STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION SECTION

2009
ENGLISH/METRIC
CONSTRUCTION MANUAL

SECTION II

CONTRACT ADMINISTRATION

2-100 PROJECT ORGANIZATION

2-100.10 Determination of Manpower Needs

The assignment of personnel to a project by the Construction Engineer and/or the Regional Construction Engineer is based on job size, location, complexity, and personnel available. Usually additional personnel are assigned at the start of the project to aid in the stake out, and at the completion to aid in the taking of final sections. Additional people may be assigned during the construction if needed for inspection, or to cover a special item, such as surface treatment or paving.

The total bid price for a contract is only one factor to be used in determining the necessary workforce requirements. Adjustments will be made depending on the total contract complexity. Additional adjustments will be made depending on availability of personnel, and geographical distribution of projects and personnel.

2-100.20 Project Supervision

The project and the personnel receive supervision at all levels from the Director of Program Development down through the channels to the Resident Engineer. The Resident Engineer gives direct supervision for the project, as well as the Inspectors working on the project.

2-100.30 Instructions to the Resident Engineer

This section sets forth more instructions for the administration and control of the project. The Resident Engineer is responsible for the project to which they are assigned, and with the aid and advice of the Construction Engineers, will supervise the administration and inspection of the construction from initiation to completion within the requirements of the plans and specifications.

As soon as possible after receiving a project assignment the Resident Engineer should spend as much time as necessary to become familiar with the background information pertaining to the project. Additional background information can be found at the following locations:

Roadway Section - The Resident Engineer should contact the Project Manager responsible for the design of the project to learn of any unusual conditions which were noticed and allowed during the investigation and design. Often the Resident Engineer will question the design of drainage or some other feature, and the Project Manager can show the logic used in arriving at the particular design.

Structures Section - As in the Roadway Section, the Structures Project Manager can clarify the design of the structures.

Right-of-Way Section - In this section the person responsible for the acquisition of the land for the project can brief the Resident Engineer on any problems encountered and on any special agreements made with the property owners. Typically, these agreements are part of the contract.

Materials and Research Section - The Materials and Research Engineer or assigned staff will brief the Resident Engineer on possible material troubles they may encounter in obtaining local materials such as borrow and gravel. The Regional Materials Technician may have information on the materials which will be found in the cuts and areas to be mucked, and the various characteristics of fills. A list of items requiring samples and/or certification is supplied for each project by the Independent Assurance Unit.

Construction Section - The Resident Engineer should make certain that all information pertaining to the project has been forwarded to the Construction Section.

Environmental Unit - The Environmental Unit is available to discuss any particular permit conditions included in the contract documents. They are the authors of the permit applications and may be able to provide an explanation as to some of the conditions or restraints placed on a project.

The Resident Engineer should become thoroughly familiar with the plans and special provisions of the project. Any questionable features or provisions which are thought to be in error or will be difficult to comply with should be brought to the attention of the Regional Construction Engineer and Project Manager. Any errors should be resolved in an expeditious manner and at the lowest level possible. If an error is found pre-bid, it should be referred to the Regional Construction Engineer, Contract Administration, and/or the Project Manager. The Resident Engineer should bring to the attention of the Contractor any items which they think may be misinterpreted, and go over these items with the Contractor. Section 100 General Provisions of the Standard Specification for Construction, deals with the general information relating to the administration of the contract. All of Section I, General Information and Section II, Contract Administration of this manual should be read at this time.

Other functions which the Resident Engineer should accomplish during the early stages of construction are as follows:

1. Make sure that the Contractor erects all the construction signs before they start any work on the project. (Refer to Subsections 2-100.100, Construction and Traffic Control Signs and 2-100.110, Maintenance Of Traffic of this manual; the E series of the Standard Drawings and Subsection 107.08, Traffic Control Devices of the Standard Specifications for Construction) as well as applicable portions of the Contract Special Provisions.

