STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
ALTERNATIVE DELIVERY DIVISION
REGION 2
7512 Volkswagen Dr
CHATTANOOGA, TENNESSEE 37421

WILL REID
DEPUTY GOVERNOR &
COMMISSIONER OF TRANSPORTATION

BILL LEE
GOVERNOR

January 14, 2026

Re: Final RFP
Contract No. DB2503
County: Marion

To the Proposers:

This final RFP version revises the draft RFP sections as detailed below. Attached are the revised sheets.

- Revised the Book 1 (ITP) procurement schedule to accommodate the Utility Form QR process. Redlines also include minor other changes to Book 1.
- Revised Book 2 to adjust the list of special provisions and include minor changes to SP108B to respond to Proposer questions.
- Revised Book 3 to include:
  - Section 2.4.5: Clarified intent of the community meeting outreach efforts as depicted on the following revised sheets.
  - Section 3.2: Clarified pavement requirements and ROW/easement callouts.
  - Section 3.5.1 and 3.5.2: Added definition for structurally deficient. **Note:** The Department is completing initial investigations related to the sufficiency of the 8-foot by 5-foot box culvert and 60-inch pipe underneath I-24 that will be provided to the Proposers when available. This information will also define the scope of the related work for these two drainage features in a forthcoming addendum to Book 3.
  - Section 4 and Section 6: Revised language to answer Proposer questions as depicted on the following revised sheets.
  - Table 5: Added contact information for Tennessee Valley Authority and Sequatchie Valley Electric Cooperative.
  - Section 7.2 and Section 8.3.1.1: Added the word “sequential” to clarify that the noted durations are sequential from the milestones listed in the respective sections.
  - Section 9.5.4: Clarified the Shellmound Connector Road improvements.
  - Book 3 Attachments: Added the pavement design provided in the Reference Documents and revised the design criteria tables as depicted in the following revised sheets.

The Proposer must acknowledge this addendum as indicated in Section 3.2.3 of Book 1 by acknowledging the addendum on Form C. The native files for the RFP forms (including Form C) are included on the Project website.

Sincerely,

Chanel Hippix
TDOT Project Manager
Alternative Delivery – Region 2

TENNESSEE DEPARTMENT OF TRANSPORTATION

Design-Build RFP

Book 1 Instructions to Proposer (ITP)

I-24 Shellmound Bridges

Marion County, Tennessee

Project Identification Number (PIN): **130900.00 and 130902.00**

State Project Number: **58100-1186-04 and 58100-1187-04**

Contract# **DB2503**

~~**December 2025**~~**Final RFP: January 2026**

3. Establish a close working relationship between TDOT and the Design-Builder to facilitate open communication, mitigate Project risks, and drive timely decision-making.
4. Optimize design through innovation and constructability that eliminates ROW and utility impacts (specifically for any proposed Shellmound over I-24 Eastbound improvements).

1.3 Procurement Schedule/Submittal Deadlines

The following procurement schedule and submittal deadlines are set out below. TDOT will not consider any submittal received after the deadlines stated below.

Event/Submittal	Date/Time
TDOT issues RFP (Industry Review Draft)	December ~~3,~~ 2025
Mandatory Pre-Proposal Meeting	December 10, 2025 2:00 PM EST
Proposer's Deadline for submittal of initial Form QR on the RFP and request for Confidential (One-on-One) Meetings	December 19, 2025 1:00 PM EST
Confidential (One-on-One) Meetings	January 9, 2026
TDOT issues Final RFP	January 15, 2026
Proposer's deadline for submittal of Form QR regarding specific questions for utility owners[1]	January 20, 2025 1:00 PM EST
Proposer's final deadline for submittal of Form QR, requests for QPL determination, organizational or Key Personnel changes, SOQ conflicts of interests update, and/or alternate technical concepts (ATCs)	February 5, 2026 1:00 PM EST
TDOT's last response on Form QR, requests for QPL determination, organizational changes, SOQ resubmittals, and/or alternate technical concepts (ATCs) determination TDOT's issuance of last addendum	February 20, 2026
Proposer's Technical Proposal and Price Proposal Due Date	March 20, 2026 1:00 PM EST
Public Price Proposal opening	April 2026
Notice of Best Evaluated Design-Builder	April/May 2026
Anticipated award of design-build contract (or rejection of all Proposal)	April 2026
Anticipated issuance of initial notice to proceed	May 2026

[1] When submitting questions on Form QR for the utility owners, the Proposer should specify the applicable utility owner in each question so that TDOT may direct these questions appropriately.

1.4 General Design-Builder Project Obligations

If awarded and in accordance with Contract Book 3, the Design-Builder's obligations generally include the following, all of which are more specifically described in the Contract Documents.

