

XIII. Construction

Overview. Construction of a project is another step in construction management. The construction step generally covers both the implementation (building of) the project and the managing/monitoring of the construction work, starting from the first day of construction all the way through final acceptance of the project. The role of the Tribe is to ensure that the project is constructed according to the plans, specifications and estimates (PS&E). When establishing a contract with a construction contractor or a private consultant, the Tribe follows its written procurement policies.

Tribes have three options for constructing a project:

- 1. Force Account.** The Tribe implements (builds) the construction project using employees of the Tribe. This is also known as “in-house” construction. If doing the project in this manner, the Tribe should complete an independent in-house cost analysis to compare to the engineers estimate that accompanies the PS&E. This is to ensure the reasonability of the anticipated cost and accuracy of the engineers estimate.

Part of the purpose of the Tribal Transportation Program (TTP) is to contribute to “...employment of Indians and Alaska Natives.” FHWA, therefore, encourages Indian and Alaska Native employment in any and all aspects of project construction. The management and monitoring of the construction may also be done by qualified employees of the Tribe.

- 2. Contracted or Project Agreement.** The Tribe contracts out the construction of the project. Even though the project will be constructed by a contractor, the project work still needs to be managed and monitored by a construction manager and inspectors. To do this, a Tribe may use its own qualified employees, or hire a consultant, or use a Federal agency (FLH, BIA or others) through a Project Agreement.

Under the authority prescribed in 23 U.S.C. 202, a Tribal government may request a Federal agency, such as BIA, FHWA Federal Lands Highway (FLH) and others, to perform all or parts of TTP project planning, preliminary engineering, and construction management and inspection. If so requested, the Federal agency may execute individual Project Agreements with Tribal governments to perform any or all project development activities if TTP funds are used. The Tribe fills out a Tribal Request for Services form as the first step (see [Exhibit 11.4 - Tribal Request for Services form](#)).

- 1. Combination.** The Tribe performs some construction and monitoring activities while hiring out (with a contract or project agreement) the other activities. For example, a Tribe could use its own force account crews to perform the construction work, but contract a consultant (or utilize a Federal agency) to manage the construction. Construction inspection could be performed by qualified and trained Tribal employees, or by a consultant through a contract, or by a Federal Agency agency (FLH, BIA or others) through a Project Agreement.

Construction equipment for Force Account Projects. Construction equipment, to be used for constructing a TTP project with Force Account crews, can be leased, rented, or purchased (25 CFR 170 Appendix A to Subpart B). Construction equipment can be purchased using TTP funds only after the Tribe provides the FLH Director of the Office of Tribal Transportation Program with written notice and a written “cost analysis” (49 CFR 18.36) showing that it is more economical to purchase than lease. Use the form shown in [Exhibit 14.1 - Equipment Acquisition Request Form](#) to document the cost analysis. The cost limit shown in Item 3 of this form does not apply to equipment to be purchased for force account

construction of a TTP project. Construction equipment cannot be purchased with TTP funds unless specific approval is granted in writing by the FLH Director of the Office of Tribal Transportation Program.

A. Statutory/Regulatory Requirements

- All construction and construction monitoring is governed under 25 CFR 170.470 - 170.474.
- The Tribe must meet applicable labor standards in accordance with Mine Safety and Health Administration (MSHA) regulations found in 30 CFR 1 - 199, Mineral Resources, developed pursuant to the Federal Mine Safety and Health Act of 1977 (PL 91-173) as amended, and in accordance with the Occupational Safety and Health Administration (OSHA) regulations found in 29 CFR 1900, Labor - Construction Standards, developed pursuant to the Occupational Safety and Health Act of 1970 (PL 91-596) as amended.
- With respect to Indian Employment Preference/Tribal Preference/TERO, please see 25 CFR 170.910 - 25 CFR 170.917 for further information in these areas.

