DESIGN-BUILD STANDARD GUIDANCE

TENNESSEE DEPARTMENT OF TRANSPORTATION

Revised April 28, 2022

DEFINITIONS

Except for titles, headings, proper names, and the beginnings of sentences, capitalized words indicate that they have been given a defined meaning below or in the text accompanying the term.

- "**Accept" or "Acceptance"** is the Department's written statement indicating that the subject work appears to comply with all **Design-Build Contract** requirements and authorizing the Design-Builder to proceed at its risk with **Design-Build Contract** performance, using or incorporating the work into the Project. Such Acceptance shall not constitute affirmation that the subject work complies with all **Design-Build Contract** requirements. Further, Acceptance will only be granted for those submittals, activities, and work specifically identified as "for Acceptance" in the **Design-Build Contract**. With regard to Final Acceptance, see definition.
- **"Addendum"** is a written interpretation or modification of the **Design-Build Contract** delivered to prospective bidders before the opening of bids.
- **"Adjusted Low Bid"** means a form of best value selection in which qualitative aspects are scored on a 0 to 100 scale expressed as a decimal; price is then divided by the qualitative score or calculated by a modified version of this formula as stated within the RFP to yield an "adjusted bid." Award is made to the Design-Builder with the lowest adjusted bid.
- **"Advertisement"** is the public advertisement inviting Statement of Qualification for the design and/or construction of specific projects in response to a Request for Qualifications.
- **"Alternate Technical Concepts"** are alternative concepts to the Base Technical Concept that promote innovation and are equal or better in quality or effect as determined by the Department in its sole discretion and which have successfully been used elsewhere under comparable circumstances.
- **"Approval"** is a written statement from the Department that the submission was satisfactory.
- **"As-Built Plans"** are plans reflecting the construction work as actually performed under the **Design-Build Contract**.
- **"Authorities"** are regulatory agencies; courts; and federal, state, and local political subdivisions with jurisdiction over the activity, the entity, the workers, the work, the Project, a particular work location or materials development source, or the Project Site.
- **"Award"** is written notification to the Design-Builder that the Design-Builder has been awarded a **Design-Build Contract**.
- **"Baseline CPM Schedule"** is a CPM Schedule to define and sequence activities to accurately describe the Project and to meet **Design-Build Contract** requirements; the scope of work; phasing; accommodations for traffic; and interim, milestone, and project completion dates.
- **"Base Technical Concept"** is the project information provided in the RFP upon which Design-Builders will develop their Technical and Price Proposals. Such project information may include without limitation roadway alignment, preliminary designs, interchange configurations, and other conditions as well as Design Documents either: (a) included in the **Design-Build Contract** as of the Effective Date or (b) developed during the term of the **Design-Build Contract**, that meet or exceed minimum **Design-Build Contract** requirements, as determined by the Department in its sole discretion, and otherwise comply with all **Design-Build Contract** terms.

- **"Best and Final Offer"** is a change to a Design-Builder's Technical and/or Price Proposal made at the request of, or as allowed by, the Department within a Best and Final Offer RFP after the solicitation closing date when all Price Proposals exceed an acceptable range of the Department's estimate.
- **"Best and Final Offer RFP"** is a revised RFP issued to all eligible Design-Builders that may make minor changes to the scope and/or contract requirements to allow Design-Builders to revise their Technical and/or Price Proposals.
- **"Best Value Selection"** means any selection process in which proposals contain both price and qualitative components, and award is based on a combination of price and qualitative considerations.
- **"Bridge"** is a structure erected over a stream, watercourse, highway, railroad, or opening for carrying pedestrian and/or vehicle traffic having a length, measured along the centerline of the roadway, of more than 20 feet (6.1 meters) between the faces of end supports.
- **"Business Day"** is any Calendar Day, beginning and ending at midnight, between Monday and Friday, inclusive, excluding State-recognized holidays.
- **"Calendar Day"** is every day shown on the calendar beginning and ending at midnight.
- **"Change Order"** is a written order issued by the Department to the Design-Builder modifying work required by the **Design-Build Contract**, and, if applicable, establishing the basis of payment or a change in schedule for the modified work.
- **"Changed Work"** is work included in a Pay Item and within the scope of the Project that is different from that reflected in the **Design-Build Contract** as stated within the **Design-Build Standard Guidance**.
- **"Close Conformance"** is where the Design-Builder complies with Working tolerances given in the Department's Standard Specifications. Where working tolerances are not given, Close Conformance means compliance, in the Department's judgment, with reasonable and customary manufacturing and construction tolerances.
- **"Compensatory Mitigation"** is the restoration, enhancement, or preservation of a natural resource for the purpose of compensating for unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization have been achieved. Mitigation is required for all stream relocations, encapsulations and wetland impacts which do not meet requirements for General Aquatic Resource Alterations Permits (TDEC), or for certain Nationwide Section 404 permits (USACE). Mitigation could include on-site replacement, off-site replacement, contributing funds to a wetland bank or site and contributing funds to the Tennessee Wildlife Resource Foundation (TWRF) Tennessee Stream Mitigation Program (TSMP) In-Lieu Fee Program.
- **"Construction Easement"** is a right owned by the Department in a parcel of land owned by a third party outside the highway right-of-way for the purpose of containing construction that exceeds the right-of-way.
- **"Context Sensitive and Sustainable Solutions"** are solutions that (a) reflect social values (community values; cultural, aesthetic, and historic resources; and diversity); (b) maintain safety and mobility; and (c) support economic prosperity. "Sustainable solutions" are those that achieve responsible stewardship of the natural environment and optimize long-term performance.
- **"Contract"** is the written agreement between the Department and the Design-Builder, including all Contract Documents, describing the work to be completed and defining the

rights and obligations of the Department and the Design-Builder. Also see "**Design-Build Contract**".

- **"Contract Amount**" is the total amount to be paid for the work performed under the **Design-Build Contract**, as it may be adjusted from time to time accounting for Extra work, additional work (required by the Department), or deductive Change Orders. "**Contract Amount"** does not include:
  - adjustments made pursuant to these provisions to account for price fluctuations in designated commodities;
  - amounts that may be paid in incentive awards pursuant to the **Design-Build Contract**;
  - amounts deducted from progress payments as Liquidated Damages;
  - amounts authorized under the terms of the **Design-Build Contract** to be deducted from Progress Payments as reimbursement for the Department payments made on behalf of the Design-Builder or to meet Design-Builder obligations;
  - amounts deducted from Progress Payments pursuant to court order or other legal mandate; or
  - other amounts authorized under terms of the **Design-Build Contract** to be deducted from Progress Payments**.**
- **"Contract Completion Date"** is the date identified in the **Design-Build Contract**, by which all work under the **Design-Build Contract**, with the exception of plant establishment, must be completed.
- **"Contract Documents"** are the documents identified as the **Design-Build Contract** as well as all documents incorporated therein by reference during the term of the **Design-Build Contract**.
- **"Contract Specifications"** are Specifications from which the Design-Builder is authorized to assemble the Design-Builder Specifications, which include (a) the Department specifications, (b) DB Standard Guidance, and (c) such additional Specification, if any, developed by the Design-Builder and authorized for use pursuant to Change Order.
- **"Contract Time"** is the amount of time allowed under the **Design-Build Contract** to complete all work, except for plant establishment and Punch-List Items, by the Contract Completion Date specified in the **Design-Build Contract**, Multiple Interim Completion Dates within the Contract Time may be stipulated in the **Design-Build Contract**.
- **"Critical Path Method (CPM) Schedule"** is a process for defining the time-frame required in relationship (logic ties) between critical and non-critical activities associated with construction projects and their completion dates.
- **"Critical Path"** is the time-scaled, cost-loaded Critical Path network, updated from time to time in accordance with Design-Build Contract requirements and depicting (a) Pay Items and subordinated activities and their respective prices (distributed over time); (b) durations, sequences, and interrelationships that represent Design-Builder's work plans; (c) Design-Builder's work structure for designing, constructing, and completing the Project; and (d) the Contract Amount, distributed over the term of the **Design-Build Contract**.
- **"Cross-Section"** is the exact image formed by a plane cutting through an object, usually at right angles to a central axis, to determine area.
- **"Deficiency"** is a material failure of a Proposal to meet the Department requirements, or a combination of significant weaknesses in a Proposal that increases the risk of unsuccessful **Design-Build Contract** performance to a level unacceptable to the Department.
- **"Definitive Design"** is Base Technical Concepts developed by the Design-Builder to such

a degree of completion as will enable the Department to make a meaningful evaluation, and which, upon the Department Acceptance, will form the contractual basis upon which the Plans and Design-Builder Specification must be developed.

- **"Definitive Design Review"** is the process whereby the Department: (a) evaluates the Design-Builder's proposed Definitive Design; (b) collaborates with the Design-Builder in developing and incorporating any modifications they may agree upon; and (c) formally Accepts the resulting Definitive Design.
- **"Design-Build"** means a project delivery method that combines all or some portions of the design and construction phases of a project – including without limitation design, right-of-way acquisition, regulatory permit approvals, utility relocation, and construction – into a single contract.
- **"Design-Build Contract"** means the agreement that provides for the design and construction of a project – which without limitation may include design, rights-of-way acquisition, regulatory permit approvals, utility relocation, and construction – into a single contract. Also see "Contract".
- **"Design-Build Project Estimate"** is the Department's Project cost estimate prepared from Project-specific features, components and issues; this estimate is based upon historical Department cost data, trends, and market forecasting.
- **"Design-Build Review Committee"** means the committee designated by the Department to review and evaluate Statements of Qualifications and/or Technical and Price Proposals for the purpose of selecting a Design-Builder for a **Design-Build Contract**.
- **"Design-Builder"** means any entity or joint venture contractually responsible for delivering the project design and construction, or, as the context may require, any entity or joint venture that responds to a Department solicitation for a **Design-Build Contract**. The Design-Build Team is the Design-Builder and all subcontractors.
- **"Design-Builder Specification"** are specifications implementing the Plans, and otherwise complying with all **Design-Build Contract** requirements, that the Design-Builder assembles from (a) the Department Standard Specifications and the Department Special Provisions (modified by the Design-Builder as necessary to conform to **Design-Build Contract** terminology and requirements); and (b) additional Specifications, if any, developed by the Design-Builder and authorized for use pursuant to Change Order.
- **"Design Documents"** are the Base Technical Concepts, Definitive Design, Interim Design, Readiness-for-Construction Plans, the Design-Builder Specifications, As-Built Plans, Working Plans, Shop Drawings, and all other design documents, if any, referenced in the **Design-Build Contract** or required to construct the Project, and all required Quality Management documentation.
- **"Drainage Easement"** is a right owned by the Department in a parcel of land owned by a third party outside the highway right-of-way to construct and maintain ditches, channels, or structures for directing the course and flow of water outside the highway right-of-way.
- **"Earned Value"** is the value of the work completed to date. Planned Value depicts the revenue to be earned in each month, while Earned Value depicts the revenue actually earned in the month.
- **"Easement"** is a property right to use or control real property of another.
- **"Engineer of Record (EOR)"** means a professional engineer who seals drawings, reports, or documents for a project.

- **"Environmental commitments"** are statements included on the green sheets of NEPA documentation and/or appear in the commitments section within PPRM and on the commitment sheet in the roadway plans that outline obligations made to various stakeholders that are legally binding unless/until completed or officially vacated.
- **"Environmental Boundaries"** are the limits of an environmental study area (ETSA) within a specified distance from the proposed centerline as shown on the plans, within which studies have, or will, identify environmental resources and determine environmental impacts (i.e. streams, wetlands, sinkholes, etc.).
- **"Environmental Boundary Studies"** are studies within a specified distance from the proposed centerline to identify natural resources along the proposed alternative alignments conducted by degreed biologists using resources including literature and database surveys as well as on-foot reconnaissance with particular attention to locating streams, wetlands, and specialized habitats such as glades, caves, springs, and sinkholes which could harbor protected species or influence water quality.
- **"Environmental Compliance Plan"** is the Design-Builder's Plan to achieve 100 percent compliance with environmental commitments, environmental permits, programmatic agreements, orders, opinions, clearances and authorizations, and protection of the environment.
- **"Ephemeral Stream"** is a stream that has flowing water only during and for a short duration after precipitation events in a typical year. Ephemeral streambeds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.
- **"Equipment"** is all machinery, tools, manufactured products, and fabricated items either needed to perform the **Design-Build Contract** or specified for incorporation into the Project.
- **"Establishment Period"** is the time specified to assure satisfactory establishment and growth of planted materials.
- **"Extra Work"** is an item of work not provided for in the **Design-Build Contract** as awarded but found essential to the satisfactory completion of the **Design-Build Contract** within its intended scope.
- **"Final Acceptance"** is written confirmation by the Department that the Project has been completed in accordance with **Design-Build Contract** requirements, with the exception of warranty obligations, if any, and has been accepted.
- **"Final Inspection"** is the inspection conducted by the Department to determine that the Project has been completed in accordance with **Design-Build Contract** requirements.
- **"Fixed Price/Best Design"** means a variation of Design-Build utilizing a best value selection process in which contract price is established by the Department and stated in the Request for Proposals document. Design solutions and other qualitative factors are evaluated and rated. Award is made to the Design-Builder offering the best qualitative proposal for the established price.
- **"Force Account Work"** is a method of payment for items of Extra work ordered by the Department to be paid according to the DB Standard Guidance.
- **"Highway"** is every road, street, thoroughfare and place, including Bridges, viaducts and other Structures within the boundaries of the State, open, used, or intended for use by

vehicular traffic.

- **"Incidental"** is a term identifying those acts, services, transactions, property, or items for which the Department will make no separate or additional payment to the Design-Builder under the **Design-Build Contract**.
- **"Initial Project Schedule (IPS)"** is a partially developed CPM including a detailed plan for all work contemplated for the first one hundred and twenty (120) Calendar Days after the Initial NTP is issued and including all other work thereafter in sufficient detail to identify the Critical Path and milestones.
- **"Inspect"** or **"Inspection"** is a visual examination and evaluation by the Design-Builder of construction, manufacturing, design, safety, and maintenance practices, processes, and products, including document control and review, to ensure that such practices, processes, and products comply with all **Design-Build Contract** requirements. The Department, or a representative for the Department, shall conduct inspections to evaluate whether such practices, processes, and products appear to comply with **Design-Build Contract** requirements. However, the Department's inspections shall not relieve the Design-Builder of its sole responsibility to perform the **Design-Build Contract** according to its terms.
- **"Interim Completion Date(s)"** is the date(s) established in the **Design-Build Contract** as the deadline by which certain specified components of the construction work must be completed, with the exception of plant establishment. There may be one or more Interim Completion Dates established for a Project. Any applicable Liquidated Damages will be identified in the **Design-Build Contract**.
- **"Interim Design Review"** is the design development occurring after Definitive Design Acceptance and prior to Readiness-For-Construction (RFC) plan submittal to remedy conflicts, account for exceptions, and incorporate betterments.
- **"Intermittent Stream"** is a stream that has flowing water during certain times of the year, when ground water provides water for stream flow during a typical year. During dry periods, intermittent streams may not have flowing water. Runoff from precipitation is a supplemental source of water for stream flow.
- **"Key Personnel"** are persons and entities specifically identified in the **Design-Build Contract**.
- **"Laws or Legal Requirements"** are statutes, regulations, rules, ordinances, codes, permits, opinions, orders, judgments, and decrees issued by Authorities. In each case, unless otherwise expressly stated in the **Design-Build Contract**, the law is to be understood to be the current version in effect at the time the event governed by the law takes place. This applies regardless of whether a specific law has been cited, included, summarized, or paraphrased in the **Design-Build Contract**.
- **"Listing of Milestones"** is the listing describing the Milestones and stipulating dates by which Milestones are to be achieved in order to maintain periodic payments in accordance with the **Design-Build Contract**.
- **"Liquidated Damages"** are a specific sum of money stipulated by the contracting parties as the appropriate amount of actual damages to be recovered for each day of delay in delivery or completion of the Project. Liquidated Damages may also be stipulated by the contracting parties for failure to comply with other **Design-Build Contract** requirements, including but not limited to Traffic Control, Maintenance, Environmental and Material Specifications.

- **"Lowest Price-Technically Acceptable"** means a type of modified Design-Build selection process in which the Department identifies evaluation factors that establish the minimum requirements of acceptability. Proposals are evaluated for acceptability but not ranked using non-cost/price factors. The award will be made on the basis of the lowest evaluated price of proposals meeting or exceeding the acceptability standards for non-cost/price factors. Evaluated prices may include provisions such as cost-plus-time bidding, lane rental or other cost-based provisions.
- **"Major Participants"** are (1) all general partners or joint venture members of the Design-Builder; (2) all individuals, persons, proprietorships, partnerships, limited liability partnerships, corporations, professional corporations, limited liability companies, business associations, or other legal entity, however organized, holding (directly or indirectly) a 20% or greater interest in the Design-Builder; and (3) the lead engineering/design firm(s).
- **"Milestone"** is a defined step, identified on the Schedule of Milestones, toward the completion of work.
- **"Modified Design-Build"** means a variation of Design-Build in which the Department furnishes Design-Builders with partially complete plans. The Design-Builder's role is generally limited to the completion of the design and construction of the project.
- **"Monthly Progress Payment"** is the detailed Pay Item Totals breakdown of the work included in a monthly report, that serves as the basis for measuring the time of work performed as estimated in the CPM Schedule, and which must be approved by the Department as a condition of payment.
- **"Notice to Proceed"** is written notice authorizing the Design-Builder to begin performance of the work on a portion of the Project.
- **"On-Site Work"** is any work taking place at a work location, including designated staging areas adjacent to the work location.
- **"Organizational Conflict of Interest"** means that because of other activities or relationships with other persons, a person is unable or potentially unable to render impartial assistance or advice to the owner or the person's objectivity in performing the contract work is or might be otherwise impaired, or a person has an unfair competitive advantage.
- "**Performance and Payment Bond"** is the approved security furnished by the Design-Builder's surety as a guaranty of the Design-Builder's performance of the **Design-Build Contract** and of its obligation to pay promptly in full all sums due for materials, equipment, and labor furnished to complete the work.
- **"Perennial Stream"** is a stream that has flowing water year-round during a typical hydrologic year. The water table is located above the streambed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from precipitation is a supplemental source of water for stream flow. Perennial streams support aquatic organisms year round.
- **"Plans"** are drawings prepared by or for the Design-Builder and stamped and signed by the Responsible Engineer, that show work location, type, dimensions, and details of construction work to be performed under the **Design-Build Contract**, as well as the Department-prepared Standard Drawings and other details produced by the Department if used in, or referenced in, the Design-Builder's drawings.
- **"Preliminary Design"** defines the general project location and design concepts. It includes, but is not limited to, preliminary engineering and other activities and analyses, such as

environmental reviews, environmental boundaries studies, topographic surveys, metes and bounds surveys, geotechnical investigations, hydrologic analysis, hydraulic analysis, utility engineering, traffic studies, financial plans, revenue estimates, hazardous materials assessments (including pyritic materials), general estimates of the types and quantities of materials, and other work needed to establish parameters for the final design.

- **"Prequalification"** means the Department's process for determining whether a Design-Builder, or any member thereof, is fundamentally qualified to compete for a particular project or class of projects.
- **"Pay Items"** are component tasks for which the Design-Builder has assigned Pay Item Totals.
- **"Pay Item Totals"** are values assigned by the Design-Builder to individual Pay Items and task components of individual Pay Items for purposes of calculating the value of work performed, that must be detailed in the Monthly Progress Report to support payment, as set out in the Schedule of Items.
- **"Planned Value"** is the approved value of the work to be completed over the **Design-Build Contract** Time as assigned to an activity.
- **"Price Proposal"** means the price submitted by a Design-Builder to provide the required design and construction services.
- **"Price Reasonableness"** means the determination that the price of the work for any project or series of projects is not excessive and is a fair and reasonable price for the services to be performed.
- **"Programmatic Plans"** are the Design-Builder's Safety Plan, Public Involvement Plan, Quality Management Plan, and all other plans identified in the **Design-Build Contract** that describe programs or processes to be followed in performing the **Design-Build Contract**, other than construction drawings, means or methods.
- **"Project"** is the specific improvement, together with all appurtenances to be constructed, and all processes required to complete the improvement, under the **Design-Build Contract**.
- **"Project Records"** are all information in any way relating to the Project or performance of the **Design-Build Contract** whether any of such records are paper-based, in the form of electronic data or in electronic/digital format, capable of being reduced to paper-based or electronic/digital format, in audio format, or constitute visual reproductions such as photos or videotape, in any way relating to the Project, including but not limited to all: financial and accounting records and information; correspondence, internal communications, communications with the Department and Authorities, notices, orders, permits, opinions, field notes, file notes, and diary entries; survey drawings, reports, maps, original computations and other data; and materials testing records, materials certifications; work product; and all other documents and information generated by or for, or received by, the Design-Builder in performance of the **Design-Build Contract**.
- **"Project Site"** is the physical location within the confines of which construction and related activities are to be performed, including authorized State-controlled contiguous storage and staging areas.
- **"Proposal"** is the offer of a Design-Builder to perform the work and is the combination of the Technical and Price Proposals.
- **"Proposal Guarantee"** is a Proposal bond in the form of cashier's check issued by an insured institution or certified check submitted with a Proposal to assure that the Design-

Builder will enter into the **Design-Build Contract** if the Proposal is accepted.

- **"Punch-List"** is a listing of instructions for correction of unsatisfactory work, in whole or in part, after an inspection by the Department prior to final acceptance.
- **"Quality Assurance"** are the activities performed by the Department which assures all materials, on projects in which Federal monies are used, conform to the requirements of the approved plans and specifications.
- **"Quality Control"** are the activities performed by the Design-Builder to ensure that the product delivered complies with the specifications.
- **"Quality Management"** is the activities performed by the Design-Builder to ensure that the work meets all **Design-Build Contract** requirements, including documentation of all Quality Program activities. For design Quality Management, this includes, but is not limited to: (a) procedures for evaluating, establishing, monitoring, and maintaining design quality; (b) Design Reviews, and (c) design checks, evaluations, and review of Design Documents for constructability, conformance to applicable design professional standards of practice, and compliance with the law, regulations, applicable standards, and other **Design-Build Contract** requirements. For construction workmanship and materials Quality Management, this includes, but is not limited to: (a) procedures for materials handling and for evaluating, establishing, monitoring, and maintaining construction quality; (b) inspection of source development and aggregate production plants, fabrication and production of manufactured products, and materials certification; (c) inspection, sampling and testing of materials and manufactured products; (d) calibration and maintenance of equipment; (e) production process control; and (f) monitoring of environmental compliance. Quality Management also includes preparation of all Quality Management documentation required under the terms of the **Design-Build Contract**.
- **"Quality Management Plan"** is the Design-Builder's Programmatic Plan for (a) implementing the overall Quality Program and associated Quality Management activities, (b) meeting or exceeding the **Design-Build Contract's** quality requirements, and (c) coordinating Design-Builder's Quality Management activities with those of the Department.
- **"Quality Program"** is the Design-Builder's overall quality program and associated activities, including Quality Management, the **Design-Build Contract's** quality requirements, and the Quality Management Plan.
- **"Quality Proposal"** is the document submitted in response to the "Quality Proposal Submittal Information and Instructions", as well as the Proposal Revision submitted in response to a request for Best and Final Offers (BAFOs).
- **"Quality Team"** is the Design-Builder Project Quality Manager, Design Quality Manager, Construction Quality Manager, and all personnel designated by the Design-Builder to perform Quality Management functions under the direction of the Project Quality Manager.
- **"Readiness-for-Construction Plans"** are the Plans submitted at RFC Design Review that must be accepted by the Department prior to the Design-Builder's commencing any of the construction work represented therein.
- **"Readiness-for-Construction Specifications"** are the Design-Builder Specifications that describe the construction work represented in the RFC Plans (collectively, the "Readiness-for-Construction Plans and Specification").
- **"Reevaluation"** is a review pursuant to 23 CFR 771.129 of a previously approved NEPA

document to determine if the decision made in that document remains valid or if supplemental and/or larger documentation and studies are needed.

- **"Reference Documents"** are documents provided by the Department for informational purposes only.
- **"Regulated Work Area"** is the portion of each work location that is regulated by the Tennessee Department of Environment and Conservation (TDEC), the U.S, Army Corps of Engineers (USACE) and/or the Tennessee Valley Authority (TVA). All issue permits have restrictions that apply to work within the Regulated work Area. Other authorizations, including the Biological Opinion or Letter of Concurrence from the Tennessee Wildlife Resources Agency (TWRA) and/or the United States Fish and Wildlife Service (USFWS), may also contain work restrictions relative to the area. Unless otherwise noted in the issued permits or authorizations, the entire area within the Regulated work Area is regulated by permit authorized work and the special/general conditions of the permit.
- **"Request for Information (RFI)"** is a question or collection of questions seeking information or clarification transmitted between any of the three major parties (owner, designer, or builder).
- **"Request for Proposals"** means the document issued by the Department in a single-phase process or the second phase of a two-phase selection process that describes the procurement process, forms the basis for the final proposals, and may potentially become an element of the **Design-Build Contract**.
- **"Request for Qualifications"** means the document issued by the Department in the first phase of a two-phase selection process that describes the project in enough detail to let potential Design-Builders determine if they wish to compete and forms the basis for identifying (i.e., short listing) the most qualified Design-Builders.
- **"Responsible Engineer"** is the Tennessee-registered professional engineer, usually affiliated with the Design-Builder, who must sign and seal the Design Documents for which the Responsible Engineer is in "responsible charge" of the design.
- **"Review and Approval"** is the Department's reviews based solely on information provided by the Design-Builder and the Department's written response resulting from the Department Approval.
- **"Review and Comment"** is the Department's reviews, observations, and/or inspections based solely on information provided by the Design-Builder and the Department's written response. Review and Comment does not constitute Acceptance or Approval, and shall not be construed to waive or excuse **Design-Build Contract** obligations or relieve the Design-Builder of any aspect of its obligation to perform the **Design-Build Contract** according to its terms.
- **"Right-of-Way"** is a general term denoting land, property, or interest therein acquired for or devoted to a highway and its appurtenant structures.
- **"Safety Plan"** is the Programmatic Plan that sets out the Design-Builder's means of complying with its obligations in relation to Project safety.
- **"Schedule of Items"** is the list of Pay Items, their units of measurement, and prices.
- **"Scope of Work"** is the work to be performed to design and construct the Project, as described in the **Design-Build Contract**.
- **"Short Listing"** or **"Short Listed"** means the narrowing of the field of potential Design-Builders through the selection of the most qualified Design-Builders who have responded

to an RFQ.

- **"Single-Phase Selection Process"** means a procurement process where Price and/or Technical Proposals are submitted in response to an RFP without a RFQ or Short Listing.
- **"Sinkhole"** is a naturally occurring depression in a karst area characterized by inward drainage (inlets) accepting runoff from the surrounding area and having no visible surface outlet.
- **"Special Provisions"** are provisions inserted into a **Design-Build Contract** revising the Standard Specifications or Supplemental Specifications and covering conditions peculiar to the individual Project.
- **"Stakeholders"** for the Project may include the following: (a) the State, primarily represented by the Department, including its subsidiary agencies and departments; (b) FHWA, for federal-aid projects; (c) other states and/or multi-state Authorities directly affected by or cooperating with the development of the Project; (d) federal and State regulatory and permitting agencies having jurisdiction over portions of the work or Project Site; (e) Native American Tribes and tribal members of Tennessee affected by the Project; (f) counties, cities, towns, and villages within the State directly affected by the Project; (g) other public or private entities impacted or potentially impacted by the Project, such as political subdivisions, Utility owners, transit systems, and railroads; and (h) other entities specifically identified by the Department.
- **"Standard Drawings"** are the current version of the Department-prepared detailed drawings for work or methods of construction that normally do not change from project to project.
- **"Standard Specifications"** means the current version of the Department's Standard Specifications for Road and Bridge Construction.
- **"State"** is the State of Tennessee.
- **"Statement of Qualifications"** is the document(s) submitted by a Design-Builder in response to an RFQ that describes the qualifications and capability of the Design-Builder to perform the scope of services to be included in the **Design-Build Contract**.
- **"Stipend"** means a monetary amount paid to unsuccessful Design-Builders, at the discretion of the Department stated within the RFP, who have submitted responsive proposals in response to an RFP.
- **"Structures"** are Bridges, retaining walls, endwalls, cribbing, buildings, culverts, manholes, catch basins, drop inlets, sewers, service pipes, underdrains, foundation drains, pedestrian bridges, high mast luminaries, overhead sign support structures, and other similar features encountered at a work location or specified in the work to be performed, as well as all components and systems incorporated into a Structure.
- **"Subcontractor"** is any entity with whom the Design-Builder contracts to perform a portion of the work, with the exception of suppliers, vendors, and delivery/transport services. Subcontractor also refers to any Subconsultant.
- **"Substantial Completion"** means all work items (except for Punch-List items and vegetation establishment) has been completed.
- **"Supplemental Specifications"** means the current supplements to the Department's Standard Specifications for Road and Bridge Construction.
- **"Technical Proposal"** means that portion of a Design-Build proposal which contains

design solutions and other qualitative factors that are provided in response to an RFP.

- **"TDOT or the Department"** is the state of Tennessee, acting by and through the Tennessee Department of Transportation.
- **"TDOT PM"** is the SINGLE POINT OF CONTACT for the Department after **Design-Build Contract** award. The responsibilities of the TDOT PM include, but are not limited to, contract administration, general supervision of all inspection personnel, interdivisional coordination, dispute resolution, submittal management, etc.
- "**Temporary Right of Entry"** is temporary legal authority to enter onto private property for a purpose specified in the permit.
- **"Transportation Management Plan"** is the tool used to itemize and describe mitigation strategies for every work zone having the Department oversight and is used to plan transportation management strategies meeting both the Department's goals and the requirements of the federal Work Zone Safety and Mobility Rule.
- **"Two-Phase Selection Process"** means a procurement process in which the first phase consists of Short Listing based on statements of qualifications submitted in response to an RFQ and the second phase consists of the submission of Price and Technical Proposals in response to a RFP.
- **"Uniform Act"** is the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (84 Stat. 1894; 42 USC 4601 et seq., Pub. L 91-646) and amendments thereto, including the Uniform Relocation Act Amendments of 1987, Title IV of the Surface Transportation and Uniform Relocation Assistance Act of 1987 (1987 Amendments), Pub. L. 100-17, 101 Stat. 246-256.
- **"Warranty Bond"** is the approved security furnished by the Design-Builder's surety as a guaranty of the Design-Builder's performance of its warranty obligations.
- **"Weighted Criteria Process"** means a form of best value selection in which maximum point values are pre-established for qualitative and price components. Award is made to the Design-Builder with the highest total points earned.
- **"Wet-Weather Conveyance"** are man-made or natural watercourses, including natural watercourses that have been modified by channelization: that flow only in direct response to precipitation runoff in their immediate locality; whose channels are above the groundwater table; that are not suitable for drinking water supplies; and in which hydrological and biological analyses indicate that, under normal weather conditions, due to naturally occurring ephemeral or low flow there is not sufficient water to support fish or multiple populations of obligate lotic aquatic organisms whose life cycle includes an aquatic phase of at least two months.
- **"Work Product"** is the Base Technical Concepts, Definitive Design, Drawings, Plans, Design-Builder Specification, and all other documents, analysis, computations, models, computer programs, and information obtained or developed for the Project or in performance of the **Design-Build Contract**, in or capable of being reduced to tangible paper-based, electronic, audio, or video format, whether or not designated as a deliverable under the **Design-Build Contract**.
- **"Working Plans or Working Drawings"** are those Plans prepared by the Design-Builder to specify particular details and procedures for construction of the Project.

ACRONYM LIST

AAPO	Affirmative Action Program Officer
AASHTO	American Association of State Highway and Transportation Officials
ACM	asbestos-containing material
ADA	Americans with Disabilities Act
ANSI	American National Standards Institute
APM	acid-producing material
APWA	American Public Works Association
ARAP	Aquatic Resource Alteration Permit
ASP	Associate Safety Professional
ASTM	ASTM International
ATC	Alternate Technical Concept
BMP	best management practice(s)
BTC	Base Technical Concept
CAP	Corrective Action Plan
CCR	Contract Compliance Reviews
CE	Categorical Exclusion
CE&I	Consultant Engineering and Inspection
CFR	Code of Federal Regulations
cfs	cubic feet per second
CGP	Construction General Permit
CPM	Critical Path Method
CQM	Construction Quality Manager
CQMP	Construction Quality Management Plan
CRO	Civil Rights Office
CSP	Certified Safety Professional
CSS	Context-Sensitive Solutions
CUF	Commercially Useful Function
DB	Design-Build
DBSG	Design-Build Standard Guidance
DBE	Disadvantaged Business Enterprise
DBRC	Design-Build Review Committee
DD	Definitive Design
DOJ	U.S. Department of Justice
DQM	Design Quality Manager
DQMP	Design Quality Management Plan
DWR	Daily Work Report
EA	Environmental Assessment
EBR	Environmental Boundary Report
ECP	Environmental Compliance Plan
E&O	errors and omissions
EOR	Engineer of Record
EPSC	Erosion Prevention and Sediment Control
EPSCS	Erosion Prevention and Sediment Control Supervisor
ESA	Endangered Species Act
ETO	Environmental Technical Office
EV	Earned Value
FEMA	Federal Emergency Management Agency

FHWA	Federal Highway Administration
FPA	Formal Part-Affected
GPS	global positioning system
GSP	Graduate Safety Practitioner
HEC	Hydraulic Engineering Circular
HEC-RAS	Hydraulic Engineering Center River Analysis System
IA	Independent Assurance
IPS	Initial Project Schedule
ITS	Intelligent Transportation Systems
JV	Joint Venture
LCC	Life Cycle Cost
LIC	Local Interstate Connector
LIMS	Laboratory Information Management System
LOS	Level of Service
LRFD	Load & Resistance Factor Design
MASH	Manual for Assessing Safety Hardware
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MPO	Metropolitan Planning Organization
MSE	mechanically stabilized earth
MUTCD	Manual of Uniform Traffic Control Devices
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NOA	Notice of Availability
NOC	Notice of Coverage (NPDES Permit)
NOI	Notice of Intent to Discharge (NPDES Permit)
NOT	Notice of Termination (NPDES Permit)
NOV	Notice of Violation (NPDES Permit)
NPDES	National Pollutant Discharge Elimination System
NPDES CGP	NPDES Construction General Permit
NTP	Notice to Proceed
OSHA	Occupational Safety & Health Administration
OJT	On-the-Job Training
PE	Preliminary Engineering
PI	public information
PCA	Preconstruction Assessment
PCE	Programmatic Categorical Exclusion
PIB	Pay Item Breakdown
PIN	Project Identification Number
PIP	Public Involvement Plan
PLM	polarized light microscopy
PM	Program Manager
PMP	Project Management Plan
PS&E	Plans, Specifications, and Estimates
PV	Planned Value
QA	Quality Assurance
QC	Quality Control
QCT	Quality Control Technician

QMP	Quality Management Plan
QPL	Qualified Products List
RFC	Readiness-For-Construction
RFI	Request for Information
RFP	Request for Proposal
RFQ	Request for Qualifications
RFH	Replacement Housing Payment
RLS	Registered Land Surveyor
ROD	Record of Decision
ROW	right-of-way
S&H	safety & health
SEIS	Supplemental Environmental Impact Statement
SHPO	State Historic Preservation Office
SIA	State Industrial Access Road
SMO	Structural Memorandum
SOP	Standard Operating Procedure
SOQ	Statement of Qualifications
SP	Special Provision
SRH-2D	Sedimentation and River Hydraulics - Two Dimension
SWPPP	Storm Water Pollution Prevention Plan
T.C.A.	Tennessee Code Annotated
TDEC	Tennessee Department of Environment and Conservation
TDOT	Tennessee Department of Transportation or the Department
TEER	Tennessee Environmental Evaluation Report
THM	Tennessee Hydraulic Memoranda
TI	Transportation Information
TMP	Transportation Management Plan
TO	Transportation Operations
TOSHA	Tennessee Occupational Safety and Health Administration
TRB	Transportation Research Board
TSMP	Tennessee Stream Mitigation Program
TTC	Temporary Traffic Control
TWRA	Tennessee Wildlife Resources Agency
TWRF	Tennessee Wildlife Resources Foundation
TVA	Tennessee Valley Authority
URA	Uniform Relocation Assistance and Real Property Acquisition Act of 1970
U.S.C.	United States Code
USCG	United States Coast Guard
USACE	U.S. Army Corps of Engineers
USDA/USDOA	U.S. Department of Agriculture
USDI	U.S. Department of Interior
USDOC	U.S. Department of Commerce
USDOL	U.S. Department of Labor
USDOT	U.S. Department of Transportation (same as DOT)
USEPA	United States Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service (also F&WS or FWS)

USPAP	Uniform Standards of Professional Appraisal Practice
USGS	U.S. Geological Survey
VE	Value Engineering
VECP	Value Engineering Change Proposal
WBE	Women's Business Enterprise
WWC	Wet-Weather Conveyance

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CHAPTER 1: DESIGN-BUILD INTRODUCTION

This Design-Build Standard Guidance (**DB Standard Guidance**) is intended to provide the Design-Builder with the procedures required by law, regulation, rule, policy, and standard for the use of Federal Aid and State Highway funds for transportation projects. If the procedures included in this **DB Standard Guidance** are not followed, federal and/or state funding are subject to be withdrawn from the project. Considerable effort has been made to provide guidance on how to accomplish the work, document the results, and to incorporate the flexibility options provided by the applicable federal laws; rules; regulations; policies; and the applicable State of Tennessee laws, rules, regulations, and policies. The Design-Build federal requirements are established within 23 Code of Federal Regulations (CFR) 636.

To minimize confusion, technical guides and resource information are incorporated into this **DB Standard Guidance** by reference below. The Design-Builder may access them on-line or download them for ready field reference.

If at any time the design of the project potentially affects the approved Federal Highway Administration (FHWA) National Environmental Policy Act (NEPA) document, the Design-Builder shall cease work and contact the Department Alternative Contracting Office.

Appendix A contains a complete list of references and hyperlinks used in this manual.

1.1 DESIGN-BUILDER REPRESENTATIVE

The Design-Builder's Project Manager, as stated within the **Design-Build Contract**, will be responsible for the administration of the project including, but not limited to, requesting payment, supervising all project personnel, requesting changes, and taking accountability for **Design-Build Contract** compliance.

1.2 DEPARTMENT REPRESENTATIVES

The Alternative Contracting Office within the Headquarters Construction Division is the area within the Tennessee Department of Transportation (TDOT or **the Department**) that serves the Design-Builder. During the procurement phase, personnel identified in Book 1 of the **Request for Proposals (RFP)** are available to assist the Design-Builder with their questions about this **DB Standard Guidance**.

Upon award of the **Design-Build Contract**, the Department will assign a designated TDOT Project Manager (PM) to administer the **Design-Build Contract**. The TDOT PM shall be the SINGLE POINT OF CONTACT for the Department after **Design-Build Contract** award. The responsibilities of the TDOT PM include, but are not limited to, contract administration, general supervision of all inspection personnel, interdivisional coordination, dispute resolution, submittal management, and other roles. All matters shall be first brought to the attention of the TDOT PM.

1.3 PURPOSE

The **DB Standard Guidance** is intended to help Design-Builders design and construct projects, acquire right-of-way (ROW), relocate utilities, navigate environmental regulatory processes of transportation facilities, and administer projects contracted through the Design-Build program. To assist Design-Builders in accomplishing these goals, this **DB Standard Guidance** describes the processes, documents, and approvals necessary to develop, design, and construct

transportation projects.

The information contained in this **DB Standard Guidance** is compiled from many sources and serves as guidance for administrative, design, and field personnel associated with the Design-Builder.

Unless stated elsewhere within this **DB Standard Guidance** or the **Design-Build Contract**, all work shall be completed in accordance with the most current version of the Department's Standard Specifications for Road and Bridge Construction, the Department Roadway Design Guidelines, the Department Standard Roadway, Structures and Traffic Operations Drawings, and the Department Standard Operating Procedures (SOPs; e.g., Construction Circular Letters, Materials and Tests SOPs, Field Operations, Field Operations Forms) including all supplements and addenda in effect at time of release of the RFP.

Where the terms "By the Engineer," "By the Contractor," or "By the Consultant" are used in the context of a matter or function for responsibility under the Department's Standard Specifications, the Department Roadway Design Guidelines, or any of the Design-Builder's Programs or Plans, "By the Engineer," "By the Contractor," or "By the Consultant" shall mean "Design-Builder" unless stated otherwise in the **Design-Build Contract**.

Where the term "By the Engineer" is used in the context of verification or Independent Assurance testing, Construction Engineering and Inspection (CE&I), and Review and Acceptance requirements, it is the responsibility of the Department. If the Design-Builder does not understand the assumption in a given context, the Design-Builder shall obtain clarification from the Department Alternative Contracting Office before acting. Alternative Contracting Staff names and phone numbers are provided on the Construction Division Page. Additionally, the Department may issue a clarification to the Design-Builder on its own initiative at any time. The Department's determination shall be final.

When notice is to be given to the "Engineer"/Design-Builder, it shall also be given to the Department.

1.4 ORGANIZATION OF DESIGN-BUILD STANDARD GUIDANCE

The Design-Builder should be able to find answers to most questions regarding procedural requirements for Design-Build contracted transportation projects within this **DB Standard Guidance**. This **DB Standard Guidance** is organized to reflect the flow of a project through the major phases of development and to incorporate the developmental needs of different projects. All **Design-Build Contract** documents are intended to be complementary. Conflicts, if any, will be resolved using the descending order of precedence as defined in the **Design-Build Contract**.

The Department may assign designated Department contact people in writing for different milestones, tasks, or activities discussed throughout this **DB Standard Guidance**. Contact information for the designated contact people may be given to the Design-Builder after award of the **Design-Build Contract**. Before the Initial Notice to Proceed (NTP), the Design-Builder may contact the Department Alternative Contracting Office for this information if not provided in the RFP. If designated contact people for different steps are not assigned in writing, the Department's designated Alternative Contracting Office contact listed in the RFP shall function as the SINGLE POINT OF CONTACT before **Design-Build Contract** award, and the TDOT PM shall function

as the SINGLE POINT OF CONTACT after award. Upon **Design-Build Contract** award, communication with any designated Department contact person or Division shall be copied to the TDOT PM. If confidentiality of the communicated content is required, a correspondence summary, including dates, shall be sent to the TDOT PM indicating that a document with sensitive information was sent directly to the designated Department contact person.

CHAPTER 2: DESIGN-BUILD MANAGEMENT

It is the Department's position that the Design-Builder shall design, manage, and construct the Project. The Design-Builder shall submit the information and documents outlined in the **Design-Build Contract** as well as this **DB Standard Guidance**. The Design-Builder may request technical assistance from the TDOT PM at any time.

The TDOT PM is the single Department point of contact for project correspondence and submittals after **Design-Build Contract** award, unless a designated Department contact person is named in writing to the Design-Builder for specific milestones, tasks, or activities. All questions shall be directed to the TDOT PM, and the TDOT PM may coordinate with the Alternative Contracting Office to seek answers to technical questions from the technical areas of the Department. The Design-Builder is required to place the Project Identification Number (PIN) (PIN XXXXXX.XX), the **Design-Build Contract** Number (DBXXXX), and Project Description (including County) on all correspondence with the Department.

The Design-Builder PM and TDOT PM shall meet to define the management process as it pertains to project and contract administration before the Post-Award Meeting. The Department Construction Division's Circular Letter File contains general guidance and requirements for the proper administration of projects besides that provided in this document. A copy of this file is located at the TDOT Construction Division Web Page for Circular Letters.

2.1 ASSIGNMENT OF FUNDS

It is understood that the Department acts on the behalf of the FHWA for the administration of construction projects and that, in accordance with federal regulations, funds may be withheld for non-compliance of federal rules and regulations (23 CFR 1.36):

> **"If the Administrator determines that a State has violated or failed to comply with the Federal laws or the regulations in this part with respect to a project, he may withhold payment to the State of Federal funds on account of such project, withhold approval of further projects in the State, and take such other action that he deems appropriate under the circumstances, until compliance or remedial action has been accomplished by the State to the satisfaction of the Administrator."**

2.2 LIMITATION OF OPERATIONS

The Design-Builder shall comply with all **Design-Build Contract** provisions and shall perform its work in accordance with the following:

- Conduct the work at all times so as to cause the least interference with traffic.
- Do not begin work that may allow damage to work already started.

The Design-Builder shall not begin any work until the Design-Builder has completed the following:

- Received the Initial Notice to Proceed (NTP);
- Met with the Department at the Post-Award Meeting;

- Received Acceptance of the Critical Path Method (CPM) Initial Project Schedule (IPS); and
- Received Acceptance of the Design Quality Management Plan (DQMP), unless otherwise specified in the **Design-Build Contract**.

The Design-Builder shall not begin any On-Site work (or as specified) until the Design-Builder has completed the following:

- Received the appropriate Notice to Proceed for the type of work;
- Confirmed that the proposed work was considered and cleared in an approved NEPA or Tennessee Environmental Evaluation Report (TEER) document or reevaluation and will be conducted within the boundaries studied in that document;
- All applicable water quality permits and stormwater permit coverage are received for the area under construction. No grading shall occur until applicable permits are received (posted on-site);
- The Geotechnical Study for area under construction, if required, has been completed;
- Received ROW/Utility & Railroad Certification;
- Met with the Department at the required Pre-Construction Conference and addressed any contingencies on starting work;
- Received Acceptance of the Baseline CPM Project Schedule;
- Received Acceptance of the Construction Quality Management Plan (CQMP), unless otherwise specified in the **Design-Build Contract**; and,
- The Safety Manager and Quality Manager(s) have been appointed and have commenced duties, unless otherwise specified in the **Design-Build Contract**.

The Design-Builder shall have the written NTP to begin the next phase or shall stop before engaging in any work requiring the NTP. Should the Design-Builder proceed with work without the associated NTP, whether intentional or unintentional, they are proceeding at the Design-Builder's own risk.

The acquisition of ROW is a phased process that requires multiple interim NTPs. Work requiring a NTP that is performed before the issuance of the NTP may not be reimbursable and could jeopardize the project funding. The Design-Builder *shall not* begin the next phase of ROW acquisition until the NTP for that phase is obtained, as detailed in Chapter 6 of this **DB Standard Guidance**.

2.3 NOTICES

The Department will provide notices to the Design-Builder to inform them when specific work, or the next phase of work, can begin as follows:

- An Initial NTP will be issued by the Alternative Contracting Office as soon as possible from the date the **Design-Build Contract** is executed by the Department.
- Interim NTPs will be issued by the Alternative Contracting Office for the following Major Milestones, as well as others, determined on a project-by-project basis as defined in the **Design-Build Contract**:
    - ROW Appraisal NTP - Review and Acceptance of Definitive Design (DD) Plans (only when these responsibilities are included in the Design-Builder's scope of work for the

Design-Build Contract) for the segment or phase of construction to begin;

- ROW Negotiation NTP – Review and Acceptance of the Appraisal Process;
- ROW Closing NTP - Review and Acceptance of the Negotiation Process and court settlements;
- Utility Coordination NTP – Review and Acceptance of the DD Plans (only when these responsibilities are included in the Design-Builder's scope of work for the **Design-Build Contract**) for the segment or phase of construction to begin (this only applies when the **Design-Build Contract** does not contain ROW acquisition);
- Construction NTP - Review and Acceptance of Readiness-For-Construction (RFC) Plans. All pre-construction requirements must be met in accordance with the **Design-Build Contract** for the segment or phase of construction to begin.

The Design-Builder is required to notify the Department of important events relating to the Project throughout the Design-Build process.

- Start Dates

Within 1 week of starting work, the Design-Builder Project Manager shall notify the TDOT PM that design and/or construction Milestone work has started.

- Completion Dates

Interim completion dates (if any) and the contract completion dates are specified in the **Design-Build Contract**. If an earlier Interim Completion Time/Date or Contract Completion Time/Date (as specified in the **Design-Build Contract**) is proposed by the selected Design-Builder and accepted by the Department, then the earlier Interim Completion Time/Date or Contract Completion Time/Date, as applicable, shall become the baseline Completion Time(s)/Date(s) and shall be incorporated into the **Design-Build Contract**.

The Design-Builder Project Manager shall send the TDOT PM a Construction Completion Letter or Written Notice when all items of work have been inspected and are complete for any Interim or Contract completion dates. The Construction Completion Letter or Written Notice shall be sent within 1 week after all items are accepted as complete.

