring any replacement utility property interests at the Design-Builder's sole cost and time.
    b. All proposed utility easements must be agreed to and be acceptable to the receiving utility owner and be limited in replacing existing rights held by the utility owner.
    c. The Department's assigned utility coordinator shall be included in all negotiations for replacing existing utility rights.
4. Bear all cost and time associated with the associated design and ROW change, including the costs and time of relocating displaced businesses or residents and the costs and time to secure a ROW certification from the Department for each additional property.
5. Provide mapping for additional ROW that includes proper survey location information. Obtain concurrence from the Department on the ROW plans and associated legal descriptions.
6. Comply with the Department's ROW standards, in addition to any other applicable governmental approval and governmental law.

If requesting additional property, the Design Documents (showing the approved priority and phasing) shall be submitted to the Department, and the ROW boundaries shall be surveyed and staked prior to proceeding with the ROW process and timing described in Section 6.2.

7 UTILITIES AND RAILROAD

The Project is a Chapter 86 qualified project. Reimbursement will be subject to TDOT Policy 340-07, Utility Relocation from Public Highway Right-of-Way Under TCA 54-5-804.

7.1 Utility Coordination Responsibilities for Bridges 31 and 32

As listed on Table 7, the Department has identified the following utilities Bridges 31 and 32.

Table 7: Utility Information for Bridges 31 & 32

Utility Owner	Utility Type	Disposition	Contact	Anticipated Relocation Date
Brownville Energy Authority (Gas)	Underground Gas	Relocate	Russ Stroots rstroots@budutil.com 731-772-8845	July 1, 2026
AT&T (Electric)	Underground Fiber	Abandoned	Daniel Potts dp7607@att.com 901-488-2359	N/A
City of Halls	Water, Gas, & Sewer	No impact	Walter Tate tohpwac@lctn.com 731-836-9653	N/A
Forked Deer Electric	Electric	No impact	Jeff Newman jeff@forkeddeer.com 731-836-7508	N/A

While it is anticipated that construction Work will be required around the utilities being protected in place (as listed in Table 7), the Department will coordinate relocation efforts for the balance of impacted utilities either before or concurrently with the Design-Builder's construction Work (the "Advanced Utility Adjustments"). The Department's responsibilities for Bridges 31 and 32 include submitting utility coordination plans and receiving, reviewing, and approving responses, reimbursement agreements, easement agreements (if needed), and authorizing the utility owner to proceed with the Advanced Utility Adjustments.

The Design-Builder's Design Documents shall accommodate the Advanced Utility Adjustments for Bridges 31 and 32. Any subsequent relocation, adjustments, removal, or alteration of the Advanced Utility Adjustments or alteration of a protect-in-place disposition listed in Table 7, as required by the Design-Builder's Design Documents or construction Work, shall be considered a change in design and the responsibility of the Design-Builder in accordance with Section 7.3.

The Design-Builder shall coordinate its construction Work considering the Advanced Utility Adjustments, limiting its construction of temporary or permanent improvements in or around the adjustment areas, not prevent the utilities from accessing the Project Limits to complete the utility owner's work, or otherwise not occupy the areas a utility owner is working in until after the relocation dates listed in Table 7.

If the actual relocation date extends beyond the anticipated relocation date, the Department will review the Design-Builder's time impact analysis for impacts to the Critical Path that may justify additional Contract Time. If warranted, additional time will be granted to extend the Contract Completion date, but this extension will be non-compensable.

7.2 Utility Coordination Responsibilities for Bridges 29, 30, 41, 46, 47, 48, 49, 50, & 51

Through the early utility notification process, the Department has identified the following utilities within the Project Limits for Bridges 29, 30, 41, 46, 47, 48, 49, 50, & 51 as listed in Table 8.

Table 8: Utility Table for Bridges 29, 30, 41, 46, 47, 48, 49, 50, & 51

Utility Owner	Utility Type	Bridges
Southwest Tennessee Electric Membership Corporation	Power	29, 30, 41, 47, 49, 50, 51
Tennessee Valley Authority	Power	29
Ripley Power & Light Company	Power	46
City of Ripley	Gas	49
AT&T	Communications	29, 30, 41, 46, 47, 48, 49, 50
Charter	Communications	46
Lauderdale County Water System	Water	47, 48, 49

7.2.1 Utility Coordination Activities

As part of its initial field survey Work, the Design-Builder shall locate all utilities in the Project Limits for each bridge location, including the survey data in the Definitive Design Plans. Additionally, the Design-Builder shall develop its Definitive Design Plans to include all required utility information as listed in Section 6.2.2 of the DB Standard Guidance. The Design-Builder shall determine the exact locations of each utility in the field by contacting the utility owners involved. Notification by calling the Tennessee One Call System (as required by TCA 65-31-106) is required, in addition to the Design-Builder monitoring each utility owner's responses to its locate requests per TCA 65-31-118. The Design-Builder shall submit a property packet used to establish the existing right-of-way, One-Call tickets for utility location, and any other pertinent information via email or file share to the Department.

After acceptance of the final Definitive Design Plans (Final DD Plans), the Design-Builder shall lead coordination efforts for all impacted utilities associated with Bridges 29, 30, 41, 46, 47, 48, 49, 50, & 51. This includes the Design-Builder:

- Preparing the utility estimate (in parallel with preparing the associated ROW estimate) so that TDOT can authorize utility relocation funding. The Design-Builder shall allow up to four (4) weeks after the estimate is submitted to receive authorization to move forward.
- Preparing the Utility Coordination Plans (based on the Final DD Plans) and associated correspondence to send to the impacted utility owners. The Design-Builder's responsibilities during this time may include leading a kickoff meeting with the impacted utility owners to communicate forthcoming work efforts and utility requirements.
- Overseeing the utility coordination timeline required under TCA 54-5-854, which states:
    - The utility owner is to respond within one hundred and twenty (120) calendar days of receiving the Definitive Design Plans (A-date). A utility owner's response will include the "A-

Date Package," which includes color coded relocation plans (rainbows), a schedule of calendar days, and an estimate of cost in order to generate the Utility Relocation Agreement.

- The "A-date" may be extended an additional forty-five (45) calendar days upon request of the utility owner and approval by TDOT.
- The Design-Builder's responsibilities during this time may include leading a kickoff meeting and deconfliction meeting(s) with the impacted utility owners.
- TDOT will be responsible for the following during this timeline:
  - Reviewing and approving any engineering packages/contracts requested by the utility owner to complete its relocation design work
  - Reviewing any other utility consultant documentation, including any established MOUs, certification of consultant, proposed scopes of work, and estimate of costs

- Receiving and reviewing the A-Date Packages in coordination with the Department's Environmental and Utilities divisions.
- Receiving and reviewing the B-Date Packages if a Move-in State (MIS) utility relocation is identified and agreed to by the parties.
  - Move-In State (MIS) utility relocation work is only to be accomplished if a MIS Contract is executed by both TDOT and the utility owner.
  - MIS contracts will require that the utility owner provide the detailed construction plans, construction specifications and quantities, collectively known as the "B-Date Package" in the Utility Agreement, no later than thirty (30) calendar days after the utility receives the fully executed contract back from the Department.
  - In the event the Design-Builder performs any utility relocation work as part of an MIS relocation, the Design-Builder shall complete any necessary TEER reevaluations and obtain all applicable permits (including water quality and environmental permits) to complete the work.
  - The Department will revise the Contract Documents (for added cost) to include any MIS work per Standard Specification 109.04.
- Certifying that in a written statement to the Department that the proposed relocation of utilities will not conflict with the proposed highway improvement or with another utility's relocation plan.
- Supporting the Department in generating the relocation contracts and "put to work" letters with the impacted utility owners.
- After construction NTP, authorizing the utilities to begin work and continuing coordination efforts and record keeping (as detailed in Section 6.3 of the DB Standard Guidance) during the construction Work.
- Locate all final utility locations on the As-built Plans as described in the DB Standard Guidance.

The Design-Builder shall be responsible for identifying any utility conflicts/relocations from the utility construction plans.

7.2.2 Utility Coordination Timelines

Once the Final Definitive Design Plans (Final DD Plans) are accepted, the Design-Builder shall account for the following sequential durations in its CPM Schedule to complete the utility coordination process for each impacted utility at each bridge location.

Table 9: Utility Timelines

Activity	Estimated Timeframe	Responsible Party
Prepare utility estimate (in parallel with the ROW estimate)	5 weeks	Design-Builder/TDOT (as demarcated in Section 7.2.1)
Develop and distribute utility coordination plans	2 weeks	Design-Builder
Utility review (utility owner to prepare A-Date package)	Up to 165 calendar days	Utility Owner
Submit rainbows (from the A-Date Package) to the Department utilities and environmental division	2 weeks	Design-Builder
Generate and execute relocation contracts	6 weeks	TDOT
Send “put to work” letters	3 weeks	TDOT
Receive B-Date Package(s) (if an MIS) and complete its relocation work	Timing to be coordinated with the utility owner based on the A-Date Package	Utility Owner

7.3 Design and Construction Requirements

7.3.1 Utility Conflict Matrix

The Department has provided certain utility information in the Reference Documents and this Section 7. The Design-Builder shall analyze the utility information, contact and make inquiries of utility owners, perform surface inspections of the Project’s ROW, and perform such additional inspections (including potholing) as it deems appropriate to verify that the information provided fully and accurately:

- Identifies all utilities within the Project Limits,
- Addresses all field conditions, and
- To supplement the utility information.

Within ninety (90) Calendar Days from the initial NTP, Design-Builder shall submit for Department Review and Approval the Design-Builder’s Utility Conflict Matrix reflecting the existence and dispositions of any and all utilities present within the Project Limits by each bridge location.

If any utility located within the Project Limits of Bridges 31 and 32 and that require actual relocation is not identified in the utility information provided by the Department or is misidentified therein, but is timely identified by the Design-Builder in the Design-Builder’s Utility Conflict Matrix within the first ninety (90) days, then the Design-Builder may be entitled to a Change Order for performing work directly attributable to such lacking or inaccurate information.

