

CHAPTER 2 - RECORDS AND REPORTS

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2-1 GENERAL

This chapter provides a basic outline for record preparation and report requirements for a typical construction project. Additional reports may be considered necessary for the proper administration of projects with unique features, or to satisfy Division specific needs.

A uniform filing system should be established by each Division and used in the construction field offices. Uniformity in filing will simplify the training of field office personnel and reduce training time upon reassignment to other projects. A uniform filing system will help other FLH personnel who have need to review or check project files.

Project records must be maintained properly and be readily available when needed. Much reporting is done with standard forms. Many of the more common forms are listed and their uses described throughout this manual. Some forms are made mandatory by the Federal Acquisition Regulation (FAR). Special forms to meet special needs may be developed by the Project Engineer. A list of available forms should be available from the Federal Lands Division office. This list should include the form number, title or purpose, frequency of submission, distribution, and number of copies.

Instructions for record preparation and reporting by the Project Engineer are also included in the FLH Field Materials Manual, and in Division administrative and technical manuals.

2-2 CORRESPONDENCE

All correspondence, including reports originating from the Project Engineer's office, should be signed or initialed by the Project Engineer, or the acting Project Engineer.

The Contractor and others who may need to correspond regarding the Project, should be advised of the FLH names and addresses with whom we prefer they correspond. The Project Engineer will forward to Division files through the Construction Operations Engineer (COE) copies of all incoming or outgoing correspondence, and retain a copy in the project office files. Correspondence covering matters outside the authority of the Project Engineer should be noted for the Construction Operations Engineer's action. Copies of correspondence to State or county highway agencies should be furnished to the appropriate FHWA Division Administrator.

The Project Engineer should maintain a complete list of contacts related to the project - name, agency or company, phone and FAX number, relationship to project. This list will expedite appropriate communication of project problems and assist new personnel assigned to the project.

The handling of Contractor submittals, payrolls, test reports and other non-correspondence items should be in accordance with Division policy as to whether copies are required for central files or Division technical specialists.

2-3 PROJECT DIARIES AND INSPECTOR'S DAILY REPORTS (IDR'S)

2-3.1 Project Diaries

It is mandatory that diary records be kept for each project and filed with other records when the project is complete.

These diaries may include but are not necessarily limited to the following:

Engineer's (Project) Diary
Staking Diary
Inspector's Diary (or IDR)
Erosion Control Diary
Materials Diary
Traffic Control Diary

The Project Engineer shall maintain diaries which contain appropriately signed daily entries. If the Engineer is absent from the project, daily entries shall be made and signed by the person in charge during the absence.

Diaries are most important. Diary entries should be factual, concise, complete, and legible. Entries should avoid vague generalizations like, "Contractor operations remain inefficient." State why they are inefficient and how long they have been that way. If there is a dispute in, say, interpretation of the specifications, try to express both [Government's and Contractor's] points of view. When a decision is made, or agreement reached on further action, state what the outcome was. If no agreement was reached, state what instructions were given to the Contractor. If an opinion is included, identify as an opinion, not fact.

It is intended that information recorded in the diaries and/or on the Inspector's Daily Report be of sufficient detail so that the events can be reconstructed later as they actually happened. On projects where the Contractor is required to maintain records of equipment, personnel and construction operations, it is not intended that FLH personnel duplicate those records. However, the Project Engineer should establish a process of reviewing, endorsing, and providing

feedback as necessary, on Contractor produced records.

All diary entries should be in permanent ink. Diaries may be kept in either bound books or books featuring paper that will provide a duplicate copy if desired. The Project Engineer may find a voice recorder helpful, either for recording notes to be used at the end of the day in making diary entries, or for recording events which can later be transcribed into the diary and signed by the Project Engineer. It may be helpful to file certain tapes regarding claims and disputes in addition to the transcription. If this occurs, there should be a notation in the diary or in the transcription.

The use of a computer or word processor to generate the diary is permissible, provided that a hard copy is generated, signed and filed at the end of each daily entry. In the event of a dispute and litigation, it is important to clearly establish who made the entry, and when it was made.

Federal Regulations generally allow inspection of public records, such as FLH diaries, by the Contractor and even the general public. Certainly, all entries should be made as if they will eventually be seen by the Contractor and others involved in the Contract. Requests to inspect diaries or other records should be referred to the COE. Depending on the circumstances and Division procedures, the COE may authorize inspection and copying limited records in the project office; or the requester may be required to make a written request to the Division pursuant to the Freedom of Information Act (FOIA). Of particular concern however, are requests by a subcontractor or contractor which is in a dispute with another subcontractor or contractor. FLH may be obligated to protect privacy type information provided by a company doing business with the Government.

Unless otherwise directed, field measurements and notes for documenting monthly progress estimate quantities should not be recorded in the project diary.

Diaries should be considered an official government document and must be turned in with other project records at the conclusion of a project. This is also applicable to any retained voice recordings.

Daily entries for each type of diary should include the following as appropriate for each diary, plus any additional pertinent information:

- Date and weather conditions.
- Work of Project Engineer.
- Work of inspectors and/or project staff.
- Names of visitors to the project
- Construction work in progress, unless otherwise covered by **Inspectors Daily Reports (IDR's)**. See **Subsection 2-3.2**. At a minimum, this should include a list of the equipment and labor force being used on each construction activity, where and what the activity is.
- Comments on the progress of operations as compared to the Contractor's approved schedule.
- The substance of important conversations with the Contractor concerning conduct, progress, changes, interpretation of specifications, or other details.
- Comments on construction safety hazards and corrective measures.
- Discussion of erosion control and other environmental concerns as appropriate.
- Information concerning accidents occurring on the project or incidental to the construction work.
- Comments on traffic control and signing.
- Any information not covered in other

notebooks that might have a bearing in case of future disagreement, such as difficulties encountered in construction and their causes, delays caused by breakdowns of equipment, comments relative to improper use of equipment reflecting inefficient operations by the Contractor, etc.

