- The Design Builder shall be solely responsible for and obtain any necessary environmental permits or approvals from state and/or local agencies regarding the operation of any project-dedicated asphalt and/or concrete plants.
- Borrow and waste disposal areas shall be located in non-wetland areas and above the 100-year, Federal Emergency Management Agency floodplain. Borrow and waste disposal areas shall not affect any Waters of the State/U.S. unless these areas are specifically covered by an ARAP, 404, or NPDES permit, obtained solely by the Design Builder.

c. The assigned DBE goal for this Project is:

- The assigned DBE goal for this Project is **8%**.

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

d. Assigned On-the-Job/Apprenticeship Training

- ~~Not~~ required on this project.

e. The liquidated damage for non compliance ~~(including lane closures outside specified timeframes)~~ is **$12,376 per Calendar Day***. This is also the Time Value used for calculation of selection and for failure to complete the work on time. It shall be calculated as follows:

   If the Project is NOT completed in time "B", then the following amount will be deducted from the monies due the Design Builder as:

   (Actual Time Charged – B) x **$12,376/Calendar Day***

   * Calendar Day amounts are applicable when the Contract Time is expressed on the Calendar Day or fixed date basis.

   Any liquidated damages shall be addressed, not as a penalty, and computed as they occur with a separate item number subtracting from monies due the Design Builder.

f. All work shall be completed in accordance with the most current version of the Tennessee Department of Transportation Standard Specifications for Road and Bridge Construction, unless specifically stated herein.

g. The Department will be responsible for Construction Engineering Inspection (CEI) work.

h. A rideablility Special Provision (SP411B) will be included in this Project.

i. Bituminous Material, Portland Cement and Fuel Price Adjustments shall **be** available on this Project. Once the Contract is executed items for Bituminous Material and Fuel Price Adjustments will be added. The adjustments will be made on the Progress Payments approved by the Department.

acquisitions are unavoidable, the Design Builder will be responsible for all ROW activities including but not limited to appraisals, appraisal reviews, and acquisitions.

The Design Builder shall be responsible for all utility coordination and utility relocations.

The Design Builder shall ensure that minimum clearing and grubbing is performed beyond the toe of slopes, preserving as much vegetation as possible.

The Design Builder will be responsible for the replacement of all control access fence within the project limits. The new control access fence shall be 6' chain link fence. The following special note shall be added to the plans and adhered to during construction: "Removal of existing fence shall be performed by hand or suitable means to avoid damage to adjacent vegetation. Vegetation shall be removed only if it is entangled in the fence itself. Removal of all fence shall be as directed by the engineer and all costs for removal are to be included in the price bid for new fence."

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

The Design Builder shall install ITS conduit and pull boxes along both sides of the roadway. ITS conduit is to be located outside of the cut and fill slope lines and close to the ROW line when possible. Conduit should also be located so that it will not conflict with or be damaged by other roadway items such as drainage structures, foundations, signing, lighting, guardrail, retaining walls, and landscaping. ITS conduit shall be Flexible Conduit (Bank Type 4) and shall meet the attached specifications for ITS Conduit. ITS conduit will be required to be bored under active roadways and ramps. ITS conduit shall be marked with cable markers. Pull boxes shall be located at a maximum spacing of 500 feet. The Design-Builder shall design and install the foundation for a future Dynamic Message sign in the proposed median barrier. The foundation for the future DMS sign will be at L.M. 4.65. The foundation shall be designed to accommodate a dynamic message sign in each direction and be capable of supporting a structure spanning both directions of traffic and providing a minimum of 6 feet clearance between the back or the guardrail on the outside shoulders and the sign support. The Design –Builder shall submit designs to the TDOT Design Division and TDOT Structures Division for approval prior to beginning construction. Upon project completion, the Design-Builder shall provide the TDOT Design Division with a survey using Tennessee State Plane Coordinates of the location of the completed foundations along with as-built plans and design calculations. Information is to be supplied in hard copy and MicroStation files using TDOT CADD standards.