- End of Contract Time

When the Design-Builder believes that all work (except for Punch-List items and vegetation establishment) has been completed, the Design-Builder shall send the TDOT PM a Construction Completion Letter or Written Notice. The Construction Completion Letter or Written Notice shall be in writing and sent within 1 week after the Design-Builder's Project Manager has verified that all work items are completed. The Construction Completion Letter or Written Notice shall notify the TDOT PM that all work items (except for Punch-List items and vegetation establishment) associated with the final completion date have been verified as complete and request that the Department inspect the Project to determine whether the work is acceptable and complete according to the **Design-Build Contract**. Final Acceptance shall be granted in accordance with the Department's Standard Specifications, Subsection 105.15.

Upon presumptive completion of the Project and due notice from the Design-Builder, the Department will inspect the project site. If all items of work (except Punch-List items and

vegetation establishment) are completed to the Department's satisfaction, the Department will stop time charges as of the date of the inspection. However, if the inspection reveals that some items of work remain to be completed, the Department will direct the Design-Builder in writing to complete these items. The Design-Builder shall complete all tasks in an expeditious manner within the timeframe proposed by the Department. Time will continue to be charged until all work (except Punch-List items and vegetation establishment) has been satisfactorily completed, regardless of the number of inspections required before Substantial Completion. However, time will not be charged while waiting for the appropriate officials to inspect the Project such as, but not limited to, FHWA.

Upon determining that all work (except for Punch-List items and vegetation establishment) has been completed, the TDOT PM will issue a Substantial Completion Letter, stopping time charges. The Design-Builder shall continue to maintain the Project in accordance with the approved maintenance plan until the Notice of Termination (NOT) is submitted to the Tennessee Department of Environment and Conservation (TDEC) in accordance with Chapter 7.3.3. Once the Design-Builder achieves Substantial Completion, files the NOT, and completes all Punch-List items, the Design-Builder Project Manager shall notify the TDOT PM, and the TDOT PM will issue a Release of Maintenance Letter. Upon completion of project closeout the TDOT PM will issue the Final Acceptance Letter.

- Notice of Delay

The Design-Builder shall notify the Department of any delay that will likely prevent completion of any On-Site work by the applicable Interim Completion Date(s) or of all work by the Contract Completion Date specified in the **Design-Build Contract**. The notice shall be written in accordance with the Department's Standard Specifications, Subsection 108.07.

- Contract Change Notification

The Design-Builder shall provide immediate written notification upon discovering that a change order may be required, as indicated by Circular Letter 104.03-01.

2.4 POST-AWARD MEETING

Within 30 Calendar Days of a fully executed **Design-Build Contract,** and before the start of work, unless otherwise authorized in writing by the Department, the Design-Builder shall meet with the Department at the Post-Award Meeting to discuss Progress Schedule and development of the components of the Project Management Plan (PMP). The Design-Builder's Project Manager shall consult with the TDOT PM and shall arrange and lead a Post-Award Meeting.

The Post-Award Meeting agenda shall be developed in consultation between the TDOT PM and the Design-Builder and prepared by the Design-Builder, which shall include, at a minimum, all of the following:

- Development of the PMP;
- Design development and the Design Review process;
- Design development and the Design Review schedule;
- Defining the management process as it pertains to project and contract administration;
- Other plans as specified by the Department; and

- Refining the level of detail to be required for measuring progress and making payments regarding pre-construction (e.g., Design, Project Management, Mobilization) Lump Sum Pay Items in accordance with this **DB Standard Guidance**.

The Design-Builder shall use the Project Understanding and Approach and the Project Management and Approach submitted with the Technical Proposal as a foundation to prepare the PMP component plans. The Design-Builder shall implement all elements of the PMP.

The Design-Builder shall prepare and administer a PMP containing the Design-Builder's approach to managing the design and construction of the Project in accordance with this **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*****
- DQMP*****, unless otherwise specified by the **Design-Build Contract**;
- CQMP, unless otherwise specified by the **Design-Build Contract**;
- Safety and Health Plan*****, unless otherwise specified by the **Design-Build Contract**;
- Environmental Compliance Plan (ECP), unless otherwise specified by the **Design-Build Contract**;
- CPM IPS;
- Public Relations and Public Involvement Plan (PIP), unless otherwise specified by the **Design-Build Contract**;
- Records Management Plan*****; and
- Other plans as specified by the **Design-Build Contract**.

*Component plans marked with an asterisk are required to be completed by the Post-Award Meeting. The remaining component plans are required to be completed within 30 Calendar Days after the Post-Award Meeting, except for the CQMP, which is required to be completed no less than 30 Calendar Days before the Pre-Construction Conference. The Design-Builder shall receive Acceptance of the above applicable plan/s before performing any associated work.

The Design-Builder is required to use PlanGrid or other software as specified by the **Design-Build Contract** for the project.

2.5 QUALITY PROGRAM AND QUALITY MANAGEMENT PLAN

The Design-Builder shall be responsible for the professional quality, technical accuracy, and coordination of all surveys, designs, drawings, specifications, geotechnical, and other services furnished by the Design-Builder under the **Design-Build Contract**.

The Design-Builder shall, without additional compensation, correct all errors or deficiencies in the surveys, designs, drawings, specifications, and/or other services.

No fabrication, casting, or construction will occur until all related design review and shop drawing review comments are resolved.

The Department is responsible for providing the required Construction Engineering and

Inspection (CE&I) and Quality Assurance (QA) Testing and Inspection. However, the Design-Builder shall describe how they plan to inspect the project as part of their CQMP, unless otherwise specified by the **Design-Build Contract**.

In addition to the statements included above, the Design-Builder shall establish and implement a Quality Management Plan (QMP) for Review and Acceptance by the Department, unless otherwise specified by the **Design-Build Contract**. The QMP shall include a DQMP and a separate CQMP. The Project Quality Manager shall meet the minimum requirements specified in the **Design-Build Contract**. The purpose of the QMP is to:

(a) Ensure that the Design-Builder provides the Department a completed Project that meets **Design-Build Contract** requirements;

(b) Prevent the occurrence of design and construction non-conformances through active and effective monitoring of processes and permit requirements; and

(c) Assure that the Design-Builder manages the work such that the Department can substantiate that the requirements of the **Design-Build Contract** are being met and substantiate with documentation that appropriate payments for the work are made.

The Design-Builder's QMP shall detail how the Design-Builder will establish and operate its Quality Program management structure independent from design and construction and document its procedures pertaining to all aspects of the work. The Design-Builder shall establish and maintain the QMP such that it provides a Department-auditable system to assure that the Design-Builder's organization complies with contract requirements pertaining to, at a minimum, those Design-Builder responsibilities stated in the **Design-Build Contract** for the following general areas of the work:

- Project administration;
- Tracking of estimated (planned) and completed-to-date quantities of work;
- Design requirements;
- Materials quality;
- Project progress (scheduling);
- **Design-Build Contract** progress submittals for payment;
- Environmental requirements and compliance;
- ROW requirements;
- Geotechnical investigations;
- Utility relocation requirements;
- Compliance with Programmatic Plans;
- Context-Sensitive Solutions (CSS) Approach;
- Proposed QMP staffing, communications organization chart, and personnel identification; and
- Work Zone safety issues.

The QMP shall establish the organization of the Quality Team and the implementation of all Quality Management activities applicable to the areas of work identified above, as well as independent auditing by the Design-Builder's Quality Management staff to assess and assure

performance compliant with **Design-Build Contract** requirements. The Quality Program shall be implemented at all levels of the Design-Builder's and its Subcontractors' organizations for both design and construction functions (including those that supply labor only).

The submitted QMP shall document the following:

- **Design-Build Contract** & Subcontract Responsibilities;
- Organization of the Quality Team;
- Independence of the Project Quality Manager from the Design-Builder's production team;
- Procedures for documentation of quality activities and their status; and
- Processes, procedures, and protocols the Quality Team will use to ensure quality of the Project in the general areas of work.

The Department will review the Design-Builder's QMP to evaluate whether it meets the guidelines and minimum requirements established by the Department. However, the Department's review of the QMP will not constitute the Department's agreement that it meets these criteria or relieve the Design-Builder of its sole responsibility for the quality and workmanship of the work performed.

The Department has the right to perform quality inspections and audits of the Design-Builder's management, design, construction, and maintenance activities; the Design-Builder's Quality Management activities; the quality of materials and fabricated products; the quality of workmanship of the completed Project; and the associated documentation.

The CQMP shall require, among other things, a level of review, inspection, and documentation consistent with those indicated in the Department's Materials and Tests SOP. The CQMP shall also require material quality and documentation consistent with the requirements in the Department's Materials and Tests SOP, the Qualified Products List (QPL), and the Department Standard Specifications.

(a) **Quality Management Plan Submittal** – The Design-Builder shall submit to the Department for Review and Acceptance the Design-Builder's QMP, updated as necessary to meet all **Design-Build Contract** requirements, at the Post-Award Meeting and before the start of any work. This submittal shall include the Organizational Structure & Staffing Plan, DQMP, S&H Plan and Records Management Plan. The ECP, CPM IPS, Public Relations and Public Involvement Plan, and other plans as specified by the **Design-Build Contract** shall be submitted within 30 Calendar Days after the Post Award Meeting. The CQMP may be submitted later but shall be submitted no less than 30 Calendar Days before the Pre-Construction Conference.

The TDOT PM will be available to meet with the Design-Builder immediately following the Initial NTP to discuss the requirements of the QMP and help facilitate the smooth creation, Review, and Acceptance of the QMP.

(b) **Partial Quality Management Plan Submittal** - If the Design-Builder desires to begin any items of work before submittal of the QMP, a partial QMP covering those items of work shall be submitted for the Department's Review and Acceptance.

(c) **Quality Management Plan Reviews and Updates** - The Design-Builder shall conduct ongoing management reviews of its Quality Program during the term of the **Design-Build**

Contract.

As work progresses, the Design-Builder shall update the QMP to reflect current conditions and shall make such revisions as are necessary to meet the quality standards established in the **Design-Build Contract**. Additionally, the Department may identify the need for revisions to the QMP and will notify the Design-Builder of such.

The Design-Builder shall submit a conformed copy of each updated QMP, with revisions highlighted, to the Department for Acceptance within 30 Calendar Days of identification of the need for an update or revision. In addition, the Design-Builder shall submit annually (within 12 months of receipt of last Acceptance from the Department) either: (a) its updated QMP for review by the Department or (b) a narrative statement that no updates or revisions have been made to the Accepted QMP during that 12-month period, and that all current processes, procedures, and protocols are functioning as intended.

A QMP checklist is provided in Appendix B.

2.5.1. QUALITY TEAM

The Project Quality Manager shall manage all functions required under the QMP through the Quality Team. The Quality Team shall operate as a distinct and separate quality unit reporting directly to the Project Quality Manager and may comprise suppliers, the Design-Builder, or independent Quality Management personnel. The Project Quality Manager is independent from the Design-Builder's Project Manager and shall not report directly to the Design-Builder Project Manager or any other Design-Builder personnel on the Project but shall report to the TDOT PM.

(a) **Organizational Requirements** – The Design-Builder's Project Quality Manager shall be responsible for overseeing the Quality Program, including Quality Management relating to both design and construction, and for the preparation, implementation, and updating of the QMP.

- The Design Quality Manager (DQM) and Construction Quality Manager (CQM) shall report directly to the Project Quality Manager. If separate Quality Managers are required, the responsibilities and requirements will be stated within the **Design-Build Contract** as Key Personnel.
- The Project Quality Manager shall visit the Project Site regularly and be available for consultation with the Department on call throughout the term of the **Design-Build Contract**. The Project Quality Manager shall attend all weekly progress meetings as detailed in the QMP or as required by the Department, and such other meetings as the Department may request, including individual meetings between the Project Quality Manager and the Department.
- The Project Quality Manager shall be the primary point of contact to the Department for all issues relating to the Design-Builder's QMP (preparation, reviews, implementation, revisions, and updates).

(b) **Authority** - The Project Quality Manager shall have and exercise authority over the work production necessary to ensure quality and compliance with **Design-Build Contract** requirements. The Quality Team shall have and exercise authority to stop work until the work is brought into conformance with **Design-Build Contract** requirements.

2.5.2. DESIGN QUALITY MANAGEMENT PLAN (DQMP)

The DQMP shall describe:

- The quality roles and responsibilities of the Design-Builder's Design Quality Management Team; and,
- Procedures for implementing the design work in accordance with Chapter 5 of this **DB Standard Guidance**.

The DQMP shall be submitted for the Department's Review and Acceptance at the Post-Award Meeting and before starting any design work. The Department will not receive any Design Plans for Review and Acceptance without an Accepted DQMP. The DQMP shall describe the design development, submittal, and design review process for preparation of final signed and sealed construction plans used to construct the proposed improvements. The processes and procedures in the DQMP shall be developed in accordance with the Department's Roadway Design Guidelines and Chapter 5 of this **DB Standard Guidance**.

The DQMP shall include quality control and quality assurance procedures for ensuring the quality of the design work and conformance with the **Design-Build Contract**, requirements in this **DB Standard Guidance** including design-quality checks and certifications, and independent Design Reviews before submittal for the Department's Review and Acceptance.

The Design-Builder 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 **Design-Build Contract** requirements. Ten Business Days shall be allocated in the CPM Schedule for activities requiring the Department's Review and Acceptance, or Review and Comment.

The Design Quality Manager (DQM) shall be responsible for design QC and ensuring that the design submittals and design reviews are performed and documented in accordance with the DQMP and the **Design-Build Contract**. The Design-Builder shall provide a DQM to perform quality assurance activities and audits of the QC activities and QC program. The DQM shall be independent of the production work and shall certify to the Design-Builder and the Department that the design Work Product conforms to the requirements of the **Design-Build Contract**.

2.5.3. CONSTRUCTION QUALITY MANAGEMENT PLAN (CQMP)

The CQMP shall describe:

- The quality roles and responsibilities of the Design-Builder's Construction Quality Management Team; and,
- Procedures for implementing the construction work in accordance with Chapter 7 of this **DB Standard Guidance**.

The CQMP shall be submitted for the Department's Review and Acceptance no less than 30 Calendar Days before the Pre-Construction Conference.

Although the Department will provide CE&I and QA Testing and Inspection, the Design-Builder is responsible for ensuring the quality of the work. The Design-Builder shall prepare procedures in the CQMP for quality control (QC) of materials and detail how the Design-

Builder plans to inspect the project to ensure compliance with the **Design-Build Contract**.

The Construction Quality Manager (CQM) shall be responsible for QC during construction and shall ensure that QC testing and inspections are performed in accordance with the CQMP and the **Design-Build Contract**. The Design-Builder shall provide a CQM to oversee, manage, certify, and perform construction QC and audit 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 CQM's quality staff, and that all work complies with the **Design-Build Contract**. 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.

All construction processes, procedures, and workmanship shall be inspected by the Design-Builder's Construction Quality Inspectors. Inspection shall include the observations, measurements, and documentation specified in the Design-Builder's CQMP and the **Design-Build Contract**. Inspection, observations, verification of conformance to specified requirements, measurements, results, non-conformances, and required corrective actions shall be documented on the forms provided by the Department or on Design-Builder's forms acceptable to the Department. Inspection, observation, and documentation shall include descriptions of construction activity and location.

2.5.4. ENVIRONMENTAL COMPLIANCE PLAN

The ECP is a stand-alone document that is incorporated into the QMP by reference. The purpose of the ECP is to have an effective strategy in place to ensure compliance with all environmental regulations, permits, and comments identified by the Department and other regulatory agencies throughout the NEPA and permitting processes. The Design-Builder shall prepare an ECP and submit it to the Department for Review and Acceptance, before implementation, within 30 Calendar Days after the Post-Award Meeting.

The Design Builder shall update the accepted plan as needed throughout the term of the **Design-Build Contract**. New or modified information, such as permits, compensatory mitigation plans, compliance strategies, notices of violations (NOVs), corrective actions, and reevaluations of NEPA documents developed throughout the term of the **Design-Build Contract** shall be added to the ECP, and the updated plan shall be formally submitted to the Department. Similarly, all environmental commitments, permits, clearances, and approvals shall be incorporated into the ECP as they are issued by the regulatory agencies. A separate submittal of the QMP is not required for changes to the ECP.

The ECP shall address the process and procedures the Design-Builder's environmental team will employ to ensure 100 percent compliance with all applicable environmental laws, regulations, permits, and commitments. The ECP shall also include a schedule for accomplishment of each activity.

The ECP shall include or reference the following as applicable to the specific project:

(a) All applicable environmental commitments and requirements identified through the NEPA and permitting processes;

(b) Plan for implementation of all actions required under environmental commitments,

environmental permits, orders, clearances, and authorizations obtained by the Department and/or the Design-Builder;

(c) Opportunities to avoid and minimize environmental impacts;

(d) Plans for mitigating and remediating impacts where environmental impacts cannot be avoided;

(e) Environmental controls and mitigation methods for, but not limited to:

(1) Erosion Prevention and Sediment Control (EPSC) design meeting TDOT Standards and permit requirements;

(2) Air quality;

(3) Stream and wetland;

(4) Species and habitat;

(5) Cultural resources;

(6) Noise;

(7) Hazardous material/waste management;

(8) Floodplains in accordance with 23 CFR Part 650 Subpart A.

(f) Environmental inspections and investigations;

(g) Environmental constraints maps;

(h) Key environmental compliance personnel roles and responsibilities;

(i) Strategy for coordinating with the Department;

(j) Level of anticipated regulatory agency participation in Project activities

(k) Procedures for achieving and documenting environmental compliance;

(l) Procedures for identifying and resolving non-compliance;

(m) Procedures for emergency response;

(n) Procedures for ECP implementation;

(o) Procedures for inspection, monitoring, and corrective and preventive actions;

(p) Procedures for final monitoring inspections to assess compliance with permit requirements.

(q) Environmental training program processes.

The Design-Builder shall monitor and document work to validate full compliance with the environmental requirements.

The Design-Builder assumes all legal responsibilities of the permittee for a Design-Build Project (whether or not they obtain the permits) as indicated in the permit that relate to protection of species, “waters of the United States,” “waters of the State of Tennessee,” and/or a Biological Assessment addressing any potential impacts to endangered, threatened, or otherwise protected species under federal and/or state laws; obtaining concurrence from the U.S. Fish & Wildlife Service (USFWS) and the Tennessee Wildlife Resources Agency (TWRA).

2.5.5. SAFETY AND HEALTH PLAN (S&H PLAN)

The Design-Builder is responsible for work site safety and shall perform all work in a skillful

manner as to protect the safety and health of its employees and the public. The Design-Builder shall comply with all laws concerning safety, health, and sanitation standards. The Design-Builder shall not require workers to perform work under conditions that are hazardous, dangerous, or unsanitary. The Design-Builder is required to comply with all safety standards as specified by the Department, FHWA, and the Occupational Safety and Health Administration (OSHA) and must provide all appropriate safety equipment to field personnel. Safety guidelines and procedures for archaeological field work are documented in Gorton (1999).

The Design-Builder shall establish and implement a Safety & Health Plan (S&H Plan), as required by the **Design-Build Contract**, for Review and Acceptance by the Department, unless otherwise specified by the **Design-Build Contract**.

NOTE: All projects with an estimated cost greater than $25,000,000.00 and those deemed high risk by the Department, shall have a full-time dedicated Safety Manager. The Department shall review and approve the Safety Manager based on the qualifications listed below. Additionally, any changes in personnel will require the Design-Builder to submit the new Safety Manager for approval.

A Full-Time Safety Manager shall have the following credentials:

- Certified Safety Professional (CSP) and 1 year of site safety experience; or
- Associate Safety Professional (ASP) certification and 2 years of site safety experience; or
- Graduate Safety Practitioner (GSP) certification and 2 years of site safety experience; or
- Five years of relevant site safety experience.

The Design-Builder shall require its Safety Manager to ensure compliance with the requirements of this **DB Standard Guidance** and the Design-Builder's S&H Plan and safety procedures by inspection and documentation.

The Design-Builder shall implement, review, and update the S&H Plan and introduce a program for ensuring that all workers follow the Project-specific S&H Plan at all times. The Design-Builder shall coordinate with all Authorities and relevant entities as necessary to ensure compliance with the S&H Plan. The Department may monitor and audit the Design-Builder's safety performance.

The Design-Builder's S&H Plan shall provide for the following:

- Planning, management, and design to avoid hazards;
- Subcontractor safety management and compliance with the Design-Builder's S&H Plan;
- Detection of potential hazards;
- Timely correction of hazards;
- Dedication to the protection of the public and the workers;
- Active participation of all persons involved with the **Design-Build Contract**;
- Dedicated full-time project safety staff;
- Liaison with the Department's monitoring staff;
- Site safety orientation for new employees and subcontractors, training, and regular safety

meetings including a plan for documenting attendance at safety orientation that includes subcontractors and suppliers;

- Documentation of safety activities required by the plan.

The Design-Builder's S&H Pan shall describe in detail how the S&H Plan is implemented and monitored including guidelines for protecting personnel from hazards associated with project operations and activities. The plan shall establish the policies and procedures for safety practices that are necessary for the Work to comply with the requirements of Tennessee Occupational Safety and Health Administration (TOSHA), the Manual of Uniform Traffic Control Devices (MUTCD), and other state and federal regulatory agencies with jurisdiction, rules, regulations, standards, or guidelines in effect during the Work.

The Design-Builder shall ensure that all its employees and those of the Subcontractors at all tiers (including labor-only) fully conform at all times to the provisions of the S&H Plan. If the Design-Builder's employees or its Subcontractors fail to conform to the provisions of the S&H Plan, the Design-Builder shall take appropriate disciplinary measures. Such measures shall include suspension, removal of offending employees from the Project Site, and dismissal. The obligations and requirements of this **DB Standard Guidance** shall be included in the terms and conditions of employment of all employees of the Design-Builder and in all subcontracts at all tiers including labor-only Subcontractors.

The S&H Plan shall contain a list of the detailed safety procedures to be followed. Safety procedures shall be prepared separately for individual activities and included in appendices to the S&H Plan.

The Design-Builder shall be responsible for ensuring that each Subcontractor employed on the Project complies with this requirement, and the Design-Builder shall provide to the Department a Project-specific S&H Plan covering all work to be done by each Subcontractor before the Subcontractor starts work. As an alternate, the Design-Builder may provide a certification that all activities performed by, and workers employed by, Subcontractors will be subject to the Design-Builder's S&H Plan. Submission of the required S&H Plan by the Design-Builder and Review and Comment by the Department shall not be construed to imply approval of any particular method or sequence for addressing health and safety concerns. Further, nor does it relieve the Design-Builder from the responsibility for adequately protecting the health and safety of all workers involved in the Project, as well as members of the public affected by the Project.

The Design-Builder shall revise the S&H Plan and safety procedures in order to enhance the standards of safety being implemented on site and to address changes in activities and conditions on the Project Site.

Every 12 months on or near the anniversary of the Initial NTP or when the Department deems necessary, the Design-Builder shall review its S&H Plan and shall consider all sources of information relevant to safety planning and implementation including accident reports, inspections, audits, suggestions from meetings, and other sources such as the Department and hazard analysis reviews or as needed.

A copy of the current version of the S&H Plan shall be kept on site at each work location while work is being performed, and an appropriate notice shall be posted at each work

location.

The Design-Builder's Safety Manager shall be responsible solely for the safety aspects of the Project. The Safety Manager shall implement, maintain, and monitor compliance with the Safety Plan and all safety procedures, and shall visit the Project Site regularly, and be available for consultation with the Department on call throughout the term of the **Design-Build Contract**.

The S&H Plan is required to be completed by the Post-Award Meeting. The Design-Builder shall not commence any work until the Safety Manager has been appointed and the S&H Plan has been Accepted by the Department. No work shall be performed at a work location unless the Design-Builder's Safety Manager or designated deputy is on site.

The Safety Manager and safety staff shall have authority to issue stop-work orders in the event of a perceived safety issue, concern, or observation, suspending work until appropriate corrective action has been taken or the situation has been rectified. If an incident occurs that requires hospitalization or TOSHA Citation to be submitted, send written notification of the incident to the TDOT PM and forward to the TDOT Regional Safety Manager.

2.5.6. ORGANIZATIONAL STRUCTURE AND STAFFING PLAN

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

The plan shall identify the Key Personnel and key management staff including the Key Personnel level 1 and level 2 identified in the Statement of Qualifications (SOQ) and on the Response Category 2 form.

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. The organizational chart shall be based on the staffing proposed by the Technical Proposal response to the RFP and made part of the PMP.

The organization shall be monitored and the chart updated and provided to the Department to communicate changes to the Design-Builder's organizational chart.

(a) The Design-Builder must designate a Project Manager who will be responsible for the administration of the project including, but not limited to, request for payment, authority to approve changes, and accountability for **Design-Build Contract** compliance.

(b) The Design-Builder represents that the Key Personnel identified meet the applicable minimum qualifications specified in the **Design-Build Contract**. The Design-Builder commits to assign the Key Personnel to perform in the capacities identified therein and represents that the identified Key Personnel shall be available to the extent within the Design-Builder's control for the duration of the **Design-Build Contract**.

The Department may designate other positions as Key Personnel or change the designations of some of the positions as needed at any time during the term of the **Design-Build Contract**.

(1) The Key Personnel shall be capable of reading and thoroughly understanding all Plans

and Specifications and shall be thoroughly experienced in performing and supervising the type of work depicted in the Plans and Specifications.

(2) Key Personnel shall be located in the Project vicinity for the duration of the **Design-Build Contract**, except that the Project Principal and CQM shall be available and present as necessary to fulfill their Project responsibilities.

(3) Directory of Key Personnel – The Design-Builder shall provide to the Department, within 15 Calendar Days after the Initial 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 directory shall be updated throughout the duration of the **Design-Build Contract** as changes occur. The directory shall include the names, titles, areas of responsibility, office address and location, office telephone number, email address, and cellular numbers of Key Personnel. The Design-Builder shall provide information sufficient for the Department to contact any of the Key Personnel on a 24-hour basis for the duration of the **Design-Build Contract**. The Department shall provide a directory of the Department's Project staff to the Design-Builder.

(c) The Design-Builder represents that the Subcontractors are duly qualified, available, and have committed the necessary workforce, equipment, and capital to properly and timely perform the work for which they have been contracted. All Subcontractors for the Project shall be approved by the Department for this Project before performing any work on the Project. The Department-approved Subcontractor Form shall be submitted no less than 7 Calendar Days before the Construction NTP for which the Subcontractor is to perform work.

(d) The Design-Builder shall not substitute Key Personnel or Design Professionals without approval from the Department. Notwithstanding the procedures set out herein, the Department will have no obligation to consider or approve a request to substitute, but may do so at its sole discretion.

The Design-Builder shall include a procedure for a structured and managed replacement of Key Personnel on the project team of the Design-Builder.

Any licenses or certifications required to meet the requirements of the Request For Qualifications (RFQ) and RFP shall be in place by the time the Initial NTP is issued.

To add, delete, or substitute Key Personnel or Design Professionals:

(1) The request must be submitted to the Department at least 30 Calendar Days in advance of any desired change.

(2) The Design-Builder shall submit with any request for substitution: (a) the name and qualifications of the proposed replacement Key Personnel or Design Professionals; (b) the same selection evaluation information as was specified for inclusion in the SOQ and Proposal; and (c) the reason for the proposed change. If the Department elects to consider the request, the Department, at its sole discretion, will determine whether the proposed substitute is appropriately qualified or otherwise acceptable, and will notify the Design-Builder of its determination whether or not to allow the substitution.

(3) The Department, at its sole discretion, will determine whether or not to consider or authorize the replacement of any Key Personnel or Design Professionals, the decision of which shall be final. Any authorization will be in writing, and the Design-Builder shall not change Key Personnel or Design Professionals except upon receipt of such written consent from the Department. The Department may require additional explanation from the Design-Builder as to the reason for the replacement.

2.6 ADJUSTMENT OF CONTRACT TIME

Contract Time established for the work will be subject to adjustment either by increase or decrease to the agreed upon contract term and critical path established by the Department's Review and Acceptance of the CPM Schedule for causes beyond the control of the Design-Builder, according to the terms of the **Design-Build Contract**. The Department will determine if the time impacts the Accepted CPM Schedule and adjust the time accordingly by Change Order. After adjustment, the Contract Time will become, and be designated as, the "Adjusted Contract Time."

If the Department anticipates delay during performance of the **Design-Build Contract** and specifies its expected duration in the **Design-Build Contract**, the Department will only consider additional delay beyond the stipulated duration in determining whether to adjust Contract Time. Except as specifically stated in the **Design-Build Contract**, an adjustment of Contract Time shall be the Design-Builder's only remedy for any delay arising from causes beyond the control of the Design-Builder.

The Department may increase or decrease the Contract Time or the Adjusted Contract Time if Change Orders or Extra Work orders issued actually increase or decrease the amount of time required to perform the work. The Department will promptly inform the Design-Builder of adjustments made to Contract Time pursuant to this subsection and will include the reasons for adjustment.

If the Design-Builder believes that additional Contract Time is due, the Design-Builder shall submit to the Department a request within 7 Calendar Days of delay to the CPM Schedule critical path for adjustment of Contract Time in accordance with the Department's Standard Specifications Subsection 108.07.

The Department will not grant an adjustment of Contract Time for events that occurred before the date of the last revision of the CPM Schedule. The Department will not authorize, nor will the Department pay, acceleration costs incurred by the Design-Builder before its submittal of a request for adjustment of Contract Time to which the acceleration costs relate.

The Design-Builder's request for adjustment of Contract Time shall be submitted to the Department including the following, without limitation:

- A schedule analysis based on the current CPM Schedule for each cause of delay, indicating which activities are involved and their impact on the **Design-Build Contract** completion; and
    - An updated CPM Schedule.

2.7 SUBMITTALS

Time is of the essence in the Design-Builder's performance of the **Design-Build Contract**. All

Design-Builder required submittals, notices, and other required information shall be included in the CPM Schedule submitted for Acceptance.

All submittals shown within the Accepted CPM Schedule must be received electronically by the Department-designated contact before 12:00 p.m. Central Standard Time 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 Business Days.

Submittals shall be transmitted in a logical order and in accordance with the CPM Schedule. All submittals shall be signed by the Design-Builder's Project Manager. Any document required to be sealed by a Professional Engineer shall be digitally signed and sealed by a Professional Engineer licensed in the State of Tennessee using the Digital Signature Certification process as detailed in the Roadway Design Guidelines. Submittals requiring the Department's Review and Acceptance shall be limited to two concurrent submittals per Division unless indicated otherwise by the TDOT PM.

2.8 FAILURE TO COMPLETE ON TIME

Delays in the Design-Builder's performance of the work may inconvenience the traveling public, interfere with business and commerce, and increase cost to the Department. It is essential and in the public interest that the Design-Builder prosecute the work vigorously to **Design-Build Contract** completion.

The Department does not waive any rights under the **Design-Build Contract** by permitting the Design-Builder to continue to perform the **Design-Build Contract**, or any part of it, after the Contract Time or adjusted Contract Time has expired. The proposed number of Calendar Days submitted by the Design-Builder, or as adjusted by the Department Change Order, shall be used as the basis for the assessment of Liquidated Damages included in the **Design-Build Contract**.

According to the Department's Standard Specifications Subsection 108.09, the Department has identified in the **Design-Build Contract** monies to be deducted from the Design-Builder, not as a penalty but as Liquidated Damages, the amount(s) specified by the **Design-Build Contract**.

2.9 RIGHT TO DO WORK AT DESIGN-BUILDER'S EXPENSE

If the Design-Builder neglects to prosecute the work properly or fails to perform any provision of the **Design-Build Contract** in a timely manner, the Department may, after written notice, correct the deficiencies or perform the work at the Design-Builder's expense. Any amounts expended in accordance with this may be withheld from monies due or to become due to the Design-Builder under the **Design-Build Contract** in accordance with the Department's Standard Specifications Subsection 107.13.

2.10 RESPONSIBILITY FOR WORK

The Design-Builder shall make good any defective work. The Design-Builder shall be responsible according to the Department's Standard Specifications Subsections 105.12, 105.03, and 107.14.

The Design-Builder affirms that all work shall meet all **Design-Build Contract** requirements, including applicable technical and specifications, from the date and for the period of time identified in each applicable Specification or elsewhere in the **Design-Build Contract**, and that

all design services shall be performed in accordance with the standard of care specified in the **Design-Build Contract**. Any Warranty Bond/period requirement shall be stated within the **Design-Build Contract**. If required, the Warranty Bond/period shall survive expiration or termination of the **Design-Build Contract**.

The Design-Builder shall restore public roadways, as directed by the Department, to a condition at least equal to that which existed before the work as stated in the Department Standard Specifications Subsections 104.05, 104.07, 104.09, and 104.10. The cost of cleaning or repairing city streets or public roads will not be paid separately but shall be included in other items.

2.11 CHANGE ORDERS

A proposed Change Order, including time and cost to complete the work, shall be verified as being necessary, cost-effective, and in the public's best interest. Before any work on a major change can take place, a Change Order must be signed by all required parties. Before any work on a minor change can take place, the Design-Builder must document the Department approval of the change. Work on a major change is considered as any work that alters the **Design-Build Contract** Amount; alters the termini, character, or scope of work; or increases the completion date of the original Contract Time.

Any changes to the original **Design-Build Contract** Amount, time, or addition of work must be documented by a Change Order and approved by the Design-Builder, their surety, and the Department. The approved Change Order becomes part of the **Design-Build Contract**. A plans revision shall be made by the "Engineer of Record" to the plans when an error, omission, correction, or additional detail is needed. All Change Orders shall be submitted to the Department Alternative Contracting Office for approval.

The Contract Time/Amount may only be adjusted due to any of the following:

- The Department approves scope changes, value engineering cost proposals, directives authorizing ROW reimbursements or authorized Extra Work;
- Acts or omissions by the Department or its duly appointed representative that unreasonably interfere with the Design-Builder's performance and cause delay of work on the critical path of the CPM Schedule;
- Occurrence of an environmental situation of a significant nature that would require extensive and time-consuming delays in the work;
- Changes in a legal requirement or regulation that becomes effective subsequent to the date of the **Design-Build Contract**.

Other than as provided above, the Contract Time/Amount shall not be increased for **Design-Build Contract** Adjustments or claimed delay damages. The basis for any allowable price adjustment will be a negotiated amount or, in lieu of negotiations or other agreement, an amount based on the sum of actual labor, material, equipment, insurance, bond, tax, and costs deemed direct costs. The **Design-Build Contract** Amount shall be adjusted and documented by a Change Order signed by both parties and shall be reflected immediately in the CPM Schedule. Direct costs shall be in accordance with the Department's Standard Specifications Subsection 109.04.

Upon receipt of an executed Change Order, the Design-Builder shall perform the work as modified by the executed Change Order. If the executed Change Order increases the **Design-**

Build Contract Amount, the Design-Builder shall notify its surety of the increase and shall provide the Department with a copy of any resulting modification to bond documents. The Design-Builder's performance of work pursuant to executed Change Orders shall neither invalidate the **Design-Build Contract** nor release the surety. **Design-Build Contract** Time adjustments and payment for changes in the work shall be made in accordance with the modified **Design-Build Contract** and this **DB Standard Guidance**.

2.11.1. DEPARTMENT-REQUIRED PLANS CHANGES

Department-required plans changes to details of construction are inherent in the nature of construction and may be necessary or desirable during Project construction.

Without impairing the **Design-Build Contract**, the Department reserves the right to require changes it deems necessary or desirable within the scope of the Project. These changes may modify, without limitation:

- Specifications and design;
- Grade and alignment;
- Cross-sections and thicknesses of courses of materials;
- Method or manner of performance of work;
- Project limits.

or result in:

- Increases and decreases in quantities;
- Changed Work, Extra Work;
- Elimination of any **Design-Build Contract** work;
- Acceleration or delay in performance of work.

2.11.2. ALTERATION IN PLANS OR CHARACTER OF WORK

Differing site conditions, suspension of work ordered, and significant changes in the character of work shall be addressed in accordance with the Department's Standard Specifications and this **DB Standard Guidance**.

The Party discovering such a condition shall promptly notify the other Party, in writing, of the specific differing conditions before they are disturbed and before the affected work is performed. The Design-Builder shall not continue work in the affected area until the Department has inspected such condition according to this **DB Standard Guidance** to determine whether an adjustment to the **Design-Build Contract** Amount or the **Design-Build Contract** Time is required.

Any **Design-Build Contract** Time and/or payment adjustments due to the conditions identified above will be made according to this **DB Standard Guidance**.

2.11.3. EXTRA WORK

If directed by the Department through a written order, the Design-Builder shall perform work not included in the **Design-Build Contract** but within the scope of the Project according to the Readiness-for-Construction (RFC) Plans and Specification and all applicable laws.

2.11.4. VALUE ENGINEERING CHANGE PROPOSALS

The Design-Builder may submit written Value Engineering Change Proposals (VECPs) to the Department that modifies the **Design-Build Contract** for the sole purpose of reducing the total cost of construction in accordance with the Department's Standard Specifications Subsection 104.11 and Circular Letter 104.11-01. However, the Department will not adopt a VECP that impairs the essential functions or performance characteristics of the Project including, but not limited to, service life, economy of operation, ease of maintenance, designed appearance, structural integrity, environmental requirements, or design and safety standards.

The Department will determine, at its sole discretion, whether to authorize a VECP. The Department is not obligated to consider any VECP, and the Department will not be liable to the Design-Builder for failure to authorize or act upon any VECP submitted.

Where a VECP involves an adjustment to the ROW (such as a proposal that additional real property be purchased to reduce construction costs), the VECP shall compare:

(1) The incremental reduction in costs (such as for not designing and building a wall); and

(2) The costs involved in adjusting the ROW or environmental approvals (which shall be based on the Design-Builder's additional costs such as for providing real property acquisition support services including profit, plus the Department's additional costs including land acquisition, appraisals, negotiation, relocation, condemnation, closing, property management, and environmental permitting, specifically including allocated costs of the Department personnel involved in the acquisition);

or (as appropriate) shall compare:

(1) The incremental reduction in costs (if any) for not acquiring the unnecessary real property; and

(2) The additional construction costs to be incurred.

The Design-Builder shall have no claim for any additional costs or delays resulting from the delayed processing or rejection of a VECP including development costs, loss of anticipated profits, or increased material or labor costs. The Design-Builder is not entitled to share in either collateral or future contract savings. The term "collateral savings" means those measurable net reductions in the Department's costs resulting from the VECP including costs of maintenance by the Department, logistics, and the Department-furnished property. The term "future contract savings" shall mean reductions in the cost of performance of future construction contracts resulting from a VECP submitted by the Design-Builder.

Once submitted, the VECP becomes the property of the Department. The Department reserves the right to adopt the VECP for general use without additional compensation to the Design-Builder when it determines that a proposal is suitable for application to other projects.

2.12 DISPUTED WORK

Any claims for adjustment and disputes shall be in accordance with the Department Standard Specifications Subsection 105.16 and this **DB Standard Guidance**.

2.13 LABOR GUIDANCE

If federal funds are used on the Project, in order to properly fulfill the **Design-Build Contract**, the Design-Builder must conform to the federal and state labor requirements. It is the Design-Builder Project Manager's responsibility to ensure that all requirements regarding labor are met.

(a) Design-Builder Payrolls

The Design-Builder and each Construction Subcontractor are required to submit one certified payroll to the TDOT PM each week in which any On-Site contract work is performed in accordance with the Department's Standard Specifications Subsection 107.20 and Required Contract Provisions Federal-Aid Construction Contracts, Section V, Statements & Payrolls, Part 2c. The payroll is due within 1 week of On-Site work being performed. Certified Design-Builder Payrolls received by the TDOT PM shall be date stamped. The Design-Builder is responsible for ensuring that all Construction Subcontractors submit payrolls as required. The payrolls shall be retained in the project records. Certified Payrolls are not required for Design Subconsultants.

Each payroll shall have an attached "Statement of Compliance" signed by the Design-Builder or Subcontractor or his/her agent who pays or supervises the payment of persons employed under the **Design-Build Contract** (Required Contract Provisions Federal-Aid Construction Contracts, Section V Statements and Payrolls, Part 2d). The "Statement of Compliance" is the Design-Builder's certification that the payrolls are correct, complete, each employee is classified to match the work performed, and that the wage rates conform to those set forth in the **Design-Build Contract**. Circular Letter 1273-02 dictates the minimum requirements of a certified payroll.

Federal Form WH347 is an optional form the Design-Builder may use to conform to the Payroll and Statement of Compliance Requirements. Form WH347 is posted at the U.S. Department of Labor website.

The first certified payroll for a Design-Builder is due the week following the Design-Builder's start of On-Site work. The first certified payroll submitted by the Design-Builder and each Construction Subcontractor shall be thoroughly checked to ensure that it is certified, contains the information required, all laborers and mechanics are paid (at a minimum) the rate specified in the **Design-Build Contract** for the associated classification, classifications are accurate, and overtime rates are correct.

Monthly, a randomly selected Design-Builder's or Construction Subcontractor's certified payroll should be checked to ensure conformance to the requirements. On federally funded projects, the monthly payroll checked should be that of the Design-Builder/Construction Subcontractor employee interview defined in Section 2.13(b) to ensure continued conformance.

Random payroll checks can also occur if the TDOT PM believes labor requirements are not being met for any reason.

The employee classification must agree with the classifications listed in the required wage scales.

The Design-Builder payrolls should be numbered consecutively per each Design-Builder

name. A procedure should be established to ensure that all Design-Builder and Construction Subcontractor payrolls are received within the allotted time. Progress Payments may be withheld if payrolls are not received within the allotted time.

If the work of the Design-Builder or Construction Subcontractor is interrupted for a week or more, a statement must be placed on the signature sheet of the payroll "No additional work will be performed until further notice." If work stops for a week or more, and is not anticipated to restart, the following statement must be placed "No work performed, and no work will be performed until further notice." (See the Department's Standard Specifications Subsection 107.22)

The last payroll submitted by the Design-Builder or Construction Subcontractor shall be marked "Final." This is notification that the Design-Builder's or Construction Subcontractor's work is complete.

If the Operations District Supervisor discovers, either through review of the Design-Builder or Construction Subcontractor certified payrolls, monthly labor interviews, and/or labor complaints that incorrect wages are being paid, the Operations District Supervisor is responsible to initiate immediate action to have the certified payrolls corrected (Circular Letter 1273-02.01). If payroll discrepancies are found, the Department will notify the Design-Builder of the discrepancy as soon as possible. The original payroll submitted is not returned to the Design-Builder; however, a copy is returned noting the infraction. Corrections are to be made by supplemental payrolls if required, prepared, and submitted in the same manner as the original payroll. Whatever the discrepancy may be, proper correction documentation must be received and approved promptly. The corrections received from the Design-Builder shall be attached to the appropriate related payroll. If corrections are not received in a timely manner, monthly Progress Payments may be withheld.

In some cases, notifying the Department of Labor may be required. However, issues should be resolved at the lowest level possible.

The Design-Builder and Construction Subcontractor payroll files must be made available to the Tennessee Department of Labor and Workforce Development for review as needed.

(b) Design-Builder and Construction Subcontractor Employee Interviews

One labor interview shall be required for every month work is performed on a federal-aid project. The TDOT PM shall conduct random on-the-job interviews to ensure that the actual wage is being paid and the employee is properly classified in the work he/she is performing (Circular Letter 1273-03).

If an employee declines a request for an interview, the employee's name and "Declined to Interview" shall be recorded on the form. This will be considered as a complete interview.

The labor interview is compared to the wage shown on the Design-Builder's or Construction Subcontractor's payroll for the corresponding payroll period. If a discrepancy is found, the discrepancy must be documented and resolved immediately.

The Labor Interview form is used to document interview information.

The TDOT PM will certify that the labor interviews have been conducted by approving the monthly Progress Payment.

(c) Project Site Bulletin Board (Federal-Aid Contracts)

A project site bulletin board is required on all federal-aid projects. The bulletin board must display required posters as noted in Circular Letter 1273-01, Project Site Poster Board.

The Department of Labor and Workforce Development lists on their website all the posters required by the Tennessee State Government and those required by the Federal Government for all Tennessee Employers. The Labor Posters may be downloaded from the website and printed.

The Small Business Development Office can provide the posters/documents required in regard to Disadvantaged Business Enterprises (DBEs).

2.14 ATTESTATION OF ILLEGAL IMMIGRANTS

The Design-Builder and all Design-Builder Subcontractors must certify, on a form provided in the **Design-Build Contract,** they are not knowingly using the services of illegal immigrants in the performance of the **Design-Build Contract**.

This form is to be submitted by the Design-Builder to the Department no later than January 1 and July 1 each calendar year in which work is performed.

2.15 INSURANCE

(a) **Insurance Coverages** - The Design-Builder shall obtain, at its expense, and keep in effect during the term of the **Design-Build Contract**, the insurance coverage(s) listed below. The Design-Builder may, however, contractually obligate an appropriate Subcontractor to obtain, at the Subcontractor's expense or at the Design-Builder's expense, and keep in effect during the term of the **Design-Build Contract** such types of insurance coverage that the Department approves as those that may be obtained by appropriate Subcontractors.

- **Commercial General Liability** - The Design-Builder shall maintain commercial general liability insurance covering bodily injury and property damage in a form and with coverage(s) that are satisfactory to the Department. This insurance shall include personal and advertising injury liability and products and completed operations coverage. Coverage shall be written by occurrence. Combined single limit per occurrence shall not be less than the dollar amount indicated in the **Design-Build Contract**. The annual aggregate limit shall not be less than the dollar amount indicated in the **Design-Build Contract**. The policy shall be endorsed to state that the annual aggregate limit of liability shall apply separately to the **Design-Build Contract**. If the Design-Builder's commercial general liability insurance limits are less than the required limits stated in the **Design-Build Contract**, the Design-Builder shall obtain excess or umbrella liability insurance with sufficient limits that when added to the Design-Builder's commercial general liability insurance limits the total combined limits of commercial general liability insurance required for this Project. The above-stated combined single limit per occurrence and the above-stated annual aggregate limit must each be met. Excess or umbrella liability insurance coverage shall extend to the same perils, terms, and conditions as the underlying commercial general liability insurance coverage.
- **Professional Liability** - The Design-Builder shall assume full responsibility for the quality of the Design-Builder's work and its conformance with all applicable laws, rules,

regulations, and orders governing said work. 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 duties in conformance with the reasonable standard of care as applicable to design professionals within the State of Tennessee. The Design-Builder shall provide the professional liability (Errors and Omissions [E&O]) insurance through their Design consultant.

- **Railroad's Protective Public Liability and Property Damage Liability Insurance and other Required Railroad Insurance -** The Design-Builder shall contact the railroad directly with questions concerning this requirement and any other railroad-required specific insurance. All railroad contact information will be provided within the project-specific Special Provision SP105C. All insurance required by the railroad shall be carried until all work required to be performed under the terms of the **Design-Build Contract** has been satisfactorily completed within the limits of the ROW of the railroad, as evidenced by the formal Acceptance by the Department. Insuring companies may not cancel insurance except by permission of the Department and railroad insured, or on 30 days written notice to the Department and the railroad.

(b) **Notice of Cancellation or Change** - The Design-Builder shall not cancel, change materially, or take any action showing intent not to renew the insurance coverage(s) without 30 days' advance written notice from the Design-Builder or its insurer(s) to the Department. The Design-Builder shall be responsible for ensuring that insurance coverage(s) obtained by an appropriate Subcontractor, as permitted by the Department, are not cancelled, changed materially, or have any action taken by the Subcontractor showing intent not to renew the insurance coverage(s) without 30 Calendar Days' advance written notice from the Design-Builder or the insurer(s) to the Department. Any failure to comply with the reporting provisions of this insurance shall not affect the coverage(s) provided to the Department, county, city, or other applicable political jurisdiction; or to the Department's governing body, board, or commission and its members; and the Department's officers and employees.

(c) **Certificate(s) of Insurance** - As evidence of the insurance coverage(s) required by this **Design-Build Contract**, including those permitted by the Department to be obtained by an appropriate Subcontractor, the Design-Builder shall furnish certificate(s) of insurance to the Department no later than the effective date of the **Design-Build Contract**. As evidence of insurance coverage(s) required by this **Design-Build Contract** but permitted by the Department to be obtained by an appropriate Subcontractor, the Design-Builder shall furnish certificate(s) of insurance to the Department for Review and Comment before the commencement of work by Subcontractors. The Department will review the certificate(s) for compliance with the **Design-Build Contract** requirements. The Certificate(s) shall specify all of the parties who are additional insureds and must include the State of Tennessee as an additional insured. The Design-Builder shall obtain or ensure that the appropriate Subcontractors obtain insurance coverage(s) required under this **Design-Build Contract** from insurance companies or entities acceptable to the Department and authorized to issue insurance in the state. The Design-Builder or the appropriate Subcontractor, but not the Department, shall be responsible for paying all deductibles, self-insured retentions and/or self-insurance included under these provisions.

2.16 INDEPENDENT CONTRACTOR STATUS

The service or services to be rendered under the **Design-Build Contract** are those of an independent contractor. The Design-Builder and all Subcontractors shall not become an officer, employee, or agent of the State as a result of entering into the **Design-Build Contract** for this Project.