The best record will be produced by the Project Engineer who looks ahead at potential problems, and prepares for those problems. Such a record would include diary notes on equipment or material moved to the project for use, subsequent actual use; pertinent conversations; and preparatory or production work on items that may be deleted or reduced. The record would, of course, not be limited to this information. It would include anything considered likely to be helpful in determining a fair amount of compensation.

2-3.2 Inspector's Daily Report (IDR)

The project staff should fully document the Contractor's construction operations. The **Inspector's Daily Record of Construction Operations**, (See **Figure 2-3**) may be used. This form will provide a concise, readily retrievable record of equipment, time, and work hours for each significant construction operation underway. The record will facilitate verification of the Contractor's cost in connection with any equitable adjustments or claims.

IDR's may be used to document quantities in accordance with Division procedures. Such procedures should include the following:

- It should be clear whether documentation is for progress payment purposes only, or both progress and final payment.
- All quantities entries should be stamped or otherwise noted to indicate posting to the Summary Book.
- Procedures should address how partially completed work will be documented and

the documentation finalized when the work is ultimately completed.

- Procedures should provide reasonable fail-safes against duplicate entries or other confusion resulting from multiple inspectors and documentation styles.

2-4 FIELD NOTE BOOKS AND COMPUTATIONS

2-4.1 General

Quantities should be documented in accordance with the Contract requirements and Division procedures. See **Chapter 8, Measurement and Payment**.

The number and content of field notebooks and computation documentation depends upon the type of construction involved. Each Federal Lands field Division will issue instructions or guidelines for standard notes and methods of computations.

When field notes and computations are recorded in loose-leaf books, care must be exercised to prevent the possibility of pages becoming lost. Notes must be recorded neatly, clearly, uncrowded, and in sufficient detail to be easily understood. Too much detail is better than too little.

Original entries, later determined to be in error or no longer applicable, should not be erased. A line should be drawn through them and the correction or explanation entered directly above. When revisions require the abandonment of a considerable portion of the notes, these should be crossed out and a notation made of the book and page number where the revised notes may be found.

Each book should have all pages numbered, and there should be an index of its contents on the first page. Field notebooks should show the date, weather conditions, and personnel at the beginning of each day's notes. Computations should show the date, and the names of the persons who made and checked the computations.

When records are required to be kept by Contractor personnel, the Project Engineer should go over the required format, timeliness, etc.; and provide constructive feedback to the Contractor if the records are deficient.

The project records should include a tabulation of the names, signatures, and initials of all FLH, CI, and Contractor personnel whose names or initials will appear in source records such as ticket books, survey notes, or test reports. All notebooks and other records shall be plainly marked for identification showing State, project number, contents of the book, and the date(s).

2-4.2 Field Notes

Field note books are used as source documentation for work which necessitates field measurement, stakeout or verification. Listed below are some of the field note books generally required on construction. Notes for small quantity items should be combined, insofar as practicable, in one or more *Miscellaneous* books.

- Diaries
- Surveying and Stakeout Books
- Deliveries and Stockpiled Materials
- Bituminous Materials
- Concrete Production
- Structures (Major structures should each have a separate book.)
- Culverts and Drainage Structures
- Piling
- Grade Control and Computations
- Miscellaneous Excavation and Subexcavation
- Erosion Control
- Traffic Control
- Utilities
- Topsoil and Turf Establishment

- Miscellaneous Items

2-4.3 Computations and Summary Book

Field notes and measurements are converted to quantities for progress payments by the computations required or implied in the Contract. For simple items the computations may be included in the field book.

For complex items it may be necessary to use a computer spreadsheet or preformatted software, e.g. for cross section computations, as an intermittent step between the field notes or measurements and the summary book totals.

The term *Summary Book* used in this manual refers to documentation which computes and summarizes field notes and measurements, as well as information from the plans, into quantity totals for entry in the Receiving Report to be used for progress and final payment. In the past, the summary book was prepared as a field book with manual entries, totals, etc. However, with today's use of computers, the summary book is more commonly a collection of spreadsheets - usually one for each item - which provide a format for tabulating and totaling the quantities to be paid on progress and final payments.

When computer files are used to compute and tabulate quantities, it is recommended that a printout of the summary for each item active during the month be printed out to be a part of the documentation for that estimate period; or other acceptable backup or file retention system be used to minimize reconstruction of computations which would be necessary in the event of a hard drive failure or other catastrophe.

2-5 MATERIALS RECORDS

The Project Engineer is responsible for records and reports of materials used in the construction. The details of these requirements are discussed in the *FLH Field Materials Manual*.

2-6 PHOTOGRAPHS

Photographs are an important part of the project records. They serve to document the record with respect to slides, cave-ins, floods, and other unusual occurrences; actual conditions when a contractor alleges *Differing Site Conditions*; unusual construction features or practices; accidents involving death, personal injury or property damage; encroachments within the right-of-way; and other such occurrences and conditions. They are useful in illustrating reports on experimental features and unusual construction practices, final construction reports, and other reports. They are invaluable as evidence in case a controversy develops during the Contract which results in litigation. They are especially useful when a construction contract encompasses a long period of time, as much as 2 or 3 years. As memories fade and Project Engineers are transferred to other projects or retire, photographs provide direct evidence of the conditions that existed at the time the dispute arose. The old adage that "a picture is worth a thousand words" applies here.

