

Local Project Administration Manual & Resource Guide

Construction Administration



MaineDOT

Integrity - Competence - Service

2020 Edition

Construction Administration

Construction generally follows a contract award to the successful bidder. Once the job begins, the agency administering the project must document and inspect the work. Most often, this is a full-time responsibility.

Chapter 11 of this Manual provides guidance on the topics listed below:

- Oversight responsibilities – *revised in 2020* (page 11-1);
- Pre-construction meeting (page 11-2);
- Contractor payrolls (page 11-3);
- Contract modifications (page 11-4);
- Construction documentation – *new in 2020* (page 11-5);
- Materials testing – *revised in 2020* (page 11-7);
- Buy America (page 11-8);
- Project bulletin board / Commercially Useful Function / Final inspection (page 11-9);
- Final payment to contractor / Closeout / As-built plans (page 11-10);
- Appendix 11A: Administrative checklist (page 11-11);
- Appendix 11B: Submittals to MaineDOT (page 11-14); and
- Appendix 11C: Sample field book entries – *new in 2020* (page 11-21).



11.1 Oversight Responsibilities

A local agency must assign either an employee with appropriate qualifications or a consultant with pre-qualification from MaineDOT to document and inspect the construction work. This “construction resident” protects a local agency’s interests by enforcing the construction plans and specifications, logging the daily activities on a job site, checking contractor payrolls, and verifying the quantities of materials placed on a project.

- Additionally, a local agency must arrange for a paving inspector and concrete technician with required certifications to be on site for work involving hot-mix asphalt and concrete. Refer to Section 11.6, “Materials Testing,” on page 11-7.

The construction resident on a federal project must have taken Documentation Training from MaineDOT within the previous two years. The training contact is Kevin Hanlon, MaineDOT’s documentation engineer, who may be reached at Kevin.W.Hanlon@maine.gov.

If the resident will be a consultant, a local agency must go by the hiring procedures in Chapter 2, “Consultant Selection,” and request proposals from firms pre-qualified for construction management under MaineDOT service number 601.00: www.maine.gov/mdot/cpo/prequal/.

The construction resident on a federal project must be on site for major contractor activities such as excavation, paving, drainage installation, and concrete placement. Often, this will require a **full-time** commitment to ensure that the following tasks are performed:

- Inspecting the work, documenting quantities, and checking lines and grades.
- Checking payrolls for compliance with wage requirements, as covered in Section 11.3, “Contactor Payrolls.”
- Coordinating contract modifications. **MaineDOT** must concur with modifications **before** they are signed, as covered in Section 11.4, “Contract Modifications.”
- Maintaining a daily log and other field records, as discussed in Section 11.5, “Construction Documentation.”
- Arranging for testing of gravel, pavement and concrete – and rejecting failing materials.
- Monitoring the contractor’s traffic control plan to ensure safe travel in the work zone.
- Making sure the work complies with environmental commitments and permit requirements, including erosion-control provisions.
- Approving contractor payments for satisfactory work, based on verification of quantities.
- Checking labor compliance, including setup of the project bulletin board. A diagram is online: <https://www.maine.gov/mdot/civilrights/sfp/>



11.2 Pre-construction Meeting

The primary event before work begins is the pre-construction meeting, typically involving the contractor, local project administrator, construction resident, utility representatives, and MaineDOT personnel. (See Letter 17, on page 11-15, for a sample invitation and agenda.)

A pre-construction meeting should be held after contract award and at least **one week** before the start of work. It should address the requirements of the prime contractor, coordinate the schedule, and establish the frequency of progress meetings. Refer to MaineDOT’s Standard Specifications, section 104.4.2, “Preconstruction Conference.”

The local project administrator should prepare an agenda and invite the participants. Afterward, minutes should be sent to meeting participants and other parties, including public-safety agencies if a project calls for lane closures or detours.

- ☛ If a project will require multiple utility relocations, a separate **pre-utility meeting** may be held at the discretion of the local project administrator.
- ☛ A stand-alone **pre-pave meeting** must be held *before* paving work begins. This mandatory meeting typically involves the local administrator, paving contractor, construction resident, and appropriate MaineDOT personnel.

11.3 Contractor Payrolls

□ 11.3.1: Elation System

The prime contractor and all subcontractors on federal projects must submit their payrolls electronically in the Elation system to verify Davis-Bacon Act compliance. Electronic payrolls may be used for state wages if both federal and state rates are required.

Upon awarding a contract, the agency managing a project should email the information listed below to MaineDOT's Contracts Section, which will set up a project in the Elation system:

- Work Identification Number (WIN);
- Name and email of the construction resident;
- Name and address of the prime contractor;
- Amount of the contract award;
- Dates of advertise, bid opening and award;
- Construction start date;
- Contract completion date stipulated in the contract;
- Subcontractor information, with the service provided and subcontract amount;
- County in which the work will take place;
- Wage Rate General Decision and modification numbers, such as ME100011-Mod-0.

MaineDOT Contact:
Angela Latno: 207-624-3519
angela.latno@maine.gov

An Elation user's manual is online: <https://www.maine.gov/mdot/contractors/publications/>

□ 11.3.2: Payroll Verification

The construction resident on a federal project must ensure that all contractors comply with the Davis-Bacon wage decision. Typical responsibilities consist of the following:

- Checking contractor payrolls for completeness, accuracy, and compliance issues; and
- Ensuring that the duties performed and hours put in by workers covered by Davis-Bacon are consistent with what contractors are reporting in the Elation system.

At the start of a project, the resident must check for missing classifications and rates. If the federal wage decision is incomplete, the **prime contractor** must request missing classifications and wage rates through the Elation system.

□ 11.3.3: Payroll Interviews

Every 90 days, the resident must interview **two covered workers** from the prime contractor and all subcontractors on site for at least **five days** during that 90-day period. Interviews must be voluntary, confidential and in-person. Standard Form 1445, "Labor Standards Interview," is available in the online Elation payroll system.

The construction resident will compare information from the interviews against a contractor's certified payroll report for a given period. The resident must address all discrepancies found.

❑ 11.3.4: State Payrolls

The contractors on state projects without federal funds, such as through the Small Harbor Improvement Program and Municipal Partnership Initiative, must submit certified payrolls verifying that they are paying at least the Maine Department of Labor’s prevailing wage rates for those projects. Each submittal must include a signed “Statement of Compliance” that the payrolls are correct and complete.

- ➡ A standard Certified Payroll Form from the Maine Department of Labor must be used: https://www.maine.gov/labor/labor_stats/publications/wagerateconst/

11.4 Contract Modifications

Occasionally, the local agency managing a project and its contractor will need to change the terms of the construction contract, requiring a contract modification.

A contract modification, also called a change order, must be drafted by the construction resident or local administrator – NOT the contractor. If a local agency expects MaineDOT to participate in a modification, MaineDOT’s construction manager must concur with the proposed change before any associated work begins. Otherwise, MaineDOT may deny reimbursement for work covered by a modification.

A draft contract modification must be sent to MaineDOT for review using *Letter 18*, found on page 11-17 of this chapter, with two pieces of information:

- An independent cost estimate for the additional work; and
- A statement addressing the associated contract time. If there is no change, write **0 days**.

A contract modification form may be downloaded from the MaineDOT website: www.maine.gov/mdot/lpa/docs/lpadocs/2018/ContractMod2018.doc

A contract modification generally is required for any of the following:

- A change in the specifications;
- A substitution of materials;
- A change in the testing requirements;
- A changes or extra work within the scope of the contract;
- A design change beyond the scope of the contract;
- Adding payment or credit for incentives/disincentives to the contract terms; and
- An increase or decrease of 25 percent or more in any major item, defined as 10 percent or more of the contract amount.
- A change in the completion date or a time extension not covered elsewhere.

11.5 Construction Documentation

Keeping accurate, detailed records is vital to overseeing and inspecting a project. This section provides guidance on the expectations for preparing field records. Covered on the next two pages are the typical documents, with an explanation of how to fill them out.