2. Make sure that the utility companies and the Contractor coordinate their work.
3. Remind the Contractor that all Subcontractors must be approved before they start to work. (Refer to Subsection 2-130.60, Subcontractors of this Manual and Subsection 108.01, Subletting or Assignment of Contract of the Standard Specifications for Construction).
4. Remind the Contractor of the various labor and payroll provisions that they must comply with (Refer to Subsection 2-180.30, Labor Regulations of this manual and Subsection 108.06, Wages and Conditions of Employment of the Standard Specifications for Construction).

Functions that are the responsibility of the Resident Engineer throughout the duration of the contract are as follows:

1. Give continuous supervision to the engineering work; sampling and testing of materials; inspection of the work; and the measurement, payment, and documentation of quantities (Refer to Section IV, Construction and Inspection Details).
2. Personally do or supervise the administration of the contract (Refer to Section II, Administration).
3. Interpret the plans and specifications for the Contractor and solve engineering problems within your ability. Resident Engineers are encouraged to seek help in solving engineering problems from the various specialists in VTrans; especially the specialists in the Construction Section. Look for ways to improve the final product with special emphasis on future maintenance.
4. Make sure that only acceptable materials are incorporated into the project.
5. Actively promote the training of assigned personnel by observation, explanation, discussion, rotation of job assignment, follow up, and periodic critique of performance.
6. Supervise the taking of final cross-sections and measurements at appropriate times throughout the contract work.
7. Document the Contractor's work on their specific work assignment.
8. Work on preparation of quantities and final quantities on an on-going basis throughout the project.
9. Maintain contact with property owners, Town, or City officials, and the DTA.

After the completion of the project and the final inspection and acceptance the Resident Engineer will normally, under the direction of the Finals Engineer, compile the final quantities for the project(s). (Refer to Section VI, Finals Unit Procedures).

2-100.40 Instructions to the Office Engineer

The Office Engineer shall be responsible for the compilation and documentation of the project records upon the direction of the Resident Engineer. This will involve entering data into Site Manager on a daily basis. The following duties outline the general responsibilities of the Office Engineer:

1. Record the *Daily Work Report* (DWR), (Appendix B-1) into SiteManager on a daily basis. The DWR should be a compilation of all the various Inspector's *Daily Work Reports* and shall include the equipment, personnel, and supervisory staff for all contractors on the project, and shall make installments of any quantities that are appropriate on a daily basis. It shall also include the VTrans personnel on the project.
2. The Office Engineer is responsible for ensuring that all materials incorporated into the project meet specifications including:

    a. Proper certification of materials
    b. Making sure that samples are taken in conformance with the Materials Sampling Manual.
    c. Passing samples as required for materials

3. The Office Engineer shall be responsible for making sure that quantities are being documented appropriately and that quantities are being checked during slow periods of the project.
4. The Office Engineer is responsible for sectioning, measurements, or any other form of quantity documentation.

The Office Engineer is also responsible for making sure that the Contractor is receiving the *Bi-weekly Estimates*, and that any issues with the estimates are resolved in a timely manner.

2-100.50 Instructions to Inspectors

The Inspector on a construction project, working under the direct supervision of the Resident Engineer, holds one of the most important and responsible positions within the Construction Section. The Inspector usually has more to do with the quality of the finished product than any other person connected with the project because they observe and inspect the actual work, item by item, as it is performed.

Although the Inspector has many functions, the most important duty by far, is the inspection of the Contractor's physical operations. While ensuring that the Contractor adheres to the specifications for each item, the Inspector must maintain his/her integrity and be extremely conscientious. To do a thorough job, the Inspector must be completely familiar with the requirements of the item to be inspected.

The sources of information are as follows:

1. Item specifications provided in the Standard Specifications for Construction, the General Provisions, project specific Special Provisions, and Supplemental Specifications included within the Contract documents are the most important sources of information because they outline the specific requirements for items as they pertain to a specific project.
2. The Design Standard Drawings show visually how certain items are to be constructed.
3. Section IV of this manual, Construction and Inspection Details discusses each item and gives instruction to the Inspector regarding possible problems encountered in the performance of a particular item. This information is derived from the experience of many Resident Engineers and is of great value to the Inspector. It should be noted that this information is put out solely for the benefit of Construction Section employees; it is not binding on the Contractor as this manual is not a part of any contract.