In order to best serve the intended purpose, a photographic history of all construction projects should be made. Photographs should be taken of the construction site before construction begins, during each stage of construction as it progresses, and of the completed project. For example, during a project on which major excavation is to be accomplished, photographs should be taken on a regular basis (perhaps as often as once a week) to document progress made by the Contractor. Such photographs should be taken from the same location and the camera should be aimed at the same reference point in order that a person looking at the pictures can actually see the progress, or lack of progress, which was made by the Contractor during a certain period of time.

If a project is of sufficient length, several reference points should be chosen by the Project Engineer from which photographs can be taken during the course of a project. Special consideration should be given to those areas along the project length where experience has

shown that difficulties may be encountered. For example, if there are unusual rock formations that might be encountered as excavation progresses, that site should be chosen and photographs should be taken on a regular basis.

In addition to photographs taken from specified reference points on a regular basis, photographs also should be taken immediately after unusual occurrences and before unusual conditions are disturbed. The Project Engineer and all inspectors should have, or have easy access to a camera and film at all times during construction. The use of these resources should be emphasized by the Project Engineer.

Clarity and good composition are very important, and proper identification is necessary. In some cases, it would be appropriate to have an individual stand by the unusual condition in order that the relative size of the condition may be determined. The identification record for each photograph should include the location from which the picture was taken (including references to project stations if applicable), time of day and date taken, weather conditions at the scene, name and signature of photographer, and serial number of photograph and negative. In addition, the type of camera should be recorded. All this information is particularly important for photographs that may be used as evidence in legal proceedings.

The photograph identification record should be organized so that all photographs can be easily located, and should be maintained as a part of the project filing systems.

2-7 COST RECORDS AND REPORTS

As part of the monthly progress payment procedure, the Project Engineer should estimate the total expected quantity for each item - its *probable*. The Contract quantity may be used for each item initially, unless there is information to the contrary. Quantities are then updated based on best available information as the project progresses. The Project Engineer prepares the estimate of probables, consulting with the Construction Operations Engineer or designers as needed for computation factors and methods. The Project Engineer may wish to refer to design calculations for any item for which the amount estimated probable quantity is significantly different from the contract quantity.

Probable quantities translate to probable costs. If there is a significant net change to the contract amount due to changes in probable quantities Division procedures may compel the processing of a contract modification to obtain additional funding. This need must be anticipated as far in advance as possible to avoid surprises and *emergency* reprogramming of funds.

The Project Engineer should monitor records of construction engineering cost and maintain an estimate of the probable construction engineering cost to complete the project. Such estimates should be compared to the amount assigned to the project. Any significant difference should be discussed with the COE. The Project Engineer should consult with the financial office and/or with the COE for assistance in finding and interpreting Division financial records.

2-8 PERSONNEL, SUPPLIES, AND EQUIPMENT

Records and reports on personnel, supplies, and equipment are a necessary part of the administration of each project. Instructions relative to these can be found in the Administrative Procedures Manual, Operations Manual or other Division policy and procedure instructions.

2-9 PROJECT STATUS REPORTS

The Project Engineer is required to submit a status report of project activity monthly or otherwise in accordance with Division procedures.

Division procedures will specify the format. **Figure 2-9** is an **Example Project Status Report**. The Construction Operations Engineer will inform the Project Engineer of report distribution, such as to the National Park Service.

The Project Engineer should submit reports only when the project is active, unless other instructions are received from the Construction Operations Engineer. *Active* means some type of construction or construction engineering being managed by the Project Engineer is in progress, up to and including submission of the final construction records.

The Project Engineer may also wish to, or be directed to, prepare a weekly forecast of upcoming construction operations. This is mainly used on more visible, controversial projects to keep management, the cooperating agency, and the public (through the cooperating agency) well informed of project issues. It may be a computer updated newsletter or notice. Its function is to apprise all who have legitimate interest of expected traffic delays, intermediate completions, etc. The Construction Operations Engineer will be able to furnish examples of such reports.

2-10 PROGRESS CHART

The Project Engineer may consider maintaining a progress chart for each project to show the relationship between contract time and contract earnings, as well as to assist in monitoring the maintenance and updating of the *construction schedule* discussed in Chapter 7, which the Contractor is required to furnish under the provisions of the Federal Acquisition Regulation and the Standard Specifications.

The Project Engineer compares actual progress with the Contractor's proposed progress to determine the need for requesting revision of the construction schedule, and for taking other action determined appropriate, in consultation with the Construction Operations Engineer, such as withholding a portion of progress payments.

The relationship between money earned and progress is not expected to be linear throughout the project. It is often significantly skewed by high value items such as paving, and by seasonal weather constraints.

2-11 REPORT ON PARTIALLY COMPLETED PROJECT

When a project is inactive for the winter or other long period of time, or when the Project Engineer may retire or transfer, the Construction Operations Engineer may request a detailed project status report on the project. This should be a memorandum report containing a brief outline of the work done, work remaining, problems outstanding, and suggestions and ideas which might be helpful to a new Project Engineer unfamiliar with the project. Winter maintenance responsibility and anticipated activities might be described in such a report. Agency contacts should be identified.