However, the Design-Builder shall <u>not</u> be entitled to a Change Order for any of the following:

- Increased costs of the Work attributable to unidentified or misidentified Utilities to the extent that the existence of the facility was known to the Design-Builder as of the Proposal due date or could have been inferred from a reasonable investigation or the presence of other facilities, such as buildings, meters, junction boxes, manholes or identifying markers, visible during a surface inspection of the area conducted prior to the Proposal due date;
- Increased costs of the Work attributable to unidentified or misidentified utilities where Design-Builder failed to provide timely notice in the time allowed (i.e., on its Utility Impact Matrix submitted within 90 days of the initial NTP).
- Increased costs of the Work attributable to misidentified or unidentified utilities that can be protected in place or removed rather than physically relocated;
- The costs of Design-Builder's supplemental utility investigation performed in accordance with its due diligence of the Project Limits; and
- Delay and disruption damages.

7.3.2 General

The Design-Builder shall make all reasonable efforts to design and construct the Project to avoid conflicts with utilities and minimize impacts where conflicts cannot be avoided.

The Design-Builder shall be familiar with and adhere to TDOT Rule Chapter 1680-06-01, Rules and Regulations for Accommodating Utilities within Highway Rights-of-Way; Tennessee Code Annotated, Title 54, Part 8, Relocation of Utilities (T.C.A. § 54-5-801 through § 54-5-856); 23 CFR Part 645 -- Utilities; and TDOT Policy 340-07, Utility Relocation from Public Highway Right-of-Way Under TCA § 54-5-804 (Chapter 86), *TDOT ROW Procedures Manual*, and Section 6 of the DB Standard Guidance.

The Design-Builder shall notify each individual utility owner of its intent/plan of operation in the area of the utilities. Prior to commencing any Work, the Design-Builder shall contact the utility owners and request the owners to properly locate their respective utility on the ground. This notification shall be given at least three (3) Business Days prior to commencement of operations around the utility in accordance with T.C.A. § 65-31-106.

The Design-Builder shall provide all necessary protective measures to safeguard existing utilities from damage during construction. In the event that special equipment is required to work over and around the utilities, the Design-Builder shall be required to furnish such equipment. The Design-Bulder shall include the cost of protecting utilities from damage and furnishing special equipment in the Contract Amount.

The Design-Builder shall accommodate utility adjustments, emergency construction, new installation, and routine maintenance work by others that may be underway or take place during the progress of the Contract. No additional compensation or time shall be granted for any delays, inconveniences, or damage sustained by the Design-Builder or its Subcontractors due to interference from utilities or the operation of relocating utilities.

In the event the Design-Builder performs any utility relocation work, it is the Design-Builder's responsibility to obtain any and all property rights and applicable permits, including any environmental permits.

7.3.3 Design-Builder's Changes in Design

For purposes of this Section 7 related to utilities, a change in design is the Design-Builder's modification of its Design Documents that:

- Require a change to the disposition of a utility listed in Table 7,

- Require an adjustment of a utility that was not listed in Table 7,
- Require subsequent relocations, adjustments, removals, or alterations for any of the Advanced Utility Adjustments,
- Require subsequent relocations, adjustments, removals, or alterations for any utility after acceptance of the Design-Builder's Final Definitive Design Plans (Final DD Plans), or
- Necessitate acquisition of a utility easement not included in the Department-provided property.

In any of these circumstances, the Design-Builder shall bear all cost and time for the Department's utility coordination and the utility owner's relocation efforts. If the Department agrees with the Design-Builder's alterations, the Design-Builder shall account for the utility coordination tasks and relocation activities from the utility owner (as listed in Section 7.2.1) in the CPM Schedule without any extension to the Contract Completion Date.

7.4 Railroad Coordination for Bridge 46

Through early railroad investigation, the Department has identified potential impacts to railroad ROW and operations that may require Special Provision 105C and ROW/easement acquisitions from Illinois Central Gulf Railroad Company (Railroad) based on the Design-Builder's Design Documents.

7.4.1 Railroad Coordination Activities

The Design-Builder shall submit its Definitive Design Plans (for Bridge 46 only) within 90 days of the Post-Award Meeting to allow the Department to initiate coordination efforts with the Railroad on behalf of the Design-Builder. This plan set shall include all required Railroad property information, a ROW/easement impact table, and other design details (as required per the DB Standard Guidance and the *TDOT Utility Manual*).

After acceptance of the ***final*** Definitive Design Plans (Final DD Plans) for Bridge 46, the Department will lead the Railroad coordination efforts to support the Design-Builder's ultimate construction of the bridge. This includes the Department:

- Preparing the Railroad estimate so that funding can be authorized to proceed.
- Developing and finalizing Special Provision 105C and acquiring the necessary ROW or easement areas needed to construct Bridge 46 based on the Final DD Plans.
- Preparing and executing the appropriate construction agreement(s) and certification so that Design-Bulder may proceed, upon a specific Bridge 46 notice to proceed, with construction of the bridge.

The Design-Builder shall:

- Provide the Department with timely information related to its Bridge 46 Design Documents (e.g., plans, sketches, exhibits) and related coordination and ROW details to support the Department's Railroad coordination efforts throughout the durations listed in Table 10.
- Sequence its construction Work for Bridge 46 to be the last bridge to be constructed, affording the Department the time listed in Table 10 for the Department to complete its Railroad coordination and ROW/easement acquisition activities.
- Not contact the Railroad through the process, unless directed by the Department.

Upon finalization of Special Provision 105C and any related railroad agreements, the Department will revise the Contract Documents (for added cost only) to compensate the Design-Builder for any additional Railroad work requirements (e.g., insurance, flagging).

7.4.2 Railroad Coordination Timelines

Once the Final Definitive Design Plans (Final DD Plans) are accepted for Bridge 46, the Design-Builder shall account for the following sequential durations in its CPM Schedule, allowing for the Department to complete the necessary Railroad coordination activities (and acquire any needed railroad ROW or easement) associated with Bridge 46. **Note:** The Design-Builder shall still be responsible for all other utility coordination and ROW acquisition activities unrelated to the Railroad at this bridge location.

Table 10: Railroad Timelines

Activity	Estimated Timeframe	Responsible Party
Prepare railroad estimate	8 weeks	TDOT
Prepare Special Provisions 105C and execute the Railroad Agreement	52 weeks	TDOT
Acquire necessary railroad ROW/easement	52 weeks	TDOT
Prepare and provide the railroad certification and notice to proceed for Bridge 46 construction	6 weeks	TDOT

If the total number of weeks extends beyond the total railroad timeline listed in Table 10 (i.e., 118 weeks from TDOT acceptance of the Final DD Plans for Bridge 46), the Department will review the Design-Builder's time impact analysis for impacts to the Critical Path that may justify additional Contract Time. If warranted, additional time will be granted to extend the Contract Completion date, but this extension will be non-compensable.

7.4.3 Design-Builder's Changes in Design

For purposes of this Section 7 related to Railroad coordination, a change in design is defined as the Design-Builder's modification of its Design Documents that require additional or necessitate a change to the ROW or easement areas ***or*** that require the Department to modify its Special Provision 105C or its Railroad construction agreement(s) ***after*** acceptance of the Design-Builder's Final Definitive Design Plans (Final DD Plans).

In any of these circumstances, the Design-Builder shall bear all cost and time for the Department's additional Railroad coordination efforts, which shall be accounted for in the CPM Schedule without any extension to the Contract Completion Date.

8 ENVIRONMENTAL

8.1 Tennessee Environmental Evaluation Report (TEER)

The Department has obtained and is providing the Tennessee Environmental Evaluation Report (TEER) Document in the Reference Documents (when available).

8.1.1 Environmental Commitments

Expanded upon in Section 5.2.9 of DB Standard Guidance, the Design-Builder shall review and adhere to the approved TEER Document and technical reports—specifically, any environmental commitments listed therein. The Design-Builder shall account for these commitments as part of its design and construction Work. All commitments listed are to be addressed during the design and construction Work or prior to completing the Project.

- There shall be no impact or intrusion into Tract 3 shown on the Bridge 48 Base Technical Concept.
- There shall be no impact or intrusion into Tract 4 shown on the Bridge 50 Base Technical Concept.
- There shall be no impact or intrusion into Tract 2 shown on the Bridge 51 Base Technical Concept.

8.1.2 Environmental Boundaries

The Design-Builder is responsible to field verify all features from the final environmental boundaries reports (EBRs), provided by the Department, and the Design-Builder shall update and submit a revised EBR (if necessary) in accordance with TDOT standards to document any missing features.

Should an unknown environmental feature within the environmental technical study area (ETSA) be uncovered, all construction Work shall stop immediately in that area, and the Design-Builder shall contact the Department for consultation.

For impacts to any streams, springs, wetlands, sinkholes, or other water resource features not previously documented in the original EBR, the Design-Builder shall provide the data sheets and forms listed below to the Department for Review and Comment prior to submittal to the applicable regulatory agencies.

Streams

- Hydrologic Determination Field Data Sheet (Version 1.4).
- Ecology Water Resources Field Data Sheet.
- Tennessee Division of Water Resources (TDEC): Habitat Assessment Field Data Sheet – Moderate to High Gradient Stream.
- A location map, plan sheets with resources clearly marked and labeled, and a U.S. Geological Survey (USGS) Quad map showing the proposed stream(s) using Department-provided map templates.
- Photo summary of each feature including photo views of the location of the proposed alteration, upstream, downstream, and along the centerline of the Project.

Wetlands

- U.S. Army Corps of Engineers (USACE): Wetland Determination Data Form – Eastern Mountain and Piedmont Region: Version 2.0.
- TDEC: Tennessee Rapid Assessment Methodology (TRAM) documentation for wetlands, including TRAM Decision Key, TRAM Outstanding Natural Resource Water or Exceptional Tennessee Water Decision Table, appropriate Hydrogeomorphic (HGM) field data forms (if applicable) or Non-HGM field data forms (if applicable) for the wetland type being assessed, and TRAM Quantitative Summary Table.
- A location map, plan sheets with resources clearly marked and labeled, and a USGS Quad map showing the proposed wetland(s) using Department-provided map templates.
- Photo summary of each feature including photo views of the location of the proposed alteration and wetland boundaries.

