Chapter 3 – Project Recordkeeping and Documentation

Part I - Project Records

1-301 General

Federal participation in the cost of the construction is contingent upon documentation of the project. Federal agencies require the state agencies to develop and maintain a standardized system of documenting the work and payments made. To fulfill this requirement the State of Connecticut Department of Transportation (Department) developed a standard system of recordkeeping.

The Department's standardized system for recording and documenting conditions and activities related to the construction work is presented in this Chapter. Project records must be accurate and complete. They may be subject to detailed review and audit by State and Federal personnel at any time, even years after project completion, and they may also be required for settlement of disputes between the Contractor and the State.

The Chief Inspector is responsible to ensure that all forms and reports documenting the contractors work, as well as those that may be required by other units of the Department and State and Federal agencies, are accurate and complete. Notes and explanations should supplement the records, if needed, to make the records as clear and complete as possible. A sample list of project records is provided below (depending upon the specific project other project records may be necessary):

- Contract Documents (plans, specification, etc.)
- Chief Inspector's Diary
- Inspector's Daily Work Report (DWR)
- Project Volumes (and other documentation supporting Contractor payment)
- Project Correspondence
- Meeting Minutes
- Concrete Base & Pavement Inspection Report (Form CON-135)
- Base & Bituminous Concrete Inspection Report (Form CON-136)
- · Requisitions and Receiving Reports for State-furnished materials
- Requests for Material Tests (Form MAT-100)
- Report for Test on Cylinders (Form MAT-308)
- Report of Rejected Materials (Form MAT-103)
- Cost Plus Forms
- Pile Driving Records (Form CON-87)
- Special orders/directives to Contractors
- Noncompliance and Compliance Notices
- Labor Wage Check (Form CON 131)
- Contract Status (Form CON-100)
- Certified Payrolls
- Construction Orders (Orders for extra and additional work)
- Environmental Forms and Reports

The minimum retention period for project-related records is seven years after the project's Certification of Acceptance of Project (Form CON-501) is issued or three years after final federal payment, whichever is later, providing there is no pending litigation. (Note: The date of final payment by the Federal Highway Administration or other federal agency may be years after the date of acceptance by the State Department of Transportation. Therefore the appropriate staff responsible for record retention must follow the established procedures for destruction of records before disposing of the project records).

1-302 Field Records

This section outlines general principles to be employed in the creation of the project records:

- The records should be complete, and the information should be presented in such a way that a person not familiar with the project could understand what happened and what the conditions were.
- Willful falsification, distortion or misrepresentation of any facts related to the Project is a violation of State and Federal law.
- The Department's official record of the work will be the SiteManager DWR along with supporting documents. Any exception must be approved by the Construction Division Chief.
- Through the user's acknowledgement of the Department's Computer Use Policy and the SiteManager certification statement, the user is certifying that information entered is accurate to the best of their knowledge. The user is responsible for any information entered under their user name and password. Passwords shall not be shared.
- Project Volumes (not included in SiteManager) will be filed as follows:
 - o Volume I Diaries and Inspector's Daily Work Reports (only required for non-SiteManager projects)
 - o Volume II Contract Items (only required for non-SiteManager projects)
 - o Volume III Computations, Etc.
 - o Volume IV Miscellaneous Contract Data
 - o Volume V Bound Field Books, Notes and Field Reporting Forms (for use with SiteManager projects).
- The preparer's full signature and printed name, as well as the date and project number are required on all hand written records, including documents scanned. The exception to this is the bound field book. The labeling and certifying of the bound field book is outlined later in the chapter.
- If a volume consists of more than one book, the second book in the series is designated "Book 2" (for example, "Volume III, Book 1;" "Volume III, Book 2;" and "Volume III, Book 3"). On minor projects all volumes may be contained in one or two binders, as the number of pages dictates. Each volume must have an index page that lists the contents.
- Absolutely no erasures or whiteouts are allowed on documentation prepared by project personnel. If an
 error is made, the incorrect figure, item, or statement is crossed out and initialed. The correction may be
 written neatly above it or made elsewhere. If the correction is made elsewhere, a reference to the
 correction is written above the crossed-out and initialed error.

- In general, project records are to be kept in the field office. The inspection staff should make every effort
 possible to assure that records supporting computations and payment are stored in a fireproof safe at the
 end of the work day.
- Weigh tickets and delivery tickets for materials that are not paid by the ton will be collected and kept in the project records for reference.
- Weigh tickets for materials that are paid for by the ton must be collected as the basis for payment. Inspectors are responsible for collecting the tickets, noting related information on the ticket and signing them as the material is installed. The tickets are to be kept in a binder. The location of the weigh ticket(s) must be referenced in the DWR (i.e. 3 weigh tickets located in Book 1 Processed Aggregate Base. When kept in separate folder, or binder, weigh tickets should be filed in chronological order by Item. On small projects a single binder can be used, however, separate sections should be created for each item. Refer to other sections for information to note on tickets.

1-303 Diaries and Inspector's Daily Work Reports

Daily Diaries and Daily DWRs are entered and maintained in SiteManager. The information in this manual will outline the requirements for the Diary and DWR. The inspection staff and supervisory personnel shall be guided by the SiteManager User Guide for proper entry of data into the SiteManager system.

The Daily Work Report (DWR), in conjunction with the Diary and attachments, is considered the source document. These reports provide valuable information and evidence in the event of contractual disputes and legal actions.

The intent of the Diary and Daily Work Report is to document the daily activities and occurrences related to the project, record payments, meet the requirements for the Federal reimbursement, and document field conditions. To this end it is important that the records be complete, up to date and maintained in a consistent manner throughout the Department.

1-303A - Diary

The SiteManager Diary is entered by the Chief Inspector or Resident Engineer to track time (i.e. elapsed days, calendar days), to authorize the Daily Work Reports (DWR) entered by inspection forces and to record pertinent information regarding the project.

Each Diary should contain a brief summary of the field operations covered by each inspector correlated to the inspector's name. The diary should also note the work hours of the inspection staff, any official visitors to the project and record the Chief Inspector's/Resident Engineer's activities for the day. If contractor activity does not necessitate that a DWR be completed for a given day then the Diary should include a synopsis of all conditions and activity related to the administration of the contract.

The Chief Inspector or Resident Engineer is responsible for authorizing DWRs and making sure the Charge Day is correct on their Diary. No one below the level of Chief Inspector (both Consultant and State personnel) is authorized to approve Inspector's DWRs.

Diary Entry:

- From the time the Chief Inspector or Resident Engineer is assigned full time to a project until the Notice to
 Proceed date a Diary should be entered weekly to document events and the activity of the inspection staff
 relative to the project. Time will not be charged until the Notice to Proceed Date.
- From the Notice to Proceed until the Substantial Completion Date a Diary is required for each Calendar Day including winter shut-down periods. It is important the Chief Inspector pay close attention to the Charge / No-Charge function of the Diary to accurately record contract time utilized. For example, during winter shut-down, the diaries would be coded as no-charge if the winter days do not count per the Contract.
- During a full suspension of the work, Diaries may be filled out daily or weekly as warranted to document activity pertinent to the contract.
 - o If all project personnel (up to and including the Chief Inspector and/or Resident Engineer) are relieved of their duties (reassigned, etc.), it is the responsibility of the Project Engineer to make periodic checks of the job site and create weekly Diaries in SiteManager. The Diaries must contain all ongoing information, discussions, meetings, etc., regarding the suspension period and job-site changes.
 - If the project is under suspension, it is important that the responsible party (Chief Inspector or Project Engineer) inventory materials stored and equipment left on the job site and attach a list to their Diary or DWR.
- From the Substantial Completion Date until the final punch list is completed, a DWR and Diary are required when there is contract activity. If there is no contract activity, a weekly Diary should be filled out to document events and the activity of the inspection staff relative to the project. Time will not be charged after the Substantial Completion Date. (If the inspection staff is relieved of full time duty prior to the final Punchlist being completed the weekly Diary is not necessary).

1-303B - Daily Work Report (DWR)

The SiteManager DWR and supporting information is the official record of the contract work performed on the project. The Inspector should make every effort to create a record of the work that is clear, concise, and complete.

A DWR is required when there is construction activity whether performed by a Contractor, Utility, DOT Maintenance or any other entity. A DWR is also required to make contract payments.

A DWR should be entered into SiteManager daily by all field personnel engaged in the inspection of contract work.

The SiteManager DWR is supplemented by appropriate field reporting forms for operations involving cost plus, bituminous concrete placement, concrete paving, processed aggregate base and other operations that require extensive measurements and proofs to be performed at the time of the operation in the field. The field reporting forms may be scanned and attached to the appropriate section of the SiteManager DWR. The paper copy of the field reporting form will be retained in the appropriate volume or folder and referenced from the DWR. For example, the bituminous concrete paving report will be kept with the bituminous concrete paving (or weight) tickets and cost plus documentation is kept in the Volume 3.

If the Inspector is not able to utilize a laptop or other mobile device to complete the SiteManager DWR in proximity to the work location due to site conditions, the Inspector will utilize a project specific bound field book or other approved means to record notes to allow them to recall the occurrences, conversations, field measurements, etc., at the time of inspection. The Inspector will utilize the notes to create the SiteManager DWR. The bound field books or field notes shall be retained with the project records. *Guidance is provided later in this chapter relative to the requirements of the field notes*.

DWR Creation and Entry:

- It is critical that the project staff enter the information for the DWR in the proper fields of SiteManager. This section outlines the information required for the DWR. The Project staff shall follow the direction in the SiteManager User Guide for proper entry of the information into SiteManager.
- If the project is such that an Assistant Chief Inspector or Consultant Field Chief inspector is employed they are required to fill out a DWR to document their daily activities. The DWR prepared by the Assistant Chief Inspector must include information concerning important discussions with the Contractor; incidents on the Project; discussions with designers, utilities, or public officials; meetings attended; discussions and directions given to inspectors and contractors; any other information necessary to document the events that occurred on the project. If the Assistant Chief Inspector performs inspection duties as well, the details concerning the work personally inspected shall also be included on the DWR.
- Project staff assisting in concrete and bituminous concrete placement operations are not required to prepare a DWR; however, they must be listed on the DWR of the Inspector overseeing that operation.
- The minimum information to be documented by the Inspector is outlined below: (*The appropriate locations to enter the information are outlined in the SiteManager User Guide*).
 - o The SiteManager DWR shall include: The contractor or subcontractor performing the work; weather conditions; location of work; workforce and equipment involved; hours worked; signing patterns; description of the work; items that pay for the work; status of the operation; whether or not the work is in conformance with the plans and specifications; conversations specific to the project or work items; possible extra work; environmental notes; hours of the inspector; field measurements; meetings attended; official visitors; incidents on the project; and any other information pertinent to the work.
 - o The description of contractor's work that the Inspector has observed should answer the following questions: Who, What, When, Where, How, How Much, Is it Complete or Ongoing, Is the Work Conforming or Non-Conforming? This information will be entered into the Item Field of the SiteManager DWR. (Outlined in the SiteManager User Guide).
 - If work is ongoing, but not complete and acceptable, a zero quantity must be entered into SiteManager. If the operation involves multiple work items, the Inspector may choose one that is most representative of the work to input the information.