Prior to temporary shutdowns or other discontinuity, it is also a good idea to prepare a status report for all pending CM's. This will be a useful reminder of issues that may need to be attended to, such as:

- Complete vs. incomplete work
- Submittals due from Contractor
- Pending negotiations relative to contract time or payment
- Documentation of effects on other work

2-12 CONTRACTOR PERFORMANCE EVALUATION

Regulations require a performance evaluation of most contractors. While there are certain exceptions, it is safe to assume one will be required for each highway construction contract. The Construction Engineer or other delegated contracting officer will make the official evaluation. The Project Engineer will furnish a recommendation. **Standard Form 1420, Performance Evaluation - Construction Contracts** can be used. See **Figure 2-12**. For that, the Project Engineer notes the recommended evaluation on a copy of the form and furnishes it to the Construction Operations Engineer who prepares the official evaluation. Alternatively, the Project Engineer and COE may meet to jointly prepare the evaluation.

The Project Engineer should be aware that if it is contemplated to rate a contractor's performance unsatisfactory, the project records should clearly support that rating; and the contractor should have been advised of the unsatisfactory performance during the course of the contract, and failed to correct such performance.

2-13 FINAL CONSTRUCTION REPORT

Final construction reports are required for all Federal Lands Highway projects. The Project Engineer may be required to draft final reports for assigned projects. He/she should check with the Construction Operations Engineer. The report is to be drafted within two months of agency acceptance of the construction project. For an **Example Final Construction Report**, see **Figure 2-13**. Whether the Project Engineer or Construction staff draft final reports, the directions below apply:

I. Project Description

- A. **Project Number** - Name of park, forest, Indian reservation, etc., route number, county, state, should all be included.
- B. **Description of Work** - Should be described in brief narrative form. The various activities that went into the job should be included. The description of work in the contract should be referenced for guidance.
- C. **Environmental Considerations** - Any extraordinary environmental considerations pertinent to the project should be described. All clearances and/or permits obtained for the project should be listed.

II. Project Data

- A. **Specifications** - The standard Federal or state specification that was the basis for project specifications should be included.
- B. **Termini** - The beginning and ending of the project should be described in terms of stations and/or other significant and reasonably precise information. For National Park Service projects, the Road Inventory Program (RIP)/Bridge Program (BIP)

Section(s) should be referenced.

- C. **Length** - Mainline length is to be summarized. Incidental road lengths are to be shown separately.
- D. **Width** - The predominant width of paved roadway and shoulders should be included. Any significant changes in the typical section stations should be noted.
- E. **Pavement Structure** - The depth of wearing course, binder, base stone, etc, should be included.
- F. **Structures** - The type, length, and location should be described. (BIP Section and structure number are to be referenced for NPS projects.)
- G. **Contract Number and Date** -
- H. **Contracting Officers** - Contracting Officer(s), and others involved in administering the contract and project should be listed; these include COE, Construction Engineer, and Division Engineer.
- I. **Contract Bid Amount** -
- J. **Engineer's Estimate** -
- K. **Final Contract Amount** -
- L. **Contract Time** -

Any significant dates should be shown. These include the award date, date of notice to proceed, original completion date, authorized extended completion date, date of substantial completion, date of final completion, date final estimate completed, date of final settlement. Any periods of liquidated damages, special periods for plant establishment, stream work restrictions, etc. should be summarized.

- M. **Contractor** - The contractor's name, address, and category (i.e., small

business, DBE, etc.) should be shown.

N. Subcontractors - All first tier and large second tier subcontractors' names should be listed along with a description of the work each was involved in. The category of each (i.e., Small Business, DBE, WBE, etc.) should be shown, along with the original or reported amount of each subcontract. If the prime contract required a subcontracting plan, the comparison of goals with levels achieved should be shown.

O. Construction Engineering Costs - The total FLH costs, including contract inspection costs should be shown. These costs as a percentage of the final contract amount (construction costs) should be computed and shown. $[(CE + CI) \times 100 / \text{contract amount}]$

P. Maintaining Agency - The agency which is responsible for maintenance of the road the project is on should be shown.

III. Construction

A. Materials - Sources of significant raw materials and manufactured items and their quality indicators are to be listed; e.g., for aggregates: include type, wear, soundness, specific gravities; for bituminous mixes: include grading used, densities, average asphalt content; etc. Manufacturers, suppliers, and fabricators of significant structural items and assemblies are to be listed. Problems encountered in materials control, if significant, should be described. Quantities of recycled materials incorporated in the work should be shown. The pay factor for any item where it was other than 1.0 (100%) should be indicated.

B. Experimental or New Features - Any significant experimental,

demonstration, new, innovative, or unusual features, methods, and/or materials should be described. A separate report may be referenced, if one is available, or being written. Funding of special work, if separate from basic contract funds, should be explained.

C. Changes & Problems - Contract modifications with a brief description of each are to be listed. The amount of each and any associated time change are to be described.

Problems encountered including delays, *unusual* weather, traffic control, design and construction changes, and errors are to be discussed. Be constructive, factual, and identify personal opinions when they are used.

A general description of *significant* plan versus field differences should be written. Any overrun or underrun items of 15 percent or more should be explained.

Conditions encountered which might *significantly* and adversely affect future maintenance, design, or construction are to be described.

D. Recommendations - Any recommendations for future design, construction, or maintenance based on experience from the project should be made. Staff specialists, such as the Bridge Design Engineer, Geotech Engineer, etc., should be consulted in advance of making recommendations which relate to their work. It should be kept in mind that the report may be distributed widely.

E. Claims - Each claim with a brief description and status or disposition should be listed. "No known claims" should be indicated if such is the case. If a claim is in litigation, a note should be attached reminding the Construction

Operations Engineer to clear the report through the Regional Counsel prior to its being finished.

The resolution of significant disagreements that did not become formal claims should be described. Any pertinent supplemental agreements should be referenced.