➔ For detailed information on construction documentation, refer to two online publications:

- MaineDOT Record Keeping Manual: www.maine.gov/mdot/contractors/support/
- MaineDOT Construction Manual: www.maine.gov/mdot/contractors/publications/

☐ 11.5.1: Project Diary

A construction resident must keep a field book or electronic report with a daily accounting of the work performed by the general contractor and subcontractors. This document, commonly called a “project diary,” should log the following information, at a minimum:

- ☐ Weather, since rain or cold could affect the work;
- ☐ Pay items worked on each day, by project stationing;
- ☐ The number of workers on site, with their job classifications, to be checked against contractor payrolls;
- ☐ Major pieces of equipment on site such as excavators, loaders, compactors, bulldozers, graders, pavers, and rollers;
- ☐ Field measurements by pay item number, with quantities of materials, to be checked against contractor requests for payment;
- ☐ Grade checks for items such as subgrade, top of gravel (fine-grading), ditches, and backslopes to ensure that the work meets the plans and specifications for the project;
- ☐ Drainage measurements by stationing for items such as catch basins and pipes, with computations from outlet to inlet;
- ☐ Source and disposition of excavation, borrow, gravel and pavement grindings; and
- ☐ Noteworthy events, such as:
 - Traffic accidents;
 - Contractor adherence to the traffic control and erosion control plans;
 - Directives given to the contractor by the construction resident;
 - Discussions with property owners and other abutters; and
 - Disputes with the contractor or issues with quality that could lead to a claim.



Turn to Appendix 11C, starting on page 11-21, to find sample field book entries.

11.5.2: Drainage Book

A stand-alone drainage book may be necessary for complex, urban projects with a multitude of catch basins and pipes. Such supplemental documentation should be used at the discretion of the construction resident, in consultation with the local project administrator.

Each run of pipe and catch basin on a project should have a separate page in the drainage book. The book should note items such as length of pipe installed, catch basins installed, gravel used for traffic maintenance, undercutting and bedding material used, ledge removed (if applicable), and riprap at pipe inlets or outlets.

11.5.3: Final Quantity Book

All bid items in the contract and all work orders involving additional payment must be entered in a final quantity book. This book maintains a reference trail leading from the final pay quantity for an item to the original documentation, such as notes of inspection and acceptance, measurements, or calculations made in a daily report. Entries must be signed and dated.

The final quantity book should have one item per page, as follows:

- Item number description and quantity should be at the top of the page;
- The final quantity should be entered at the bottom and so labeled;
- Pages should be set up for original measurements or computations;
- Pages set up with a total-to-date column;
- Entries and computations initialed and dated;
- Calculation of the final quantity, after an item is completed.

➡ For documentation examples, refer to Appendix 11C, starting on page 11-21.

11.5.4: Testing File

Before construction, MaineDOT establishes mandatory Minimum Testing Requirements for aggregates, pavement, concrete and other materials. These requirements establish the frequencies and types of tests to be performed on construction materials used on a project.

The construction resident should set up a testing file containing all test reports and other data that document the quality of materials used on a project. The file should be set up by material and based on the Minimum Testing Requirements, which should be placed at the front of the testing file and used as a guide.

In the testing file, the resident or a designated inspector should explain the resolution of a failing test result. The resident should note, for example, whether a failing material was removed and replaced. Results of failing tests should be shared with the MaineDOT construction manager, who can assist with resolving an issue.

At MaineDOT, a testing file typically is bound by a black pressboard binder with a white label marked, "Testing File," with location and WIN. Tabs are used to identify and separate the items.

11.6 Materials Testing

Materials placed on projects with federal and state funds must meet MaineDOT’s specifications. Proper testing of gravel, pavement and concrete will help to ensure that they perform as intended and hold up over time. After accepting the final plans, specifications and estimate (PS&E) for a project, MaineDOT will prepare Minimum Testing Requirements, which will list the type and frequency of required tests.

Each test result must be logged into a testing file, as covered in subsection 11.5.4, “Testing File.” A local agency should notify the construction manager in MaineDOT’s Multimodal Program if there is a failing test. If that occurs, MaineDOT can help to resolve the issue.

□ 11.6.1: Aggregates

A local agency must use an **independent, accredited laboratory** to test all aggregates incorporated into a project, such as gravels, underdrain sand, crushed stone and granular borrow.

A certified inspector representing the agency must obtain samples and conduct on-site tests for compaction and other properties, as set out in the Minimum Testing Requirements. The inspector also must perform all required laboratory work, such as gradation / sieve analysis, compaction testing using a proctor, and Los Angeles abrasion testing.

For a list of accredited testing labs, refer to MaineDOT pre-qualification service number 804.00, Laboratory Materials Testing and Exploration: www.maine.gov/mdot/cpo/prequal/#prequal4

□ 11.6.2: Pavement

A paving inspector certified by the Northeast Transportation Technician Certification Program (NTTCP) must be on site for paving work. The inspector will perform tasks such as checking that the pavement mix is placed at the proper temperature (275 to 325 degrees F) and preparing core samples for laboratory testing.



Once obtained, pavement core samples with ID tags filled out must be taken to the closest **MaineDOT testing lab**, located in Freeport or Bangor. MaineDOT staff will perform the tests required by the Minimum Testing Requirements.

□ 11.6.3: Concrete

A technician certified by the American Concrete Institute (ACI) must be on site for concrete placements to test mix properties such as air content, temperature, and water/cement ratio. The technician also will document the mixtures and will prepare the 4-inch by 8-inch sample cylinders that will be used to measure compressive strength and permeability at a testing lab.

Concrete cylinders with ID tags filled out must be taken the nearest **MaineDOT testing lab**, in Freeport or Bangor, where MaineDOT staff will perform tests required by the Minimum Testing Requirements. Concrete cylinders should be kept inside an on-site cure box to set up for one day before being delivered to the testing lab.

11.7 Buy America

Steel and iron products permanently incorporated into federally funded projects must be produced in the United States. Failing to comply with the Buy America Act of 1982 – known as “Buy America” – will jeopardize federal funding.

Under Buy America, covered in 23 CFR part 635.410, the manufacturing processes for steel and iron products, including the application of coatings, must occur domestically. Raw materials, however, may be sourced from outside of the United States.



Buy America commonly covers the following items:

- Steel guardrail, steel piles, steel culverts, and structural and reinforcing steel;
- Structural plates and steel supports for highway signs, luminaries and signals;
- Cast iron frames and grates; and
- The application to steel products of coatings such as epoxy, zinc (galvanized) and paint.

Buy America is covered in section 105.11 of MaineDOT's Standard Specifications:
www.maine.gov/mdot/contractors/publications/standardspec/docs/2014/div100.pdf

❑ 11.7.1: Certifications

The prime contractor must provide mill certifications for steel and iron products, along with manufacturer certifications for product coatings. Additionally, the contractor must certify that all products subject to Buy America comply with the law. The construction resident must verify these certifications before permanent products subject to Buy America are installed on a project.

❑ 11.7.2: Other Work on Federal Contracts

Buy America applies to all work under federally funded contracts – including work performed without federal money. If utility work paid for with local funds is added to a federal contract, for example, Buy America generally will apply to that work.

❑ 11.7.3: Exceptions

MaineDOT expects steel and iron items incorporated into federal projects to comply with Buy America. If a local agency during design believes that Buy America cannot be met – or if a contractor contends that certain steel or iron items subject to Buy America cannot be acquired – the MaineDOT project manager should be contacted immediately.

MaineDOT may determine that a minimal amount of foreign steel and iron is allowed. The total cost of such foreign steel and iron incorporated into a federal project cannot exceed \$2,500 or 0.1 percent of the total contract amount, whichever is greater, in accordance with MaineDOT's Standard Specifications and federal regulations.

➡ **Bottom line:** Federally funded projects are expected to comply with Buy America.

11.8 Project Bulletin Board

The prime contractor by law must display a series of posters on a bulletin board informing employees of their rights. The board must be installed by the first day of construction and stay in place until completion.



The bulletin board must be set up where it will be accessible to employees and the public all the time, such as outside the field office used by the contractor or construction resident. It must be protected from bad weather and remain readable for the duration of a project.

A checklist, diagram and poster packet are online: www.maine.gov/mdot/civilrights/sfp/

11.9 Commercially Useful Function

The construction resident on a federal project must verify that a Disadvantaged Business Enterprise (DBE) firm hired to work on the project is performing the services listed in its subcontract with its own equipment and workers. This is the “Commercially Useful Function” (CUF) of the DBE company.

The resident must verify that the employees on site are listed on the DBE company’s payrolls and not on the payroll of a different company, such as the prime contractor. The resident must perform a CUF review when:

- A DBE firm initially shows up and during the peak period of the DBE’s work; and
- A DBE firm on the job site is not listed on the prime contractor’s DBE Utilization Form.

➔ Commercially Useful Function Form is available from the MaineDOT Civil Rights Office: <https://www.maine.gov/mdot/civilrights/dbe/>

11.10 Final Inspection

Upon finishing a project, the prime contractor sends the local agency managing that project written notification that the work is considered complete. At this point, the local administrator sets up a walk-through involving the construction resident, contractor, and MaineDOT’s project manager and construction manager. (*Use Letter 19, on page 11-19.*)

Meeting at the job site, the parties inspect the project for incomplete or unsatisfactory work. Afterward, they develop a “punch list” of items that must be addressed before the local agency will accept the project as complete.