2.17 ADJUSTMENTS AND DISPUTES

This section details the process through which the Parties agree to resolve any disagreement concerning additional compensation or concerning a combination of compensation and **Design-Build Contract** Time. These provisions do not apply to disagreements concerning only **Design-Build Contract** Time or return of Liquidated Damages. The Department will not consider direct disagreements or disputes from Subcontractors, materials suppliers, or any other entity not a party to the **Design-Build Contract**.

When disagreements occur, the Design-Builder shall first pursue resolution through the Department of all issues in the dispute including, without limitation, the items to be included in a written notice. If the discussion fails to provide satisfactory resolution of the disagreement, the Design-Builder shall follow the dispute procedures outlined in the Department's Standard Specifications Subsection 105.16. If the Department denies all or part of the Design-Builder's dispute, and the Design-Builder desires to further pursue the issues, the Design-Builder must submit an additional claim for processing.

2.18 SUBCONTRACTING OF WORK

The Department shall approve all 1st Tier, 2nd Tier or lower tier subcontracts. All approved Construction Subcontractors shall be on the Department Pre-Qualified List posted on the TDOT Construction Division Page. Design Subconsultants shall be prequalified by the Department. Design consultant prequalification listings are available at the Department Consultant Information Page. An approved and executed Subcontract Form must be on file in the Project records before a Design Subconsultant or Construction Subcontractor can begin work. An approved and executed Subcontract Form discloses all of the required signatures of the appropriate officials. For non-DBE Subcontracts, only the approved and executed form is required. For DBE Subcontracts, a copy of the Department-Approved Subcontractor-contract agreement is required.

(1) 1st Tier Construction Subcontract

The Design-Builder shall submit to the Department a completed Subcontract form for each 1st Tier Construction Subcontractor.

(2) 2nd tier or greater Construction Subcontracts Shall be Approved by the Department

The 1st Tier Construction Subcontractor shall submit to the Department a completed 2nd Tier Construction Subcontractor contract form as deemed necessary.

(3) Subcontracts Involving Design or Construction Disadvantaged Business Enterprises

If the **Design-Build Contract** has a DBE Goal, a copy of the Department-Approved Subcontractor contract agreement between the Design-Builder and the Construction Subcontractor must be in the project records before the first estimate requesting payment for

DBE services can be paid. A copy of the Department-Approved Subcontractor contract between the Design-Builder and the Design Subconsultant must be in the project records before receiving the Initial NTP. Additional information regarding DBEs is located in the Civil Rights Section of this **DB Standard Guidance** and TDOT Special Provision SP1247DB.

(4) Subcontracts Involving Design Subconsultants

Design subconsultants shall be prequalified by the Department as listed on the Consultant Information page. A TDOT Design Subconsultant Form shall be submitted to the Department for approval. A sample Design Subconsultant Form is provided in Appendix E.

The Design-Builder may sublet work in accordance with Department's Standard Specifications Subsection 108.01, as allowed in 23 CFR 635.116. However, in the case of a Design-Build Project, the following paragraph will be added as a supplement to Subsection 108.01:

"For Design-Build projects, the Design-Builder is not limited to performing work with their own organization amounting to not less than the 30% of the total original contract cost. At the discretion of the Department, a minimum percentage of work that must be done by the Design-Builder may be established in the **Design-Build Contract**. For the purpose of this section, the term Design-Builder may include any firms that are equity participants in the Design-Builder, their sister and parent companies, and their wholly owned subsidiaries."

In no case shall the Design-Builder sublet more than the stated percentage of the original **Design-Build Contract** Amount of a percentage stated in the **Design-Build Contract**, if a maximum is specified.

CHAPTER 3: POST-AWARD SUBMITTALS

3.1 SUBCONTRACT FORMS

The Design-Builder must submit to the Department Construction Office the TDOT Subcontract Form of any Construction Subcontractor the Design-Builder intends to engage on the Project for Approval, and a Design Subconsultant Form of any Design Subconsultant the Design-Builder intends to use on the Project for Approval including the lead design firm. An approved and executed form must be on file with the Department before the Construction Subcontractor or Design Subconsultant beginning work.

If the subcontract involves a Construction DBE, all information stated within Chapter 2 must be on file before the first estimate requesting payment for DBE services can be paid. If the subcontract involves a Design DBE, all information stated within Chapter 2 must be on file before the Initial NTP is issued.

3.2 CPM SCHEDULE SUBMITTAL REQUIREMENTS

All projects with durations longer than 24 months or when required by contract must follow the scheduling process outlined within Circular Letter 108.03.C and meet the requirements in Standard Specifications 108.03.C. The Initial Project Schedule (IPS), the Baseline CPM Project Schedule, and Subsequent Updates shall be generated using scheduling software. The scheduling software employed by the Design-Builder shall be compatible with the current and any future scheduling software employed by the Department. The Department's current software in use is Primavera Project Manager (version as specified in the **Design-Build Contract**). The software shall be compatible to provide an electronic file version of the Project Schedule that can be loaded or imported by the Department using the Department's scheduling software with no modifications, preparation, or adjustments to define all activities cost-loaded as required by the contract and their inter-relationships to establish a Critical Path.

The Design-Builder shall submit an Adobe PDF copy of the CPM Schedule formatted for 11" x 17" color sheets, along with the schedule in electronic format. The CPM Schedule shall include a separate narrative report which describes the Design-Builder's proposed methods of operation for designing and constructing the work required by the **Design-Build Contract**. The schedule narrative shall describe the sequence of design and construction, the proposed Critical Path of the Project, and all Milestone Schedule Deadlines.

The CPM Schedule shall include all activities of work required under the **Design-Build Contract**, in sufficient detail to monitor and evaluate design and construction progress, from Initial NTP to Final Acceptance of the work. The CPM Schedule shall also include activities, if applicable to the **Design-Build Contract**, for property acquisition, utility adjustments, permit acquisitions, and interfaces with other projects, localities, municipalities, and other governmental entities. For each activity, Design-Builder shall indicate the duration (in Whole Calendar Days) required to perform the activity and the anticipated beginning and completion dates of each activity. In addition, the CPM Schedule shall indicate the sequence of performing each activity and the logical dependencies and inter-relationships among the activities. The CPM Schedule shall include a listing of all submittals, including their associated reviews as necessary, to complete the scope of work defined in the **Design-Build Contract** in accordance with this **DB Standard Guidance**.

Each activity depicting the Design-Builder's operations shall have duration of not less than 1 Whole Day. All activities shown in the schedule, except for the first and last activities, shall have a minimum of one predecessor and a minimum of one successor activity. Float shall not be considered as time for the exclusive use of or benefit of either the Department or the Design-Builder but shall be considered as a jointly owned, expiring resource available to the Project and shall not be used to the financial detriment of either party. Any method used to sequester float calculations will be prohibited. Any schedule, including the Baseline CPM Schedule and all updates thereto, showing an early completion date shall show the time between the scheduled completion date and the applicable Milestone Schedule Deadline as "Project Float."

The Design-Builder shall include all Design Reviews 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 Business Days shall be allocated in the CPM Schedule for activities requiring the Department's Review and Acceptance or Review and Comment unless stated otherwise in the **Design-Build Contract**.

3.2.1. CPM INITIAL PROJECT SCHEDULE

The Design-Builder shall use the preliminary CPM Schedule submitted with the Proposal as a foundation to prepare the CPM Initial Project Schedule (IPS) in accordance with Chapter 3 of this **DB Standard Guidance** and the requirements herein for review at the Post-Award Meeting. The CPM IPS shall include a detailed plan for all work contemplated for the first 120 Calendar Days after the Initial NTP is issued and include all other work thereafter in sufficient detail to identify the Critical Path and milestones. Concurrent with the CPM IPS submittal, the Design-Builder shall prepare and submit a Contract Submittals List covering all submittals required during the first 6 months of the **Design-Build Contract**. Acceptance of the CPM IPS shall be a condition of starting any work. Refer to Circular Letter 108.03.C and Chapter 9 of this **DB Standard Guidance** for additional information.

3.2.2. CPM BASELINE PROJECT SCHEDULE

The Design-Builder shall use the CPM IPS as a foundation to prepare the Baseline CPM Project Schedule (time and cost-loaded) and shall submit it to the Department for Review and Acceptance. Within 90 Calendar Days after the Acceptance of the CPM IPS, the Design-Builder shall submit a draft Baseline CPM schedule to the Department and hold a meeting to review. Refer to Circular Letter 108.03(C) and Chapter 9 of this **DB Standard Guidance** for additional guidance regarding cost loading requirements and CPM Requirements for Billing & Payment Procedures. Acceptance of the Baseline CPM Schedule by the Department shall be a condition of receiving Construction NTP and starting any On-Site work.

3.2.3. CPM PROJECT SCHEDULE SUBSEQUENT UPDATES

The Design-Builder shall submit an updated Project CPM Schedule monthly following Acceptance of the Baseline CPM Project Schedule for the Department's Review and Acceptance. Failure to submit an updated Project CPM Schedule may result in the withholding of progress payments.

3.2.4. CPM PROJECT SCHEDULE RE-BASELINE

A revision of the Baseline CPM Schedule is required when the schedule has been significantly impacted by a change in the Work or condition or the Design-Builder has

deviated significantly from his baseline plan or schedule.

The Design-Builder may offer a revised schedule, or the Department may request one. Circumstances that may lead to requesting a revised schedule are addressed in the CPM Schedule Update Checklist and in Standard Specifications Subsection108.03(D).

3.3 ROW ACQUISITION SHEETS

The Design-Builder shall submit any revisions to the ROW Acquisition Sheets to the TDOT PM at the Post-Award Meeting.

CHAPTER 4: PUBLIC INVOLVEMENT PROCESS

The Design-Builder shall coordinate all public communication with the Department. See Chapter 7.4.5 of this **DB Standard Guidance** for information regarding Public Relations and Public Information.

If public involvement services are included in the scope of work required by the **Design-Build Contract**, the Design-Builder shall submit a public involvement proposal and schedule to the Department for Review and Acceptance using the Department's Public Involvement Plan (PIP) as a guide. All public involvement activities shall also be included in the CPM Schedule. If public informational meeting dates and/or times change, the Design-Builder shall submit a revised schedule to the Department. Consideration of the public involvement process to be implemented for any transportation effort will begin at the earliest stage of design and construction for the Project. Projects vary in the length of time required for design and construction, and projects vary greatly in size. The public involvement process can be different for each effort, and the level of public involvement implemented can vary.

Public involvement program activities associated with each category are defined within the PIP in terms of minimum requirements and potential enhanced activities. Those defined as "minimum requirements" meet or exceed the federal requirements for public involvement. They reflect the minimum level of effort acceptable to the Department on all projects. Enhanced activities will be considered critical to implement when there is an indication that additional public involvement is needed for any project, such as particularly divisive special interest groups within a project area that would require individual attention. All levels of public involvement will include reviewing demographic information to identify any underserved or special audiences within a project area and determining the appropriate level of outreach.

The Design-Builder shall certify to the TDOT PM the dates and times of meetings that were held. A record shall be kept of all public meetings and the comments received, and the dispositions of those comments shall be documented in the Project record.

If required by the **Design-Build Contract**, the Design-Builder will assemble a multidisciplinary team to assess the impact of the proposed project on the public.

On projects located within sensitive areas, the Department may require additional public involvement from the Design-Builder.

CHAPTER 5: ROADWAY DESIGN PROCEDURES, INCLUDING STRUCTURAL DESIGN

5.1 DEPARTMENT REVIEW POINTS

Upon the Initial NTP to the Design-Builder, the Design-Builder is required to coordinate project development with the TDOT PM or the designated Department contact person in the design development stage.

The Design-Builder shall not proceed with project development for which they expect reimbursement for Design Plans requiring the Department Review and Acceptance until it completes the Post-Award Meeting. The Department will not receive any Design Plans for Department Review and Acceptance without an Accepted Design Quality Management Plan (DQMP).

5.2 DESIGN

5.2.1. DESIGN POLICIES AND PROCEDURES

The Design-Builder shall use the following roadway design policies and procedures as noted below. Meeting minimum standards is allowable, but minimum standards should not be sought for all design criteria. Where "current edition" is noted, the current edition of each reference is defined by the date of release of the RFP.

(1) Standard Roadway Drawings, the Department Design Division, current edition.

(2) Standard Structures Drawings, the Department Structures Division, current edition.

(3) Standard Traffic Operations Drawings, the Department Traffic Operations Division, current edition.

(4) Roadway Design Guidelines, the Department Design Division, current edition with Instructional Bulletins.

(5) Survey Manual, the Department Design Division, current edition.

(6) Design Division Drainage Manual, the Department Design Division, current edition.

(7) Structural Memorandums (SMO), the Department Structures Division, current edition.

(8) Multimodal Access Policy, the Department Multimodal Transportation Resources Division, current edition.

(9) Design Procedures for Hydraulic Structures, the Department Structures Division, current edition.

(10) Work Zone Safety and Mobility Manual, the Department Design Division, current edition.

(11) Geotechnical Guidelines, the Department Materials and Tests Division, current edition.

(12) Americans with Disabilities Act (ADA) Standards for Accessible Design, 28 CFR Part 36, Appendix A.

(13) Manual on Uniform Traffic Control Devices (MUTCD, FHWA, current edition).

(14) A Policy on Geometric Design of Highways and Streets, American Association of State Highway and Transportation Officials (AASHTO), current edition with addenda.

(15) Guide for the Development of Bicycle Facilities, AASHTO, current edition with addenda.

(16) Standard Specifications for Structural Supports for Highway Signs, Luminaries, and Traffic Signals, AASHTO, current edition with addenda.

(17) Traffic Design Manual, the Department Traffic Operations Division, current edition.

(18) Roadside Design Guide, AASHTO, current edition.

(19) Highway Capacity Manual, Transportation Research Board (TRB), current edition.

(20) Standard Specifications for Highway Bridges, AASHTO, current edition with addenda.

(21) Load & Resistance Factor Design (LRFD) Bridge Design Specifications, AASHTO, current edition with addenda.

(22) Hydraulic Engineering Circulars, FHWA, current edition.

(23) Flood Insurance Studies, FEMA, current edition.

(24) Environmental Guidelines, Department Environmental Division, current edition.

(25) Environmental Quality Assurance Inspection Manual, Environmental Division, current edition.

(26) EPSC Inspection Manual, Construction Division, current edition.

For all Design-Build projects; the **Design-Build Contract** and/or Plans shall not contain any proprietary items, unless specified in accordance Department policies.

As permitted under 23 CFR 625.3 (e), the Roadway Design Policies and Procedures referenced above do not apply for traffic engineering and safety projects such as signing, marking, signalization, roadway lighting, and traffic barriers that will include very minor or no roadway work. This will permit implementation of projects addressing safety and operational concerns in a timely manner without requiring design exceptions for those

elements of the roadway that are beyond the scope of purpose and funding of these types of projects.

5.2.2. STAGES OF DESIGN DEVELOPMENT

The Design-Builder shall hold Design Reviews and conform to the following five stages of design-build development:

- Definitive Design (DD);
- Interim designs;
- Readiness-for-Construction Plans (RFC) Plans, Specification and Quantity Estimates;
- Working Plans;
- As-Built Plans.

The DD and RFC Plans can be submitted in reasonable phases or segments to expedite progress. Design submittals should follow typical Department processes and submittals should be submitted in the required order. The Design-Builder shall not request Acceptance of any submittal that depends on another submittal's final Acceptance not yet provided. A separate NTP will be issued for each RFC phase or segment.

The general purpose of each stage of design development and Design Review is to:

- Verify that the design complies with all **Design-Build Contract** requirements; and
- In the case of reviews of Working Plans, enable construction to continue.

The Design-Builder shall submit to the Department design notes and computations to document the design conclusions reached during the development of the construction plans.

The design notes and computation sheets shall be fully titled, numbered, dated, indexed, and signed by the lead designer and the checker. Computer output forms and other oversized sheets shall be formatted to print to a standard size 8.5" x 11" or 11" x 17". The data shall be submitted electronically in Adobe PDF format to the Department. At the project completion, a final set of design notes and computations, signed by the Design-Builder, shall be submitted with the record set of plans.

5.2.3. STRUCTURES

Final hydraulic design and preliminary and final structural plans, digitally signed and sealed by a Professional Engineer licensed in the State of Tennessee using the Digital Signature Certification process detailed in the Roadway Design Guidelines, will be prepared by the Design-Builder and submitted to the TDOT PM before submission of the RFC Plans. A copy of the letter transmitting these plans should be sent to the Department Alternative Contracting Office. These plans will be transmitted to the designated Structures Division contact person for Review and Acceptance, and the Department will transmit to FHWA for review.

5.2.4. BRIDGES

A bridge is a structure erected over a stream, watercourse, highway, railroad or opening, for carrying pedestrian and/or vehicle traffic having a length, measured along the centerline of the roadway, of more than 20 feet between faces of end supports. For span structures, structure length should be measured from back to back of the back walls of the abutment or from pavement notch to pavement notch. For culverts, structure length is measured between inside faces of the exterior walls.

Materials for bridge construction shall be only those approved by the Department Materials and Test Division for use on the Department projects. Timber bridges or components shall not be used, unless accepted by the Department. All bridge decks must be constructed using reinforced or pre-stressed concrete.

For span bridges, a preliminary bridge layout and a hydraulic layout sheet, if necessary, shall be submitted to the TDOT PM or the designated Department contact person for Review and Acceptance before purchase of any ROW. A copy of the letter transmitting the layouts should be sent to the Department Alternative Contracting Office. Multiple crossings on a single road project shall be submitted together for Review and Acceptance to the Department.

Structural design will be guided by LRFD per AASHTO LRFD Bridge Design Specifications, current edition. All bridge rails must be specified according to current Department standards or be rails meeting Manual for Assessing Safety Hardware (MASH) standards at the appropriate test level.

Span and box bridges and culverts will be constructed according to the Department Standard Specifications for Road and Bridge Construction (Standard Specifications), current edition. Box and slab type bridges shall be specified according to the Department Structures Division standard drawings or designed to AASHTO guidelines. Pre-cast concrete boxes and three-sided, pre-cast concrete structures shall be specified according to manufacturer plans and specifications and shall be only those approved for use by the Department for roadway projects. Any greenways, bicycle lanes, or pedestrian lanes shall be accounted for in bridge design per the Department's Multimodal Access Policy.

Shop drawings will be required for all items identified in the Department Standard Specifications Subsection 105.02.

5.2.5. GRADE SEPARATED CROSSINGS

A grade separated crossing is a bridge over a road or railroad. The minimum bridge lengths for grade separated crossings will be the minimum required to accommodate the road or railroad plus the fill slopes (usually 2:1 unless otherwise specified by geotechnical study or in the **Design-Build Contract**), ditches, and sidewalks, if required.

The minimum horizontal clearance for road grade separated crossings shall be a distance equal to the width of shoulders plus ditches, except for Interstate Routes and State Routes grade separated crossings, which shall be 30 feet from the outside of the travel lane to

any substructure. For minimum vertical clearances, see the Department's Roadway Design Guidelines. An allowance of 6 inches shall be added to all vertical clearances to accommodate future resurfacing.

For railroad grade separated crossings, the minimum horizontal clearance shall generally be 25 feet measured from the centerline of rail to any substructure or fill slope. Many railroad entities require structures to span their entire ROW. If the Department or the Design-Builder deems the financial burden unrealistic, the Department can approach the railroad with a deviation from standard request. This request will require approval by railroad management and shall be based upon sound engineering justification. The request shall be submitted to the State Railroad Coordinator who will review and submit to the railroad for review. The railroad's approval or denial will be submitted back to the State Railroad Coordinator and Design-Builder.

The minimum vertical clearance shall be 23 feet above the top of rail measured 6 feet from either outside rail, whichever is higher. Each railroad may have different requirements for horizontal clearance based on their Public Project guidelines. It is the Design-Builder's responsibility to review the railroad's specific guidelines and accommodate their specific requirements. In rare circumstances, a railroad has additional requirements that are not contained in their Public Projects guidelines. It is the responsibility of the Design-Builder to coordinate with the railroad to determine and accommodate any additional railroad requirements.

5.2.6. HYDRAULIC CROSSINGS

All hydraulic structures receiving a 50-year flow of less than 500 cubic feet per second (cfs) shall be designed according to the Department Design Division Drainage Manual and structures receiving a 50-year flow of 500 cfs or greater shall be designed according to the Department Design Procedures for Hydraulic Structures (Tennessee Hydraulic Memoranda [THM]). All hydraulic design shall also comply with 23 CFR Part 650 Subpart A.

All one-dimensional hydraulic designs shall be prepared using the U.S. Army Corps of Engineers Hydrologic Engineering Centers River Analysis System (HEC-RAS) software for Review and Acceptance before submission of the RFC Plans. A more detailed two-dimensional model may be submitted using the U.S. Bureau of Reclamation's Sedimentation and River Hydraulics – Two Dimension (SRH-2D). A copy of the letter transmitting this file shall be sent to the Department Alternative Contracting Office.

Where Federal Emergency Management Agency (FEMA) Flood Insurance Studies are available for a hydraulic crossing, the flow information and water surface profile starting elevations will be used unless a hydraulic or hydrologic study is performed to determine if other data are more appropriate. If there is no FEMA study available for the Project, then other data sources shall be used as outlined within the Design Procedures for Hydraulic Structures. No backwater may be produced by an encroachment on the designated floodway over and above that already existing when the floodway was established by the local government. Note: If this requirement is impractical, the

Department may acquire flood easements for the property affected by the backwater or make appropriate improvements in conveyance in the floodway or appeal to FEMA through the local community to redesignate the limits of the floodway (44 CFR 60.3 and 44 CFR 65.12).

All hydraulic designs shall demonstrate that flooding conditions will be at least no worse than existing conditions. A scour analysis will be required according to procedures in the FHWA publication Hydraulic Engineering Circular (HEC) HEC-18 for all span bridges in the Department Region 4 (west Tennessee) and any other part of the state where foundations will not be placed on bedrock.

Bridge deck drainage will be analyzed according to procedures in the THM and FHWA publication HEC-21 for all span bridges unless the Department Standard 11-1 (Open) bridge rail is used.

An electronic hydraulic design file, including all layouts and design analyses, digitally signed and sealed by a Professional Engineer licensed in the State of Tennessee using the Digital Signature Certification process as detailed in the Roadway Design Guidelines, shall be submitted to the TDOT PM or the designated Department contact person. This file shall include a hydraulic model with detailed design documentation.

5.2.7. RETAINING WALLS

Retaining walls for bridge or roadway projects shall conform to the Department Geotechnical Guidelines and Special Provisions. See the Department Roadway Design Guidelines for Retaining Wall Design.

5.2.8. PROJECT SURVEY

The survey for the project is to be tied to the Tennessee Geodetic Reference Network. Project plans shall show the horizontal datum, vertical datum, and the datum adjustment factor on all sheets that contain survey information. Control points, benchmarks, horizontal controls, and vertical controls are to be shown in the project plans as well. All surveys shall comply with the most current version of the Department's Survey Manual and the Department's Roadway Design Guidelines, except as modified by the **Design-Build Contract**.

5.2.9. NEPA

The Design-Builder shall review and adhere to the approved Federal Highway Administration (FHWA) National Environmental Policy Act (NEPA) document, all supporting technical studies, and all environmental commitments listed on the "Green Sheet" of the approved NEPA document(s). The Design-Builder is responsible for ensuring that all actions comply with all environmental commitments noted in the most recently approved NEPA document, associated NEPA reevaluations, and shown on the commitment sheet in the roadway plans. The Design-Builder is responsible for reviewing all updates to plans and comparing the updated plans to what was studied in the most recently approved NEPA document or associated NEPA reevaluation. In

particular, this review should focus on whether the updated plans include actions, areas, or impacts not disclosed or studied in the most recently approved NEPA document or associated NEPA reevaluation. If the updated plans include actions, areas, or impacts not disclosed or studied in the most recently approved NEPA document or associated NEPA reevaluation, then the Design-Builder must develop a reevaluation to determine if the NEPA decision remains valid. Further, regardless of the presence or absence of changes to plans, before any major FHWA approvals or grants (such as ROW authorization or Construction authorization), the Design-Builder must conduct a review to determine if a NEPA reevaluation is warranted and submit documentation regarding the determination to the Department.

The Design Builder is responsible for adhering to any environmental commitments made through the NEPA and permitting processes throughout design and construction and post-construction if responsibility for ongoing commitments is assigned to the Design-Builder. The NEPA document, including the "Green Sheet" environmental commitments, will be provided on the Project website. Each listed commitment is to be fulfilled before or during construction occurring in the project area relevant to the commitment. If at any time the design of the project potentially invalidates the approved NEPA document or Permit requirements, the Design-Builder shall cease work and contact the Department Alternative Contracting Office, the Region Environmental Technical Office (ETO), and the Environmental Division.

In accordance with NEPA, before each major milestone (ROW authorization and Construction authorization), the latest design plans shall be compared to those studied in the last approved NEPA document. A reevaluation of the approved NEPA document(s) may be required to address any additional or new ROW and/or easements not studied in the approved NEPA document(s); changes to the project design, scope of work, or purpose and need that were not covered under the approved NEPA document(s); or a change in the laws or circumstances relevant to the project or the project area occurring since the approval of the last NEPA document. This includes, but is not limited to, the approval of detour routes in excess of 25 miles in rural areas or 5 miles in urban areas not specifically provided for in the approved NEPA document(s).

It is the Design-Builder's responsibility to identify the need for a reevaluation. If a reevaluation is determined to be necessary, the Design-Builder will be responsible for completing the reevaluation, coordinating with the Environmental Division and obtaining approval of the NEPA reevaluation document, including all technical studies needed for the reevaluation unless specified otherwise in the NEPA documentation section of the **Design-Build Contract**. The NEPA reevaluation and associated technical studies shall follow Department Environmental Division guidance, policies, and applicable agreements.

Design changes that warrant environmental reevaluation shall also address environmental policy changes that may have occurred since the last approved environmental document including, but not limited to, review of current threatened and endangered species lists, air quality conformity rulings, noise policy, and other rules and

regulations. The Design-Builder shall demonstrate that the findings and conclusions of the most recently approved environmental document remain valid and/or coordinate with the Department on the need for additional technical study and evaluation.

5.2.10. REGULATORY PERMITS

When regulatory permits are required to be obtained for a Design-Build project, the Design-Builder shall submit the permit application as an Authorized Agent of the Department and ensure that 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 permit applications before submitting the application to the permitting agencies. While permitting agencies will hold the Department ultimately responsible for meeting permit requirements, the Department will in turn hold the Design-Builder responsible for meeting permit requirements as specified in the **Design-Build Contract**. Should the Design-Builder's activities be in violation of the environmental permits, law, and/or regulations and therefore cause fines and/or penalties to be assessed against the Department, the fines and/or penalties will be deducted from monies due the Design-Builder.

The Design-Builder shall identify all permits required, obtain, and pay for the regulatory permits when they are required by applicable laws, the Plans, or **Design-Build Contract** Specifications, unless otherwise specified in the **Design-Build Contract**. This includes all permits required for the construction of the project and for stormwater discharges associated with construction support activities including, but not limited to, equipment staging yards, material storage areas, excess excavated materials disposal, demolition disposal (waste) areas, and borrow areas. Environmental permits may also be required when activities such as core sampling, seismic exploratory operations including placement and operation of scientific devices, geotechnical investigations, ROW fence replacement, and cultural resources surveys are within Waters of the State or Waters of the U.S.

All associated costs for permits shall be included in the **Design-Build Contract** Amount. If the Department provides the permits within the **Design-Build Contract**, the Department will transfer all permits obtained to the Design-Builder. See the Department's Roadway Design Guidelines for general guidance. Before applying for environmental permits, the Design-Builder is responsible for field verifying and updating the Environmental Boundary Report (EBR) as specified in the **Design-Build Contract**. This will include an update of resource coordination with appropriate regulatory agencies and the Department. All Department supplied and supplemental ecological information shall be included and labeled on plans.

If a National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) is required for the Project, the Design-Builder shall develop EPSC plan sheets, prepare a Storm Water Pollution Prevention Plan (SWPPP) and obtain the CGP coverage. The SWPPP, Documentation and Permits Binder and Notice of Intent (NOI) shall follow the Department's current format. Templates can be requested from the

Regional ETO or Environmental Division, Permits Section. 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 SWPPP and NOI shall be submitted at least 45 Business Days before beginning construction. Once a Notice of Coverage (NOC) is received by the Design-Builder, the EPSC Plans shall be kept current for all phases of construction. Any changes in scope after submitting the SWPPP for coverage under the CGP shall be submitted to TDEC for their records in accordance with the CGP.

The Design-Builder assumes all compliance responsibilities of the permittee as indicated in the permit(s) and the **Design-Build Contract** relating to protection of the "Waters of the United States" and/or "Waters of the State of Tennessee" pursuant to the following:

(1) Section 404 of the Federal Clean Water Act (33 United States Code [U.S.C.] §1344), Section 10 of the Rivers and Harbors Act (33 U.S.C. §403), and all implementing regulations including, without limitation, regulations of the U.S. Army Corps of Engineers governing permits for discharges of dredged or fill material into Waters of the United States in 33 CFR Part 323.

(2) The Tennessee Water Quality Control Act (Tennessee Code Annotated [T.C.A.] §69-3-101, et seq.) and all implementing regulations including, without limitation, the Rules of the Tennessee Department of Environment and Conservation (TDEC) governing NPDES permits (Tennessee State Rules and Regulations [Rule] 0400-40-10), and Aquatic Resource Alteration Permits (Rule 0400-40-07) and Class V Injection Well Permits (Rule 0400-45-06) for work in or near sinkholes.

(3) Section 26a of the Tennessee Valley Authority (TVA) Act of 1933 as amended (48 Stat. 58-59, 16 U.S.C. sec. 831.) and all implementing regulations including, without limitation, the regulations of the TVA governing construction in the Tennessee River System in 18 CFR, Part 1304.

(4) Construction, reconstruction, and/or repair of bridges over navigable waterways could require a United States Coast Guard Bridge Permit. The regulations governing Coast Guard Bridge Permits are codified in 33 CFR 114-118. Additional information regarding this program can be obtained from the Coast Guard Office of Bridge Programs.

(5) Any work within or causing changes to FEMA Flood Studied Streams will require coordination with FEMA for appropriate determinations and approvals including no-rise certifications, conditional letter of map revisions, and other documents.

Unless stated otherwise in the **Design-Build Contract**, the Design-Builder is responsible for determining and obtaining all permits required for construction and complying with all federal, state, and local permits and approvals required for construction of the project including material staging areas, dedicated asphalt and/or concrete plants, and waste and borrow areas. Required permits and approvals include, but may not be limited to, building, demolition, grading, and environmental compliance.

Permits may be modified by regulatory agencies while performing the work under the **Design-Build Contract**. Therefore, wherever the term "order," "permit," "opinion," "programmatic agreement," or "authorization" is used in the **Design-Build Contract**, it is intended to refer to the current version in effect at the time the event governed by it takes place.

The Design-Builder is responsible for obtaining and complying with all federal, state, and local permits and approvals required to perform field investigations such as core sampling, seismic exploratory operations, soil surveys, soil sampling, and cultural resources surveys are within Waters of the State or U.S.

Where the **Design-Build Contract** directs that the Design-Builder is authorized to act on the Department's behalf for environmental permit coordination, the TDOT Construction Division will provide documentation indicating this designation. Upon receipt of this documentation, the Design-Builder will act as a representative for the Department in all coordination with regulatory agencies. If any agency rejects or denies the permit application, it is the Design-Builder's responsibility to make whatever changes necessary to ensure that the permit is approved. The Design-Builder will be responsible for preparing designs and proposing construction methods that are permittable. All permits required for a particular construction activity will be acquired before commencing the particular construction activity. Delays due to incomplete permit packages, agency rejection, agency denials, agency processing time, or any permit violations will be the responsibility of the Design-Builder and will not be considered sufficient reason for time extension.

All substantive contact with regulatory authorities by the Design-Builder shall be conducted by the appropriate, qualified environmental task lead. The Design-Builder shall fully review guidance material available on the regulatory authorities' internet sites before contacting the authorities. The Design-Builder shall not contact the regulatory authorities without previous approval of the Department's environmental staff as specified in the **Design-Build Contract**.

The Department, at its discretion, may grant a non-compensable time extension for any impacts beyond the reasonable control of the Design-Builder in securing permits in an approved Change Order. Furthermore, as to any such impact, no modification provision will be considered by the Department unless the Design-Builder clearly establishes that it has continuously from the beginning of the Project efficiently and effectively pursued the securing of the permits including the use of any and all reasonably available means and methods to overcome all impacts.

5.2.11. DESIGN DOCUMENTATION

(a) Progress Tracking – The Design-Builder shall include engineering and design progress and changes in its CPM Schedule (including work on any design change) in the Monthly Progress Report. The Design-Builder's progress tracking for design shall reflect a mutually agreed-upon percent complete for Milestones achieved.

(b) Design Quality Records – The Design-Builder shall maintain an auditable record of all DQMP procedures. An independent auditor must be able to determine by reviewing the documentation if all procedures included in the DQMP and required herein have been followed. The Design-Builder shall submit all monitoring reports and records of checks and reviews within 7 Calendar Days of the completion of the applicable review.

(1) The Design Manager shall be responsible for preparing and maintaining the following design quality records.

a. Monitoring reports of all design issues and review comments resulting from the scheduled and additional checks and reviews including final resolution of those issues and comments;

b. A log of design Non-Conformance Reports and/or notices indicating date issued, reasons, status or resolution, and date of resolution;

c. Daily records of design activities using forms acceptable to the Department.

(2) The DQM shall be responsible for preparing and maintaining the following design quality records:

a. Monthly Progress Report to the TDOT PM or the designated Department contact person by the third Business Day of the following reporting month that includes each of the following:

1. Summary of Design Reviews conducted;

2. Non-conforming work and current status and disposition (based on design non-conformance log); and

3. Submissions from the Design-Builder and status.

b. Final Design Report - Upon completion of the RFC Plans and Specifications, the Design Quality Manager shall notify the Design-Builder, with a copy to the TDOT PM or the designated Department contact person, of any outstanding monitoring report issues, unresolved review comments or non-conformances.

5.2.12. DESIGN/DESIGN QUALITY CHECKS AND CERTIFICATIONS

(a) Design Checks – The Design-Builder shall require its Designer to check all Design Documents (Working Plans, Plans, Design-Builder Specifications, calculations, memoranda, and reports) as they are produced to confirm compliance with all **Design-Build Contract** requirements. The Design Manager shall conduct such independent reviews and evaluations as may be necessary to enable him/her to certify that the Design Documents have been checked per **Design-Build Contract** requirements and the Design-Builder's DQMP.

(b) Independent Design Checks – The Design-Builder's Design Review shall include independent design checks. The Design-Builder shall carry out independent design checks of Plans and Design-Builder Specifications for permanent components and major temporary components, and for effects of temporary components on the permanent components. Such checks shall be performed by senior engineers employed or retained by the Design-Builder who are not involved in the production of the design documents being reviewed, and who have qualifications and experience equal to or greater than the Responsible Engineer for the design being checked.

Independent design checks shall comprise design assessment and analytical checks, as specified herein.

(1) Design Assessment - Design assessment constitutes a review of the Design Document for general compliance with all **Design-Build Contract** requirements, considering the proposed method of construction, and shall cover each of the following areas:

- Loads;
- Legal Requirements and standards;
- Requirements of the **Design-Build Contract**;
- Methods of analysis;
- Computer software and its validation;
- Interface requirements;
- Maintenance requirements;
- Materials and material properties;
- Durability requirements;
- Fatigue performance;
- Hydrology; and
- Design flows.

(2) Analytical Check - Independent design checks shall include an independent analytical check using independently derived calculations (without reference to Designer's calculations) to evaluate the structural adequacy and integrity of critical structural members as designed. This shall include, but is not limited to, the following:

- The structural geometry and modeling;
- Material properties;
- Member properties;

- Loading intensities;
- Structural boundary conditions.

(c) Design Quality Manager Certifications – Unless otherwise specified in the **Design-Build Contract**, the Design Quality Manager shall conduct all necessary reviews to enable him/her to issue written certification in accordance with the requirements specified herein.

5.2.13. SOILS AND GEOLOGY

During the design phase of a project, the Design-Builder shall investigate the geotechnical aspects of the general roadway alignment chosen for the Project. Surface geology recognizance and mapping, drilling of the subsurface soil and bedrock information, and sampling the soil and bedrock for engineering properties will be conducted. A preliminary geotechnical study (for soils and geology) will be undertaken by the Design-Builder to identify geotechnical features that may affect the Project's design. The study will seek to identify topography; soil types; subsurface formations; and areas of unstable materials, caves, and sinkholes, as well as any special concerns such as acid-producing material (APM). The Design-Builder shall provide the Department with a narrative report covering issues on the project and recommendations including cut and fill slope design, foundation recommendations, special notes, and mitigation of problem areas for the Department's Review and Acceptance. Technical drawings shall also be included. Special concerns, such as APM, shall be avoided by design if at all possible. If not avoidable, designs shall minimize and mitigate impacts and associated costs in accordance with the Department's Geotechnical Guidelines.

The Design-Builder shall be involved in geotechnical inspection of footing condition, bridges and retaining walls, wet or soft soil conditions encountered, unstable cut slopes or potentially dangerous rock fall areas, encapsulation of APM, sinkholes that occur during construction activity, and problems with the construction of retaining walls (e.g., mechanically stabilized earth (MSE) walls, tieback walls, soil nail walls, pile lagging walls).

See the Department Geotechnical Operations website for additional information, drawings, or guidance and the Department Geotechnical Guidelines. All Geotechnical submittals shall be submitted through the TDOT PM and follow the Geotechnical Guidelines located on the Materials and Tests Divisions, Geotechnical Operations webpage.

5.2.14. TRANSPORTATION MANAGEMENT PLAN

The Design-Builder shall be responsible for the safety and operational aspects of the project work zone. The Design-Builder shall prepare a Transportation Management Plan (TMP) in accordance with the Department Work Zone Safety and Mobility Manual, which defines the strategic plan for traffic management on the Project. The TMP shall address major aspects of the work for individual construction areas, phases, and stages

including temporary traffic control, transportation operations, and public information strategies.

The level of planning required for an individual TMP will depend on the project's anticipated impacts. The first step in developing a TMP for a work zone is to determine the appropriate level of TMP to be used.

All projects, regardless of significance, require a TMP. All TMPs are required to have temporary traffic control (TTC) strategies, regardless of project significance. Significant projects shall have transportation operations (TO) and public information (PI) strategies, non-significant projects should consider TO and PI strategies. Applicable details, drawings, and strategy descriptions shall be included to expedite TMP reviews.

Before the DD submittal, the Design-Builder will submit the TMP packet to the Department for approval and TMP cover sheet signature. The TMP shall be reviewed, revised, and finalized at the RFC Design Review. The revised, finalized, and signed TMP shall be submitted with RFC Plans.

5.3 DESIGN REVIEWS, MEETINGS, CONFERENCES, AND PLAN REQUIREMENTS

Pre-Design Meeting

A maximum of 15 Calendar Days or at the Post-Award Meeting before beginning design services, unless otherwise authorized in writing by the Department, the Design-Builder shall meet with the TDOT PM or the designated Department contact person at a time mutually agreed upon. Among other matters, the purpose of the meeting will be to establish the level of detail to be required for measuring progress and making payment with regard to those design Lump Sum Pay Items referenced in this **DB Standard Guidance**.

(a) The Design-Builder shall include the Design Review schedule in the CPM Schedule, which shall be reviewed monthly until the design work is complete. The Design Review schedule shall indicate all independent Design Reviews required to be performed by the DQM before Design Reviews with the TDOT PM or the designated Department contact person.

(b) Design Review Notices – The Design-Builder shall give written notice of scheduled Design Reviews to the TDOT PM or the designated Department contact person at least 10 Business Days before any Design Review and shall not schedule more than two concurrent Design Reviews.

5.3.1. DESIGN REVIEWS

(a) Meeting Location and Participants

Design Reviews shall be conducted by the Design-Builder Design Manager. Design Review meetings shall be held in the Department regional office or elsewhere in the Project vicinity upon approval from the Department. The Design-Builder DQM, the Responsible Engineer, and any specialists having significant input into the design or

review shall be present. The Design-Builder shall notify and invite the Department to participate in all Design Reviews. The Department may also invite Sstakeholders to attend.

(b) Documentation To Be Provided

The Design-Builder shall make available to participants all Design Documents (e.g., drawings, copies of calculations, reports, and other information) pertinent to the Design Review, including all previous comments and actions resulting therefrom, as set out herein.

(c) Design-Builder Action Required

The Design-Builder shall address and attempt to resolve the Department's comments in consultation with the Department. Stakeholder comments, if any, will be forwarded to the Design-Builder by the Department and addressed by the Design-Builder. The Design-Builder shall resolve all comments to the Department's satisfaction, correct all non-conformances, and resubmit the document to the TDOT PM or the designated Department contact person in accordance with the comment resolution procedures stipulated herein.

(d) Time and Cost Impacts Borne by the Design-Builder

The Design-Builder's time and cost impacts of revisions arising from the Department's participation in Design Reviews and Review and Comment or required due to the Design-Builder's non-compliance with **Design-Build Contract** requirements, shall be borne by the Design-Builder.

The Design-Builder Continuing Responsibility – the Department's participation in Design Reviews shall not relieve the Design-Builder of its responsibility for the satisfactory completion of the work in accordance with all **Design-Build Contract** requirements.

Stages of Design Review – Design Reviews shall be conducted for the following:

(1) Definitive Design Review

The DD Review shall be the first Design Review requiring participation of the Department and is intended to verify that the Base Technical Concepts proposed by the Design-Builder meet all **Design-Build Contract** requirements. This review can be combined with the RFC Design Review on smaller projects upon Approval of the Department Alternative Contracting Office. However, Utility Coordination must still occur before the Final RFC Plans. The DQM shall verify before the DD Plans Review that:

- All **Design-Build Contract** requirements applicable to the proposed Technical Concepts, including all applicable standards, regulations, and legal requirements, have been identified, and the proposed Technical Concepts are in compliance.

- The Technical Concepts are substantiated and justified by adequate site investigation and analysis.
- ROW requirements have been identified in the ROW Acquisition Sheets.
- Environmental technical studies are complete, and a determination is made on whether the original NEPA document is still valid or if a reevaluation is needed.
- The proposed Technical Concepts are constructible.
- Required materials and equipment are available.
- Traffic control and construction phasing have been adequately considered during the DD phase.
- The Technical Concepts meet all quality requirements, and all required design quality procedures have been followed.

DD Plans are similar to ROW plans in the Department Roadway Design Guidelines and shall have all required information to obtain NTPs to acquire ROW, acquire permits, and relocate utilities as well as requirements stated in the **Design-Build Contract**. A DD Plans Checklist, based on the Department's current ROW Plans Checklist, is contained in Appendix C. The DD Plans Checklist has been modified to reflect that some requirements of traditional ROW Plans can be delayed for Design-Build Projects until the RFC Plan submittal. The requirements of the DD Plans Checklist may be modified on a per project basis by the TDOT PM. Any requirements of the Department's current ROW Plans Checklist delayed until RFC Plans for Design-Build Projects shall be included in the RFC Plans, and the RFC Plans shall meet all requirements of the Department's current Construction Plan Checklist. DD Plans shall include ecological information. These plans shall have, at a minimum, the following sheets (as applicable) and all other details as necessary to acquire permits, relocate utilities, and define construction and ROW limits:

- Title Sheet;
- Project Commitments;
- Typical Sections;
- Environmental Notes;
- Detail Sheets;
- Right-of-Way Notes, Utility Notes, and Utility Owners;
- Right-of-Way Acquisition Table and Property Maps;
- Present Layouts;

- Right-of-Way Details;
- Proposed Layouts;
- Proposed Profiles;
- Ramp Profiles;
- Side Road Profiles;
- Private Drive, Business, and Field Entrance Profiles;
- Drainage Maps;
- Culvert Sections;
- Erosion Prevention and Sediment Control Plans;
- Environmental Mitigation Plans;
- Roadway (Mainline) Cross Sections;
- Side Road Cross Sections;
- Bridge Plans (Preliminary);
- Intelligent Transportation System (ITS) Plans (Preliminary);
- Lighting Plans (Preliminary);
- Natural Stream Design Plans;
- Retaining Wall Plans (Preliminary);
- Signal Plans (Preliminary), and;
- Any other details that may be needed.

The Title Sheet for the Project plans shall have "Design-Build Project" printed in the upper right corner. A project number (XXXXX-XXXX-XX) shall be obtained from the Department Alternative Contracting Office to place on the plans.

For DD Review Plan Submittals -

All plans shall be submitted electronically and shall include plan sheets and cross section sheets both in Adobe PDF and Microstation or OpenRoads formats, current versions.

The transmittal may include preliminary reports on additional site investigations, a foundation report, hydraulic report, slope stability report, environmental findings, and other documents applicable to the design and in support of the design decisions.

After the DD Plans Review and resolution of all comments, the Design-Builder must issue Final DD Plans electronically and shall include plan sheets and cross section sheets both in Adobe PDF and Microstation or OpenRoads formats, current versions. The Final DD Plans title sheet shall be digitally signed and sealed by a Professional Engineer licensed in the State of Tennessee using the Digital Signature Certification process detailed in the Roadway Design Guidelines.

(2) Interim Design Review

The Design-Builder shall notify the Department if Interim Design Reviews are necessary and shall schedule the necessary Design Reviews following independent review by the DQM, which may be presented at a design workshop or meeting with the Department.

The Design-Builder shall also use Interim Design Reviews to verify that the concepts and parameters established and represented by the DD Plans are being followed, and that all **Design-Build Contract** requirements continue to be met. The Design-Builder shall specifically highlight, check, and bring to the attention of the Department any information differing from or supplemental to that presented at the DD Plans Review. Significant changes to the DD Plans will require a re-submittal and the Department Review and Acceptance.

For Interim Design Reviews -

All plans shall be submitted electronically and shall include plan sheets, cross section sheets, and associated details both in Adobe PDF and Microstation or OpenRoads formats, current versions.

(3) Readiness-for-Construction Design Review

The Design-Builder shall use the RFC Design Review to verify that the concepts and parameters established and represented by the DD Plans are being followed and that all **Design-Build Contract** requirements continue to be met. The Design-Builder shall specifically highlight, check, and bring to the attention of the Department any information differing from or supplemental to that presented at the DD Review. Before scheduling the RFC Design Review with the Department, the Design Quality Manager's independent review shall have been completed.

RFC Plans are similar to Construction Plans in the Department's Roadway Design Guidelines. RFC Plans shall have all required information for Construction Plans as detailed in the current Roadway Design Construction Plans Checklist as well as requirements stated in the **Design-Build Contract**. The RFC Plans will show sufficient details and dimensions to define the work. RFC Plans shall include

ecological information. These plans shall typically have, in preferred order, the following sheets (as applicable) and other details as necessary to define all work to be completed:

- Signature Sheets;
- Title Sheet;
- Roadway Index and Standard Roadway Drawings;
- Standard Structure and Traffic Operations Drawings;
- Project Commitments;
- Estimated Roadway Quantities;
- Estimated Box Bridge Quantities;
- Typical Sections and Pavement Schedule;
- General Notes;
- Special Notes;
- Tabulated Quantities;
- Detail Sheets;
- Right-of-Way Notes, Utility Notes, and Utility Owners;
- Right-of-Way Acquisition Tables and Property Maps;
- Present Layouts;
- Right-of-Way Details;
- Proposed Layouts;
- Proposed Profiles;
- Ramp Profiles;
- Side Road Profiles;
- Private Drive, Business and Field Entrance Profiles;
- Drainage Maps;
- Culvert Sections;
- Erosion and Sediment Control Plans;
- Environmental Mitigation Plans;
- Signing and Pavement Marking Plans;

- Sign Schedule Sheets;
- Miscellaneous Signing Details;
- Roadway Cross-Sections;
- Side Road Cross-Sections;
- Traffic Control Plans;
- Bridge Plans;
- Geotechnical Plans;
- ITS Plans;
- Lighting Plans;
- Natural Stream Design Plans;
- Retaining Wall Plans;
- Signal Plans;
- SWPPP Plans;
- Utility Plans; and
- Any other details that may be needed.

The Title Sheet for the Project plans shall have "Design-Build Project" printed in the upper right corner. The Professional Engineer in charge of the development of the Project plans shall place his 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. Final RFC Plans shall be digitally signed and sealed by a Professional Engineer licensed in the State of Tennessee using the Digital Signature Certification process as detailed in the Roadway Design Guidelines.

For RFC Design Reviews including a copy of the quantity estimates any other supporting data required by the Department for the design or portion of the work covered. All plans shall be submitted electronically and shall include plan sheets and cross section sheets both in Adobe PDF and Microstation or OpenRoads formats, current versions.