Work shall be coordinated and approved by the TDOT Design Division (ITS, Signal, and Standards Office) prior to any construction taking place. Upon project completion, the Design Builder shall provide the TDOT Design Division with a survey using Tennessee

State Plane Coordinates showing the as built location of all ITS related items. Information is to be supplied in both hard copy and Microstation files using TDOT CADD standards.

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 contract requirements.

The Design Builder shall design and construct two Emergency Pull Off Areas in each direction of travel. Specific guidance and details for design and construction of the Emergency Pull Off Areas is referenced in Appendix C. Locations of the Emergency Pull Off Areas are to be ultimately approved by the Department.

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

The Design Builder shall be responsible for all open channels and storm drainage design and construction. The design of drainage facilities shall be compatible with existing or proposed drainage systems on adjacent properties, and shall preserve existing drainage patterns wherever possible. If existing drainage patters must be changed due to design of the Project, the Design Builder shall design and construct a solution that does not adversely impact property owners outside the ROW.

Roadway component geometric configurations shall be designed to provide adequate drainage and minimize hydroplaning. Cross slopes shall be in accordance with the requirements of the roadway section. The required Crown Point location occurs between the first inside two lanes, with the inside lane and shoulder draining towards the median barrier and the outer lanes and should draining to the outside. An example typical section of a recent project on the website.

Hydraulic design data shall be listed on the Readiness-for-Construction Design plans for each culvert.

The Design Builder shall cold plane and pave in the direction of traffic. The Pavement Design Report for this Project has been developed by the Department and is located as an Appendix A in this **Contract Book 3 (Project Specific Information)**.

- An aggregate or filter cloth underdrain with pipe throughout the project limits will be required, as there is a drainage layer within the pavement.
- Laterals for the underdrain will also be required.
- The Design Builder shall be responsible for the design of all temporary pavements and the evaluation of existing shoulders and roadways regarding their suitability for carrying traffic during construction, if necessary. If required, the Design

g. Use HL-93 live loading in the design.
h. The bridge design shall include 35 psf for future wearing surface.
i. The bridge parapet rail and median barrier must be specified according to current TDOT standards. They shall have a single-sloped face.
j. The Design-Builder shall perform a hydraulic analysis to determine the need for deck drains and/or end of bridge drains to handle the surface water on the bridge deck.
~~k. The Design-Builder shall provide a mechanically grooved finish to the bridge deck.~~
l. An applied texture finish is required on the parapet rail, cantilever slab and exterior beam. The side of the parapet facing traffic shall receive a white finish (Fed. Spec. No. 37886). All other locations are to be mountain grey (Fed. Spec. No. 36440). The exposed portions of the substructure including the wingwalls, endwalls, abutment beams, pier columns and pier caps are to be finished in mountain grey.
m. The bridge construction shall be phased such that two 12'traffic lanes are open at all times in each direction and shall correspond with the roadway phasing.
n. The existing dual bridge plans shall be reviewed and considered during the design of the new single structure.

The Design Builder shall be responsible for all culverts and culvert extensions.

a. The Design Builder shall adhere to all permit, FEMA, and hydraulic design criteria when designing culverts and culvert extensions. Design Builder shall use Drainage Manual found on TDOT Design Division website, and Design procedures for Hydraulic Structures 2004 found on TDOT Structure Division website. Design Builder shall use FHWA scour publication HEC-18, and shall use bridge deck drain design procedures contained in FHWA publication HEC-21 or HEC-22
b. The Design Builder shall analyze existing culverts, boxes and cross pipes, impacted or affected by the project's design.
c. The Design Builder shall replace or supplement any pipes or culverts that are deemed hydraulically deficient as a result of this project and replace any structurally deficient pipes or culverts within the project limits.

The Design Builder shall be responsible for wall envelopes, design, and construction of all retaining walls, slope momentum. If retaining walls are used, the retaining walls shall be designed according to TDOT's Earth Retaining Structures Manual and TDOT Standard Specifications for Road and Bridge Construction (2006 Edition) and Supplemental Specifications.