IV. Construction Engineering

- A. **Project Personnel** - Names (not grades) of Project Engineer and major staff should be listed. Inclusive dates if there has been more than one Project Engineer should be shown.
- B. **Contract Inspection** - If contract inspection services were utilized describe the character of these service - number of personnel, assignment durations, nature of inspection duties, etc.
- C. **Other Contacts** - Name(s) and title(s) of cooperating agency personnel directly involved with the project, and other individuals who have impacted the work or its time for completion should be listed.
- D. **Partnering** - If the project was *partnered*, the process should be summarized, along with the principal participants. Overall results should be described.

V. Appendix

- A. **Title Sheet, Location Map and Typical Sections** - As-built sections (include bridge sections and layouts) should be included.
- B. **Tabulation of Bids**
- C. **Final Voucher Assembly** (See Subsection 8-4.9)

- D. **Project Materials Certification** - See FLH Field Materials Manual.
- E. **Project Photographs** - Before and after pictures should be included. These should not be repetitious; e.g, shot after shot of a completed paving project. Critical stages of major operations should be shown; e.g. excavation and embankment operations, including benching, structure foundation, and falsework in place (anything which would be useful at a later date should a slide, structural, or other failure occur). Views of new or experimental features or equipment should be shown. The report should not be loaded with pictures showing the same thing, or standard, or insignificant operations.
- F. **Special Reports** - If appropriate, copies of reports on special or experimental features incorporated into the project should be included.

2-14 AS-CONSTRUCTED PLANS

As-constructed plans are required on all Federal Lands Highway projects. For situations when these plans are not required of the construction contractor, it is the Project Engineer's responsibility to record plan changes on full-scale prints as such changes occur. The following items are to be covered:

I. Plans

- A. **Alignment** - All revised alignment should be shown. Where bearings, curve data, etc., do not change, the data should be checked for accuracy.
- B. **Changes** - Changes in construction limits, if any, should be shown.
- C. **Bridges** - Stations of all bridge ends should be shown.
- D. **Ties** - Ties to any additional found corners should be shown.
- E. **Approach Roads** - The constructed location of all road approaches are to be shown.
- F. **Right-of-Way** - All right-of-way adjacent to private property is to be shown with care for correctness.
- G. **Monuments** - All monuments should be shown.
- H. **Utilities** - All utilities should be shown (e.g., gas, water, commercial power, sewers, etc.), including new, existing, abandoned, and removed facilities.
- I. **Underdrains** - Location, size, and depth of underdrains should be shown.
- J. **Channel Changes** - As-constructed channel changes should be shown.

- K. **Crossings** - Elevations for all aerial and underground crossings of utilities should be shown. (One should not attempt to measure directly from the road to the sag in overhead crossings.)

II. Profile

- A. **Grades** - Corrected grades and grade points of intersection (P.I.s) should be shown.
- B. **Equations** - All equations and stationing should be shown.
- C. **Culverts** - Correct culvert lengths, type, invert elevations, and stations are to be shown. Skew angles and as-built grades should be shown.
- D. **Extensions** - On culvert extensions, the length of existing pipe, as well as extension, should be shown.

III. Permanent Bench Marks

- A. **Monuments** - Data on monuments should be shown.
- B. **Datum** - Datum used for levels should be shown.

IV. Retaining Walls

Limits and type of wall are to be shown on profile sheets.

V. Guardrail

Corrected stationing, lengths, and offsets from edge of pavement or travel lane, if different than original plans, should be shown.

VI. Fencing

Construction limits of fencing in relation to centerline should be shown.

VII. Typical Sections

Any revisions in both dimensions and materials should be shown. Also, stations, if termini were revised, should be shown.

VIII. Bridges

Any changes in bridge plans should be shown. If built without changes, it should be indicated on the plans that no changes were made.

Information required for bridges includes the following:

- A. Subsurface Log** - A log of foundation material encountered if substantially different than information shown on plans. Log sheets should be attached to plans if necessary or convenient.
- B. Pile Driving Records** - Pile driving records including size, length, type, bearing, and tip elevation should be included. Record sheets should be attached to plans if necessary or convenient.
- C. Elevations** - Footing and seal elevations, if different than plan, should be included.
- D. Changes** - Any changes in plan or dimensions should be noted, including any major changes in reinforcing.

At the completion of the project, the marked plans should be sent to the Federal Lands Highway Division office. There the Project Development Branch will be responsible for transferring the changes to the contract tracings, and making the proper distribution.

2-15 DISPOSITION OF RECORDS

The Project Engineer should send the original or a copy (in accordance with Division procedures) of all correspondence received from contractors to the Division Headquarters for the central, official file.

Division procedures relative to checking of field books and records should be followed. The Project Engineer should arrange for checking of field books and other source records as they are completed, rather than all at once at completion. This will provide early notice of any deficiencies in record keeping, and therefore facilitate more efficient management of the contract.

The Project Engineer should mail or deliver all field notebooks, computation books, other project records supporting payment, maps, plans, cross-section rolls, diaries, etc., to the appropriate Federal Lands Highway Division office upon completion of a project.

A transmittal letter, or a form similar to that shown in **Figure 2-15, Example Transmittal Form**, should be used to transfer records from the Project Engineer to central files.