The transmittal shall include foundation reports, hydraulics reports, slope stability reports, and all other technical reports and memoranda prepared in support of the RFC Plans and Specifications.

The TMP shall be reviewed, revised, and finalized at the RFC Design Review.

Final RFC Plans - the Design-Builder must issue Final RFC Plans after the RFC Plans Review and resolution of all comments, and the plans Accepted by the

Department, to obtain the Construction NTP. All plans shall be submitted electronically and shall include plan sheets and cross section sheets both in Adobe PDF and Microstation or OpenRoads formats, current versions.

(4) Design-Builder Specification

The Design-Builder shall be responsible for demonstrating that any proposed Specifications meet or exceed the minimum **Design-Build Contract** requirements, as determined by the Department in its sole discretion, and are suitable and appropriate to control the work. The Department will determine, in its sole discretion, if the Design-Builder Specifications meet all **Design-Build Contract** requirements and are otherwise suitable and appropriate.

(5) Working (Drawings) Plans Design Review and Shop Drawings, if required

The Working Plans Design Review would only be held if discussion was necessary on the revisions in the Working Design plans submitted after the RFC Plans. It shall be solely the Design-Builder's responsibility to provide Working Plans of such a nature as to develop a finished Project in accordance with the RFC Plans and Specifications and all **Design-Build Contract** requirements. Subsequent modifications must be processed through the Design-Builder's design Review and Acceptance/certification process and the Department's Review and Acceptance process.

Working Plans - Working Plans shall contain necessary fabrication details, shop drawings, erection diagrams, and shoring plans associated with the particular stage of construction and design.

Shop Drawings - When additional details and dimensions are needed, the Design-Builder shall prepare Shop Drawings and submit them to the Department for Review and Acceptance in accordance with the Department's Standard Specifications Subsection 105.02. In any case, the fabricator shall be construed to be an agent of the Design-Builder, and any changes from the RFC Plans submitted by the fabricator shall be considered as made by the Design-Builder. All costs for changes will be at the expense of the Design-Builder. Shop Drawings for all types of structures shall be submitted by Design-Builder to the TDOT PM for Review and Acceptance. Proof of appropriate fabricator certification (as required by the Department's Standard Specifications) for type of structure to be fabricated shall be submitted along with the Shop Drawings.

For Shop Plans submittal –

- In accordance with the Department's Standard Specifications Subsection 105.02.

(6) Design Review of Major Temporary Components

The Design Manager shall conduct a Design Review of Design Documents, if necessary, for major temporary components that represent complex Structures, or that potentially can affect the safety, quality, and durability of the permanent Project components. The review shall include the effect of the major temporary components as designed on the permanent Project components.

(7) Additional Design Reviews

The TDOT PM (with Stakeholder involvement, if invited by the Department) may require such additional reviews as the Department considers necessary to monitor continued and uniform consistency in the quality and effective incorporation into Design Documents of design revisions. The Design-Builder may also conduct additional reviews it deems necessary to facilitate release of RFC Plans and Specifications.

(8) As-Built Design Review

The Design-Builder shall submit the As-Built Plans and Design-Builder Specifications to the Department for Review and Acceptance within 30 Calendar Days of Substantial Completion of the construction work. As-Built Plans and Design-Builder Specifications, as amended, shall thoroughly describe and identify every aspect of the Project as constructed.

For the As-Built Plans and Design-Builder Specifications submittal, following construction completion, the Design-Builder shall incorporate any changes to the RFC Plans and Specifications, as well as all utility locations within ROW. All field design changes shall be incorporated into the As-Built Plans. RFC Estimated Quantities shall be updated to reflect revised As-Built Quantities. If the project was divided into multiple RFC packages, the As-Built Plans shall be submitted as a single complete plan set, except for EPSC Plans and TCPs.

The Design-Builder shall make all corrections noted in the Department comments, if any, resulting from the Department's review, and shall resubmit the corrected version to the TDOT PM or the designated Department contact person for Review and Acceptance.

A transmittal letter and electronic submission of As-Built drawings and final foundation type, including footing elevations and lengths of individual piles, shall be furnished to the Department Alternative Contracting Office before final payment of funds to the Design-Builder. The Professional Engineer in charge of the development of the Project plans shall place his 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. As-Built Plans shall be digitally signed and sealed by a Professional Engineer licensed in the State of Tennessee using the Digital Signature Certification process detailed in the Roadway Design Guidelines.

For As-Built Plans submittal –

- The Department Alternative Contracting Office and all others in the transmittal letter shall receive plans submitted electronically. The submitted plans shall include plan sheets and cross section sheets both in Adobe PDF and Microstation or OpenRoads formats.

  This submittal shall also include all final design reports, design calculations, operation and maintenance manuals, special instructions, and the Design-Builders Project Manager Narrative.

  The Design-Builders Project Manager Narrative - The Design-Builders Project Manager Narrative shall consist, at a minimum, of the following:

  - General discussion of Project progress;
  - Highlight of problems and solutions implemented;
  - Discussion of design issues, solutions, and suggested improvements for future projects;
  - Discussion of each of the significant Change Orders issued for the Project;
  - Discussion of new or innovative methods employed and the results achieved, whether or not successful;
  - Discussion of potential for improvement in future designs, quality management processes, and projects;
  - Discussion of the results of the post-Project joint review/debrief;
  - Feedback regarding a Department project, or aspect of a project, that worked well;
  - Design Review Process Flow Chart.

Unless otherwise specified in the **Design-Build Contract**, the Design-Builder shall expand upon the Design Reviews within their QMP to fully describe:

- Their internal design review processes;
- The interface between the Design-Builders design and design quality management organizations; and
- The interface between the Design-Builders design quality management organization and the Department during the development of Design Documents.

5.3.2. PLAN REQUIREMENTS – ESTIMATED QUANTITIES

Design-build projects, although bid and awarded as lump sum contracts, still require the Design-Builder to provide Estimated Roadway Quantities. The Design-Build Lump Sum Pay Items must be broken down into traditional Department Roadway Pay Items in

accordance with the Roadway Design Guidelines and Department's Standard Drawings. This is necessary to ensure substantiation of the Design-Builder's pay requests, to fulfill material testing, certification, and acceptance requirements during construction. Further breakdown of pay items may be required from the Design-Builder, such as for a Design-Build project with multiple project sites or PINs.

Requirements for when Estimated Quantities are to be provided should be discussed at the Pre-Design Meeting. The use of footnotes is not required for Estimated Roadway Quantities for Design-Build projects. Final Estimated Quantities shall be included with the RFC Plans, and any installed quantity revisions shall be included in the As-Built Plans.

5.4 COMMENT AND NON-CONFORMANCE RESOLUTION

All Design Reviews shall include a comment and non-conformance report resolution process, whereby unresolved comments and instances of non-conformance are discussed and a written action plan and schedule for resolution is developed. The Design Manager will lead the process.

(a) Comments – Comments from the Department and any other comments from Design Reviews will be transmitted to the Design-Builder. The Design-Builder shall record its proposed disposition and response to each comment and meet with the Department to resolve outstanding comments and dispositions. The Design-Builder shall document final disposition and resolution of all Department and other comments.

(b) Nonconformances - If a Design Review reveals non-conformance with **Design-Build Contract** requirements, the Department will prepare a Design Non-conformance Report and submit it to the Design-Builder for action. The Design-Builder shall make all required corrections and return to the TDOT PM or the designated Department contact person as documentation of the corrective action taken.

5.5 DESIGN CERTIFICATION

It is the sole responsibility of the Design-Builder to ensure that design of the Design-Build Project follows the Roadway Design Policies and Procedures described above or as modified by the **Design-Build Contract**. Preparation of project plans are addressed above within this **DB Standard Guidance**. The Design-Builder Project Manager shall submit a Design Certification Letter for the Design-Build Project. The "Design Certification Letter" (sample shown in this Chapter) shall contain statements indicating all the Department Policies and Procedures have been followed, and the criteria for the 13 controlling elements of design have or have not been met or formal approval of a Design Exception has been received from the Department. Appropriate standards and guidelines used during the development of the project shall also be met.

The "Design Certification Letter" shall also contain a listing of project commitments including environmental, planning, ROW, and any other commitments.

The "Design Certification Letter" shall include an electronic submittal of the Final DD Plans (after design review with all comments addressed) for the Department Review and Acceptance before any ROW negotiations or any property closings. After the "Design Certification Letter" has been received by the Department, and applicable waiting periods for public hearings have expired, the DD Plans will be Accepted for use.

Acceptance of the "Design Certification Letter" by the Department does not signify the Department's Review and Approval of the Project design.

The Design-Builder shall not begin construction work until the RFC Plans and Specifications, including Shop Drawings covering such work, have been Accepted by the Department and the Construction NTP is issued.

The ROW Appraisal NTP will not be issued until all required documentation has received concurrence by the Department.

5.5.1. DESIGN SUPPORT DURING CONSTRUCTION

The Designer and DQM shall verify during construction that the site conditions are accounted for in, and the construction work performed is consistent with, the relevant Working Plans and RFC Plans and Specifications. The Designer shall prepare any necessary adjustments in such Plans, Working Plans, and Specifications, and the Design-Builder shall conduct the appropriate checks, certifications, and reviews in accordance with the requirements stated herein pertaining to design changes. The Design-Builder shall also be responsible for obtaining any permits or authorizations that may be required as a result of the changes.

SAMPLE DESIGN CERTIFICATION LETTER

Design-Builder Name
Address
City, State Zip

Date:

Design Division Director
Suite 1200, James K. Polk Bldg
Nashville, TN 37243

Re: DB Contract Number (DBXXXX), Design Certification
Route, Termini, County

Dear Director:

This letter certifies all Department Roadway Design Policies and Procedures have been followed and the criteria for the thirteen (13) controlling elements of design have been met.

O R

This letter certifies all Department Roadway Design Policies and Procedures have been followed and Formal approval of a Design Exception for (list exception) has been received from the Department on (date). All other elements of the design meet the criteria for the thirteen (13) controlling elements of design.

For all Design-Build Projects:

The following project commitments have been made and are reflected in the plans.

1.
2.

Sincerely,

_____

Design-Builder Official Signature
Eligible to Sign for Responsibility for the Project

Enclosures
Cc: Alternate Contracting Office

5.5.2. CONSTRUCTION

Construction on any design or portion thereof may begin at any time after Department's Acceptance of the Construction Quality Management Plan (CQMP) or those portions of the Plan covering the work to be performed, after the applicable RFC Design Review has been completed, and the Department has issued its Construction NTP. Any maintenance agreements (if applicable) must be approved before proceeding with construction. The Design-Builder shall not commence construction of any permanent components or major temporary components until the applicable design checks, Design Reviews, and Design Manager and DQM's certifications have been completed; design-related Non-conformance Reports have been addressed and resolved to the satisfaction of Department; Department comments have been resolved; and the Construction NTP has been delivered to the Design-Builder. All the following must also have occurred:

(a) The RFC Plans and Specifications have been digitally signed and sealed by a Professional Engineer licensed in the State of Tennessee using the Digital Signature Certification process detailed in the Roadway Design Guidelines and Accepted by the Department. Any construction initiated by the Design-Builder before receiving the Construction NTP shall be at the sole risk of the Design-Builder. For those drawings and documents included in the submittal that are prepared by a manufacturer, supplier, or other persons not under his/her direct supervision, the Responsible Engineer shall certify that the design shown on the sheet or document conforms to the overall design and all **Design-Build Contract** requirements.

(b) The Design Manager has completed his/her checks and reviews in accordance with the requirements stated herein, and has issued a written certification that each of the following conditions have been met:

  (1) The design has undergone constructability review and is constructible as represented in the RFC Plans and Specifications.

  (2) Working Plans and RFC Plans and Specifications for the portion of the Project to be constructed are complete and checked in accordance with this Subsection.

  (3) The design and drawings for the Traffic Control Plan and temporary EPSCs and environmental measures applicable to the work have been properly completed.

  (4) Adequate stakes, lines, and/or monuments necessary to control the work have been established on the Project Site.

  (5) The design has been compared to the project as studied under the latest approved NEPA document and, if warranted, a reevaluation has been completed by the Design-Builder and approved by the Department and/or FHWA.

(c) The DQM has conducted his/her independent design quality review and has issued a written certification that each of the following conditions have been met:

  (1) Design checks have been completed.

(2) The design conforms to all Legal Requirements and other requirements.

(3) Any Design Exceptions have been approved in writing by the Department.

(4) Design quality activities are following the Design-Builder's DQMP.

(5) All outstanding issues and comments from the Design Review have been resolved.

(d) Department has provided Review and Comment regarding the RFC Plans, Specifications, and applicable TCP; temporary EPSC measures; and environmental requirements.

(e) All Design Non-Conformance Reports issued by the DQM or Department have been addressed and resolved by the Design-Builder to the satisfaction of Department.

(f) All pre-construction activities included in Chapter 7.1 Pre-construction shall be complete before the Construction NTP is issued.

CHAPTER 6: RIGHT-OF-WAY, UTILITY, AND RAILROAD PROCEDURES

If the Department is responsible for any ROW acquisitions on the Project, the Design-Builder shall provide staking from the ROW Acquisition Sheets submitted with their Technical Proposal and included in the **Design-Build Contract**. Any revisions needed to these ROW Acquisition Sheets shall be provided at the Post-Award Meeting for Department Acceptance. All costs associated with any ROW or easement acquisition required after the Acceptance of the ROW Acquisition Sheets (as revised at the Post-Award Meeting) shall be borne by the Design-Builder.

The rest of this chapter only applies if the Design-Builder has the responsibility by **Design-Build Contract** for the ROW acquisition process, the Utility relocation process, or railroad coordination.

There are several milestones for which the Design Builder is required to submit documentation/information to the Regional ROW Office for review/approval. The TDOT PM will direct the Design-Builder as to whether the TDOT PM shall be copied on this documentation/information or whether the TDOT PM shall be provided a monthly status report, including dates of all relevant communication, on the progress of ROW activities. If confidentiality of the communicated content is required, a correspondence summary, including dates, shall be sent to the TDOT PM indicating that a document with sensitive information was sent directly to the designated Department contact person.

6.1 RIGHT-OF-WAY

The ROW process (including all easements) may be included as part of the **Design-Build Contract**. Please refer to the **Design-Build Contract** for details about the Design-Builder's ROW responsibilities for this process. The Design-Builder must not proceed with any work related to the ROW process until it has received the appropriate Notice to Proceed (NTP) and contacted the TDOT PM or the designated Department contact person for guidance and coordination as necessary.

Please be aware that failure to follow all applicable laws, regulations, rules, and policies in the execution of this phase will result in the loss of federal funding for all project development phases. Please keep in mind that easements shall follow the same procedure as ROW.

The following is an outline of the basic necessities and procedures for acquiring ROW by a Design-Builder in compliance with Department policies and the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act.

Complete detailed requirements are provided in 49 CFR Part 24, "Uniform Relocation Assistance and Real Property Acquisition for Federal and Federally Assisted Programs;" the Department's ROW Procedures Manual Chapters, 3, 7, 8, 9, and 10; 1680-6-1 Rules and Regulations for Accommodating Utilities within Highway Rights-of-Way, TCA Part 8 Relocation of Utilities 54-5-801 through 54-5-856; 23 CFR Part 645 "Utilities;" and 23 CFR 646 "Railroads." Adherence to the above referenced regulations and procedures is mandatory.

These guidelines are presented in an effort to assist any Design-Builder using federal funding or expecting federal participation in any phase of a proposed project.

The Design-Builder shall submit within their Quality Management Plan ROW for Review and Acceptance by the Department identifying contacts and outlining the Acquisition Management procedures to be followed. This shall be based on the requirements of the Department ROW Procedures Manual and this **DB Standard Guidance**. The plan shall show the Design-Builder's proposal to control, monitor, report, and ensure the quality of the delivery of the ROW acquisition services.

Any ROW or easements required other than those specified in the RFP shall be identified by the Design-Builder in an Alternate Technical Concept (ATC) and approved by the Department. Any costs associated with additional ROW or easements required by the Design-Builders design will be borne by the Design-Builder.

The Design-Builder shall provide information to the Department to assist in acquiring additional ROW or easements if necessary. The Design-Builder shall specifically show in the Definitive Design (DD) Plans and identify any additional ROW easements (e.g., temporary, construction, drainage) planned. The Design-Builder may also receive approval from the Department to acquire ROW in segments to facilitate the relocation of utilities and construction based on the approved project schedule. Note, all ROW acquisition activities shall be included for each tract in the Accepted IPS or Baseline CPM Schedule before receiving ROW Acquisition NTP.

6.1.1. ROW ACQUISITION PHASE

When the acquisition phase is completed, the Department is required to certify to the FHWA that acquisition was conducted in accordance with all applicable laws, rules, regulations, and policies. Land acquisition procedures are mandated by federal law and policies. The Department may certify ROW clearance per the agreed segments to clear the project for constructing the buildable unit. The Department will not certify ROW clearance by tract unless approved by the TDOT PM. If land acquisition procedures are found to be flawed, all federal funding for the project (for all phases, even if other phases were conducted in accordance with federal law, regulations, and procedures) may be withdrawn.

PLEASE NOTE: The Design-Builder shall not proceed with any work pertaining to land acquisition until they receive ROW Appraisal NTP. The Design-Builder shall not contact property owners, appraise property, or proceed in any manner until ROW Appraisal NTP is received.

The ROW Acquisition Plan shall contain, at a minimum, the following:

- The submittal and Department Review process for all deliverables;
- The name of the Department approved title company(ies) to be engaged for title services;
- The name and qualifications of the proposed ROW Acquisition Manager; and

- The resumes and qualifications for appraisers, appraisal reviewers, relocation agents, negotiators, real estate attorneys, and ROW personnel who all shall meet the minimum qualifications below and be pre-approved by the Department ROW Division.

The ROW Acquisition Plan shall establish the specific means by which the Design-Builder will:

- Provide sufficient personnel to achieve, in accordance with the CPM Schedule, the goals and milestones established for Project ROW acquisition, relocation assistance, appraisals and appraisal review, and clearance/demolition of the improvements from the Project ROW.
- Provide administrative support.
- Provide documentation and reports.
- Produce and distribute acquisition and relocation brochures as approved by the Department.
- Provide details of plans for any public information meetings with adjacent and impacted property owners.
- Provide for non-English-speaking, visually impaired, or hearing-impaired translation as necessary.
- Include a schedule for ROW acquisitions that illustrates how the Design-Builder will prioritize the acquisition of parcels that have significant impact on the project schedule.
- Establish, implement, and maintain quality control procedures and quality review standards for the acquisition of Project ROW.
- Prevent fraud, waste, and mismanagement.

This outline is general in nature but covers all phases of the acquisition process. Design-Builders are urged to contact the TDOT PM or designated Department contact person for clarification of a point, answers to any questions, or assistance with specific problems.

6.1.2. ROW DESIGN-BUILD PROCESS OVERVIEW

The Design-Builder is to obtain the Department ROW Review and Approval before proceeding to the next phase of work. All consultants and staff must be pre-approved by the Department's ROW Division.

1. **DESIGN-BUILDER STAFF**

A. Appraiser

(a) Must be licensed and certified to conduct real estate appraisals in Tennessee;

(b) Must be from the Department's ROW Division list of approved appraisers;

(c) May not have interest, direct or indirect, in the lands being appraised.

B. Review Appraiser

(a) Must be licensed and certified to conduct real estate appraisals in Tennessee;

(b) Must be from the Department's ROW Division list of approved appraisers;

(c) May not have any interest, direct or indirect, in the lands being appraised;

(d) May not act as the appraiser identified above, a negotiator, buyer, or closing agent;

(e) Establishes just compensation by approval of appraisal OR by use of revised or additional data along with justification for its use;

(f) All reviews must be submitted to the Department ROW Division for approval.

C. Negotiator (Buyer)

(a) Must be pre-approved by the Department ROW Division;

(b) Makes written offer to purchase;

(c) May not approve administrative or legal settlements;

(d) May not close transaction.

D. Relocation/Property Management Agent

(a) Must be pre-approved by the Department ROW Division;

(b) Provides relocation advisory services;

(c) Computes relocation benefits;

(d) May act as a negotiator.

E. Closing Agent

(a) May not be the negotiator, appraiser, or review appraiser;

(b) May be a local Abstract or Title Company.

2. **NOTICE**

Property owners must be notified in writing as soon as possible that their properties will be acquired or affected. The Notice of Intent to Acquire Letter shall receive Department concurrence before being mailed to the property owners.

3. **PROPERTY OWNERS RIGHTS**

Property owners are entitled:

A. To be advised of their rights by written statement or brochure;

B. To the opportunity to accompany the appraiser who appraises their property;

C. To receive just compensation. This may not be less than the approved appraisal of the fair market value;

D. To a written statement of the amount of just compensation and a written summary of the basis for that amount, a copy of the appraisal, and documentation of the approved offer;

E. To receive agreed upon purchase price before being required to vacate property;

F. To have deposited with the court in the case of condemnation the amount of estimated just compensation before surrendering possession of the property;

G. To a determination of just compensation by a court of law;

H. To a reimbursement of expenses incidental to transfer of title to the acquiring agency such as recording fees, transfer taxes, fees for partial discharge of mortgage, and others;

I. To relocation assistance and payments when applicable;

J. To at least 90 Calendar Days' written notice to vacate from date of possession;

K. To the right to have the acquiring agency purchase uneconomic remainders.

4. **TITLE EVIDENCE**

A Title Report and/or Abstract and search of county records is required for each parcel. The Design-Builder may begin title searches after receiving the Initial NTP, and Title Reports must be submitted for Department Review and Concurrence before requesting ROW Appraisal NTP. The Design-Builder is to obtain the Department ROW Appraisal NTP before proceeding to the next phase.

5. **APPRAISAL**

A. Market Study

(a) Must be based on examination of an adequate sample of current sales of comparable properties;
(b) Is used to estimate values; narrative discussion should indicate that appraiser has clear understanding of the specific property types encountered, the competitive environment, and the value elements that influence price.

B. The appraisal may be a formal appraisal or a Formal Part-Affected (FPA) appraisal, in addition to those elements required by the Uniform Standards of Professional Appraisal Practice (USPAP).

(a) Each format must include a statement that the property owner is offered the opportunity to accompany the appraiser on an inspection of the property.
(b) Each must include a statement of value of the land to be acquired, improvements to be acquired, and a separate statement of any damages to remaining lands.

(c) Each must include a date of valuation.
(d) Each must contain a description of physical characteristics of the land and improvements being appraised and a description of the lands being acquired including any improvements.
(e) Each will contain descriptions of comparable sales.
(f) Each must include a statement that project influence has been disregarded in arriving at the "before" value estimate but given due consideration in the "after" value estimate in arriving at the recommended compensation.

6. **APPRAISAL REVIEW**

Establishes the just compensation to be offered to the property owner.

A. The Department reviewer reviews each appraisal for:

(a) Compliance with acceptable appraisal standards--the Uniform Act and USPAP;
(b) Accuracy and completeness in all relevant approaches to value;
(c) Confirmation that data or information used in the appraisal determines whether the market data are capable of addressing the value characteristics of each parcel;
(d) Explains fully, in writing, any changes, revisions, or corrections made to the appraisal being reviewed;
(e) Signs Certificate of Review and Value.

B. The Design-Builder is to obtain the Department ROW Negotiation NTP before proceeding to the next phase of work.

7. **NEGOTIATION – ACQUISITION**

A. Negotiations should be made by personal contact.

B. Negotiations may be carried out by correspondence if the property owner is a non-resident of the area.

C. A written offer to purchase must be given to the property owner. This written offer establishes the Initiation of Negotiations.

(a) The offer must be no less than the amount of the Department ROW approved value.

(b) The offer must stipulate the amount being offered for real property and the amount to be paid as damages to remaining lands.

D. A summary statement of the basis for the offer must be given to the property owner, along with a legal description of the area to be acquired including any easements, a tract map, a copy of the appraisal, and the determination of value or the appraisal waiver form.

E. The property owner must be given a reasonable length of time to consider the offer made: not less than 30 Calendar Days.

F. Counter-offers by property owner should be considered.

G. No coercion or threat shall be used to influence a property owner to accept the offer made.

H. The property owner may be given the opportunity to retain at a salvage value and move any improvements located within the ROW being acquired. If a property owner elects to retain and move improvements, a refundable performance deposit will be collected. This option is only valid if the property is acquired by deed.

I. Negotiations shall include an offer to acquire any uneconomic remnants of land. The property owner may decline this offer.

J. The negotiator or buyer must prepare and maintain negotiators' logs for each parcel. The negotiators' logs shall cite dates, times, and locations of each contact with the property owner or their representative. It shall also include names of those present, a brief summary of the discussion, and any counter-offers.

K. Donations of ROW may be accepted, provided the property owner has been apprised of his/her rights to just compensation and has signed a statement or affidavit that he/she has been offered the opportunity to receive payment of just compensation, but has chosen to donate the necessary ROW.

8. **ADMINISTRATIVE AND COURT SETTLEMENTS**

A. After all good faith efforts to settle a ROW file have failed, a recommendation for Administrative Settlement or Condemnation shall be submitted by the Design-Builder to the TDOT PM.

B. The Department ROW Division shall have the responsibility for an Administrative Settlement or Condemnation action.

C. Any party performing Design-Builder ROW appraisal services shall participate in condemnation proceedings as an expert witness if called upon by the Department.

D. The Design-Builder is to obtain the Department ROW Closing NTP before proceeding to the next phase of work.

9. **CLOSING**

A. A closing statement is required showing the disbursement of funds to the property owners, mortgages, land contract vendors, lien holders, or to unpaid taxes.

B. Incidental expenses shall be paid by the Department or reimbursed to the property owner such as:

(a) Recording fees;

(b) Transfer taxes;

(c) Fee for partial discharge of mortgage;

(d) Mortgage pre-payment penalties.

C. The Design-Builder shall obtain the Department ROW Certification NTP before proceeding to the next phase of work.

10. **PROPERTY MANAGEMENT**

Property Management is the control and administration of the lands and improvements acquired. This includes the maintenance, protection, occupancy, rental, and disposal of those improvements.

For those properties or improvements rented temporarily, the rent should be at current fair market value for short-term rentals.

For additional information concerning property management policies, contact the TDOT PM or the designated Department ROW contact person.

11. **RELOCATION**

A. Residential displacee may be entitled to:

(a) Relocation advisory services;

(b) Moving cost for personal property;

(c) Replacement Housing Payment (RHP):

(1) 180 Calendar Day Owner

(i) RHP of up to $22,500 based on price differential;

and

(ii) Incidental expenses relating to the purchase of replacement housing;

and

(iii) Mortgage interest differential;

or

(iv) Rental assistance payment not to exceed the amount for which the displacee is eligible under item 1 above.

(2) Tenant (90 Calendar Day Occupant) or less than 180 Calendar Day Owner:

(a) Down payment assistance up to $5,250;

(b) Rental assistance payment up to $5,250.

B. A displaced business, farm, or non-profit organization may be entitled to:

(a) Relocation advisory services and either;

(b) Moving costs for personal property;

(c) Up to $10,000 in reestablishment expense;

or

(a) A fixed payment in lieu of moving cost and reestablishment expense not to exceed $20,000.

C. The owner of personal property displaced by a project who does not qualify as a residential displacee, a displaced business, farm, or non-profit organization may be entitled to:

(a) Relocation advisory services;

(b) Moving cost for personal property.

NOTE: For detailed instructions concerning eligibility, calculation of these benefits and explanation of the exceptions to these monetary limits, please refer to the Department ROW Procedures Manual, Chapter 9 and consult the TDOT PM or the designated Department ROW contact person.

The entitlements listed are general in nature. For more information concerning relocation benefits, qualification, and exclusions, **PLEASE CONTACT YOUR TDOT PM OR DESIGNATED DEPARTMENT ROW CONTACT PERSON.** The Design-Builder is to obtain the Department Review and Approval before proceeding to the next phase of work.

12. **CERTIFICATION**

Each segment or tract, as determined by the TDOT PM, is required to be certified before the Department issues a Construction NTP for the segment or phase of construction. The Design-Builder will be responsible for providing all documentation and files allowing the Department ROW Division to certify the segment or tract. Files must be made available upon request by Department staff for review.

Complete detailed requirements are provided in the 49 CFR Part 24 “Uniform Relocation Assistance and Real Property Acquisition for Federal and Federally-Assisted Programs” and the Department’s ROW Procedures Manual Chapters 3, 7, 8, 9, and 10. Adherence to the above referenced regulations and procedures is mandatory.

DOCUMENTS IN A TYPICAL PARCEL FILE

- Notice of Intent to Acquire;

- Title Information;
- Donation Form;
- Appraisal;
- Appraisal Review or Waiver of Appraisal;
- Offer to Acquire Real Property;
- Legal Description;
- Tract Map;
- Agreement of Sale;
- Right of Entry Form;
- If Administrative Settlement - Written statement approving amount
- Instrument of Conveyance – Warranty Deed or Easement;
- Closing Statement;
- Negotiator's Logs;
- If Relocation is Required –
    - Determination of Eligibility;
    - Offer of Relocation Assistance including list of available properties;
    - Determination of Benefits;
    - Copies of all claims and receipts to verify payments;
    - Copy of Notice to Quit – if applicable.
- If Condemnation is Required – Petition for Condemnation.

6.2 UTILITY COORDINATION PROCEDURES

Various highway projects require the adjustment of utility facilities to accommodate the activities of the project as well as meet the physical requirements to improve the section of the highway. Utilities can be relocated as part of the **Design-Build Contract**, by Department personnel during the **Design-Build Contract** or before the start of construction on the project. In any case, adequate documentation shall be maintained. In certain circumstances, the appropriate Utility may be reimbursed for expenses incurred for the relocation. Reimbursement will be determined before utility work begins. Utility Coordination and Relocation may be included as part of the **Design-Build Contract**. Please refer to the **Design-Build Contract** to determine if the Design-Builder's Utility responsibility will include part of the Department requirements below for this procedure.

During the planning and development of any roadway project, it is advisable to be in early contact with the utility companies that will be affected by the project. Early coordination will be undertaken by the Department in most cases. Refer to the **Design-Build Contract** for additional information. Project qualification for Chapter 86 reimbursement will be determined in the early coordination phases of these projects. Chapter 86 qualification will control how much reimbursement utilities receive when they relocate facilities currently on public ROW. Because there are no lettings for Design-Build projects, the only type of relocation for which a utility is eligible for Chapter 86 reimbursement is those that include their work in the state contract. Typically, all relocations will need to be included in the state contract for the utilities to receive Chapter 86 reimbursement. Time and money can be saved with advanced coordination and planning regarding utility facilities. The Department recommends early contact with the potentially affected utility companies. Early contact ensures proper contacts for the project and allows the utilities to plan and budget for the project.

The Design-Builder shall incorporate utilities' time needs into the Design-Builder's CPM Schedule and shall also include durations for the Department to execute any Utility Relocation Contracts required. This process typically takes 4 to 6 weeks after receipt and approval of the A-Date Package. For Design-Build projects, the B-Date Package will typically be set a reasonable amount of time before the anticipated Construction NTP Date.

The Design-Builder is responsible for protecting all Utilities that the Design-Builder has concluded are not affected in constructing the Project.

6.2.1. PROJECT DEVELOPMENT PHASE

The Department, unless otherwise specified in the **Design-Build Contract**, shall have the responsibility of coordinating the Project design with all Utilities that may be affected. The Department will be responsible for entering into one or more utility agreements with each affected utility owner to define the design, material, construction, inspection, and acceptance standards and procedures necessary to complete utility adjustments, as well as to define the Department and the utility owner's respective responsibilities for utility adjustment costs and utility adjustment activities such as design, material procurement, construction, inspection, and acceptance. A utility agreement may address more than one utility adjustment for the same utility owner. Adjustments may be added to an existing utility agreement by amendment. The Design-Builder shall adhere to each utility agreement.

6.2.2. DEFINITIVE DESIGN & READINESS FOR CONSTRUCTION PLANS (UTILITIES)

The Design-Builder shall design the Project to avoid conflicts with Utilities where possible and minimize impacts where conflicts cannot be avoided.

The Design-Builder shall assemble all the information that may have a bearing on the final Utility locations for the Project into the DD Plans for Acceptance by the Department, which should include the information detailed below. Any information detailed below that is not known at the time the DD Plans are submitted for Acceptance by the Department, or that

is revised from the DD Plans, shall be included in the Readiness-for-Construction (RFC) Plans.

The plan shall contain the following:

- Existing location of each Utility based on survey;
- Proposed location of each Utility (for those that require relocation). Initially, this could be based on relocation maps prepared by the Utilities. However, if the proposed relocation does not fit with other proposed Utility relocations, the Design-Builder may need to work with the Utilities to refine/change the proposed new locations so they will work within the context of the Project;
- Demonstration and identification of any Utility easements planned;
- A description of any timing and sequencing requirements in relation to the relocations;
- Coordinated process and end results that consider all Utilities;
- Relocation schedule as agreed upon in the documents with Utilities. Relocation schedules shall be included in the Design-Builder's CPM Schedule.

When the plans have been fully developed, the Design-Builder must issue Final DD Plans in Adobe PDF format to the TDOT PM or the designated Department contact person, and the Department will distribute to all utilities within the project area for their use in relocation. Should electronic design files be requested by the Utility, they shall be provided to the TDOT PM in OpenRoads or Microstation format for distribution. The utility coordination specified by state law, federal regulations, and established Department procedures is for the Department to authorize utility engineering by sending a letter with the Final DD Plans stating the specifics of the project including the projected schedule and give specific dates by which the utility must submit its proposed relocation plan to the Design-Builder. Sufficient time shall be accommodated in the project schedule to allow for utility coordination in accordance with state statutes.

If the **Design-Build Contrac**t requires the Design-Builder to perform utility coordination, the letter sent must adhere to the provisions cited in the Department letter in accordance with state statute, delivered with receipt verified, certified mail, electronic delivery, or hand-delivered signature. The Design-Builder must document and certify to the Department delivery of plans, coordination of utilities, and utility compensation if applicable. At this point, the Design-Builder must certify to the Department that plans have been delivered and accepted by the utility.

If a separate Pre-Construction Utility Conference is necessary due to the magnitude of utility work related to the **Design-Build Contract**, please contact the TDOT PM or the Department designated contact person for further information.

6.2.3. UTILITIES RESPONSIBILITY

TCA 54-5-854 states that, within 120 Calendar Days following the receipt of the plans (Final DD Plans), the utility owner shall mark on the plans, or on a copy of the plans, the approximate vertical and horizontal locations of underground utility facilities, approximate horizontal locations of aboveground utility facilities, a description of each of its existing utility facilities and any proposed new location of the facilities and additional facilities within all ROW shown on the project plans, and prepare a plan and a schedule of Calendar Days to accomplish the proposed new location. The project plans, or a copy of the plans, and the plan and schedule of Calendar Days shall be returned to the Department in care of the person whose name and address are listed on the project plans. If Design-Builder is contracted to perform utility coordination, the plans would be returned to them.

Should coordination with other owners be required for an owner to prepare a plan and schedule of Calendar Days, or should changes to the project plans cause the utility to alter its relocation plan or schedule, then additional time shall be allowed. However, in no case shall the additional time exceed the original 120 Calendar Days by more than an additional 45 Calendar Days. The Design-Builder shall always accommodate the statute (TCA 54-5-854) required 120 to 165 Calendar Days, with additional time to process and certify Utilities in their CPM Schedule for Utility Investigation.

Each utility must request the engagement of a consulting firm if they do not have adequate staff to manage the relocation. This consultant must be selected according to the Department's Utility Procedures for Consultant Approval. The engagement of the consultant must be approved before any formal engineering work is completed or this work will not be eligible for any potential reimbursement.

6.2.4. RELOCATION PLAN

NOTE: The utility phase is considered a part of the ROW process. There is no separate Notice to Proceed for the utility phase. If the Design-Builder has received a Notice to Proceed with the ROW process, it may also proceed with the utility relocation phase.

The Utility must submit its proposed relocation plan to the Department by the date specified by the Department. If Design-Builder is contracted to perform utility coordination, the Utility shall send it to them. A complete submittal would include: an estimate of construction cost, percentage of facilities located on private easements, estimate of any proposed betterment costs, and request for method by which the relocation work is to be performed by the utility or to be included in the project construction.

The Design-Builder is then responsible for Review and Comment of the Utility’s proposed relocation plan and estimate. The Design-Builder must review the proposed Relocation of Utilities Plans and certify 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.

The Department will review the Design-Builder response, and if applicable, certify to FHWA that utility coordination is completed in accordance with state and federal rules, regulations, and laws.

If the Utility is eligible for reimbursement, a contract must be executed between the Department and the Utility for the relocation work. If betterment is requested by the Utility, provisions must be made for deposit of funds by the Utility for the portions of the relocation attributed to betterment.

The Design-Builder must not proceed until the Department has Reviewed and Accepted the plans and estimate.

The Design-Builder shall be liable for any damages negligently inflicted to the owner's utility facilities during the time provided in the schedule of Calendar Days for installation, relocation, or adjustment, or during the approved time for any additional relocation or adjustment.

The Design-Builder may contact the TDOT PM or the designated Department contact person for Utilities forms and additional information. Additional information pertaining to contracts is provided in 23 CFR 635.

6.3 UTILITY RELOCATION DOCUMENTATION

6.3.1. UTILITY RELOCATION NOT IN CONTRACT (NON-REIMBURSABLE OR REIMBURSABLE)

The relocation work is to be performed by the utility generally before the highway construction work begins. Where the Utility is performing the relocation construction, the Utility shall be directed to notify the Design-Builder Project Manager of the date on which the Utility intends to begin work in order to provide the Project Manager sufficient time to schedule inspections. This should be documented in the letter from the Design-Builder Project Manager, which authorizes the Utility to “go to work” or to proceed with the utility relocation construction. The Design-Builder Project Manager should inspect and maintain sufficient records that the utility relocation work is conducted in accordance with the approved plans. The Department will require sufficient documentation to certify payments to the Utility met state and federal requirements.

The Project Utility Diary (DT-0667) shall be used on all projects requiring utility relocations to document the relocation work, whether the work is reimbursable or not. The Project Utility Diary section “Description of work Performed” will be the only documentation required. However, the documentation shall note whether the work is reimbursable or not. The work start date and work complete date shall be noted.

The Design-Builder Project Manager shall verify the start date, completion date, and that the work performed corresponds with the Project Utility Diary documentation (Circular Letter 105.07-04). The Design-Builder Project Manager shall notify the Department of the completion of work and submit a copy of the Project Utility Diary to the Department.

The Department shall obtain the cost invoices associated with the work to be processed for payment. The Department shall compare the submitted invoices to the Project Utility Diary documentation to ensure that the records are consistent.

6.3.2. UTILITY RELOCATION INCLUDED IN DESIGN-BUILD CONTRACT

Utility relocation work included in the **Design-Build Contract** requires documentation of utility item installed quantities. The appropriate Utility company shall provide an inspector to document and certify the items used in the utility relocation.

The following documentation is required for utility relocation work included in the **Design-Build Contract**.

(a) **Project Utility Diary (DT-0667)**

The Project Utility Diary (DT-0667) is used to document the relocation work performed.

(b) **Utility Item Certification/Final Acceptance (DT-1716)**

The Utility Item Certification/Final Acceptance form shall be completed and submitted for each estimate period. The utility inspector shall check the Installed Item Certification box and sign the appropriate line to certify that the items installed during the estimate period meet all applicable Specifications.

This form is also used for the final acceptance of the utility relocation work. As soon as possible, after the relocation is complete, the utility inspector shall check the Final Acceptance of work box and sign the appropriate line to certify that the work is complete and accepted by the utility company.

(c) **Summary of Installed Utility Items**

The Summary of Installed Utility Items form shall be completed and submitted for each estimate period. The Utility Inspector enters the installed quantities for the appropriate estimate period and attaches the form to the Utility Item Certification/Final Acceptance form.

6.4 CONSTRUCTION

The Design-Builder shall issue written authorization for the utility to begin its relocation work.

Therefore, the Design-Builder may not authorize utilities to begin work until it receives a Construction NTP.

The Design-Builder shall be responsible for inspection of the relocation work performed and certify that utilities are installed in accordance with the approved relocation plans. The Department shall be responsible to make payments as they are submitted by the utility(s) for work completed. The Design-Builder shall certify to the Department that utility relocation work has been authorized.

The Design-Builder shall accurately show the final locations of all Utilities on the As-Built Plans for the Project.

Should the Design-Builder have ***ANY*** questions, please contact the TDOT PM or the designated Department contact person before conducting the associated project activity.

6.5 PROCEDURES FOR DEALING WITH RAILROAD

The purpose of Railroad Coordination is to involve the respective railroad(s) as early as practical in the design process to identify and avoid conflicts or issues that may impede design and eventual construction. The FHWA requires any project that uses federal money be certified for Railroad Coordination before it can be let for construction.

If the affected property is an Easement corridor granted to the Railroad by State Charter, the State manages the underlying fee, while the corridor is used for railroad purposes, and a Crossing Agreement and Special Provisions 105C will be necessary. However, if the Railroad owns the Corridor in Fee Simple, the Department must pay for the property rights required and obtain a deed transfer before the Design-Builder can enter the Railroad's property. If Fee Simple ownership is determined, the Department will need to be solicited for assistance with the property negotiations. When a project requires Railroad Fee Simple ROW, the State must obtain the property rights by warranty deed or permanent/temporary easement. A warranty deed would be used for Fee Simple acquisitions. A permanent easement would be used for air rights or drainage easements. A temporary easement would be required for construction and slope easements.

Given that Railroads can own ROW in Fee Simple or Easement, the demarcation lines can blur. Early coordination is recommended because obtaining property rights for Fee Simple can be lengthy. Regardless of the type of ownership, the Railroad or their representatives must be invited to the Pre-Construction Conference. Additional guidance is provided in the Department's Utility Procedures Manual.

The following is general guidance for the Design-Builder for projects with railroad involvement:

(1) FHWA and the Department, in compliance with the Supreme Court Shanklin judgment, require that any rail-highway at-grade crossing within the zone of influence of a federally funded highway project (including enhancement projects such as pedestrian and bicycle paths) be mitigated to provide adequate protective devices. The zone of influence is defined as any public at-grade crossing within approximately 750 feet parallel to or from the limits of construction. The identification of those rail-highway crossing locations is the responsibility of the Design-Builder and will be confirmed by the Railroad Coordination Office. The Department will recommend adequate protection. Photos of each crossing and all signs and pavement markings will be collected by the Design-Builder and submitted to the Railroad Coordination Office along with the project plans. The Freight and Logistics Division will review the provided materials and provide their recommendations. The Railroad Coordination Office will provide these recommendations to the Design-Builder, and they will be required to implement these recommendations into the associated plans

and quantities. The Design-Builder will be required to generate an estimate of cost and engineered plans, while the Railroad Coordination Office will work directly with the Railroad for any required input from the impacted Railroad(s). If the Freight and Logistics Office provides recommendations that include active warning device installations or interconnection with existing or proposed traffic warning devices, this work must be performed by the Railroad. In this case, the Railroad will work with the Railroad Coordination Office to develop plans, quantities, and estimates that reflect the recommendations of the Freight and Logistics Office. Under these circumstances, coordination will be required between the Railroad and the Design-Builder, but this coordination will be facilitated through the Railroad Coordination Office. Active warning device design, quantities, estimates, construction, and interconnect will be performed by the Railroad and paid directly by the Railroad Coordination Office. The Design-Builder will not design, estimate quantities, or otherwise be responsible for any active warning device work. The Design-Builder should have personnel well versed in railroad crossing device installation and safety to review any grade crossings within the zone of influence of a project's limits.

(2) Once the rail-highway crossing has been identified, the Design-Builder should contact the Department Railroad Coordination Office to obtain contact information for the railroad.

(3) The Design-Builder should contact the Railroad Coordination Office and begin dialogue about the proper protection devices for the crossing in question. The dialogue will request the train traffic/railroad flagging rate data used for construction contract governing flagging issues and protection of railroad interests. If the Design-Builder subcontracts the project construction, the subcontract must include any railroad requirements. Note: If the project involves fiber-optic or electric wire-line crossings over or under railroad ROW, the Design-Builder must send the plans for and pre-pay the processing fees to the Railroad's Property Services or Permit Department for execution of a wire-line crossing agreement. These fees shall be considered incidental and shall be included in the cost of other categories.

(4) The Design-Builder shall adhere to all requirements set forth by the railroad not specifically mentioned in this guidance.

(5) The Design-Builder shall adhere to the project-specific Special Provisions 105C and any other documentation provided by the Railroad. The Design-Builder shall so arrange and conduct his work such that there will be no interference with railroad operations including train, signal, telephone and telegraphic services, or damage to the property of the railroad, or to wires or other facilities of the tenants on the ROW of the railroad. The use of any scaffolding or other temporary framework that effects horizontal or vertical clearance must first be approved by the railroad consultant engineer and shall in no case fail to meet the approved clearances. Construction details and specifications shall conform to Department Standard Specifications and the rules, regulations, and requirements of the owning and operating railroads including those related to safety, fall protection, utility crossings (if required), and protective equipment.

(6) Should any damage occur to railroad property as a result of the Design-Builder's unauthorized or negligent operations, and the Railroad Superintendent deems it necessary to repair such damage or perform any work for the protection of its property, the required materials, labor, and equipment shall be furnished by the railroad, and the Design-Builder shall reimburse it for the costs incurred.

(7) If the Design-Builder desires access across the railroad's ROW and tracks at any location other than an existing and open public road crossing in or incident to construction of the Project, the railroad may permit such Design-Builder access across said ROW and tracks at such location as shall be mutually agreed upon by the railroad General Manager and the Design-Builder, provided the Design-Builder first executes a license agreement satisfactory to the railroad and agrees to reimburse the railroad for the flagmen expenses, cost of providing and removing any temporary grade crossing, or other costs that the railroad general manager deems necessary for protection of its property and operations. The Design-Builder shall at no time cross the railroad's ROW or tracks with vehicles, equipment of any kind or character, or personnel, except at such crossing or crossings as may be established by the railroad. <u>These costs shall be considered incidental and shall be included in the cost of other categories.</u>

(8) Any flagging service required when, in the opinion of the railroad General Manager, such service is necessary for the safety of its operations because of work being performed by the Design-Builder or in connection therewith, will be provided by the railroad. The Department will reimburse the railroad directly for all costs incurred for flagging services by railroad personnel.

(9) The railroad shall have the right to assign a watchman to the site of the project to inspect protection of its railroad operations whenever, in the opinion of the railroad General Manager, such inspection may be necessary to prevent interference with railroad operations, such as but not necessarily limited to obstruction of track clearances and roadbed drainage, foreign substances on or adjacent to the rails, and disturbance of surface and alignment of track, but such inspection shall not relieve the Design-Builder from liability. The cost incurred by the railroad for furnishing a watchman to perform such inspections will be reimbursed by the Department.

(10) Explosives shall not be used adjacent to any track or other railroad property without the approval of the railroad General Manager, but such approval will not relieve the Design-Builder from any liability. If the use of the explosives is permitted, the blasting shall be conducted with light charges under experienced supervision, and every precaution shall be taken to avoid damage to property, injury to persons, and interruption of railroad operations. Blasting shall be discontinued immediately on notice from the Railroad Superintendent that it is too hazardous.

(11) The Design-Builder shall not store or pile materials or equipment on the ROW of the railroad without having first obtained permission from the railroad General Manager, and in no case shall they be stored closer than 13 feet from the centerline on any railroad track measured at right angles thereto. Such permission will be granted with the understanding

that the railroad will not be liable for any damage to such materials or equipment from any cause and that the railroad General Manager may move, or require the Design-Builder to move at the Design-Builder's expense, such materials and equipment.

(12) The Design-Builder will be required upon completion of the work to remove from within the limits of the railroad's ROW all machinery, equipment, surplus materials, false work, rubbish, or temporary buildings of said Design-Builder and to leave the ROW in a neat condition, satisfactory to the Railroad Superintendent. The Design-Builder will be required to provide the TDOT PM or the designated Department contact person with a letter of release from the Railroad Superintendent before Final Acceptance of the Project by the Department.

(13) The Design-Builder shall cooperate with others participating in the construction of the Project, to the end that all work may be carried on to the best advantage. No charge or claim of the Design-Builder against either the Department or the railroad will be allowed for hindrance or delay on account of railroad traffic or any work done by the railroad or others, incident to or necessary for safe maintenance of railroad traffic or completion of the Project, but due consideration of any such delay will be reviewed for consideration of an adjusted time Change Order.