Each ATC shall include the following information:

1. Description. Provide a detailed description and schematic drawings of the ATC configuration or other appropriate descriptive information (including, if appropriate, product details [i.e., specifications, construction tolerances, special provisions] and a traffic operational analysis, if appropriate).
2. Usage. Describe where and how the ATC is to be used on the Project.
3. Deviations. Reference all requirements of the RFP that are inconsistent with the proposed ATC, explain the nature of the deviations from said requirements, and submit a request for approval of such variance(s).
4. Analysis. Submit an analysis justifying use of the ATC and why the variance to the requirements of the RFP should be allowed.
5. Impacts. Discuss potential impacts on vehicular traffic, the environment, community, safety, Project life-cycle, design life, and future repair and maintenance.
6. History. Provide a detailed description of other projects where the ATC has been used, the success of such usage, and names and telephone numbers of project owners that can confirm such statements.
7. Risks/Opportunities. Describe any added risks or opportunities to TDOT and other entities associated with implementing the ATC.
8. Costs. Describe the ATC implementation costs to TDOT, the Proposer/Design-Builder, and other entities (right-of-way, utilities, mitigation, long term maintenance, etc.). Include an estimate of any cost savings that would accrue to TDOT or related third-party(ies) should the ATC be approved and implemented.
9. Schedule. Identify any reduction in the time to reach Substantial Completion resulting from implementing the ATC, including, as appropriate, a description of the methods and commitments to reducing time on the Project.
10. Environmental. Provide a preliminary analysis of potential impacts on environmental clearances (including impacts to any current environmental approvals, changes to an environmental permit application, and/or changes or need for additional governmental/environmental approvals) and an analysis of whether the Proposer believes a reevaluation or supplemental environmental document(s) would or would not be required and why if the ATC were to be approved and implemented.
11. Right-of-Way. Any change to the Project right-of-way is considered an ATC that requires TDOT review and approval. If the Proposer's ATC requires additional or modified right-of-way compared to the BTC, the Proposer is to submit an Initial Right-of-Way (ROW) Acquisition Exhibit containing the ROW Acquisition Sheets and ROW Acquisition Table that includes all proposed areas of right-of-way and easements and proposed Property Maps/Present Layouts that clearly depict the proposed acquisitions. The format of this submittal is to adhere to TDOT Roadway Design format.
12. Traffic modeling. If applicable, provide the Proposer's traffic modeling files and summary of the revisions made to the project's traffic model if the ATC modifies the Project's geometry, number of lanes, or other configuration element.

The Proposer shall include the ATC, if approved, in its Price Proposal if the Proposer elects to include the ATC in its Technical Proposal.

TENNESSEE DEPARTMENT OF TRANSPORTATION

Design-Build

Book 2 Contract

I-24 Shellmound Bridges

Marion County, Tennessee

DB Contract# **DB2503**

~~December 2025~~January 2026

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~~12/29/2025
Supplemental Specification to Section 200	----------	~~07/14~~12/29/2025
Supplemental Specification to Section 300	----------	08/28/2024
Supplemental Specification to Section 400	----------	12/~~26/2024~~29/2025
Supplemental Specification to Section 500	----------	12/27/2023
Supplemental Specification to Section 600	----------	~~01/08~~12/29/2025
Supplemental Specification to Section 700	----------	12/~~26/2024~~29/2025
Supplemental Specification to Section 900	----------	12/~~26/2024~~29/2025

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

Except for the Special Provisions included after 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
~~Special Provisions Relative to Protection of Railroad Property Railroad Flagging and Insurance Requirements~~	~~105C~~
~~Buy American Requirements~~	~~106A~~
Prohibition of Certain Telecommunications & Video Surveillance Services or Equipment	106B
~~Contractor Payroll Requirements in AASHTOWARE Project Civil Rights & Labor (CRL)~~	~~107CP~~
Environmental Permits	107FP
Lane Closures and Project Completion Liquidated Damages	108B
Payment Adjustment for Fuel	109A
Price Adjustment for Bituminous Material	109B
Electronic Ticket Delivery System for Aggregate	109ETAG
Electronic Ticket Delivery System for Asphalt	109ETAS
Electronic Ticket Delivery System for Concrete	109ETC
Drilled Caissons	204DC
~~Embankment (Compacted in Place)~~	~~205A~~
~~Reinforced Soil Slopes~~	~~205RSS~~

