

## **IX. CONSTRUCTION AND INSPECTION**

This section only applies to Infrastructure Projects. Infrastructure projects are those that involve any ground disturbance or that involve an existing structure. Examples include sidewalks, streetscape projects, installing signs, restoration of historic buildings, and any major construction project.

### **IX.1. Subcontractor Prequalification**

Prime contractors may use subcontractors for components of project construction. The LPA should be aware of the following:

- Subcontractors must be prequalified with KYTC for the type of work they are to perform.
- Prior to the contractor using a subcontractor on any phase of project construction, it must request approval of that subcontractor in writing from the Administering Office by filling out a subcontractor request [form](#) found here:

A copy of this form is also provided as an attachment to this chapter. For more information regarding the proper way to request subcontractor approval please see section CST 304-1 in the KYTC construction [manual](#).

- The LPA must also submit an [Affidavit for Bidders, Offerors, and Contractors](#) signed by each subcontractor.
- Any prime contractor must perform at least 30% of the construction work and must perform more than any single subcontractor.<sup>1</sup>

### **IX.2 Construction Posters**

Signs required to be posted on Federal-aid project job sites can be found here:

<http://www.fhwa.dot.gov/programadmin/contracts/poster.cfm>

### **IX.3 Construction Inspection**

#### **Inspectors**

A construction inspector must inspect the contractor's work on the project pursuant to the inspection plan. These inspections ensure that the project is well built, compliant with the construction specifications, and that the LPA is getting a good value from the contractor. They also play a role in determining when work has been completed, allowing the contractor to receive progress payments on their contract.

The inspector must be qualified by having at least five (5) years of roadway and/or bridge construction experience. Engineering education may be substituted on a year-by-year basis with the KYTC State Highway Engineer (SHE) approval. The inspector must have experience and understanding of construction practices, record keeping and workmanship regarding inspections. The inspector must be capable of handling the physical requirements needed to access and perform

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<sup>1</sup> Spec Book Section 108

all inspection activities on any construction project. Certifications listed below shall be held and maintained throughout the duration of the contract:

- ACI Level I Certification
- Aggregate Sampling Technician
- Grade Level I Technician
- Asphalt Lay-Down Technician
- Structural Inspection Level I
- KEPSC-RI qualification

Grade I certification requires use of nuclear density machine. The consultant inspector will be required to furnish his own badge and will track and report to appropriate safety organization. Consultant inspector will have to transport nuclear density machine from storage area to job site and be in compliance with policy on transportation and storage and supervision while in his possession until stored properly at end of workday. Inspectors are required to attend safety classes presented by Troxler or equivalent. The inspector(s) must have all qualifications before reporting to duty.

The inspector **is required** be on the project’s job site at any time construction work is being completed. The inspector is required to create Daily Inspection Reports(DIRs).

### **Daily Inspection Reports**

Inspectors are required to create [Daily Inspection Reports](#) (DIRs) and shall use the form provided as an attachment to this chapter, unless otherwise approved by KYTC. An [example](#) DIR is also provided as an attachment.

The DIRs shall include the following information:

- Contractor’s operations
- Equipment used
- Personnel on site
- DBE utilization
- Measurement of completed bid items
- Materials Tests, along with location of tested materials
- Traffic control items

If the DIRs show any deviation from the design plans, proposal (or other bidding document) or the Standard Specifications for Road and Bridge Construction (“Spec Book”), these deviations should be discussed with the contractor and remedied. Any changes must be approved by KYTC.

### **DBE Utilization**

As part of the DIRs the inspector is asked to verify that any DBEs working on the project are performing a commercially useful function and are participating adequately for the payments to them to count towards the DBE goal. This may require interviewing DBE employees, confirming the ownership of the DBE equipment, and determining the origin of goods supplied by the DBEs. If the inspector has any concerns regarding whether the DBEs are providing a commercially useful function, he/she must contact the LPA immediately so that the LPA can work with KYTC to resolve the problem without risking the LPAs reimbursement. The inspector is required to give a copy of all Daily Inspection Reports to the LPA. The LPA is required to retain the reports for 3 years as they may be

reviewed by auditors or analyzed by the KYTC Office of Civil Rights and Small Business Development to ensure that the commercially useful function reviews were adequately performed.