Once a final inspection determines that the contractor has addressed all punch-list items, the local agency managing a project must notify the contractor in writing that physical work is complete and in compliance with the contract.

➔ Completion of Physical Work Notification form may be downloaded from the Construction section of MaineDOT’s LPA Documents page: www.maine.gov/mdot/lpa/lpadocuments/

11.11 Final Payment to Contractor

After sending the prime contractor a Completion of Physical Work Notification, a local agency may make final payment to that contractor under the following conditions:

- There are no claims or disagreements with quantities on the project;
- There are no liquidated damages against the contractor for missing the contract deadline;
- There is no remaining work to be done in the field; and
- The contractor has submitted the final documents listed below, as applicable:
 - Request for final payment, with statement that all bills have been paid;
 - Agreement with final quantities;
 - Buy America certification (federal projects);
 - Materials certification (all projects); and
 - Quality-control certification under Standard Specification 106.4.3, “Testing.”

11.12 Closeout

Once a local agency has made final payment to its contractor, the local project administrator should request from MaineDOT’s project manager an accounting of MaineDOT’s internal charges to a project, as described in Chapter 1 of this Manual, “Administration & Finance.”

Upon receiving the documentation, the local administrator should calculate its matching share of those charges and send MaineDOT’s project manager a final invoice formatted after Letter 20. *(An example of this letter is found on page 11-20).*

The local share of MaineDOT’s charges will be deducted from the final reimbursement payment to the local agency managing a project. Upon making final payment, MaineDOT will terminate the local agency agreement signed at project kickoff and then close out the project.

11.13 As-Built Plans

Revised as-built plans are design plans that have been altered in the field to document a project as constructed. “As-builts” for projects on state highways should be sent to MaineDOT as .pdf files within **90 days** of completion.



As-builts are the full-sized design plans for a project that have been marked up in the field either with a red medium felt-tip marker or a blue/black medium ballpoint pen to note changes made during construction.

On each revised sheet, the reviser should write in the lower right corner “Revised As-Built” and initial; on unchanged plan sheets, the reviser should write “As-Built” and initial. Upon completion of all changes, the reviser should sign and date the title sheet of the marked-up plans.

Appendix 11A: Administrative Checklist

(Updated in 2020)



CHECKLIST: CONSTRUCTION ADMINISTRATION

- Obtain Minimum Testing Requirements from MaineDOT's project manager (PM).
- Send award information to MaineDOT to enter project in the Elation payroll system.
 - MaineDOT contact is Angela Latno: (207) 624-3519 or Angela.Latno@maine.gov

Pre-Construction Tasks

- Send notice of pre-construction meeting and agenda (Letter 17) to the following:
 - Contractor;
 - Utilities;
 - Construction resident;
 - MaineDOT's PM and construction manager.
- Note: A separate *pre-pave meeting* must be held before any paving work may take place.
- Pre-construction meeting held on: _____
 - Pre-pave meeting held on: _____
- Contractor schedule received on: _____
- Quality Control (QC) Plan and Mix Designs received from Contractor on: _____
 - Contractor must submit them at least 30 days before the work is scheduled to begin.
- Contractor Traffic Control Plan submitted to MaineDOT for review.
 - MaineDOT Approval Date:* _____.
- Contractor Soil Erosion Water Pollution Control Plan approved by construction resident.

Testing & Documentation

- Field Book created to record the following information:
 - Weather, crew & equipment, hours worked, and contractor activities;
 - Field measurements to document materials quantities for payment to the contractor;
 - Noteworthy events (accidents, discussions with owners, disputes with contractor).
- Pit authorizations completed.
- Waste area agreements completed.
- Project bulletin board erected: <https://www.maine.gov/mdot/civilrights/sfp/>
 - Condition of signs must be noted weekly in a project field book.
- Testing file set up for each item in Minimum Testing Requirements.
 - Check with MaineDOT to learn if Hot Mix Asphalt / Portland Cement Concrete plant has been inspected recently or needs to be inspected: Kevin.cummings@maine.gov
- Materials Tests:
 - Aggregates must be tested at an independent, accredited laboratory.
 - Only results of failing tests reported to MaineDOT.
 - Hot-mix asphalt and concrete are tested at one of MaineDOT's labs, in Bangor or Freeport.
- Subcontractor Approvals: <https://www.maine.gov/mdot/contractors/publications/>
 - Send copies of approved subcontractor packages to MaineDOT's PM.
 - PM will arrange for the subcontractor to be added to the Elation system.

- Federal projects: Weekly certified payrolls received electronically from all contractors.**
 - Certified payroll checked in Elation system for compliance with minimum wage rates.
- Federal projects: Employees interviewed to verify Davis-Bacon wage rate compliance.**
 - Voluntary interviews held every 90 days with 2 covered workers from the following:
 - Prime contractor;
 - All subcontractors on site 5 or more days during a 90-day period.
- Federal Projects: Commercially Useful Function Form sent to MaineDOT, if applicable.**
- Federal Projects: “Buy America” (Special Provision 105).**
 - “Buy America” certifications must be received before steel and iron products are installed.
- Progress payments to contractor:**
 - Prepare estimate and review with contractor; or receive and check estimate from contractor.
 - Once approved, process estimate and send payment to contractor.
- Final Quantity Book created:**
 - Book set up by item numbers;
 - Pages set up for original measurements (or computations from plan dimensions);
 - Pages set up with a total-to-date column;
 - Entries and computations initialed and dated;
 - After item is completed, compute final quantity.

Contract Modifications

- Modifications to the construction contract are handled as follows:**
 - Prepare an independent cost estimate for the additional work.
 - Note the time associated with the change. (If no change, note 0 additional days.)
 - Send modification to MaineDOT construction manager for review (**Letter 18**).
- Obtain MaineDOT’s concurrence with contract modification.**
- Send modification to contractor for signature.**
 - When contractor has signed, local project administrator signs and dates the modification.
 - Send copy of the executed modification to the contractor, with a copy to MaineDOT.

Completion

- Final inspection performed by Municipality, MaineDOT and contractor (**Letter 19**).**
 - Inspection Date: _____.
 - Final “punch list” of items completed on: _____.
- Final Quantity Book finalized by construction resident.**
- Completion of Physical Work Notification sent to contractor.**
- Federal projects: Final DBE Form completed by the contractor, signed by each DBE.**
 - MaineDOT’s PM will forward to MaineDOT’s Civil Rights Office.
- Contractor sends in request for final payment and statement that all bills have been paid.**
- Final estimate paid and retainage released to contractor.**
- As-built plans completed and sent to MaineDOT’s PM (if applicable).**

Appendix 11B: Submittals to MaineDOT

- ❑ To obtain electronic documents, go to the section labeled “Letters to MaineDOT” on the LPA Documents web page: <https://www.maine.gov/mdot/lpa/lpadocuments/>

[Date]

_____, Project Manager
Maine Department of Transportation
Bureau of Project Development, Multimodal Program
16 State House Station
Augusta, ME 04333-0016

Subject: Pre-Construction Meeting
MaineDOT WIN_____

Dear _____:

Your attendance is requested at the pre-construction meeting for **[insert project scope]** in the Municipality of _____ on **[insert meeting date/time]**. I have attached an agenda for your convenience.

If you need additional information, please let me know.

Sincerely,

Local Project Administrator

Cc: [Insert Name], Construction Manager, MaineDOT Multimodal Program

**AGENDA ITEMS FOR PRE-CONSTRUCTION MEETING
(Federally Funded Project)**

1. Introductions
2. Review Scope of Project
 - a. Acknowledge Amendments
 - b. Completion Date
 - c. Liquidated Damages
3. Permits Obtained (if required)
4. Construction Safety
 - a. Primary consideration during construction
 - b. Emergency contact list including 24 hour contacts
 - c. Contractor safety plan to be provided
 - d. Traffic Control Plan (TCP) must be reviewed and approved by Maine DOT
5. Schedule for the completion of work to be provided
 - a. Are there utility issues?
 - b. Update schedule as required
 - c. Daily construction activities to be recorded
 - d. Town must pay contractor first, then request reimbursement on a monthly basis
6. Labor Requirements
 - a. Davis-Bacon wage rates apply – if project has federal money
 - b. Certified payrolls with classifications to be submitted & reviewed: Elations
 - c. Payroll labor interviews
 - d. DBE participation & CUF form
7. Construction Control
 - a. Minimum Testing Requirements
 - b. Subcontract Approval (*FHWA-1273 must be inserted in all subcontracts*)
 - c. Measurement & documentation of materials used for payment purposes
 - d. Engineering oversight of activities
 - e. Manufacturer's certification for materials
 - f. Soil Erosion and Water Pollution Plan (SEWPCP)
 - g. Quality control plans, mix design submittals, pre-pave meeting
 - h. Buy America: steel/iron product certifications must be received before payment for that item, if a project has federal money
8. Submittals
 - a. Requests for Information (RFIs)
 - b. Change Orders require MaineDOT review; must include detailed description of scope change, independent cost estimate & time
 - c. Notification of anticipated issues, claims or disputes

[Date]

Jen Paul, Construction Manager
Maine Department of Transportation
Bureau of Project Development, Multimodal Program
16 State House Station
Augusta, ME 04333-0016

Subject: Contract Modification Request
MaineDOT WIN_____

Dear _____:

Attached for your review is Contract Modification #_____ for **[insert project scope]** in the Municipality of _____. The change will consist of **[insert description of contract modification including scope change and/or extra costs]**.