During construction of the footings, piers, or other supports or structures adjacent to any track of the railroad, the Design-Builder shall make adequate provisions against sliding, shifting, sinking, or in any way disturbing the railroad embankment and track operations by driving temporary sheeting and/or providing temporary shoring in a manner satisfactory to the TDOT PM or the designated Department contact person and railroad’s designee. Before commencing work on any pier or structure adjacent to any track, the Design-Builder shall submit electronic prints in Adobe PDF format of the proposed shoring and bracing details for the protection of the railroad company's track to the TDOT PM or the designated Department contact person and the railroad’s designee for their approval. This submittal shall include the proposed method of installation and shall be accompanied by supporting data including design computations, soil descriptions, and other pertinent information.

After approval by the TDOT PM or the designated Department contact person, one set of electronic prints in Adobe PDF format of the proposed shoring and bracing details bearing the seal of a registered structural or professional engineer, together with supporting documents, shall be forwarded to the railroad’s designee for Review and Acceptance. The Design-Builder shall notify the railroad’s designee and the railroad General Manager (in writing) in accordance with the requirements of the SP105C in advance of the proposed time of the beginning of the construction of the piers, supports, or structures adjacent to the track.

(14) When the plans have been prepared, the Design-Builder should send one set of electronic plans in Adobe PDF format with cover letter to the TDOT PM or the designated Department contact person to review the plans and make comments. Existing Fiber Optic facilities installed on the railroad property, not owned by the railroad, are to be processed as a utility relocation, by either the Design-Builder or the Department, depending on who

has the responsibility by project agreement. A copy of the letter should be sent to the Alternative Contracting Office. The TDOT PM or the designated Department contact person will recommend adequate protection on any rail-highway grade crossings affected by the Project.

(15) When the changes requested by the Department have been made, the Design-Builder should transmit the plans to the Railroad Coordination Office, which will be submitted to the railroad for Review and Acceptance.

(16) Railroad will send an email either approving the plans as they are designed or with comments detailing what revisions to the plans are needed to protect railroad interests. The Railroad Coordination Office will submit the requested revisions of the plans to the Design-Builder.

(17) The Design-Builder will revise the plans per the request of the railroad and submit the revised plans to the Railroad Coordination Office. The Railroad Coordination Office will coordinate with the railroad for approval of the revised plans and request the railroad to provide a detailed cost estimate for work required to accommodate the project.

(18) When the cost estimate is received from the railroad, the Railroad Office will Review and Approve it.

(19) Once the railroad cost estimate has been approved by the Railroad Coordination Office, the Design-Builder must submit the plans and estimate to the Department for Review and Acceptance. After Acceptance is received from the Department, the Railroad Coordination Office will enter into contract with the railroad. When the contract has been fully executed, the Railroad Coordination Office shall officially authorize the railroad to begin work necessary to accommodate the project. The Design-Builder will accomplish the requirements outlined in the SP105C for railroad protection inclusive of railroad flaggers. The railroad will begin to bill the Railroad Coordination Office for said railroad work.

(20) In rare circumstances, such as for move in state utility contracts for TDOT owned fiber installations, the railroad may require the Design-Builder to enter into a Preliminary Engineering (PE) Agreement. The cost of relocating the utility installations will be the responsibility of the Design-Builder. If applicable, the track time provided by flagman will be reimbursed by the Department.

CHAPTER 7: CONSTRUCTION PROCEDURES

7.1 PRE-CONSTRUCTION

At least 10 Calendar Days before the Pre-Construction Conference, the Design-Builder shall furnish the Department with a complete plan of operations including an updated project CPM Schedule.

7.1.1. MANAGEMENT PLAN SUBMITTALS AND UPDATES

The Construction Quality Management Plan (CQMP) shall be developed according to Chapter 2.5.3 of this **DB Standard Guidance.** The CQMP, if not submitted in conjunction with the Design Quality Management Plan (DQMP), shall be submitted to the Department for Review and Acceptance no less than 30 Calendar Days before the Pre-Construction Conference. The CQMP must be Accepted by the Department before issuance of the Construction Notice to Proceed (NTP).

The Transportation Management Plan (TMP) shall be reviewed, revised, and finalized at the RFC Design Review. Any required updates to the TMP shall be submitted to the Department for Review and Acceptance no less than 30 Calendar Days before beginning the first phase or stage of construction. The TMP must be Accepted by the Department before issuance of the Construction NTP. The Design-Builder shall install, maintain, and remove all temporary traffic control devices.

Any necessary updates to the Environmental Compliance Plan (ECP) shall be submitted to the Department for Review and Acceptance no less than 30 Calendar Days before the Pre-Construction Conference (the anticipated beginning date for the first phase or stage of construction). The ECP must be Accepted by the Department before issuance of the Construction NTP.

7.1.2. UTILITY SCHEDULING MEETING

Utility coordination begins upon issuance of the Initial NTP and continues through the completion of the project. Before meeting with the Department for the Pre-Construction Conference, the Design-Builder shall hold a group utility scheduling meeting with representatives from the utility companies involved with the Project. Representatives from TDOT shall be invited to participate in this meeting. The Design-Builder shall incorporate the utilities' time needs into the Design-Builder's CPM Schedule submitted at the Pre-Construction Conference.

7.1.3. PRE-CONSTRUCTION CONFERENCE

At least 15 Calendar Days before beginning any On-Site construction, unless otherwise authorized in writing by the Department, the Design-Builder shall hold a Pre-Construction Conference at a time mutually agreed upon.

A conference announcement shall be sent by the Alternative Contracting Office to all parties with a vested interest in the project including, but not limited to, Subcontractors, material suppliers, regulatory agencies, utility owners, the Department Regional Director, and other affected agencies. The Design-Builder's Project Manager shall provide the

Alternative Contracting Office with contact information for Subcontractors, material suppliers, and others with vested interests for the meeting announcement. Federal Highway Administration (FHWA) personnel shall be included in all meetings and announcements. The Construction NTP will not be issued until the Pre-Construction Conference has been held.

The Pre-Construction Conference (the Department's Standard Specifications Subsection 105.06) shall be held by the Design-Builder's Project Manager to discuss, at a minimum (as applicable):

1. Design-Builder's Plan of Operations and Schedule;
2. Required **Design-Build Contract** provisions;
    a. Special Provisions and **Design-Build Contract** requirements.
3. Utility Relocations;
4. CQMP;
    a. Material Certification;
    b. QC Procedures and Inspections;
    c. 407 Process Control Plan;
    d. 604 Process Control Plan.
5. TMP;
    a. Traffic Control Plan;
    b. Roadway Closures;
    c. Detours;
    d. Special Events;
    e. Restrictions.
6. S&H Plan;
    a. Work Zone Safety;
    b. Contagious Diseases.
7. ECP, unless a separate Environmental Pre-Construction Meeting is held;
    a. EPSC Plan;
    b. Environmental Commitments (if applicable);
    c. SP107FP Water Quality and Stormwater permits;
    d. Special Environmental Areas or Concerns.
8. QA Inspection;

a. Field Inspection/Monitoring;

b. Materials Acceptance and Testing;

c. Independent Assurance and Testing;

9. Submittal Process and Review;
10. Certified Payroll Requirements;
11. Prompt Payment Certifications;
12. DBE/Subcontractor Requirements;
13. Establishing the level of detail to be required for measuring progress and making payments regarding construction Lump Sum Pay Items, in accordance with this **DB Standard Guidance**.

Minutes shall be kept of this meeting, including an attendance roster, and key decisions shall be fully documented. The Design-Builder's Project Manager shall document and distribute the meeting minutes. All attendees shall receive a copy of the conference minutes. At a minimum, the following shall be submitted at the Pre-Construction Conference:

1. Traffic Control Plan;
2. EPSC Plan;
3. Material Suppliers List including the names and locations of suppliers (Standard Specifications Subsection106.07);
4. Listing of all subcontractors and the items and/or materials with which they are involved;
5. Traffic Control Letter and Certifications (Standard Specifications Section 712);
6. 105 Letter – Certified listing of personnel including Name & License # of PE or Registered Land Surveyor (RLS; Standard Specification 105.09);
7. 24-hour emergency contact information for Traffic Control, EPSC, Customer Service, and Employee Safety Professionals;
8. Copies of signed agreements between Design-Builder and DBE Subcontractors;
9. On-The-Job Training – Initial Training Schedule

    a. At the time of the Pre-Construction Conference, the Design-Builder shall electronically submit the “On-The-Job Training - Initial Training Schedule” form. The request must include at least the number of trainees required to fulfill the **Design-Build Contract**. See Circular Letter 1230-01 for on-the-job training program requirements and Circular Letter 1240-01 for training program requirements.

Additional information and materials may be required as indicated in the **Design-Build Contract** and/or the current TDOT Pre-Construction Checklist.

A separate Environmental Pre-Construction Conference can be scheduled if environmental topics cannot be fully covered at the Pre-Construction Conference. The appropriate individuals, the Department, Utility Representatives, Design-Builder, Subcontractors, Municipal Representatives, and other applicable individuals shall be invited to the Environmental Pre-Construction Conference. The notice shall be sent in ample time for the invitees to arrange to attend. All information exchanged shall be documented on the Environmental Pre-Construction Conference Meeting Minutes Form. The Design-Builder's Project Manager shall document and distribute the meeting minutes. All attendees shall receive a copy of the conference minutes.

Additional meetings may be required by the Department to accommodate project-specific needs. The Department will determine if additional meetings are required on a project-to-project basis.

7.2 CONSTRUCTION ADMINISTRATION

All construction shall be completed in full compliance with the **Design-Build Contract**.

The Design-Builder shall give all required notices and comply with all laws relating to the work and to those engaged in the work. Representatives of regulatory and governmental Authorities shall have access to the work. The Design-Builder shall give the Department a minimum of 24 hours' written notice of scheduled visits and immediate written notice of unscheduled visits so that visitors can be accompanied by Department personnel.

It is understood and agreed that the Design-Builder shall obtain and pay for any additional permits required by the method of construction including without limitation haul roads, temporary channels or temporary ditches, and/or off-site waste and/or borrow areas and shall be included in the **Design-Build Contract** Amount.

The Department has the authority to suspend all work until all environmental deficiencies concerning environmental permits are alleviated. No additional time shall be added to the **Design-Build Contract** due to this work stoppage. Should the Design-Builder's activities associated with the work on the Design-Build project violate the Department's Standard Specifications Section 107, any fines and/or penalties assessed to the Department will be deducted from monies due the Design-Builder. Any fines and/or penalties assessed to the Design-Builder will be the sole responsibility of the Design-Builder.

7.2.1. SUMMARY OF RESPONSIBILITIES

The Design-Builder is responsible for:

- The accuracy and completeness of all work performed under the **Design-Build Contract**;
- Furnishing all design services, quality management, materials, equipment, labor, transportation, and incidentals required to complete the Project according to the

accepted Plans; the Department's Standard Specifications, as amended; and terms of the **Design-Build Contract**;

- Overall management and construction of the project according to the lines, grades, typical sections, dimensions, and other details shown on the accepted Plans, as modified by Change Order or another written directive issued by the Department;
- Ensuring the quality of the work (The Design-Builder shall prepare procedures in the CQMP for QC of materials and describe how the Design-Builder plans to inspect the project to ensure compliance with the **Design-Build Contract** Documents);
- Performing EPSC inspections according to the terms and conditions of the latest version of the TDOT EPSC Inspection Manual, follow-up and associated reporting, and;
- Traffic control and pavement markings.

The Department or the Independent CE&I is responsible for:

- QA (the Design-Builder must have their own QC program);
- Item Quantity Tickets;
- Field Inspection Worksheets;
- Acceptance Testing; and
- Documenting Material Certification.

The Department is responsible for:

- Verification Testing;
- Independent Assurance Testing; and
- Providing QA Inspection Services through the Environmental Division and in accordance with the latest version of the TDOT QA Inspection Manual.

7.2.2. REQUESTS FOR INFORMATION, FIELD DESIGN CHANGES, & CONTRACT NON-CONFORMANCE

The need for design plan changes may be discovered during the execution of work. This subsection describes the general process to be followed. The Design-Builder shall coordinate with the TDOT PM to define the process of how to track these changes. Proposed changes that will impact the project footprint, environmental features, or buffer zones must obtain previous approval from the Department Environmental Division. The following are general examples of what will need to be tracked throughout the project.

Upon discovery of the need for a design plan change, a Request for Information (RFI) should be generated and sent to the Engineer of Record (EOR). The EOR will determine if a plan revision is required to accommodate the change. If a revision is required, the EOR will reissue a new set of sealed plans. If no revision is required, construction can proceed with the change recommended by the EOR. Any proposed change to the sealed design

plans shall be reviewed by the Department before implementation. The Department may reject proposed changes that do not conform to the **Design-Build Contract**.

The Design-Builder may proceed **at risk** before receiving Department acceptance for plan changes. If the Design-Builder proceeds with construction before receiving Department acceptance, there is potential that their submitted plan could be rejected, and the work would have to be removed and replaced at the Design-Builder's expense.

Plan changes shall be processed as agreed upon by the Design-Builder and the Department and must be fully reflected in As-Built Plans. The Design-Builder shall maintain a log of plan changes.

7.2.3. TRAINEES

- **Trainees** (Circular Letter 1240-01)

  Design-Build Contracts may include a requirement for Trainee Hours. The required Trainee Hours will be set by the Department in the **Design-Build Contract**. Summarized below is a partial list of requirements. See the **Design-Build Contract**, Circular Letter, and Special Provision for full requirements.

  The Design-Builder shall use the TDOT On-The-Job Training Program Desk Reference, which is the training plan approved by TDOT and FHWA.

  The Design-Builder shall not be permitted to commence construction without an approved training program. Failure of the contractor to provide an approved training program shall not be considered "As a condition not under the control of the Design-Builder" in regards to **Design-Build Contract** Time.

  Before the Pre-Construction Conference, the Design-Builder shall submit to the Affirmative Action Program Officer (AAPO), the "On-The-Job Training – Initial Training Schedule" form for at least the minimum number of hours required by the **Design-Build Contract**. Upon approval of the "On-The-Job Training – Initial Training Schedule" form by the On-the-Job Training (OJT) Program Coordinator, a copy of this approved form will be forwarded to the Design-Builder and the TDOT PM.

  Before a trainee is employed on the project, the Design-Builder shall submit an "On-The-Job Training Enrollment Form" (Enrollment Form) to the AAPO. The AAPO will forward approved copies of the enrollment form to the Design-Builder and the TDOT PM.

  The trainee normally starts work within 2 weeks of the type of work for which he/she is classified. If the type of work reaches 15 percent complete, and the trainee has not started work, the Design-Builder shall submit to the Department a written reason as to why the trainee has not started work. If the written reason is not received, **the Progress Payment may be withheld**.

  The trainee shall be included on the Design-Builder payroll by the approved classification and labeled as Trainee. The wage rate shall be compared to ensure that

the minimum rate requirements are met. However, if the Enrollment Form has not been received, and the Trainee is shown on the payroll, the payroll shall be returned for correction. Likewise, if the Enrollment Form has been received and the Trainee is shown on the payroll but is not labeled as Trainee, the payroll shall be returned for correction. Additional trainees may be requested at any time during the Project.

The Design-Builder is responsible for documenting trainee hours. The hours shown on the payroll for a Trainee shall be entered into a separate log per Trainee. The Design-Builder shall pay Trainees according to the **Design-Build Contract** requirements.

The OJT Weekly Progress Report must be signed by the Design-Builder's Project Manager and Trainee with attached payroll and submitted to the AAPO. This report will be the primary documentation for payment of Trainees. However, the hours shown on this report must agree with the total hours shown on the accumulated payrolls.

No payment for training hours will be made until the Trainee has terminated training on the project and the AAPO has received and approved a Letter of Completion and "OJT Request for Payment" (Attachment 4). Upon approval by the OJT Program Coordinator of the Request for Payment, a "Memo to Pay" or "Memo of No Pay" and supporting documentation will be sent to the TDOT PM. Payment shall not be made without approval from the TDOT OJT Program Coordinator. In addition, the Final Estimate will not be paid without a "Memo to Pay" or "Memo of No Pay" from the TDOT OJT Program Coordinator. All payments shall be made under Item 109-10.01, Trainee, at the unit price of $0.80 per hour for each hour of approved training, whether or not the Trainee completes the approved training program.

7.3 DEPARTMENT FUNCTIONS DURING CONSTRUCTION

The TDOT PM or their designee will conduct daily project reviews to ensure that the quality of construction and project record keeping is satisfactory. Unsatisfactory workmanship, inspection, acceptance testing, recordkeeping, or other conditions shall be corrected immediately and avoided in the future to prevent any loss of Project funding. The inspection and material sampling and testing shall be administered pursuant to the Department SOPs.

7.3.1. FIELD INSPECTION (CHECKLISTS)

Field Inspection Checklists are to be completed by the Department CE&I or the Independent CE&I. There are checklists contained in several Circular Letters indicated below. Any checklist contained in the Department's current Circular Letters shall be completed and maintained, which include but are not limited to the following (as applicable):

Asphalt

- Hot Mix Asphalt Plant Inspector Checklist Report (Circular Letter 407.04-01);

- Hot Mix Asphalt Roadway Inspector Checklist (Circular Letter 407.14.01).

Bridge

- **Bridge Deck** (Circular Letter 604.16-01)
- A Pour Meeting shall be scheduled and conducted before any bridge deck pours.
  - Pre-Pour;
  - During;
  - Post-Pour.
- **Bridge Inspection and Acceptance**

  The following information must be documented. This information shall include the following for abutments, piers, and other infrastructure.

  - Footing elevations;
  - Pile cut-off elevation;
  - Pile tip elevation;
  - In-place pile length;
  - An Initial Bridge Inspection must be completed by the Regional Bridge Inspection office before opening any new or reconstructed bridge to traffic. If construction is phased, additional inspections shall be required for each construction phase completed before any traffic shift and upon completion of the bridge.

DBE Subcontracting

- Commercially Useful Function (CUF) Checklist (Circular Letter 1247-01)

Guardrail

All guardrail shall be inspected at the time of installation. The Department or the Independent CE&I shall complete the Guardrail and Guardrail Terminal Anchor Daily Field Report.

Guardrail end terminals shall be tagged using the appropriate Guardrail Decal available from the TDOT PM.

- Guardrail and Guardrail Terminal Anchor Daily Field Report (Circular Letter 705.05-01).

Deficient guardrail found upon inspection shall be documented on the Guardrail Inspection Form for Deficient or Deviated Terminal Units.

Labor Interview (Davis-Bacon Act)

- Contractor's Employee Interviews (Form C-27) (Circular Letter 1273-03)

Safety

- Traffic Control Devices Checklist (Circular Letter 712.07-01).
- Tennessee Highway Patrol Hours (Circular Letter 712.04-04)

7.3.2. ITEM QUANTITY TICKETS (AGGREGATES, ASPHALTS, ETC)

The Electronic Ticket Delivery System requirements are only a portion of the required Item Quantity Tickets. See Electronic Ticket Delivery System (Circular Letter 109.01-01).

The Department or the Independent CE&I shall collect the tickets from the carrier upon delivery of the ticketed material, record any additional information on the ticket necessary, and retain the original copy for payment. Loads exceeding the Legal Weight limit shall be rejected and are subject to liquidated damages as specified by SP108B. Continued or repeated violations are subject to suspension of work.

The Department or the Independent CE&I shall ensure that the following information is shown on each ticket.

- **Design-Build Contract** Number;
- Date;
- Signature of the person accepting the ticket on the job site;
- Unit of measure;
- Identification of hauling vehicle.

Additional information the Department or the Independent CE&I shall write on the last item quantity ticket for a specific day:

- Station and location of material placement;
- Name of Design-Builder/Subcontractor;
- Cumulative totals for the day.

The Item Quantity Tickets are totaled daily per item and recorded on the Item Quantity Totals spreadsheet. A summary shall be attached to the daily bundle of tickets. The summary must contain the following information: **Design-Build Contract** Number, Project Number, Date, and the accumulated total of tickets.

The Item Quantity Total spreadsheet may be kept electronically or printed and filled in manually. A current cumulative total shall be kept.

7.3.3. ENVIRONMENTAL QUALITY ASSURANCE INSPECTIONS

If there are National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) coverage, water quality or other environmental permits, or environmental commitments on a project, Environmental Quality Assurance (QA) Inspections will be required for the Design-Build Project. These inspections include all

work associated with the Design-Build project (e.g., waste and/or borrow areas, staging areas).

The Department's Environmental Division will conduct Environmental QA Inspections with staff or contracted consultants according to the requirements and specifications identified in the TDOT Quality Assurance Inspection Manual. The purpose of the Environmental QA Inspection is to independently review the work to ensure that the EPSC measures are installed, repaired, and maintained as required and to ensure that the requirements of all environmental permits and commitments are being followed.

The QA Inspector shall submit a QA Inspection Report to the Department and the Design-Builder within the timeframe specified in the latest version of the TDOT Environmental Quality Assurance Inspection Manual. If the Department's QA Inspector indicates non-conformances on the QA Inspection Report, no additional money shall be added to the **Design-Build Contract** Amount to alleviate the non-conformances; however, if the non-conformances continue to reoccur, Liquidated Damages may be deducted from monies due the Design-Builder as specified in SP108B.

At a minimum, the Environmental QA Inspections should be conducted at a frequency stated within the latest version of the TDOT Environmental Quality Assurance Inspection Manual. More frequent inspections shall be conducted if violations or repeat non-conformances occur, but no less than monthly, unless specifically approved in writing by TDOT Environmental Division. The QA Inspector shall schedule the Environmental QA Inspections according to the specifications identified in the latest version of the TDOT Environmental Quality Assurance Inspection Manual unless noted otherwise.

Upon concurrence of final stabilization by all involved parties (including the Department), completion of all permit requirements and forms, and the receipt of the final Environmental QA Inspection Report from the QA inspector, the Notice of Termination (NOT) form shall be completed and submitted to TDEC by the Design-Builder Project Manager with a copy sent to the TDOT Environmental Engineering Office and the Alternative Contracting Office.

7.3.4. DEPARTMENT DOCUMENTATION

The Department or the Independent CE&I shall maintain a project daily work report (DWR) to document the daily activities and major events on a Project. Record keeping by the Department is predominately electronic. Department CE&I or Independent CE&I use the DWR App or SiteManager to enter DWRs. DWRs from the project inspection personnel are combined in SiteManager to consolidate record keeping.

The DWR, in general, will contain a day-by-day record of all significant activities relating to the project. It is essential that the notes be complete, as they become important evidence in the establishment of responsibilities or liabilities.

The following is a partial list of items to be noted in the DWR:

1. Weather AM & PM;

2. Accumulated Total of Days used and hours worked;

3. Design-Builder's staff on site;
4. Subcontractor's staff on site;
5. Summaries of important discussions with the Design-Builder;
6. Documentation of accidents/incidents on site;
7. Official visitors and inspections;
8. Environmental Notices of Violations and recurring non-conformances;
9. Sediment releases;
10. Work or materials rejected and reasons;
11. Time of shutting down or resuming of work and explanation;
12. Work done by Design-Builder's or Subcontractor forces during day;
13. General purpose of work, type and location of work taking place;
14. Identify the controlling item of work for the current construction phase;
15. Length and cause of any delay;
16. Arrival and departure of major equipment, type and amount of equipment on site (hours used or idle);
17. Unusual conditions, if any such are high water, bridge failures, slides, or other;
18. Other issues that may affect the completion of the project.

The DWR mobile app or SiteManager will record the person filling out the report and organize the DWRs.

At the completion of the project, all project DWRs shall become a part of the permanent record. Project files shall be neatly organized to adequately document and record all Project correspondence and provide full support for all payments and decisions made including material certifications and test reports, calculations, invoices, and other documents.

It is of prime importance in the administration of a **Design-Build Contract** that records of all activities pertaining to the **Design-Build Contract** contain sufficient details and are clear enough to be read and understood by anyone unfamiliar with the Project.

7.3.5. ITEMS DOCUMENTED USING WORKSHEETS

Determination of unit prices for use with worksheets

Unit prices will be developed using the Department's 3-year historical average unit prices at the time of bid. The Design-Builder may submit alternate unit pricing with documentation to justify the alternate pricing. The Department may negotiate with the Design-Builder's alternate unit pricing. If the Department and the Design-Builder fail to

agree on alternate pricing, the Department's 3-year historical average unit price at the time of bid shall be used.

Various item quantities are calculated using worksheets. The Department's Standard Specifications and Special Provisions dictate the appropriate deductions, additions, and adjustments applied to the **Design-Build Contract** payments. The items shall be documented by the Department or the Independent CE&I within the Project records. The following is a listing of the deductions/additions/adjustments:

Deductions

Appropriate deductions necessary for **Design-Build Contract** payments shall be handled as follows:

Material Deductions – The Design-Builder will be notified in writing by the Department of the Pay Items for deduction. The Design-Builder shall prepare a report mitigating the cause of deduction. The Design-Builder shall either take a deduction for the specific Pay Item or replace the defective material at their own expense for payment. If the defective material is such that removal and replacement is required, the Design-Builder shall only remove and replace the material for payment at their own expense. If a deduction is required, the deduction will be processed and deducted from monies due the Design-Builder on the Monthly Progress Payment in which it occurs.

- **AC Content & Gradation Deduction (Whole Mix or Split Mix)** (the Department's Standard Specifications Subsection 407.20)
- **Material Variation Deduction LOI (Whole Mix or Split Mix)** (the Department's Standard Specifications Subsection 411.10)
- **Density Deduction (Whole Mix or Split Mix)** (the Department's Standard Specifications Subsections 407.15 & 407.20)
- **Defective Concrete (Reduced Pay Rate)** (the Department's Standard Specifications Subsections 604-15, 604-20, 604-31)

  The Department or the Independent CE&I shall communicate Low Cylinder Break information to the Design-Builder promptly. The documentation to support the recommended correction is the Evaluation of Low Strength Concrete Form. This form shall be completed by the Department or the Independent CE&I with a statement by the Design-Builder. Evaluation of Low Strength Concrete (Circular Letter 604.21-01)

Liquidated Damages Deduction - The Design-Builder will be notified in writing by the Department of the Liquidated Damages deduction amount and reasons for the deduction. If Liquidated Damages are assessed, the deduction will be processed and deducted from monies due the Design-Builder on the Monthly Progress Payment in which it occurs.

Adjustments (Circular Letter 109.02-01)

Adjustments are permanent or temporary payment adjustments for the fluctuating costs of petroleum products, assessment of Liquided Damages or material deductions, withholding

payment for missing test reports or certifications, and other issues. Adjustments are contract-specific and defined in the **Design-Build Contract**.

Adjustments are calculated and paid monthly according to the Standard Specifications.

- **Price Adjustment for AC Content** (the Department's Standard Specifications Section 307)
- **Price Adjustment for AC Content** (the Department's Standard Specifications Section 411)
- **Assessment of Liquidated Damages**

  Liquidated Damages are to be accessed using the SP108B.

- **Rideability**

  Contracts may contain the specifications or provisions dictating deductions, additions, and adjustments for meeting or not meeting the requirements for smoothness.

- **Concrete Pavement Adjustment** (the Department's Standard Specifications Sections 501 and 604)
- **Test Reports**

  Payment may be withheld for materials/work associated with items that do not have required material certifications and/or test reports. Monies withheld will be calculated as detailed above for the item missing the required documentation.

- **Incentive/Disincentive Adjustments** - If the **Design-Build Contract** requires an incentive/disincentive Special Provision, such as rideability, the adjustment will be processed and applied on the Monthly Progress Payment in which it occurs.

7.3.6. MATERIALS AND TESTS

A representative from the Department shall conduct all verification and independent assurance testing for the Design-Build project in accordance with the Department SOP-1-2B and SOP 4-1.

The quality of materials used on the Project and tests performed must conform to all the Department standard operating policies and procedures. The Quality Assurance Procedures for Construction generally consist of the following:

All materials used on the Project must have test reports, material certifications, and/or field testing by certified personnel to document that the material meets appropriate specifications.

Testing must be in accordance with the Department SOP 1-1.

Testing data must be entered into the Laboratory Information Management System (LIMS), a component of SiteManager. LIMS is the module that allows the material samples to be reviewed and approved, which in turn allows payment of the contract work item. Because the **Design-Build Contract** is based on Lump Sum Pay Items, there are

some additional steps required to record quantities and substantiate payment to the Design-Builder. The use of LIMS requires traditional Department Pay Items, which will be provided within the RFC Plans. The traditional Department Pay Items are entered into SiteManager using Zero Dollar Change Orders. This allows the Lump Sum Pay Item to be distributed to traditional Department Pay Items without changing the **Design-Build Contract** value and facilitates tracking of both estimated total and installed quantities. Tracking estimated total and installed quantities is essential for estimating progress and substantiating payment to the Design-Builder. Further, it is required for ensuring that adequate testing has been completed for the quantity of installed materials. SiteManager is also used to determine fuel or material adjustments based on LIMS data.

The source for each type of material must be approved by the Department before delivery begins.

7.3.7. ACCEPTANCE TESTS

Acceptance Sampling and Testing shall be conducted in accordance with the Department SOP-1-1 and SOP 4-1. Acceptance samples and tests are those used for determining the quality and acceptability of the material and workmanship that have been or are being incorporated in the project. The results of these tests are to be used by the Department and the Design-Builder to determine conformance to the **Design-Build Contract**. Acceptance Sampling and Testing is performed by the Department or Independent CE&I.

A qualified private testing facility employed by the Design-Builder may be engaged for their own quality control program.

7.3.8. VERIFICATION TESTS

Verification Sampling and Testing shall be conducted in accordance with the Department SOP-1-1 by a designated Department representative. Verification samples and tests are those used for validating the quality of a product that is being incorporated in the Project.

7.3.9. INDEPENDENT ASSURANCE TESTS

Independent Assurance Sampling and Testing shall be conducted in accordance with the Department SOP-1-2B by a designated Department representative. Independent assurance samples and tests are used for checking the reliability of the results obtained in Acceptance Sampling and Testing. An independent Assurance (IA) Technician will be responsible for observing the Acceptance Technician while they conduct the tests to ensure that the proper techniques and procedures are followed. Independent Assurance Sampling and Testing and Acceptance Sampling and Testing shall not be conducted by the same technicians or the same independent entity.

This provides an independent analysis of the QA tests to ensure that the test results are valid. IA technicians will usually be the Department Region personnel but may also be the Department’s Central Laboratory or a Department-contracted independent testing laboratory.

Independent assurance sampling shall be conducted at the minimum frequency established in SOP 1-2B. The designated representative (the Department or independent entity) will

promptly compare acceptance test results with independent assurance test results. This comparison must be documented in the Project records. If the comparison indicates a problem, either with the materials or with the testing methods, action must be taken immediately to resolve the problem.

The Department's Central Laboratory will act as a "referee" laboratory for resolution of disputes regarding the Department's Verification Sampling and Testing results and the Design-Builder's QC test results unless there is a potential for conflict of interest. If the dispute is between the Design-Builder's QC testing laboratory and the Department's Central Laboratory, the dispute will be resolved by test results obtained from a certified laboratory agreed upon by the Parties. The services of the "referee" laboratory may be requested by either the Department or the Design-Builder. The sampling and testing results determined by the "referee" laboratory shall be final and binding on both Parties and not subject to dispute resolution under this **DB Standard Guidance**. The Party whose sampling and testing results are not confirmed or supported by the "referee" laboratory (i.e., the unsuccessful Party) shall be responsible for payment for the "referee" services. If the Design-Builder is the unsuccessful Party, the cost of the "referee" laboratory services will be deducted from monies due or to become due the Design-Builder under the **Design-Build Contract**.

The Design-Builder shall have documentation that materials and equipment that conform to the **Design-Build Contract** requirements available at the Project site no less than 24 hours before installation or use of such materials or equipment. This documentation shall be retained at the Project site.

7.4 ANCILLARY DESIGN-BUILDER FUNCTIONS

The Design-Builder shall coordinate and have, at a minimum, monthly project progress meetings to discuss the status of the project and other project issues. The Design-Builder's Project Manager and the TDOT PM shall be notified in advance of the scheduled progress meetings.

The information detailed in this section identify and discuss certain aspects of Design-Builder functions but are not intended to be an exhaustive list of Design-Builder responsibilities.

7.4.1. SIGNING, TRAFFIC CONTROL, AND PAVEMENT MARKINGS

The signing, traffic control, and pavement markings shall be in accordance with Section 700 of the Department's Standard Specifications, the Department Traffic Design Manual, the Department's Roadway Standard Drawings, Department's Traffic Operations Standard Drawings, the MUTCD, the Department's Work Zone Safety and Mobility Manual, and the Design-Builder's approved TMP.

The Signing Plans shall be prepared by the Design-Builder and included in the RFC Plans. The Design-Builder shall be responsible for:

- The design, fabrication, and installation of signs required throughout and beyond the construction limits to ensure provision of adequate advance signage and spacing;

- Maintaining all existing signs during construction to ensure that signs are properly maintained and visible during project construction;
- Removal, temporary storage, and reinstallation of existing signs, if required;
- Design and installation of temporary sign supports;
- Determining the station locations for all signs;
- Determining those existing signs that will no longer be needed upon completion of the project, removing and disposing of these signs and supports, and identifying the signs to be removed on the signing plan;
- Determining, designing, and installing any protection for proposed and exiting sign supports.

All revisions in the RFC signing plan shall be submitted to the Department for Review and Acceptance before implementation.

The TCPs, including pavement markings, shall be submitted with the RFC Plans. All pavement marking material used shall be placed in accordance with the Department's Standard Specifications. Pavement markings are constantly degrading and shall be replaced at regular intervals to be effective.

The Design-Builder will be notified for failure to comply with the specification or plans. The safe passage of pedestrian and multimodal traffic through and around the temporary traffic control zone, while minimizing confusion and disruption to traffic flow, shall have priority over other Design-Builder activities. Continued failure of the Design-Builder to comply with the requirements of the Department Standard Specifications or Special Provisions will result in a deduction of monies from the **Design-Build Contract** for non-performance of work, not as a penalty, but as Liquidated Damages as specified in the **Design-Build Contract**.

Failure of the Design-Builder to comply with the Specification or failure to take immediate corrective actions (required within 48 hours of written notice) shall be reason for the Department to suspend all work on the Project, except EPSC and traffic control, and to apply a deduction of monies from the **Design-Build Contract**, not as a penalty, but as Liquidated Damages, at a rate specified in the **Design-Build Contract.** The monies due to the Design-Builder for any work on the Project may be withheld until traffic control deficiencies are corrected. These other actions shall be additional to the deduction for non-performance of traffic control.

7.4.2. DISCOVERY OF HUMAN REMAINS

It is the responsibility of the Design-Builder to know and comply with all state and federal legislation concerning the discovery of human remains. Pursuant to T.C.A. § 11-6-101 et seq., National Historic Preservation Act, Section 106, 36 CFR 800, and 36 CFR 60.4, human skeletal material and associated funerary objects (e.g., artifacts) must not be knowingly handled, disturbed, or removed. If a bone or bone fragment is removed and later identified as human, it must be returned to the exact location from which it was removed. If human remains are discovered, the Design-Build Project Manager must immediately

stop work in the area and contact the TDOT PM in order to notify the appropriate Department Archaeologist, who will then in turn notify the State Archaeologist and provide further guidance to the Design-Builder's Project Manager. The location of the remains must be documented with a global positioning system (GPS) unit conforming to the data collection requirements detailed above. Sharing the location information with parties other than law enforcement, the Department, and the State Archeologist is prohibited. Archaeologists are strongly encouraged to refer to White (1991) and/or Bass (1995) to familiarize themselves with the major diagnostic traits used to distinguish between human and non-human bone.

7.4.3. ASBESTOS HAZARDS

It is the responsibility of the Design-Builder to understand and comply with all state, federal, and local laws and regulations to protect workers, contractors, and the general public from potential asbestos hazards. Asbestos is a fibrous mineral once popular until the 1960s and 1970s in the construction and commercial products industries for its heat-resistance and material strengthening properties. Inhaling asbestos particles can lead to lung cancer, mesothelioma, and asbestosis, even though symptoms might not develop until 20 or more years after asbestos exposure. Due to the dangers of asbestos exposure, most uses are now banned; however, asbestos-containing materials (ACMs) still exist in many structures and in some modern construction materials.

The following bodies regulate asbestos in the State of Tennessee,

- United States Environmental Protection Agency (USEPA), 40 CFR Part 61, Subpart M (National Emission Standards for Hazardous Air Pollutants [NESHAP]);
- Occupational Safety and Health Administration (OSHA), §1926.1101 (Construction Industry) and §1910.1001 (General Industry);
- U.S. Department of Transportation, 40 CFR Parts 171-180;
- Tennessee Code, §62-41-101 et seq. (Tennessee Asbestos Contractor Accreditation and Regulation Act);
- Local Municipal Agencies (including but not limited to Knox, Hamilton, and Shelby Counties).

NESHAP regulations, under the Clean Air Act, specify work practices for asbestos to be followed during demolition and renovation of all facilities including, but not limited to, structures (bridges), installations, and buildings. The regulations require a thorough inspection by a licensed asbestos inspector where the demolition or renovation operation will occur. The regulations require the owner or the operator of the renovation or demolition to notify the appropriate delegated entity (often a state agency) before any demolition or before any renovations of buildings that contain threshold amounts of regulated ACMs. The rule requires work practice standards that control asbestos emissions. Any required asbestos abatement should be performed by properly trained workers and Tennessee accredited contractors.

Procedures for thoroughly and comprehensively surveying buildings and facilities for the purpose of locating, identifying, quantifying, and assessing ACMs are provided in the most recent ASTM International E2356 Standard Practice for Comprehensive Building Asbestos Surveys. Following collection, samples should be submitted under chain of custody to a laboratory accredited by the National Voluntary Laboratory Accreditation Program for bulk asbestos analyses. All samples will be analyzed by polarized light microscopy (PLM) in accordance with USEPA Method EPA/600/R-93/116. The USEPA defines ACM as containing greater than 1 percent asbestos content. If bulk sample results are reported near or below the PLM detection limit, additional analysis may be required. The OSHA regulates all amounts of asbestos.

7.4.4. ENVIRONMENTAL PROCESS & EPSC INSPECTION

Depending on the complexity of environmental actions, the Design-Builder may be required to provide monthly Environmental Status and Compliance Reports to the Department. In addition, the Design-Builder may be required per the **Design-Build Contract** to arrange and schedule bi-weekly meetings, depending on the level of permitting and construction activity in or adjacent to environmentally sensitive areas, with the Department to review Project compliance with permits and approvals. Meeting minutes shall be prepared and distributed within 5 Business Days of the meeting.

It is the Design-Builder's responsibility to determine whether coverage under the current NPDES CGP is required based on the project's area of disturbance, in accordance with Chapter 5 of this **DB Standard Guidance**. The SWPPP, EPSC Plans, the latest version of the TDOT EPSC Inspection Manual, and all applicable environmental permits shall be adhered to throughout construction of the project.

Various permits require routine inspections of EPSC measures, documentation of environmental issues that arise, and completion of various reports. The Design-Builder shall be responsible for compliance with all applicable environmental permits and regulations including those associated with reporting and record keeping. It is essential that the SWPPP and EPSC Plans be followed throughout construction, revising as needed in response to changing field conditions.

The Design-Builder shall furnish an EPSC supervisor (EPSCS) for EPSC inspections. The EPSCS shall be responsible for coordinating all EPSC activities within the Project limits, including any off-site areas, including borrow, staging, and waste areas, for the duration of the Design-Build Project with the intent to prevent eroded materials, sediments, or other pollutants disturbed by construction activities from reaching streams or leaving the limits of construction. The work shall be conducted in accordance with Standard Specifications Section 209 and all applicable Special Provisions, approved EPSC Plans and SWPPP, and all applicable environmental permit requirements.

The Design-Builder shall conduct routine EPSC inspections (as required in the NPDES CGP) and document the findings to ensure that the SWPPP is being followed and non-compliance is unlikely. Inspection reports shall be completed in accordance with the current CGP requirements and shall include photographic documentation, the current TDEC Construction Stormwater Inspection Certification Form, and a monthly rainfall log.

EPSC inspections shall include all areas associated with the Design-Build Project including waste and/or borrow areas, staging areas, and other areas. This report shall also document Design-Builder compliance with EPSC requirements in conformance with TDEC, USACE, and/or TVA permits. The EPSC inspection report and instructions are identified in Circular Letter 209.01-02. The Department and/or the Independent CE&I shall have the option of participating in routine EPSC inspections. The EPSCS shall ensure that the QA Inspector, the Department, and/or the Independent CE&I are copied on all EPSC inspection submittals.

All EPSC measures deemed to be in non-conformance shall be repaired, replaced, or upgraded in accordance with SP107FP or issued environmental permits, depending upon which has the more stringent timeframe. Failure to comply with this timeframe may result in deduction of Liquidated Damages from monies due the Design-Builder. It is the Design-Builder's responsibility to notify the Department when a NPDES CGP is required on the Design-Build Project. If the Department is not notified of these requirements before any land disturbance, all construction-related work shall be immediately shut down until the Design-Builder has obtained NPDES Permit Coverage, and Liquidated Damages shall be deducted from monies due the Design-Builder.

The Design Builder shall notify the TDOT PM and the TDOT Environmental Division of any environmental non-conformances, Requests for Information (RAIs), Notices of Violation (NOVs), or active Corrective Action Plans (CAPs). RAI and NOV documents are issued by the regulatory agencies and are to be provided to the TDOT Environmental Division immediately upon receipt or notification. The TDOT Environmental Division will coordinate the Department's response to the agency. Additionally, all environmental CAPs must receive documented approval from the TDOT Environmental Division before implementation.

In the event of a sediment release, the Design-Builder shall immediately mitigate the source of the release. The Design-Build Team, as the responsible party, shall notify the applicable regulatory agencies of the sediment release, providing location information, proposed steps for sediment removal, and plans to prevent future violations. Following the initial regulatory agency coordination, the Design-Builder shall notify the TDOT PM and the QA Inspector of the sediment release and planned resolution. The TDOT PM and the QA Inspector shall also be copied on any documented correspondence with the applicable regulatory agencies.

Whether or not any environmental permits are required, if any land disturbance (including clearing and grubbing) activities occur on the Design-Build project, EPSC measures are required to prevent erosion and control sediment from leaving any work site associated with the Design-Build Project and routinely inspected.

All environmental permits, reports, and documentation shall be kept within the work site at all times during construction. If a regulatory agency requests to view any written environmental information on the Design-Build Project, the Design-Builder must comply with this request in the timeframe specified by the regulatory agency.

Once construction is complete, and final stabilization has been met with concurrence by all involved parties (including the Department), a NOT should be submitted for the project. A NOT notifies TDEC of the request to terminate coverage of the General NPDES Permit for Discharges of Storm Water Associated with Construction Activities. General instructions for completing the NOT Form are provided in Circular Letter 107.08-01, however the NOT is submitted by the Design-Builder's Project Manager.

The Design-Builder shall not be released from the project site responsibilities under the NPDES permit provisions until the NOT is submitted to TDEC in accordance with Chapter 7.3.3. The NOT is a certification that the construction project site is permanently stabilized and that all construction-related discharges have ceased. This means that the use of EPSC measures to alleviate concerns of surface erosion and transport of sediment to surface water conveyances or to Waters of the State is no longer necessary. Furthermore, it means that permanent controls, hard surfaces, and/or vegetation employed at the site are deemed adequate to prevent erosion and sediment transport, and no other potential sources of construction-related pollution exist on the project.

Dispute between the Design-Builder and the Department regarding final stabilization and submittal of a NOT will be resolved via project inspection by a Certified Professional in Erosion and Sediment Control agreed upon by the Parties. The services of the "referee" inspector may be requested by either the Department or the Design-Builder. The results determined by the "referee" inspector shall be final and binding on both Parties and not subject to dispute resolution under this **DB Standard Guidance**. The Party whose determination is not confirmed or supported by the "referee" inspector (i.e., the unsuccessful Party) shall be responsible for payment for the "referee" services. If the Design-Builder is the unsuccessful Party, the cost of the "referee" inspection services will be deducted from monies due or to become due the Design-Builder under the **Design-Build Contract**.

7.4.5. PUBLIC RELATIONS AND PUBLIC INFORMATION

The Design-Builder should provide information weekly, as indicated in the **Design-Build Contract** or as directed by the TDOT PM, to the Department regarding lane closures, construction updates, and general project information. The Design-Builder SHALL NOT have contact with the media, unless specifically requested and/or approved by the Department.

7.4.6. DESIGN-BUILDER DOCUMENTATION

All project records must be compiled by the Design-Builder and retained in accordance with federal records retention policies.

The Design-Builder shall track material quantities and maintain daily reports including the following information:

1. Work schedules indicating the number of personnel, kind of equipment, and location and nature of the work to be performed;

2. Daily reports that include at least the following data:

a. Date, start time, and end time of work;

b. Who is filling out the report;

c. People on site including subcontractors by company and wage type, labor breakdown per wage type, and visitors;

d. Equipment used;

e. Area and type of work completed including pay item description and quantities;

f. Issues discovered including design, field changes, traffic control, erosion, and quality;

g. Issues resolved;

h. Issues ongoing.

Upon request by the Department, these records shall be submitted to the TDOT PM weekly.

The Design-Builder shall maintain the Project records for 5 years from the date on which the Project is closed by the FHWA.

7.5 PROJECT CLOSEOUT

7.5.1. MATERIAL CERTIFICATION AND ACCEPTANCE

All materials incorporated in the construction of the project shall be approved regarding material requirements, pursuant to the current SOPs from the Materials and Tests Division. Materials used on the project must have test reports, material certifications, and/or field testing by certified personnel to document that the materials meet appropriate specifications.

The intent of the material certification is to ensure that the quality of all materials incorporated into the project conforms with the associated Plans and Specifications.

At the completion of the Project, the Department or the Independent CE&I shall document all failing material tests and the corrective action taken by the Design-Builder on the Material Certification Letter with supplement form DT-1696. The Material Certification Letter from the Department or Independent CE&I must be based on an audit of the Project records according to a certification check list stating:

> **"The results of the test on acceptance samples indicate that the materials incorporated in the construction work, and the construction operations controlled by sampling and testing, were in conformity with the plans and specifications and such results compare favorably with the results of the independent assurance sampling and testing. Exceptions to the plans and specifications are explained in the attachment."**

The Department or Independent CE&I completes and submits this form to the Design-Builder for review/verification and signature, submits the Material Certification Letter to the Regional Field Office for review and signature, and then to the Alternative Delivery

Project Manager for review and signature. After the form has been signed by all parties, it is placed in the End of Job Folder to be submitted with Final Records. A sample form DT-1696 for Design-Build Projects is provided in Appendix E.

Products delivered to the Project site for use in the work shall comply with the Department Standard Specifications, Qualified Products List, or **Design-Build Contract** when the Department Specifications are used. Products accepted by certification shall have a materials certification attached to a completed Department Form DT-044, or similar, documenting Department test requirements and certified test results. Material certifications shall be date appropriate according to the date on which the specific material was used. Other products shall have daily reports showing actual test results. Progress Payments should not be made on a material if there are insufficient certifications or test data for that material.

All materials shall be accepted in accordance with the "Materials and Tests" section of this **DB Standard Guidance** and the Department SOPs.

Materials not accepted on certification shall have daily reports documenting the actual test results.

The required forms for material certifications/test reports are located at the Materials and Tests Division Field Operations web page. Each form has attached an example completed form.

All material certifications/test reports shall be recorded on the test report totals form. There shall be a test report totals form per item that requires certification/test reports for materials used.

Additional source-review tests performed at the Design-Builders request shall be at the Design-Builder's expense.

7.5.2. FINAL CLEAN-UP

Before Final Inspection, the Design-Builder shall clean up the Project in accordance with the Department's Standard Specification, Subsection 104.10. Unless the **Design-Build Contract** specifically provides for payment for this item, the Department will make no separate or additional payment for Final Clean-Up.

7.5.3. FINAL INSPECTION/ACCEPTANCE

When all work is complete, the TDOT PM and other Department representatives, including Regional Operations personnel, as required will make a final inspection of the Project to determine the quality, completeness, and acceptability of the work and to ensure that the authorized Project was constructed in reasonable conformance with the **Design-Build Contract** requirements, all applicable Plans, and the Department's Standard Specifications.

The Department's Standard Specifications Subsections 105.15 and 108.06 provide the general guidance to determine the inspection process for final acceptance date of the Project. If the inspection discloses any work, in whole or in part, as being unsatisfactory,

the Department will give the Design-Builder the necessary written instructions (Punch-List) for correction of same, and the Design-Builder shall immediately comply with and execute such instructions.

The attendees at the inspection shall be listed and, if applicable, the work that must be performed to complete the Project as stated in the Punch-List shall be documented in the Project records. Once completed, the Final Inspection Date shall be documented in the Project records.

On all projects with bridges greater than or equal to 20 feet long, including bridge repair projects, the Design-Builder Project Manager shall contact the TDOT PM to request an initial inspection by the Department to certify that the bridge construction (not necessarily the whole project) is complete. Even if the approach work is not already in place, the bridge inspectors can perform their initial inspection of the structure and document any deficiencies they discover. Their inspection report, listing those deficiencies, can be copied to the Design-Builder Project Manager for the Design-Builder to address before leaving the Project.