- The Inspector shall make a determination of whether or not the work being performed by the Contractor is in conformance with the plans and specifications to the best of the Inspector's knowledge. For each operation covered, the Inspector shall record any work they deem non-conforming on their SiteManager DWR and inform the contractor and chief inspector (*These observations replace the Con 134A form.*) The non-conforming work may or may not warrant the issuance of a Non-Compliance Notice. See below for further explanation.
- Defective work is defined in the Standard Specifications section 1.05.11. Defective materials are defined in the Standard Specifications section 1.06.04. (Also, refer to Non-Compliance Notices Section 1-310).
 - If in the Inspector's opinion, the work or material is deficient it shall be noted as such and the inspector should communicate the deficiency verbally and in writing to the Prime Contractor Foreman or above. The Inspector should also inform the Chief Inspector of the situation. If a sub-contractor is performing the work they should be informed, but the Prime Contractor should always be informed and asked to correct the subcontractor issue.
 - If deficiencies in the work in the opinion of the Chief Inspector warrant a non-compliance notice as the written communication, refer to Non-Compliance Notices (Section 1-311) for additional information.
 - See the SiteManager User Guide for proper entry in the SiteManager system. A copy of the notice should be scanned and attached to the SiteManager DWR.
 - The signed hard copy Non-Compliance Notice shall be incorporated into the project records.
- o If the Contractor alleges or requests extra work for an operation and the project staff does not concur, it should be noted and the labor, materials and equipment recorded.
- Lane closures should identify the approximate beginning and ending locations, which lanes are closed, time closed and time opened to traffic. If there are no lane closures record "None" in the appropriate field of the DWR. Computations shall be documented by use of templates, the Volume 3 or the Volume 5. Templates are explained in the SiteManager User Guide. Computations not calculated with SiteManager Templates must be referenced from the SiteManager DWR to the location of the computation supporting the payment. A reference to the payment DWR should also accompany the computations. (Note: If other electronic means of calculating quantities are employed, such as Microsoft Excel, care must be taken to assure that the files are made part of the project records and properly referenced and backed up.)
- Discussions with contractors, property owners, and governmental agencies, or others pertinent to the project should be noted.
- o Meetings attended should be noted with a brief description of topic.
- When the Contractor's "density person" is on the project site it should be documented on the Inspector's DWR.

- Field notes are intended for field measurements and observations. Computations are not to be performed in the field notes.
 - o Field notes used to prepare the DWR can be handled in one of two ways:
 - Bound Field Book If a hard Bound Field Book (book diary system) is used to record information gathered in the field, it must be included with the project records (Volume V). The Bound Field Book can be used in lieu of field notes attached to the DWR. An index for the Volume V shall be created to record the various field books. (See section 1-307of this chapter for Volume V contents).
 - Labeling of the Bound Field Book: The front cover or inside of the front cover of the Bound Field Book shall contain the dates covered, the project number, and the inspectors printed name and signature. Each page of the notebook shall contain the date(s). The Inspector shall limit the field book to notes related to only the one contract.
 - Unbound Field Notes and Forms Unbound field notes and forms that do not accompany delivery tickets (as explained elsewhere in this chapter) may be scanned and attached to the SiteManager DWR but must be included in the Volume 5 or another hard copy folder.

1-303C - Review of DWRs

This section outlines the routine reviews necessary by Chief Inspectors, Resident Engineers and Project Engineers during the normal course of business.

It is the responsibility of the Chief Inspector(s) to review and approve all inspectors' DWRs including attached sheets and forms.

The Chief Inspector should ensure that issues identified during their review, or a review performed by others, are addressed. They should also make efforts to ensure that similar issues do not occur in the future.

The following checklists have been created to standardize the review of DWRs by the noted individuals:

Review by Chief Inspector or Resident Engineer:

- 1. Written supplementary sheets, forms, field books etc. prepared by inspection staff, are referenced from the Diary or DWR as outlined in Section 1-303B.
- 2. The DWR records the minimum information as outlined in Section 1-303B.
- 3. If the work is identified as deficient that indication of informing the contractor is noted as outlined in Section 1-303B.
- 4. Possible cost-plus work is documented with a full description of the location and work, as well as labor hours, equipment hours, and amounts of material used for each contractor's operation.
- 5. The Inspector has commented on all work operations regarding conformance with the plans and specifications. (This is important because the statement regarding the acceptability of the work replaces the CON-134A).
- 6. Lane closure information includes the location, lane(s) closed, direction etc. If there are no lane closures involved in an operation the DWR notes "None".

- 7. The DWR references supporting documentation (i.e. Volume III book and page number, Volume V book and page number, ticket folder, etc.), and the supporting documentation references back to the DWR (note: the reference from the supporting documentation is not required for the volume V given that the page numbering includes the user name and date.).
- 8. The computations referenced from the DWR are checked within a reasonable timeframe. For a large project with multiple inspectors the computations should be checked prior to accepting the DWR. For projects staffed with one or limited staff the computations may not be able to be checked prior to acceptance of the DWR but should be checked in a timely manner and any corrections made should reference the original computation and DWR.
- 9. Sketches and/or measurements are properly referenced.
- 10. Work performed by others (i.e. Utilities, Maintenance, Municipalities, or others) is documented by hours, personnel, equipment, and description of work.
- 11. Project and other DOT staff assisting with inspection of operations are listed on the lead inspectors report (include hours of work).
- 12. The Diary (Chief Inspector or Resident Engineer) lists all Inspectors assigned to the project and the work operations covered by each Inspector.
- 13. Notes regarding discussions with contractors, property owners, governmental agencies or others, detail specifics of the conversation and actions taken.
- 14. No erasures or whiteouts are allowed in any of the volumes or written forms prepared by project personnel. Mistakes should be lined out and initialed.
- 15. Meetings attended are noted and a reference is made to location of the minutes of meeting.
- 16. Official visitors (i.e. State or Town officials, ConnDOT supervisors or managers, and FHWA, FTA, FAA, utility representatives, Record Examiners, Auditors, DEP, AMTRAK, etc.) are noted and conversations detailed.

If there are issues identified by the review, the Chief Inspector or Resident Engineer shall confirm that the corrections are made prior to acceptance of the DWR(s) and discuss the issues with the Inspector to avoid recurrence in the future.

Review by Project Engineer

The Project Engineer is responsible for reviewing a minimum of three days of DWRs and Diaries per month (up to five DWRs per day reviewed).

The review shall focus on procedure, content and documentation. As a benchmark, a minimum of 50% of the DWRs reviewed should contain item payments. Cost-plus items and items with computations in the Volume III should also be reviewed. The items checked should vary from month to month. All documentation supporting payment made on the DWR should be examined whenever possible.

The Project Engineer shall enter a DWR in the SiteManager system for the day that they perform the review. The DWR shall identify the items, DWRs, Diaries, and documentation reviewed and an accompanying statement of whether or not each met the requirements and any corrections required.

The Chief Inspector will ensure that the corrections are made and notify the Project Engineer when complete. The Project Engineer should check the following month to make sure the same issues are not repeated.

The following checklist has been created to standardize the review of DWRs by the Project Engineer:

- 1. The diary is kept up to date.
- 2. The DWRs are being kept up to date for all work activities.
- 3. The DWRs are clear, concise and adequately describe the work performed.
- 4. The payments made on the SiteManager DWR have the proper references to calculations and field measurements.
- 5. Quantities of material tested are consistent with quantities being paid.
- 6. Field measurements are being taken and documented in accordance with the contract documents and specifications.
- 7. Corrections are made using the "strike out" method on written forms.

For single inspector projects, the Project Engineer will also check the items noted on the Chief Inspector/Resident Engineer review checklist, listed above.

1-303D - Daily Paving Reports

The Inspector in charge of a paving operation is required to enter a SM DWR and make out a Concrete Pavement Inspection Report (Form CON-135) or a Base and Bituminous Concrete Inspection Report (Form CON-136) as appropriate. Refer to Volume 2, Chapter 7, "Concrete Pavements," for guidelines to complete Form CON-135, and Volume 2, Chapter 6, "Bituminous Pavements," for guidelines to complete Form CON-136.

1-304 Volume II - Contract Items (Non-SiteManager Project Only)

The Volume II is used when the Department's construction management system, SiteManager, is not used to administer construction activities. The Volume II records daily Contract item quantities, Change Order Revisions, estimate payments, new Construction Order items, and material test results. Items are placed in the Volume II as follows:

• The first sheet in Volume II is the Project Identification/Construction Recordkeeping Format Sheet, shown in Figure 1-3.1.

Volume 1

Figure 1-3.1 Volume II - Project Identification/Construction Recordkeeping Format Sheet

CONNECTICUT DEPARTMENT OF TRANSPORTATION BUREAU OF ENGINEERING AND HIGHWAY OPERATIONS PROJECT #: 200-200 BRZ-6200 F.A.P. #: NAME OF TOWN: GRISWOLD ELLMOND ROAD ROAD: CONTRACTOR: STEPHEN CONSTRUCTION ORIGINAL CONTRACT VALUE: \$1,505,742.67 \$1,937,989.48 FINAL CONTRACT VALUE: FUNCTION: 730-210 UNIT: CONTRACTOR ORDERED TO START: APRIL 1, 2001 CONTRACTOR STARTED: APRIL 1, 2001 CONTRACT COMPLETED: JUNE 15, 2002 SPECIFICATIONS REFERENCE: 814A INSPECTOR'S NAME: TYLER STEPHENS

- Next, each Volume II contains a Construction Item Index, shown in Figure 1-3.2, with the items listed in numerical order.
- The Request for Test Index sheet that lists the material tests in numerical order follows the index. It is shown in Figure 1-3.3.
- The first Contract item is entered on Page 1 and the opposite page contains testing data and is numbered Page 2. The next Contract item is entered on the next page and is numbered 3. The left-hand page for the daily-item quantity entries is always an odd number, and the right-hand page, containing item-testing data, is an even number. Figures 1-3.4 and 1-3.5 show a sample of a Contract item page and corresponding testing data page.
 - o The testing requirements noted on the right-hand page (Figure 1-3.5) are completed with the minimum frequency for control and progress tests, and all materials tested for that item are listed.
 - Additional pages needed for daily-item entries, are inserted after the item page. The pages are numbered with the item page number and a letter (for example, "31A," "31B," and "31C").
 Additional testing-data pages follow the same procedure, but they are placed in front of the testing-data sheet.
 - o The heading for each Contract-item page (Figure 1-3.4) in Volume II shows the item number, item description, original quantity, unit price, Construction Order revisions, revised quantities, and, when the item is completed, the final quantity.