Water resource determinations shall be completed by a Tennessee Qualified Hydrologic Professional (TN-QHP). The certification for the TN-QHP must be submitted along with the Hydrologic Determination Field Data Sheet for the individual preparing the data sheets and forms. All additional environmental field studies are to be performed by the Design-Builder's personnel with the required qualifications.

8.1.3 State or Federal Endangered / Threatened Species

The Department completed species coordination with the relevant agencies for the Project (see the Reference Documents).

If the Design-Builder requires any additional ROW (e.g., fee simple or easement) not studied within the Project's ETSA, this will immediately require additional review(s) and coordination regarding the proposed changes by USFWS, TWRA, and TDEC DNA. The Design-Builder shall contact the Department prior to any coordination with resource agencies.

The Design-Builder's coordination with resource agencies must, at a minimum, include the following information:

- A clear description of the Project changes to be reviewed,
- Timing and schedule for implementation of the changes,
- Maps showing location of changes (if applicable),
- Plans documenting the changes,
- Description of how the changes maintain compliance with existing environmental commitments, and
- Previous coordination responses from the resource agencies.

If a TEER re-evaluation is required (also see Section 8.1.6), the Design-Builder shall be responsible for the time and cost necessary to prepare the re-evaluation and adhere to any additional environmental commitments required by the resource agencies as a result of the agency review. These commitments may include preparation of species reports or biological assessments, species surveys, species sweeps and relocations, additional prohibitions on the Work during designated time periods, and any required species monitoring.

The Design-Builder shall (in consultation with the Department) allow time in the Project Schedule for the Department to coordinate with the appropriate agency (e.g., TWRA, USFWS, and the TDEC DNA), if required.

8.1.4 Other Natural Resources

The Design-Builder shall ensure identification, survey, and monitoring of other natural resources, such as sinkholes, caves, or specialized habitats. The Design-Builder shall work with the Department to coordinate with regulatory agencies (e.g., TDEC) as necessary and to obtain any necessary permits for modifications to the natural resources (e.g., TDEC Underground Injection Control (UIC) Permit, etc.).

8.1.5 GPS/GIS Data Collection

The Design-Builder's data collection for streams, wetlands, springs, sinkholes, or other jurisdictional features shall be with mapping grade accuracy (defined as sub meter).

8.1.6 Design-Builder Required Reevaluations

If the Design-Builder's design footprint or construction limits extend beyond the ETSA, including for use of permanent and/or temporary interests, which results in changes to impacts of identified resources, the Design-Builder shall bear all cost and time associated with the:

- Design-Builder's preparation of revised environmental technical studies and the TEER Document re-evaluation(s),
- Department's Review and Approval of the TEER Document re-evaluation(s), and
- All agency coordination, as required, of the TEER Document re-evaluation(s).

Additionally, if the Design-Builder's changes result in changes to impacts of the environmental features, the Design-Builder shall bear all cost and time to incorporate additional compensatory mitigation documented in the updated EBR or for additional features identified prior to and during construction Work.

The Design-Builder shall provide the Department with a notification and copy of the revised Plans.

8.2 Mitigation of Streams and Wetlands

8.2.1 Mitigation Responsibilities for Bridges 31 and 32

To construct Bridges 31 and 32, the Base Technical Concept requires proposed mitigation for:

- STR-1 from Station 115+93.03 to 118+88.69.
- STR-2 from Station 126+95.74 to 129+00.33
- WTL-1 at station 117+00.00

In accordance with *TDEC Stream Mitigation Guidelines*, the Department has developed and provided in the Base Technical Concept a proposed stream mitigation design to offset foot-for-foot impacts to the two listed streams requiring relocation.

In accordance with *TDEC Stream Mitigation Guidelines*, the Design-Builder shall advance and finalize the stream relocation design and construct the stream channel in a manner that additional mitigation credits are not needed or minimized to the greatest extent practicable.

If the Design-Builder's design alters the proposed mitigation determination (e.g., alters the mitigation design or increases the impacts required to construct the two bridges), then the Design-Builder shall bear all cost and time required to:

- Modify the Project's environmental water quality permits (see Section 8.3.3 for this process).

- Design and construct additional stream/wetland mitigation or purchase necessary stream/wetland credits to address the additional impacts to the permittable features.

8.2.2 Mitigation Responsibilities for Bridges 29, 30, 41, 46, 47, 48, 49, 50, & 51

The Design-Builder's Design Documents shall determine the extent of stream or wetland impacts and mitigation (as needed) for Bridges 29, 30, 41, 46, 47, 48, 49, 50, & 51.

The Design-Builder shall design and construct foot-for-foot mitigation to offset all stream relocations, permanent stream impacts, and permanent fill of wetlands at the nine bridge locations in accordance with *TDEC Stream Mitigation Guidelines*. Per Rule 0400-40-07-.04(7)(b), the Design-Builder's mitigation design shall minimally accommodate (for all new or relocated streams) a vegetated riparian zone, demonstrated lateral and vertical channel stability, and have a natural channel bottom. The Design-Builder is prohibited from rock lining or armoring the channel but may place buried rip rap at defined elevations. All mitigated watercourses shall maintain or improve flow and maintain classified uses after the mitigation has been constructed. The Design-Builder's mitigation design shall be included with the associated water quality permit application as further detailed in Section 8.3.2.3.

As needed (but not intended to fully offset all potential stream and wetland impacts on the Project), the Department is providing the following credits that the Design-Builder may elect to use to offset proposed impacts. The Design-Builder shall request use of the listed credits when preparing the associated water quality permit sketches, by which the Department will provide the necessary information for the Design-Builder to reference in the permit application.

- Three (3) wetland credits
- One hundred (100) stream credits

If the Design-Builder elects to not advance site-specific mitigation design and instead pursues additional credits beyond what is listed above, the Design-Builder shall be responsible for time and cost to purchase these additional credits.

8.3 Environmental Water Quality and Construction General Permits

The Design-Builder is responsible, under federal and state environmental laws and regulations, to avoid and minimize, to the maximum extent practicable, impacts to Waters of the State and/or Waters of the U.S. when designing and constructing the Project. The Design-Builder assumes all responsibility as the Authorized Agent of the Department (Permittee) as indicated in the permit that relates to protection of the "Waters of the United States" and/or "Waters of the State of Tennessee" pursuant to the regulatory permits listed in Section 5.2.10 of the DB Standard Guidance.

8.3.1 Environmental Permit Responsibilities for Bridges 31 and 32

As listed in Table 11, the Department has identified the following environmental permits required to construct Bridges 31 and 32. The Department's responsibilities for Bridges 31 and 32 include developing the permit sketches and permit applications for submittal to the relevant agency. However, the Design-Builder shall be responsible for the time and cost to prepare and obtain its TDEC National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) for Bridges 31 and 32.

Table 11: Environmental Permits for Bridges 31 & 32

Agency Permit	Party Responsible to Obtain	Anticipated Permit Receipt Date
TDEC Individual Aquatic Resource Alteration Permit (IARAP)	TDOT	July 1, 2026
USACE Nationwide Permit	TDOT	July 1, 2026
TDEC National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP)	Design-Builder	To be determined (based upon finalizing the Design-Builder's EPSC sheets and SWPPP)

The Design-Builder's Design Documents shall accommodate the permit documentation advanced by the Department for Bridges 31 and 32. Any additional or altered impacts to the environmental features in the area, because of changes from the Design-Builder's Design Documents or construction Work, shall be considered a change in design and the responsibility of the Design-Builder in accordance with Section 8.4.9.

If the actual permit receipt date extends beyond the anticipated date, the Department will review the Design-Builder's time impact analysis for impacts to the Critical Path that may justify additional Contract Time. If warranted, additional time will be granted to extend the Contract Completion date, but this extension will be non-compensable.

8.3.2 Environmental Permit Responsibilities for Bridges 29, 30, 41, 46, 47, 48, 49, 50, & 51

The Design-Builder is responsible for all time and cost to obtain all necessary water quality permits and TDEC NPDES CGPs to construct Bridges 29, 30, 41, 46, 47, 48, 49, 50, & 51.

The Department has initially identified potential water quality permit needs based on the Base Technical Concept as information only; however, the Design-Builder's Design Documents shall be the sole determinant to define the necessary water quality permits for Bridges 29, 30, 41, 46, 47, 48, 49, 50, & 51.

Table 12: Preliminary Permit List for Bridges 29, 30, 41, 46, 47, 48, 49, 50, & 51

Potential Agency Permit (based on the Base Technical Concept)	Applicable Bridge
TDEC Individual Aquatic Resource Alteration Permit (IARAP)	29, 30, 41, 46, 47, 48, 49, 50, & 51
USACE Nationwide Permit 404	41, 46, 47, 48, 49, 50, & 51
USACE Individual 404	29 & 30
TDEC National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP)	29, 30, 41, 46, 47, 48, 49, 50, & 51

8.3.2.1 WATER QUALITY PERMIT ACTIVITIES

Using the Definitive Design Plans, the Design-Builder shall lead permit development and coordination efforts for all impacted permittable features associated with Bridges 29, 30, 41, 46, 47, 48, 49, 50, & 51. This includes the Design-Builder:

- Preparing a revised permit assessment for Department Review and Comment.
- Preparing and submitting the permit sketches to the Department for Review and Comment for each noted impact.
- Finalizing and submitting the permittable plans and sketches (as part of the Permittable Plans Package) to the Department for Review and Comment.
- Developing and submitting the permit application to the Department for Review and Comment.
- Once comments are resolved, submitting the permit application to the agency and paying for all fees in accordance with the DB Standard Guidance.
- Monitoring the process and coordinating with the agencies to answer questions, provide additional information, revise the application, and ultimately secure the noted permits(s).

Additional requirements related to regulatory permits are described in Section 5.2.10 of the DB Standard Guidance.