An independent estimate of the cost of the additional work is attached. This modification will add **[number of days]** to the original contract.

(Instructions: The amount of time required by the modification must be noted. If there is no change in the schedule, then state "0 days" or indicate that the modification will not change the amount of time associated with the contract.)

If you need additional information, please let me know.

Sincerely,

Local Project Administrator

Cc: MaineDOT Project Manager

PROJECT DESCRIPTION:	
CONTRACT MOD. NO.:	
PROJECT WIN:	
MUNICIPALITY:	
DATE ISSUED:	

To: _____, you are hereby notified, the following work is to be accomplished in accordance with the provisions of your Contract. The work will not be considered authorized for payment without the required signatures. Payment will be made as described.

(By signing this Order, the Contractor agrees that all issues, including time, relating to the described work are satisfactorily resolved by this Order. No other compensation will be sought or made.)

DESCRIPTION:

--

REASON:

--

COST:

--

Amount of this Order: \$

Original Contract Amount	\$
Total Cost of this Contract Modification	\$
Total Cost of all Contract Modifications Including this Mod	\$
Percentage of Contract for this Mod	%
Total Percentage of Contract including all Mods	%
Total Contract Amount Including this Mod	\$

Additional Days Added (This Mod):	New Completion Date:
-----------------------------------	----------------------

TITLE:	SIGNATURE:	DATE:
Resident or Inspector		
Contractor		
Municipality		

[Date]

Jen Paul, Construction Manager
Maine Department of Transportation
Bureau of Project Development, Multimodal Program
16 State House Station
Augusta, ME 04333-0016

Subject: Final Inspection, MaineDOT WIN_____

Dear _____:

Your attendance is requested at the Final Inspection for **[insert project scope]** in the Municipality of _____ on **[insert date/time]**. At the time, we can make available all documentation and testing required for the project.

If you need additional information, please let me know.

Sincerely,

Local Project Administrator

Cc: MaineDOT Project Manager

INSTRUCTIONS: *This must be submitted on letterhead with all requested documentation.*

[Date]

_____, Project Manager
Maine Department of Transportation
Bureau of Project Development, Multimodal Program
16 State House Station
Augusta, ME 04333-0016

Subject: Final Invoice and Notification of Completion of Work

MaineDOT WIN _____; Contract # _____

This Municipality of _____ certifies that the contractor has completed all work on the project in accordance with the construction contract and approved modifications, and that:

- The Municipality has accepted the work;
- All quantities were measured in accordance with the contract;
- Final quantities have been reconciled and agreed to by the contractor;
- The Municipality has all required supporting documentation for the final quantities;
- There are no outstanding claims or disputes associated with the project; and
- All fees and contract balances have been paid, including expenses from preliminary engineering, right-of-way, construction, inspection, and construction engineering.

Attached is the final invoice for the project requesting reimbursement of \$_____ as MaineDOT's _____% share of expenditures for the service period, _____. Attached is the documentation to support this request, including copies of invoices received and checks issued. I understand that the Municipality's _____% share of MaineDOT's internal charges to the project will be reconciled and deducted from this final invoice.

Also attached is a copy of the federally required consultant evaluation for the project.

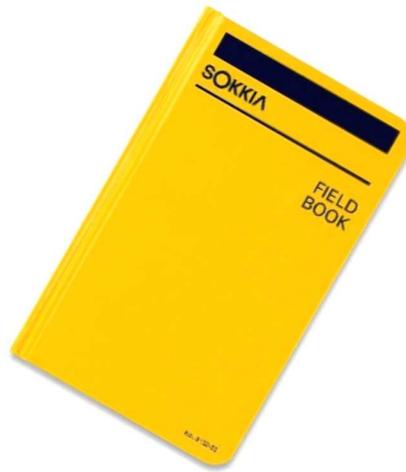
By signing this invoice, I certify to the best of my knowledge and belief that the information provided is true, complete, and accurate, and the expenditures, disbursements, and cash receipts are for the purposes and objectives set forth in the terms and conditions of the federal funding award. I am aware that any false, fictitious, or fraudulent information, or the omission of any material fact, may subject me to criminal, civil or administrative penalties for fraud, false statements, false claims or otherwise (U.S. Code Title 18, Section 1001 and Title 31, Sections 3729-3730 and 3801-3812.)

Sincerely,

_____, Local Project Administrator

Enclosure: Final billing

Appendix 11C: Sample Field Book Entries



DATE	DAY	WEATHER
MDOT:	PERSONEL	
CONTRACTOR		
PERSONEL		
EQUIPMENT		
WORKING HOURS		
SUB CONTRACTOR		
PERSONEL		
EQUIPMENT		
WORKING HOURS		
VISITORS		
PROJECT ACTIVITIES:		
<input type="checkbox"/>	ITEM NUMBER, LOCATION & LIABLE CONTR/SUB	
<input type="checkbox"/>	SOURCE AND DISPOSITION OF ANY EXCAVATION	
<input type="checkbox"/>	SOURCE AND DISPOSITION OF GRAVEL AND BORROW	
<input type="checkbox"/>	NON-ROUTINE ACTIVITIES	
	A: CONTRACTORS' NON ADHERANCE TO CONTRACT SPEC'S: MTCD'S & SEWPC	
	B: MDT DIRECTIVES GIVEN TO CONTRACTOR IE: C/O RELOCATIONS, CHANGES IN DESIGN, UNDERCUTTING & REWORK.	
	C: CONTRACTOR IS INADEQUETLY STAFFING THE JOB FOR THE TYPE OF WORK	
	D: ANYTHING RELATED TO POTENTIAL CONTRACTOR CLAIMS	
	E: ANY DISCUSSIONS WITH TOWN OFFICIALS, UTILITIES, DEVELOPERS AND ABUTTERS	
	G: TRAFFIC ACCIDENTS & OTHER HAZARDS	
ENTERED BY : NAME & DATE		

6/12/2002	FRIDAY	SUNNY 80'S
MDOT:	BILL BITTERMAN, RESIDENT BILLY BOB BENNET, INSPECTOR	
M&H:	6:00AM TO 5:00 PM 1 SUPT 5 WORKERS 2 LARGE EXC. 1 APE 1 D6 DOZER	1 COMPRESSOR 2 TRUCKS 1 5 TON VIB ROLLER 1 CHAMPION GRADER
	HASTINGS TREE REMOVAL SERVICES	
	ITEMS 652.361 AND 656.75 MTCD AND SEWPC INSPECTED AND ACCEPTED FOR THE WEEK	
	ITEM 201.23 SINGLE TREE HASTINGS CUT AND REMOVED SINGLE TREE AT THE THE CORNER OF PINE STREET AND RT 4	
	ITEM 603.159 12" OPT III CULV PIPE INSTALLED 12" OPT I CULV PIPE AT STA 12+56 RT	
	ITEM 604.097 6' B1-C CATCH BASIN INSTALLED AT STA 12+56 RT	
	ITEM 631.2 STUMP CHIPPER HASTINGS USED STUMP CHIPPER TO GRIND 2 STUMPS	
	M&H MULCHED ALL DISTURBED AREAS	
	COMPLAINT FROM BILL SIMPSON , PROJ SUPT ABOUT DELAYS FROM UTILITIES NOT SHOWN ON PLANS AS WELL AS SLOW PRODUCTION. HE THEY WILL KEEP RECORDS FOR POSSIBLE CLAIM. HE HAS ALSO REQUESTED INFORMATION ON ALTERNATE WORK AT THE OTHER END OF THE PROJECT STA 42+50 TO 45+75	
ENTERED BY : BILL BITTERMAN 6-12-02		