#### Materials Testing

The project inspector is also responsible for materials testing. Materials test reports shall correlate with the specific bid items, the DIRs, and the trip ticket information. Materials tests shall be in compliance with the [KYTC Materials Field Sampling Manual](#). The requirements for materials used on most projects are found in the [KYTC Standard Specifications](#). If the project's materials are not addressed in the Spec Book, they must meet some other standard set by a reputable source, as agreed upon by the LPA and the Administering Office. These standards should be included in the Bid Proposal discussed in **Chapter VIII**. The inspector must test the materials according to the testing requirements indicated in the Spec Book and the Materials Field Sampling Manual. The LPA shall be provided with material certification which will provide sufficient information to determine that the materials incorporated into the project meet the contract specification requirements.

#### Contractor Payments

The reporting of contractor operations and measurement of completed bid items included in DIRs will help the Inspector/LPA determine whether certain phases of construction required for progress payments have been completed. The LPA is required to promptly pay the contractor for work completed as these milestones are met. The contract between the LPA and the contractor must not allow for withholding retainage on Federal-aid projects. A retainage is the withholding of a portion of each progress payment earned by a contractor or subcontractor until a construction project is complete. Retainage is calculated as a percentage of each progress payment, typically 5% to 10% of the payment. Because the full amount of the progress payment due at the milestone is not paid, such a retainage does not comply with the requirement that the LPA promptly pay the contractor for the work completed. The LPA is permitted, however, to include a bid item for demobilization, up to 1½ % of the total project price, to compensate the contractor after it has finished removing all equipment from the project site, cleaning up the project site, and completing the Punch List as discussed in the following section.

### **IX. 4 Change Orders**

Sometimes unexpected things happen or are discovered during construction of a project that require a change in the project plans. If this occurs, the LPA must submit a formal request for “change order” approval to its Administering Office. There are currently separate change order forms for OLP-Administered projects and District-Administered projects, provided, respectively, at the links below and as attachments to this chapter.

- [OLP-Administered](#)
- [District Administered](#)

No work may be done on the change order until KYTC provides the LPA with written approval.

Supporting documentation clearly justifying the change order must accompany the change order form. If the change order relates to a time extension it must indicate how the extension will affect the project's schedule. The LPA may be required to prepare an independent estimate to ensure that the proposed change order prices are fair and reasonable.

FHWA's "Change Orders" Video:

<http://www.fhwa.dot.gov/federal-aidessentials/catmod.cfm?id=4>

The Administering Office will review the change order to ensure that the change is truly unforeseen, within the original scope of the project, in accordance with all construction and design requirements, and that the redistribution of the allocated funds is acceptable<sup>2</sup>. The Administering Office will then route the request for the appropriate KYTC approvals. No work may be done on the change order until KYTC provides the LPA with written approval.

**The LPA must not assume that additional funds will be allocated above the amount of the project award. Cost overruns are the LPA's responsibility.**

#### **IX.5. Construction Plan Revision**

If there is a significant change in the plans, a construction plan revision may be required.

#### **IX.6. Final Inspection and Acceptance**

When the construction work is complete, the LPA must notify the Administering Office that the project is ready for final inspection. The appropriate KYTC representative(s), an LPA representative, the inspector, and the contractor should visit the project together and create a list of corrective work for the contractor to complete ("Punch List"). Once the contractor notifies the LPA that the Punch List is complete, the LPA should coordinate with the Administering Office to arrange to revisit the project site together to ensure that the Punch List changes were made. If the Punch List was properly addressed, the appropriate KYTC representative will certify that the project was constructed satisfactorily, and he/she will complete a [KYTC Formal Acceptance Report](#) ("Acceptance Report"). The template at the following web link should be used:

A copy of this form is provided as an attachment to this chapter.

The Administering Office will provide a copy of the Acceptance Report to the LPA.

Upon receipt of the Acceptance Report, the LPA may issue the Final Release Letter ("Release") for the contractor's signature. A list of final quantities and work will be attached. If the contractor agrees with the statements in the Release, he/she will sign the letter. The LPA cannot issue the final payment to the contractor without a signed release from the contractor. The LPA must submit the Acceptance Report and the signed Release to the Administering Office.

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<sup>2</sup> 23 CFR § 635.121