8.3.2.2 APPLYING FOR AND OBTAINING WATER QUALITY PERMITS

To prepare a water quality permit application, the Design-Builder shall be responsible for preparing all documents (including the necessary permit sketches, Permittable Plans Package, and water quality permit application package) and attending all public meetings necessary to obtain the water quality permits required to accommodate the Design-Builder's Design Documents. As needed, the Design-Builder shall obtain the necessary information and prepare the permit drawings/sketches, Permittable Plans Package, and application to reflect the impacts and minimization efforts resulting from the Design-Builder's Design Documents.

The Design-Builder shall be responsible for all public notice requirements such as documentation to be placed in the local newspaper and in the field and answering of public notice comments.

The Design-Builder shall submit the water quality permit application in its own name and ensure the permit is issued in its name. If, under the applicable laws and regulations, the water quality permit application cannot be submitted in the Design-Builder's name, the Design-Builder shall submit the permit application as an Authorized Agent of the Department and ensure the permits are issued with the Department as the Permittee. The Design-Builder shall attend a final review meeting with the Department to review all water quality permit applications prior to submitting the application to the permitting agencies.

The Department shall be invited to any meeting between the Design-Builder and the respective regulatory agency to discuss issues related to the application for (or refusal of) a permit. The Design-Builder shall inform the Department a minimum of ten (10) business days in advance of the time and location such a meeting is to take place and provide a meeting agenda five (5) business days in advance of the meeting.

The Design-Builder shall assist the Department, as needed, in any proceedings relating to reservations, objections, appeals, and/or applications for preliminary injunctions initiated by others against the water quality permit application or by itself against the permit decision. In such proceedings, the Design-Builder shall make every reasonable effort to defend the submitted application.

If any regulatory agency rejects or denies the permit application, it is the Design-Builder's responsibility to make the necessary revisions to ensure the permit is approved. If revisions are required to obtain the permit, the Design-Builder shall schedule a review by the Department to ensure regulatory practices are met. The Design-Builder shall be responsible for preparing and revising its designs and proposing appropriate construction means and methods that are permittable. The Design-Builder shall acquire all permits required for a particular construction activity prior to commencing the particular construction activity. All costs and time/delays associated with an incomplete permit package or application, agency rejection, agency denials, agency processing time, or any permit violations shall be the responsibility of the Design-Builder.

The Design-Builder shall provide the Department with a copy of the draft permit decision and a copy of the final permit upon receipt.

8.3.2.3 WATER QUALITY PERMIT APPLICATION CONTENTS

The water quality permit application (applicable for USACE 404, TVA Section 26a, and TDEC ARAP permits) shall include the:

- Department's application templates, or an approved equal, that meets all the required sections of the agencies' applications forms (e.g., TDEC CN-1091, USACE ENG 4345, NPDES NOC, etc.); and
- Signed application letter to the TDEC Division of Water Resources, Permits Section, TVA, and USACE listing all water quality impacts.

The permit application shall include:

- Alternatives and proposed methods utilized by the Design-Builder to minimize impacts to each environmental feature
- Proposed mitigation for impacts to the environmental features
- Labeled USGS color quadrangle map. The map shall have the following information shown:
- Impact areas labeled by permit type;
  - Longitude and latitude (precision to four decimal places) listed for each impact;
  - Quadrangle name and number;
  - Project information (including PIN, State Project Number, project description, County name, nearest city);
  - Scale bar (quad map scale shall be set to 1:24,000); and
  - North arrow.
- Copy of signed CN1091 form (the originally signed CN1091 form shall be submitted to TDEC)
- Signed DA/TVA form or DA form (if applicable). DA/TVA form must be filled out if an Individual Section 404 Permit is required. Individual Section 404 Permit applications require the names and addresses of property owners adjacent to all permit impacts listed in an excel spreadsheet
- Signed TVA Applicant Disclosure Form (if applicable)
- Pre-filing and certification request (if applicable)
- Environmental feature impact tables based on Design-Builder's Design Documents
- TN SQT data and debit tools
- Individual permit sketches of impacts to environmental features (if applicable).
- Stream mitigation design/plan or mitigation credit ledger to account for impacts to environmental features (if applicable)
- Hydrologic Determination Field Data Sheet (if applicable)
- Ecology Field Data Sheet (if applicable)
- Habitat Assessment Field Data Sheet (if applicable)
- Wetland Determination Data Form (if applicable)
- TRAM Decision Form (if applicable)
- Quad map and photographs showing impact area and/or environmental features

- Marked-up plan sheets showing features from the EBRs (if applicable)
- A copy of all coordination correspondence between the Department and the USFWS (if applicable)
- TDEC DNA endangered species database search (if applicable)
- A copy of all coordination correspondence between the Department and the TWRA (if applicable)
- Federal Emergency Management Agency (FEMA) flood map for the subject project with construction limits labeled
- FEMA No-Rise Certification letter or Conditional Letter of Map Revision (CLOMR) (if applicable).
- A copy of approved environmental document (Environment Assessment, Finding of No Significant Impact, TEER, Categorical Exclusion, etc.) or Design-Builder prompted reevaluation (if applicable)
- A copy of the State Historic Preservation Office (SHPO) letter (architectural and archaeological)
- Mitigation plan/plans for all streams and wetlands changes proposed by the Design-Builder (if applicable)
- Half-size copy of the bridge layout(s) proposed by the Design-Builder (if applicable)
- Half-size copy of any utility layout(s) plans that impact(s) environmental features (if applicable)
- Include an excel table listing the revised utility layout(s) impacts to environmental features (if applicable).
- Half-size set of plans showing all environmental features. The plans shall be highlighted according to the following guidelines:
    - New culvert construction (extensions included) shall be highlighted in orange on the proposed layout.
    - Existing culverts shall be highlighted in blue on the present layout (blue on the proposed layout if sections are remaining).
    - Stream inlet and outlet protection measures and channel detailed dimensions shall also be labeled on the plans and recorded in the impact table.
    - Streams/springs shall be highlighted in blue on the present and proposed layout.
    - Wetlands shall be highlighted on present layout (green for permanent impacts and yellow for temporary impacts).
    - Bank stabilization, outfall structures, and sinkholes shall be highlighted in pink on proposed layout.

Any temporary construction measures, including de-watering, construction access, haul roads, EPSC measures, temporary crossings, stream diversions, etc., required for the Design-Builder's revised Design Documents shall be addressed in the water quality permit application. The Design-Builder shall clearly indicate the location of and impacts from haul roads on jurisdictional areas. The Design-Builder shall identify all proposed borrow and waste sites and provide all clearance documentation per TDOT's *Waste and Borrow Manual*. These details shall be included in the permit application data.

8.3.2.4 WATER QUALITY PERMIT TIMELINES

For all water quality permit submittals, the Design-Builder shall include standard Department Review and Comment time periods in its CPM Schedule (notably for submittal of its Permittable Plans Package, the permit application, and permit conditions). The Department will review the submittals to ensure regulatory practices have been met.

Upon submittal of the Permittable Plans Package, the Design-Builder shall account for the following sequential durations in its CPM Schedule to complete the water quality permitting process for each bridge location.

Table 13: Water Quality Permit Timelines

Activity	Estimated Timeframe	Responsible Party
Review the Permittable Plans Package	2 weeks	TDOT
Develop application	At least 1 month	Design-Builder
Department review of the application	2 weeks	TDOT
Agency Response Timelines (permit dependent)		As required to address the impacts to the environmental features by the Design-Builder's Design Documents
GARAP, USACE Non-notification	6 months	
IARAP, NW-404	9 months	
IARAP, I-404 (with simple PRM or no PRM)	12 months	
IARAP, I-404 (with PRM)	18 months	

8.3.3 Permitting for Design-Builder's Temporary Interest

The Design-Builder shall bear all cost and time for complying with and obtaining any necessary building, demolition, grading, and environmental and regulatory permits or approvals, including archaeology, ecology, historical, hazardous materials, air quality and noise, TVA 26a, TDEC, and USACE permits from federal, state and/or local agencies regarding any Design-Builder temporary interest, including material and staging areas, storage areas, excess excavated materials disposal areas, and the operation of any Project-dedicated asphalt, concrete plants, and waste or borrow sites that will be used. These areas are to be addressed in accordance with the TDOT *Waste and Borrow Manual*. Design-Builder shall submit all such permits to the Department prior to the commencement of activities in the permitted area(s).

The Department shall be included in all correspondence and/or negotiations with agencies.

The Design-Builder shall be aware that environmental permits may also be required when activities such as core sampling, seismic exploratory operations, geotechnical investigations, ROW fence replacement, utility relocations, and historic resources surveys are within Waters of the State or Waters of the U.S. These permits may also be required for placement and operations of scientific measurement devices.

8.3.4 Erosion Prevention and Sediment Control (EPSC)

The Design-Builder shall be responsible for all Erosion Prevention and Sediment Control (EPSC) designs and implementation for all bridge locations. The Design-Builder shall place all permanent stabilization at locations to prevent damage to adjacent facilities and property due to erosion on all newly graded cut and fill slopes that have permanently ceased.

- Pre-construction vegetative ground cover shall not be destroyed, removed, or disturbed (i.e., clearing and grubbing initiated) more than 14 calendar days prior to grading or earth moving activities, unless the area is mulched, seeded with mulch, or other temporary cover is applied.
- Clearing, grubbing, and other disturbances to riparian vegetation shall be limited to the minimum necessary for slope construction and equipment operations. Existing vegetation, including stream and wetland buffers (unless permitted), should be preserved to the maximum extent possible.
- Unnecessary vegetation removal is prohibited.

Design-Builder shall initiate temporary stabilization within 14 calendar days when construction activities on a portion of the site are temporarily ceased, and earth disturbing activities shall not resume until after 14 calendar days. Permanent stabilization measures in disturbed areas shall be initiated within 14 calendar days after final grading of any phase of construction.

Steep slopes shall be temporarily stabilized no later than 7 calendar days after construction activity on the slope has temporarily or permanently ceased. For this Project, steep slopes shall be defined as natural or created slopes of greater than 3H:1V, regardless of height.

Permanent stabilization shall replace temporary measures as soon as practicable. Priority shall be given to finishing operations and permanent EPSC measures over temporary EPSC measures.