Title	SP#
Bituminous Plant Mix Rdwy Density	407DEN
Asphalt Concrete Surface (Hot Mix)	411B
~~Section 602 – Steel Structures (Inspection Cost Only)~~	~~602~~
~~3 Sided Pre-Cast Culvert & Bridge Strucs or Pre-Cast Arches~~	~~607CS~~
~~Horizontal Drain Installation~~	~~610HD~~
Retaining Walls	624
Drilled Shaft Specifications	625
Truck-Mounted and Trailer-Mounted Attenuators	712TMA
Traffic Queue Protection	712PTQ
Speed Feedback Sign Assembly	712SFS
Removal and Disposal of Litter	719A
Utility Specifications	790
Right-of-Way Mowing	806
~~Dynamic Pile Testing~~	~~930PDA~~
~~Geofoam Backfill~~	~~940~~
Equal Employment Opportunity	1230
Debarment, Suspension, etc.	1275
Labor (State Projects Only)	1280
Non-Discrimination in Employment	1290
~~Tennessee Department of Transportation Minimum Wage Scales for Federal-Aid Construction and State Funded Construction~~	~~1320~~
State Wage Rates	AA-ST RATES

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

County: Marion
Contract No. DB2503

SPECIAL PROVISION

REGARDING

LANE CLOSURE AND PROJECT COMPLETION LIQUIDATED DAMAGES

All temporary lane closures ~~and~~, road closures, or rolling road blocks on interstates, state routes, and local streets must be approved in advance by the Department (for all requests) and for Marion County (for all local road requests). Requests for temporary lane closure approvals and state trooper requests (if applicable) must be sent to the Department and Marion County at least fourteen (14) calendar days in advance. Requests for a Shellmound Road full closure and detour approvals must be sent to the Department at least ninety (90) calendar days in advance.

No lane closures will be allowed during Special Events, Holidays, or Holiday weekends in accordance with the plans and subsection 104.04 of the Standard Specifications, or as directed by the Department.

During daytime hours between 5:00 a.m. and 8:00 p.m. (central time), the Contractor shall maintain all open travel lanes on I-24 (westbound and eastbound). Lane reductions from two (2) to one (1) lane ~~will~~or a rolling road block may be permitted outside of the time specified above. During approved night-time lane closures, one travel lane must be open at all times. For each hour, or portion thereof, in which required lanes are not maintained and open to traffic as specified above, the sum of **$1,000.00** per hour per lane shall be deducted from monies due the Contractor, not as a penalty, but as liquidated damages.

Shellmound Road between Piercy Road and Hass Road can be fully closed using an approved detour during the Shellmound Bridge over I-24 eastbound construction. At no time during the construction of the Shellmound Bridge over I-24 eastbound will it be permissible to fully close Shellmound Road between State Route 2/US-41 and Hass Road, including the Shellmound Road intersection with Hass Road. One lane of Shellmound Road must be maintained at all times north of I-24 eastbound during the Shellmound Bridge over I-24 eastbound construction. Access from Shellmound Road to Hass Road shall be maintained at all times, including that any Shellmound Road closures for eastbound and westbound locations not be concurrent to allow access to Hass Road. For each hour, or portion thereof, in which required lanes are not maintained and open to traffic beyond what is approved, the sum of **$1,000.00** per hour per lane shall be deducted from monies due the Contractor, not as a penalty, but as liquidated damages.

Other local street lane closures may be permitted based on coordination with the Department and Marion County. For each hour, or portion thereof, in which the temporary lane closure is not

TENNESSEE DEPARTMENT OF TRANSPORTATION

Design-Build

Book 3 Project Specific Information

I-24 Shellmound Bridges

Marion County, Tennessee

Project Identification Number (PIN): **130900.00 and 130902.00**

State Project Number: **58100-1186-04 and 58100-1187-04**

DB Contract# **DB2503**

~~**December 2025**~~

Final RFP: January 2026

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),
- 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.

2.4.5 Project-Specific Outreach Requirements

The Design-Builder shall lead the following Project-specific outreach efforts, starting at Notice to Proceed and continuing until Substantial Completion.

- **Neighborhood Community Meeting:** The Design-Builder shall prepare for and participate in one neighborhood community meeting with adjacent residents at least 60 days prior to the closure of Shellmound Road. The intent of this meeting is for the Design-Builder to present design exhibits, area displays, and detour information to the local residents/attendees.

  To advertise for the meeting, the Design-Builder shall design a mailer to send to the impacted property owners and tenants within 0.25 mile of the Project Limits along Shellmound Road and Hass Road. After receiving comments from the Department on the content of the mailer, the Design-Builder shall send out the mailers 15 days before the meeting.

Additionally, the Design-Builder shall place ~~door hangers~~signs or message boards with the meeting and Project information in the Project area and prepare a meeting notice to be placed on the Project website. The Design-Builder shall post the meeting notices at local churches, libraries, post offices, and schools. The Design-Builder shall submit all meeting notices/announcements to the Department for review and comment prior to publication and/or distribution.

Design-Builder shall attend~~, present, and prepare minutes for the meeting that summarizes the input received and shall assist the Department in responding to comments and questions~~ and present required information at the meeting.