6/16/02	MONDAY	FAIR 60'S
MDOT:	BILL BITTERMAN, RESIDENT BILLY BOB BENNETT, INSPECTOR	
M&H:	6:00AM TO 5:00 PM 1 SUPT 5 WORKERS 2 LARGE EXC. 1 APE	1 COMPRESSOR 2 TRUCKS 1 5 TON VIB ROLLER 1 CHAMPION GRADER
ITEM 304.10	STA 3+00 TO 4+25	
	AFTER PLACING/COMPACTING LOWER LAYER OF ASC GRAVEL, THE SUBGRADE MATERIAL BEGAN TO PUMPING INTO THE LOWER ASC GRAVEL LIFT. THE RESIDENT DIRECTED THE CONTRACTOR TO EXCAVATE AND REMOVE THE CONTAMINATED GRAVEL. ROADWAY STABILIZATION GEOTEXTILE WAS THEN PLACED ON THE SUB-GRADE SURFACE BEFORE PLACING ASC GRAVEL. THIS WORK WILL BE PAID UNDER ITEM 203.20 COMMON EXC AND 304.10 ASC-GRAVEL. REF TO BOOK 4 PAGES 5 THROUGH 7 FOR FIELD MEASUREMENTS ROADWAY STABILIZATION GEOTEXTILE WILL BE PAID PER RESIDENTS WORK ORDER #1 (AMOCO 2006 INSTALLED)	
	THERE WAS AN ACCIDENT ON THE PROJECT TODAY AT STA 2+25 AT 10:00 AM +/-, VEHICLE NO 1 (FORD EXPLORER PLATE NO 4356 JJ) REAR-ENDED VEHICLE NO 2 (CHEVY S-10 PLATE NO 763784 I) WHICH WAS STOPPED FOR FLAGGER ED KNOWLES WITHIN THE WORK ZONE. THE ACCIDENT WAS INVESTIGATED BY JOEL RAMICH OF THE FARMINGTON POLICE DEPT. ALL SIGNS WERE UP AND TRAFFIC CONTROL DEVICES WERE SATISFACTORY. REFER TO CORRESPONDENCE FILE FOR A COPY OF THE POLICE/ACCIDENT REPORT COMPLETED ACCIDENT REPORT AND FORWARDED TO THE MDOT LEGAL DEPT.	
ENTERED BY :	BILL BITTERMAN	06-16-02

6/17/02	MONDAY	FAIR 70'S
MDOT:	BILL BITTERMAN, RESIDENT BILLY BOB BENNETT, INSPECTOR	
M&H:	6:00AM TO 6:00 PM 1 SUPT 5 WORKERS 2 LARGE EXC.	1 COMPRESSOR 2 TRUCKS 1 5 TON VIB ROLLER
SUB:	PIKE IND, 4 ROLLERS, 1 PAVER, 12 TRUCKS, 1 SERVICE TRUCK, 1 WATER TRUCK & 1 BOBCAT.	
	PERSONNEL: 1 SUPT, 1 FOREMAN, 7 SKILLED, 12 UNSKILLED, 2 LABORERS & 2 QC/QA WORKERS	
ITEM 304.104		
	FINEGRADE COMPLETE AND ACCEPTED STA 22+00 TO 35+25	
ITEM 403.207		
	PAVING OPERATIONS BEGAN AT STA 22+00 TO 35+25	
	CALL FROM BILL COBURN-FABRICATION INSPECTOR RE: CONCRETE CURBING. BILL HAD SOME CONCERNS ABOUT THE PERMABILITY. HE WILL VISIT GAGNE THEIR VEAZIE TOMORROW AND WILL E-MAIL ME THE RESULTS OF THE TEST IF THERE IS A PROBLEM, REFER TO CORRES. FILE FOR RECORD.	
ITEM 211.20		
	STA 2+00 TO 5+00, EXCESS MATERIALS FROM INSLOPE WORK REMOVED AND TAKEN TO APPROVED WASTE AREA (SMITH PIT)	
ITEM 203.20		
	STA 2+00 TO 12+00, PIKES RECLAIMER ON PROJECT, STA 2+00 TO STA 5+00 TO REMOVE PYMT IN FULL EXCAVATION AREA, LOADER PLACING MAT'L IN TRUCKS TO BE STOCKPILED ON SITE AND PLACED AS ASG AT A LATER DATE. TO BE PAID AS COMMON EXC AND AS6. RECLAIMED STA 5+00 TO 12+00, GRADED AND COMPACTED, TO BE PAID AS 307.	
	DENNY DOYLE, MDOT	ON SITE TO TEST 307 COMPACTION
ENTERED BY :	BILL BITTERMAN	6-17-02

202.20 COMMON EXCAVATION

COMMON EXC STA 20+00 TO 21+25 (TAPERED ENDS)
FROST HEAVE AREA

SECTION	W1	W2	DEPTH	AREA SF	LENGTH	VOLUME
1	0	0	0	0		
2	24'	28'	1.5'	39	25	487.5
3	24'	28'	1.5'	39	75	2925
4	0	0	0	0	25	487.5

ITEM 202.20
TOTAL VOLUME FOR THIS SECTION = (3900)/27 = 144.44 CY

ITEM 304.104 AS6 QTY = 144.44 CY

ENTERED BY : BILL BITTERMAN 11-08-02

CHECKED BY: ABC 1-2-03

DEPTH = 18"

202.20

COMMON EXC STA 16+25 L
REGRADE ENTRANCE TO MATCH NEW ROADWAY ELEV

DATE	TRUCK NO	NO OF LOADS	VOLUME VOL/LOAD CY	VOLUME CY
37530	117	2	10.5	21
37530	120	3	11.2	33.6
10/2/2002	117	1	10.5	10.5
10/2/2001	120	1	11.2	11.2

TOTAL 76.3 CY

T.M. QTY REDUCTION

ITEM 202.2 TOTAL QTY .9(76.3) = 68.67 CY

REFER TO BOOK #4 PAGE 60 FOR TRUCK MEASUREMENTS

ITEM 304.104

NOTE: TRUCK REMOVED EXC AND RETURNED WITH ASC WITH ONE ADDITIONAL LOAD BY TRUCK NO 117

TOTAL 76.3 CY

TRK #117 10.5

86.8 CY

T.M. QTY REDUCTION

ITEM 304.104 TOTAL QTY .8(86.8) = 69.44 CY

ENTERED BY : BILL BITTERMAN 11-08-02

CHECKED BY: ABC 1-2-03

203.21 ROCK EXCAVATION		600 CY @ \$12.00		
STA	STA	ACC. QTY	ENT BY	DATE
17+50	17+80	11.59 ✓	BBB	8/20/2002
16+50		2.46 ✓	BBB	8/12/2002
21+25	22+20	14.6 ✓	BBB	8/12/2002
FINAL PAY QUANTITY: 24.64 CY				
ENTERED BY : BILL BITTERMAN 11-08-02				
CHECKED BY: ABC 1-2-03 ✓				

202.20 COMMON EXCAVATION	
REF	
	CONSTRUCTION BK 3 PG 6
	INSP DIARY BK 4 PG 3
	CONSTRUCTION BK 3 PG 10

203.25 GRANULAR BORROW

600 CY @ \$12.00

STA	STA	QTY	ACC. QTY	ENT BY	DATE
30+00	32+00	275	275	BBB	37478
33+28 RT		21.43	276.43	BBB	
19+00	19+75	42.5	318.93		

FINAL PAY QUANTITY: 318.93 CY

ENTERED BY : BILL BITTERMAN 11-08-02

CHECKED BY: ABC 1-2-03

REF

NOTE: THE ENGINEERS ESTIMATE WAS REVIEWED AND APPEARS TO BE REASONABLE AND ACCURATE.

REF: RWO NO 1; CONTRACTOR AGREED TO PLAN QTY PAYMENT PLUS ANY ADDITIONAL EXCAVATION OUTSIDE OF EXCAVATION LIMITS OR AS DIRECTED.