The Design-Builder shall perform inspection, repair, and maintenance of EPSC structures on a regular basis and remove sediment from sediment control structures when the design capacity has been reduced by fifty percent (50%). During sediment removal, the Design-Builder shall take care to ensure that structural components of EPSC structures are not damaged and thus made ineffective. If damage does occur, the Design-Builder shall repair the structures at their own expense.

EPSC controls shall be inspected according to permit requirements to verify measures have been installed and maintained in accordance with TDOT standard drawings, specifications, and good engineering practices. EPSC inspections shall be documented on the TDOT EPSC inspection report, and Design-Builder shall provide a copy of each inspection report to the Department.

The Design-Builder shall place and treat sediment removed from sediment control structures in a manner so that the sediment is contained within the Project Limits and does not migrate onto adjacent properties or into Waters of the State/United States.

The Design-Builder shall establish and maintain a comprehensive and proactive method to inspect and prevent the off-site migration or deposit of sediment off the Project Limits (i.e., ROW, easements, etc.), into Waters of the State/United States, or onto roadways used by the general public. If sediment escapes the construction site, off-site accumulations of sediment that have not reached a stream must be removed at a frequency sufficient to minimize off-site impacts (e.g., fugitive sediment that has escaped the construction site and has collected in a street must be removed so that it is not subsequently washed into storm sewers and streams by the next rain and/or so that it does not pose a safety hazard to users of public streets). Arrangements concerning removal of sediment on adjoining property must be settled with the adjoining property owner before removal of sediment.

Upon conclusion of the inspections, the Design-Builder shall repair, replace, or modify EPSC measures found to be ineffective before the next rain event, if possible, but in no case more than 24 hours after the inspection or when the condition is identified. If the repair, replacement, or modification is not practical within the 24-hour timeframe, the Design-Builder shall provide written documentation in the field diary and EPSC inspection report. An estimated repair, replacement, or modification schedule shall be documented within 24-hours of identification. The Design-Builder shall bear all costs and time associated with modifications made to these measures, and all modifications shall be concurred with by the Department.

The Design-Builder may remove temporary EPSC measures at the beginning of the workday but must be replaced at the end of the workday or before/during a precipitation event. Delaying planting of cover vegetation until winter months or dry months shall be avoided.

The Design-Builder shall minimize offsite vehicle tracking of sediments and the generation of dust. The Design-Builder shall provide a stabilized construction access (a point of entrance/exit to the construction project) to reduce the tracking of mud and dirt onto public roads by construction vehicles.

The Design-Builder shall have a plan in place for dust control. The dust control plan shall be developed prior to the start of any construction activities and shall be submitted to the Department for Review and Approval.

The Design-Builder shall update the EPSC plans whenever EPSC inspections indicate, or where State or Federal officials determine EPSC measures are proving ineffective in eliminating or significantly minimizing pollutant sources or are otherwise not achieving the general objectives of controlling pollutants in storm water discharges associated with the construction activity.

The accepted EPSC plan shall require that EPSC measures be in place before clearing, grubbing, excavation, grading, culvert or bridge construction, cutting, filling, or any other earthwork occurs, except as such work may be necessary to install EPSC measures.

EPSC measures shall be installed and functional prior to any earth moving operations and shall be maintained throughout the construction period except as such work may be necessary to install EPSC measures.

The Design-Builder shall establish and maintain a proactive method to prevent litter and construction wastes from entering Waters of the State/United States. The Design-Builder shall remove these materials from stormwater exposure prior to anticipated storm events, before being carried offsite by wind, or as otherwise needed to prevent these materials from becoming a pollutant source for stormwater discharges. After use, the Design-Builder shall remove materials used for EPSC from the site.

8.3.5 NPDES Permit Requirements

A TDEC National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) for construction stormwater runoff is required for all bridge locations. The Design-Builder shall develop its EPSC sheets and the Storm Water Pollution Prevention Plan (SWPPP) to obtain the NPDES CGP for the Project.

The Design-Builder shall prepare a SWPPP, Documentation and Permits Binder, and a Notice of Intent (NOI) using the Department's template prior to submittal of the NPDES CGP to TDEC. A copy of the SWPPP template used by the Department to develop SWPPPs and the Documentation and Permits Binder can be obtained from the Department's Environmental Division, Ecology and Permits Office: NPDES Stormwater Permitting Program (tn.gov) The Design-Builder shall use the SWPPP template as a guide in preparation of the SWPPP, and the Design-Builder is responsible for complying with all requirements of the CGP.

The SWPPP shall include the EPSC plans for application of coverage under the CGP. The Design-Builder shall submit the SWPPP and NOI at least forty-five (45) business days prior to beginning construction activities. Once a Notice of Coverage (NOC) is received by the Design-Builder, the EPSC submitting the SWPPP for coverage under the CGP shall be submitted to both TDEC and the Department for their records.

The Design-Builder shall prepare EPSC plans detailing Best Management Practices (BMPs) to prevent erosion, control sedimentation, and prevent the discharge of any pollutants from leaving the Project Limits and Department's ROW or easements, or from entering jurisdictional features or stormwater conveyances, and be transported to receiving waters during the construction of the Project. The Design-Builder shall identify all outfall locations on the EPSC plans with an appropriate numbering or lettering system.

The Design-Builder shall revise the SWPPP and the EPSC plans as necessary based on actual construction activities throughout the duration of the Project. All SWPPP and EPSC revisions shall be documented. The Design-Builder shall certify that the individual who prepared and reviewed the EPSC plans and SWPPP is currently certified according to the CGP. The Design-Builder shall also certify that the BMPs are designed so that if properly implemented, installed, and maintained, they will manage erosion and prevent sedimentation

to Waters of the State/United States or on adjacent property owners, as well as comply with the terms of the TDEC NPDES CGP.

8.3.6 Inspections

The Design-Builder shall complete Project site inspections of the erosion control measures, disturbed areas, areas used for storage of material, construction entrance/exit, and all outfalls. Following the inspection, the Design-Builder shall prepare and maintain a report with the SWPPP. The CGP requires the inspections to be performed at least twice a week, 72 hours or more apart. The inspector must document the findings of the inspection fully in the report and provide a copy to the site operator and the Design-Builder, document that the rain gauge has been read and rainfall recorded on a daily basis or that a reference site has been used to document rainfall. The inspector shall also document that all records are being completed and maintained per the TN CGP.

The inspector shall use photo documentation to clearly convey recommendations to the site operator and the Design-Builder. All photos shall be saved to document site conditions over time to support the inspection report findings when the site is audited by TDEC or other regulators.

The Design-Builder shall maintain a rain gauge on-site that measures up to 6-inches of rainfall. The rain gauge shall be located within the Project Limits in an open area such that measurements will not be influenced by outside factors. The Design-Builder shall initiate rainfall monitoring prior to clearing, grubbing, excavation, grading, cutting or filling. The rain gauge shall be read and emptied after every rainfall event occurring on the Project site (at approximately the same time of day). The rainfall records shall be recorded and maintained with the SWPPP. Recorded data should include the date of the rain event, amount of rainfall and the approximate duration.

Inspectors performing the required twice weekly inspections must:

- Have a valid certification from the “Fundamentals of Erosion Prevention and Sediment Control Level I” course, or
- Be a Licensed professional engineer or landscape architect, or
- Have a Certified Professional in Erosion and Sediment Control (CPESC) certification, or
- Have successfully completed the “Level II Principles for Erosion Prevention and Sediment Control for Construction Sites” course.

A copy of each inspector’s certificate, license, or training record shall be kept on site.

As outlined in the NPDES CGP, the Department will perform the monthly Environmental Quality Assurance Project Compliance Assessments (QA Inspections) on this Project, which will include any Design-Builder temporary interest sites (including waste and borrow areas).

8.3.7 Noncompliance Determinations

If at any time, the Design-Builder is not in compliance with any applicable permit regulations, all noncompliance items must be addressed by the Design-Builder within 24 hours of such identification. The Department has the authority to suspend Work until such time as the deficiencies have been corrected.

The Design-Builder shall not be granted any compensation or time extension for any work suspension associated with a non-compliance determination. Any monetary fees and/or fines associated with any violations shall be the sole responsibly of the Design-Builder. In the event that a Notice of Violation (NOV) is issued by a regulatory agency, the response to the NOV shall be written by the Design-Builder and

approved by the TDOT Environmental Division – Environmental Engineering Office – Permits Unit prior to submittal to the agency.

8.3.8 Permit Register

The Design-Builder shall maintain a permit register and provide updates with every progress report. The permit register shall include an overview of all permits required of the Project. The permit register requires each permit to be indicated as follows:

- Name and address of the granting authority,
- Purpose of the permit,
- Reference to the document in which the permit conditions are defined,
- Status of permit,
- Date by which the authorization of the specific permit is anticipated,
- Permit conditions relevant for the Work,
- Date by which the permit is required (milestone),
- How the Design-Builder ensures that it will comply with the permit requirements and conditions, and
- Validity and the expiry date (if any) of the permit.

8.3.9 Permit Modification Due to Design-Builder Design Changes

If the Design-Builder's design substantially alters the Base Technical Concepts for Bridges 31 and 32 resulting in additional or altered impacts to the environmental features (e.g., significant increases or alteration of jurisdictional water resource impacts), the Design-Builder shall bear all cost and time to:

- Develop the modified permit application (and associated supporting design and documentation),
- Procure the modified water quality permit(s),
- Design and construct any required mitigation, and/or
- Acquire any mitigation credits needed to address the impacts from the Design-Builder's design.

If permit modifications are necessary for Bridges 31 and 32 (or for any other bridge location after the Design-Builder has submitted and obtained its original water quality permit), the Design-Builder shall contact the Department's Alternative Contracting Office for guidance. The Design-Builder shall follow Section 8.3.2.2 and Section 8.3.2.3 to prepare, apply, and obtain the modified water quality permits.

9 CONSTRUCTION

The Design-Builder's construction Work shall meet the requirements of the TDOT Standard Specifications, Supplemental Specifications, the relevant Special Provisions, the *Manual on Uniform Traffic Control Devices* (MUTCD), and regulations of the Tennessee Occupational Safety and Health Administration (TOSHA).