	Index			Index (Cont'd)	
Item No.	Item Description	Page No.	Item No.	Item Description	Page 1
0202002	Earth Excavation	1-1A	0707001A	Membrane Waterproofing (Woven Glass)	44-44
0202102	Rock Excavation	2-2A	0708001	Dampproofing	45-43
0202202	Channel Excavation-Earth	3-3A	0725002	Bagged Stone	46-4
0202251	Channel Excavation-Rock	4-4A	0811004	Concrete Transition Curbing	47-4
0202529	Cut Bituminous Concrete Pavement	5-5A	0822001A	Temporary Precast Concrete Barrier Curb	48-4
0203002	Structure Excavation - Earth (Complete)	6-6A	0909497A	Timber Guide Rail Transition System	49-4
0203101	Structure Excavation - Rock (Complete)	7-7A	0909498A	Timber Guide Rail End Anchorage	50-5
0204151A	Handling Water	8-8A	0909500A	Timber Guide Rail	51-5
0205001	Trench Excavation (0-4 ft Deep)	9-9A	0912503	Remove Metal Beam Rail	52-5
0205002	Rock in Trench Excavation (0-4 ft Deep)	10-10A	0912506	Remove Single Post	53-5
0205003	Trench Excavation (0-10 ft Deep)	11-11A	0922501	Bituminous Concrete Driveway	54-5
0205004	Rock in Trench Excavation (0-10 ft Deep)	12-12A	0939001	Sweeping for Dust Control	55-5
0209001	Formation of Subgrade	13-13A	0950005	Turf Establishment	56-5
0210035A	Temporary Dewatering Basin	14-14A		Construction Field Office (Type B)	57-5
0210306	Turbidity Control Curtains	15-15A		Maintenance and Protection of Traffic	58-5
0210820A	Water Pollution Control (Estimated Cost)	16-16A	0974001A	Removal of Existing Masonry	59-5
0212002	Subbase	17-17A	0975002	Mobilization	60-6
0213011	Granular Fill	18-18A	0976002	Barricade Warning Lights - High Intensity	61-6
0214020	Compacted Granular Fill	19-19A	0978002	Traffic Drum	62-6
0216002 0219001	Pervious Structure BackFill Sedimentation Control System	20-20A 21-21A	0979003A 0980001	Construction Barricade type III Construction Staking	63-6
0406012	Bitum inous Concrete Class 1	21-21A 22-22A	1220011A	Construction Staking Construction Signs - Type III Reflective Sheeting	65-6
0406012	Bituminous Concrete Class 1	23-23A	O6A0001	Archeological Find	66-6
0406017	Bituminous Concrete Class 2	24-24A	O6A0001	Install Traffic Light	67-6
0406030	Material for Tack Coat	25-25A	O6B0001	Install Park Benches	68-6
0507001	Type "C" Catch Basin	26-26A	O6C0001	Redesign Footing	69-6
0507001	Type "C-L" Catch Basin	27-27A	O6C0001	Install Stringer	70-7
0601003A	Class "A" Concrete	28-28A	0000002	Instan Stringer	70-7
0601003A	Concrete Form Liners	29-29A			+-
0601008A	Simulated Stone Masonry	30-30A		 	+
0601101	Class "C" Concrete	31-31A		 	+
0601201	Class "F" Concrete	32-32A		 	+
0602001	Deformed Stell Bars	33-33A			1
0602006	Deformed Stell Bars - Epoxy Coated	34-34A			+
0605020	Dimension Stone Masonry	35-35A			+
0606001	Cement Rubble Masonry	36-36A			+
0609001	Repointed Masonry	37-37A			+
0651001	Bedding Material	38-38A		1	\top
0651011	12" R.C. Pipe	39-39A			\top
0651013	15" R.C. Pipe	40-40A			+
		4 - 100000 11000000		+	+
0652011	15" R.C. Culvert End	41-41A			_
0703011	Intermediate Riprap	42-42A			
0703012	Modified Riprap	43-43A			

Figure 1-3.2 Volume II - Construction Item Index

- o Each daily entry shows the date, location, quantity, and quantity to date, and is referenced to a DWR and to the source of the documentation, a Volume III computation.
- o Monthly or semimonthly estimate payments are recorded accordingly in red. An example entry is "Estimate No. 2, Pay 20,065. Total to Date 24,104."
- o Items added to the Contract by a Construction Order are inserted after the original Contract items.
- o Material testing requirements for new items must be included.

Figure 1-3.3 Volume II - Request for Test Index

REQUEST FOR TEST INDEX

PROJECT #: 200-200

REQUEST FOR CONTRACT ITEMS

SAMPLE NUMBER	SAMPLE DATE	MATERIAL		APPROVED REJECTED	VOLUME 2 REFERENCE
C-1	05/01/01	Signs (material Cert)	06/02/01	A	PAGE 65A
C-2	05/02/01	Gravel (Source)	05/09/01	R	PAGE 17A
C-2A	05/10/01	Gravel (Source)	05/20/01	A	PAGE 17A
C-3	05/21/01	Gravel (Gradation)	05/29/01	A	PAGE 17A
C-4	05/21/01	Gravel (Proctor)	05/29/01	I	PAGE 17A
C-5	05/21/01	C. Barricade III (material cert)	06/07/01	A	PAGE 63A
C-6	05/28/01	Paint (material cert)	06/08/01	A	PAGE 80A
C-7	05/28/01	Spheres (material cert)	06/08/01	A	PAGE 80A
C-8	06/07/01	Hay Bales	06/20/01	A	PAGE 21A
C-9	06/07/01	Silt Fence	06/27/01	A	PAGE 21A
C-10	07/31/01	Portland Cement	08/15/01	A	PAGE 26A
C-11	08/15/01	bedding material	08/21/01	A	PAGE 38A
C-12	08/15/01	12" RCP	08/21/01	A	PAGE 38A

REQUEST FOR CP TESTING (ASSURANCE)

SAMPLE	SAMPLE		REPORT	APPROVED	VOLUME 2
NUMBER	DATE	MATERIAL	DATE	REJECTED	REFERENCE
CP-27	09/01/01	Gravel	10/01/01	A	PAGE 17A
CP-6032	12/11/01	Class "F" Concrete	12/17/01	I	PAGE 32A

REQUEST FOR TEST CYLINDER CARDS

	SAMPLE				VOLUME 2
NUMBER	DATE	MATERIAL	DATE	REJECTED	REFERENCE
C6001	04/10/01	Class "A" Concrete	04/13/01	I	PAGE 28A
C6001A	04/10/01	Class "A" Concrete	04/13/01	I	PAGE 28A

REQUEST FOR TEST BITUMINOUS

SAMPLE	SAMPLE		REPORT	APPROVED	VOLUME 2
NUMBER	DATE	MATERIAL	DATE	REJECTED	REFERENCE
B1	08/25/01	Bituminous Concrete Class 4	09/07/01	A	PAGE 24A
B2	08/25/01	Bituminous Concrete Class 1	09/07/01	A	PAGE 22A

Notes

1) Rejected Material Must have a "Report of Rejected Material" Filled out and submitted to the District

Figure 1-3.4 Volume II - Contract Item Page

ORIGINAL O	UANTITY	2.00 each (a) \$	2,550.00			
CONST. ORI	DER	O6A				
QUANTITY		7.00				
REVISED QU		9.00				
FINAL QUA	VTITY	9				
			· · · · · · · · · · · · · · · · · · ·			
DATE	LOCAT		QTY.	QTY. TO DATE		REFERENCE
		19+465.591 to 19+565.593	2.00	2.00		III BOOK 1 PAGE 9
07/02/01 E	llmond Rd Station 1	19+575 to 19+625	1.00	3.00	I.R. 93A VOLUME	III BOOK 1 PAGE 9
					and the second second	
Estimate # 4	late 7-30-012 Pay 3	Each Total Paid to Date	3 Each	(estimate to be written	in red)	
08/17/01 E	llmond Rd Sta 19+6	525 to 19+775	1.00	4.00	LR 139A VOLUME	E III BOOK 1 PAGE 9
	Ilmond Rd Sta 19+7		1.00	5.00		E III BOOK 1 PAGE 9
Estimate #5 d	ate 8-31-01 Pay 2 F	Each Total Paid to Date 5	Each			
	- ***					
05/01/02 E	llmond Rd Sta 19+8	855 to 19+935	1.00	6.00	I.R. 396A VOLUMI	E III BOOK 1 PAGE 9
05/02/02 E	llmond Rd Sta 19+9	935 to 20±010	1.00	7.00	I.R. 397A VOLUMI	E III BOOK 1 PAGE 9
05/00/02 T	llmond Rd Sta 20+0	3104 301005	1.00	8.00	ID 4014 MOLIDA	E III BOOK 1 PAGE 9
03/09/02 E	ililiona Ku sta 2010	710 to 20±06.5	1.00	6.00	I.K. 401A VOLUMI	E III DOOK I PAGE 9
05/10/02 E	llmond Rd Sta 20+0	085 LT to 20+085 RT	1.00	9.00	I.R. 402A VOLUME	E III BOOK 1 PAGE 9
			133.000			
Estimate #14	date 5-30-02 Pay 4 I	Each Total paid to Date 9	Each			
				_	1	
-					- 2	
					+	
-						
				30		
	OMPUTED BY:			CHECKE		
	RINTED NAME:			PRINTEL		
S	IGNATURE:			SIGNATU	JRE:	

Figure 1-3.5 Volume II - Contract Item Testing Data Page

PROJECT NO. ITEM PAGE	200-200	TEST REQUIREMENTS CONTROL PROGRESS		PAGE NO. 27A	
		(10-16-10)000-0-0000-0-000-0-000-0-000-0-000-0-000-0-			
	TEST NO.	LAB NO.	ATERIAL TESTS QUAN.	TO DATE	RESULT
Minimum Requirements	C-90	678279 TOP/FRAME/GRATE	5 EACH	5 EACH	A
Minimum Requirements	C-92	678277 SUMP	5 EACH	5 EACH	A
Slab (Precast) Each	C-118	567623 SAND	10 C.Y.	10 C.Y.	R
Sand (Masonry) Grade A. C.Y.	C-117	187390 BLOCKS	10 C. 1 . 125 EACH	125 EACH	A
Sand (Masonry) Grade B C.Y.	C-118A	568331 SAND	10 C.Y.	10 C.Y.	A
Cement - Portland Type I/II (Bags)	C-139	685827 CEMENT	5 BAGS	5 BAGS	A
Catch Basin - Top, Frame & Grate	C-140	686621 RISER	10 EACH	10 EACH	A
Catch Basin - Sump (Precast)	C-212	691245 TOP/FRAME/GRATE	4 EACH	9 EACH	A
Catch Basin - Blocks (Concrete)	C-213	691249 SUMP	5 EACH	9 EACH	A
Brick (Concrete)	C-214	213456 SAND	10 C.Y.	20 C.Y.	Λ
Water	C-215	196785 BLOCKS	100 EACH	225 EACH	A
Catch Basin - Riser (Precast)	C-216	692451 CEMENT	4 BAGS	9 BAGS	A
	C-217	692452 RISER	8 EACH	18 EACH	Α
	C-218	693547 WATER	15 GALS	15 GALS	A
			Ŷ.) i
			,		
		3			

1-305 Volume III - Quantity Computations

Contents: The Volume III is used for items requiring extensive and/or complex computations and other items as necessary. It is systematically organized by item. The following is a list of items and documentation that must be incorporated in the Volume III, if applicable, when not computed utilizing SiteManager Templates:

- Asphalt adjustment documentation.
- Cost Plus records, including payroll copies, receipted material invoices, bills, and *Blue Book* verification sheets. Refer to the "Final Package Booklet" for a sample form. (Cost-Plus back-up documentation is to be kept in its own Volume III Book).
- Drainage items (Master summary not required if SiteManager is utilized).
- Trafficperson Report Summary Sheet.