- **Emergency/First Responders and School District Coordination Meetings:** At least 30 days prior to starting the first activity related to the overall Project's construction Work and repeating quarterly thereafter until Substantial Completion, the Design-Builder shall lead regular coordination meetings with local emergency/first responders and the school district to present detour routes, maintenance of traffic considerations, upcoming closures, and other area traffic impacts. The Design-Builder shall coordinate an appropriate meeting date and time a minimum of 15 days prior to each meeting date.

  Design-Builder shall attend, present, and prepare minutes for each meeting that summarizes the input received and shall assist the Department in responding to comments and questions.

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.

- ~~The Design Builder shall be responsible for identifying, establishing, and securing all necessary right-of-way and temporary construction easements required to complete the work in accordance with the Contract Documents.~~
- Shoulder widths along I-24 shall be a minimum of 12 feet total, 10 feet paved (see TDOT Typical Sections Standard Drawing(s) RD18-TS-7). Any shoulder used to carry traffic during construction shall be constructed to the full depth pavement section equivalent to the adjacent proposed travel lane pavement section.

II) For **PIN 130902.00** the Design-Builder shall design and construct the Project so that the:

- Proposed horizontal and vertical alignments of Shellmound Road shall meet or exceed a 30-mph design speed for a Rural Minor Collector Roadway and rolling terrain for a 2-lane facility.
- Traffic lanes along Shellmound Road shall be a minimum of 11 feet wide (see TDOT Typical Sections Standard Drawing(s) RD18-TS-3A).
- The minimum clear zone along Shellmound Road shall be 14 to 16 feet for cut slopes and 14 to 16 feet for fill slopes at 6:1 slope. Any slopes steeper than 6:1 shall meet the clear zone criteria listed in TDOT Standard Drawing S-CZ-1.
- All driveway and intersection connections to Shellmound Road shall meet minimum intersection sight distance requirements.
- ~~The ROW and easement lines shall be set as depicted in the Base Technical Concept.~~
- Shoulder widths along Shellmound Road shall be a minimum of 6 feet total, 4 feet paved.

Any interstate work within the respective Project Limits shall adhere to criteria listed in Section I above.

The Design-Builder shall be responsible for preparation of final signed and sealed construction plans 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 Waivers and Exceptions

No design waivers or exceptions will be allowed without the Department’s approval.

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

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 construction.

The Design-Builder shall propose linings for any ~~existing~~structurally deficient corrugated metal cross drains that are to remain or be extended.

The Design-Builder shall submit a Drainage Report with the associated Design Document submittal to present all drainage calculations in support of the proposed design for the Department's Review and Comment. The Drainage Report shall include:

- Flow rate calculations
- Culvert analysis (include HY-8 report if applicable)
- Riprap analysis or energy dissipator design
- Ditch capacity analysis
- Ditch liner analysis

3.5.2 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. For any existing drainage structures that the Design-Builder proposes to keep in service, the Design-Builder must confirm that the existing drainage structure meets hydraulic design requirements and that it is in good condition (as verified by camera inspection) and founded on solid bedding. The Department's concurrence must be obtained to keep in service any existing drainage structure.

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. Survey data shall be collected for all upstream/downstream/adjacent properties that are impacted, such as road crossing information, structure damage elevations, and channel cross sections (at a minimum), and shall be used in support of hydraulic calculations for the offsite drainage systems. Engineering analyses and certifications shall be provided to the Department and the local jurisdiction for Review and Approval prior to performing the alteration.

The Design-Builder shall identify existing drainage areas and calculate the estimated runoff to the highway drainage system. If documentation is not available for certain components of the existing drainage system within the Project Limits and these components are planned to remain in place, the Design-Builder shall investigate and provide record of these components to determine condition, size, material, location, and other pertinent information.

The Design-Builder shall video inspect and verify that existing drainage systems to remain are clean, operable, and structurally adequate. Any repairs, replacements, debris removal, and/or deficiencies shall be corrected by the Design-Builder. The most current information available to the Department for the existing drainage systems for the Project include survey information provided in the Reference Documents. (Note: The Design-Builder shall verify all existing survey information provided by the Department.)

Drainage pipes meeting any of the following conditions shall **not** be considered structurally adequate and shall require replacement as part of the construction Work:

- **Concrete pipe:** Transverse cracks that are open greater than 1/8" with efflorescence and/or rust staining; spalling at numerous locations; extensive cracking; full or partial pipe collapse, or joints with more than a 1" gap between them.
- **Corrugated metal pipe:** Extensive heavy rust; deep pitting throughout the invert; distorted pipe with span dimensions up to 15% greater than design; full or partially collapsed pipe.
- **Plastic pipe:** Wall crushing; pipe deflection more than 15% from original shape, splitting of the pipe.

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.