B. Guidelines / Procedures.

The following are recommended procedures, regardless of whether the construction project is being built by a construction contractor or by the Tribe's own force account crews. These procedures should also be used by Tribal employees, consultants or Federal agencies (BIA, FLH or others) if they are managing or monitoring the construction. The Tribal On-site Representative's (TOSR) position should be established and duties described herein carried out regardless of whether the project is being constructed by Tribal force account crews or by a contractor.

- 1. Documentation.** The need for an accurate and detailed documentation and monitoring of construction projects cannot be over emphasized. Documentation plays a major role in every construction project. Information must be collected and stored to serve as a reference or evidential material.

Documentation may be different depending on the option the Tribe chooses in implementing and overseeing the construction activities. For example, if the Tribe chooses to have a consultant, BIA, or FHWA implement and oversee the construction activities, these entities may have their own tested documentation processes already in place. Whereas if the Tribe chooses to implement and oversee the construction activities in house, the Tribe may need assistance on what and how to document all the activities taking place on a construction project. Below is a website where a Tribe can obtain forms used by WFL. These forms can be modified and simplified to fit the complexity of the construction project.

<http://www.wfl.fhwa.dot.gov/resources/construction/forms/contractor-forms.htm>

Documentation covers the collection of information from the pre-construction stage through the construction stage. Documentation is intended to be used as a record for looking up facts, definitions or other information relating to activities or work performed in a construction project.

Documentation should serve in resolving disputes and supporting contractual claims. This calls for a detailed and accurate collection and recording of construction information. The documents contained in a file will almost certainly affect the outcome of a dispute. When the construction documents are complete, they are subject to code and legal reviews. Accurate and detailed project documentation also establishes either the validity or unsustainability, of a contractual claim.

Documentation is necessary to record construction activities and results, in order to provide adequate evidence of compliance with laws, regulations, codes, PS&E requirements. Documentation also supports funding used in constructing the project.

Below are some suggested basic rules for good documentation for the construction procedures.

a. Rules for Data Entry

- Signature and Initials logs, that list the printed name, title, and the written signature and initials used by each person who is authorized to make or authenticate entries, will be prepared and maintained in the construction field book, when used, or in the file cabinet for that construction activity. Copies of this log, along with original signatures and initials added, are acceptable.
- Entries must be legible, clear, and reproducible.
- Errors will be corrected by lining through the incorrect entry with a single line, making the correction, and initialing and dating the correction. The erroneous information must not be obliterated or erased.
- When entries for a given subject are made on two or more pages or separate records that are not consecutive, each page or record must be cross-referenced to the previous and the following entries.
- When a page has entries from more than one day, each entry shall be signed or initialed and dated.
- The balance of that section of the document shall be crossed out immediately below the last entry.
- Pages to documents shall not be left completely blank. If a page must be left blank, it must be ruled across, signed, and dated.

b. Completeness and Correction of Incorrect Information

- The person who monitored or recorded the activity must identify the construction site, provide the date the activity was monitored or observed, and sign (or initial if the initials are identified on a signature/initials log) each page of the document recording a construction activity.
- Record accurately and concisely all data as required by procedures for the activity being performed.
- Record all significant and relevant field activity on the construction field inspection log; account for each work day, noting any work suspension and restarts.
- Describe the activity with enough detail to enable someone of equivalent skill and experience to understand and be informed as to what occurred or was recorded.
- All documentation shall be kept intact; no page is to be partially removed.
- Documents requiring replacement because of illegible handwriting, incompleteness, or inaccuracies will be voided and a replacement prepared. A notation will be made on the voided document indicating that a replacement document was completed along with the initials and date of the person making the void notation. The voided document will be filed immediately following the replacement document.
- When a document contains information on more than one activity or project, reproducible copies may be designated and controlled as records for the other activities.