General Information: Computations must be documented. Prior to the start of contractor activity, the Chief Inspector and Project Engineer should decide which item quantities are to be computed using SiteManager Templates (when available). Items quantity computations not computed utilizing SiteManager templates will be incorporated into the Volume III or Volume V numbering system. (Note: Contact the Office of Construction SiteManager staff for assistance related to the use of Templates in SiteManager.)

The assembly of the Volume III (set up of books and pages) and coordination with the Office of Construction SiteManager administrator to designate item quantities to be computed using templates, should be done as far in advance of the work starting as possible to avoid confusion.

Each Volume III book should have an individual number. Examples are "Volume III, Book 1" and "Volume III, Book 2." Do not duplicate book numbers. If the books become too voluminous, an expandable concept may be used. (Example: "Volume III, Book 1;" "Volume III, Book 1A;" and "Volume III, Book 1B".) On complex contracts, in addition to the book number, it is suggested to use subtitles to identify the content of certain Books (i.e., "Volume III, Book 3, Drainage Book.") A loose leaf binder is acceptable to use for the Volume III books. All Volume III's must have a table of contents.

Summary sheets are recommended for complex items. As an alternative, an item report from SiteManager may be utilized as the summary. Since the item report can be generated at any time it does not have to be maintained on paper. The exception to this is the drainage book. See specific guidance later in this chapter relative to set-up of the drainage book.

The Volumes should consist of, items that involve extensive computations that cannot be computed using SiteManager templates. Examples of items requiring extensive computations include earth excavation, concrete for structures, deformed steel bar items drainage items, electrical items, handling of controlled material, reuse of controlled material, cost-plus work.

If an item has a very large original bid quantity and/or it is expected that the back-up documentation to support the payments will be extensive it is suggested that the item have its own book number. Items having an "estimated" dollar value in the contract often fit this scenario. Examples include Drainage, Earth Excavation, Handling of Contaminated Materials, Materials for Structural Steel, Lead Health and Safety, Trafficperson and large cost-plus items.

When setting up the Volume III Books it is very important to anticipate the amount of documentation necessary for each item and allow ample room for expansion. Consideration should be given to the size and nature of the project.

Any questions regarding this should be directed to the Project Engineer.

Figure 1-3.6 Volume III – Sample Item Summary Sheet

ITEM	PROJECT NO: 200-200 PAGE NO: 23		
Location Abutment No 1	Quantity 405.89	Source Documentation Volume III Page#23A	
Abutment No 2 Wingwall 1A & 1B Wingwall 2A & 2B	379.28 18.67 18.67	Volume III Page#23B Volume III Page#23C Volume III Page#23D	
TOTAL CLASS "A" C	ONCRETE 822.51		
COMPUTED BY:	ONCRETE 822.51		CHECKED BY:
PRINTED NAME: Tyler Stephens SIGNATURE: Tylor Slephens DATE: 11/12/04			PRINTED NAME: John D SIGNATURE: John D

Figure 1-3.7 Volume III – Sample Master Summary Sheet

ITEM : 0202002 Earth Ex	cavation Master Sum Volume III	mary Final Breakdown	PROJECT NO: 200-20 PAGE NO: 1
Location	Quantity	Source Documentation	
Ellmond Road Station 19+085.591 to 19+285	267.54	Volume III Book 1 Page 1A	
Ellmond Road Station 19+285 to 19+365.591	87.88	I.R. 12A	
Ellmond Road Station 19+425.591 to 19+525.591	159.67	Volume III Book 1 Page 1C	
Ellmond Road Station 19+525.591 to 19+725.591	187.85	Volume III Book 1 Page 1D	
Ellmond Road Station 19+725.91 to 19+785	57.98	I.R. 54A	
Ellmond Road Station 19+785 to 19+875	121.15	Volume III Book 1 Page 1F	
Ellmond Road Station 19+875 to 19+995	186.24	Volume III Book 1 Page 1G	
Ellmond Road Station 19+995 to 20+085.591	103.54	Volume III Book 2 Page 1H	
			
TOTAL FINAL EARTH EXCAVATION	1,171.85	•	
COMPUTED BY:		CHECKED BY:	
PRINTED NAME: Tyler Stephens		PRINTED NAME: John Doe	
SIGNATURE: Tyler Stephens		SIGNATURE: John Doe	
DATE: 12/9/04		DATE: 12/15/04	

Figure 1-3.8 Volume III – Sample Master Summary Sheet with Categories

	70006 t T	rafficperson (Municipal Po					8	Volume 3 Book 11 Page 2
0303/0304/0			Bid Quantity = \$6	25,000 (\$125	5,000 Per categor	<u>y)</u>		
Date	DWR	Description	Reference	LIN/0303 CAT 02 Quantity	CAT 03 Quantity	LIN/0305 CAT 04 Quantity	CAT 05 Quantity	LIN/0307 CAT 06 Quantity
12/31/07	corderl	Fairfield Police	Pg 2A	813.75	-		1 2	-
7/31/08	corderl	Bridgeport Police	Pg 2B	341.55	-			-
9/30/08	corderl	Bridgeport Police	Pg 2C, 2D	539.06		20		260.23
9/30/08	corder1	Westport Police	Pg 2E	-	- 1	+0	112.00	2000
10/15/08	corderl	Westport Police Balance	Pg 2E		12		35.00	
12/31/08	corderl	Bridgeport Police	Pg 2F, 2G, 2H	8,500.55	-	2,174.80		460.71
1/15/09	corderl	Bridgeport Police	Pages 2I, 2J	6,427.18	2	25	74	2,626.98
2/13/09	corder1	Bridgeport Police	Pages 2K, 2L	1,524.21				8,194.93
2/13/09	corderl	Fairfield Police	Pages 2M, 2N		214.40		422.40	
			Category Subtotals	18,146.30	214.40	2,174.80	569.40	11,542.85
		į	Max Category Amount	Cat 02	Cat 03 125,000.00	Cat 04 125,000.00	Cat 05 125,000.00	Cat 06 125,000.00
						Tot	tal Paid to Date Total Quantity	
Computed by Printed Nam Date:					Checked by: Printed Name: Date:			

When an estimated payment procedure is used to make payment for an item a record that this procedure has been approved by the Project Engineer must be placed in the Volume III. For further explanation refer to Section 1-912. A sample record is shown in Figure 1-3.8A

Figure 1-3.8A (formerly 1-3.27) Volume III- Record of Estimated Payment Procedures (Sample)

Estimated Payme	nt Procedures	Project # XXX-XXXX	
·		J	
Item No. 0202003	Bearth Excavation:		
Paying estimated	by load count until the sur	ey party is available to survey the area.	
(signed)	(printed name)	(date)	
(signed)	(printed name)	(date)	
-	•	(date)	
(signed) Approved by Proj	•	(date)	

Also refer to the following sections for additional direction: Section 1-305C Drainage Systems, 1-305D Structures, Mainline and Roadway, and 1-2005 Trafficperson.

1-305A Computations and Measurements

Computations prepared by the inspection staff and contained within the project records must be well documented and checked. Information related to the location of the work including the station, offset, plan sheet(s), structure etc. must be included with the computations. Field measurements taken by inspection staff must also be documented and reference other source(s) used to prepare the documentation:

•	For Computations performed on paper, the person checked it are to sign and date every page. Use the f	•	
	"Computed by(<u>signature)</u> (printed name)	Date	_
	Checked by <u>(signature)</u> (printed name)	Date	"
•	For recorded sketches, measurements, etc. in the measurement, etc. is to sign and date the page using		•
	"Prepared by <u>(signature)</u> (printed name)	Date	
	Measured by <u>(signature)</u>	Date	"

(printed name)

- For measurements recorded in the SiteManager DWR that were measured by others, record the name of the inspector(s) who took the measurement(s) and date(s).
- For page numbering and identification requirements of the Volume V, see Section 1-307 of this manual.

1-305B Electronic Forms

This section outlines general principles to be utilized in dealing with software used to calculate payment quantities.

The following software programs are approved by the Office of Construction for use by project personnel for performing calculations:

- SiteManager Templates
- Micro-station CADD
- Inroads CADD
- Microsoft Excel (Spreadsheets)
- Other Software Programs approved for use by the Office of Construction

The calculations and the data entry must be checked to verify that the software is performing as expected and there were no user errors. The following guidelines shall apply:

- 1. SiteManager template is utilized to perform calculations:
 - The calculation does not need to be checked by the project staff. The calculations performed by the template were tested and approved in advance by the SiteManager Team.
 - The data entry should be verified in a timely fashion. This is accomplished by comparing the Inspector's field measurements to the data entered into the DWR template.
 - The work of verifying the data may be delegated by the Chief Inspector or Resident Engineer to other project personnel. The Chief Inspector however is responsible to receive verification and document that the data entry is correct from the delegated party.
- When Micro-station, Inroads or other CADD program is utilized by another DOT Office and the information is supplied to the Project staff, it is the responsibility of the Office supplying the information to the District to verify that it is correct. The Project staff is responsible to perform a cursory review to verify that the supplied information is generally as expected.
- 3. For other software programs utilized such as, Microsoft Excel, the following guidelines shall apply:
 - The program or spreadsheet must be checked to ensure that the method of measurement and materials used comply with the Contract requirements.
 - If an Office of Construction approved form is utilized, the calculations have been checked prior to approval and therefore if changes are not made to the "approved form" the field staff does not have to check to see that the formulas of the program are correct.
 - If an "approved form" is not utilized the calculations (formulas) must be verified by picking two sets of data (field measurements, take offs, etc.) and manually performing the calculations that are computed by the software. Document the manual calculations and attach them to a zero

payment in SiteManager for the subject contract item or incorporate them in the Volume III and reference the paper copy from the SiteManager zero payment. If an Office of Construction approved form is utilized, the calculations do not have to be checked.

- The data entry must be checked by comparing the field measurements, take offs or other source data to the data entered. If the data set exceeds 300 entries or the unit price is less than \$5/unit, a random verification of 25% of the entries is acceptable.
- Examples:
 - o For Rebar, check the data to make sure the bar types, sizes, and lengths agree with the approved shop drawings and field notes. (The bar type is obtained from the Bar Mark.)
 - o For cost-plus reports, check the labor, material, and equipment data to make sure the information agrees with the original report created in the field, certified payrolls, receipted bills, and "Rental Rate Blue Book" worksheets.
 - For excavation calculations, check the data to make sure entries agree with plan sheets and survey data.

Each program file and any computer-generated reports shall be saved electronically and backed up on a DVD or other acceptable media, and stored with the project files. One copy of the report is to be generated in the program format. An additional copy of the report shall be generated as a PDF file. All back-up media must be labeled.

File Naming Convention:

The following naming convention to aid in the filing and retrieval of the electronic files including calculations, correspondence, reports of meetings, scanned correspondence, etc.:

PPPP-PPPP_YYYYMMDD_BriefSubjectName.pdf

(Project No)_(Correspondence Date)_BriefSubjectName

Examples:

- 0170-2829_20110709_MatlCerts.pdf for Material Certs for 0170-02829 that is dated 07/29/11.
- 0082-0294_20110628_ProgressMtg.pdf for the Progress Meeting Minutes for 0082-0294 held on 6/28/11.
- 0123-0115_20120416_RebarBr1520WW2B for Rebar computations for 0123-0115, Br 1520, WW2B.