Project records of internal matters, transfers, T&A reports, service contracts no longer in effect, etc., should be disposed of at the end of each construction season or when the project is completed, in accordance with Division policy.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

PROJECT ENGINEER'S MONTHLY STATUS REPORT

% Work Complete	_____	Date Time Began	_____
% Time Elapsed	_____	Est. Completion Date	_____
% CE Used	_____	Act. Completion Date	_____
DBE SCC Payments \$	_____	Final Insp. Date	_____

STAFFING:

ENGINEERING:

CONSTRUCTION:

REMARKS:

SUBMITTED BY: _____
(Submit to COE between the 20th and 24th of each month)

Figure 2-9
Example Project Status Report

**FOR OFFICIAL USE ONLY
(WHEN COMPLETED)**

PERFORMANCE EVALUATION – CONSTRUCTION CONTRACTS		1. CONTRACT NUMBER
PART I – GENERAL CONTRACT DATA		
2. CONTRACTOR (Name, address and ZIP code)	3. TYPE OF CONTRACT (Check) <input type="checkbox"/> ADVERTISED <input type="checkbox"/> NEGOTIATED	A. ADVERTISED B. NEGOTIATED <input type="checkbox"/> CPFF <input type="checkbox"/> FIRM FIXED PRICE <input type="checkbox"/> OTHER (Specify)
4. COMPLEXITY OF WORK <input type="checkbox"/> DIFFICULT <input type="checkbox"/> ROUTINE		
5. DESCRIPTION AND LOCATION OF WORK		

6. FISCAL DATA	A. AMOUNT OF BASIC CONTRACT \$	B. TOTAL AMOUNT OF MODIFICATION \$	C. LIQUIDATED DAMAGES ASSESSED \$	D. NET AMOUNT PAID CONTRACTOR \$
7. SIGNIFICANT DATES	A. DATE OF AWARD	B. ORIGINAL CONTRACT COMPLETION DATE	C. REVISED CONTRACT COMPLETION DATE	D. DATE WORK ACCEPTED
8. TYPE AND EXTENT OF SUBCONTRACTING				

PART II – PERFORMANCE EVALUATION OF CONTRACT (Check appropriate box)			
9. PERFORMANCE ELEMENTS	OUTSTANDING	SATISFACTORY	UNSATISFACTORY
A. QUALITY OF WORK			
B. TIMELY PERFORMANCE			
C. EFFECTIVENESS OF MANAGEMENT			
D. COMPLIANCE WITH LABOR STANDARDS			
E. COMPLIANCE WITH SAFETY STANDARDS			
10. OVERALL EVALUATION <input type="checkbox"/> OUTSTANDING (Explain in Item 13, on reverse) <input type="checkbox"/> SATISFACTORY <input type="checkbox"/> UNSATISFACTORY (Explain in Item 14, on reverse)			
11. EVALUATED BY			
A. ORGANIZATION (Type or print)			
B. NAME AND TITLE (Type or print)		C. SIGNATURE	D. DATE
12. EVALUATION REVIEWED BY			
A. ORGANIZATION (Type or print)			
B. NAME AND TITLE (Type or print)		C. SIGNATURE	D. DATE

NSN 7540-01-150-0326

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STANDARD FORM 1420 (10-83)
Prescribed by GSA
FAR (45 CFR) 53.236-1(b)

**Figure 2-12
SF 1420, Performance Evaluation, Construction Contracts**

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13. REMARKS ON OUTSTANDING PERFORMANCE - AS INDICATED BY THE CONTRACTOR'S PERFORMANCE ON THIS CONTRACT, IF YOU CONSIDER THE CONTRACTOR TO BE OUTSTANDING, SET FORTH FACTUAL DATA SUPPORTING THIS OBSERVATION. THESE DATA MUST BE IN SUFFICIENT DETAIL TO ASSIST CONTRACTING OFFICERS IN SELECTING CONTRACTORS THAT HAVE DEMONSTRATED OUTSTANDING QUALITY OF WORK AND RELIABILITY. *(Continue on separate sheet, if needed.)*

14. EXPLANATION OF UNSATISFACTORY EVALUATION - FOR EACH UNSATISFACTORY ELEMENT, PROVIDE FACTS CONCERNING SPECIFIC EVENTS OR ACTIONS TO JUSTIFY THE EVALUATION *(e.g., extent of Government inspection required, rework required, subcontracting, cooperation of contractor, quality of workmen and adequacy of equipment)*. THESE DATA MUST BE IN SUFFICIENT DETAIL TO ASSIST CONTRACTING OFFICERS IN DETERMINING THE CONTRACTOR'S RESPONSIBILITY. *(Continue on separate sheet, if needed.)*

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STANDARD FORM 1420 BACK (10-83)

Figure 2-12 (Continued)
SF-1420, Performance Evaluation, Construction Contracts

FINAL CONSTRUCTION REPORT

Project PRA-COLO 1D40,E13 Colonial National Historical Park

I. PROJECT DESCRIPTION

A. Project Number - Project PRA-COLO 1D40,E13 was located on the Colonial Parkway in James City County, Virginia.

B. Description of Work - The project consisted of the following work:

Rehabilitation and reconstruction of reinforced concrete pavement, rehabilitation of one bridge, grading, drainage, base, hot asphaltic concrete pavement, and other work.

C. Environmental Considerations - The Environmental Assessment was completed by the National Park Service in June 1989 with a Finding of No Significant Impact. It was determined by the National Park Service that the repair of the Colonial Parkway from Yorktown to Jamestown Island is a Categorical Exclusion.

The following permits were obtained for this project:

- A U.S. Army Corps of Engineers permit for temporary bridge support and falsework, dated July 19, 1992.

- A Stormwater Management And Sediment Erosion Control Permit from Virginia Department of Environment Quality, dated August 7, 1992.

- A Waterway Construction Permit from Virginia Department of Natural Resources, dated August 16, 1992.