The Design-Builder shall replace damaged, destroyed, missing, or permanently attached castings on existing drainage structures. This shall include any structure located within the proposed roadway that is not already being modified or addressed within the proposed drainage Work or a structure which is within the resurfacing limits, which is not being affected by any proposed drainage Work.

3.6 Pavement Markings

The Design-Builder shall prepare pavement marking Plans as part of its Design Documents for Department Review and Comment. All pavement markings shall comply with TDOT standards and following requirements. In cases where TDOT standards do not address a specific condition, the Design Builder shall ensure compliance with the latest edition of the MUTCD. TDOT standards shall take precedence over MUTCD requirements whenever applicable.

- The design and installation of permanent pavement markings shall be done in 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.

3.7 Signing

The Design-Builder shall replace all existing permanent signage within both Project Limits. The Design-Builder shall prepare signage Plans prior to ordering and installing all signs. All permanent signing plans, signing layouts, sign schedules, and miscellaneous detail sheets shall be reviewed by the Department prior to ordering and construction/installation.

4.2 Design Requirements

The new bridges shall be designed and detailed 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.

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

The bridge rails shall conform to TDOT Standard Drawing STD-1-1SS and shall include the Tri-Star emblem as shown on the TDOT Standard Drawing STD-8-6.

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 shall be in accordance with the details shown on TDOT Standard Drawing STD-1-2SS.

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 Specifications. 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. Drill shaft rock socket depths shall be two times the diameter of the shaft.

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.

When piers and bents require more than one column, the columns shall be symmetrically spaced.

4.3 Project Photography and Videography

The Design-Builder shall provide and use high-resolution equipment resulting in still photos and a time-lapse video of the bridge construction Work from start to finish.

1. ~~The location of~~ The camera placement locations must be approved by ~~TDOT and must have clear~~ the Department for each of the proposed bridges. Clear lines of sight ~~lines~~ for full visibility of the bridge~~.~~ shall be provided at each of the respective bridge locations. The Design-Builder shall submit a camera placement plan ~~of the~~for each Project site with notation of the vantage point(s) marked for location and direction along with the elevation.
2. The Design-Builder shall provide the Department unlimited access to and ability to download from an online photo album, including still photos and high-quality time-lapse videos, in order to view what is happening at any time during the construction Work, as well as to review what has already happened. The Design-Builder shall submit for approval the proposed frequency for taking the images. Still photos shall include the date and time within the file name. Time-lapse videos shall include the date range within the file name.
3. All images and time-lapse footage shall be the property of the Department.

4. All original digital still images shall be provided without alteration, manipulation, editing, watermarks, or modifications using image-editing software.
5. At the conclusion of the construction Work, the Design-Builder shall submit a professionally produced high-definition time-lapse movie of the Project. Editing shall include image stabilization, color correction, removal of inclement weather footage, and removal of images outside the desired daily time range as directed by the Department.
6. Final video should be a minimum resolution of 4K (3840 x 2160 pixels) with minimal compression at 30 frames per second. Photos should be a minimum resolution of 20MP (5472 x 3648 pixels) with minimal compression.

The Design-Builder shall also provide monthly drone footage with a minimum resolution of 4k (3840 x 2160 pixels).

4.4 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~~. There are no identified asbestos containing materials in the structures.

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. The Design-Builder is prohibited from using blasting to demolish any section of the existing structure. The existing piers shall be removed to at least 2 feet below the natural ground level.

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.

4.5 Retaining Walls

If the Design-Builder utilizes retaining walls, each wall shall be built in accordance with TDOT Standard Drawings and TDOT Special Provision 624 (Retaining Walls). Retaining walls shall receive a Class 2 finish and shall be texture coated Mountain Gray unless another color is specified.

6 RIGHT-OF-WAY (ROW)

Table 3 lists the preliminary (for information only) tracts and acquisition areas for the noted bridges based on the Base Technical Concept.

Table 3: ROW Acquisition Table

PIN	TRACT NO.	PROPERTY OWNER	BASE TECHNICAL CONCEPT EASEMENTS TO BE AQUIRED (SQ. FT.)
130900.00	3	Gregory S. Taylor and Wife, Danita L. Taylor	5,854 (Temporary Construction Easement)
130900.00	6	Aaron A. Acomb and Wife, Kathy R. Acomb	2,597 (Temporary Construction Easement)
130902.00	9	Charles E. Crabtree and Wife Rita G. Crabtree	1,048 (Permanent Drainage Easement)
130902.00	9	Charles E. Crabtree and Wife Rita G. Crabtree	1,080 (Temporary Construction Easement)

No changes to access control are proposed in the Base Technical Concept. Access fence (right-of-way [ROW] fence) shall be removed and replaced as shown in the Base Technical Concept~~.~~ and as necessary to accommodate the Design-Builder's Design Documents and construction Work. Access fence installation shall follow the latest TDOT guidelines, standards, standard drawings, and specifications.