1-305C Drainage Systems

The following are guidelines to use when setting up individual drainage systems in the Volume III books: As used in this section a drainage system is from structure to structure, i.e. catch basin to catch basin, catch basin to outlet.

• When SiteManager is utilized for project documentation, the Master summary noted in the next bullet is not necessary. The Site Manager Item Report may be generated at any time for reference therefore a printed copy does not have to maintain in the Volume 3. The SiteManager item report does not replace the left and right had pages of the drainage book. They provide specific information that must be maintained in the Volume 3 or by alternative means.

- The Volume III drainage index master summary log, shown in Figure 1-3.9, is listed by system, as they appear in the drainage books and summarizes the items and quantities for each system. A total must be shown for each item.
- The right-hand page, shown in Figure 1-3.10, shows the plan sketch and the computations for the system. Only one system is allowed on the right-hand page. The left-hand page, shown in Figure 1-3.11, lists the items and quantities pertinent to the system shown on the right-hand sheet. Quantity entries are listed below as the system is installed.
- Totals for each item are noted on the drainage system summary sheet when the system is completed. If additional pages are needed, they are inserted between the two pages and given a letter designation.

DRAINAGE MASTER SUMMARY LOG VOLUME 3 PAGE NUMBER 0651001 BEDDING MAT 0507201 FYPE "C-L" CB 0651011 12" RCP STATION FROM 32.19 5.74 97.00 51 7.16 1.40 4.50 48.66 53 15+75 TO 16+25 18.05 28.60 1.00 1.00 2.84 55 52.15 2.54 14.18 148.00 1.00 8.80 16+25 TO 17+75 57 17+75 TO 18+55 28.53 14.18 1.00 79.00 28.47 14.18 79.00 18+55 TO 19+35 1.00 28.56 14.18 1.00 74.00 63 23.41 1.25 28.35 1.00 4.10 69.66 65 7.16 1.00 1.40 24.00 20+85LT TO 20+85RT 4A 28.76 14.18 79.00 1.00 4A 15.97 12.63 14.18 79.00 11 1.00 4A 13 10.24 4A 15 22.32 14.18 1.00 5.67 4A 17 103+45 TO 104+25 18.67 9.88 14.18 1.00 7.70 14.18 4A 18 104+25 TO 104+90 28.35 1.00 Comp by Printed Name: Chkd By: Printed Name Signature Signature:

Figure 1-3.9 Volume III – Drainage Master Summary Log

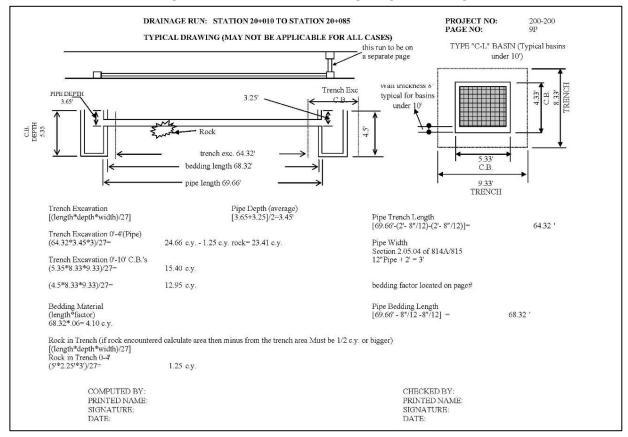


Figure 1-3.10 Volume III – Drainage (Right-Hand Page)

Figure 1-3.11 Volume III – Drainage (Left-Hand Page)

			STATION	20+010	TO 20+08.	5			Project No. 200 Page No. 9O	-200
LR.#	DATE	0205001 TRENCH 0-4'	0205002 ROCK 0-4'	0205003 TRENCH 0-10'	0507201 TYPE "C-L" CB	0651001 BEDDING MAT	0651011 12"RCP	Î Î	I	I Ī
405A	5/10/2002	23.41	1.25	28.35	2	4.10	69.66			
TOTALS		23.41	1.25	28.35	2	4.10	69.66			
		Comp by:	Printed Name: Signature: Date:				Chkd By:	Printed Name; Signature; Date;		

1-305D Structures, Mainline Roadway, Ramps, Etc.

Use the following guidelines for setting up Volume III books for structures, mainline roadway, ramps, etc.

• The first sheet in the book is the index sheet, shown in Figure 1-3.12.

Figure 1-3.12 Volume III – Index Sheet (Sample)

	Project No: 200-200 F.A.P. No:	BRZ-6200		Volume 3	
	Index			Index (Cont'd)	
Item No.	Item Description	Page No.	Item No.	Item Description	Page No
0202002	Earth Excavation	1	0609001	Repointed Masonry	31
0202102	Rock Excavation	2	0703011	Intermediate Riprap	33
0202202	Channel Excavation-Earth	3	0703012	Modified Riprap	34
0202251	Channel Excavation-Rock	4	0707001A	Membrane Waterproofing (Woven Glass)]	36
0202529	Cut Bituminous Concrete Pavement	5	0708001	Dampproofing	37
0203002	Structure Excavation - Earth (Complete)	6	0725002	Bagged Stone	38
0203101	Structure Excavation - Rock (Complete)	7	0811004	Concrete Transition Curbing	39
0204151A	Handling Water	8	0822001A	Temporary Precast Concrete Barrier Curb	40
0209001	Formation of Subgrade	9	0909497A	Timber Guide Rail Transition System	41
0210035A	Temporary Dewatering Basin	10	0909498A	Timber Guide Rail End Anchorage	42
0210306	Turbidity Control Curtains	11	0909500A	Timber Guide Rail	43
	Water Pollution Control (Estimated Cost)	12	0912503	Remove Metal Beam Rail	44
0212002	Subbase	13	0912506	Remove Single Post	45
0213011	Granular Fill	14	0922501	Bituminous Concrete Driveway	46
0214020	Compacted Granular Fill	15	0939001	Sweeping for Dust Control	47
0216002	Pervious Structure BackFill	16	0950005	Turf Establishment	48
0219001	Sedimentation Control System	17	0969002A	Construction Field Office (Type B)	49
0406012	Bituminous Concrete Class 1	18	0971001A	Maintenance and Protection of Traffic	50
0406017	Bituminous Concrete Class 2	19	0974001A	Removal of Existing Masonry	51
0406030	Bituminous Concrete Class 4	20	0975002	Mobilization	52
0406236	Material for Tack Coat	21	0976002	Barricade Warning Lights - High Intensity	53
	Class "A" Concrete	22	0978002	Traffic Drum	54
	Concrete Form Liners	23	0979003A	Construction Barricade type III	55
	Simulated Stone Masonry	24	0980001	Construction Staking	56
0601101	Class "C" Concrete	25	1220011A	Construction Signs - Type III Reflective Sheeting	57
0601201	Class "F" Concrete	26	O6A0001	Archeological Find	58
0602001	Deformed Stell Bars	27	O6A0002	Install Traffic Light	59
0602006	Deformed Stell Bars - Epoxy Coated	28	O6B0001	Install Park Benches	60
0605020 0606001	Dimension Stone Masonry Cement Rubble Masonry	29 30	O6C0001	Redesign Footing	61

- Because an expandable concept usually is used in the book, only one page number is assigned to an item. Additional pages that show computations are assigned the same number with a letter designation. An example is "Class A Concrete, Page 23"; "Class A Concrete, Page 23A"; and "Class A Concrete, Page 23B."
- On projects with several structures, ramps, etc., the item summary sheet can list the structures and the assigned letter for each, as shown in Figure 1-3.13. Separate books should be set up for each structure, ramp, etc.

Figure 1-3.13 Volume III – Item Master Summary

ITE	M : 0202002 Earth Excavation Master Sumn Volume III	nary	PROJECT NO: 200-200 PAGE NO: 1
	Location	Quantity	Source Documentation
EB Roadway	0+366-0+518	2793	Volume III Book 1
Ramp A	0+131-0+198	468	Volume III Book 2
Ramp C	0+192-0+308	4007	Volume III Book 3
	TOTAL FINAL EARTH EXCAVATI	ON 7,268	•
COMPUTED BY: PRINTED NAME: SIGNATURE: DATE:		CHECKED BY: PRINTED NAME: SIGNATURE: DATE:	

1-306 Volume IV - Miscellaneous Contract Data

This volume contains miscellaneous contract data pertaining to the Project. It can be either maintained in a hard copy or electronic data file format. A Sample Index for Miscellaneous Contract Data is shown in Figure 1-3.14. The sheets listed in the indexes can be obtained from the District or may be developed using Microsoft Excel spreadsheets or other computer generated reports.

Volume 1

Figure 1-3.14 Sample Volume IV Index

VOLUME IV - MISCELLANEOUS CONTRACT DATA INDEX State Project #						
Federal Aid Project #						
PAGE DESCRIPTION	PAGE #	REMARKS				
Title Sheet						
Record of Project Personnel						
Material Stored Inventory Log						
**Record of Shop Drawings						
*** Record of Labor Wage Checks						
*** Record of Certified Payrolls						
N/A if electronic files are kept. *SiteManager data entry is acceptable in lieu of Vol. IV		ev June 2010				

The sheets that follow the index in Volume IV are listed below. The information on the sheets must be complete and kept up to date throughout the Project. They can be either maintained in the Volume IV or in electronic files. (Refer to Volume I, Chapter 11 for a list of the acceptable electronic spreadsheets).

• Record of State/Consultant Personnel. The sheet is shown in Figure 1-3.21. Record all personnel assigned to the project from the ordered-to-start date until the final is completed. Include the start and completion dates for each employee and the assigned operation. Include Project Engineers on this record.

Figure 1-3.15 Deleted

Figure 1-3.16 Deleted

Figure 1-3.17 Deleted

Figure 1-3.18 Deleted

Figure 1-3.19 Deleted

Figure 1-3.20 Deleted

CONTRACT NO:
PAGE NO:

Figure 1-3.21 Record of State/Consultant Personnel

- Record of Labor Wage Checks. This summary is only required if information is not entered into SiteManager. The summary is shown in Figure 1-3.22. List all labor wage checks made on the summary. Form CON-131 for individual checks is shown in Figure 1-12.5. If the number of the records is large, the Form CON-131s may be kept in a separate booklet, labeled accordingly. Refer to Volume 1 Chapter 12 Civil Rights, Labor and Contract Compliance for additional information on labor wage requirements.
- Record of Certified Payrolls. This summary is only required if information is not entered into SiteManager. Figure 1-3.23 shows a payroll log. Keep a copy of each pertinent payroll for the prime Contractor and all subcontractors at the construction project site in designated folders(s) and maintain a log of their receipt. Refer to Volume 1 Chapter 12 Civil Rights, Labor and Contract Compliance for additional information on payroll requirements.
- Material Stored Inventory Log. The sheet is shown in Figure 1-3.24. The material must be inspected and inventoried as specified in the Section 1-909 "Payment for Stored Materials." On large projects or projects with large amounts of materials stored, a separate book should be created to centralize the location of all documentation for materials stored on site.
- Record of Shop Drawings and Working Drawings. The sheet is shown in Figure 1-3.25. List all shop drawings pertinent to the project.

