

104-10 MAINTENANCE OF THE PROJECT

The Contractor shall maintain the project from the date of availability or the date of beginning work, whichever occurs first, until the project is finally accepted. On resurfacing projects the Contractor shall maintain each part of the project, as defined by map numbers, from the date of beginning work on that part until such part is finally accepted. This maintenance shall be continuous and effective and shall be prosecuted with adequate equipment and forces to the end that all work covered by the contract is kept in satisfactory and acceptable condition at all times.

The Contractor shall maintain all existing drainage facilities, except where the work consists of resurfacing only, such that they are in the same condition upon acceptance of the project as they were when the project was made available to the Contractor.

In the event that the Contractor's work is suspended for any reason, the Contractor shall maintain the work covered by the contract, as provided herein.

When a portion of the project is accepted as provided in Article 105-17, immediately after such acceptance the Contractor will not be required to maintain the accepted portions. Should latent defects be discovered or become evident in an accepted portion of the project, such defective work shall be repaired or replaced at no cost to the Department.

Where an observation period is required that extends beyond the final acceptance date, the Contractor shall perform any work required by the observation period until satisfactory completion of the observation period. The Contractor will not be directly compensated for any maintenance operations necessary, as this work will be incidental to the work covered by the various contract items.

104-11 FINAL CLEANING UP

Before acceptance of the project, the highway, borrow sources, waste areas and all ground occupied by the Contractor within the project limits in connection with the work shall be cleaned of all rubbish, excess materials, temporary structures and equipment. All parts of the work shall be left in an acceptable condition.

The Contractor will not be directly compensated for the work of final cleaning up, as this work will be considered incidental to the work covered by the various contract items.

104-12 VALUE ENGINEERING PROPOSAL

This value engineering specification is to provide an incentive to the Contractor to initiate, develop and present to the Department for consideration, any cost reduction proposals conceived by the Contractor involving changes to the contract. A Design-Build VEP may also be considered in accordance with Subarticle 104-12(F). This specification applies to proposals submitted by the Contractor using the *Value Engineering Proposal (VEP) Submittal Form* on the Department's website. Submittals that propose material substitutions of permanent features, such as, but not limited to, changes from rigid to flexible or flexible to rigid pavements, concrete to steel or steel to concrete bridges will not be considered acceptable VEPs. Depending on the complexity of the evaluation and implementation, VEPs that provide for a total savings before distribution of less than \$10,000 may not be considered.

(A) Minimum Requirements for Proposals

Accepted VEPs for technical review are those that would result in a net savings to the Department by providing a decrease in the total cost of construction or reduce the construction time without increasing the cost to construct the project. A VEP must provide an equivalent or better product than what is specified in the Contract. The effects the VEP may have on the following items, but not limited to these items, will be considered by the Department when evaluating the VEP:

- (1) Service life,
- (2) Safety,

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- (3) Reliability,
- (4) Economy of operation,
- (5) Ease of maintenance,
- (6) Desired aesthetics,
- (7) Design,
- (8) Standardized features, and
- (9) Environmental impact.

(B) Evaluation of Proposals

The Department reserves the right to reject the VEP or deduct from the savings identified in the VEP to compensate for any adverse effects to these items that may result from implementation of the VEP.

The Department reserves the right to reject, at its sole discretion, any VEP submitted that would require additional right of way. VEPs requiring a construction plan revision will be reviewed in accordance with the current construction revision guidelines. Substitution of another design alternate detailed in the contract plans for the one that the Contractor bid will not be allowed. Plan errors that are identified by the Contractor and that result in a cost reduction will not qualify for submittal as a VEP. Pending execution of a formal supplemental agreement implementing an approved VEP and transferal of final plans (hard copy and electronic) sealed by an engineer licensed in the State of North Carolina incorporating an approved VEP to the Engineer, the Value Management Office and the Design-Build Unit (if applicable), the Contractor shall remain obligated to perform in accordance with the terms of the existing contract. No time extension will be granted due to the time required to develop and review a VEP.

(C) Subcontractors

The Contractor is encouraged to include this specification in contracts with subcontractors. The Contractor shall encourage submissions of VEPs from subcontractors; however, it is not mandatory that the Contractor accept or transmit VEPs proposed by his subcontractors to the Department. The Contractor may choose any arrangement for the subcontractor value engineering payments, provided that these payments shall not reduce the Department's share of the savings resulting from the VEP.