Upon completion of the Project, the amount paid to date shall be compared to the documented Milestone completion activities. All differences shall be corrected on the Final Progress Report (the presumed last Progress Payment).

Adjustments or Liquidated Damages shall be assessed as specified in SP108B on any work that has not been completed in accordance with the **Design-Build Contract** after the established Contract Completion Date stated in the **Design-Build Contract**.

7.5.4. RETENTION OF DEPARTMENT RECORDS

At Project Completion, the TDOT PM or designee will review all project records and prepare storage boxes using the Field Office Checklist in Appendix A of the TDOT Standard Guidelines for the Closeout of Construction Projects.

The Project Records shall be organized, indexed, and available for review as needed. An index of records shall be provided. Boxes shall be numbered consecutively and labeled by **Design-Build Contract** Number or Project Number, and County.

The Department shall store the following project records within separate sections to finalize the Project. The Project Records folder shall be organized in the following manner (as applicable):

1. Adjustments;
2. Change Orders;
3. Civil Rights Documents:
    a. CC-3s;
    b. Certification Regarding Money Paid to DBE;
    c. Contractors Employee Interview CL1273_03;

   d. CUF Checklist.

4. Conference;
5. Contractor Management:
   a. Attestation of Illegal Immigrants;
   b. Contractor Performance Evaluation.
6. Contractor Payments;
7. Correspondence;
8. End of Job - An End of Job Folder shall be created to retain documents that pertain to events that occur at the completion of the project. The documents listed in this section shall be kept in the End of Job file of the Project records:
   a. Pre-final Installed Work Items Report;
   b. Pre-final Estimate Summary to Contractor Report;
   c. Overrun Discrepancy Report;
   d. As-Built Letter;
   e. DT1696 Materials Certification & Supplement;
   f. Project Records Submittal Form;
   g. Closeout Checklist;
   h. Final Records Submittal;
   i. End of Job Certificate.
9. Environmental Documents;
10. Inspector Miscellaneous Forms;
11. Material Certifications & Test Reports;
12. Notices;
13. Payrolls;
14. Photos;
15. Project Documents:
   a. **Design-Build Contract**;
   b. Subcontracts;
   c. Project Meeting Minutes;
   d. Plans & Drawings (including export of all PlanGrid information).

16. Railroad;

17. Stockpiled Materials;

18. Survey;

19. Utility Documents.

All electronic files should also be copied to an appropriate backup.

The End of Job Certificate is completed and signed by the Design-Builder to certify that all work on this **Design-Build Contract**, including all amendments thereto, has been satisfactorily completed and is accepted as complete, subject to the terms and conditions of the **Design-Build Contract** and Specifications; and that all charges or bills for labor or services performed or materials furnished and other charges against the project (including those incurred by subcontractors) have been paid in full and in accordance with the terms of the **Design-Build Contract**. The Design-Builder's Certification is a requirement for final payment.

The End of Job Certificate is signed by the Department or the Independent CE&I to certify that this **Design-Build Contract** has been completed in compliance with the Department standard construction procedures and to affirm that the records have been checked and are a true representation of the work that was performed, the final activities are correct, and the final activities are covered by the required material certifications.

Upon signature by both parties, the Certificate is placed in the End of Job file of the Project Records. A sample Certificate is provided in Appendix E.

After the records have been checked by the Department, a summary document will be sent to the Design-Builder. A request to the Design-Builder for Certification Regarding Money Paid to Disadvantaged Business Enterprises (CC3s; if applicable) will be attached, and any deficient material certifications required for the Department to pay the Final Estimate.

The Department shall maintain the End of the Job Folder pursuant to Department Policy. The Design-Builder shall maintain the Project records for 5 years from the date on which the Project is closed by the FHWA.

7.5.5. POST-CONSTRUCTION REVIEW

In order to determine future construction process improvements, a post-construction review is required on all projects with a **Design-Build Contract** Amount of $10,000,000 or greater. This review shall be conducted as soon as practical following the completion of all work. Attendees at this review shall include the Design-Builder and representatives from the following areas when applicable: Construction, Design, Structures, Materials and Tests; Project Management; and FHWA. The review shall be facilitated by the Department Alternative Contracting Office or the TDOT PM. The participants will identify all significant Project problems and recommend avoidance measures for future projects. A Post-Construction Review Report shall be prepared. The Report shall recommend any construction process improvements and methods for elimination of identified delays.

CHAPTER 8: TITLE VI PROCEDURES

8.1. TITLE VI COMPLIANCE REVIEWS

49 CFR 21.9; 23 CFR 200.9; 23 CFR 200.11

Non-discrimination provisions apply to all federally assisted programs and activities of federal aid recipients, consultants/contractors, and Design-Builders, regardless of tier. The provisions prohibit any use of federal financial assistance to subsidize, promote, or perpetuate discrimination based on race, color, national origin, sex, age, disability/handicap, or income status. Recipients are responsible for determining and attaining compliance by the consultants/contractors and Design-Builders.

Responsibilities of the Consultants, Contractors, and the Design-Builder: Every agency receiving federal financial assistance must have a comprehensive and proactive Title VI enforcement program to eliminate and prevent discrimination. Every agency that extends federal financial assistance covered by Title VI is subject to the United States Department of Justice's (DOJ's) coordination regulations and guidelines (28 C.F.R. 42, Subpart F (1994); and § 50.3.). FHWA, for example, is required to obtain assurances of compliance with Title VI from the Department per these regulations (28 C.F.R. §§ 41.5(a)(2), 42.407(b)). In addition, Executive Order 12250 requires each agency to issue appropriate regulations or policy guidance to implement the non-discrimination provisions.

The Civil Rights Office (CRO) Title VI Program is responsible for implementing, developing, and establishing adequate procedures for identifying and addressing Title VI issues prescribed by the FHWA.

8.2. TITLE VI/NON-DISCRIMINATION

8.2.1. SELECTED AUTHORITIES

49 CFR Part 21	US DOT Title VI Regulations
23 CFR 200	FHWA regulation implementing "Title VI of the Civil Rights Act of 1964"
Executive Order 12898	The Executive Order requires that each federal agency shall, to the greatest extent allowed by law, administer and implement its programs, policies, and activities that affect human health or the environment to identify and avoid "disproportionately high and adverse" effects on minority and low-income populations.
US DOT Order 5610.2	This Order sets forth a process by which DOT and its Operating Administrations will integrate the goals of the Executive Order into their operations. This is to be accomplished

	through a process developed within the framework of existing requirements, primarily the NEPA, Title VI of the Civil Rights Act of 1964 (Title VI), the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (URA), the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), and other DOT applicable statutes, regulations, and guidance that concern planning; social, economic, or environmental matters; public health or welfare; and public involvement. The Order is an internal directive to the various components of DOT and does not create any right to judicial review for compliance or noncompliance with its provisions.
FHWA Order 6640.23	FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations - establishes policies and procedures for the FHWA to use in complying with Executive Order 12898, Federal actions to Address Environmental Justice in Minority and Low-Income Populations
Executive Order 13166: Limited English Proficiency	Requires all agencies that provide federal financial assistance to issue guidance on how recipients can take reasonable steps to provide meaningful access to Limited English Proficient persons.

1. The Design-Builder shall:
   - Endorse non-discrimination assurances;
   - Adhere to the requirements of Section 162(a) of the Federal-Aid Highway Act of 1973 (23 U.S.C. 324) that requires there be no discrimination on the ground of sex;
   - Attend a Department Title VI Program training session online at: https//www.tn.gov/tdot/civil-rights/title-vi-program/title-vi---training.html

2. Post-Award Compliance Reviews

   As part of ongoing monitoring, the Title VI Program will conduct annual desk reviews for planning agencies, urban and rural transit systems, and the Department Emphasis Program Areas.

3. Discretionary Follow-Up Compliance Reviews

   The Department Title VI Program will conduct follow-up reviews as deemed necessary and appropriate to ensure that federally and/or state assisted services and benefits are distributed fairly and equitably.

CHAPTER 9: BILLING & PAYMENT PROCEDURES

The Design-Builder must provide the Department Alternative Contracting Office with the name(s) of persons authorized to sign as "Design-Builder Project Manager" and "Design-Builder Official." The Department assumes no liability if it remits payment based upon a Progress Report submitted by an unauthorized individual; once payment is remitted pursuant to a Progress Report, any work for which the Department has previously remitted payment will be rejected. Progress Schedules received that do not contain the original signature of an authorized person will not be submitted to the Department Finance Office for payment. An electronic signature is acceptable.

Progress Schedules shall be submitted monthly for reimbursement. Progress Schedules should be sent to the TDOT PM for verification of progress. Acceptable Progress Schedules will be forwarded by the TDOT PM for processing payment through the Department Finance Office. NOTE: Projects for which no billing is received for more than a 1-year period may be subject to de-obligation by the Federal Highway Administration (FHWA).

The Design-Builder must keep all documentation supporting amounts billed to the State of Tennessee for 5 years from the date on which the project is closed with FHWA. This is NOT the same date as the last reimbursement from the State of Tennessee. The Department will notify the Design-Builder when the Project has been closed with FHWA.

9.1 MONTHLY PROGRESS SUBMITTALS

The Design-Builder shall submit a Monthly Progress Report consisting of the following:

- A monthly Project Status Critical Path Method (CPM) Schedule Update;
- A progress narrative (including the overall project completion percentage);
- Planned Value (PV) and Earned Value (EV) cost curves based on the cost-loaded schedule including a narrative discussion with supplemental information;
- A Change Order status report;
- A monthly subcontract report;
- A monthly procurement report;
- An updated Contract Submittals List;
- Material certifications (T2s);
- A safety report including any incidents, property damages, near misses, or Occupational Safety & Health Administration (OSHA) infractions;
- A summary of planned or unplanned hazardous materials and contaminated substance activities; and
- A Certification from the Design-Builder's Construction Quality Manager (CQM).

Please refer to the Sample Progress Report provided in Appendix D. The Design-Builder can use their own format, provided that all of the required information is included.

The Design-Builder shall submit each of the following to the Department with the Design-Builder's Progress Report.

(a) CPM Schedule:

(1) The Design-Builder shall update, at least monthly for the Department for Review and Comment, a CPM Schedule to reflect the current status of the Project as well as expected future activities including approved Change Orders. Each Project Status CPM Schedule Update shall accurately reflect all activities completed as of the effective date of the updated schedule. Each Project Status CPM Schedule Update shall indicate the completion percentage of each Pay Item number (by cost) of the Project. The Design-Builder shall submit an electronic copy of the Project Status CPM Schedule Update in Adobe PDF format, on 11" x 17" color sheets, and the XER file exported. In developing the CPM Schedule, the Design-Builder shall prioritize the acquisition of parcels that have significant impact on the Project Schedule and/or affect the Critical Path as so indicated.

(2) The Project Status CPM Schedule Update shall include a schedule narrative report that describes the status of the Project in sufficient detail to evaluate progress and substantiate payment.

(3) If, in the opinion of the Department, the specified work falls behind the CPM Schedule, the Design-Builder shall take such actions necessary to improve its progress. If the Design-Builder is behind schedule in any month, it shall indicate what measures it will take in the next 30 Calendar Days to put the work back on schedule to meet Interim Completion Dates and the **Design-Build Contract** Completion Date. The Design-Builder shall not be entitled to any additional compensation on account of the requirement to put the work back on schedule unless provided for in other provisions of the **Design-Build Contract**. In preparing the revised CPM Schedule, the Design-Builder shall consider increasing its workforce, construction plant, and equipment or number of work shifts. If the Department finds the proposed CPM Schedule revision unacceptable, the Department may require the Design-Builder to submit a new revision.

(4) The Design-Builder shall employ and supply a sufficient force of workers, materials, and equipment and shall execute the work with such diligence so as to: (a) maintain the rate of progress indicated on the CPM Schedule, (b) prevent work stoppage, and (c) ensure completion of the Project within the Contract Time. Any additional or unanticipated costs or expense required to maintain the schedule shall be solely the Design-Builder's obligation and shall not be charged to the Department unless provided for in other provisions of the **Design-Build Contract**.

(5) The Design-Builder shall furnish weekly work schedules indicating the number of personnel, kind of equipment, and location and nature of the work to be performed.

(6) If the Design-Builder fails to submit a CPM Schedule or any revision or update when required, the Department may withhold any Progress Payment.

(b) Progress Narrative - The Design-Builder shall prepare and submit a monthly Progress Narrative, which shall summarize all of the following information:

- Activity and progress for the **Design-Build Contract** including design, construction, and identification of the start and completion dates of work;
- Achievement of any Milestones;
- Quality Management efforts including results of any Design Reviews and/or quality audits;
- The date on which to begin the acquisition of the Project ROW and the anticipated

completion date of acquisition activities for each parcel. The Department shall be advised of all additional properties and temporary rights or interests in real property to be acquired by Design-Builder.

- Problems/issues that arose during the period and remaining problems/issues to be resolved;
- Resolution of problems/issues raised in previous progress schedules or resolved during the period;
- Critical schedule issues and proposed resolutions, proposal of actions planned to correct any negative float and explanation of potential delays and/or problems and their estimated impact(s) on performance;
- Issues that may need the Department's attention or action for the next month including Design Reviews.

(c) PV and EV Cost Curves; PV is the approved value of the work to be completed over the **Design-Build Contract** Time as assigned to an activity. The PV serves as the baseline for generating the curve and shall not be adjusted without approval by the TDOT PM. EV is the value of the work completed to date. PV depicts the revenue to be earned in each month, while EV depicts the revenue actually earned in the month. The Design-Builder shall submit within the monthly report a graph showing the monthly PV and EV plotted on axis 1 and the cumulative PV and EV on axis 2. The PV and EV curves shall be based on the cost-loaded CPM Schedule and shall include a narrative discussion with any additional supplemental information.

(d) The Design-Builder shall submit within the monthly report any outstanding Change Order requests containing all of the following:

- The Design-Builder's and the Department's Change Order identification numbers and/or coding;
- The issue title;
- A brief description of the change;
- Any outstanding issues to be resolved;
- The estimated cost and time implications;
- The projected resolution date.

(e) Subcontract Report - As part of the Monthly Progress Report, the Design-Builder shall submit a Subcontractor Paid Summary Report (Subcontract Report) providing the Department with an updated list of Subcontractors (design subconsultants and construction subcontractors, at all tiers, including labor-only). The Design-Builder shall specifically identify DBEs in the report. The location in which each Subcontractor worked shall also be identified. The Subcontract Report shall indicate the total number of Subcontractors and the total dollar value of all subcontracts awarded to date. The report shall show the total number of subcontracts, regardless of tier, and all of the following:

- The original subcontract amount;
- The value of any modification to date;

- Payments made to date;
- Tier of the Subcontractor;
- Appropriate signatures.

The Subcontract Report shall include the following information for the purpose of tracking DBE use and goals:

- DBE percentage for the Subcontractor (0, 60, or 100 percent per SP1247DB); and
- Totals for Original DBE Amount, Current DBE Amount and Payments made to DBEs to date.

(f) Procurement Report - The Design-Builder shall also report the results of all procurements completed in the previous month including those procured competitively and by other means. The Design-Builder shall indicate for each the type of work or product procured, and size of the procurement (in dollars), the names of firms competing for the subcontract and the name of the successful Subcontractor. Additionally, the Design-Builder shall provide any critical procurement dates; status of shop drawings; and list of any drawings, details, or permits that need approval with the anticipated dates for each.

(g) Concurrent with the CPM IPS submittal, the Design-Builder shall prepare and submit a Contract Submittals List covering all submittals required during the first 6 months of the **Design-Build Contract**. Thereafter, the Design-Builder shall submit monthly updates with the Monthly Progress Report. The updated list shall show the record of submittals made to date and shall show the submittals due over the next 3-month period.

(h) Material Certifications (T2s) – Department Form DT-0044 (T-2) is used to: (1) record and report test data and project information on various materials; (2) document certification that materials meet specifications for use on TDOT projects; and (3) record and submit test results on performance-graded asphalts and emulsions. Additional information regarding completion of T2s is posted at the Materials & Tests Division web page.

(i) Safety Report – The Design-Builder shall include details of any minor incidents, major incidents, near misses, and other incidents. The safety report should also include summaries of safety meetings, inspections, OSHA visits, notices, citations, and other associated documentation. Details of any interaction with Department safety personnel shall be noted.

(j) The Design-Builder shall submit a monthly summary of planned or unplanned activities related to hazardous materials.

(k) The Design-Builder CQM shall independently review the submittals for the Department and, upon completion, shall certify to the Department that the information is accurate and complete. Additionally, the Design-Builder CQM shall certify that all work shown as complete for the previous progress schedule period (including that of the Design Professionals, Subcontractors at all tiers, suppliers, and fabricators) has been checked and/or inspected by the Design-Builder CQM's quality staff, and that all work complies with all **Design-Build Contract** requirements.

The Design-Builder CQM shall also certify to the Department that the Quality Plan and all measures, protocols, and procedures provided therein are functioning properly and are being followed, and that Quality Management is functioning independently from the work production.

9.2 PAYMENT, PRICING, AND MEASUREMENT OF PAY

9.2.1. PRICING AND PAYMENT TERMS

The Department will only compensate for Pay Items incorporated into the Project performed in accordance with the terms of this **DB Standard Guidance** and the **Design-Build Contract**.

Payment constitutes full compensation to the Design-Builder for furnishing all materials, equipment, tools, labor, and incidentals necessary to complete the work; and for risk, loss, damage, and expense arising from the nature or prosecution of the work or from the action of the elements, subject to the provisions of this **DB Standard Guidance**. The Design-Builder shall include the costs of bonds, insurance, overhead, and profit for the Project in each Pay Item of work to be performed. The term "Lump Sum" unit of payment shall mean complete payment for the work described in the **Design-Build Contract**. When a complete Lump Sum Pay Item unit is specified as the unit of measure, it shall mean to include all necessary fittings and accessories.

When the **Design-Build Contract** states that the Pay Item Total is compensation for certain materials or work essential or incidental to the Pay Item, the same materials or work will not be measured or paid under any other Pay Item. The Pay Item Breakdowns (PIBs) shall state all materials, work and equipment needed for that specific activity.

The pricing and payment terms, along with the means of determining the percent work performed, is described herein. The Parties shall use a detailed breakdown of pricing and measurement of pay quantities to determine the percent of work performed. This detailed breakdown shall be determined before first Progress Report processing and shall be used throughout the term of the **Design-Build Contract** as the basis for payment. The detailed breakdown must be reconciled to the **Design-Build Contract's** Schedule of Prices for each month's payment cycle.

(a) Pricing Concept - The Department reserves the right to request further breakdown and detail at any time throughout the project. The pricing concept is summarized as follows:

- Identification of Pay Items – identifies each Pay Item Description, PIB, and Pay Item number shown on the Schedule of Items.
- Pay Item Values are assigned by the Design-Builder to each Pay Item on the Schedule of Items to facilitate the determination of the work performed (work progress).

(b) Assignment of Pay Items Breakdown

The Design-Builder shall also describe within their Technical Proposal, in bulleted or narrative form, all of the work generally encompassed within each Pay Item as PIBs and shall cross-reference items of a similar nature that are included in other Pay Items.

Appendix F contains general guidance to be used in distributing costs through the IPS and Baseline Schedule and in subsequent updates for several items including Mobilization, Construction, Stakes, Lines and Grades, Design and Engineering Services, Contract Management, Traffic Management, ROW Services, Geotechnical Services, and EPSC Services.

9.2.2. MEASUREMENT/DETERMINING PROGRESS

The Parties will conduct a Post-Award Meeting to refine the level of detail required for measuring progress and making payments in the Progress Payout Schedule with regard to percentage complete for each Lump Sum Pay Item. Progress shall be determined using a cumulative percent of work complete. Consistent Pay Item Values and PIBs are required pursuant to this **DB Standard Guidance**.

If the Parties cannot agree on the level of detail to be required, the Department shall establish the requirements, the decision of which shall be final. The Design-Builder shall include the basis for progress measurement and Pay Items, which must be Accepted by the Department before the Department's processing of the Design-Builder's first Monthly Progress Report.

9.2.3. PROGRESS PAYMENTS

The Department shall make Progress Payments to the Design-Builder in general accordance with this **DB Standard Guidance.** Materials will only be paid if they have been properly tested and accepted and have the necessary certifications submitted.

Monthly Progress Schedules submitted to the Department shall contain all the necessary documentation and certifications required in the Payment Section of this **DB Standard Guidance.**

(a) Required Submittals - the Department will make payments only in accordance with the Payout Schedule if a Progress Report conforming to **Design-Build Contract** requirements and all required accompanying submittals, prepared in accordance with **Design-Build Contract** requirements, has been submitted to and approved by the Department. The Department may withhold payment or partial payment until the Progress Report and its supporting documentation conform to the requirements of the **Design-Build Contract**.

(b) Payment Does Not Constitute Acceptance - the Department's payment of progress shall not be construed as Acceptance or Approval of any part of the work and shall not relieve the Design-Builder of responsibility for defective materials or workmanship.

(c) Progress Payout Schedule - The percentage of time upon which Progress Payments are based is not represented to be precise, and all estimated quantities are subject to correction in the final payment. If the Design-Builder uses these estimates as a basis for making payments to Subcontractors, the Design-Builder assumes all risk and bears any losses that result.

If work is not performed per **Design-Build Contract** requirements, the Design-Builder will not be considered to have progressed the work beyond the previous month's level until work is brought into compliance.

(1) Submittal of Progress Payout Schedule – At the same time each month, the Design-Builder Project Manager shall submit to the TDOT PM for Review an estimate of the amount of work completed through the previous month, calculated based on the CPM Schedule and the Pay Item Total allocation for each activity within the Monthly Progress Report. Sufficiently detailed information shall be provided for support. The Design-Builder Quality Manager shall verify and certify satisfactory completion of

all work being submitted for payment and that the work complies with all quality requirements of the **Design-Build Contract**. Notwithstanding the foregoing, the amount of each progress payment will not exceed the time of the work performed, as determined by the Department. If work is not performed per **Design-Build Contract** requirements, payment will be suspended at the previous month's level until work is brought into compliance.

(2) A "Design-Builder Progress Report" must be submitted monthly to the TDOT PM and the Alternative Contracting Office for all costs.

9.2.4. PARTIAL PAYMENT

The TDOT PM shall have the authority to withhold payment, wholly or in part, if the Design-Builder furnishes materials or uses workmanship that are not fully acceptable or fails to comply fully with any orders or with any provisions of the **Design-Build Contract**.

Items for which payment may be withheld include but are not limited to the following:

(a) Baseline Schedule Submissions – The Department may withhold payments or only make payments for the value of the materials in accordance with Standard Specifications Subsection 108.03C until the TDOT PM Accepts the Baseline Schedule.

(b) Monthly Schedule Submissions - If the Design-Builder fails to provide monthly schedule updates or address the TDOT PM's comments regarding the monthly schedule update within 10 Calendar Days following the progress estimate pay period cutoff date, the TDOT PM may withhold up to 10 percent of the monthly estimate payment until an acceptable update has been provided.

(c) Subcontractor Payment - The Department will withhold estimate payments if the required information is not submitted or if subcontractors (at any tier), material suppliers, or haulers are not paid after the 30-Calendar-Day period. Any delay or postponement of payment beyond the 30-Calendar-Day timeframe will be subject to terms listed in T.C.A. §12-4-707(b). The Design-Builder shall remain obligated to pay all subcontractors, material suppliers, and haulers fully and promptly for all work associated with a pay estimate from the Department, notwithstanding any withholding of payment from the Design-Builder for failure to pay a subcontractor, material supplier, or hauler within 30 Calendar Days.

(d) Erosion Control - If the Design-Builder fails to control project-related erosion or the discharge of pollutants, either on or off the ROW, the TDOT PM may withhold payment of future progress estimates until the Design-Builder has satisfactorily performed the necessary corrective measures. If deemed necessary, the TDOT PM may employ outside assistance or use Department forces to provide the needed protective measures and will charge all incurred direct costs plus project engineering costs to the Design-Builder by appropriate deductions from the Design-Builder's monthly progress estimate.

(e) Traffic Control - Failure of the Design-Builder to comply with Chapter 7.4.1 of this **DB Standard Guidance** or take immediate corrective actions required within 48 hours of written notice shall be reason for the TDOT PM to withhold payment of monies due to the Design-Builder for any work on the Project until traffic control deficiencies are corrected.

9.2.5. PAYMENT UNDER TERMINATED DESIGN-BUILD CONTRACT

Payment for work performed under a terminated **Design-Build Contract** will be determined under (a) or (b) of this subsection.

(a) Termination for Default - Upon termination of the **Design-Build Contract** for the Design-Builder's default, the Department will make no further payment to the Design-Builder. The Department will make Progress Payments to the entity to whom the **Design-Build Contract** is assigned but may withhold an amount sufficient to cover the Department's anticipated costs, as determined by the Department, to complete the Project.

Upon completion of the Project, the Department will determine the total amount that the defaulting Design-Builder would have been entitled to receive under the terms of the **Design-Build Contract** for the work actually completed by the Design-Builder had the Design-Builder completed the work (the "Cost of the Work").

If the Cost of the Work completed by the Design-Builder, less the sum of all amounts previously paid to the Design-Builder, exceeds the expense incurred by the Department in completing the work, including without limitation expenses for additional managerial and administrative services, the Department will pay the excess to the Design-Builder subject to the consent of the Design-Builder's surety.

If the expense incurred by the Department in completing the work exceeds the **Design-Build Contract** Amount, the Design-Builder or the Design-Builder's surety shall pay to the Department the amount of the excess expense.

The Department's determination of the expense incurred by the Department and the total amount of the Department damage resulting from the Design-Builder's default shall be final.

If a termination for default is determined by a court of competent jurisdiction to be unjustified, it shall be deemed a termination for public convenience, and payment to the Design-Builder will be made as provided below.

(b) Termination for Public Convenience

(1) General - Full or partial termination of the **Design-Build Contract** shall not relieve the Design-Builder of responsibility for completed portions of the work or relieve the Design-Builder's surety of the obligation for any just claims arising from the completed work.

(2) Mobilization - If mobilization is not included as an activity within a separate Pay Item, but payment is otherwise allowable as a reimbursable item under the **Design-Build Contract**, the Department may pay the Design-Builder for mobilization expenses including moving equipment to and from the Project Site. If allowed, payment of mobilization expenses will be based on cost documentation submitted by the Design-Builder to the Department.

(3) All Other Work - The Department will pay the Design-Builder at the price stipulated in the **Design-Build Contract** for the number of Pay Items of completed, accepted work. For Pay Items partially completed, payment will be as mutually agreed, or, if not agreed, as the Department determines to be fair and equitable. No claim for loss

of anticipated profits will be allowed.

9.2.6. PROMPT PAYMENT AND RETAINAGE

The Design-Builder is required to pay each Subcontractor within 30 Calendar Days from receipt of each payment the Design-Builder receives for work.

The "Prompt Payment to Subcontractors" Form must be completed by the Design-Builder to certify each month that payment has been made to the appropriate Subcontractors. The Prompt Payment Form will run 2 months in arrears (example: to receive progress payment for March 2020, the Prompt Payment Form for January 2020 must be on file).

The Design-Builder shall not withhold any retainage from the Progress Payments to their Subcontractors.

9.2.7. PAYMENT FOR CHANGES IN MATERIAL COSTS

Material Certifications covering each item shall be on file before payment may be processed (Circular Letter 109.02-01).

Material price adjustments are not available for all projects. If material price adjustments are available on a project, including bituminous price adjustments, it will be stated within the **Design-Build Contract**.

9.2.8. FUEL COST PRICE ADJUSTMENT

Fuel price adjustments are not available for all projects. If fuel price adjustments are available on a project, it will be stated within the **Design-Build Contract** and based on actual quantities for the month determined by ticket totals, field measurements, cross-sectioned, or similar methods.

9.3 ROW COSTS

Any costs associated with the Design-Builder responsibilities for ROW purchase and/or ROW service shall be stated in the **Design-Build Contract**.

9.4 FINAL PAYMENT

(a) Final Estimate - As soon as practicable after Final Inspection and Acceptance, the Design-Builder will prepare a final Progress Report of the Pay Items performed. With this Progress Report as a base, the total amount due the Design-Builder will be determined according to the terms of the **Design-Build Contract** including without limitation any amounts due for Extra work performed.

(b) Final Payment - The amount of final payment will be the difference between the total amount due the Design-Builder and the sum of all payments previously made, minus any deductions or Liquidated Damages assessed by the Department against the Design-Builder. All previous payments shall be subject to correction in the final estimate and payment. After computation of the final amount due, final payment will be mailed to the Design-Builder's last known address, as shown in the records of the Department.

(c) No Waiver of Right to Make Adjustment – See the Department's Standard Specifications Subsection 107.19.

APPENDIX A - REFERENCES & HYPERLINKS

REFERENCES

TDOT References	
Alternative Contracting	Qualified Products List (QPL)
Circular Letters	ROW Acquisition Brochure
Construction Division	ROW Consultant Resources
Consultant Information	ROW Procedures Manual
CPM Schedule Update Checklist	Rules and Regulations for Accommodating Utilities Within Highway Rights-Of-Way
Design CADD Standards	2nd Tier Subcontract Form
Design Guidelines	Small Business Development Office
Design Procedures for Hydraulic Structures	Special Provisions
Design Subconsultant form	Standard Drawings Roadway
Drainage Manual	Standard Drawings Structures
Environmental Division	Standard Drawings Traffic Operations
EPSC Inspection Manual	Standard Specifications & Supplemental Specifications
Geotechnical Guidelines	Subcontract form
Guidelines for Appraisers	Survey Manual
Instructional Bulletins	TDOT Multimodal Project Scoping Manual
Materials & Tests Field Operations	Tennessee Environmental Procedures Manual
Materials & Tests Field Operations Forms	Traffic Design Manual
Materials and Tests Division	Utility Resources
Materials and Tests SOP's	Utility Forms
MS4 Permit	Waste & Borrow Manual
Pre-Qualified List	Work Zone Safety and Mobility Manual
Public Involvement Plan	

Other References	
23 CFR	State Scenic Rivers
23 CFR 636 (Design-Build Contracting)	TCA, Title 69-3-141 (Bill of Rights for Permit Applicants)*
23 CFR 771.101 et. seq. (FHWA NEPA regs)	TCA, Title 54 (Highways, Bridges & Ferries)*
Federal Wild and Scenic Rivers	Note: For the above TCA links, you must click and then browse to the appropriate Title, Chapter & Part
FEMA Map Service Center	TDEC
FHWA	TDEC Erosion and Sediment Control Handbook
FHWA Hydraulic Engineering Circulars	TDEC Summary of Permits
FHWA other websites	Tennessee Department of Labor
Form WH347 (Payrolls)	TOSHA
Labor Interview Form	TVA
Labor Posters	TWRA
MUTCD	U.S. Department of Labor
NPDES CGP	USACE Memphis Environmental
OSHA	USACE Nashville Environmental
PlanGrid	USFWS
Primavera P6	

APPENDIX B – DESIGN-BUILD QUALITY MANAGEMENT PLAN CHECKLIST

**** The following checklist items are not intended to be complete and inclusive of all requirements and is for information only. It is intended to provide some of the basic elements expected in the Quality Management Plan for a typical project. The checklist should be reviewed in relation to the Design-Build Contract documents and modified as necessary to meet specific contract requirements, as well as those specific to the Design-Builder's team. Note, if the Design-Builder desires to begin any items of work prior to submittal of the Project Quality Management Plan, they must submit a partial Quality Management Plan covering those items of work for TDOT acceptance prior to performing that work. ****

☐ Review Design-Build Contract Requirements for Quality Plan. (*Note, these control over the DBSG requirements.)*

Quality Management Plan Checklist

General Submittal Requirements (DBSG 2.4 & 2.5)

☐Design-Builder shall submit the following components of the Quality Management Plan as part of the PMP at the Post Award Meeting:

- ☐Organizational Structure & Staffing Plan
- ☐Design Quality Management Plan
- ☐Safety & Health Plan
- ☐Records Management Plan

☐Design-Builder shall submit the following components of the Quality Management Plan as part of the PMP within 30 Calendar Days after the Post Award Meeting:

- ☐Environmental Compliance Plan
- ☐Critical Path Method (CPM) Initial Project Schedule (IPS)
- ☐Public Relations and Public Involvement Plan
- ☐Other plans as specified by the Design-Build Contract

☐Design-Builder shall submit the Construction Quality Management Plan no less than 30 Calendar Days before the Pre-Construction Conference.

☐ Design-Builder shall submit a conformed copy of each updated Quality Management Plan, with revisions highlighted, to the Department for acceptance within 30 Calendar Days of identification of the need for an update or revision.

☐ Design-Builder shall submit annually (within 12 months of receipt of last acceptance from the Department) either:

- ☐ Its updated Quality Management Plan for review by the Department,
- ☐ A narrative statement that no updates or revisions have been made to the Accepted Quality Management Plan during that 12-month period, and that all current processes, procedures, and protocols are functioning as intended.

The following outlines basic elements expected for the content of the Design-Builder's Quality Management Plan, which can follow this general outline or their own, but must provide the appropriate details necessary to demonstrate the Design-Builder will meet all requirements of the DBSG, as well as the specific Design-Build Contract, for Quality Management.

General Plan Requirements (DBSG 2.5)

☐ The Quality Management Plan (QMP) documents the Design-Builder's Quality Program

sufficient to demonstrate the Design-Builder has a plan and qualified staff to meet the contract requirements for professional quality and technical accuracy.

☐ The QMP shall document contract responsibilities. This can be specifically included in the QMP or by reference to other documents, ie the Project Management Plan.

☐ The QMP shall include a statement documenting the Design-Builder's commitment to quality and adherence to their QMP for all phases of work, signed by the Design-Builder's Project Manager and the Quality Manager. The statement should also provide for the Quality Manager's authority over the work, including stopping work, as necessary to meet the requirements of the QMP.

☐ The QMP shall include all required documents associated with management of quality for the project either by reference or by specific section. These include but may not be limited to the Design Quality Management Plan (DQMP), the Construction Quality management Plan (CQMP), the Environmental Compliance Plan (ECP), and the Safety and Health Plan (S&H Plan).

☐ The QMP shall have a title sheet or heading on each sheet documenting basic project data, including the Project: Name, Description, Route, County, Limits, PIN, State Project Number, Federal Project Number, Version/Revision Date(s).

☐ The QMP should have a section defining all abbreviations and key terms, as well as any proprietary terms utilized in the QMP.

☐ The QMP should identify all references, standards, and specifications to be utilized for quality activities.

☐ The QMP shall have a section defining the specific quality management activities, quality control and quality assurance, for each of the scope of work sections included in the Design-Build Contract. This include subconsultants and subcontractors. If activities are the same for multiple scope sections, state as such for each section.

☐ The QMP shall define document control systems and protocols that are auditable by the Quality Manager and/or TDOT for documentation of quality activities contained in the plan and their status, as well as the process for maintaining these records. This should include procedures to ensure document security and confidentiality as necessary.

☐ The QMP should include Quality Assurance activities including audits of quality records and routine reviews by the Quality Manager with status reporting to the Design-Builder's Project Manager and TDOT if requested.

☐ The QMP should include or reference a Risk Management Plan with activities and a risk registry for tracking specific project risks.

Quality Team and Organization (DBSG 2.5, 2.5.1, 2.5.2, & 2.5.3)

☐ The QMP shall establish the organization of the Quality Team and the implementation of all Quality Management activities applicable to all areas of work, including subconsultants and subcontractors. This should be in the form of a team organizational chart.

☐ The organization of the Quality Team should clearly demonstrate independence between the Quality Team and the Design and Construction staff, task leads, and management.

☐ The team organization section should clearly define the specific roles and responsibilities for the Project Team and Quality Team as they relate to execution of the quality management plan.

☐ Contact information should be included for all Key Personnel and the Quality Team including the Quality Manager, Design Quality Manager, Construction Quality Manager, Safety Manager, and Environmental Manager, as applicable.

☐ The Quality Team shall define the Design Quality Manager (DQM) and their responsibility

for Quality Control during design and ensuring that quality activities are performed and documented in accordance with the QMP.

☐ The Quality Team shall define the Construction Quality Manager (CQM) and their responsibility for Quality Control during construction and ensuring that testing and inspections are performed in accordance with the QMP.

☐ The QMP should include or reference (ie PMP) the process for making changes to the Quality Team and obtaining TDOT approval for changes to any Key Personnel defined by the Design-Build Contract.

☐ The Quality Organization Section should also define the basic roles and responsibilities to be met by Department, ie Quality Assurance Testing, and/or the TDOT CEI Consultant in accordance with the Design-Build Contract.

Design Quality Management Plan (DQMP) (DBSG 2.5.2 & Ch.5)

☐ A DQMP meeting all requirements of the DBSG and the Design-Build Contract shall be prepared by the Design-Builder and accepted by the Department prior to beginning design work. TDOT will not accept a design submittal without the Design-Builder obtaining TDOT acceptance for the DQMP for the associated work. The DQMP shall be submitted prior to or at the Post Award Meeting and discussed at the Post Award Meeting.

☐ DQMP includes defined workflows showing the design development, submittal, and design review processes and procedures for preparation of final signed and sealed construction plans as well as maintaining daily records of design activities.

☐ DQMP shall include defined workflows for design-quality checks, certifications, and independent design reviews. This includes monitoring and documentation of checks and reviews, as well as associated comments and resolution of issues identified.

☐ A monthly quality report should be required by the DQMP and maintained and submitted with progress reports and/or CPM updates.

☐ DQMP should define who is responsible for each Quality Activity and in what sequence the activities are to be executed as well as the method for documentation.

☐ All quality reviews associated with deliverables shall be included in, or correlate with, the CPM Schedule, as appropriate, including time for the TDOT review and response period in accordance with the Design-Build Contract. Note, the design review schedule shall be available for discussion at the Post Award Meeting.

☐ Documentation requirements of the DQMP should include a method for logging of design Non-Conformance Reports and/or notices indicating date issued, reasons, status or resolution, and date of resolution.

☐ Design document control and file management, as well as software tools to be used (ie PlanGrid), should be defined in the DQMP specifically or by reference to the Project Management Plan or Document Control Plans as applicable. These should address:

- ☐ Methods for submitting and tracking reviews and acceptance status for deliverables.
- ☐ Methods and documentation for performing design checks and reviews.
- ☐ Methods for tracking resolution of review comments.
- ☐ Non-conformance reporting, tracking, and resolution.
- ☐ Procedure and documentation for design certification.
- ☐ Procedure for maintaining current record sets and associated archives.

☐ The DQMP shall include requirement for certification that deliverables are in conformance with contract documents by the Design Quality Manager. This will be in the form of a Design

Certification Letter stating as required by DBSG Chapter 5.

Construction Quality Management Plan (CQMP) (DBSG 2.5.3 & Ch.7)

☐ A CQMP meeting all requirements of the DBSG and the Design-Build Contract shall be prepared by the Design-Builder and accepted by TDOT before starting construction work and as a condition for receiving NTP to Construction for a given segment of work. The CQMP should be submitted at least 30 Calendar Days prior to the Preconstruction Conference for discussion at that meeting.

☐ The CQMP shall include procedures for implementing construction work in accordance with DBSG Chapter 7.

☐ The CQMP shall define activities providing for review, inspection, and documentation consistent with those indicated in the Department's Materials and Tests SOP, the Qualified Products List (QPL), and the Department Standard Specifications.

☐ The CQMP should include contact information and roles and responsibilities for the Design-Builder's QC construction inspection team as well as any required certifications and associated training schedules.

☐ The CQMP shall include or reference construction contract requirements included in the Design-Build Contract, with a list of all associated deliverables and the quality activities to be employed for each, as appropriate.

☐ The CQMP shall include workflows showing the processes and procedures for the quality control (QC) of materials and the inspection of the project construction to ensure compliance with the Design-Build Contract Documents.

Developed workflows to include, but not limited to:

- ☐ Construction document control and file management systems.
- ☐ Methods of documenting material quality.
- ☐ Preparing, maintaining and review of QC Inspection deliverables.
- ☐ Certification of installed work
- ☐ Preparation, maintenance and review of Construction As-Built documentation.
- ☐ Non-conformance reporting, tracking, and resolution.
- ☐ Field change reporting and tracking.
- ☐ Others as required by the Design-Build Contract specifically or as necessary to ensure all Design-Build Contract requirements are met.

☐ The CQMP shall provide for independent reviews by the CQM of all deliverables prior to submittal to the Department with certification that the information is accurate and complete and in accordance with the CQMP and Design-Build Contract requirements.

☐ The CQMP should include processes for preventive action to address specific project risks identified in the project Risk Management Plan.

Environmental Compliance Plan (ECP) (DBSG 2.5.4)

☐ If required, the Design-Builder shall prepare a stand-alone ECP meeting all requirements of the DBSG and the DBC and submit within 30 days after the Post Award Meeting and update the ECP as necessary through project development and construction.

☐ The ECP shall list the key environmental compliance personnel and their roles, responsibilities, and authority and provide contract information for the Environmental Compliance Manager (ECM). Training program requirements and schedules should be defined, as required, for each.

- ☐ The ECP shall include or reference all applicable environmental constraints maps and plans.
- ☐ The ECP shall define the procedures for coordinating, dissemination of correspondence, and record keeping of permit discussions with the Department
- ☐ Level of anticipated Regulatory Authority participation in Project activities.
- ☐ The ECP shall incorporate and provide a plan of activities to ensure 100% compliance with all applicable environmental commitments, environmental permits, programmatic agreements, orders, opinions, clearances, and authorizations and their requirements.
- ☐ The schedule for all ECP activities shall be included in or correlate with the CPM Schedule.
- ☐ The ECP shall include processes to identify opportunities to avoid and minimize environmental impacts.
- ☐ The ECP shall include plans and procedures for mitigating and remediating impacts where environmental impacts cannot be avoided.
- ☐ The ECP shall define procedures for:
  - ☐ Conducting and documenting environmental inspections and investigations.
  - ☐ Identifying and resolving non-compliance.
  - ☐ Emergency response.
  - ☐ Compliance Plan implementation.
  - ☐ Inspection, monitoring, and corrective and preventive actions.
  - ☐ Final monitoring inspections to assess compliance with permit requirements.
  - ☐ Monitoring and documenting environmental compliance.
  - ☐ Identifying need for reevaluations due to conflicts with approved NEPA documents.
  - ☐ Others as required by the Design-Build Contract specifically or as necessary to ensure all Design-Build Contract requirements are met.

Safety & Health Plan (S&H Plan) (DBSG 2.5.5)

- ☐ The Design-Builder shall establish and implement a Safety & Health Plan (S&H Plan), as required by the Design-Build Contract, for Review and Acceptance by the Department, unless otherwise specified by the Design-Build Contract.
- ☐ The S&H Plan is required to be completed by the Post Award Meeting. The Design-Builder shall not commence any work until the Safety Manager has been appointed and the S&H Plan has been Accepted by the Department.
- ☐ All projects with an estimate greater than $25,000,000.00 and those deemed high risk by the Department, shall have a full-time safety manager dedicated to the project.
- ☐ The Design-Builder's S&H Plan shall provide for the following:
  - ☐ Planning, management, and design to avoid hazards
  - ☐ Subcontractor safety management and compliance with the Design-Builder's S&H Plan
  - ☐ Detection of potential hazards
  - ☐ Timely correction of hazards
  - ☐ Dedication to the protection of the public and the workers
  - ☐ Active participation of all persons involved with the Design-Build Contract
  - ☐ Dedicated full-time project safety staff
  - ☐ Liaison with the Department's monitoring staff

- ☐ Site safety orientation for new employees and sub-contractors, training, and regular safety meetings, including a plan for indicating attendance at safety orientation that includes sub-contractors and suppliers;
- ☐ Documentation of safety activities required by the plan

☐ The Design-Builder's S&H Pan shall describe in detail how the S&H Plan is implemented and monitored including guidelines for protecting personnel from hazards associated with project operations and activities.

☐ The S&H Plan shall contain a list of the detailed safety procedures to be followed. Safety procedures shall be prepared separately for individual activities and included in appendices to the S&H Plan.

☐ Every 12 months on or near the anniversary of the Initial NTP or when the Department deems necessary, the Design-Builder shall review its S&H Plan and shall consider all sources of information relevant to safety planning and implementation, including accident reports, inspections, audits, suggestions from meetings, and other sources, such as the Department and hazard analysis reviews or as needed.

☐ A copy of the current version of the S&H Plan shall be kept on site at each work location while work is being performed, and an appropriate notice shall be posted at each work location.

Design-Build Contract Requirements *(use this section to list differing or additional QMP requirements from the Design-Build Contract in relation to those above from DBSG.)*

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APPENDIX C – DEFINITIVE DESIGN PLANS CHECKLIST

DEFINITIVE DESIGN PLANS CHECKLIST

This Definitive Design Plans Checklist is a modified version of TDOT's ROW Plans Checklist. The checklist has been modified to recognize that a lesser level of plan development is acceptable for Definitive Design Plans and some requirements of traditional ROW Plans can be delayed until RFC Plans for a Design-Build Project. It is the intention of the Department that any ROW Plan checklist items removed from the Definitive Design Checklist be required in the RFC Plans. The Design-Builder shall include all information necessary to obtain NTP to acquire ROW, acquire water quality permits and relocate utilities. This DD Checklist is list of minimal requirements for TDOT review of plans and does not modify final design or plan requirements.

The requirements of this checklist may be modified on a per project basis by the TDOT PM.

The Design-Builder shall submit an Excel file to the TDOT PM with estimated roadway quantities with Final Definitive Design Plans similar to the requirements for ROW Plans.

County:	
Contract No.:	
PIN:	
Description:	
DEFINITIVE DESIGN TMP Completion Date:	
Submitted by Design-Builder: **Date:**	
ALL ITEMS HAVE BEEN REVIEWED AND DETERMINED TO BE READY FOR FIELD REVIEW BY:	
Name of TDOT PM: **Date:**	

Comments:

Design Exceptions, Design Waivers, Work Zone Deviation?

Note: If components of the plans were designed based off the AASHTO 2018 Green Book that would normally require a Design Exception if designed based off the AASHTO 2011 Green Book, it shall be noted on this sheet.

If the posted speed is different than the design speed, note it here. This is important to include so that the standard drawings, particularly for multimodal designs, can be checked accordingly.

DEFINITIVE DESIGN PLANS CHECKLIST

DEFINITIVE DESIGN INDEX OF SHEETS

Footnotes:

① Haul Road profiles follow Side Road profiles in the sheet numbering sequence.
② Final Natural Stream Design Plans may be needed to obtain permits.

See Roadway Design Guidelines *Chapter 1-205.01, R.O.W. Index of Sheets* for proper sequencing and numbering of sheets. Unless otherwise stated in the checklist, the sheet names in the index should match the sheet title.

DEFINITIVE DESIGN PLANS CHECKLIST

The checklist is written to clearly define features and text that shall be shown on Definitive Design sheets to ensure there is consistency throughout the state. If any of the items are not applicable to your project, then do NOT include and mark N/A. If there are questions, contact the TDOT PM.

Information for each sheet shall be filled in correctly in the upper right corner including TYPE (DD.), CURRENT YEAR, FEDERAL PROJECT NUMBER, STATE PROJECT NUMBER (S), and SHEET NUMBER.

SHEET 1 SERIES

1. TITLE SHEET

A MicroStation title sheet template is provided in both a seed file and sheet file. The original Definitive Design Title Sheet is sealed and submitted in with the final submission of RFC Plans. All items listed below are in a data field or in a box with levels that can be turned on or off as needed.