The Design-Builder shall ensure that all applicable "General and Special Notes" found in Section VI of the current edition of the State of Tennessee Department of Transportation Design Division *Roadway Design Guidelines – PDN* are adhered to during all construction Work.

9.1 Construction Services

The Design-Builder shall supervise and administer all construction Work in accordance with the Contract requirements. The Design-Builder shall perform all other construction Work required to complete the Project in conformance with all Contract requirements. Notably, the Design-Builder shall:

- Comply with all applicable laws.
- Keep the Work location and its vicinity free from accumulation of waste materials and rubbish caused by the Design-Builder's operations.
- Repair, at its expense, any area that is disturbed outside limits of the construction Work over the duration of the Project. Note: all repaired areas shall be inspected and be deemed satisfactory by the Department.
- Coordinate its Work with that of other contractors and utility owners working on or near the Project Limits. Note: The Design-Builder shall consider the schedule of other contractors when developing the CPM Schedule to maintain continuity of Work and compliance with the Contract Time.

9.2 Construction Submittals

The Design-Builder shall submit Plan revisions of approved design and field changes to the Department within two weeks after approval of each change. As required in the DB Standard Guidance, all field design changes shall be incorporated into the As-Built Plans.

9.3 Acceptance of Material

All materials used on this Project shall meet the requirements set forth in the Contract Documents, Design Documents/Plans, and specifications. Materials incorporated into the Project must have certifications, test reports, and/or acceptance testing as specified in the Department's Quality Assurance Program for the Sampling and Testing of Materials and Products (SOP 1-1) (Standard Operating Procedures). The Design-Builder shall communicate what materials will be used in the Project, along with estimated quantities, in sufficient time that adequate samples and/or acceptance testing can be performed by Department representatives. The Design-Builder shall provide the Department an estimated quantities list using the Department's pay item list for each lump sum item so that the Department may determine the number(s) and type(s) of testing required.

The Design-Builder is responsible for determining all means and methods of its construction Work for the Project. However, this does not relieve the Design-Builder of the responsibility to protect the public, environment, and private property.

9.4 Maintenance During Construction

The Design-Builder shall prepare and submit (prior to starting any construction Work) a Maintenance Plan for Department Review and Approval that meets the requirements of the TDOT Standard Specifications (including Section 104.05), the DB Standard Guidance, and this Section. The Design-Builder is responsible for the maintenance of the Project Limits in accordance with these requirements and the approved Maintenance Plan at least 90 days prior to starting the construction Work at each specific bridge location and until the Design-Builder requests and the Department accepts relief of maintenance in accordance with Section 9.4.1.

9.4.1 General Requirements

The Design-Builder shall maintain all components of the transportation system within the Project Limits, which shall include asphalt roadway, signing, and guardrail.

Department acceptance and subsequent Design-Builder relief of maintenance for each bridge location shall occur when both 1) the Bridge Opening Date has been met and 2) all Punch-List items and vegetation establishment requirements have been completed and accepted by the Department.

Upon acceptance by the Department and granting relief of maintenance for the last bridge location, the Department will issue Final Acceptance to close out the Project.

9.4.2 ROW Mowing and Litter Removal

The Design-Builder shall perform ROW mowing (two mowing cycles each year) and litter removal (as needed) in the Project Limits to provide a consistent vegetation height and a clean non-littered appearance from at least 90 days prior to starting the construction Work at each specific bridge location and until the Design-Builder requests and the Department accepts relief of maintenance in accordance with Section 9.4.1.

The Department shall direct the Design-Builder with the exact dates for the annual mowing cycles.

9.4.3 Acceptance of the Project

Upon completion and acceptance of each bridge location (as described above) and the overall Project, the Department will assume responsibility for the operation and maintenance of the Project Limits. Nothing contained herein shall otherwise limit any warranty obligations of the Design-Builder with respect to any defect or non-conforming Work.

9.4.4 Maintenance of Traffic

The road closures for structure replacements and all other related construction Work shall be in accordance with Special Provision 108B and this Section 9.

- The Design-Builder shall maintain access to all side roads, driveways, and field entrances during the construction Work. The Design-Builder shall not close any pairs of bridges that have a field entrance between the two bridge locations.
- Considering the detour information provided in the Reference Documents, the Design-Builder shall identify detours to be utilized during construction. Detours shall be approved by the Department.
- Detours shall not be used for Bridges 47 and 48.
- All detours shall use State Routes, except for Bridge 50’s closure, which has no State Route detour option. The Department and Design-Builder shall coordinate with the local agency to determine the appropriate detour route at least 60 days prior to the Design-Builder’s closure request.

- Bridges 29 and 30 shall not be closed at the same time as Bridge 41.
- Bridges 49 and 51 shall not be closed at the same time.

9.5 Construction Signage

All construction signing shall be in strict accordance with the current edition of the MUTCD.

The Design-Builder shall be responsible for maintaining the proper signing and any barricades for road closure until the respective Bridge Opening Date (as applicable).

9.6 Disposal

All disposal activities shall be in accordance with the *TDOT Waste and Borrow Manual*.

Borrow and waste disposal areas shall be located in non-wetland areas and above the 100-year FEMA floodplain. Borrow and waste disposal areas shall not affect any Waters of the State/U.S. unless these areas are specifically covered by environmental water quality and construction permits.

The Design-Builder is prohibited from removing and using any river/t rock to construct any temporary improvements or permanent Project infrastructure.

9.7 Stream Relocation

If applicable, the Design-Builder shall be responsible for performing any stream relocations required for its construction Work. If the Planned ROW Limits are not sufficient to allow for this stream relocation and the requisite vegetative buffer, then the Design-Builder shall coordinate with the TDOT Alternative Delivery Office. If needed, the Design-Builder shall perform the final design and construction of the relocated stream channel. In the event that any portion of the relocated stream does not meet performance standards, as set forth in the associated regulatory permits, then the Design-Builder shall be responsible for any required corrective action.

9.8 Department Inspections

The Department will review and monitor the Project (Quality Assurance Inspections), including all temporary interests and waste and borrow areas, to ensure compliance with all applicable environmental regulations and stormwater management activities throughout the duration of the Project.

Should the Project have repeat non-conformance reports on QA Inspections, water quality violations, or a NOV, the Department may increase the frequency of QA inspections to two per month. The extra QA inspection will occur until the Project has been brought back into compliance for two consecutive QA inspections.

The Design-Builder will bear all cost and time associated with any work related to the additional QA inspections or non-compliance determinations, including compensating the Department for the additional QA inspections. The Design-Builder shall be solely responsible for any monetary fees and/or fines associated with any violations, as assessed by the Department or the regulatory agencies.

Attachment A: Pavement Schedule

Pavement Schedule		
	Mainline & Shoulder	
	Description	Depth (in)
Pavement	ACS MIX (PG 64-22) Grading D	1.25
	Asphalt Conc Mix (PG 64-22) (BPMB-HM) GR B-M2	2
	Asphalt Conc Mix (PG 64-22) (BPMB-HM) GR A	3
Base	Mineral Aggregate, Type A	6
Subgrade		

Note:

1 - Add Tack Coat Per Standard Specification 403.05 between each pavement layer

2 - Use Prime Coat @ 0.30-0.35 gal/sy between base and pavement

Attachment B: Roadway Design Criteria

Bridge 29

GENERAL INFORMATION

Roadway Identification	SR 87 Bridge #29 over Lagoon Creek (LM 3.61) - Haywood Co.	
Roadway Limits	L.M. 3.58 TO 3.70	
Functional Classification	Rural Major Collector	
Design Speed	55 (See Notes)	
Design Year	2049	
Traffic Volume	410	
Level of Service	N/A	
Access Control	Full Access	
Design Units	English	
TYPICAL SECTION	See RD11-TS-2	
Travel Lanes		
Number of Lanes	2	
Lane Width	11	
Cross Slope	2%	
Max Superelevation	8%	
Shoulders		
Shoulder Width	4	
Cross Slope	4%	
Max Rollover	7%	
Median	N/A	
Width	N/A	
Slope	N/A	
Side Slopes		
Clear Zone Width	12'-14' Minimum	14'-18' Minimum
Slope Inside Clear Zone	6:1 or Flatter (Unprotected)	5:1 to 4:1 (Unprotected)
Slope Outside Clear Zone	2:1 Maximum	
HORIZONTAL ALIGNMENT		
Min Radius of Curve	960' for 8%	

VERTICAL ALIGNMENT	See RD11-TS-2
Max Grade	
Ascending	6% (Level)
Descending	6% (Level)
Min Curvature (K)	
Sag Vertical Curve	115
Crest Vertical Curve	114
DRAINAGE	
Calculation of Q	Rational Method for D.A. < 100 Acres TR-55 Method for D.A. 128 Acres > D.A. > 100 Acres Rural Regression for D.A. > 128 Acres
Cross Drains	
Flood Fequency	50 Year (100 Year Check)
Pipe Material	RCP
Minimum Freeboard	50 Year
Side Drains	
Flood Frequency	N/A
Pipe Material	N/A
Storm Drains	
Flood Fequency	N/A
Pipe Material	N/A
Pavement Spread	N/A
Minimum Pipe Size	18"
Minimum Cover	Not less than 12" measured from the bottom
	of the subgrade to the top of the outside face
	of the pipe.
INTERSECTIONS	
Stopping Sight Distance	495' for 55 mph
Design Vehicle	WB-67
NOTES:	Contact TDOT Hydraulics for Flow Rate for Bridge
	Design.
	Design Waiver at 45 MPH design speed allowed
	for vertical alignment only.