(D) Preliminary Review

The preliminary review is intended to expedite the initial review of a VEP idea, as well as minimize the Contractor's initial capital investment and risk in developing the VEP. This step allows the Contractor to submit a conceptual plan, and only requires the Department to assess the general merits and technical feasibility of the proposal. The Contractor shall submit the preliminary VEP to the Engineer, the Value Management Office at ValueManagementUnit@ncdot.gov and the Design-Build Unit (if applicable). The submittal shall include the *Value Engineering Proposal (VEP) Submittal Form*, description of the proposed change and the associated benefits, concept sketches or mark-ups on existing plan sheets that can be clearly understood and interpreted and an estimate of cost savings associated with the proposal. Include the identity of any Private Engineering Firms proposed by the Contractor to prepare designs or revisions to designs. The Department will review the preliminary submittal only to the extent necessary to determine if it has possible merit as a VEP. This preliminary review does not obligate the Department to approve the final VEP should a preliminary review indicate the VEP has possible merit. The Department is under no obligation to consider any VEP (Preliminary or Final) that is submitted.

(E) Final Proposal

A copy of the Final VEP shall be submitted by the Contractor to the Engineer, the Value Management Office at ValueManagementUnit@ncdot.gov and Design-Build Unit (if applicable). The VEP shall contain the following at a minimum:

- (1) A *Value Engineering Proposal (VEP) Submittal Form*.
- (2) A description of the difference between the existing contract requirements and the proposed modifications, with the comparative advantages and disadvantages of each.
- (3) If applicable, a complete drawing of the details covering the proposed modifications and supporting design computations shall be included in the final submittal. The preparation of new designs or drawings shall be accomplished and sealed by an engineer licensed in the State of North Carolina. Further, the Department may require a review, and possibly the redesign, be accomplished by the project's original designer, or an approved equal. The Department may contract with private engineering firms, when needed, for reviews requested by the Department. The Contractor shall contract with the original project designer, or an approved equal, when required by the Department, for any design work needed to prepare completely and accurately the contract drawings. The Department may waive the requirements to have the preparation of contract drawings accomplished by an engineer licensed in the State of North Carolina or the project's original design based on the extent, detail and complexity of the design needed to implement the proposal.
- (4) An itemized list of the contract requirements that would be modified and a recommendation of how to make each modification.
- (5) A detailed estimate of the cost of performing the work under the proposed modification.
- (6) A statement of the time when approval of the proposal shall be issued by the Department to obtain the total estimate cost reduction during the remainder of the contract, noting any effect on the contract completion or delivery schedule.

The complete review of each submittal (Preliminary or Final) may take up to 20 business days. Additional review time may be needed and should be anticipated for VEPs with construction plan revisions, VEPs requiring extensive and complex changes, and Design-Build VEPs.

(F) Design-Build VEPs

Review of a Design-Build VEP will follow the same process described above. However, only the VEPs which alter the requirements of the Request for Proposal (RFP) issued by the Department and/or the Technical Proposal submitted by the Design-Build Team, will be considered as VEPs. A previously submitted ATC (Alternate Technical Concept) that was not approved can be resubmitted for consideration as a VEP, if applicable.

In addition to the technical review, a Design-Build VEP will be reviewed by the Design-Build Unit for Contractual compliance and the Estimating Management Group for fairness of approximate savings noted by the Contractor.

(G) Modifications

The preparation of new design drawings by or for the Contractor shall be coordinated with the appropriate Design Branch through the State Value Management Engineer. The Contractor shall provide, at no charge to the Department, one set of reproducible drawings of the approved design needed to implement the final VEP. Drawings (hardcopy and electronic) which are sealed by an engineer licensed in the State of North Carolina shall be submitted to the Engineer, Value Management Office at

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ValueManagementUnit@ncdot.gov and Design-Build Unit (if applicable) no later than 10 business days after acceptance of the final VEP unless otherwise permitted.

The Contractor has the right to withdraw, in whole or in part, any final VEP not accepted by the Department within the period to be specified in the final VEP per Subarticle 104-12(E)(6).

If a VEP is approved, the necessary changes will be affected by the supplemental agreement. Included as a part of the supplemental agreement will be requirements for price adjustment giving the Contractor 50% of the net savings to the project resulting from the modifications. Supplemental agreements executed for design-bid-build contracts shall reflect any realized savings in the corresponding line items. Supplemental agreements executed for design-build contracts shall add one line item deducting the full savings from the total contract price and one line item crediting the Contractor with 50% of the total VEP savings.

The Department reserves the right to include in the supplemental agreement any conditions it deems appropriate for consideration, approval and implementation of the VEP. Acceptance of the supplemental agreement by the Contractor shall constitute acceptance of such conditions.