YES	N/A	
☐	☐	Adjacent projects labeled and checked for Traffic Control Significance
☐	☐	Add Phase Stamp (DEFINITIVE DESIGN. Field Review, DEFINITIVE DESIGN Field Review (Utilities Only), DEFINITIVE DESIGN Plans, or DEFINITIVE DESIGN Plans (Utilities Only)
☐	☐	Begin/End **R.O.W.** project limits labeled with R.O.W. project numbers for federal and state project(s). Project limits must contain the word "R.O.W." and be labeled with station and North/East coordinates (4 decimal places). For Projects that are Utility-Only projects, label the Begin/End with the Federal and state PE-D number, or use the R.O.W. number if one is available, and use the Construction begin/end stations.
☐	☐	Bridge I.D. (s) identified above or below state map
☐	☐	Chapter 86 toggled, Yes or No
☐	☐	County or Counties shaded on the state map
☐	☐	Coverage of each present layout sheet on map with DEFINITIVE DESIGN sheet number identified
☐	☐	Design exception data table filled in
☐	☐	Design traffic data table filled in/updated to current year and projected volumes
☐	☐	Engineer's seal with signature and date for final DEFINITIVE DESIGN submittal
☐	☐	Geoid note, check with regional survey for correct Geoid date/version
☐	☐	Identification block in lower left hand corner completed with PE-D project number and label (Design) and PIN for project, fill in CE Manager 1 or Transportation Manager, Designed by Consultant Firm, Designer, and Checked By data fields
☐	☐	Location map showing route to be improved, local roads, streams, railroads with railroad entity maps shown, and towns
☐	☐	Map Scale
☐	☐	No Exclusions block or Exclusions block with station ranges identified
☐	☐	North arrow

DEFINITIVE DESIGN PLANS CHECKLIST

☐	☐	Project Description filled in under County/Counties. Description shall match PPRM including interstate, state route, or local road name and project limits with log mile(s). Type of work shall be DEFINITIVE DESIGN and additional type of work identified (i.e. grade, drain, bridge, pave, sign, lighting, construction, etc.). Identify State Route and US Route numbers
☐	☐	DEFINITIVE DESIGN Index of Sheets Included in upper left hand corner
☐	☐	R.O.W. project length, roadway length, bridge length, box bridge length, and project length (truncate to three (3) decimals - no rounding). Project length may differ from R.O.W. length based on R.O.W. acquisition needs
☐	☐	Road closure note for traffic control
☐	☐	Sheet title block in upper right corner filled in with current year, sheet number "1", Federal Project Number, and State R.O.W. Project Number
☐	☐	Signatures of Commissioner and Chief Engineer in signature block
☐	☐	Work Zone Significance toggled, Yes or No

1B. PROJECTS COMMITMENT

YES	N/A	
☐	☐	Design-Builder shall coordinate project commitments with the TDOT PM and the Environmental Division. TDOT Reviewers should check PPRM and the Contract to verify that all commitments are included.

SHEET 2 SERIES

2A. ESTIMATED ROADWAY QUANTITIES

Note to Designer: Estimated roadway quantities are not required to be detailed on Definitive Design Plans, but an Excel file with estimated roadway quantities broken down by project shall be provided to the TDOT PM with the final Definitive Design Plans.

2B. TYPICAL SECTIONS (2B1-2B2, if needed)

The following checks apply to tangent and superelevated sections for the mainline and all side roads. Each typical section shall reference appropriate Standard Drawings and be defined by name and station limits for tangent or superelevated sections. Names and station ranges shall match names and curve data shown in present layout and cross section sheets.

YES	N/A	
☐	☐	Bridge typical section (if bridge typical differs from roadway such as additional width for future widening and/or contains sidewalks, then it shall be shown and labeled to match the bridge typical. If not, begin and end stations for bridge shall be listed as shown on the proposed layout sheets.)
☐	☐	Curb and Gutter details and transition details
☐	☐	Finished Grade labeled on all typical sections

☐	☐	Haul road and/or any temporary road typical sections with type and depth of material identified
☐	☐	Mainline and side roads typical sections: label cross-slopes and widths for applicable elements (travel lanes, turn lanes, shoulders, bike paths, shared use paths, sidewalks, and benches); label subgrade slope according to appropriate standard drawing; label side slope for cut and fill slopes with variable slopes labeled as "Varies (list station range)-See Cross Sections" and with final stabilization application defined (seed, sod)
☐	☐	Median Barrier shown on typical sections
☐	☐	Noise wall shown on typical sections
☐	☐	Private drive, business entrance, and field entrance typical sections with type and depth of material identified, and with final application defined (seed, sod)
☐	☐	Proposed R.O.W. labeled on each typical section for mainline and side roads (label exact proposed width in feet. For varying proposed rural R.O.W. widths, label "R.O.W. Varies - Minimum R.O.W. Width *XXX.XX'* "
☐	☐	Retaining wall shown on typical sections
☐	☐	Rock cuts and catchment areas labeled with a note referencing a "See Geotechnical Sheet *X* and Cross Section sheet *X* for details on rock cut"
☐	☐	Show guardrail location on typical sections and label "as required"
☐	☐	Sinkhole repair details (provided by Geotechnical Engineering Section)
☐	☐	Slopes stabilization shown (sod, seed and blanket, etc.) and/or slopes that require additional stabilization by the addition of a rock pad, rock buttress, or some other measure as deemed necessary in the Geotechnical report shall have a note added that states "See Geotechnical sheet *X* and Cross Section sheet *X* for details on (*rock pad etc.)* required for slope stabilization."
☐	☐	Transitions for lane and/or shoulder tapers/transitions clearly defined on typical section or in table format including station limits, offsets from centerline, and width. Shall coincide with tapers/transitions labeled on proposed layout sheets
☐	☐	Typical Sections clearly identified by name and station limits

2E. ENVIRONMENTAL NOTES (2E1 if needed)

See Chapter 9 in the Roadway Design Guidelines for all Environmental notes.

Yes	N/A	
☐	☐	Check all notes for referrals to Roadway Standard Drawings. Ensure all Standard Drawings are shown in the Standard Drawings list and reference the most current drawing
☐	☐	Revise all notes that refer to pay items.
☐	☐	Description blanks in notes shall be populated
☐	☐	Scope of Work shall be shown with description of project overview including type of work to be performed, construction details, any project specific expected goals, requirements, and/or limitations that are not project commitments.
☐	☐	Special notes shall be added if specific to the job

2G. DETAIL SHEETS

(2G1 and 2G2 if needed)

Note to Designer: Details not directly related to obtaining ROW, acquiring water quality permits or that would impact the relocation of utilities are not required until RFC Plan submittal.

YES	N/A	
☐	☐	Detail of channel/stream modifications

SHEET 3 SERIES

3. RIGHT-OF-WAY NOTES, UTILITY NOTES, AND UTILITY OWNERS

If the project is small and there is adequate room on the R.O.W. Notes, Utility Notes, and Utility Owners sheet, the R.O.W. acquisition table and disturbed area block can be added to this sheet

YES	N/A	
☐	☐	R.O.W. notes, utility notes and utility owner names with contact information confirmed by Project Development Utility personnel

3A-3B. RIGHT-OF-WAY ACQUISITION TABLE(S) AND PROPERTY MAP(S)

Property map(s) and R.O.W. acquisition table shall be shown for all projects that contain an acquisition table and property map in the survey file. Exclusions would be resurfacing, ramp queue, or other similar projects.

1. R.O.W. Acquisition Table

YES	N/A	
☐	☐	Acquisition table for all surveyed tracts complete with areas to be acquired, areas remaining, and easements to be acquired. The entire R.O.W. for tracts not affected shall be lined through and checked against the Property Map Sheet and Present Layout Sheet for consistency
☐	☐	Acquisition table shall be shown on sheets prior to property maps. The Disturbed Area table shall be shown under the acquisition table on this sheet
☐	☐	Disturbed Area table shall be shown under acquisition table; however, if there is not sufficient room, the table can be shown on the R.O.W. Notes, Utility Notes, and Utility Owners sheet. The Disturbed Area table includes the Area Between Slope Lines, Area Outside Slope lines (10’ min width), Total Disturbed Area, and Total Project Area calculations shown in Acres
☐	☐	Footnote as needed. Example footnote: Easement is needed for EPSC measures

2. Property Map

DEFINITIVE DESIGN PLANS CHECKLIST

YES	N/A	
☐	☐	Begin/End **Construction** project limits labeled. Project limits must contain the word "CONSTRUCTION" or "CONST." and be labeled with station and North/East coordinates (4 decimal places)
☐	☐	Begin/End **ROW** project limits labeled with R.O.W. project numbers for federal and state project(s). Project limits must contain the word "R.O.W." and be labeled with station and North/East coordinates (4 decimal places)
☐	☐	Boundary lines shall be shown for all properties. If boundary will not fit on sheet, a closed tract detail showing the reduced size boundary shape shall be shown and labeled Not to Scale (N.T.S.)
☐	☐	Coordinate Notation (datum adjustment note above sheet title)
☐	☐	Existing control-access fence shown with areas labeled to be removed
☐	☐	Existing easement linework and patterning shown and labeled according to type. A legend may be included showing the different hatchings and their respective easement types.
☐	☐	Existing natural features shown and labeled
☐	☐	Existing railroad centerline shall be shown with dimensions of the overall width of the railroad corridor and both widths from the centerline of rail to each field side R.O.W. boundary. When the railroad property is not consistent, the maximum and minimum distance from the right of way line to the closest centerline of rail shall be shown
☐	☐	Existing survey R.O.W. linework and text without labeling stations/offsets and bearings/distances. Include "Present ROW" label.
☐	☐	Existing survey tract numbers only (no names). For tracts not affected, the number shall be lined through and checked against the Acquisition Table and Present Layout Sheet for consistency
☐	☐	If the railroad corridor is held as Easement by the Railroad, the following note shall be placed: *"The Agreement required for the Railroad crossing will be obtained by the R.O.W. Division's Utility Office Railroad Coordinator through negotiations and Special Provisions with the Railroad."*
☐	☐	Intersections of the centerline of railroad and the centerline of the Route/Interstate that includes the DOT crossing number and the railroad milepost along with the corresponding station of the Route/Interstate.
☐	☐	Intersections of mainlines with side roads, haul road, and/or construction run-around flagged and labeled with both road names, stations at intersection, and North/East coordinates
☐	☐	Loss of access or impaired access shown with patterning and notes if needed
☐	☐	Match lines with station and sheet number filled in, and sheet title block with station ranges and scale. Scale of this sheet may not match scales of layout sheets resulting in station ranges not matching
☐	☐	North arrow
☐	☐	Proposed control access fence linework and text. Label tie-ins to existing proposed control access fence
☐	☐	Proposed easement linework and patterning shown and labeled. A legend should be included showing the different hatchings and their respective easement types.
☐	☐	Proposed roadway centerline linework and labeled
☐	☐	Proposed R.O.W. linework shown and labeled

PLAN AND PROFILE SHEET SERIES

DEFINITIVE DESIGN PLANS CHECKLIST

Note to Designer: Limit of R.O.W. station shall be checked on all sheets for consistency. Verify that limits match typical section and layout sheets. For clarity purposes in checklist, sheets will be numbered through 10 for the mainline plan and profile series)

4-10. PRESENT LAYOUT(S)

Note to Designer: Sheet Level Filter for all Present Layout sheets shall be set to *Sheets-Present Layout no R.O.W. PL Text*- for the design files and all referenced files.

YES	N/A	
☐	☐	Begin/End **Construction** project limits labeled with Construction project numbers for federal and state project(s). If the Construction project numbers are unknown, use Xs as place holders. Project limits must contain the word "CONSTRUCTION" or "CONST." and be labeled with station and North/East coordinates (4 decimal places)
☐	☐	Begin/End **R.O.W.** project limits labeled with R.O.W. project numbers for federal and state project(s). Project limits must contain the word "R.O.W." and be labeled with station and North/East coordinates (4 decimal places). For Projects that are Utility-Only projects, label the Begin/End with the Federal and state PE-D number, or use the R.O.W. number if one is available, and use the Construction begin/end stations
☐	☐	Bridge I.D. (s) identified and labeled (can be added to survey bridge information)
☐	☐	Coordinate Notation (datum adjustment note above sheet title)
☐	☐	Existing buildings and text
☐	☐	Existing concrete channels located in environmental features shall be shown and labeled including lengths
☐	☐	Existing drainage (bridges, culverts, pipes, storm sewer) with text (including structure size, type, and length) and natural features, this shall include structures on environmental features (caves, creeks, rivers, streams, seeps, sinkholes)
☐	☐	Existing easement linework (**no** text)
☐	☐	Existing Items/structures to be plugged and abandoned (culverts, catch basins, manholes, pipes, etc.) shall be clearly labeled Plugged/Abandoned
☐	☐	Existing pavement marking with text
☐	☐	Existing railroad centerline shall be shown with dimensions of the overall width of the railroad corridor and both widths from the centerline of rail to each field side right of way boundary. When the railroad property is not consistent, the maximum and minimum distance from the right of way line to the closest centerline of rail shall be shown
☐	☐	Existing roads edge of pavements, medians, shoulders, etc., linework and widths labeled
☐	☐	Existing roadside barriers shown and labeled (impact attenuators, cable barrier, guardrail, noise walls, retaining walls, etc.)
☐	☐	Existing signs and devices with text
☐	☐	Existing survey grid points with state plane coordinate text
☐	☐	Existing survey control point table showing coordinates or location diagrams for all GPS points, Benchmarks, and Horizontal Control Points

DEFINITIVE DESIGN PLANS CHECKLIST

☐ ☐ Existing survey political boundaries linework and text
☐ ☐ Existing survey property lines
☐ ☐ Existing survey property markers with text
☐ ☐ Existing survey property owners with tract numbers. For tracts not affected, the name and number shall be lined through
☐ ☐ Existing survey R.O.W. linework **without** labeling stations/offsets and bearings/distances
☐ ☐ Existing survey R.O.W. markers with text
☐ ☐ Existing underground and overhead utilities and text (cable, electric, fiber optic, gas, lighting, sanitary sewer, storm sewer, telephone, and water)
☐ ☐ Geo-hazard limits shown if given in Geotechnical Report – shall match soil sheets
☐ ☐ If the railroad corridor is held as Easement by the Railroad, the following note shall be placed: *"The Agreement required for the Railroad crossing will be obtained by the R.O.W. Division's Utility Office Railroad Coordinator through negotiations and Special Provisions with the Railroad."*
☐ ☐ Intersections of the centerline with railroad and the centerline of the Route/Interstate that includes the DOT crossing number and the railroad milepost along with the corresponding station of the Route/Interstate.
☐ ☐ Intersections of mainlines with side roads, haul road, and/or construction run-around flagged and labeled with both road names, stations at intersection, and North/East coordinates
☐ ☐ Items added/checked as directed by Environmental recommendations (Environmental Boundaries Report, Ecology comments, Permit comments, SWPPP comments, etc.)
    - Wetlands
    - WWC
    - Streams, including top of bank lines
    - Springs
    - Sinkholes
    - Seeps
    - Receiving waters
    - Ponds shall be shown and labeled; ex. WWC-1, WTL-4 (includes existing natural features)
    - Flow directions shall be shown for all streams. For impacted streams, the beginning and end of impact shall be labeled
    - Begin/End environmental impact, with feature and stationing call out
    - Begin/End Relocated Stream with feature and stationing call out
    - Open sinkholes and caves shall be shown that will be filled in, undercut, and/or receive runoff from the project
☐ ☐ Match lines with station and sheet number filled in, and sheet title block with station range and scale for each sheet correctly filled in to coincide with ranges shown on R.O.W. Detail sheet and Proposed Layout sheet
☐ ☐ North arrow
☐ ☐ Permanent Railroad Easements shall be shown with no hatching, with a leader line, and a Permanent Easement label
☐ ☐ Proposed areas to be scarified are patterned and labeled to be scarified and obliterated

☐	☐	Proposed easement linework and patterning shown and labeled. A legend should be included showing the different hatchings and their respective easement types.
☐	☐	Proposed limit of construction for side roads
☐	☐	Proposed loss of access or impaired access shown with patterning and notes if needed
☐	☐	Proposed private drives, business entrances, and field entrances with edges of pavement shape shown and shaded.
☐	☐	Proposed roads centerlines (mainline, side roads, haul roads, construction run-arounds and text). Label road name, full station ticks every 500', half station ticks every 100', bearings, and curve data
☐	☐	Proposed R.O.W. linework (including controlled access fence) **without** stations/offsets and bearings/distances labeled. Include "Prop. ROW" label.
☐	☐	Proposed R.O.W. markers with text
☐	☐	Proposed Railroad linework and text (centerlines and easements)
☐	☐	Proposed Signal Poles
☐	☐	Proposed slope lines and text (cut or fill)
☐	☐	Pyritic material/Acid producing rock shown and labeled with including notes
☐	☐	Railroad Air Rights shown with hatching with a leader line and an Air Rights Easement Label
☐	☐	Wetland pattern(s) shown and labeled and include wetland impact table (if project has wetland mitigation sheets, this information is not needed on this sheet)

4A-10A. R.O.W. DETAILS

YES	N/A	
☐	☐	Begin/End **Construction** project limits labeled. Project limits must contain the word "CONSTRUCTION" or "CONST." and be labeled with station and North/East coordinates (4 decimal places)
☐	☐	Begin/End **R.O.W.** project limits labeled with R.O.W. project numbers for federal and state project(s). Project limits must contain the word "R.O.W." and be labeled with station and North/East coordinates (4 decimal places). For Projects that are Utility-Only projects, label the Begin/End with the Federal and state PE-D number, or use the R.O.W. number if one is available, and use the Construction begin/end stations
☐	☐	Coordinate Notation (datum adjustment note above sheet title)
☐	☐	Existing easement linework and patterning shown and labeled according to type. A legend may be included showing the different hatchings and their respective easement types.
☐	☐	Existing railroad centerline shall be shown with dimensions of the overall width of the railroad corridor and both widths from the centerline of rail to each field side Right-of-Way boundary. When the railroad property is not consistent, the maximum and minimum distance from the right of way line to the closest centerline of rail shall be shown
☐	☐	Existing survey control point table showing coordinates or location diagrams for all GPS points, Benchmarks, and Horizontal Control Points
☐	☐	Existing survey grid points with state plane coordinate text
☐	☐	Existing survey property lines with bearings/distances labeled

☐	☐	Existing survey property markers with text
☐	☐	Existing survey property owners with tract numbers. For tracts not affected, the name and number shall be lined through
☐	☐	Existing survey R.O.W. linework with stations/ offsets and bearings/distances labeled
☐	☐	Existing survey R.O.W. markers with text
☐	☐	Intersections of mainlines with side roads, haul road, and/or construction run-around flagged and labeled with both road names, stations at intersection, and North/East coordinates
☐	☐	Intersections of the centerline with railroad and the centerline of the Route/Interstate that includes the DOT crossing number and the railroad milepost along with the corresponding station of the Route/Interstate.
☐	☐	Match lines with station and sheet number filled in, and sheet title block with station range and scale for each sheet correctly filled in to coincide with ranges shown on Present and Proposed Layout sheets
☐	☐	North arrow
☐	☐	Proposed easement linework and patterning shown and labeled. A legend should be included showing the different hatchings and their respective easement types.
☐	☐	Proposed limit of construction for side roads
☐	☐	Proposed loss of access or impaired access shown with patterning and notes if needed
☐	☐	Proposed private drives, business entrances, and field entrances with edges of pavement shape shown and shaded
☐	☐	Proposed roads centerlines (mainline, side roads, haul roads, construction run-arounds and text). Label road name, full station ticks every 500', half station ticks every 100', and bearings **(no curve data)**
☐	☐	Proposed R.O.W. linework with stations/offsets and bearings/distances labeled. Include "Prop. ROW" label.
☐	☐	Proposed R.O.W. markers with text
☐	☐	Proposed slope lines and text (cut or fill)
☐	☐	Wetland pattern(s) shown and labeled and include wetland impact table

4B-10B. PROPOSED LAYOUT(S)

YES	N/A	
☐	☐	Begin/End **Construction** project limits labeled. Project limits must contain the word "CONSTRUCTION" or "CONST." and be labeled with station and North/East coordinates (4 decimal places)
☐	☐	Begin/End **R.O.W.** project limits labeled with R.O.W. project numbers for federal and state project(s). Project limits must contain the word "R.O.W." and be labeled with station and North/East coordinates (4 decimal places). For Projects that are Utility-Only projects, label the Begin/End with the Federal and State PE-D number, or use the R.O.W. number if one is available, and use the Construction begin/end stations
☐	☐	Coordinate Notation (datum adjustment note above sheet title)
☐	☐	*****Existing signs, signals or lighting poles if to remain in place (if sign to be re-set with new posts, sign faces shall be shown as dashed)

DEFINITIVE DESIGN PLANS CHECKLIST

☐ ☐ Intersections of the centerline with railroad and the centerline of the Route/Interstate that includes the DOT crossing number and the railroad milepost along with the corresponding station of the Route/Interstate.

☐ ☐ Intersections of mainlines with side roads, haul road, and/or construction run-around flagged and labeled with both road names, stations at intersection, and North/East coordinates. (This shall also be done on all intersecting roads and at railroad intersections)

☐ ☐ Items added/checked as directed by Environmental recommendations (Ecology comments, Permit comments, SWPPP comments, etc.)

- Wetlands
- WWC
- Streams, including top of bank lines
- Springs
- Sinkholes (show the remaining portions)
- Seeps
- Receiving waters
- Ponds shall be shown and labeled; ex. WWC-1, WTL-4 (includes existing natural features)
- Flow directions shall be shown for all streams. For impacted streams, the beginning and end of impact shall be labeled
- Begin/End environmental impact, with feature and stationing call out

☐ ☐ Line of sight linework for intersections shall be shown **only** when R.O.W. is required for the purpose of establishing or maintaining intersection sight distance

☐ ☐ Match lines with station and sheet number filled in, and sheet title block with station range and scale for each sheet correctly filled in to coincide with ranges shown on R.O.W. Detail sheet and Present Layout sheet

☐ ☐ North arrow

☐ ☐ Proposed bridges and bridge end drains with text (Begin and End Bridge stations) and rip-rap apron shapes shown and labeled

☐ ☐ Proposed pedestrian or animal passes and label

☐ ☐ Proposed channel changes with begin and end roadway station labeled, and stream buffer shown. Proposed planting plan including tree planting diagram and typical cross section view, and tree schedule and quantity table shall be shown. The relocated stream channel detail including typical cross section of existing and proposed channel shall be shown to scale. The relocated stream detail should include the substrate type. The length, width, and class of any riprap needed along the stream location shall be shown. Where necessary, notes specific to the mitigation or vegetative plantings (trees, etc.) and to the sequence of construction shall be noted.

☐ ☐ Proposed cross drains and endwalls with appropriate labels (station, inlet and outlet elevations, pipe culvert type, length, diameter, endwall type and treatment (rip-rap, turf reinforcement mat, dissipater, etc.))

☐ ☐ Proposed curb and gutter linework and text including begin and end stations with offset from centerline

☐ ☐ Proposed curb ramps with standard drawing type labeled

DEFINITIVE DESIGN PLANS CHECKLIST

☐ ☐ Proposed drainage systems (catch basins, pipes, manholes, junction boxes, endwalls, dissipators, etc.) shall be labeled with:

- Appropriate text (structure code and type, grate/inlet/outlet elevations, flow direction of pipe, pipe diameter, endwall type and treatment (rip-rap, turf reinforcement mat, dissipater,etc.))
- For those structures conveying environmental features, the length of the structure along the stream shall be shown
- Information can be placed in table format on each sheet if needed

☐ ☐ Proposed edge of pavement and shoulder lines shown. All transition lengths and widths for proposed edge of pavements and shoulders shall be labeled by station and offset for beginning and ending stations

☐ ☐ Proposed guardrail with type of anchors and/or tie-in stations/offsets labeled. Standard Drawing S-PL-1 shall be used to find length of need in concurrence with cutting cross sections at 5' increments to study proposed guardrail location.

☐ ☐ Proposed independent ditch flow line, width, type of lining, and begin, end, and breakpoints labeled by station and offset (regular roadside ditches shall **not** be shown)

☐ ☐ Proposed limit of cold plane and/or overlay labeled (label station ranges that are overlay only and not full depth pavement)

☐ ☐ Proposed limit of construction for side roads

☐ ☐ Proposed median opening linework and width labeled

☐ ☐ Proposed noise wall linework with station and offset for begin, end, and all breakpoints labeled

☐ ☐ Proposed pavement lines shown at intersections representing the lane taper, bay taper, storage length, and radii. All tapers shall be labeled by begin and end stations. Radii shall be labeled

☐ ☐ Proposed pavement markings including channelization, stop bars, crosswalks, pavement arrows, linework, and text. (Proposed pavement markings will be shown on Proposed Layout Sheets if not shown on separate sheets as listed in Signing and Pavement Marking Plan(s) section of the checklist.)

☐ ☐ Proposed private drives, business entrances, and field entrances with centerlines, edges of pavement, and radii shown and labeled with mainline station, station for driveway limit of construction, and radius length of driveway centerline. Label width and type of drive, side drain length, diameter, and endwall. All elements shall match profiles for each. (**no** shading)

☐ ☐ Proposed retaining wall linework with station and offset for begin, end, and all breakpoints labeled

☐ ☐ Proposed rip-rap locations, dimensions, and types labeled

☐ ☐ Proposed roads centerlines (mainline, side roads, haul roads, construction run-arounds and text). Label road name, full station ticks every 500', half station ticks every 100', and bearings **(no curve data)**

☐ ☐ Proposed sidewalk linework

☐ ☐ Proposed signal and/or lighting poles and text

☐ ☐ Proposed signing with text. Remember to check sight distance

☐ ☐ Proposed special ditch flow line, width, type of lining, and begin and end stations labeled by station and offset (no breakpoints labeled). Regular roadside ditches shall **not** be shown

☐	☐	Proposed treatment limits shown (rock pads, rock buttresses, undercutting, sinkholes, etc.) with station limits, dimensions, and type of rock labeled
☐	☐	Reference Profile sheet number in plans for side road
☐	☐	Traffic diagrams
☐	☐	*****Transitions or tie-in points for proposed transportation features (guardrail, median openings) or drainage systems (curb and gutter, extensions of existing pipes, boxes, etc.) shall be labeled by station and offset. The existing features shall be copied to the appropriate proposed level at the tie-in point and labeled to remain in place
☐	☐	Wetland(s) to remain shown and labeled and include wetland impact table

***Some existing elements may need to be shown to provide clarity on the plans. These elements will have to be copied from the survey file and changed to the appropriate proposed level to display in the sheets.**

4C-10C. PROPOSED PROFILE(S)

YES	N/A	
☐	☐	Begin/End **Construction** project limits labeled. Project limits must contain the word “CONSTRUCTION” or “CONST.” and be labeled with station and North/East coordinates (4 decimal places)
☐	☐	Begin/End **R.O.W.** project limits labeled with R.O.W. project numbers for federal and state project(s). Project limits must contain the word “R.O.W.” and be labeled with station and North/East coordinates (4 decimal places)
☐	☐	Bridge I.D. (s) identified and labeled (can be added to survey bridge information)
☐	☐	Channel Changes, Independent Ditches, and Special Ditches shall be labeled with the following: Begin Limits End limits Grades Ditch Types (V and trapezoidal)
☐	☐	Existing bridges, pipes, culverts, and storm sewers with hydraulic data and/or text provided in Survey file
☐	☐	Existing Items/structures to be plugged and abandoned (culverts, catch basins, manholes, pipes, etc.) shall be clearly labeled Plugged/Abandoned
☐	☐	Existing overhead utilities with text
☐	☐	Existing survey control points (GPS points, Benchmarks) and text
☐	☐	Existing top of ground labeled “Existing Ground” on each sheet
☐	☐	Existing underground utilities including type and size
☐	☐	Grid shown with stations along the bottom and elevations along the side
☐	☐	Intersections of the centerline with railroad and the centerline of the Route/Interstate that includes the DOT crossing number and the railroad milepost along with the corresponding station of the Route/Interstate.
☐	☐	Intersections of mainlines with side roads, haul road, and/or construction run-around flagged and labeled with both road names, stations at intersection, and North/East coordinates.

☐	☐	Match lines with station and sheet number filled in, and sheet title block with station range for each sheet correctly filled in to coincide with ranges shown on Present layout, R.O.W. Detail, and Proposed layout sheets, and horizontal and vertical scales added
☐	☐	Proposed bridge linework with begin and end stations labeled, hydraulic data, and rip-rap shapes shown and labeled
☐	☐	Proposed noise wall linework with station and offset for begin & end labeled
☐	☐	Proposed pipes (not including side drains), culverts, and storm sewer features shown and labeled with structure code and culvert type, pipe diameter, pipe grade, and hydraulic data and/or text
☐	☐	Proposed retaining wall profile with station and offset for begin limits & end limits labeled
☐	☐	Proposed vertical alignment and curve text labeled including K Values (no speeds listed), stations and elevations for PI, PC, and PT, and grades with areas of proposed graphical grade labeled with station and elevation every 50' or as needed. When a tangent grade covers two layout sheets, the grade shall be copied and shown on both sheets
☐	☐	Sheet title block with and horizontal and vertical scale and station range for each sheet correctly filled in to coincide with ranges shown on Present Layout, R.O.W. Detail, and Present Layout sheets
☐	☐	Superelevation rate diagram with stations and rates labeled

Note to Designer: The numbering of the following sheets will depend on the number of plan and profile sheets needed for the mainline. For clarity purposes in checklist, the sheets will continue the sequence and coincide with the Definitive Design Index.

11-12. RAMP PROFILE

YES	N/A	
☐	☐	Bridge I.D. (s) identified and labeled (can be added to survey bridge information)
☐	☐	Channel Changes, Independent Ditches, and Special Ditches shall be labeled with the following: • Begin Limits • End limits • Grades • Ditch Types (V and trapezoidal)
☐	☐	Existing bridges, pipes, culverts, and storm sewers with hydraulic data and/or text provided in Survey file
☐	☐	Existing drainage structures shown with hydraulic data
☐	☐	Existing overhead utilities with type, station, and elevation labeled
☐	☐	Existing survey control points (GPS points, Benchmarks) and text
☐	☐	Existing top of ground labeled "Existing Ground" on each sheet
☐	☐	Existing underground utilities including type and size
☐	☐	Existing items/structures to be plugged and abandoned (culverts, catch basins, manholes, pipes, etc.) shall be clearly labeled Plugged/Abandoned
☐	☐	Grid shown with stations along the bottom and elevations along the side

☐	☐	Intersections of the centerline of railroad and the centerline of the Route/Interstate that includes the DOT crossing number and the railroad milepost along with the corresponding station of the Route/Interstate.
☐	☐	Intersections with mainline with side roads, haul road, and/or construction run-around flagged and labeled with both road names, stations at intersection, and elevations
☐	☐	Proposed bridge linework with begin and end stations labeled and hydraulic data
☐	☐	Proposed drainage structures shown with hydraulic data
☐	☐	Proposed finished grade linework and text
☐	☐	Proposed limit of construction labeled with station and elevation
☐	☐	Proposed noise wall linework with station and offset for begin, end,
☐	☐	Proposed pipes (not including side drains), culverts, and storm sewer features shown and labeled with structure code and culvert type, pipe diameter, pipe grade, and hydraulic data and/or text
☐	☐	Proposed retaining wall linework with station and offset for begin limits, end limits
☐	☐	Proposed vertical alignment and curve text labeled including K Values (no speeds listed), stations and elevations for PI, PC, and PT, and grades with areas of proposed graphical grade labeled with station and elevation every 50' or as needed. When a tangent grade covers two layout sheets, the grade shall be copied and shown on both sheets
☐	☐	Sheet title block correctly filled in and horizontal and vertical scales added
☐	☐	Superelevation rate diagram with stations and rates labeled

13-14. SIDE ROAD PROFILE(S)

Note to Designer: Haul Roads and/or construction run-around shall follow the same checklist as side roads and will also follow side roads in the sheet numbering sequence. A separate sheet is not required for the Haul Road, but the sheet name shall be modified to include the Haul Roads.

YES	N/A	
☐	☐	Bridge I.D. (s) identified and labeled (can be added to survey bridge information)
☐	☐	Channel Changes, Independent Ditches, and Special Ditches shall be labeled with the following: • Begin Limits • End limits • Grades • Ditch Types (V and trapezoidal)
☐	☐	Existing drainage structures shown with hydraulic data
☐	☐	Existing bridges, pipes, culverts, and storm sewers with hydraulic data and/or text provided in Survey file
☐	☐	Existing items/structures to be plugged and abandoned (culverts, catch basins, manholes, pipes, etc.) shall be clearly labeled Plugged/Abandoned
☐	☐	Existing overhead utilities with type, station, and elevation labeled
☐	☐	Existing survey control points (GPS points, Benchmarks) and text
☐	☐	Existing top of ground labeled "Existing Ground" on each sheet

☐	☐	Existing underground utilities including type and size
☐	☐	Grid shown with stations along the bottom and elevations along the side
☐	☐	Intersections of the centerline with railroad and the centerline of the Route/Interstate that includes the DOT crossing number and the railroad milepost along with the corresponding station of the Route/Interstate. If the Railroad information is needed, please contact the State Railroad Coordinator at HQRailroadCoordinator@tn.gov.
☐	☐	Intersections of mainline with side roads, haul road, and/or construction run-around flagged and labeled with both road names, stations at intersection, and elevations
☐	☐	Profiles shall be shown in order as shown in plans. Reference Proposed Layout sheet number in plans where side road is located
☐	☐	Proposed bridge linework with begin and end stations labeled and hydraulic data
☐	☐	Proposed drainage structures shown with hydraulic data
☐	☐	Proposed finished grade linework and text
☐	☐	Proposed limit of construction labeled with station and elevation
☐	☐	Proposed noise wall linework with station and offset for begin, end,
☐	☐	Proposed pipes (not including side drains), culverts, and storm sewer features shown and labeled with structure code and culvert type, pipe diameter, pipe grade, and hydraulic data and/or text
☐	☐	Proposed retaining wall linework with station and offset for begin, end,
☐	☐	Proposed vertical alignment and curve text labeled including K Values (no speeds listed), stations and elevations for PI, PC, and PT, and grades with areas of proposed graphical grade labeled with station and elevation every 50' or as needed. When a tangent grade covers two layout sheets, the grade shall be copied and shown on both sheets
☐	☐	Sheet title block correctly filled in and horizontal and vertical scales added
☐	☐	Superelevation rate diagram with stations and rates labeled

15-18. PRIVATE DRIVE, BUSINESS ENTRANCES, AND FIELD ENTRANCE PROFILE(S)

YES	N/A	
☐	☐	Check to ensure all profiles are shown that are in Proposed Layout sheets
☐	☐	Grid shown with stations along the bottom and elevations along the side
☐	☐	Intersections with mainline and private drive or field entrance labeled with each road name, station, and elevation
☐	☐	Existing items/structures to be plugged and abandoned (culverts, catch basins, manholes, pipes, etc.) shall be clearly labeled Plugged/Abandoned
☐	☐	Profiles shall be shown in order as shown in plans. Reference corresponding tract owner number on each profile as shown on Present Layout sheet
☐	☐	Proposed finished grade and subgrade linework and text
☐	☐	Proposed limit of construction labeled with station and elevation
☐	☐	Proposed side drain pipes shown with text
☐	☐	Proposed vertical alignment and curve text including stations and elevations for PI, PC, and PT
☐	☐	Sheet title block correctly filled in and horizontal and vertical scales added

19-20. DRAINAGE MAP(S)

YES	N/A	
☐	☐	Begin/End **Construction** project limits labeled. Project limits must contain the word “CONSTRUCTION” or “CONST.” and be labeled with station and North/East coordinates (4 decimal places)
☐	☐	Begin/End **R.O.W.** project limits labeled with R.O.W. project numbers for federal and state project(s). Project limits must contain the word “R.O.W.” and be labeled with station and North/East coordinates (4 decimal places)
☐	☐	Coordinate Notation (datum adjustment note above sheet title)
☐	☐	Drainage flow arrows from existing TIN file
☐	☐	Existing drainage areas and shapes
☐	☐	Existing drainage structures including drainage cell (Drainage Data for Drainage Map cell or Excel file) with all text complete (Station, structure, skew, drainage area, discharge, terrain, velocity, etc.)
☐	☐	Existing natural features such as streams or WWC labeled
☐	☐	Existing roads edge of pavement
☐	☐	Match lines with station and sheet number filled in, and sheet title block with station range and scale for each sheet correctly filled in
☐	☐	North arrow
☐	☐	Proposed roads centerlines (mainline, side roads, haul roads, construction run-arounds and text). Label road name, full station ticks every 500’, half station ticks every 100’, bearings **(no curve data)**
☐	☐	Wetland boundaries labeled

21-22. CULVERT SECTION(S)

Note to Designer: All cross drains in the proposed layout sheets shall have a culvert section. Sheet Level Filter for all Culvert Section sheets shall be set to *Sheets- Culvert Cross Sections*- for the design sheet file and all referenced files.

Culvert sections shall be cut to ensure the cross section depicts the accurate finished grade, cross slope, superelevation, roadway width, shoulder width, guardrail placement (including earthwork pad), special ditch, benches, and side slopes including any variable slopes defined in cross sections variable files. Include independent ditches. Any additional information from the Geotechnical report (rock lines, etc.) shall also be shown in the cross section.

YES	N/A	
☐	☐	Bridge parapet shown
☐	☐	Culvert Sections for all existing cross drains that are to remain in place but are being extended. Linework for existing portion of pipe to remain in place shall be shown as dashed. Proposed pipe extension shall be shown with proposed endwall and end treatment. All hydraulic data from the pipe culvert data XS MicroStation cells shall be completed. Connections to existing or proposed drainage structures shall be shown including structure name and type and(catch basin, junction box, or manhole, etc.) inlet and outlet elevations

☐	☐	Culvert Sections for all proposed box bridges created by using Seed File BoxCulvertSection.dgn. All hydraulic data shall be completed.
☐	☐	Culvert Sections for all proposed cross-drains shall be shown with proposed pipe, endwall, and end treatment. Pipe diameter and type, flow direction, and grade shall be labeled. All hydraulic data from the pipe culvert profile data MicroStation cells shall be completed. Connections to existing or proposed drainage structures shall be shown including existing structure name and type and (catch basin, junction box, or manhole, etc.) inlet and outlet elevations
☐	☐	Endwall and/or ditch treatments (rip-rap, turf reinforcement mat, dissipater, etc.) labeled with type, length, and width/thickness
☐	☐	Existing R.O.W. line shown (For Rural Typicals only)
☐	☐	Proposed centerline shown
☐	☐	Sheet title block correctly filled in and horizontal and vertical scales added

23, 24, 25 - 27Z. EROSION PREVENTION AND SEDIMENT CONTROL PLANS

Note to Designer: Erosion Prevention and Sediment Control Plans shall be listed Erosion Prevention and Sediment Control Plans in the index. However, the sheets shall be in the following order:

23. EPSC Special Notes
24. EPSC Legend and Tabulation
25-27Z. EPSC Plan Sheets

23. EROSION PREVENTION AND SEDIMENT CONTROL SPECIAL NOTES

YES	N/A	
☐	☐	EPSC General Notes shown in RDG Chapter 9-410 series
☐	☐	EPSC Special Notes that provide additional specifications in RDG Chapter 9-415 series
☐	☐	Notes in addition to EPSC Special Notes that have been provided by the Environmental Division and Regional Environmental Technical Offices
☐	☐	Performance notes on application of BMPs, restrictions on clearing, sensitive areas, etc.
☐	☐	Special Notes for NPDES permitted projects
☐	☐	Special Notes for project specific requirements
☐	☐	Special Notes for Utility Relocations
☐	☐	Special Notes regarding steps the contractor shall take during construction
☐	☐	Wetland mitigation notes

24. EPSC LEGEND AND TABULATION

Legend and tabulation shall be added to the EPSC Special Notes if space is available

YES	N/A	
☐	☐	EPSC legend block with all relevant Standard Drawings in numerical order

DEFINITIVE DESIGN PLANS CHECKLIST

25 - 27Z. EPSC PLANS

Refer to The Drainage Manual Chapter 10 for additional information on EPSC plans

Projects which involve less than five (5) acres of land disturbance require at least two (2) EPSC stages:

1. Clearing and Grubbing Stage
2. Final Construction Stage

Projects which involve five (5) or more acres of land disturbance require at least three (3) EPSC stages:

1. Clearing and Grubbing Stage
2. Intermediate Stage (example: a widening project where traffic remains on existing roadway and portion of road is being constructed)
3. Final Construction Stage

The following is a checklist for three (3) possible stages:

Clearing and Grubbing Stage Showing Existing Contours

YES	N/A	
☐	☐	Begin/End **Construction** project limits labeled. Project limits must contain the word "CONSTRUCTION" or "CONST." and be labeled with station and North/East coordinates (4 decimal places)
☐	☐	Begin/End **R.O.W.** project limits labeled with R.O.W. project numbers for federal and state project(s). Project limits must contain the word "R.O.W." and be labeled with station and North/East coordinates (4 decimal places)
☐	☐	Best Management Practices (BMP's) for work being performed (silt fence, silt fence with backing, temporary diversion berms, temporary stream crossings, filter tube, etc. with type or size labeled)
☐	☐	Buffer zones. High visibility fencing should be placed around the buffer zone and call outs should say "High visibility fencing for buffer zone protection."
☐	☐	Coordinate Notation (datum adjustment note above sheet title)
☐	☐	Energy dissipaters for culverts, labeled with type and dimensions (rip-rap or concrete)
☐	☐	Erosion control devices shown for current stage
☐	☐	Erosion control stage shall be noted beside sheet title block
☐	☐	Existing bridge linework and text including drainage areas and type of terrain
☐	☐	Existing pipe and culvert linework (no text) including drainage areas and type of terrain. (Terrain is used to determine the runoff coefficients for the SWPPP.)
☐	☐	Existing survey contours with main contour cut at 10' intervals and text (can be done at 5' intervals for flat areas)
☐	☐	Existing survey intermediate contours (optional to show text) (2' intervals or 1' intervals for flat areas)
☐	☐	Items added/checked as directed by Environmental recommendations (Ecology comments, Permit comments, SWPPP comments, etc.)

- Wetlands

- WWC
- Streams
- Springs
- Seeps
- Receiving waters
- Ponds shall be shown and labeled; ex. WWC-1, WTL-4 (includes existing natural features)
- Flow directions shall be shown for all streams. For impacted streams, the beginning and end of impact shall be labeled

☐ ☐ Limits of land disturbance and clearing labeled. This may be necessary if excessive R.O.W. is available and small disturbances are anticipated to keep the project from hitting certain thresholds

☐ ☐ Location and details for proposed diversion channels or other methods of in-stream diversion devices to isolate stream flow during construction

☐ ☐ Locations of temporary EPSC measures, including labeling the type and size of measures

☐ ☐ Match lines with station and sheet number filled in, and sheet title block with station range and scale for each sheet correctly filled in

☐ ☐ North arrow

☐ ☐ Performance notes on application of BMPs, restrictions on clearing, sensitive areas, etc. specific to this sheet (if generic notes that apply to all sheets show on Special Erosion Prevention and Sediment Control Notes sheets)

☐ ☐ Proposed easement linework labeled according to type

☐ ☐ Proposed road centerlines (mainline, side roads, haul roads, construction run-arounds). Label road name, full station ticks every 500', half station ticks every 100', and bearings **(no curve data)**

☐ ☐ Proposed R.O.W. linework and "Proposed R.O.W." labels (**no** stations/ offsets and bearings/distances labeled)

☐ ☐ Proposed slope lines (**no** text)

☐ ☐ Pyritic material/Acid producing rock shown and labeled including notes

☐ ☐ Sediment basins

☐ ☐ Silt fence shall be placed on contours. If unable to place on contours, use "J" hooks

☐ ☐ Storm water outfall locations labeled with outfall number, drainage area in acres, slope (%)

☐ ☐ Special details

☐ ☐ Temporary Construction Exits

☐ ☐ Temporary culverts labeled as temporary with grate/inlet/outlet elevations, pipe diameter, and pipe grade

☐ ☐ Undisturbed areas labeled on plans. This is for special site considerations that contain areas that should not be disturbed

☐ ☐ Verify EPSC measures are not outside R.O.W. or easement areas

2. Intermediate Grading Stage may show Existing and Proposed Contours

Sometimes, on a large project, an intermediate stage of erosion control may be needed where both existing and proposed contours are shown. For example, if a project is being

widened, the second stage of erosion control may have traffic on the existing roadway while widening occurs on the proposed section. Therefore, existing contours would be shown where there is existing traffic and proposed contours shown in the proposed widening section. The Designer will have to manipulate the sheets by clipping boundaries of the referenced files containing the existing and proposed contour files.

YES	N/A	
☐	☐	Begin/End **Construction** project limits labeled. Project limits must contain the word "CONSTRUCTION" or "CONST." and be labeled with station and North/East coordinates (4 decimal places)
☐	☐	Begin/End **R.O.W.** project limits labeled with R.O.W. project numbers for federal and state project(s). Project limits must contain the word "R.O.W." and be labeled with station and North/East coordinates (4 decimal places)
☐	☐	Best Management Practices (BMP's) for work being performed (erosion control blankets, silt fence, silt fence with backing, dewatering structures, sediment bags, culvert protection, catchbasin filter assemblies, slope drains, filter tube, etc. with type or size labeled)
☐	☐	Buffer zones. High visibility fencing should be placed around the buffer zone and call outs should say "High visibility fencing for buffer zone protection."
☐	☐	Coordinate Notation (datum adjustment note above sheet title)
☐	☐	Energy dissipaters for culverts, labeled with type and dimensions (rip-rap or concrete)
☐	☐	Erosion control devices shown for current stage
☐	☐	Erosion control stage shall be noted beside sheet title block
☐	☐	Existing bridge linework and text including drainage areas and type of terrain
☐	☐	Existing pipe and culvert linework (no text) including drainage areas and type of terrain. (Terrain is used to determine the runoff coefficients for the SWPPP.)
☐	☐	Existing survey contours with main contour cut at 10' intervals and text (can be done at 5' intervals for flat areas (shown in existing area where traffic remains, etc.)
☐	☐	Existing survey intermediate contours (optional to show text) (2' intervals or 1' intervals for flat areas) (shown in existing area where traffic remains, etc.)
☐	☐	Items added/checked as directed by Environmental recommendations (Ecology comments, Permit comments, SWPPP comments, etc.) • Wetlands • WWC • Streams • Springs • Seeps • Receiving waters • Ponds shall be shown and labeled; ex. WWC-1, WTL-4 (includes existing natural features) • Flow directions shall be shown for all streams. For impacted streams, the beginning and end of impact shall be labeled
☐	☐	Limits of land disturbance and clearing labeled. This may be necessary if excessive R.O.W. is available and small disturbances are anticipated to keep the project from hitting certain thresholds

DEFINITIVE DESIGN PLANS CHECKLIST

☐	☐	Location and details for proposed diversion channels or other methods of in stream diversion devices to isolate stream flow during construction
☐	☐	Locations of temporary EPSC measures, including labeling the type and size of measures
☐	☐	Match lines with station and sheet number filled in, and sheet title block with station range and scale for each sheet correctly filled in
☐	☐	North arrow
☐	☐	Performance notes on application of BMPs, restrictions on clearing, sensitive areas, etc.
☐	☐	Proposed contours with main contour cut at 10' intervals and text (can be done at 5' intervals for flat areas (shown in proposed work zone for this stage)
☐	☐	Proposed intermediate contours (optional to show text) (2' intervals or 1' intervals for flat areas) (shown in proposed work zone for this stage)
☐	☐	Proposed cross drains and endwalls with appropriate labels (length, and diameter) if being constructed during this phase. For proposed extensions of existing features, the existing structure to remain in place shall be copied to the appropriate proposed level and labeled to remain in place).
☐	☐	Proposed easement linework labeled according to type.
☐	☐	Proposed road centerlines (mainline, side roads, haul roads, construction run-arounds) and text **(no curve data)**
☐	☐	Proposed R.O.W. linework and "Proposed R.O.W." labels (**no** stations/ offsets and bearings/distances labeled)
☐	☐	Proposed slope lines (**no** text)
☐	☐	Proposed special ditches with flow direction
☐	☐	Pyritic material/Acid producing rock shown and labeled, including notes
☐	☐	Sediment basins
☐	☐	Silt fence shall be placed on contours. If unable to place on contours, use "J" hooks
☐	☐	Storm water outfall locations labeled with outfall number, drainage area in acres, and slope (%). An outfall table can be used. Update location for current stage, add new if needed, and remove existing if needed but do not re-use number.
☐	☐	Special details
☐	☐	Stream relocations
☐	☐	Temporary Construction Exits
☐	☐	Temporary culverts labeled as temporary with grate/inlet/outlet elevations, pipe diameter, and pipe grade
☐	☐	Undisturbed areas labeled on plans. This is for special site considerations that contain areas that should not be disturbed
☐	☐	Verify EPSC Measures are not outside R.O.W. or easement areas
☐	☐	Wetland pattern(s) shown and labeled and include wetland impact table

3. Final Construction Stage with Proposed Contours shown

YES	N/A	
☐	☐	Begin/End **R.O.W.** project limits labeled with R.O.W. project numbers for federal and state project(s). Project limits must contain the word "R.O.W." and be labeled with station and North/East coordinates (4 decimal places)

DEFINITIVE DESIGN PLANS CHECKLIST

☐ ☐ Begin/End **Construction** project limits labeled. Project limits must contain the word “CONSTRUCTION” or “CONST.” and be labeled with station and North/East coordinates (4 decimal places)

☐ ☐ Best Management Practices (BMP’s) for work being performed (silt fence, silt fence with backing, rock check dams, slope drains and berms, erosion control blankets, culvert protection filter tube, etc. with type or size labeled)

☐ ☐ Buffer zones. High visibility fencing should be placed around the buffer zone and call outs should say “High visibility fencing for buffer zone protection.”