The Design-Builder shall be responsible for the design and construction of a noise wall on I-40 west-bound east of SR-171 (Mt. Juliet Road).

a. The noise wall shall be located at/near the edge of shoulder.

b. The top of noise wall elevation shall be 10 feet above finished grade of the outside lane.

c. The noise wall shall begin on the exit ramp at log mile 3.21 and extend a distance of 2600' to log mile 3.70.

d. The noise wall shall be designed using the AASHTO Guide Specifications for Structural Design of Sound Barriers, 1989 edition (with 1992 and 2002 interims).

e. The noise wall shall be constructed using concrete posts and concrete panels.

f. The concrete used in the posts and panels must have a compressive strength of at least 3000 psi.

g. The posts shall be centered between the panels. The post spacing shall not exceed 20 feet.

h. The panels shall be 2', 3' or 4' in height. The panels may be tapered. The horizontal joints between the panels shall align with adjacent panel sections.

i. The posts and panels shall be flush at the top. The top of wall elevation shall vary by no more than 2 feet.

j. The posts and panels shall be texture-coated mountain grey (Fed. Spec. No. 36440).

k. The noise wall panels shall have an ashlar stone pattern using a formliner on both sides. The pattern shall be approved by TDOT before fabrication may begin. The top panel in each section shall have a 12 inch smooth concrete band at the top of the panel.

l. The noise wall does not need to be absorptive.

m. The noise wall design shall address any conflicts with utilities and/or drainage structures.

The Design-Builder shall be responsible for the design and construction of all remaining structures necessary to complete the project.

The Design-Builder shall be responsible for the removal and disposal of all deficient structures, or portions thereof.

There are three existing bridges crossing Interstate 40 along the project limits. A minimum vertical clearance of at least 16'-0" over the roadway shall be provided ~~during and~~ after construction. It will be acceptable to maintain its existing vertical clearance during construction.

The Design-Builder shall be responsible for Bridge Repair of the spalls on the substructure of the existing bridges over Wilson creek. The Design-Builder shall contact TDOT Structures Division concerning all needed repairs to the existing bridges or any other structures.

1. The Design Builder shall remove the existing wearing surface.
2. The Design Builder shall be sounded the existing bridge to determine the areas of full and partial depth deck repairs. (Existing bridges already has a concrete overlay). Bridge deck survey referenced on Index C.

APPENDIX C

REFERENCE INFORMATION

- Technical Report http://www.tdot.state.tn.us/construction/DB1101_details.htm
- As Built Plans http://www.tdot.state.tn.us/construction/DB1101_details.htm
- I-40 DB Mapping http://www.tdot.state.tn.us/construction/DB1101_details.htm
- Existing Structure details over Wilson Creek http://www.tdot.state.tn.us/construction/DB1101_details.htm
- Environmental Document D-list C.E. http://www.tdot.state.tn.us/construction/DB1101_details.htm
- DB Geotechnical documents http://www.tdot.state.tn.us/construction/DB1101_details.htm
- NEPA Ecology Report http://www.tdot.state.tn.us/construction/DB1101_details.htm
- Emergency Pull over Area Detail http://www.tdot.state.tn.us/construction/DB1101_details.htm
- Latest Inspection Reports of the I-40 crossing of Wilson Creek http://www.tdot.state.tn.us/construction/DB1101_details.htm
- Spall Repair Details http://www.tdot.state.tn.us/construction/DB1101_details.htm
- Permit Forms Examples http://www.tdot.state.tn.us/construction/DB1101_details.htm
- Signing Details http://www.tdot.state.tn.us/construction/DB1101_details.htm
- ITS conduit plans example http://www.tdot.state.tn.us/construction/DB1101_details.htm
- DMS detail http://www.tdot.state.tn.us/construction/DB1101_details.htm
- Typical Sections example http://www.tdot.state.tn.us/construction/DB1101_details.htm
- Green Sheet http://www.tdot.state.tn.us/construction/DB1101_details.htm