The final net savings to be distributed will be the difference in cost between the existing contract cost for the involved unit bid items and the actual final cost resulting from the modification. Only those unit bid items directly affected by the supplemental agreement will be considered in making the final determination of net savings. For design-build VEPs, a cost estimate of the net savings based on the current market values must be included with the submission and will be reviewed and approved by the State Estimator. In determining the estimated net savings, the Department reserves the right to disregard the contract prices if, in the judgment of the Department, such prices do not represent a fair measure of the value of the work to be performed or to be deleted. Subsequent change documents affecting the modified unit bid items, but not related to the VEP, will be excluded from such determination. The Department's review and administrative costs for VEPs will be borne by the Department. The Contractor's costs for designs and/or revisions to designs and the preparation of design drawings will be borne by the Contractor. The costs to either party will not be considered in determining the net savings obtained by implementing the VEP. The Contractor's portion of the net savings shall constitute full compensation to the Contractor for effecting all changes pursuant to the agreement. The net savings will be prorated, 50% to the Contractor and 50% to the Department, for all accepted VEPs.

Upon execution of the supplemental agreement, the Department will thereafter have the right to use, duplicate or disclose, in whole or in part, any data necessary for the use of the modification on other projects without obligation or compensation of any kind to the Contractor. Restrictions or conditions imposed by the Contractor for use of the VEP on other projects shall not be valid.

Except as may be otherwise precluded by this specification, the Contractor may submit a previously approved VEP on another project.

Unless and until a supplemental agreement is executed and issued by the Department and final plans (hard copy and electronic) sealed by an engineer licensed in the State of North Carolina incorporating an approved VEP have been provided to the Engineer, the Value Management Office at ValueManagementUnit@ncdot.gov and the Design-Build Unit (if applicable), the Contractor shall remain obligated to perform the work in accordance with the terms of the existing contract.

Acceptance of the modification and its implementation will not modify the completion date of the contract unless specifically provided for in the supplemental agreement.

The Contractor shall not be entitled to additional compensation under Section 104 for alterations in the plans or in the details of construction pursuant to the VEP.

The Department will not be liable to the Contractor for failure to accept or act upon any VEP nor for any delays to the work attributable to any such VEP.

The Department reserves the right to negotiate desired changes with the Contractor under the requirements of the contract even though the changes are the result of a VEP submitted on another contract. In this instance the savings will be prorated in accordance with the terms of the negotiated agreement.

104-13 RECYCLED PRODUCTS OR SOLID WASTE MATERIALS

It is the policy of the Department to aid in reduction of materials that become a part of our solid waste stream. To that extent the Department encourages contractors to initiate, develop and use products and construction methods that incorporate the use of recycled or solid waste products in the project. Recycled products or waste materials will be those products or materials that would otherwise become solid waste and are collected, separated, or processed and reused or returned to reuse in the form of raw materials or products that are incorporated into a beneficial reuse on the project. Targeted materials include, but are not limited to, the following: plastic, glass, paper, cardboard, shingles, tires, fly ash, bottom ash, sludge and construction and demolition debris.

This Specification will not be applicable to reclaimed asphalt materials used in accordance with Section 610 and shall not be applicable to any recycled or solid waste materials that are specified for use by the Department on the project.

To use recycled or solid waste materials, the Contractor shall submit to the Department of Transportation a Recycled Products or Solid Waste Materials Proposal for approval. This proposal shall be submitted to the Resident Engineer and the Resource Conservation Engineer at ResourceConservation@ncdot.gov. The proposal shall contain, at a minimum, a statement that the request for the modification is being made as a Recycled Products or Solid Waste Materials proposal and the requirements in Subarticles 104-12(E)(2) through 104-12(E)(6).

The Contractor shall be responsible for obtaining any and all permits that may be required for the hauling, storing, or handling of the targeted materials.

If a Recycled Products or Solid Waste Materials proposal is approved, the necessary changes will be effected by supplemental agreement. Included as a part of the supplemental agreement will be requirements for price adjustment as follows:

(A) If the proposal results in a net savings to the Department the savings and distribution of the savings shall be done in accordance with Article 104-12.

(B) If the proposal results in a net increase in the project cost but is judged to have a significant effect on the development of long term markets for the targeted materials, or results in significant beneficial usage of project generated debris that would have otherwise been disposed of in accordance with Section 802, the Department will bear the approved increased costs, if any. This includes recycled products that have been approved by the Department but were not originally included in this contract.

(C) If the proposal is new and innovative, never used in the Department projects before as approved by the Engineer and results in a net savings to the Department, the savings shall be distributed in accordance with Article 104-12. However, when this innovative proposal results in a net increase in project cost, Subarticle 104-13(B) shall apply, and at least \$1,500, but not more than \$5,000, may be awarded to the Contractor.

The Contractor shall provide certification that verifies the source of the material and the percentage of targeted materials to be used.

The quantities of reused or recycled materials either incorporated in the project or diverted from landfills and any practice that minimized the environmental impacts on the project shall