6.1 Design-Builder 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's Design Documents shall determine the ultimate extent of any temporary or permanent ROW needs for both bridge locations within the Project Limits, and the Design-Builder shall be responsible for all time and cost necessary to acquire said ROW based on the Design-Builder's Design Documents (and not the Department's Base Technical Concept).

Through this process, the Design-Builder shall act as an agent on behalf of the Department and perform 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 the Department in preparing the Preliminary Group Inspection (PGI) Report
- Completing necessary ROW survey and 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)

7 UTILITIES

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.

Through the early utility notification process and the Department's initial survey efforts, the Department has identified the following utilities within the Project Limits as listed in Table 5.

Table 5: Utility Impact Table

PIN	Utility Owner	Utility Type	Utility Contact
130900.00	Town of Jasper	Water and Sewer	Mayor Jason Turner (423) 942-3180 jasonturner@jasper-tn.com
	Charter	Communications	Morgan Wilcher (931) 239-9222 Morgan.Wilcher@charter.com
	AT&T	Communications	Joe Perrel (423) 488-2825 jp1389@att.com
		Fiber Optics	Ms. Trina Ivey (678) 641-5522 ki2863@att.com
	Century Link/Lumen	Fiber Optics	Jeffrey Cannon (615-) 263-1128 relocations@lumen.com
	Tennessee Valley Authority	Electric	Mr. Stephen Williams (862) 255-6272 sewilliams@tva.gov
	~~TBD~~ Sequatchie Valley Electric Cooperative	Electric	~~TBD~~Mr. Lucas Marsh (423) 837-8605 (423) 837-5026 lmarsh@svalleyec.com
130902.00	Charter	Communications	Morgan Wilcher (931) 239-9222 Morgan.Wilcher@charter.com
	AT&T	Communications	Joe Perrel (423) 488-2825 jp1389@att.com
		Fiber Optics	Ms. Trina Ivey (678) 641-5522 ki2863@att.com
	Century Link/Lumen	Fiber Optics	Jeffrey Cannon (615-) 263-1128 relocations@lumen.com
	Tennessee Valley Authority	Electric	Mr. Stephen Williams (862) 255-6272 sewilliams@tva.gov
	~~TBD~~ Sequatchie Valley Electric Cooperative	Electric	~~TBD~~Mr. Lucas Marsh (423) 837-8605 (423) 837-5026 lmarsh@svalleyec.com

7.1 Design-Builder 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

- 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 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 6: 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 7.1.1)
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 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

- 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)
- 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 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, required for the Design-Builder's 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 the *TDOT Waste and Borrow Manual*. These details shall be included in the permit application data.

8.3.1.4 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).

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.

- The remaining portion of Shellmound Road over I-24 eastbound to north of Piercy Road may be closed for single phase bridge construction. If a full closure is proposed, the Design-Builder shall provide an adequate detour as approved by the Department. The Reference Documents include a currently approved detour route that the Design-Builder may use upon request for this closure.

9.5.3 Temporary Markings and Signage

Temporary markings and raised pavement markings in both Projects Limits and along any approved detour route shall adhere to the TDOT standards as the primary governing criteria. In cases where TDOT standards, supplemental specifications, or special provisions are silent on specific issues, the Project shall default to compliance with the Manual on Uniform Traffic Control Devices (MUTCD).

All temporary signage shall be in accordance with TDOT Standard Specifications for Road and Bridge Construction, TDOT Standard Drawings, TDOT Standard Traffic Operations Drawings, TDOT Traffic Design Manual, TDOT Design Guidelines, TDOT Work Zone Safety and Mobility Manual, and the latest edition of the Manual of Uniform Traffic Control Devices.

Changeable Message Signs shall be used in advance of changed roadway conditions such as lane closures, road closures, lane shifts, or detour routes. The locations of these Changeable Message signs shall be reviewed by the Department prior to implementation. Portable changeable message signs should be used as a supplement to and not as a substitute for conventional signs and pavement markings. Portable changeable message sign trailers should be delineated on a permanent basis by affixing retroreflective material, known as conspicuity material, in a continuous line on the face of the trailer as seen by oncoming road users.

9.5.4 Detour and Construction Pavement and Signage

Access to all side roads, business entrances, and driveways shall be maintained during the construction Work unless specified elsewhere in the Contract Documents.

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

Per Special Provision 108B, upon the Notice to Proceed for construction Work, the Design-Builder shall be responsible for maintaining the proper signing and barricades of the road closure until Substantial Completion and acceptance by the Department.

Specific to the Shellmound Connector Road and prior to implementing any related detour, the Design-Builder shall:

- Provide 1.5-inches of 411 D pavement overlay along the Connector Road. The Design-Builder shall submit an asphalt mix design to be reviewed and approved by the Department prior to paving activities on the Connector Road.
- Improve the intersections of Shellmound Road / Connector Road and the TVA Road / Connector Road to current signing and striping standards, which shall remain-in-place in the permanent condition.