II. PROJECT DATA

A. Specifications - Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, FP-92.

B. Termini - The project began at State Route (S.R.) 199 and ended at the Jamestown Entrance Station.

C. Length - Parkway Mainline: 11.424 kilometers
Incidental Road Construction: 1.572 kilometers
Total: 12.996 kilometers

D. Width -

Parkway Mainline:

Concrete Slab Rehabilitation - 13.2 meter roadway

Figure 2-13

(9.0 meter concrete pavement, 2.1 meter shoulders).

S.R. 199 Ramps:

9.6 to 11.4 meter roadway (5.4 to 7.2 meter hot asphaltic concrete pavement, 2.1 meter shoulders).

E. Pavement Structure -

Parkway Mainline:

Concrete Slab Rehabilitation - 175 millimeters exposed aggregate reinforced portland cement concrete pavement.

Concrete Slab Reconstruction - Variable depth subbase (lightweight aggregate or crushed aggregate base), 175 millimeters exposed aggregate reinforced portland cement concrete pavement.

S.R. 199 Ramps:

Mill 50 millimeters existing asphalt pavement, place 50 millimeters hot asphaltic concrete pavement, Class C, grading D.

F. Structures -

Halfway Creek Bridge, BIP Structure No. 4290-022P, 259 meter concrete slab and girder bridge.

G. Contract Number and Date - DTFH71-92-C-00039, September 30, 1992

H. Contracting Officers -

Gary L. Klinedinst, Division Engineer
Donald W. Miller, Construction Engineer
Gary L. Brown, Construction Operations Engineer

I. Contract Bid Amount - \$4,339,431.20

J. Engineer's Estimate - \$4,400,000.00

K. Final Contract Amount - \$5,253,290.55

L. Contract Time -

Notice To Proceed:	November 18, 1992
Original Completion Date:	June 8, 1994

Figure 2-13 (Continued)

Total Extensions Granted: 40 calendar days
Revised Completion Date: July 18, 1994
Date Substantially Complete: May 21, 1994
Date All Work Complete: May 30, 1994
Date Plant Establishment Complete: June 5, 1995
Stream Restriction Dates: March 1 - 31
Liquidated Damages Assessed: None

M. Contractor -

Central Atlantic Contractors, Inc. (Small Business)
P. O. Box A
Aberdeen, Maryland 21001

N. Subcontractors -

Henry S. Branscome, Inc. (Small Business)
Excavation, aggregate base, lightweight aggregate base, and asphalt paving

Bryant Contracting, Inc. (Small Business)
Bridge piles and structural concrete

Dalton Contracting, Inc. (DBE)
Concrete curb, paved waterways, stone masonry

Clinton Painting (WBE)
Bridge structural painting

Shores Safety Co. (Small Business)
Steel backed timber guardrail and signs

O. Construction Engineering Costs -

FLH CE Costs	\$ 239,136
CI Costs	\$ 74,560
Total Costs	\$ 313,696
% of Final Contract Amount	6.0 %

P. Maintaining Agency - National Park Service, Colonial National Historical Park

III. CONSTRUCTION

A. Materials -

Item 30101 Aggregate Base, Grading C or D
Gradation: Virginia Gradation 21A

Figure 2-13 (Continued)

Supplied by Luck Stone, Boscobel, Richmond, Virginia.
L. A. Abrasion - 19.4 %
Sodium Sulfate Soundness Loss - 1.32 %
CBR - 98
Bulk Specific Gravity - 2.562
Modified Proctor Density - 2413 kilograms per cubic meter
Average Field Density - 2340 kilograms per cubic meter (96.9 %)
Final Pay Factor - 1.04

Item 30101A Aggregate Base, Lightweight Aggregate
Supplied by the Solite Corporation, Richmond, Virginia.
L. A. Abrasion - 32.8 % to 38.1 %
Sodium Sulfate Soundness Loss - 6.5 % to 7.25 %

Item 40101CD Hot Asphalt Concrete Pavement, Class C, Grading D
Asphalt cement was Grade AC-20, supplied by the Amoco Oil Company,
Savannah, Georgia. Asphalt cement properties:
Specific Gravity @ 25 degrees C - 1.031
Penetration @ 25 degrees C - 71
Kinematic Viscosity @ 135 degrees C - 365 square millimeters per second
Absolute Viscosity @ 60 degrees C - 180 pascal seconds
Average Asphalt Content - 5.15 %

Aggregates were No. 8 crushed gravel and No. 10 screenings supplied by Luck
Stone, Boscobel, Richmond, Virginia.

No. 8 Crushed Gravel
Bulk Specific Gravity - 2.548
L. A. Abrasion - 41.9 %
Sodium Sulfate Soundness Loss - 0.82 %
No. 10 Screenings:
Bulk Specific Gravity - 2.627
Sand Equivalent - 69
Sodium Sulfate Soundness Loss - 3.31 %

Asphalt mix properties:
Average Asphalt Content - 5.15 %
Maximum Theoretical Density - 2465 kilograms per cubic meter
Average Field Density - 2324 kilograms per cubic meter (94.3 %)
Final Pay Factor - 1.03.

Items 50101P Reinforced PCC Pavement and 50103P RPCC Pavement Patch
Concrete supplied by Custom Concrete Co., Williamsburg, Virginia.
Cement, Type I/II - Lehigh Portland Cement Co., Union Bridge, Maryland.
Fly Ash, Class F - Monex Resources, Inc., Belews Creek Plant, Walnut Cove,
North Carolina.

Figure 2-13 (Continued)

Fine Aggregate, Natural Sand - Custom Sand & Gravel, Providence Forge, Virginia.

Coarse Aggregate, No. 57 and No. 3 - Sadler Materials Corporation, Sandston, Virginia.