c. Recording Construction Activities

- Use still or digital photographic images and narrated video camera recording to enhance all written documentation from preexisting site conditions to final inspections.
- The Construction Field Inspection Log or other line management approved form should provide a documented factual record of the work performed each day, as well as:
 - All changes that might affect cost and schedule.
 - Major project status changes.
 - All directions or clarifications.
 - Personnel accidents or injuries, safety infractions, and corrections.
 - Safety meetings held on site.
 - Names of visitors to the site.
 - Conditions and actions in response to Subcontractor violations.
 - Significant events, such as unexpected power outages, severe weather occurrences, or spills of hazardous materials (residual radioactive material, hazardous waste, hazardous substance).
 - Construction inspections and quality control tests performed. Include time of tests and inspections and results.
 - Implementation of the applicable emergency plan.
 - Security incidents.
 - Applicable equipment parameters, including out-of-tolerance readings.
 - Nonconformance reports.
 - Signatures that acknowledge notifications or changes in construction activities.
 - Positive actions that resulted in significant savings, quality improvements, lessons learned, etc.
 - Hours worked.
 - Equipment on-site and used.
 - Weather.
 - Other pertinent information as determined by the project manager.
- The Site Supervisor should:
 - Document events as completely as possible and communicate information as clearly as possible to maximize understanding by individuals reading the Construction Field Inspection Log.
 - Record information promptly to avoid inaccuracy or incompleteness that often results from delayed entries.
 - Enter unusual, abnormal, or unexpected conditions in the appropriate record, and resolve these conditions in accordance with project management's guidance.

2. Project Management and Monitoring.

- a. Pre-Construction Conference and Walk Through/Photographs.** Prior to beginning any construction project, the Tribe should hold a pre-construction conference with the construction contractor, any force account Tribal employees working on the project, any consultant or Federal Agency personnel serving as project managers or inspectors, the FHWA or BIA Tribal Coordinator, and other key stakeholders. The purpose of the conference is to discuss, review, and reinforce the plans and specifications for the project, any unusual conditions, the construction contractor's plan and schedule of operation, type and adequacy of equipment, labor requirements, equal employment opportunity requirement, Tribal

Employment Rights Ordinance (TERO), maintenance of traffic, requirements for traffic control, the construction contractor's responsibilities for accident prevention, material sources and testing requirements, subcontracting requirements, required submissions, and any other pertinent items which would result in a better job understanding.

It is recommended that the Tribe, the construction contractor, and any consultant or Federal Agency personnel hired to manage the project, walk through the project and take photographs prior to beginning construction. Additional photographs of the project should be taken during construction to document the progress of the project until completion and final inspection.

- b. Submittal Review.** Prior to beginning work on a construction project, the construction contractor (or the project manager of force account construction) should begin submitting documentation for materials that are intended for use on the project. A log of all of the construction contractor's submittals, or force account work records, should be maintained through the duration of the project including:
- payrolls,
 - material certifications,
 - test reports, and
 - other routine items.
- c. Construction Project File Set-up.** Key to any construction is to establish and maintain an organized filing system. Documentation is important for proper accountability purposes.
- i. **Tribal On-site Representative's (TOSR) Daily Diaries.** The TOSR should maintain project diaries documenting construction operations, progress, meetings, telephone conversations, and problems encountered. Daily entries, with signature should be made. If the TOSR is absent from the project, the daily entries should be made and signed by the person left in charge during their absence.
 - ii. **Inspector's Daily Reports.** The project inspector(s) should prepare a daily report that fully documents the construction contractor's (or force account crew's) construction operations and pay quantities. The TOSR should review and sign the daily report. The TOSR should establish a process for reviewing, endorsing, and providing feedback as necessary, on construction contractor produced records.
 - iii. **Construction Daily Reports.** It is recommended that the Tribe require the construction contractor (or force account crews, if being used) to maintain daily records of equipment, personnel, and construction operations. If required by the contract, the construction contractor's daily reports should be contractually required to be furnished to the Tribal Contracting Officers representative within 24 hours following the reporting period.
 - iv. **Project Files.** The TOSR should establish a uniform filing system for use in construction field offices. Establishing and maintaining this system will ensure compliance with 25 CFR 472, which states that project records have to be maintained properly and be readily available when needed.
- d. Inspection.** An important part of construction monitoring is completing project-level inspections. An on-site review is required to evaluate project activities and the quality and progress of the work. The following are several types of inspections.