Bridge 30

GENERAL INFORMATION

Roadway Identification	SR 87 Bridge #30 over Branch (TMA)(LM 3.47) - Haywood Co.	
Roadway Limits	L.M. 3.39 TO 3.55	
Functional Classification	Rural Major Collector	
Design Speed	55	
Design Year	2049	
Traffic Volume	410	
Level of Service	N/A	
Access Control	Full Access	
Design Units	English	
TYPICAL SECTION	See RD11-TS-2	
Travel Lanes		
Number of Lanes	2	
Lane Width	11	
Cross Slope	2%	
Max Superelevation	8%	
Shoulders		
Shoulder Width	4	
Cross Slope	4%	
Max Rollover	7%	
Median	N/A	
Width	N/A	
Slope	N/A	
Side Slopes		
Clear Zone Width	12'-14' Minimum	14'-18' Minimum
Slope Inside Clear Zone	6:1 or Flatter (Unprotected)	5:1 to 4:1 (Unprotected)
Slope Outside Clear Zone	2:1 Maximum	
HORIZONTAL ALIGNMENT		
Min Radius of Curve	960' for 8%	

VERTICAL ALIGNMENT	See RD11-TS-2
Max Grade	
Ascending	6% (Level)
Descending	6% (Level)
Min Curvature (K)	
Sag Vertical Curve	115
Crest Vertical Curve	114
DRAINAGE	
Calculation of Q	TR-55 Method for D.A. 128 Acres > D.A. > 100 Acres Rural Regression for D.A. > 128 Acres
Cross Drains	
Flood Fequency	50 Year (100 Year Check)
Pipe Material	RCP
Minimum Freeboard	50 Year
Side Drains	
Flood Frequency	N/A
Pipe Material	N/A
Storm Drains	
Flood Fequency	N/A
Pipe Material	N/A
Pavement Spread	N/A
Minimum Pipe Size	18"
Minimum Cover	Not less than 12" measured from the bottom of the subgrade to the top of the outside face of the pipe.
INTERSECTIONS	
Stopping Sight Distance	495' for 55 mph
Design Vehicle	WB-67
NOTES:	Contact TDOT Hydraulics for Flow Rate for Bridge Design.

Bridges 31 and 32

GENERAL INFORMATION

Roadway Identification	SR 180 Bridge #31 over Overflow (LM 2.61) and Bridge #32 over Otter Creek (LM 2.74) - Haywood Co.	
Roadway Limits	L.M. 2.53 to L.M. 2.82	
Functional Classification	Rural Major Collector	
Design Speed	50	
Design Year	2049	
Traffic Volume	630	
Level of Service	N/A	
Access Control	Full Access	
Design Units	English	
TYPICAL SECTION	See RD11-TS-2	
Travel Lanes		
Number of Lanes	2	
Lane Width	11'	
Cross Slope	0.02	
Max Superelevation	0.08	
Shoulders		
Shoulder Width	4	
Cross Slope	0.04	
Max Rollover	0.07	
Median	N/A	
Width	N/A	
Slope	N/A	
Side Slopes		
Clear Zone Width	10-12' Minimum	12-14' Minimum
Slope Inside Clear Zone	6:1 or Flatter (Unprotected)	5:1 to 4:1 (Unprotected)
Slope Outside Clear Zone	2:1 Maximum	
HORIZONTAL ALIGNMENT		
Min Radius of Curve	758' for 8%	

VERTICAL ALIGNMENT	See RD11-TS-2
Max Grade	
Ascending	6% (Level)
Descending	6% (Level)
Min Curvature (K)	
Sag Vertical Curve	96
Crest Vertical Curve	84
DRAINAGE	
Calculation of Q	Rational Method for D.A. < 100 Acres TR-55 Method for 128 Acres > D.A. > 100 Acres Rural Regression for D.A. > 128 Acres
Cross Drains	
Flood Fequency	50 Year (100 Year Check)
Pipe Material	RCP
Minimum Freeboar	50 Year
Side Drains	
Flood Frequency	50 Year (100 Year Check)
Pipe Material	HDPE OR RCP
Storm Drains	
Flood Fequency	N/A
Pipe Material	N/A
Pavement Spread	N/A
Minimum Pipe Size	18"
Minimum Cover	Not less than 12" measured from the bottom
	of the subgrade to the top of the outside face
	of the pipe.
INTERSECTIONS	
Stopping Sight Distance	425' for 50 mph
Design Vehicle	WB-67
NOTES:	Contact TDOT Hydraulics for Flow Rate
	for Bridge Design

Bridge 41

GENERAL INFORMATION

Roadway Identification	SR 87 Bridge #41 over Branch (LM 2.30) - Haywood Co.	
Roadway Limits	L.M. 2.24 T0 L.M. 2.36	
Functional Classification	Rural Major Collector	
Design Speed	55	
Design Year	2049	
Traffic Volume	450	
Level of Service	N/A	
Access Control	Full Access	
Design Units	English	
TYPICAL SECTION	See RD11-TS-2	
Travel Lanes		
Number of Lanes	2	
Lane Width	11'	
Cross Slope	0.02	
Max Superelevation	0.08	
Shoulders		
Shoulder Width	4	
Cross Slope	0.04	
Max Rollover	0.07	
Median	N/A	
Width	N/A	
Slope	N/A	
Side Slopes		
Clear Zone Width	12-14' Minimum	14-18' Minimum
Slope Inside Clear Zone	6:1 or Flatter (Unprotected)	5:1 to 4:1 (Unprotected)
Slope Outside Clear Zone	2:1 Maximum	
HORIZONTAL ALIGNMENT		
Min Radius of Curve	960' for 8%	

VERTICAL ALIGNMENT	See RD11-TS-2
Max Grade	
Ascending	6% (Level)
Descending	6% (Level)
Min Curvature (K)	
Sag Vertical Curve	115
Crest Vertical Curve	114
DRAINAGE	
Calculation of Q	Rational Method for D.A. < 100 Acres TR-55 Method for 128 Acres > D.A. > 100 Acres Rural Regression for D.A. > 128 Acres
Cross Drains	
Flood Fequency	50 Year (100 Year Check)
Pipe Material	RCP
Minimum Freeboard	50 Year
Side Drains	
Flood Frequency	50 Year (100 Year Check)
Pipe Material	HDPE or RCP
Storm Drains	
Flood Fequency	N/A
Pipe Material	N/A
Pavement Spread	N/A
Minimum Pipe Size	18"
Minimum Cover	Not less than 12" measured from the bottom
	of the subgrade to the top of the outside face
	of the pipe.
INTERSECTIONS	
Stopping Sight Distance	495' for 55 mph
Design Vehicle	WB-67
NOTES:	Contact TDOT Hydraulics for Flow Rate
	for Bridge Design

Bridge 46

GENERAL INFORMATION

Roadway Identification	SR 87 Bridge #46 over Drainage Ditch (LM 20.76) - Lauderdale Co.	
Roadway Limits	L.M. 20.74 TO L.M. 20.78	
Functional Classification	Urban Major Collector	
Design Speed	30 (See Notes)	
Design Year	2049	
Traffic Volume	720	
Level of Service	N/A	
Access Control	Full Access	
Design Units	English	
TYPICAL SECTION	See RD11-TS-2	
Travel Lanes		
Number of Lanes	2	
Lane Width	11'	
Cross Slope	0.02	
Max Superelevation	0.08	
Shoulders		
Shoulder Width	4	
Cross Slope	0.04	
Max Rollover	0.07	
Sidewalks	5' South Side Only	
Median	N/A	
Width	N/A	
Slope	N/A	
Side Slopes		
Clear Zone Width	7-10' Minimum	7-10' Minimum
Slope Inside Clear Zone	6:1 or Flatter (Unprotected)	5:1 to 4:1 (Unprotected)
Slope Outside Clear Zone	2:1 Maximum	
HORIZONTAL ALIGNMENT		
Min Radius of Curve	214' for 8%	

VERTICAL ALIGNMENT	See RD11-TS-2
Max Grade	
Ascending	7% (Level)
Descending	7% (Level)
Min Curvature (K)	See Notes
Sag Vertical Curve	37 (30 MPH) 17 (20 MPH)
Crest Vertical Curve	19 (30 MPH) 7 (20 MPH)
DRAINAGE	
Calculation of Q	Rational Method for D.A. < 100 Acres TR-55 Method for 128 Acres > D.A. > 100 Acres Rural Regression for D.A. > 128 Acres
Cross Drains	
Flood Fequency	50 Year (100 Year Check)
Pipe Material	RCP
Minimum Freeboard	50 Year
Side Drains	
Flood Frequency	50 Year (100 Year Check)
Pipe Material	HDPE or RCP
Storm Drains	
Flood Fequency	10 Year (50 Year in Roadway Sag Sections)
Pipe Material	RCP
Pavement Spread	8'
Minimum Pipe Size	18"
Minimum Cover	Not less than 12" measured from the bottom
	of the subgrade to the top of the outside face
	of the pipe.
INTERSECTIONS	
Stopping Sight Distance	200'
Design Vehicle	P (Passenger Vehicle) (8'0" Vertical Clearance at Tunnel)
NOTES:	Contact TDOT Hydraulics for Flow Rate
	for Bridge Design
	Design Waiver at 20 MPH design speed allowed
	for vertical alignment only.

Bridge 47

GENERAL INFORMATION

Roadway Identification	SR 87 Bridge #47 over Branch (LM 5.18) - Lauderdale Co.	
Roadway Limits	L.M. 5.03 TO 5.33	
Functional Classification	Rural Major Collector	
Design Speed	55	
Design Year	2049	
Traffic Volume	370	
Level of Service	N/A	
Access Control	Full Access	
Design Units	English	
TYPICAL SECTION	See RD11-TS-2	
Travel Lanes		
Number of Lanes	2	
Lane Width	11	
Cross Slope	2%	
Max Superelevation	8%	
Shoulders		
Shoulder Width	2	
Cross Slope	4%	
Max Rollover	7%	
Median	N/A	
Width	N/A	
Slope	N/A	
Side Slopes		
Clear Zone Width	12'-14' Minimum	14'-18' Minimum
Slope Inside Clear Zone	6:1 or Flatter (Unprotected)	5:1 to 4:1 (Unprotected)
Slope Outside Clear Zone	2:1 Maximum	
HORIZONTAL ALIGNMENT		
Min Radius of Curve	960' for 8%	

VERTICAL ALIGNMENT	See RD11-TS-2
Max Grade	
Ascending	6% (Level)
Descending	6% (Level)
Min Curvature (K)	
Sag Vertical Curve	115
Crest Vertical Curve	114
DRAINAGE	
Calculation of Q	Rational Method for D.A. < 100 Acres TR-55 Method for D.A. 128 Acres > D.A. > 100 Acres Rural Regression for D.A. > 128 Acres
Cross Drains	
Flood Fequency	50 Year (100 Year Check)
Pipe Material	RCP
Minimum Freeboard	50 Year
Side Drains	
Flood Frequency	N/A
Pipe Material	N/A
Storm Drains	
Flood Fequency	N/A
Pipe Material	N/A
Pavement Spread	N/A
Minimum Pipe Size	18"
Minimum Cover	Not less than 12" measured from the bottom
	of the subgrade to the top of the outside face
	of the pipe.
INTERSECTIONS	
Stopping Sight Distance	495' for 55 mph
Design Vehicle	WB-67
NOTES:	Contact TDOT Hydraulics for Flow Rate for Bridge
	Design.