Water, Private Well - Custom Concrete, Williamsburg, Virginia.

Air Entraining, MB-VR Concentrated - Master Builders, Inc., Cleveland, Ohio.

Water Reducer, LL 960 - Master Builders, Inc., Cleveland, Ohio.

Average Compressive Strength - 22.00 megapascals

Final Pay Factor - 0.98

Item 55213 Seal Concrete Surface

Sealer and stain for the bridge concrete surface was Hydro-Shield Stain manufactured by Horsey-Set Products. Supplied by Robson Downes Associates, Inc., Oxford, Maryland.

Item 60201 Pipe Culverts

Reinforced concrete pipe culverts supplied by Empire Sales, Inc., Hampton, Virginia.

Item 61701H Guardrail System SBTB

Timber supplied by Taylor-Ramsey Corporation, Blackstone, Virginia.

Steel supplied by Elderlee, Inc., Oaks Corner, New York.

B. Experimental or New Features -

See special report titled "Use of Lightweight Aggregate (Solite) in Roadway Embankments" included elsewhere in this report.

C. Changes & Problems -

1. Changes

Contract Modification No. 1 provided for a 0.3 meter grade revision from Station 6+658 to 6+878 to avoid a potential problem with surging high tides. This contract modification also deleted the removal of slabs 139 through 143 because no grade change was originally indicated and the problem with standing water could be eliminated by grading the high shoulders to drain. Net decrease of \$ 51,433.

Contract Modification No. 2 provided for removal of concrete pavement slabs encountered below existing pavement slabs, excavation, installation of underdrain and lightweight aggregate from slabs No. 171 to 173. Net increase of \$ 33,619.

Contract Modification No. 3 provided for the removal and replacement of approximately 9.8 meters of 600 mm reinforced concrete pipe and headwall found broken beneath slab No. 111. Net increase of \$ 9,956.

Figure 2-13 (Continued)

Contract Modification No. 4 provided for the removal and replacement of Belgian Blocks in the median island between slabs No. 700(a) and 700(b) and between slabs No. 608, 609, and 583, 584 at the request of the National Park Service. Net increase of \$ 19,000.

Contract Modification No. 5 provided for an increase in the final quantity for the contract item 555(9), Clean and Paint Structural Steel (Final Quantity). This item was increased by 55 square meters due to field measurement. Net increase of \$ 5,292.

Contract Modification No. 6 finalized the quantity of concrete patches under Item 502(13). It also granted the agreed time extension and additional costs due to this overrun. Net increase of \$ 551,546 and 10 calendar days.

Contract Modification No. 7 provided for an equitable adjustment in the total cost for Item 202(7AB) Removal of Concrete (Bridges) due to an overrun in the contract quantity. Net increase of \$ 8,391.

Contract Modification No. 8 provided compensation under the DBE/WBE Subcontracting Compensation Clause. Total payment was \$ 56,243 and 30 calendar days.

2. Problems

- a. Sounding of the concrete adjacent to the transverse slab joints using a chain-drag identified additional deteriorated concrete which doubled the Concrete Patching item quantity thereby considerably increasing the contract cost and requiring a time extension to complete this work.
- b. The transverse construction joints required bushhammering and epoxy bonding of the full depth sawcut joint face. In most cases this did not adequately bond the new concrete patch to the existing slab and these joints have opened.
- c. Concrete piling in steel shells was used underneath the approach slabs at Powhatan Creek and Mill Creek Bridges. Estimated length of piles was 12 meters to obtain a bearing of 177 kilonewtons. It actually required 24 meters to obtain minimum bearing.
- d. See problems with use of lightweight aggregate indicated in the separate report.

D. Recommendations -

1. All concrete joint areas and bridge decks should be sounded prior to determining the extent of work. For 18 meter slab joints, it is recommended that all lanes at a transverse joint patch be removed and replaced such that the third (middle) joint can be eliminated.
2. A concrete paving machine should not be used to finish exposed aggregate

Figure 2-13 (Continued)

concrete due to the rollers forcing the aggregate down into the concrete every time the rollers change direction. This leaves dents and streaks in the finished surface.
Recommend stating this in the contract to make potential bidders aware of this problem.

E. Claims -

There were no claims on this contract.

IV. CONSTRUCTION ENGINEERING

A. Project Personnel -

Raymond Hatten, Project Engineer
William Fisher, Inspector

B. Contract Inspection -

Two Contract Inspectors (two Level II Inspectors) were provided by KCI, Inc. One worked as the office person. The other was assigned to inspect the bridge rehabilitation operations.

C. Other Contacts -

Roy Bigelow, Park Engineer, Colonial National Historical Park
Harry Sloat, Section Chief, Roads & Trails, Denver Service Center
John Haines, Landscape Architect, Denver Service Center

D. Partnering -

Formal partnering allowed a good relationship to be maintained between all stakeholders and resulted in no claims on this contract. The partnering workshop and two subsequent partnering meetings were facilitated by Dr. Jay Sullivan of Performance Training Corporation.

Figure 2-13 (Continued)



U.S. Department of Transportation
 Federal Highway Administration
 Federal Lands Highway Program

Records Transmittal

Certified Mail No. _____

File: _____

State: _____

Date _____

Route: _____

Project: _____

FROM:

TO:

FILE NUMBER

DESCRIPTION

STATION TO STATION

Please acknowledge receipt by signing and returning 1 copy of this transmittal.

RECEIVED BY: _____

DATE: _____

DATE RECORDS WILL BE RETURNED: _____ BY: _____

Figure 2-15
 Records Transmittal Form