- i. **Work Site Safety, Worker Safety, and Work Zone Traffic Control.** The TOSR is responsible for ensuring that day-to-day project inspections are carried out during construction. The inspections should include a review of project safety.

As part of the daily inspections, the Tribe should complete a Work Zone Traffic Control inspection to assure compliance with the approved project standards. An example of a Traffic Control Report (see link below) for these inspections that may be modified to meet project requirements is located at:

<http://www.wfl.fhwa.dot.gov/resources/construction/forms/contractor-forms.htm>

A Safety Checklist (see [Exhibit 13.2 – Safety Checklist](#)) is also included for reference to assist the TOSR. This checklist identifies critical elements of work zone traffic safety and OSHA conditions that should be checked during an inspection. The checklist should be completed by the Tribe at least once during each construction season for that particular project. The checklist was developed to minimize subjective reporting and to help determine if the construction contractor's safety plan and policy, plus the approved traffic control plan are being followed throughout the duration of the project. Upon request of the Tribe, an FLH representative may be available to take part in the safety review.

If the TOSR becomes aware of any unsafe condition resulting from the construction contractor's action or inaction or a possible violation of either OSHA standards or reasonable standards of construction safety practice, the construction contractor must be immediately notified verbally, and followed up with written notice documenting the deficiency. The Tribe should be involved in this process and should be copied on any correspondence regarding safety issues.

- ii. **Construction Standards.** Quality Assurance/Quality Control (QA/QC) must be performed on all projects. The TOSR should oversee the activities of the construction contractor and monitor their work to ensure compliance with plans and specifications. WFL has examples of forms to aid in monitoring and documenting the construction contractor's work. See this link:
<http://www.wfl.fhwa.dot.gov/resources/construction/forms/contractor-forms.htm>
- iii. **Materials.** Construction administration and quality control by the construction contractor and quality assurance by the Tribe should include continuous on-site inspections throughout construction, by competent, technically qualified, and experienced inspectors.

The TOSR should ensure that all materials being incorporated into the project conform to contract requirements. At a minimum, this work should include:

- Confirming that construction contractor sampling/testing is performed in accordance with the sampling/testing frequencies stipulated in the contract and project specifications.
- Ensuring that the construction contractor's testing company maintains properly calibrated equipment and qualified personnel to perform the required work.
- Maintaining all materials test results and documents for project records. It is recommended that records of all failing test results be supplemented with a follow-up

passing test result. Any reporting discrepancies; i.e., errors, omissions, or conflicts, should be corrected and documented properly.

- Receiving and maintaining materials certifications for all manufactured/non-tested materials incorporated into the project.
- Sampling and Testing – Ensuring that all test samples are taken in accordance with the approved project standards and contract requirements, and that they are sent to the testing company for verification testing and analysis. The tribe should have independent testing done in addition to what the contractor is performing to verify the construction contractor's results. The construction contractor's testing is for quality control and should be reviewed and overseen by the Tribe or their agent.

WFL has examples of forms to aid the Tribe in continuous on-site inspections and documentation throughout the construction project. See this link:

<http://www.wfl.fhwa.dot.gov/resources/construction/forms/contractor-forms.htm>

- iv. **Quantity Measurements.** Before any measurements are taken on a project, the TOSR should study the plans, specifications, and special contract requirements to determine what is to be measured and how the measurement will be completed.
- v. **Sediment and Erosion Control Inspections.** The TOSR should ensure that the construction contractor provides permanent and temporary erosion control measures in accordance with the approved erosion control plan, to minimize erosion and sedimentation during and after construction. It is recommended that inspections be carried out at least weekly and/or after significant rain events. Some permits required for construction may specify certain inspection, monitoring, and reporting requirements. It is the Tribe's responsibility to see that these permit requirements are met.
- e. **Construction Schedule Review.** If specified in the contract, a construction contractor must submit a construction schedule to the TOSR. This construction schedule represents the sequence in which the construction contractor plans to perform the contract work. The TOSR should review the schedule and work with the construction contractor to verify that the construction schedule generally represents the activities that logically occur during the completion of the construction project. Updates to the construction schedule should be submitted according to requirements set out in the Tribal policy. It is recommended that a construction schedule should also be prepared by the Tribe (or consultant/Federal agency used by the Tribe) for projects being constructed with Tribal force account crews.
- f. **Progress Payments.** The payment and invoice process, as well as the construction contractor's obligations, should be emphasized at the preconstruction conference. The construction contractor should understand the negative impacts that could result from failure to provide required materials and documentation, test reports, and/or certifications. The requirements for the processing of progress payments that are included in the contract should be reviewed in detail as well.
- g. **Contract Modifications.** Only the Professional Engineer of record may change a TTP project's PS&E during construction. This requirement applies regardless of whether the project is being built by a construction contractor or by Tribal force account crews.

Substantial changes to a construction contract should only be completed in coordination with the Tribe and the facility owner. Records of the approved change orders, along with documentation of the work involved, such as photographs, diaries, daily reports, costs, and time must be maintained by the TOSR to assist in determining final costs and liability.

- h. Project Progress Meetings.** The TOSR should hold regularly scheduled meetings with the construction contractor's superintendent or representative to discuss the construction contractor's work progress, future plan, schedule of work, and any problems arising on the project. The frequency of the meetings should be determined by the complexity of the project.
- i. Weekly/Monthly Status Reports.** The TOSR should keep the Tribe and facility owner aware of the current state of the project by submitting a project status report to them on a regular basis.
- j. Construction Project Reviews.** In accordance with Section 1(F)(4) of Article III in the Program Agreement, FHWA Tribal Coordinator has the opportunity to visit project sites on a monthly basis or at critical project milestones. This visit may also be carried out by a mutually agreed upon delegated representative as well. FHWA Tribal Coordinator will give the Tribe reasonable advance written notice of inspection. For BIA lands, the BIA will be invited to attend. These visits are intended to allow FHWA, through the Tribal Coordinator, to carry out its oversight and stewardship responsibilities for the TTP Program or project(s) assumed by the Tribe.

A Construction Project Review will be completed during the visit and discussed/reviewed with the TOSR. The FHWA Tribal Coordinator will document the review using the [Project Monitoring Checklist \(see Appendix A - Exhibit 13.1\)](#) and the [Construction Inspection Report \(see Appendix A - Exhibit 13.3\)](#). FHWA Tribal Coordinator will not provide direction or instruction to the Tribe's construction contractor or any subcontractor, or Tribal force account crews, at any time. If a problem is discovered during an on-site monitoring visit, FHWA Tribal Coordinator will promptly notify the TOSR and, if asked, provide technical assistance.

For a BIA facility ownership, the FHWA Tribal Coordinator will invite a BIA representative to attend interim project reviews if not already invited.

k. Final Inspection, Project Acceptance, and Project Closeout and Report.

- i. Final Inspection.** A final inspection is conducted to determine whether the project has been completed in reasonable conformity with the PS&E.

The final inspection should be conducted within 30 days of the completion of all contract activities submittal or completion of force account construction.

The TOSR should schedule the final inspection so that officials from the Tribe, facility owner (i.e., BIA), and FHWA are able to participate, as well as the construction contractor and maintenance personnel. For a BIA owned facility, the BIA should also attend the final inspection.