Contract No.:
Page No.:

RECORD OF LABOR WAGE CHECKS

Complying to the
Minimum Hourly Rate
Is Is Not Comments

Comments

Figure 1-3.22 Record of Labor Wage Checks

Figure 1-3.23 Record of Certified Payrolls

Year:							Contract No.: Page No.:	:
Prime Contractor Payroll Log for Sul								
Date Started:			Date Completed:					
Week of	Date Payroll Received	Wage Check Taken	Week of	Date Payroll Received	Wage Check Taken	Week of	Date Payroll Received	Wage Chee Taken
JANUARY			MAY			SEPTEMBER		8-316-85-8
		YES / NO			YES / NO			YES / NO
	_	YES / NO			YES / NO			YES / NO
		YES / NO		_	YES / NO			YES / NO
	_	YES / NO			YES / NO			YES / NO
		YES / NO			YES / NO			YES / NO
FEBRUARY			JUNE			OCTOBER		15013
		YES / NO			YES / NO			YES / NO
		YES / NO			YES / NO			YES / NO
		YES / NO			YES / NO			YES / NO
		YES / NO			YES / NO			YES / NO
		YES / NO			YES / NO			YES / NO
MARCH		美国的最高	JULY			NOVEMBER		* * * * * * *
		YES / NO			YES / NO			YES / NO
		YES / NO			YES / NO			YES / NO
		YES / NO			YES / NO			YES / NO
		YES / NO			YES / NO			YES / NO
		YES / NO			YES / NO			YES / NO
APRIL			AUGUST			DECEMBER		D 10 10 10 10 1
KII		YES / NO			YES / NO	DECEMBER	W. S.	YES / NO
		YES / NO			YES / NO			YES / NO
		YES / NO			YES / NO			YES / NO
		YES / NO			YES / NO			YES / NO
		YES / NO			YES / NO			YES / NO

Figure 1-3.24 Material Stored Inventory Log

"MATERIA	L STORED" INVEN	CONTRACT NO: PAGE NO:			
DESCRIPTION OF MATERIAL	MATERIAL QUANTITY STORED SITE (LOCATIO		VERIFIED BY (SIGNATURE OF INSPECTOR)	REMARKS	

Figure 1-3.25 Record of Shop Drawings and Working Drawings

ORD OF SHOP DRAWI	NGS AND WORKING	G DRAWINGS	CONTRACT NO: PAGE NO:	
DESCRIPTION	SUBMITTED BY	SUBMITTED TO	DATE RETURNED	DISPOSITION
			+	
			DESCRIPTION SUBMITTED BY SUBMITTED TO	ORD OF SHOP DRAWINGS AND WORKING DRAWINGS PAGE NO:

Figure 1-3.26 Deleted

Figure 1-3.27 Revised (See Figure 1-3.8A)

1-307 Volume V - Field Notes and Reporting Forms:

The Volume V contains bound field books, unbound field notes, non-complex computations, miscellaneous sketches and field reporting forms that are generated in the field. This volume will be organized by date and subject. The outline provided below contains the minimum requirements for the organization of this volume series:

- Volume V, Book 1 Series Bound Field Notebooks.
 - o Book 1 will contain a summary of the Bound Field Books.
 - o The first field notebook completed shall be logged into the summary as Volume V, Book 1A; the next will be Volume V, Book 1B, and so on.
- The labeling requirements for field books are explained in Section 1-303B of this manual.
- Volume V, Book 2 Series Field Reporting Forms and unbound field notes and miscellaneous sketches.
 - o The books shall be numbered as:

Project ####-####

Volume V Book 2,2A,2B...- Field Reporting Forms, Unbound Field Notes, Miscellaneous Sketches, and Non-Complex Computations

From: (Date) XX/XX/XX To: (Date) XX/XX/XX

- o The book 2 series shall be utilized for unbound field notes, field reporting forms that are not associated with items that require delivery (weight) tickets, non-complex calculations and miscellaneous sketches. (If an item requires delivery tickets such as bituminous concrete pavement or Class "F" concrete, the field reporting forms shall be kept in the ticket folder with the tickets for the given day.)
- o New pages will be added as the work necessitates. A page is not required for each day.
- o Each page shall contain the person's signature, SiteManager user ID., project number, the date of the corresponding DWR (i.e. the date on the page must correspond to the DWR date. If a subset of the page is related to a previous event then a note should be added on the page to identify when the event happened)
- o The Volume V page number that will be referenced from the DWR is a combination of the Date and the SiteManager user name. If multiple pages are necessary for one date number the second page for that date as "Username-1" and so on. (Example reference: Volume V Book 2 Page 030513 Angeloc)
- o The measurements and computations on a page are assumed to be that of the person signing the page. Therefore a separate "Computed by" or "Field measured by" is not needed for each individual computation. Like-wise, the person checking the computations on the page may indicate "this page checked by:"
- o If information is supplied by someone other than the inspector completing the page note the person's name supplying the information.

Part II – Other Project Records

1-308 Project Correspondence

To properly identify Project related correspondence both the State and Federal project numbers are to be shown. The official copy of Project correspondence is to be kept in the District Office. The Supervising Engineer is responsible to establish and maintain a complete chronological file of all project-related correspondence for each project assigned to him/her. When necessary, copies of correspondence are to be forwarded to the Project field office for their records. Correspondence received in the field is to be forwarded to the District.

Correspondence and other project information that is not part of the four volume record-keeping system must be maintained in an organized manner at the field office. A hierarchical file structure should be established at the onset of the project for the project correspondence. The size of the file system will vary depending on the size and complexity of the project. The files for smaller projects are usually categorized based upon the type of correspondence or contents of the folder. Larger projects or those projects using an electronic database will likely use a more complex numerical sequential system. The Resident Engineer or chief inspector is responsible for establishing the file system for the project, subject to the review and approval of the Project Engineer. Sample correspondence filing systems for both smaller and larger projects are included in Appendix C, Table 2.

On Federal oversight projects, the FHWA Area Engineer should be copied on the project correspondence concerning issues that have a significant impact on project scope, schedule or budget.

The "List of Standard Correspondence" is located in Appendix C, Table 1, of this manual. This chart assigns responsibility for research and preparation of project correspondence, and also provides guidance for the authorized signature on the respective documents. A higher level of authority could possibly be necessary depending on the circumstances. Suggestions to add additional correspondence to this chart are encouraged and should follow the instructions in Appendix B "Update Procedures".

The "Approved Forms" folder is located within the Construction Manual folder on the Department's share drive. Suggestions to add additional forms are also encouraged and should follow the instruction in Appendix B of this manual "Update Procedures".

Generally, all official project correspondence (letters addressing compensation, disputes, RFCs (requests for changes), and other contractual issues) must be sent through the District before it is sent to the Contractor. Similarly, all Contractor correspondence of this nature must be sent to the District Office and then forwarded to the field office. Advance or preliminary copies of such correspondence may be exchanged at the project level, however all official copies must be sent to/from the District Office. Routine correspondence (meeting reports, transmittals, material test reports, RFIs (Requests for Information), etc.) may be issued at the field level with a copy to the District office. If "field memorandums" are issued by the Inspector to the Contractor relative to contract performance, the District Office must be copied.

1-308A Email

Emails are contract records and may be subject to detailed review; therefore, Project related email, sent and received, must be printed and kept in the correspondence folder. An exception may be allowed if the project maintains an electronic database of project records. Email prepared by project staff should always be professional and to the point.

We have adopted the following naming convention to aid in the filing and retrieval of the email and scanned correspondence:

Email Subject Line: PPPP-PPPP Subject

File Name: PPPP-PPPP_YYYYMMDD_BriefSubjectName.pdf Format: (Project No)_(Correspondence Date)_BriefSubjectName

Examples:

- 0170-2829_20110709_MatlCerts.pdf for Material Certs for 0170-02829 that is dated 07/29/11.
- 0082-0294_20110628_ProgressMtg.pdf for the Progress Meeting Minutes for 0082-0294 held on 6/28/11.

1-309 Progress Meetings

Progress meetings are required to be held at least monthly on active projects, except during the winter shutdown period or at other times when no work activity is occurring on the project. The purpose of the meeting is to discuss the progression of the work and any issues which may impact the ongoing work. The meeting should be conducted by the Chief Inspector or Project Engineer. Where appropriate, action items should be defined and responsible parties assigned specific tasks. Each task should be given a due date and tracked until resolved. The Chief Inspector is responsible for preparing a report of the meeting. The Project Engineer is responsible to ensure that the report of meeting is accurate. The report of meeting should be prepared, reviewed and be ready for distribution within 5 working days of the date of the meeting.

On Federal oversight projects, the FHWA Area Engineer should be invited to each Progress Meeting and copied on the meeting minutes.

The following topics should be discussed at each meeting and included in the meeting minutes:

- Contractor's progress and review of project's schedule,
- Utilities,
- Quality and workmanship
- Environmental concerns,
- Maintenance and Protection of Traffic/Work Zone Safety
- Submittals
- Testing
- Civil Rights (DBE/SBE, OJT, Payrolls, Labor Wage)
- General Concerns.

Figure 1-3.28 shows a sample report of meeting. Project staff is to use this format for Report of Meetings or other format approved at the District level.

Figure 1-3.28 Sample of Report of Meeting

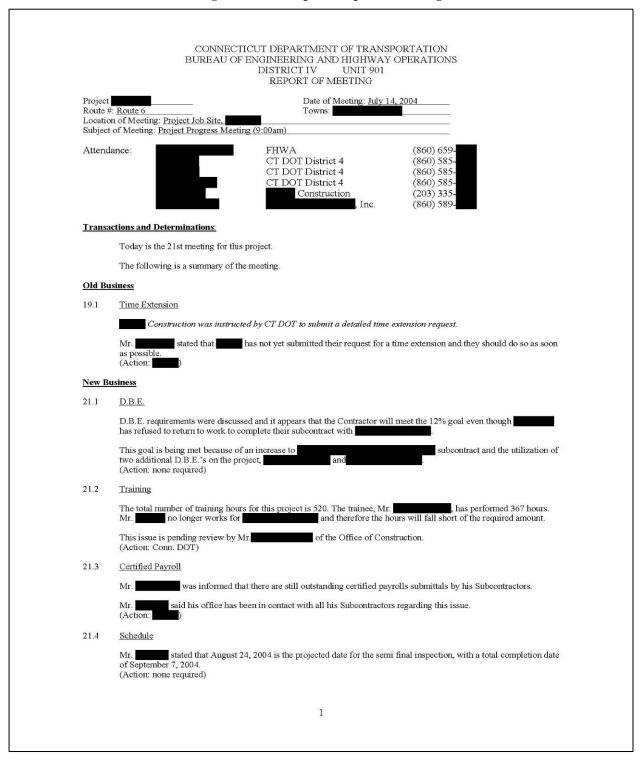
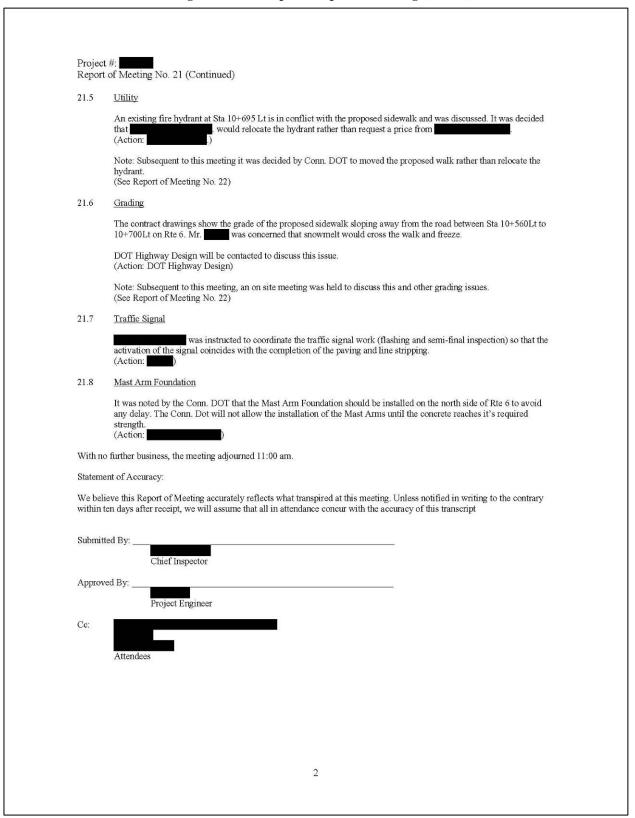