☐ ☐ Coordinate Notation (datum adjustment note above sheet title)

☐ ☐ Energy dissipaters for culverts, labeled with type and dimensions (rip-rap or concrete)

☐ ☐ Erosion control devices shown for current stage

☐ ☐ Erosion control stage shall be noted beside sheet title block

☐ ☐ Items added/checked as directed by Environmental recommendations (Ecology comments, Permit comments, SWPPP comments, etc.)

- Wetlands
- WWC
- Streams
- Springs
- Seeps
- Receiving waters
- Ponds shall be shown and labeled; ex. WWC-1, WTL-4 (includes existing natural features)
- Flow directions shall be shown for all streams. For impacted streams, the beginning and end of impact shall be labeled

☐ ☐ Limits of land disturbance and clearing labeled. This may be necessary if excessive R.O.W. is available and small disturbances are anticipated to keep the project from hitting certain thresholds

☐ ☐ Location and details for proposed diversion channels or other methods of in stream diversion devices to isolate stream flow during construction

☐ ☐ Locations of temporary EPSC measures, including labeling the type and size of measures

☐ ☐ North arrow

☐ ☐ Match lines with station and sheet number filled in, and sheet title block with station range and scale for each sheet correctly filled in

☐ ☐ Performance notes on application of BMPs, restrictions on clearing, sensitive areas, etc.

☐ ☐ Proposed bridge linework

☐ ☐ Proposed contours with main contour cut at 10’ intervals and text (can be done at 5’ intervals for flat areas (shown in proposed work zone for this stage)

☐ ☐ Proposed cross drains and endwalls with appropriate labels (length and diameter) if being constructed during this phase. For proposed extensions of existing features, the existing structure to remain in place shall be copied to the appropriate proposed level and labeled to remain in place.

☐ ☐ Proposed easement linework labeled according to type

☐ ☐ Proposed intermediate contours (optional to show text) (2’ intervals or 1’ intervals for flat areas) (shown in proposed work zone for this stage)

☐	☐	Proposed road centerlines (mainline, side roads, haul roads, construction run-arounds and text). Label road name, full station ticks every 500', half station ticks every 100', and bearings **(no curve data)**
☐	☐	Proposed R.O.W. linework and "Proposed R.O.W." labels (**no** stations/ offsets and bearings/distances labeled)
☐	☐	Proposed slope lines (**no** text)
☐	☐	Proposed special ditches with flow direction
☐	☐	Sediment basins
☐	☐	Silt fence shall be placed on contours. If unable to place on contours, use "J" hooks
☐	☐	Special details
☐	☐	Storm water outfall locations labeled with outfall number, drainage area in acres, and slope (%). An outfall table can be used. Update location for current stage, add new if needed, and remove existing if needed but do not re-use number.
☐	☐	Stream relocations
☐	☐	Temporary Construction Exits
☐	☐	Temporary culverts labeled as temporary with grate/inlet/outlet elevations, pipe diameter, and pipe grade
☐	☐	Undisturbed areas labeled on plans. This is for special site considerations that contain areas that should not be disturbed
☐	☐	Verify EPSC measures are not outside R.O.W. or easement areas
☐	☐	Wetland pattern(s) shown and labeled and include wetland impact table

28. ENVIRONMENTAL MITIGATION PLAN(S)
(28A, 28B if needed

CROSS SECTION SHEET SERIES

29-81. ROADWAY (MAINLINE) CROSS SECTIONS

Each cross section sheet will show:

- **Cross Section**
  - Existing Ground Line
  - Proposed Template
  - Pavement Subgrade Layer
  - Text for the Finished Grade
  - Cross Slopes
  - Side Slopes
  - Right and Left offsets/elevations for Subgrade Limits
  - Point where Proposed Template meets Existing Ground
  - Station
- **Right Corner of Sheet**
  - Begin and End Station limits of all Cross Sections on sheet
  - Horizontal and Vertical Scale
  - Name of Roadway

DEFINITIVE DESIGN PLANS CHECKLIST

The roadway shall match the name shown on the typical section and all plan sheets. All text will be shown in the correct location and on the correct level.

Cross sections cut at 50' increments are shown in the plans. However, when designing drainage or analyzing the need for guardrail or retaining walls, it is recommended that cross sections are cut at 5' increments. The slopes from the 5' increments can be compared to those projected from the 50' cross section run to ensure sufficient R.O.W. is acquired.

YES	N/A	
☐	☐	Begin and end of bridge sections shall be shown and labeled "Bridge." When running earthwork , ensure that bridge sections are skipped and do not have fill quantities unless there is solid rock or similar material added under or around bridge section
☐	☐	Channel changes, Independent ditches, and/or special ditches shall be shown and labeled and included in end area quantities
☐	☐	Check end area totals on each cross section against grading quantity file . Ensure end areas are shown for all types of material including rock
☐	☐	Cross sections shall be cut at 50' increments. If the proposed horizontal and/or vertical alignment changes start or end at an increment other than 50', a cross section at that station shall be shown. (Example: Proposed horizontal and/or vertical alignment changes start at Sta. 100+30.00 and end at 105+62.00. A cross section shall be cut for each of these stations). Slope lines shall be projected into the present layout sheets
☐	☐	Cross sections shall be cut at a 50' increment station before and after the station where proposed horizontal and/or vertical alignment changes begin and end. (Example: Proposed horizontal and/or vertical alignment changes start at Sta. 100+35.00 and end at 105+62.00. For accurate end area volumes, a cross section shall be cut at 100+00.00 and 106+00.00. There will not be any proposed elements shown on these cross sections)
☐	☐	Cross sections shall be cut at the beginning and end of a superelevated section and include a cross section at the PC, PT, fully superelevated, reverse crown, and zero percent cross slope stations. The Designer shall check proposed drainage to ensure zero percent cross slope area is draining properly
☐	☐	Cross sections shall be cut at beginning and end of each proposed retaining wall
☐	☐	Cross section shall match Geotechnical report and shall be checked against any updated Geotechnical information prior to field review and final submission (graded solid rock pads, temporary shoring, and other soil stabilization measures)
☐	☐	Endwall labeled with type, length, and width/thickness
☐	☐	Existing and Proposed R.O.W. lines shall be projected onto the sheets (For Rural Typicals only)
☐	☐	Finished grade, cross slopes, side slopes, station and offset at the tie-in point with existing ground properly labeled
☐	☐	Guardrail shown to match limits on proposed layout sheets including limits for guardrail earth pad
☐	☐	Independent ditches and/or special ditches shall be shown and labeled and included in end area quantities

☐	☐	Intersecting roads shall be shown at the edge of pavement and labeled
☐	☐	Median barrier shown
☐	☐	Pavement thickness shall match pavement design so that earthwork quantity is correct
☐	☐	Proposed retaining/noise walls shall be shown on the sheets
☐	☐	Proposed utilities shall be projected onto the sheets if data is available
☐	☐	Road names on each sheet shall match names shown on Present Layout Sheets
☐	☐	Rock lines and catchments, rock pads and rock buttresses shall be shown, labeled, and reflected in earthwork calculations for all proposed treatment limits (undercutting, sinkholes, etc.)

82-92. SIDE ROAD CROSS SECTIONS

Note to Designer: Haul Roads and/or construction run-around shall follow the same checklist as side roads and will also follow side roads in the sheet numbering sequence. A separate sheet is not required for the Haul Road, but the sheet name shall be modified to include the Haul Roads.

YES	N/A	
☐	☐	Begin and end of bridge sections shall be shown and labeled “Bridge.” When running earthwork ensure that bridge sections are skipped and do not have fill quantities unless there is solid rock or similar material added under or around bridge section
☐	☐	Check end area totals on each cross section against grading quantity file. Ensure end areas are shown for all types of material including rock
☐	☐	Check slope lines in plans after cross sections run. If there are areas where the slope line makes a significant change for only a short segment, look at the cross sections to see if a steeper slope can be used that is acceptable by Geotechnical Engineering Section. This shall also be checked in areas that will require only a small amount of R.O.W.to see if a change can avoid small amounts of R.O.W. acquisition
☐	☐	Cross sections shall be cut at 50’ increments. If the proposed changes start or end at an increment other than 50’, a cross section at that station shall be shown. (Example: Proposed horizontal and/or vertical alignment changes start at Sta. 100+30.00 and end at 105+62.00. A cross section shall be cut for each of these stations). Slope lines shall be projected into the proposed layout sheets
☐	☐	Cross sections shall be cut at a 50’ increment station before and after the station where proposed horizontal and/or vertical alignment changes begin and end. (Example: Proposed horizontal and/or vertical alignment changes start at Sta. 100+35.00 and end at 105+62.00. For accurate end area volumes, a cross section shall be cut at 100+00.00 and 106+00.00. There will not be any proposed elements shown on these cross sections)
☐	☐	Cross sections shall be cut at the beginning and end of a superelevated section and include a cross section at the PC, PT, fully superelevated, reverse crown, and zero percent cross slope stations. The Designer shall check proposed drainage to ensure zero percent cross slope area is draining properly

☐	☐	Cross sections shall be cut at beginning and end of each proposed retaining wall
☐	☐	Cross section shall match Geotechnical report and shall be checked against any updated Geotechnical information prior to field review and final submission
☐	☐	Endwall labeled with type, length, and width/thickness
☐	☐	Existing and Proposed R.O.W. lines shall be projected onto the sheets (For Rural Typicals only)
☐	☐	Finished grade, cross slopes, side slopes, station and offset at the tie-in point with existing ground properly labeled
☐	☐	Guardrail shown to match limits on proposed layout sheets including limits for guardrail earth pad
☐	☐	Independent ditches shall be shown and labeled and included in end area quantities
☐	☐	Intersecting roads shall be shown at the edge of pavement and labeled
☐	☐	Median Barrier shown
☐	☐	Pavement thickness shall match pavement design so that earthwork quantity is correct
☐	☐	Proposed retaining and/or noise walls shall be shown on the sheets
☐	☐	Proposed utilities shall be projected onto the sheets if data is available
☐	☐	Road names on each sheet shall match names shown on Present Layout sheets
☐	☐	Rock lines and catchments, rock pads and rock buttresses shall be shown, labeled, and reflected in earthwork calculations

T1, T2, T3 – T50Z TRAFFIC CONTROL PLAN

Note to Designer: Traffic Control Plan sheets shall be a draft version and printed for informational purposes only for the DEFINITIVE DESIGN field review. Traffic Control Plans shall not be listed in the index. The sheet(s) shall have the *Info Only* stamp and be titled DEFINITIVE DESIGN in the project title block on each sheet. After the field review, changes shall be made to the traffic control sheets prior to DEFINITIVE DESIGN submittal.

T3 – T50Z. TRAFFIC CONTROL PLANS

Traffic control phases shall coincide with erosion control phases.

YES	N/A	
☐	☐	Begin/End **Construction** project limits labeled. Project limits must contain the word “CONSTRUCTION” or “CONST.” and be labeled with station and North/East coordinates (4 decimal places)
☐	☐	Begin/End **R.O.W.** project limits labeled with R.O.W. project numbers for federal and state project(s). Project limits must contain the word “R.O.W.” and be labeled with station and North/East coordinates (4 decimal places)
☐	☐	Coordinate Notation (datum adjustment note above sheet title)
☐	☐	Existing natural features and text (names of streams and receiving waters)
☐	☐	Existing shoulders that will be used for traffic during construction shall be discussed with Pavement Design personnel to obtain information on type of material needed to effectively handle proposed traffic. Items for removal of

existing shoulder and addition of material needed prior to traffic shall be added to the Estimated Quantities. The removal of existing shoulder and addition of new material shall also be noted in the traffic control staging notes

- ☐ ☐ Lane closure details
- ☐ ☐ Median cross-over details if used as part of traffic control
- ☐ ☐ North arrow
- ☐ ☐ Proposed bridges and bridge end drains with text (Begin and End Bridge stations) and rip-rap apron shapes shown and labeled
- ☐ ☐ Proposed drainage systems (catch basins, manholes, storm sewer, junction boxes, endwalls, etc.) For proposed drainage systems that tie into existing drainage structures, the existing structure to remain in place shall be copied to the appropriate proposed level and labeled to remain in place
- ☐ ☐ Proposed edge of pavement and shoulder linework for phase of construction shown on sheet
- ☐ ☐ Proposed limits of construction stations labeled for sideroads
- ☐ ☐ Proposed limit of paving labeled (clearly define station ranges that are overlay only and not full depth)
- ☐ ☐ Proposed median openings linework and width labeled
- ☐ ☐ Proposed private drives, business entrances, and field entrances, edges of pavement, and radii shown (**no** shading)
- ☐ ☐ Proposed road centerlines (mainline, side roads, haul roads, construction run-arounds and text). Label road name, full station ticks every 500', half station ticks every 100', and bearings (**no** curve data)
- ☐ ☐ Schematic detail for construction signs and placement
- ☐ ☐ Stage construction typical cross section details
- ☐ ☐ Standard Drawings referenced if used as detail
- ☐ ☐ Temporary culverts labeled as temporary with lengths and diameter
- ☐ ☐ Temporary signal details
- ☐ ☐ Temporary pavement marking details and/or removal of pavement striping
- ☐ ☐ Traffic control temporary devices (portable barrier wall, high visibility construction fence, barrels, temporary guardrail attenuator, flashing message boards, barricades, etc.)
- ☐ ☐ Traffic control temporary sign faces and text with vertical panels as needed
- ☐ ☐ Traffic control typical section and/or notes pertaining to traffic control lane/shoulder usage
- ☐ ☐ Traffic flow areas added for clarity
- ☐ ☐ Work zone area patterned for each phase of construction

IF THE ROAD IS TO BE CLOSED DURING CONSTRUCTION THE FOLLOWING ITEMS ARE ALSO APPLICABLE:

YES N/A

- ☐ ☐ City and/or county officials contacted by Project Development for verification of closure and to request updated contact name and number
- ☐ ☐ If detour signs installed and maintained by State or County/City (include note on plans)

☐ ☐ If detour routes determined and maintained by State or County/City (include note on plans)
☐ ☐ If detour route is planned by TDOT, a detour map shall be shown with detour signs and barricades

NON-ROADWAY PLAN SERIES

For all non-Roadway Design Plan Series, the signature shall be shown in the ***-1** index. The naming convention for these signature sheets is shown below:

DIVISION/SECTION	SHEET NAME
Roadway Design	ROADWAY-SIGN1
Structures -Bridge	BRIDGE-SIGN1
Geotechnical	GEOTECH-SIGN1
Signal Design	SIGNAL-SIGN1
Lighting Design	LIGHTING-SIGN1
ITS	ITS-SIGN1
Natural Stream Design	NS-SIGN1
Structures – Retaining Wall	RW-SIGN1

B-1. BRIDGE PLANS

If proposed bridge(s) are in the project, the Preliminary Bridge layout shall contain the plan and profile of the proposed structure, typical section with construction phasing, and other pertinent data.

ITS-1. ITS PLANS

If ITS elements are in the project, Preliminary ITS sheets shall be inserted into the DEFINITIVE DESIGN field review plan packet and DEFINITIVE DESIGN submission. The first sheet of the ITS plans, ITS-1, will contain an index for the rest of the sheets in the ITS series, including the ITS signature sheet.

L-1. LIGHTING PLANS

If Lighting elements are in the project, Preliminary Lighting sheets shall be inserted into the DEFINITIVE DESIGN field review plan packet and DEFINITIVE DESIGN submission. The first sheet of the LIGHTING plans, L-1, will contain an index for the rest of the sheets in the Lighting series, including the Lighting signature sheet. The checklist below is for information only purposes:

Yes N/A
☐ ☐ Applicable Notes
☐ ☐ Estimated Lighting quantities block with Item Number, Description, Unit and Quantity filled in with TDOT approved items

DEFINITIVE DESIGN PLANS CHECKLIST

NS-1 NATURAL STREAM DESIGN PLANS

If a natural stream design is part of the project, the first sheet of the Natural Stream Design plans, NS-1, will contain an index for the rest of the sheets in the Natural Stream Design series, including the Natural Stream signature sheet.

R-1. RETAINING WALLS PLANS

If retaining walls are in the project, the first sheet of the Retaining Wall plans, R-1, will contain an index for the rest of the sheets in the Retaining Wall series, including the Retaining Wall signature sheet. Sheets developed for **Noise walls** shall be included in the Retaining Wall-RW sheet series.

COORDINATE WITH THE STRUCTURES DIVISION AND GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TEST DIVISION FOR GEOTECHNICAL DESIGN NOTES AND REQUIREMENTS AND SOIL PROFILES AND DETAILS SHEETS

See the Retaining Wall Section of the Roadway Design Guidelines for information.

Retaining Wall (R) - Estimated Quantities
Retaining Wall (R#) - Geotechnical Design Notes and Requirements
Retaining Wall (R#A) - Geometric Layout
Retaining Wall (R#B) - Soil Profiles and Details

SIG-1. SIGNAL PLANS

If signals are in the project, the first sheet of the SIGNAL plans, SIG-1, will contain an index for the rest of the sheets in the Signal series, including the Signal signature sheet.

Note to Designer: The designer shall check the signal pole locations to ensure adequate R.O.W. is available, check for site distance issues, and utility, drainage, or similar conflicts. Pole location shall also be evaluated for any ADA compliance issues.

The checklist below is for informational only purposes.

Yes	N/A	
☐	☐	Applicable Notes
☐	☐	Estimated signal quantities block with Item Number, Description, Unit and Quantity filled in with TDOT approved items.

GEOTECHNICAL REPORT

No plans are required. Incorporate all comments from the Geotech Report into the plans.

FINAL PREPARATION OF DEFINITIVE DESIGN PLANS

Yes	N/A

DEFINITIVE DESIGN PLANS CHECKLIST

☐	☐	Check PPRM for any changes to the R.O.W. project number on all DEFINITIVE DESIGN plan sheets and project commitments
☐	☐	Final DEFINITIVE DESIGN plans shall address all comments received at the Site and DEFINITIVE DESIGN Field Review, and those received from the SWPPP Consultant and Quality Assurance/Quality Control Section of the Roadway Design Division.
☐	☐	Submit for R.O.W. - R.OW. Distribution letter shall be sent via email to appropriate personnel as defined in Roadway Design Guidelines and serve as the second file in the *nnnnnn-nn-ROW.*pdf

Note to Designer: Generally, Interchange/Intersection details are shown within the station range of the mainline in the plans. However, if additional sheets are needed because of the complexity of the interchange, intersection, or it is a roundabout, the same checks used for R.O.W. Details, Present Layout, Proposed Layout, and Profiles shall be used. The proposed contour sheets for these sections shall also be addressed to ensure that the grades between the interchange/intersection and mainline tie together with no ponding in the radius returns etc.

APPENDIX D – SAMPLE PROGRESS REPORT

TDOT Alternative Contracting Project DBXXXX

Project Name, Road Route

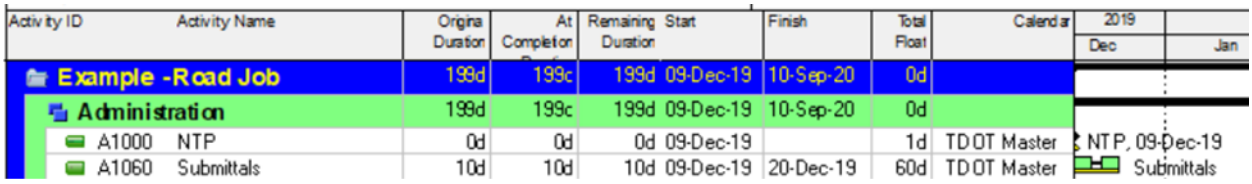
Monthly Progress Report

January 3rd, 2022

Table of Contents

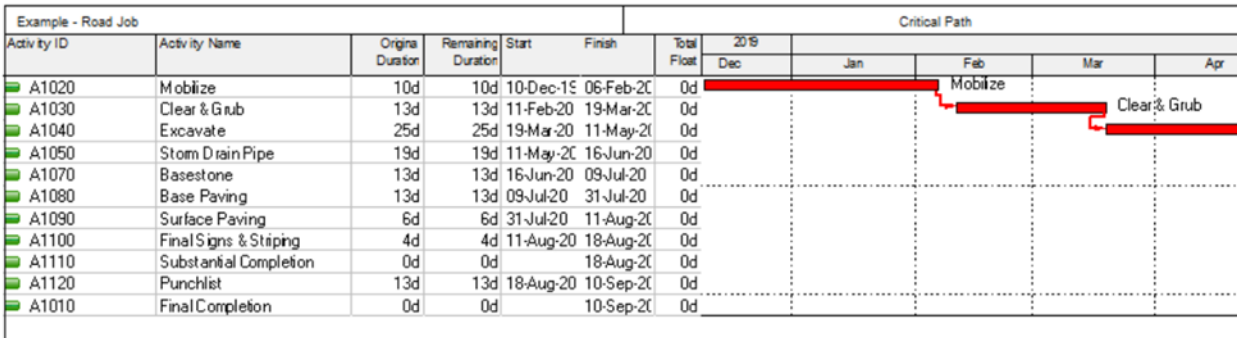
A. Critical Path Method Schedule Narrative

The printouts shown here are to capture the columns which each printout should contain at a minimum. These printouts should be individual PDF's printed on 11x17 containing the Gantt chart for submission.



Activity ID	Activity Name	Original Duration	At Completion	Remaining Duration	Start	Finish	Total Float	Calendar
Example -Road Job		199d	199c	199d	09-Dec-19	10-Sep-20	0d	
Administration		199d	199c	199d	09-Dec-19	10-Sep-20	0d	
A1000	NTP	0d	0d	0d	09-Dec-19		1d	TDOT Master
A1060	Submittals	10d	10d	10d	09-Dec-19	20-Dec-19	60d	TDOT Master

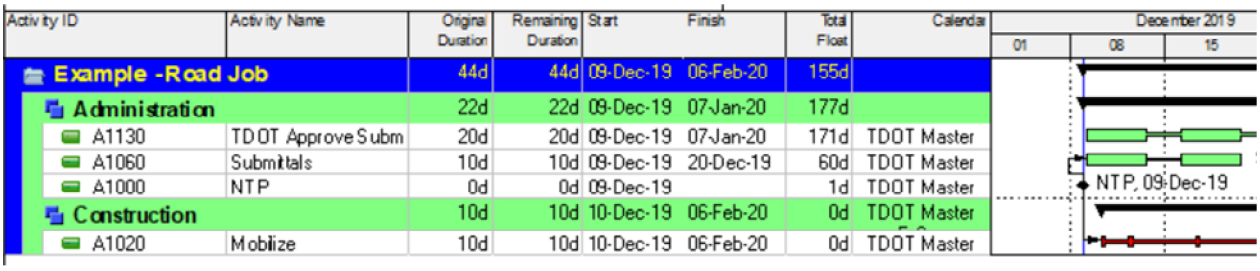
Figure 1: Full Remaining Schedule



Example - Road Job — Critical Path

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Total Float
A1020	Mobilize	10d	10d	10-Dec-19	06-Feb-20	0d
A1030	Clear & Grub	13d	13d	11-Feb-20	19-Mar-20	0d
A1040	Excavate	25d	25d	19-Mar-20	11-May-20	0d
A1050	Storm Drain Pipe	19d	19d	11-May-20	16-Jun-20	0d
A1070	Basestone	13d	13d	16-Jun-20	09-Jul-20	0d
A1080	Base Paving	13d	13d	09-Jul-20	31-Jul-20	0d
A1090	Surface Paving	6d	6d	31-Jul-20	11-Aug-20	0d
A1100	Final Signs & Striping	4d	4d	11-Aug-20	18-Aug-20	0d
A1110	Substantial Completion	0d	0d		18-Aug-20	0d
A1120	Punchlist	13d	13d	18-Aug-20	10-Sep-20	0d
A1010	Final Completion	0d	0d		10-Sep-20	0d

Figure 2: Critical Path Printout



Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Total Float	Calendar
Example -Road Job		44d	44d	09-Dec-19	06-Feb-20	155d	
Administration		22d	22d	09-Dec-19	07-Jan-20	177d	
A1130	TDOT Approve Subm	20d	20d	09-Dec-19	07-Jan-20	171d	TDOT Master
A1060	Submittals	10d	10d	09-Dec-19	20-Dec-19	60d	TDOT Master
A1000	NTP	0d	0d	09-Dec-19		1d	TDOT Master
Construction		10d	10d	10-Dec-19	06-Feb-20	0d	TDOT Master
A1020	Mobilize	10d	10d	10-Dec-19	06-Feb-20	0d	TDOT Master

Figure 3: 60-Day Lookahead

Typical Update Schedule Narrative, per 108C, should be included here. An example can be requested from TDOT.

Additional Narrative Section discussing resources and cost loading should be included to discuss changes to any resource assignments for new activities, changes in assignment of resources, changes in units budgeted, and changes in units completed.

B. Progress Narrative

Activity & Progress:

Design activities over the last month included the assembly of the RFC plans for the final segment of the project. Design also reviewed the Erection Plan for Bridge 2 and 5 internal RFI's.

Construction activities included placement of the concrete for the driveway near Sta. 33+40, temporary shoulder pavement sta. 25+10 to 78+88 LT and 27+44 to 78+88 RT, grading between private driveway 1 and intersection with Ramp A RT. *[Include all work performed this month]*

Photograph 1: Base stone Completed from sta. 30 to 50 RT

Photograph 2: Grading of ditches near Private Drive 1

Milestones:
Traffic Control Phase 1A – Completed January 13, 2022

Quality Management:
Internal 2021 Q4 Audit resulted in 2 NCR for Design Internal Review Documentation and 6 instances where Construction Field Staff were not completing daily reports by the noted turn in period. All individuals have been retrained on the on the project requirements.

No design reviews took place in the last 30 days.

ROW:

Acquisition Summary	Complete	Incomplete
Total Tracts:	10	
Form 2:	4	6
Form 2's Over 60 days old:	0	0
Initiation of Negotiations:	2	2
Options:	0	
Condemned:	0	
Open Tracts:	2	
Closed:	0	0
Recorded:	0	0
Submitted to Region:	0	0
Administrative Settlements:	0	

No Relocations are required.

Issues & Resolution:

Issue	Date Identified	Location/ Stationing	Scopes Effected	Ball in Court	Date Closed/ Resolved	Notes/Updates
Verizon Conflict @ Wie Way	1/28/22	50+14 LT to 52+32 LT	Delaying the completion of stone and paving; grading work around conflict currently proceeding	Verizon	On Going	2/3/22 U25 - Verizon notified of Conflict, Next meeting scheduled for 2/15 3/3/23 U26 - Verizon committed to be on site the week of 3/21 in utility meeting. Expected to take 10 days of work to complete

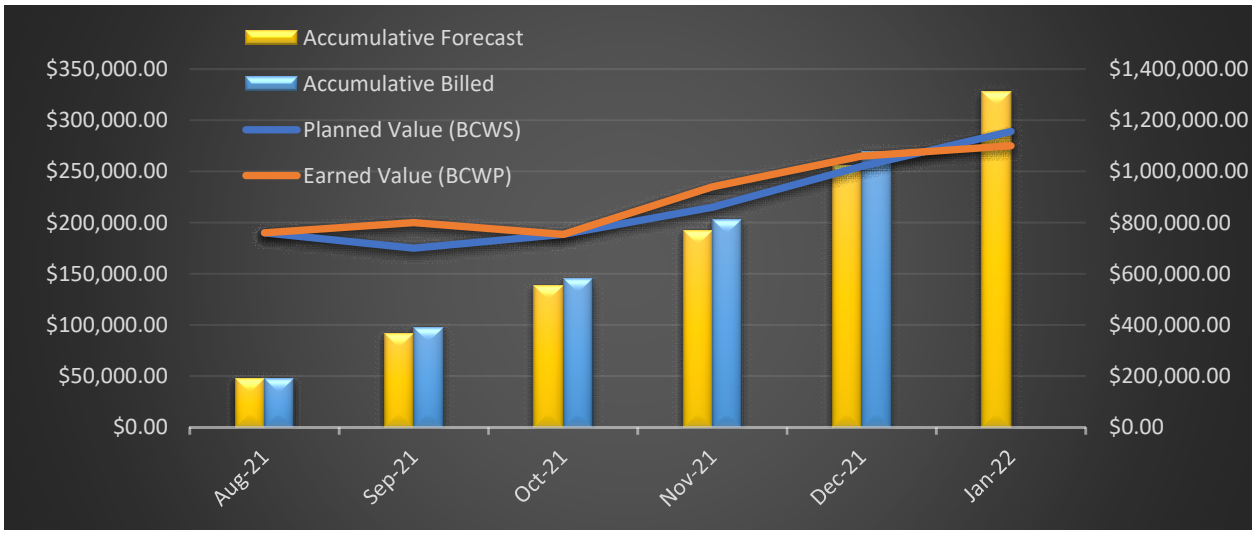
Critical Schedule Issues & Corrective Actions:

Critical Issue	Date Identified	Location/ Stationing	Scopes Effected	Ball in Court	Date Closed/ Resolved	Notes/Updates
City Façade Changes on Br. 2 Parapet	12/2/21	42+31	Bridge Parapet and sidewalk; traffic switch to new phase on bridge	City/ TDOT	On Going	12/1/21 – City Inspector told Foreman the Parapet should include letter and form liner 12/5/21 – meeting with City/TDOT/DB 1/11/22 – City submitted façade details to TDOT 1/19/22 – TDOT requested funds from City Current – waiting funding to be approved which will then begin CO process for DB

Issues Requiring Department Attention:

Issue	Date Identified/ Submitted	Location/ Department	Due Date	Notes/Updates
Erection Plan Review	1/28/22	Structures	On Going	Revision 1

C. Planned Value (PV) and Earned Value (EV) Cost Curves



D. Change Order Status Report

Change Order Status Report						
PCO No.	**Change Order Name / Description**	**Notification Date**	**Ball in Court**	**Notes / Comments**	**Status**	**Official CO No.**
001	Additional Colored DMS Board	11/08/2021	-	-	Executed	001
002	Brook Way Landscape Package	11/20/2021	[General Contractor]	PKG Expected 1/21/22	Drafting	--
003	Brook Way Lighting Package	11/20/2021	[General Contractor]	TDOT Meeting Sch. 1/18/22	Drafting	--
004	Noise Wall Repairs STA 71+50.08 LT	11/29/2021	TDOT	-	Executed	002
005	Ramp C Repairs	12/15/2021	TDOT	No TDOT Comments Rec'd to Date	Pricing	--

E. Monthly Subcontractor Report

All Subcontractors:

Total Number of Subcontractors: 6

Subcontractor Name	Scope of Work	DBE Participant	Original Subcontract Amount	Changes to Original Contract	Current Contract Amount	Payments Made To-Date	Tier
ABC Steel	Steel Girders	N	$2,250,000	$25,000	$2,275,000	$2,250,000	1st
B&C Asphalt	Paving	N	$8,620,000	870,000	9,490,000	$4,250,000	1st
Wilson & Sons Demolition	Concrete Demo	Y	$2,250,000	$25,000	$2,275,000	$2,250,000	1st
Robock Site Contracting, LLC	Site grading & Drainage Utilities	N	$3,550,000	$35,000	$3,585000	$1,090,000	1st
Saw Cutting, Inc.	Saw Cutting	Y	$22,000	$-	$22,000	$22,000	2nd
Erosion LLC	Erosion Control	N	$935,000	$-	$935,000	$935,000	2nd

Summary of DBE Participation:

Total Number of DBE Subcontractors & Suppliers: 3

Subcontractor Name	Scope of Work	DBE Qualified Percentage	Original Subcontract Amount	Co's to Original Contract	DBE Qualified Amount	Payments Made To-Date	Tier
Wilson & Sons Demolition	Concrete Demo	100%	$2,250,000	$25,000	$2,275,000	$2,250,000	1st
Saw Cutting, Inc.	Saw Cutting	100%	$22,000	$-	$22,000	$22,000	2nd
Mack Trucking	Tri-Axle Trucking	100%	$50,000	$-	$50,000	$10,521.36	1st
Mack Trucking	Liquid AC	60%	$500,000	$-	$300,000	$0	1st
				DBE Totals	$2,647,000	$2,282,521.36	9.82%

F. Procurement Report

Procurement Report							
No.	**Material Item Description**	**Submittal Approve/Accept Date**	**Release for Manufacture Date**	**Estimated Lead Time**	**Estimated Availability Date**	**Delivery Date**	**Storage Location**
001	Water Valves	7/01/2021	7/01/2021	5 MO	12/01/2021	12/02/2021	Installed
002	Wood Power Poles	7/12/2021	11/26/2021	30 days	12/28/2021	12/30/2021	Laydown Yd B
003	Metal Power Poles	7/20/2021	7/20/2021	9 MO	4/20/2022	TBD	TBD
004	Bridge 1 – Span 1	9/09/2021	9/09/2021	90 Days	12/10/2021	12/27/2021	Installed
005	Bridge 1 – Span 2	9/13/2021	9/13/2021	90 Days	12/13/2021	12/27/2021	Laydown Yd A
006	Bridge 2 – Beams	Upcoming	TBD	90 days	TBD	TBD	TBD
007	Traffic Signals	Upcoming	TBD	9 MO	TBD	TBD	TBD
008	OH Signs	Upcoming	TBD	3 MO	TBD	TBD	TBD

G. Contract Submittal List (maintain on list for 60 days following closing)

Submittal List						
No.	**Submittal Name / Description**	**Date Submitted**	**Due Date**	**Date Returned**	**Status**	**Comments**
117	Bridge 2 – Calculations, Shop & Construction Drawings	11/05/2021	12/10/2021	12/09/2021	Closed	Approved on 12/09/21.
118	Bridge 3 – Calculations, Shop & Construction Drawings	11/05/2021	12/10/2021	12/10/2021	Closed	Approved on 12/09/21.
125	Bridge 1 – Erection Plan	11/22/2021	12/27/2021	12/21/2021	Closed	Approved on 12/21/2021.
144	Bridge 2 – Demo Plan	12/22/2021	1/26/2022	TBD	Open	15 days remaining.
152	Phase 3 RFC Plans	12/30/2021	2/01/2022	TBD	Open	19 days remaining.
260	RFI-012 CB 11 Conflict	TBD	--	--	Upcoming	Anticipate submittal 1/04/21.
261	Pay Application No. 6	TBD	--	--	Upcoming	Anticipate submittal 1/04/21.

H. Material Certifications

Material Certification Log

No.	Material Item Description	Submittal Approval Date	Delivery Date	QA/QC Date	Comments
301	RCP – 18”	9/29/21	10/08/21	10/08/21	
302	Aggregate Grade D	9/29/21	10/08/21	10/08/21	

I. Safety Report

Safety Compliance:
Since NTP, Contractor has required all subcontractors to attend a safety orientation before performing any work on site. To date, 121 workers have completed Contractor’s safety orientation, including 8 new workers within this month’s period from Erosion LLC (3) and Roebuck Site Contracting, LLC (5).

Contractor continued conducting weekly toolbox talks and its subcontractors are performing daily task hazard analysis (THA) before performing any tasks.

Site Visitors during the last month included Jay Norris (TDOT), Webb Rizor (TDOT), and Joe Shmoo (President of ABC Contractors).

The following subcontractors were onsite this period:

- Erosion LLC
- Wilson & Sons Demolition
- Roebuck Site Contracting, LLC
- Saw Cutting, Inc.

Safety Incidents:
None this month.

Near Misses:
None this month.

Property Damage or Utility Strikes:

OSHA Infractions:
None this month.

I. Summary of Planned or Unplanned Hazardous Materials and Contaminated Substance Activity Report

5,000 Gallon Diesel Fuel storage tank is located at the equipment yard at 3501 44th St.

Asbestos Removal is planned to run from February 1 to 4, 2022.

APPENDIX E – FORMS

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
DIVISION OF MATERIALS AND TESTS
6601 CENTENNIAL BLVD.
NASHVILLE, TENNESSEE 37243-0360

MATERIALS AND TESTS CERTIFICATION

Date _____ County _____ Region _____

Project Reference No. _____

Project No. _____

Contract No. _____

Civil Engineering Director
Division of Materials and Tests
6601 Centennial Blvd.
Nashville, Tennessee 37243

This is to certify that:

The results of the tests on acceptance samples indicate that the materials incorporated into the construction work and the construction operations controlled by sampling and testing, conform in substance with the approved plans and specifications.

Acceptance

☐ All tests meet plans and specifications.

☐ See attached Supplement for exceptions to the plans and specifications.

Independent Assurance

☐ IA not required.

☐ IA required and all test results are within tolerance limits.

☐ IA required, see attached IA test results that did not compare favorably.

Alternative Delivery Project Manger Date

Design-Builder Quality Manager Date

Regional Operations Engineer Date

Regional Materials Supervisor Date

Form DT-1696
REV 10-29-18

END of JOB CERTIFICATE

Project Title/Termini: _____

Design-Builder: _____ PIN: _____

Address: _____ State Project No.: _____

_____ Federal Project No.: _____

Date Prepared: _____ Contract No.: _____

County: _____

I certify that all work on this contract, including all amendments thereto, has been satisfactorily completed, subject to the terms and conditions of the contract and specifications. I further certify that the project records have been checked and are a true representation of the work that was performed, the final activities are correct, and the final activities are covered by the required material certifications. All project records will be maintained by the Design-Builder in accordance with the applicable records retention policy.

By signing below, I am affirming the above statements.

Signed:

_____

Design-Build Representative Date

I certify that this contract has been completed in compliance with the Department standard construction procedures. The foregoing record, as noted on the various forms and for the various items, is a true representation of the work done by , the Design-Builder on the above listed contract, and any part of the record which has been copied from the field books is a true copy of the field notes. All project records will be maintained by the Department in accordance with the applicable records retention policy.

Signed:

_____

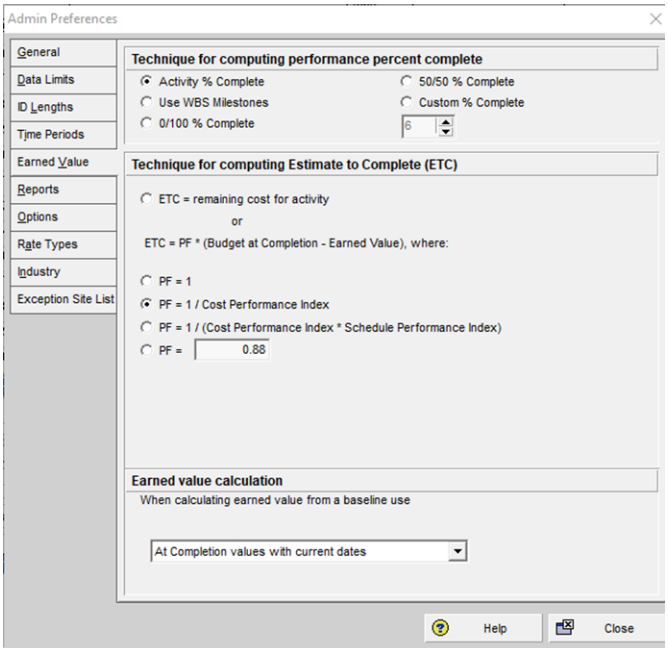
Department or CEI Representative Date

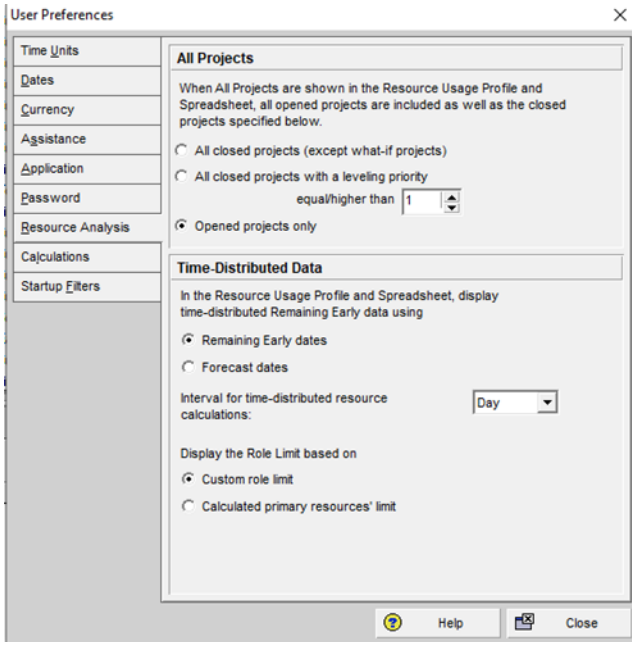
APPENDIX F – DESIGN-BUILD SCHEDULES & COST LOADING

DESIGN-BUILD SCHEDULES AND COST LOADING

Cost Loading Settings

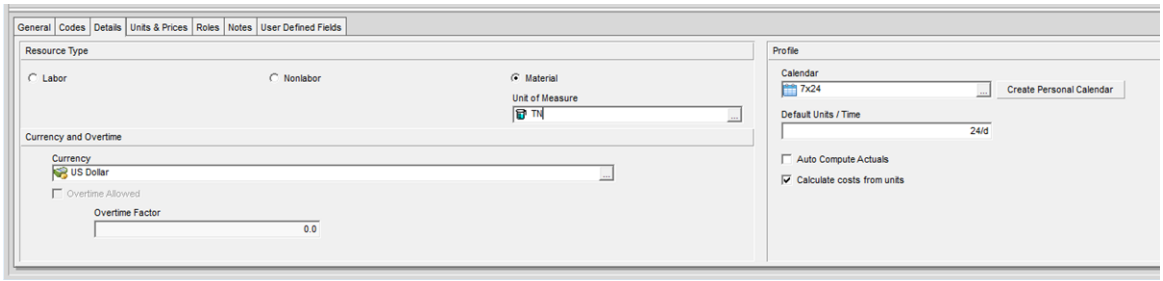
Setting in a new P6 schedule before creating any activities:





<u>Required Settings</u>

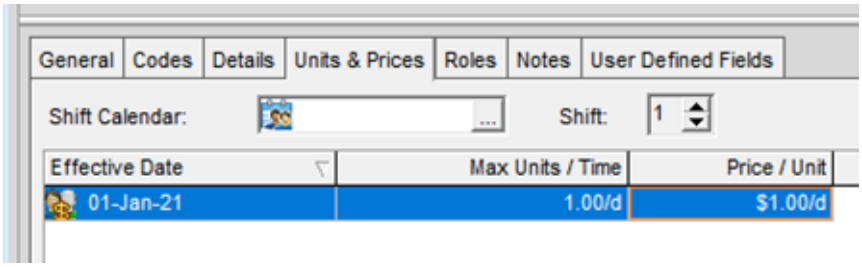
- Do not Auto Compute Actuals
- Select Calculate costs from units.
- Delete the Max Units/Price setting in the Unit & Prices.
- Duration Type on all Task Dependent activities should be fixed durations & Units.
- Activity Codes – should include Project/Area, Discipline, Crew, Responsibility, Pay Item
- In the Resource tab make sure the details are reviewed as well.



<u>The following are recommended settings, but not required:</u>

- On the Project Window, open the Project Details Box and click on the Resources Tab and uncheck the box for “Resources can be assigned to the same activity more than once”

- It is recommended to use a material type resource for cost loading the schedule, P6 evaluates and limits the Labor and Nonlabor resources differently.
- Within the detail tab from the Resource Window, the resource should be set up with a Unit of Measure (dollar) and a standard rate of $1.00/dollar. This will allow the program to function more traditionally but using the units to calculate cost which will equal each other.



- If a resource is set up for each pay item in the pay estimate, this will allow for an easier verification of the costs budgeted and incurred compared to the pay application each month. These rollups can be observed in the Resource Assignment window.

IPS & Baseline Schedule Supplemental Specification

In accordance with 108.03C except 108.03C2 Initial Project Schedule shall read *"Submission of the IPS shall be in accordance with the requirements of this subsection. The IPS will be reviewed at the Post Award Meeting. The IPS schedule must be accepted prior to the Design-Builder beginning work."* Furthermore, Baseline CPM Schedule shall read *"Within ninety (90) calendar days after the approval of the IPS, submit a draft baseline CPM schedule to the TDOT PM and hold a meeting to review. The baseline schedule shall be accepted prior to Construction NTP."*

Schedule Updates

- If the Design-Builder elects to utilize the stored period performance function within P6, the financial periods calendar shall be submitted and approved by TDOT prior to the baseline schedule approval.
- The Design-Builder shall make every effort to maintain the value of each previous period as approved. Any adjustments to earned value due to the change in projected finish for in progress activities must be noted in each monthly update narrative.
- The Design-Builder shall provide adequate explanation in the narrative to justify any earned value changes in previous months.

Distribution of Cost

The following general guidance shall be used in distributing costs through the baseline schedule and subsequent monthly updates:

- Cost loading shall be applied to individual schedule items rather than level of effort (LOE) activities.
- Change orders for either additional scope or deducted scope shall be incorporated in the first schedule update after the scope change.
- Adjustments and/or liquidated damages do not need to be included in schedule updates.

The following items should be paid out as follows unless agreed to by the Engineer. The breakdown of cost items represented in this document may need to be adjusted to account for the specifics of each project. Any modifications should be agreed to by the Engineer.

105-01.20 Construction Stakes, Lines & Grades – The Department will make partial payments for Construction Stakes, Lines and Grades on the basis of a percentage of the lump sum bid in accordance with DB-Table 105.18-1 below.

DB Table 105.01.20: Payment Schedule for Construction Stakes, Lines and Grades

Estimate Number or Percent of Total Construction Amount of Previous Estimate	Total Percent of Construction Stakes, Lines, and Grades Lump Sum Bid Item
Pre-Construction Activities: ROW Staking, Environmental, Design Survey, etc.	up to 20%
1st Estimate following Construction NTP	30%
2nd Estimate following Construction NTP	50%
10%	60%
20%	70%
40%	80%
60%	90%
80%	100%

105-01.55 Design Eng Services – The Department will make partial payments for Design and Engineering Services on the basis of a percentage of the lump sum bid in accordance with DB-Table 105.55 below.

DB Table 105-01.55: Payment Schedule for Design and Engineering Services

Design Scope Items	Percent of Engineering and Design Services Lump Sum Bid Item
ROW Acquisition Revisions following NTP (per Ch. 3)	5%
Definitive Design	20-40%
RFC	20-40%
Field Services	10%
As-Built/Redlined Drawings	10-20%

105-08.20 Contract Management– The Contractor shall utilize a straight-line method of payment correlating to the time percent complete of the project utilizing the current Contract Completion.

109-04.50 ROW Services – The Department will make partial payments for Right of Way Services based on the following percentage breakdown for each tract noted in the Acquisition Table. The total number of tracts will be divided equally for the total of the lump sum bid item.

DB Table 109-04.50: Payment Schedule for Right of Way Services

Right of Way Scope Items to be applied to each tract noted in the Acquisition Table	Percent of ROW Services Lump Sum Bid Item
Title Report	10%
Appraisals	30%
Negotiations	30%
Closing/Condemnation	20%
Closed	10%

204-05.05 Geotechnical – The Department will make partial payments for Geotechnical Services based on a percentage of the lump sum bid in accordance with DB-Table 204-05.05 below.

DB Table 204-05.05: Payment Schedule for Geotechnical Services

Geotechnical Scope Items	Total Percent of Geotechnical Services Lump Sum Bid Item
Straightline throughout Definitive Design	20-40%
Straightline throughout RFC Approval	30-75%
Straightline throughout Construction	50-95%
Following Redline Approval	5%

209-01.50 EPSC – The Department will make partial payments for EPSC Services based on a percentage of the lump sum bid in accordance with DB-Table 209-01 below.

DB Table 209-01.50: Payment Schedule for EPSC

Estimate Number or Percent of Total Construction Amount of Previous Estimate	Total Percent of EPSC Lump Sum Bid Item
Through Definitive Design	20-50%
Through Construction NTP	40-50%
25%	60%
50%	70%
75%	80%
Substantial Completion	90%
Final Acceptance	100%

712-01.75 Maintenance of Traffic – The Contractor shall utilize a straight-line method of payment correlating to the time percent complete from the Construction NTP through the current Contract Completion.

717-99.95 Mobilization – The Department will make partial payments for Mobilization as described below. If the amount bid for the item of Mobilization exceeds 5% of the total amount bid for the Contract, the Department will pay up to 5% of the total amount bid on each partial payment as described below, and that portion exceeding 5% on the last partial pay estimate. If the DB Contractor utilizes a phased approach, the payment shall be prorated to mirror the percent of the total construction cost for that phase.

DB Table 717-99.95: Payment Schedule for Mobilization

Estimate Number	Percent of Mobilization Lump Sum Bid Item*
1st Estimate following Initial NTP	10%*
2nd Estimate following Initial NTP	10%*
1st Estimate following Construction NTP	40%*
2nd Estimate following Construction NTP	40%*
Final Estimate	Remaining Portion*

* Percent reflective of Mobilization Lump Sum equal to or less than 5% of Total Contract, portion exceeding 5% will be paid on Final Estimate