The Tribe shall provide a construction report that accounts for the funds expended to date on the project, as well as the as-built plans to the facility owner and the FHWA Tribal Coordinator for final inspection. In addition, all project information must be made available during the final inspection. Examples of project information include:

- Daily diaries
- Weekly progress reports
- Monthly Narrative progress reports
- Subcontracts
- Subcontract expenditures
- Salaries
- Equipment expenditures
- As-built drawings
- Material Certifications/ testing reports
- Contract modifications
- Etc.

Final inspection review forms (See Appendix A - [Exhibit 13.1 – Project Monitoring Checklist](#) and [Exhibit 13.3 - Construction Inspection Report](#)) will be completed by an FHWA Tribal Coordinator representative in company with the TOSR. If a BIA owned facility, the BIA representative will also participate in completing the Construction Inspection Report.

Once completed, the Construction Inspection Report will be forwarded to the Tribe for review and consideration.

- ii. **Project Acceptance.** Before the project can be closed out, certain documents and processes must be completed. The items must be included as completed in the close-out report. Items in support of the final project acceptance may include:
 - Final Contract Modification (CM) – Actual final item quantities often vary from the original contract item quantities and as a result, a final CM may be required in order to close out the contract. The final CM will change the item quantities to match the actual amounts incorporated into the project. This work should be carried out by the TOSR.
 - The Final Estimate – The final estimate should account for all final quantities, a time count, and any assessment of liquidated damages. The final amount of the contract should also be identified.
 - Claims – It is recommended that the Tribe, the facility owner (BIA if owner of the facility), and the construction contractor address and resolve any pending claims, which pertain to the contract as part of the close-out process.
 - The Tribe should receive and maintain all project records. The records should include certifications showing that all of the materials used on the project were in conformance with project specifications. The U.S. Department of Transportation recommends that project records be maintained for at least 10 years.
 - Verify completion and/or status of environmental commitments.

Once the final inspection is documented and any issues completed and documentation which supports all activities of the project is completed, a Letter of Acceptance (See Appendix A - [Exhibit 13.4 – Final Letter of Acceptance](#)) shall be developed by the Tribe. (For a BIA owned facility, the BIA will write a Letter of Acceptance to the Tribe, with a copy to FHWA, once accepted by the BIA (see Appendix A - [Exhibit 13.5 – Final Letter of Acceptance for BIA Owned Facility](#)). The Tribe will then send a Letter of Acceptance to the Contractor, if applicable). This letter is a formal acceptance document in which the Tribe and the BIA (if BIA owns the facility) accept and acknowledge that the project has been developed as requested or in accordance with the contract document. This releases the construction contractor of any further responsibilities of the project.

The Letter of Acceptance is provided to the construction contractor and a courtesy copy is also given to the facility owner and the FHWA Tribal Coordinator.

- iii. **Project Closeout and Report.** After final inspection, completion of any required corrections, and project final acceptance by the Tribe and the facility owner, the Tribe must submit a final project closeout report to FHWA Tribal Coordinator and the facility owner (BIA if facility owner).

The project closeout report is the final accounting of all construction project expenditures and is the closing of the financial books for the construction project.

The closeout documents and report are typically generated by the TOSR.

The report should be completed within 120 calendar days (4-months) of the date of project acceptance.

The final close out report should consist of:

- A summary of the construction project records to ensure compliance requirements have been met,
- Review of the bid item quantities and expenditures to ensure reasonable conformance with the PS&E and contract modifications,
- Final as-built plans,
- Photographs,
- Change orders,
- FHWA Final Inspection report, and
- Acceptance letter

All project information made available during final inspection per 25 CFR 472-474 can also be used to develop the TTP construction project closeout report.

Once the project is complete the Tribe must update the National Tribal Transportation Facility Inventory to reflect any changes and submit cost to construct detail sheets to the BIADOT.

C. Resources.

- FHWA Construction website at <http://www.fhwa.dot.gov/construction/>
- FLH Construction Manual at <http://flh.fhwa.dot.gov/resources/manuals/cm/>