9.5.5 Construction Work Zone

Traffic control devices shall not be displayed or erected unless related conditions are present necessitating warning.

9.5.6 Pavement Edge Drop-Off Traffic Control

Attachment A

Pavement Design for I-24

	Mainline		
	Item #	Description	Depth (in)
Pavement	411-03.10	ACS MIX(PG 76-22)Grading D	1.25
	307-03.08	Asphalt Conc Mix(PG 76-22)(BPMB-HM) GR B-M2	2.5
	307-03.01	Asphalt Conc Mix(PG 76-22)(BPMB-HM) GR A	6
	307-01.22	Asphalt Conc Mix(PG 76-22)(BPMB-HM) GR A-S	3
Base	303-01	Mineral Aggregate, Type A	12
Subgrade	0		

	Shoulder		
	Item #	Description	Depth (in)
Pavement	411-01.07	ACS MIX(PG 64-22)Grading E	1.25
	307-01.08	Asphalt Conc Mix(PG 64-22)(BPMB-HM) GR B-M2	2.5
Base	303-01	Mineral Aggregate, Type A	21
Subgrade	0		

Note:

1 Add Tack Coat Per Standard Specification 403.05 between each pavement layer
2 Use Prime Coat @ 0.35 Gal/SY between base and pavement
3 Do not apply Tack Coat above A-S layer
4 Subsurface drainage: aggregate underdrain w/pipe
5 For Super-elevated section, Replace the "A-S mix" with "A mix" on the higher side, while widening. For new construction, use both "A-S" & "A" mix whether it's in super-elevation or not
6 Use 411-03.10 ACS MIX (PG76-22) GRADING D at bridge approaches/departures for a minimum of 100 feet when the bridge is not being overlaid with OGFC.

Pavement Design ~~forthcoming.~~ for Shellmound Road

Low Volume Pavement Design

411-01.07	**D mix**	**1.25 inches**
307-01.08	**B-M2**	**2 inches**
307-01.01	**A**	**3 inches**
303-01	**Aggregate Base**	**8 inches**

Note: Tack Coat should be included on asphalt surfaces.

Note: If the mineral aggregate is to be covered with asphalt in the same construction season, no prime coat is required. If the mineral aggregate will be wintered without asphalt, use a Tack coat to seal the mineral aggregate surface. In general, Prime Coat Materials is uneconomical for local projects and the same material specified for tack coat is sufficient for the need on these routes.

Attachment B

Roadway Design Criteria

I-24 Westbound Overpass at Shellmound Road (PIN 130900.00)

GENERAL INFORMATION	
Roadway Identification	I-24 (Westbound)
Functional Classification	Rural Interstate
Design Vehicle	WB-67
Design Speed	70 MPH
Design Year	2046
Traffic Volume	32880
Level of Service	N/A
Access Control	Full Access Control
Design Units	English
TYPICAL SECTION	See RD18-TS-7
Travel Lanes	
Number of Lanes	2
Lane Width	12 ft
Cross Slope	2% and 2.5%
Max Superelevation	8%
Shoulders	
Shoulder Width	10 ft (Paved) - 12 ft (Total)
Cross Slope	4%
Max Rollover	7%
Median	
Width	N/A
Slope	N/A
Side Slopes	
Clear Zone Width	30 – 34 ft (6:1)
Slope Inside Clear Zone	
Slope Outside Clear Zone	
HORIZONTAL ALIGNMENT	
Min Radius of Curve	1,810 ft

VERTICAL ALIGNMENT	See RD18-TS-7
Max Grade	
Ascending	4% (Rolling at 70 MPH)
Descending	4% (Rolling at 70 MPH)
Min Curvature (K)	
Sag Vertical Curve	181
Crest Vertical Curve	247
DRAINAGE	
Calculation of Q	Rational Method < 100 Acres TR-55 Method 100 Acres < D.A. < 128 Acres Rural Regression > 128 Acres Hydrologic Area 1
Cross Drains	
Flood Frequency	50 Year (100 Year Check)
Pipe Material	RCP
Minimum Freeboard	1 ft
Side Drains	
Flood Frequency	N/A
Pipe Material	N/A
Storm Drains	
Flood Frequency	N/A
Pipe Material	N/A
Pavement Spread	N/A
Minimum Pipe Size	18 in
Minimum Cover	12 in (Measured from the bottom of the subgrade to the top of the outside face of the pipe.)
INTERSECTIONS	
Stopping Sight Distance	730’ for 70 mph
Design Vehicle	WB-67

Roadway Design Criteria

Shellmound Road at I-24 Eastbound (PIN 130902.00)