BK 4 PG 2 MULTI PLATE BACKFILL COMPLETED TO PLANS & SPEC
BK 4 PG 2 FOR ADDITIONAL EXCAVATION (UNDERCUT)
BK 4 PG 2 MAINTENANCE OF TRAFFIC

211.2 INSLOPE EXCAVATION

1500 FEET @ \$3.00/ft

STA	STA	LENGTH	ACC. LENGTH	ENT BY	DATE
2+00RT	3+25RT	125' ✓	125' ✓	BBB	6/20/2002
4+05FT	5+00RT	95' ✓	220' ✓	BBB	6/20/2002
5+40RT	6+00RT	60' ✓	280' ✓	BBB	6/20/2002
6+35RT	6+75RT	40' ✓	320' ✓	BBB	6/20/2002
8+25RT	9+50RT	125' ✓	445' ✓	BBB	6/21/2002
10+80RT	11+90RT	160' ✓	605' ✓	BBB	6/21/2002
1+00 LT	12+00 LT	435' ✓	1040' ✓	BBB	6/26/2002
21+50RT	22+50RT	100' ✓	1140' ✓	BBB	6/27/2002
23+25RT	24+50RT	125' ✓	1265' ✓	BBB	6/27/2002
25+35RT	25+55RT	25' ✓	1290' ✓	BBB	6/27/2002
26+50RT	26+75RT	25' ✓	1315' ✓	BBB	6/27/2002
27+75 RT	28+25RT	50' ✓	1365' ✓	BBB	6/27/2002
28+50RT	29+50RT	100' ✓	1465' ✓	BBB	6/27/2002
21+00LT	30+00LT	325' ✓	1790' ✓	BBB	7/1/2002

FINAL PAY QUANTITY: 1790 FT ✓

ENTERED BY : BILL BITTERMAN 11-08-02

✓ CHECKED BY: BWD1-2-03

REF.					
DIRECT ENT.					
	completed accord to plan/spec, waste hauled to Smith's waste area				
REF TO INSP DIARY #1 PAGE 5					
DIRECT ENT.					
	completed accord to plan/spec, waste hauled to Ames waste area				
REF TO INSP DIARY #1 PAGE 8					

304.104 AGGREGATE SUBBASE COURSE GRAVEL-PLAN QTY

STA	STA	QTY	QTY	ACC.	ENT	DATE
15+00	21+00	600	600	600	BBB	37489
20+00	21+25	69.44	669.44			
FINAL PAY QUANTITY: 669.44 CY						
ENTERED BY : BILL BITTERMAN 11-08-02						
CHECKED BY: ABC 1-2-03						

600 CY @ \$16.00/CY

REF

NOTE: THE ENGINEERS ESTIMATE WAS REVIEWED AND APPEARS TO BE REASONABLE AND ACCURATE.

REF: RWO NO 1: CONTRACTOR AGREED TO PLAN QTY PAYMENT PLUS ANY ADDITIONAL EXCAVATION OUTSIDE OF EXCAVATION LIMITS OR AS DIRECTED.

BK 3 PG 4 THRU 16 FOR FINEGRADE CHECKS

ADDITION MATL USED IN DRIVES, REF INSP DIARY PG 22-32

403.208 HOT MIX ASPHALT, 12.5 MM

COVER	SLIP NO	DATE	QTY	ACCUM QTY	M.L.	ACCUM M.L.
3456	8/4/2002	1,856.25	1,856.25	1,856.25	1,856.25	1,856.25
3457	8/5/2002	1,795.50	3,651.75	1,795.50	3,651.75	3,651.75
3458	8/6/2002	1,601.25	5,253.00	1,300.00	4,951.75	4,951.75
3460	8/7/2002	1,109.50	6,362.50			
3461	8/16/2002	1,649.25	8,011.75	1,649.25	6,601.00	6,601.00
3466	8/17/2002	1,780.50	9,792.25	1,540.50	8,141.50	8,141.50
3469	8/18/2002	963.75	10,756.00			
TOTALS			10756.50		8,141.50	8,141.50
3470	37487	230.50	**			
<u>FINAL PAY QUANTITY: 10,756.00 MG (PARTICIPATING)</u>						
ENTERED BY : BILL BITTERMAN 11-08-02						
CHECKED BY: ABC 1-2-03						
<u>FINAL PAY QUANTITY: 230.50 TONS</u> (NON-PARTICIPATING)						
ENTERED BY : BILL BITTERMAN 11-08-02						
CHECKED BY: ABC 1-2-03						

10,850 MG TONS @ \$41.00/TON

SHLDR QTY	ACCUM QTY	LOT NO	ENT BY	DATE	600 CY @
		1	BBB	8/5/2002	
		1	BBB	8/6/2002	
301.25	301.25	1	BBB	8/7/2002	*
1,109.50	1,410.75	1	BBB	8/8/2002	
		2	BBB	8/17/2002	
240.00	1,650.75	2	BBB	8/18/2002	
963.75	2614.50	2	BBB	8/19/2002	
	2614.50				
* REF INSPECTORS DIARY BK 4 PAGE 23FOR QTY BREAKDOWN					
** NON-PARTICIPATING MIX ON MAPLE LANE TO BE PAID BY TOWN OF FARMINGTON					

631.12 ALL PURPOSE EXCAVATOR (INCL OPERATOR)

DREW NO.	NO OF HRS	ACCUM HRS	ENT BY	DATE
1	2	2	BBB	7/1/2002
2	10	12	BBB	7/6/2002
3	3	15	BBB	7/16/2002
5	8	23	BBB	7/25/2002
6	10	33	BBB	8/5/2002
8	8	41	BBB	8/12/2002

TOTAL

41

FINAL PAY QUANTITY: 41 HRS

ENTERED BY : BILL BITTERMAN 11-08-02

CHECKED BY: ABC 1-2-03

20HRS @ 100.00/HR

REF
 INSP DIARY BK 4 PAGE 4
 INSP DIARY BK 4 PAGE 12
 INSP DIARY BK 4 PAGE 13
 INSP DIARY BK 4 PAGE 22
 INSP DIARY BK 4 PAGE 55, REF CONTRACT MOD #5
 INSP DIARY BK 4 PAGE 56, REF CONTRACT MOD #5

652.33 DRUMS

DATE COUNTED	EA	REF	ENT BY	DATE
9-27-01	10	DIRECT ENT	BBB	9/27/2002
10-15-01	22		BBB	10/05/2002
10-30-01	22	↓	BBB	10/10/2002
10-25-01	36		BBB	10/25/2002
11-05-01	66	BK 3 PGE XX	BBB	11/5/2002
11-10-01	25	DIRECT ENT	BBB	11/20/2002
11-17-01	30	DIRECT ENT	BBB	12/5/2002

MAXIMUM AMOUNT = 66 DRUMS ↓

FINAL PAY QUANTITY: 66 EA ↓

ENTERED BY : BILL BITTERMAN 12-10-02

CHECKED BY: ABC 1-2-03 ↓

50 EA @ \$55.00

656.75 TEMP SOIL EROSION AND WATER POLLUTION

ACCEPTED INSPECTED WEEK ENDING

O.K. 8/8/2002

O.K. 8/15/2002

O.K. 8/22/2002

O.K. 8/29/2002

O.K. 9/6/2002

REF TO REMARKS 9/10/2002

REF TO REMARKS 9/11/2002

O.K. 9/13/2002

O.K. 9/20/2002

FINAL PAY QUANTITY: 1 LS OF \$20,000 ✓

ENTERED BY : BILL BITTERMAN 11-08-02

CHECKED BY: ABC 1-2-03 ✓

1 L.S. @ \$20,000

REMARKS

MIKE CLARK, OES, REVISED AND APPROVED SEWPCP, PAY 10%

PAID 50%

✓ DEDUCT \$100 FOR NON COMP TO PLAN, REF TO CORRESPONDENCE DATED 9/10/02 AND PROJECT DIARY PAGE 45

✓ DEDUCT \$100 FOR NON COMP TO PLAN, REF TO CORRESPONDENCE DATED 9/11/02 AND PROJECT DIARY PAGE 70

NOTE: THE DEDUCTIONS ARE MADE UNDER SAME ITEM # W.O. 55, FOR A \$200 LS DEDUCT

FINEGRADE CHECKS

LEFT	STA	RIGHT
16'	15+00	16'
12'	15+50	12'
12'	16+00	12'
12'	16+50	12'
12'	17+00	12'
12'	17+50	12'
12'	18+00	12'
12'	18+50	12'
12'	19+00	12'
12'	19+50	12'
12'	20+00	12'
12'	20+50	12'
12'	21+00	12'