Figure 1-3.28 Sample of Report of Meeting (Cont'd)



1-310 Other Project Booklets and Folders

When applicable, the following additional information should be put together in a booklet or series of folders and kept with the field books as part of the records:

- Computer disks;
- Construction Orders, with backup;
- Contract;
- Contractor payrolls;
- Correspondence;
- Delivery tickets (separate book that is clearly labeled should be used for each type of material);
- Environmental correspondence, logs, etc.;
- EEO/Affirmative Action reports;
- Hazardous waste manifests;
- Labor Wage Checks, Form CON-131;
- Materials Certificates and all laboratory reports;
- Nuclear Density Tests and Data Sheets, Forms CON-125 and MAT-438;
- Pile Driving Logs, Form CON-87;
- Purchase orders and requisitions;
- Semimonthly and monthly estimates;
- Schedules;
- Shop drawings;
- Working drawings;
- Request for Information (RFI);
- Request for Change (RFC);
- Utility forms, Forms CON-40 and CON-41;
- Trafficperson Sign in/out Log;
- Other materials, if required or requested (i.e. work performed by others, records of state furnished materials).

1-311 Non-Compliance Notices

Defective work is defined in the Standard Specifications section 1.05.11. Defective materials are defined in the Standard Specifications section 1.06.04. Comments related to Non-Compliance issues are required on all SiteManager DWR's (See the procedure below for documentation.)

Non-Compliance Notices are intended to document instances when the Contractor's workmanship or materials do not conform to the plans and/or specifications and which cannot be resolved quickly in the field. The process of recognizing and resolving non-compliance issues consists of the following major steps; 1) recognizing the problem, 2) proposing a corrective procedure, 3) gaining approval for the corrective procedure, and 4) completing the corrective work. Whenever unacceptable work is encountered steps 1) and 4), as identified above, are always necessary. Depending upon the scope and/or severity of the non-compliance issue, corrective procedures may be required (steps 2 and 3). When approval is required for corrective procedures, separate correspondence is generated addressing the issue in question.

The goal of this process is not to create more paperwork for project personnel, but to alleviate some of the difficulties of confronting these issues day to day. Also, items will not be forgotten and left until the punch-list at the end of the project. No Contractor likes rework; however, if the issues and expectations are clearly defined, the work can be reasonably discussed and included in the work plan. In so doing, confrontation at the field level should be reduced.

Non-Compliance Notices should be issued to the contractor if any of the following conditions exist:

- Unacceptable materials are being incorporated into the work.
- The construction methods or workmanship do not meet the contract requirements or approved plans.
- Rework is required to correct a deficiency discovered on the project.
- The survey lay-out is incorrect or there is inadequate survey to verify the accuracy of the work.
- The contractor intends to place new work upon previous work that has not been accepted.
- The contractor has left the work in an incomplete state and it is possible the remaining work could be overlooked. If the project staff has adequately documented the incomplete nature if the work in some other fashion (ex. DWR, Volume 3, As-Built, White Paper Tracings, etc.), then the NCN may not need to be issued.

Specific questions pertaining to Non-Compliance/Compliance Notices and their issuance should be directed to the Project Engineer. The inspection staff may not deviate from the above guidance unless approved by the Project Engineer or Supervising Engineer for the project.

The following procedure is to be used for the resolution of non-compliance issues:

- If unacceptable materials or workmanship is discovered, a Non-Compliance Notice should be issued to the Contractor that clearly identifies the problem and requests a proposed corrective measure if one is required. Non-Compliance Notices are to be numbered as follows: XXXX-XXXX-0001NCN. XXXX-XXXX-0002NCN etc. See Figure 1-3.29
- The paper copies of the non-compliance and compliance notices shall be retained in a folder.
- Information regarding the notices must be entered into the appropriate field of SiteManager. A copy of the notice can also be scanned and attached to the SiteManager DWR for ease of tracking. Refer to the SiteManager User Guide for direction on entering Non-Compliance Notices in SiteManager.
- For each Non-Compliance Notice issued that requires a corrective procedure to ensure there is agreement as to the scope of the repair work required, the final/approved corrective procedure should be issued by the District. In some instances the correction is obvious and may be determined by project personnel. Other times approval by the District, Lab, CE Design or other units is required. Project personnel are to obtain such approval, when required.

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When the corrective work has been completed in accordance with the approved corrective procedure, a
Compliance Notice is to be issued to clear the Non-Compliance Notice. The Compliance Notice must have
the same number as the Non-Compliance Notice. Example: XXXX-XXXX-0001CN. See figure 1-3.30.

Discussion of "open" Non-Compliance issues should be included as a standing item at Progress Meetings. The Non-Compliance Notices and corresponding Compliance Notices are to be kept in a folder at the project. .

Figure 1-3.29 Non Compliance Notice

Connecticut Dept. of Transportation

NON-COMPLIANCE NOTICE NO. 0123-0456-0001NCN

Contract No. 0123-0456

Project Description: Reconstruction of Route 454 in New Haven

TITLE: Bridge No. 987 DATE ISSUED: 2/7/2007

PROJECT: 0123-0456 & 123-457, Reconstruction of Route 454 in New Haven

CONTRACTOR RESPONSIBLE: Dave's Rebar Installers, LLC

TO: ABC General Contractors, Inc.

2345 Main Street Bridgeport, CT

Attention: Mr. Robert Smith, Project Super

DATE CONTRACTOR IS REQUIRED TO COMPLETE BY: 2/15/07

DATE CONTRACTOR STARTED:

DATE CONTRACTOR COMPLETED:

DATE OF DWR REPORTED ON AND USER ID: 2/7/07, ferrard

DESCRIPTION OF NON-COMPLIANCE:

Subcontractor Dave's Rebar Installers are currently using the wrong type of rebar for wingwall 1A footing on Bridge No. 987. Contractor told that rebar should be #7 not #5 as shown on plan sheet no. 31 of 156.

Contractor has ordered the correct size and type of rebar and will remove bars previously installed.

SIGNATURE:

PRINTED NAME: David Ferraro
Date: 2/7/07

cc: Paul H. Breen Steve DiGiovanna Alan Warner

Figure 1-3.30 Compliance Notice

Connecticut Dept. of Transportation

COMPLIANCE NOTICE NO. 0123-0456-0001CN

Contract No. 0123-0456

Project Description: Reconstruction of Route 454 in New Haven

TITLE: Bridge No. 987 DATE ISSUED: 2/7/2007

PROJECT: 0123-0456 & 123-457, Reconstruction of Route 454 in New Haven

CONTRACTOR RESPONSIBLE: Dave's Rebar Installers, LLC

TO: ABC General Contractors, Inc.

2345 Main Street Bridgeport, CT

Attention: Mr. Robert Smith, Project Super

DATE CONTRACTOR STARTED:
DATE CONTRACTOR COMPLETED:
DATE OF DWR REPORTED ON AND USER ID: 2/7/07, ferrard

CORRECTIVE ACTION COMPLIANCE:

Subcontractor Dave's Rebar Installers are currently using the wrong type of rebar for wingwall 1A footing on Bridge No. 987. Contractor told that rebar should be #7 not #5 as shown on plan sheet no. 31 of 156.

Contractor has ordered the correct size and type of rebar and will remove bars previously installed.

SIGNATURE:

PRINTED NAME: David Ferraro

Date: 2/7/07

cc: Paul H. Breen Steve DiGiovanna Alan Warner

1-3.37

1-312 Working Drawings

1-312A Working Drawings for Permanent Construction

When working drawings for permanent construction are required, the Contract should require the Contractor to submit nine (9) copies of the working drawings directly to the appropriate Principal Engineer in the Office of Engineering for review (State Design or Consultant Design as the case may be). The Office of Engineering is responsible for transmitting the submission to other reviewing units as required for comments. Examples of working drawings for permanent construction are: Proprietary Retaining Walls, Precast Concrete Box culverts, Pot Bearings, Modular Joints, Permanent Soil Nail Wall, Tie-Backs, Micro-Piles, etc.

The Working Drawings are reviewed and stamped in accordance with the requirements of the Bridge Design Manual. After review, five (5) stamped copies of the working drawing submittal are sent to the District administering the contract with recommendation regarding acceptance.

The District is to forward two (2) copies of the working drawing submittal along with the review comments and statement regarding the acceptability of the submission to the contractor. The District is responsible to ensure that all review comments are appropriately addressed prior to the Contractor starting work.

The District is to retain one (1) copy of the submittal in the District files, and one (1) copy in the field office files. After all comments have been resolved, the District should forward one (1) copy to the Materials Testing Division.

The District is to direct the Contractor to submit reproducible mylars/sheets of the working drawings after the Contractor has addressed the review comments and made necessary changes. The District is responsible for including these mylars/sheets as part of the "As-Built" Drawings.

1-312B Working Drawings for Temporary Construction

When working drawings for temporary construction are required, the Contract should require the Contractor to submit nine (9) copies of the working drawings to the District. The District should forward the submittal with a Letter of Transmittal to the appropriate Principal Engineer in the Office of Engineering for review (State Design or Consultant Design as the case may be) when necessary. The Office of Engineering unit should not review the Design computations in depth.

The Working Drawings should be reviewed and stamped in accordance with the requirements of the Bridge Design Manual. After review, five (5) copies of the working drawing submittal should be returned to the District administering the contract with a recommendation regarding acceptance.

The District should forward three (3) copies of the working drawing submittal with the review comments to the Contractor along with a statement regarding the acceptability of the working drawing submission. The District should be responsible for the resolution of all comments prior to the Contractor starting work.

The District should retain one (1) copy of the submittal in the District files, and one (1) copy should be retained in the field office files.

1-312C Examples of Working Drawings That Require a Review by the Office of Engineering

<u>Permanent Construction:</u> Proprietary Retaining Walls, Precast Concrete Box culverts, Pot Bearings, Modular Joints, Permanent Soil Nail Wall, Tie-Backs, Micro-Piles, etc.,

<u>Temporary Construction:</u> Temporary Sheet Piling, temporary Soil Nail Walls, Cofferdams, temporary Superstructure Supports, Falsework, Jacking, Structural Steel Erection Plans, Post-Tensioning Procedures, Containment and Collection Systems for painting, etc.