Bridge 48

GENERAL INFORMATION

Roadway Identification	SR 87 Bridge #48 over Branch (TMA)(LM 6.42) - Lauderdale Co.	
Roadway Limits	L.M. 6.28 TO 6.59	
Functional Classification	Rural Major Collector	
Design Speed	60	
Design Year	2049	
Traffic Volume	370	
Level of Service	N/A	
Access Control	Full Access	
Design Units	English	
TYPICAL SECTION	See RD11-TS-2	
Travel Lanes		
Number of Lanes	2	
Lane Width	11	
Cross Slope	2%	
Max Superelevation	8%	
Shoulders		
Shoulder Width	2	
Cross Slope	4%	
Max Rollover	7%	
Median	N/A	
Width	N/A	
Slope	N/A	
Side Slopes		
Clear Zone Width	12'-14' Minimum	14'-18' Minimum
Slope Inside Clear Zone	6:1 or Flatter (Unprotected)	5:1 to 4:1 (Unprotected)
Slope Outside Clear Zone	2:1 Maximum	
HORIZONTAL ALIGNMENT		
Min Radius of Curve	1200' for 8%	

VERTICAL ALIGNMENT	See RD11-TS-2
Max Grade	
Ascending	6% (Level)
Descending	6% (Level)
Min Curvature (K)	
Sag Vertical Curve	151
Crest Vertical Curve	136
DRAINAGE	
Calculation of Q	Rational Method for D.A. < 100 Acres TR-55 Method for D.A. 128 Acres > D.A. > 100 Acres Rural Regression for D.A. > 128 Acres
Cross Drains	
Flood Fequency	50 Year (100 Year Check)
Pipe Material	RCP
Minimum Freeboard	50 Year
Side Drains	
Flood Frequency	N/A
Pipe Material	N/A
Storm Drains	
Flood Fequency	N/A
Pipe Material	N/A
Pavement Spread	N/A
Minimum Pipe Size	18"
Minimum Cover	Not less than 12" measured from the bottom
	of the subgrade to the top of the outside face
	of the pipe.
INTERSECTIONS	
Stopping Sight Distance	570' for 60 mph
Design Vehicle	WB-67
NOTES:	Contact TDOT Hydraulics for Flow Rate for Bridge
	Design.

Bridge 49

GENERAL INFORMATION

Roadway Identification	SR 87 Bridge #49 over Branch (LM 11.57) - Lauderdale Co.	
Roadway Limits	L.M. 11.45 TO 11.63	
Functional Classification	Rural Major Collector	
Design Speed	60	
Design Year	2049	
Traffic Volume	860	
Level of Service	N/A	
Access Control	Full Access	
Design Units	English	
TYPICAL SECTION	See RD11-TS-2	
Travel Lanes		
Number of Lanes	2	
Lane Width	11	
Cross Slope	2%	
Max Superelevation	8%	
Shoulders		
Shoulder Width	4	
Cross Slope	4%	
Max Rollover	7%	
Median	N/A	
Width	N/A	
Slope	N/A	
Side Slopes		
Clear Zone Width	12'-14' Minimum	14'-18' Minimum
Slope Inside Clear Zone	6:1 or Flatter (Unprotected)	5:1 to 4:1 (Unprotected)
Slope Outside Clear Zone	2:1 Maximum	
HORIZONTAL ALIGNMENT		
Min Radius of Curve	1200' for 8%	

VERTICAL ALIGNMENT	See RD11-TS-2
Max Grade	
Ascending	6% (Level)
Descending	6% (Level)
Min Curvature (K)	
Sag Vertical Curve	151 (61 for 45 MPH)
Crest Vertical Curve	136 (79 for 45 MPH)
DRAINAGE	
Calculation of Q	Rational Method for D.A. < 100 Acres TR-55 Method for D.A. 128 Acres > D.A. > 100 Acres Rural Regression for D.A. > 128 Acres
Cross Drains	
Flood Fequency	50 Year (100 Year Check)
Pipe Material	RCP
Minimum Freeboard	50 Year
Side Drains	
Flood Frequency	N/A
Pipe Material	N/A
Storm Drains	
Flood Fequency	N/A
Pipe Material	N/A
Pavement Spread	N/A
Minimum Pipe Size	18"
Minimum Cover	Not less than 12" measured from the bottom
	of the subgrade to the top of the outside face
	of the pipe.
INTERSECTIONS	
Stopping Sight Distance	570' for 60 mph
Design Vehicle	WB-67
NOTES:	Contact TDOT Hydraulics for Flow Rate for Bridge
	Design.
	Design Waiver at 45 MPH design speed allowed
	for vertical alignment only.

Bridge 50

GENERAL INFORMATION

Roadway Identification	SR 87 Bridge #50 over Branch (LM 19.11) - Lauderdale Co.	
Roadway Limits	L.M. 19.11 TO 19.21	
Functional Classification	Urban Major Collector	
Design Speed	55	
Design Year	2049	
Traffic Volume	2,100	
Level of Service	N/A	
Access Control	Full Access	
Design Units	English	
TYPICAL SECTION	See RD11-TS-2	
Travel Lanes		
Number of Lanes	2	
Lane Width	11	
Cross Slope	2%	
Max Superelevation	8%	
Shoulders		
Shoulder Width	4	
Cross Slope	4%	
Max Rollover	7%	
Median	N/A	
Width	N/A	
Slope	N/A	
Side Slopes		
Clear Zone Width	12'-14' Minimum	14'-18' Minimum
Slope Inside Clear Zone	6:1 or Flatter (Unprotected)	5:1 to 4:1 (Unprotected)
Slope Outside Clear Zone	2:1 Maximum	
HORIZONTAL ALIGNMENT		
Min Radius of Curve	960' for 8%	

VERTICAL ALIGNMENT	See RD11-TS-2
Max Grade	
Ascending	6% (Level)
Descending	6% (Level)
Min Curvature (K)	
Sag Vertical Curve	115
Crest Vertical Curve	114
DRAINAGE	
Calculation of Q	Rational Method for D.A. < 100 Acres TR-55 Method for D.A. 128 Acres > D.A. > 100 Acres Rural Regression for D.A. > 128 Acres
Cross Drains	
Flood Fequency	50 Year (100 Year Check)
Pipe Material	RCP
Minimum Freeboard	50 Year
Side Drains	
Flood Frequency	N/A
Pipe Material	N/A
Storm Drains	
Flood Fequency	N/A
Pipe Material	N/A
Pavement Spread	N/A
Minimum Pipe Size	18"
Minimum Cover	Not less than 12" measured from the bottom
	of the subgrade to the top of the outside face
	of the pipe.
INTERSECTIONS	
Stopping Sight Distance	495' for 55 mph
Design Vehicle	WB-67
NOTES:	Contact TDOT Hydraulics for Flow Rate for Bridge
	Design.
	Design Exception for lane width and shoulder width

Bridge 51

GENERAL INFORMATION

Roadway Identification	SR 371 Bridge #51 over Branch (LM 1.39) - Lauderdale Co.	
Roadway Limits	L.M. 1.33 TO 1.42	
Functional Classification	Rural Major Collector	
Design Speed	55	
Design Year	2049	
Traffic Volume	1,200	
Level of Service	N/A	
Access Control	Full Access	
Design Units	English	
TYPICAL SECTION	See RD11-TS-2	
Travel Lanes		
Number of Lanes	2	
Lane Width	11	
Cross Slope	2%	
Max Superelevation	8%	
Shoulders		
Shoulder Width	4	
Cross Slope	4%	
Max Rollover	7%	
Median	N/A	
Width	N/A	
Slope	N/A	
Side Slopes		
Clear Zone Width	12'-14' Minimum	14'-18' Minimum
Slope Inside Clear Zone	6:1 or Flatter (Unprotected)	5:1 to 4:1 (Unprotected)
Slope Outside Clear Zone	2:1 Maximum	
HORIZONTAL ALIGNMENT		
Min Radius of Curve	960' for 8%	

VERTICAL ALIGNMENT	See RD11-TS-2
Max Grade	
Ascending	6% (Level)
Descending	6% (Level)
Min Curvature (K)	
Sag Vertical Curve	115 (37 for 45 MPH)
Crest Vertical Curve	114 (19 for 45 MPH)
DRAINAGE	
Calculation of Q	Rational Method for D.A. < 100 Acres TR-55 Method for D.A. 128 Acres > D.A. > 100 Acres Rural Regression for D.A. > 128 Acres
Cross Drains	
Flood Fequency	50 Year (100 Year Check)
Pipe Material	RCP
Minimum Freeboard	50 Year
Side Drains	
Flood Frequency	N/A
Pipe Material	N/A
Storm Drains	
Flood Fequency	N/A
Pipe Material	N/A
Pavement Spread	N/A
Minimum Pipe Size	18"
Minimum Cover	Not less than 12" measured from the bottom
	of the subgrade to the top of the outside face
	of the pipe.
INTERSECTIONS	
Stopping Sight Distance	495' for 55 mph
Design Vehicle	WB-67
NOTES:	Contact TDOT Hydraulics for Flow Rate for Bridge
	Design.
	Design Waiver at 30 MPH design speed allowed
	for vertical alignment only.