CHECKED & FOUND TO BE WITHIN ALLOWABLE TOLERANCES, ENT BY BBB 8-2-02

CHECKED & FOUND TO BE WITHIN ALLOWABLE TOLERANCES ENT BY BBB 8-3-02

CHECKED & FOUND TO BE WITHIN ALLOWABLE TOLERANCES, ENT BY BBB 8-2-02

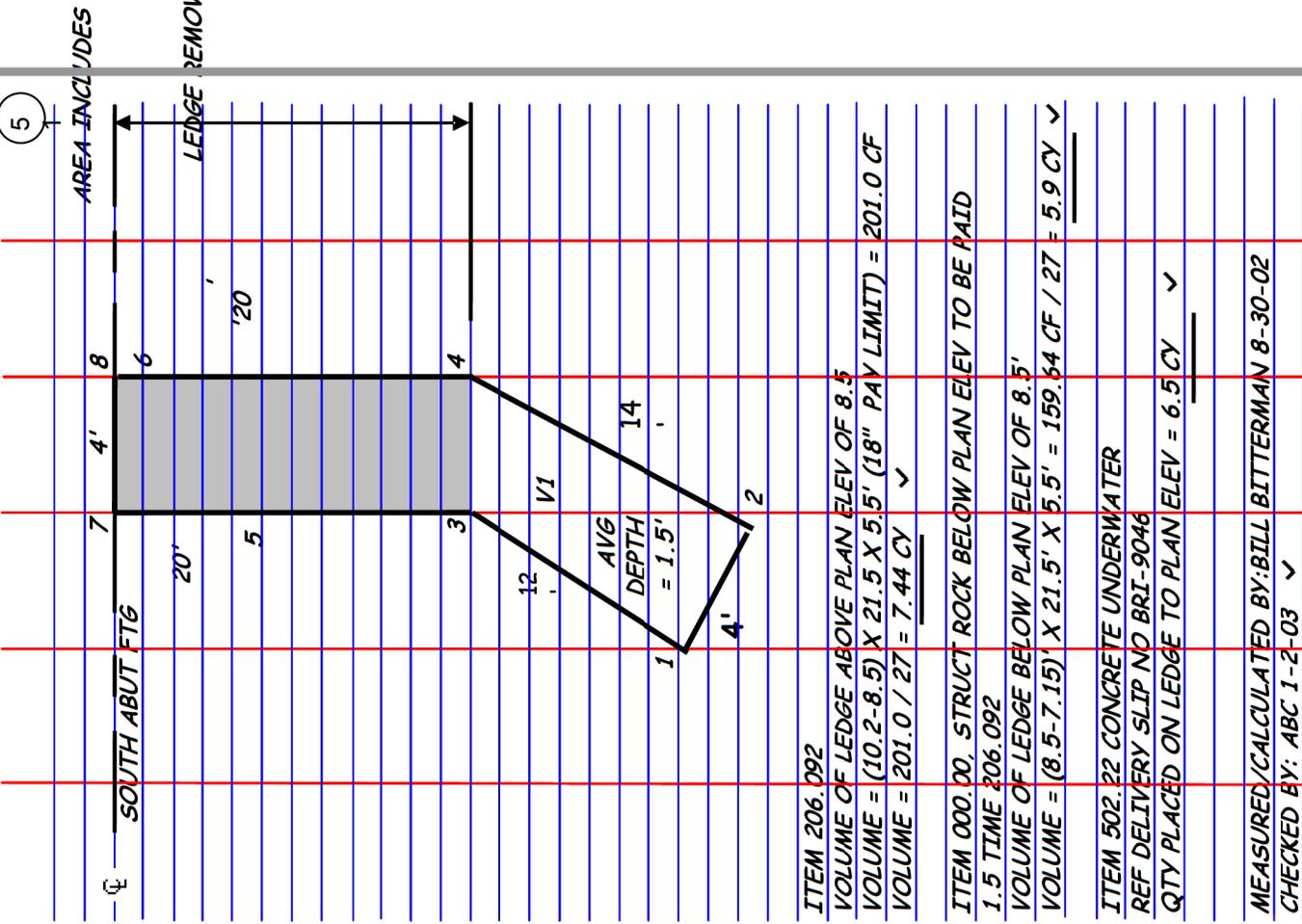
CHECKED & FOUND TO BE WITHIN ALLOWABLE TOLERANCES ENT BY BBB 8-3-02

NOTE: DEATHS EXPRESSED IN INCHES BELOW C-1'

LEFT	STA	RIGHT
16'	15+00	16'
-2%	15+50	-2%
4"	0"	3"
-2%	15+50	-2%
3.25"	0"	3"
-2%	16+00	-2%
23.5"	0"	3"
-2%	16+50	-2%
1.75"	0	3"
-2%	17+00	-2%
-0.5"	21"	3"
-2%	17+50	-3.0%
-2.5"	0"	4.25"
-2%	18+00	-4.0%
-4.75"	0"	5.75"
-2%	18+50	-4.0%
-4.75"	0"	5.75"
-2%	19+00	-3.0%
-2.5"	0"	4.25"
-2%	19+50	-2.0%
-0.5"	0"	3"
-2%	20+00	-2.0%
1.75"	0"	3"
-2%	20+50	-2.0%
3.25"	0"	3"
-2%	21+00	-2.0%
4"	0"	3"

CHECKED BY B. SMITH 10-10-02

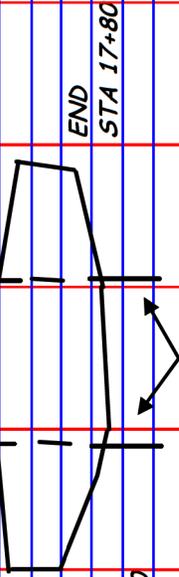
7/24/1900 STRUCTURAL EARTH EXC-MAJOR STRUCTURES				REMOVAL DEPTH BELOW FTG ELEV 8.5'
TMB #3	BS	FS	ELEV	
EL = 15.5'	3.8'	19.3'		
1		12.0	7.3	1.2'
2		12.3	7.0	1.5'
3		12.1	7.2	1.3'
4		12.5	6.8	1.9'
AVERAGE DEPTH OF UNDERCUT BELOW ELEV 8.5' =				1.5'
ITEM 206.082 STRUCT EARTH EXC-MAJOR STRUCT				
VOLUME = .5(12+14) X 4' X 1.5' = 78 CF/27 = 2.89 CY				
ITEM 203.25 GRAVEL BORROW				
VOLUME = 2.89 X 1.15 (SWELL) = 3.32 CY				
ITEM 206.092 STRUCT ROCK EXC-MAJOR STRUCT				
TOP OF LEDGE ELEVATIONS				
	BS	HI	FS	ELEV
3	3.8	19.3'	10.0	9.3'
4			10.2	9.1'
5			9.2	10.1'
6			8.8	10.5
7			8.4	10.9'
8			8.2	11.1'
TOP OF LEDGE WEIGHTED AVERAGE ELEVATION				
= (9.3 + 9.1 + 2(10.1+10.5) + 10.9 + 11.1)/8 = 10.2'				
BOTTOM OF LEDGE ELEVATIONS				
	BS	HI	FS	ELEV
3	3.8	19.3'	12.3	7.0
4			12.2	7.1'
5			12.0	7.3'
6			12.1	7.2'
7			12.2	7.1
8			12.3	7.0
BOTTOM OF LEDGE WEIGHTED AVERAGE ELEVATION				
= (7.0 + 7.1 + 2(7.3+7.2) + 7.1 + 7.0)/8 = 7.16				



203.21 ROCK EXCAVATION

REMOVING ROCK ABOVE SUBGRADE STARTING AT STA 17+00

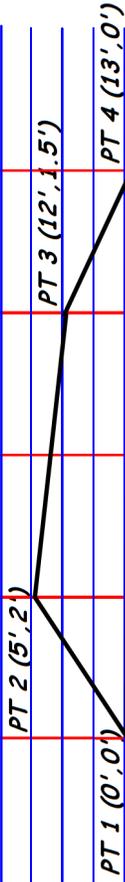
PLAN



TWO SECTIONS WERE TAKEN AT STA 17+60 AND 17+72

SECTION AT STA 17+60

NOTE: ZERO ELEV DEPICTS SUBGRADE



TBM	BS	HI	FS	ELEV
= SG	5.5	5.5		
PT 1		5.5	5.5	0'
PT 2		3.5	2.0'	2.0'
PT 3		4.0	1.5'	1.5'
PT 4		5.5	0'	0'

SECTION AT STA 17+72

NOTE: ZERO ELEV DEPICTS SUBGRADE



TMB	SG	BS	HI	FS	ELEV
PT 1			5.5		
PT 2			5.5	5.5	0
PT 3			4.0	1.5'	1.5'
PT 4			5.0	.5"	.5"
PT 4			5.5	0	0

ENTERED BY : BILL BITTERMAN 11-08-02

CHECKED BY: ABC 1-2-03

AREA OF SECTION = $.5(X_1(Y_4 - Y_2) + X_2(Y_1 - Y_3) + X_3(Y_2 - Y_4) + X_4(Y_3 - Y_1))$

AREA OF SECTION AT 17 + 60

POINT	X	Y	DIFFERENCE OF Y'S	DOUBLE AREA
1	0	0	0-2=-2	0
2	+5	+2	0-1.5=-1.5	7.5
3	12	+1.5	2-0=2	24
4	+13	0	1.5-0=1.5	19.5
1	0	0	0	0
TOTAL				43.5
AREA = 36 X .5 = 18 SF				✓