GENERAL INFORMATION			
Roadway Identification	Shellmound Road		
Functional Classification	Rural Minor Collector		
Design Vehicle	WB-67		
Design Speed	30 MPH		
Design Year	2046		
Traffic Volume	1,930 ADT (2046)		
Access Control	Partial Access Control		
Design Units	English		
TYPICAL SECTION	See RD18-TS-3A		
Travel Lanes*			
Number of Lanes	2 (One Direction)		
Lane Width	11 ft		
Cross Slope	2% (Normal Crown)		
Max Superelevation	8%		
Shoulders*			
Shoulder Width	4 ft (Paved) - 6 ft (Total)		
Cross Slope	4%		
Max Rollover	7%		
Median			
Width	N/A		
Slope	N/A		
Side Slopes*	Varies (2:1 to 6:1)		
Clear Zone Width**	12-14 ft (6:1)	14-16 ft (4:1)	
Slope Inside Clear Zone	N/A	N/A	
Slope Outside Clear Zone	N/A		

VERTICAL ALIGNMENT	See RD18-TS-3A
Max Grade*	
Ascending	9% (Rolling at 30 mph)
Descending	9% (Rolling at 30 mph)
Min Curvature (K)*	
Sag Vertical Curve	37
Crest Vertical Curve	19
DRAINAGE	
Calculation of Q	Rational Method < 100 Acres TR-55 Method 100 Acres < D.A. < 128 Acres Rural Regression > 128 Acres Hydrologic Area 1
Cross Drains	
Flood Frequency	50 Year (100 Year Check)
Pipe Material	RCP
Minimum Freeboard	1 ft
Side Drains	
Flood Frequency	N/A
Pipe Material	N/A
Storm Drains	
Flood Frequency	N/A
Pipe Material	N/A
Pavement Spread	N/A
Minimum Pipe Size	18 in
Minimum Cover	12 in (Measured from the bottom of the subgrade to the top of the outside face of the pipe)
INTERSECTIONS	
Stopping Sight Distance	200 ft for 30 mph
Design Vehicle	WB-62

Footnotes:
* Per Rural Local Road Design Standards for Collectors, 2-Lane Roads and Streets Standard Drawing RD18-TS-3A
** Per Clear Zone Criteria, Standard Drawing S-CZ-1

Roadway Design Criteria

I-24 EB Underpass at Shellmound Road (PIN 130902.00)

GENERAL INFORMATION	
Roadway Identification	I-24 (Eastbound)
Functional Classification	Rural Interstate
Design Vehicle	WB-67
Design Speed	70 MPH
Design Year	2046
Traffic Volume	Not Available
Access Control	Full Access Control
Design Units	English
TYPICAL SECTION	See RD18-TS-7
Travel Lanes*	
Number of Lanes	2 (One Direction)
Lane Width	12 ft
Cross Slope	2%
Max Superelevation	8%
Shoulders*	
Shoulder Width (Inside)	10 ft (Paved) - 12 ft (Graded)
Shoulder Width (Outside)	10 ft (Paved) - 12 ft (Graded)
Cross Slope	4%
Max Rollover	7%
Median	
Width	N/A
Slope	N/A
Side Slopes*	
Clear Zone Width**	30-34 ft (6:1)
Slope Inside Clear Zone	N/A N/A
Slope Outside Clear Zone	N/A

VERTICAL ALIGNMENT	See RD18-TS-7
Max Grade*	
Ascending	4% (Rolling Terrain at 70 mph)
Descending	4% (Rolling Terrain at 70 mph)
Min Curvature (K)*	
Sag Vertical Curve	181
Crest Vertical Curve	247
DRAINAGE	
Calculation of Q	Rational Method < 100 Acres TR-55 Method 100 Acres < D.A. < 128 Acres Rural Regression > 128 Acres Hydrologic Area 1
Cross Drains	
Flood Frequency	50 Year (100 Year Check)
Pipe Material	RCP
Minimum Freeboard	1 ft
Side Drains	
Flood Frequency	N/A
Pipe Material	N/A
Storm Drains	
Flood Frequency	N/A
Pipe Material	N/A
Pavement Spread	N/A
Minimum Pipe Size	18 in
Minimum Cover	12 in (Measured from the bottom of the subgrade to the top of the outside face of the pipe)
INTERSECTIONS	
Stopping Sight Distance	730 ft for 70 mph
Design Vehicle	WB-67

Footnotes:
* Per Typical Details for Inside Lane Widening of Freeways, Standard Drawing RD18-TS-7C – or –
* Per Freeways with Depressed Median (4-6 Lane), Standard Drawing RD18-TS-7
*While RD18-TS-7B is for independent roadways, all references are made for arterial roads – freeways are not mentioned.
** Per Clear Zone Criteria, Standard Drawing S-CZ-1