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In general, the working drawings that can be reviewed by the District are minor traffic control plans, submissions related to the implementation of construction staging plans, minor steel erection schemes, bearing replacement or repair schemes, barrier relocation plans, etc.

1-313 Shop Drawings

When shop drawings are required the contract should require the contractor to submit nine (9) copies of the shop drawings directly to the appropriate Principal Engineer in the Office of Engineering or Office of Traffic for review (State Design or Consultant Design as the case may be).

The drawings must include erection plans, material lists, and material designated for project use, such as:

- · Reinforcing steel,
- Anchorage details for rail attachments at the ends of bridge parapets,
- Structural steel,
- Pre-tensioned concrete beams and deck units,
- Post-tensioned concrete superstructures,
- Post-tensioned pier caps,
- Concrete for structures (remain-in-place forms),
- Modular expansion joints,
- Mechanical/electrical components of movable bridges,
- Elastomeric compression seals,
- · Bearings,
- Bridge scuppers,
- Pipe for bridge drainage,
- Stain protection,
- Metal bridge rail,
- Open steel sidewalk grating,
- · Granite facing, and
- Illumination.

In addition to bridges, shop drawings are required for side-mounted sign supports, bridge-mounted sign supports, and tubular and truss sign supports. These sign support drawings are submitted to the Office of Traffic Engineering.

The contractor should provide the District with a copy of the letter of transmittal for all shop and working drawings that are not sent directly to the District. The Inspector must maintain a log in the Volume IV or in an electronic file to track the acceptance of shop and working drawings and notify the Project Engineer if reviews are not timely.

1-314 Final Revisions of Plans and Cross Sections (As-Builts)

The Chief Inspector must make sure the information necessary to create the as-built drawings are kept up to date on working plans as the Project progresses. At a minimum the working plans should be updated every other week. Periodically, as part of the review of project records, the Project Engineer is to verify that as-built plans are being updated concurrently with the physical work on the project and note this review by initialing and dating the front sheet of the white paper as-builts.

When the Contractor is required to produce as-built drawings (i.e. electrical or vertical construction projects), the Chief Inspector should periodically remind the Contractor of the requirement to submit as-built drawings and ask for an update on the status.

The following guidance is offered for the preparation of as-built drawings:

Responsibility of Contracting Engineers. A contracting engineer must indicate the as-built features of a project in either ink on the original tracings or the digital design file, if required. The work must be accomplished in accordance with the terms of the agreement with the State. If a contracting engineer must indicate the as-built features on the tracings, it is not necessary to revise a set of prints of the plans for the use of the Highway Design Section.

Responsibility of Department Forces. Designated District staff is to revise the original tracings or digital design files on State or federal-aid projects to show the project as-built.

Methods of Showing Revisions. If paper transparencies have been added to the plans to indicate revisions resulting from Construction Orders during construction, the revisions are transferred to the corresponding original tracings. The following notations are inscribed in a conspicuous place on the original tracings:

Revisions of	shown on Sh	eet No
Date of	Plan Sheet	
	incorporated on this she	eet
of Plan Sheet	Date	
• Title Sheet. U	se the following guidelines for	the title sheet:
	how the corrected beginning a le. Cross out original figures.	and ending stations, and the horizontal length of the project
0 Inscripti	on. Inscribe the following in a	conspicuous place on the sheet:
•	Construction Started	Date
•	Construction Completed	Date

Index Plan and Index Profile Sheet. Do not correct the plan and profile sheets. In a conspicuous place, inscribe this note: "THIS SHEET NOT CORRECTED."

Detailed Estimate Sheet. Inscribe this note somewhere on the detailed estimate sheet: "THIS SHEET NOT CORRECTED." If quantities are on the title sheet, inscribe this note: "THESE QUANTITIES NOT CORRECTED."

Typical Section Sheets. Show any changes in the typical sections and add the note, "TYPICAL SECTION CORRECTED."

Plan Sheets. If either the beginning or ending stations of the project have been changed, make the necessary correction and label: "BEGINNING OF CONSTRUCTION" or "END OF CONSTRUCTION."

Use the following guidelines to revise the plan view:

• General Construction Notes. General construction notes are not to be corrected.

Culverts. The locations and lengths of culverts must be changed, except that no change in location is made unless the culvert has been moved 3 m (10 ft.) or more from its original proposed location or unless the angle of crossing has been radically changed. If the original culvert notes were listed individually adjacent to each proposed culvert and no change has been made in the length or size, simply check the note with a black ink "x" mark.

If either the length or size of the culvert has been changed, cross out the incorrect figures and insert the correct ones immediately above. If new pipes were installed that were not originally proposed, plot the pipe and label it. For example, "28 ft.—28 in. \times 20 in. (8.5 m—680 mm \times 500 mm) A.C.C.M. PIPE ARCH INSTALLED."

- Catch Basins, Manholes, Underdrains, Endwalls and Ditches. Use the procedure for culverts. For example, "INSTALLED" or "DITCH EXCAVATED."
- Drives and Barways. Plot as constructed. If not constructed, cross out.
- Wire Fences. Plot as constructed. Label "WIRE FENCE ERECTED" or "CHAIN LINK FENCE ERECTED."
- Stone Wall Fences. Plot in the locations constructed. Label "STONE WALL FENCE ERECTED" or "FARM WALL ERECTED."
- Guide Railing. Show as constructed. Label "GUIDE RAILING ERECTED." Cross out any not installed.
- Single Posts. If not proposed on the plan, plot and label "SINGLE POST ERECTED." Single poles at each end of Guide Railing need not be shown.
- Intersecting Roads. Outline as constructed. Give the type of surface. Label "APPROACH CONSTRUCTED."
- Temporary Approaches. Indicate by heavy broken lines and label "TEMPORARY APPROACH CONSTRUCTED."
- Slope Lines. Do not revise.
- Relocation of Buildings, Poles, Etc. Show in the new locations.
- Channel Relocation. Plot in the location actually constructed. If not originally proposed, plot and label "CHANNEL EXCAVATED."
- Riprap. Show the outline as constructed. Label "RIPRAP INSTALLED."
- Curbing. Show the beginning and end, with the note, "(TYPE) CURBING INSTALLED."

Profile Sheets. Use the following guidelines for the profile view:

- Culverts, Catch Basins, Manholes and Underdrains. For structures 381 mm (15 in.) or greater in diameter, plot accurately all field changes in elevation and location. Use the procedure for plan notes for these items.
- *Grade Changes*. Any field change in grade of 91 mm (0.3 ft.) or more must be shown with a broken line. Label "GRADE AS CONSTRUCTED."
- Subbase. Make all changes in subbase with correcting notes, such as "STA. ______ TO STA. _____ (DEPTH)," or if no change, check the original notes.

Bridge Sheet. Show all changes in the structures. Do not correct bar lists.

Cross-Section Tracings. Revise the final cross-section tracings only if changes in the original design were authorized or if embankment material is to be deducted from the borrow material.

1-315 Recycling of Construction Materials

Department policy encourages the reuse and recycling of materials on construction projects. To determine the amount of material recycled, a Recycling Report for Construction Projects must be completed twice each year, January through June and July through December. The reports are due no later than the 20th of the following month.

Figure 1-3.31 lists the types of material that are reported.

Type Desig- nation	Kind of Material
A	Demolition debris—concrete and bituminous concrete
В	Wood—clearing and grubbing, structures and cable rail posts
С	Steel—reinforcing bars, structures, sheeting, beam rail, etc.
D	Glass

Figure 1-3.31 Type Designation of Recycled Material

See Figure 1-3.32 for a copy of the form. Enter the appropriate reporting period, year and project number. Then complete the form as follows:

- Reuse of Material On Site. Enter the type of material, either A or B as described above, obtained from within the limits of the project and reused on the same project.
- Reuse of Material Off Site. Enter the type of material, either A or B, obtained from within the limits of the project and transported off site for reuse.

- Imported Recycled Material. Enter the type of recycled material, either A or B, imported from beyond the limits of the project. Note: Recycled materials from beyond the limits of the project must be accompanied by a materials certificate and certified test report indicating that the material is environmentally acceptable and structurally sound in accordance with Article 1.06.07 of the Standard Specifications.
- Original and Final Locations. If possible, use station numbers and describe the application for all locations.
 If the material was used off site but on another CONNDOT project, list the project number and application where used.
- Percentage of Recyclable Material Used. The percentage is derived from the amount of recyclable material utilized in an application. For example, Project XYZ has one metric ton (1.1 ton) of bituminous material that has been removed, the project has a requirement for 10 metric tons (11 tons) of fill. The one metric ton (1.1 ton) of bituminous was used as part of the fill. This yields 10 percent of recyclable material used.

Figure 1-3.32 Recycling Report

Reporting Period:	Jan-Jun	Х	Jul-Dec	Year	2004
Project No.					
District No. 1					
Reuse of Material On-Site					
					% of Recyclable
Type of Material	Original Location		Final Location	Quantity (Tons)	Material Used
A				9432.92	4
B C					-
C				+	
Reuse of Material Off-site				+	
rease of Material Off-Site				+	% of Recyclable
Type of Material	Original Location		Final Location	Quantity (Tons)	Material Used
A	onginar zoodien		THAT EGGATOTI	14656	
В					
С				261.3	3
D					
Imported Recycled Material					
					% of Recyclable
Type of Material	Original Location		Final Location	Quantity (Tons)	Material Used
A				1500	
В				400	

All quantities must be reported in metric tons (tons). Use the following factors for converting volumes to mass.

Type A, Bituminous 1 cu. yd. = 3105 lbs. = 1.55 tons
 Type A, Concrete 1 cu. yd. = 4050 lbs. = 2.02 tons
 Type D, Glass 1 cu. yd. = 3105 lbs. = 1.55 tons

Where possible list location by station numbers. Quantities should be in tons for all items.

1-316 Requests for Information and Requests for Change

Request for Information (RFI) - Is a request for clarification of the contract documents. This can include clarification of intent of information shown on the plans or in the specifications, requests for information missing from contract documents and interpretation of conflicting information shown on the plans or in the specifications.

Procedure for RFI- The Prime Contractor sends the RFI to the Project Staff/District Field Office. If the RFI cannot be resolved by the District Staff the RFI is sent to the Designer for resolution. The Designer prepares a response addressed to the District and the District responds to the Contractor. A response to an RFI should be within 7 days.

Request for Change (RFC) - This includes all requests by the Contractor to substitute materials specified in the contract documents. This also includes requests to change the methods of construction as detailed in the contract documents. Before any RFC by the Contractor will be considered, a formal written request from the Contractor must be made to the District and written approval secured before any change in the design will be sanctioned.

Procedure for RFC - The Prime Contractor sends a written request to the District's ADE. The District determines the appropriate parties for review. If design review is required, the request should be sent to the appropriate Project Manager in Design. Design should forward the request, if required to the Consultant Designer for their comment and/or recommendations. Design should forward their recommendation to the District after reviewing the request and/or the Consultant Designer recommendations. The District should make the final decision and approve or not approve the request. A written response of the decision should be sent to the Contractor. A response to an RFC should be within 30 days.