AREA OF SECTION AT 17+ 80

POINT	X	Y	DIFFERENCE OF Y'S	DOUBLE AREA
1	0	0	0-1.5=-1.5	0
2	5	1.5	0-.5=-.5	2.5
3	12	0.5	1.5-0=1.5	18
4	13	0	.5-0=.5	7.5
1	0	0	0	0
TOTAL				25.5
AREA = 23 X .5 = 11.5 SF				✓

VOLUME OF ROCK REMOVED

STA	AREA SF	AVERAGE AREA SF	LENGTH FT	VOLUME CF
17+50	0			
17+60	18	9	10	90
17+72	11.5	14.75	12	177
17+80	0	5.75	8	46
TOTAL VOLUME =				313/27 = 11.59 CY

ITEM 203.21 = 11.59 CY, ITEM 203.20 DEDUCT 11.59 CY

206.07 STRUCTURAL ROCK EXCAVATION

STA	BS	HI	FS	ELEV
10+90			9.0	10.0 ✓
11+00			8.8	10.2 ✓
11+10			8.6	10.4 ✓
11+20			8.5	10.5 ✓
11+30			8.2	10.8 ✓
11+40			8.1	10.9 ✓
11+50			8.4	10.6 ✓
11+60			8.6	10.4 ✓
11+70			8.5	10.5 ✓
11+80			8.8	10.2 ✓
11+90			9	10 ✓
BOTTOM OF ROCK ELEVATIONS				
BM #3 = 23.5'	4.2	19.3'		
STA				
10+85			9.7	9.6 ✓
10+90			9.6	9.7 ✓
11+00			9.4	9.9 ✓
11+10			9.5	9.8 ✓
11+20			9.5	9.8 ✓
11+30			9.4	9.9 ✓
11+40			9.6	9.7 ✓
11+50			9.5	9.8 ✓
11+60			9.4	9.9 ✓
11+70			9.5	9.8 ✓
11+80			9.6	9.7 ✓
11+90			9.5	9.8 ✓
11+95			9.7	9.6 ✓

206.07 STRUCTURAL ROCK EXCAVATION FOR 12" UD TYPE C

FROM STA 10+80 TO 11+90

TRENCH PAY WIDTH = DIA + 18" = 30" = 2.5' ✓

TOP OF ROCK ELEV.

BM #3 = 23.5'

BS 4.5

HI 19.0

FS

ELEV

206.07 STRUCTURAL ROCK EXCAVATION

STA	TOP LEDGE	BOTTOM LEDGE	AREA	AVG AREA L'	VOLUME
10+85	0	9.6	0	.25 X 5	1.25 ✓
10+90	10.0	9.8	0.5	.875 X 10	8.75 ✓
11+00	10.2	9.7	1.25	1.25 X 10	12.5 ✓
11+10	10.4	9.9	1.25	1.5 X 10	15 ✓
11+20	10.5	9.8	1.75	2.13 X 10	21.3 ✓
11+30	10.8	9.8	2.5	2.75 X 10	27.5 ✓
11+40	10.9	9.7	3	2.5 X 10	25 ✓
11+50	10.6	9.8	2	1.63 X 10	16.3 ✓
11+60	10.4	9.9	1.25	1.5 X 10	15 ✓
11+70	10.5	9.8	1.75	1.5 X 10	15 ✓
11+80	10.2	9.7	1.25	.875 X 10	8.75 ✓
11+90	10	9.8	0.5	.25 X 5	1.25 ✓
11+95	0	9.6	0		
(END OF ROCK EXC)					TOTAL VOLUME = 167.6 CF ✓
NOTE: ALL FINAL ROCK ELEV ABOVE THE FLOW LINE - 1 FT					
PAY LIMIT (PIPE ELEV. 10.4 TO 10.0)					
ITEM 206.07					
TOTAL VOLUME = 167.6/27=6.2 CY ✓					
MEASURED & CALCULATED BY : BILL BITTERMAN 11-08-02					
CHECKED BY: ABC 1-2-03 ✓					

501.36 STEEL H-PILES

PILE NO.	HEAT NO.	DATE DRIVEN	LENGTH (FT)	CUT OFF	LENGTH
1	191244	5-2-02	50.32	4.1"	
	194352	5-6-02	40.26	11.33'	89.3' ✓
DRIVEN LENGTH					
2	191248	5'-2'-02	50.32	7.2"	
	194350	5-6-02	40.27	11'-6"	89.0' ✓
DRIVEN LENGTH					
3	191248	5'-2'-02	50.33	6"	
	194348	5-6-02	40.27	11'-0"	89.2' ✓
DRIVEN LENGTH					
4	191244	5'-2'-02	50.31	4"	
	194427	5-6-02	40.25	11'-6"	89.3' ✓
DRIVEN LENGTH					
5	191246	5'-2'-02	50.31	6"	
	194352	5-6-02	40.26	11'-2"	89.1' ✓
DRIVEN LENGTH					
501.361					
PILE NO.	DRIVEN LENGTH (FT)	ACCUM (FT)	PILES DELIVERED (FT)	ACCUM (FT)	
1	89.3' ✓	89.3' ✓	50.32' ✓	40.26' ✓	90.58
2	89.0' ✓	178.3	50.32' ✓	40.27' ✓	181.17
3	89.2' ✓	267.5	50.33' ✓	40.27' ✓	271.77
4	89.3' ✓	356.8	50.31' ✓	40.25' ✓	362.33
5	89.1' ✓	445.9 ✓	50.31' ✓	40.26' ✓	452.9' ✓

PILE NO:

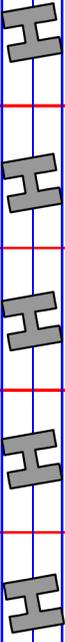
1

2

3

4

5



NORTH ABUTMENT

STREAM



NOTE: THE PILE #'S ARE NOT THE SAME AS THE BEAM #'S
ALL PILES ARE HAVE A 10 DEGREE SKEW

ITEM 501.36: PILES DELIVERED = 452.9'

ITEM 501.361: PILES IN PLACE = 445.9'

MEASURED/COMPS BY BILL BITTERMAN 5-7-02

CHECK BY: ABC 8-08-02 ✓

ITEM 203.21

NOTE: ALL AREAS WERE MEASURED WITH A PLANIMETER FROM THE ADJACENT CROSS SECTIONS

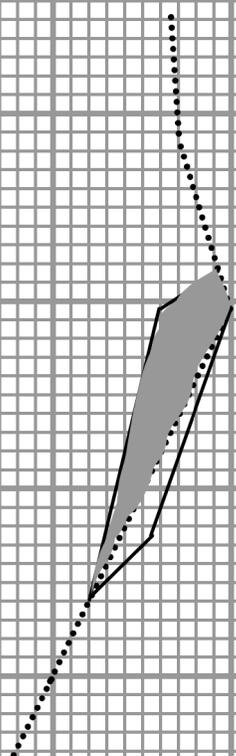
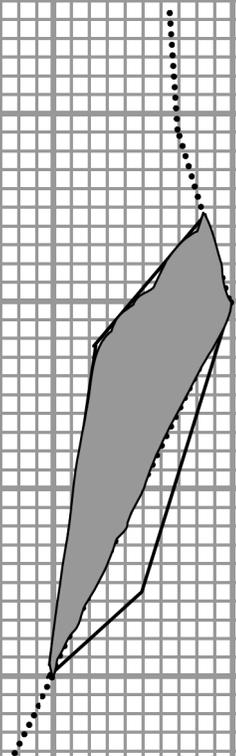
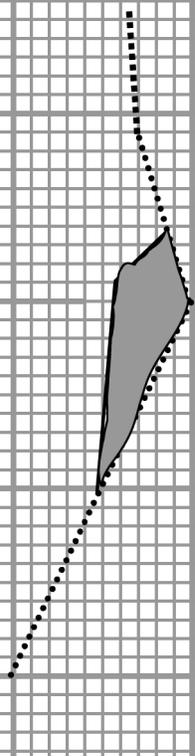
STA	AREA	AVERAGE AREA	LENGTH (FT)	VOLUME (CY)
21+25	0	2.9	25	2.7 ✓
21+50	5.8	7.5	25	6.9 ✓
21+75	9.2	6.5	15	3.6 ✓
21+90	3.8	1.9	20	1.4 ✓
22+10	0	TOTAL		14.6 ✓

ITEM 203.21 TOTAL = 14.6 CY ✓

MEASURED/CALC BY: BILL BITTERMAN 8/20/02

CHECKED BY: ABC 1-2-03

- DESIGN GRADE
- █ 203.21 ROCK EXCAVATION
- ROCK PROFILE



END OF CHAPTER 11