The Resident Engineer will brief the Inspector on their duties; advise them on the inspection phases and quantity documentation of the items, along with advice as to which items may need special attention.

After becoming familiar with the specifications, the inspector's job is to see that the Contractor complies with these specifications. The Inspector should not specify the methods that the Contractor will use. They do not act as foremen for the Contractor; the Inspector should only make sure that the final results are as described in the specifications. If the Inspector feels that the Contractor cannot follow the specifications exactly, the matter must be brought to the attention of the Resident Engineer for a decision. As stated above, the final quality of the project can depend on how well the Inspector does their work.

As part of their duties while inspecting the Contractor's operation the Inspector should maintain an Inspector's *Daily Work Report* (Appendix B-1), in which they should record their work each day, personnel and equipment involved in the work, unusual happenings or conversations with the Contractor, and measurements or estimates of the quantities which they have observed being incorporated in the work. The Inspector's *Daily Work Report* should be kept in loose leaf form (Refer to Subsection 2-150.20, Inspector's Daily Report). The measurements may be used to justify bi-weekly payments to the Contractor, or may be transferred to the field books as part of the permanent project records.

Besides actual inspection, the Inspector may be assigned to other jobs by the Resident Engineer. These may include survey and layout work, sampling and testing of materials, measurement of quantities, checking of quantities, plotting of sections, and miscellaneous book work and record keeping. All of this work is described in the various sections of this manual.

2-100.60 Advance Preparations for Project Staking and Inspection

The project is staked as far in advance of construction activities as possible. Staking may be done under the supervision of the Resident Engineer, but if it is not, the Resident Engineer should ensure that the job is properly and accurately staked. Staking to be done includes centerline offset stakes with cuts or fills to the finish grade; culvert offset stakes with grades, and structure layout stakes. Clearing and grubbing limits and slope stakes are normally set by the Contractor. Prior to clearing operations survey control points must be accurately and thoroughly tied in. Culverts in fill sections should be staked as early as possible, but drainage in excavation sections is not staked until the excavation is complete. Section III, Engineering and Construction Surveying, details the survey methods to be used.

Plans for inspection should be formulated before construction begins. Items requiring manufacturer's certification should be brought to the attention of the Contractor by presenting them with the certification forms prepared by the Materials and Research Section. Local sources of aggregate, gravel, or sand that the Contractor intends to use should be sampled and tested for preliminary approval. A plan to give the most complete inspection coverage of all items with the available personnel should be worked out. A conference with the Contractor's superintendent to discuss their proposed work schedule and operation procedures will aid in arriving at a workable inspection plan.

2-100.70 Project Field Office

Field Offices are supplied by VTrans or the Contractor as a bid item in the contract. The location of the field office and any preparations for the area must be approved by the Environmental Section, the Construction Environmental Engineer, and if required by the NPDES Permit, the Agency of Natural Resources. This location must comply with any local zoning.

The Regional Office and Construction Headquarters should be notified of the field address, telephone number, and fax number via the Project Emergency Contact Form (Appendix B-17) as soon as they have been established.

If the Field Office is a contract bid item, the Contractor is responsible for the installation and payment of heat and electricity. Telephone service will be provided through the Contractor. The Contractor will supply the telephone.

2-100.80 Setting Up Project Files

A filing system should be set up for proper storage of project records and correspondence. The extent of the system will vary with the size of the project, but in all cases it should be adequate to keep project papers readily available for reference by project, Regional Office, and FHWA personnel. This file should be indexed into the following categories at a minimum:

1. Change Orders/Supplemental Agreements
2. Written Orders
3. Material Reports and Certifications
4. Contractor Daily Work Reports
5. Project Correspondence
6. On-the-Job Training information
7. Subcontractor approvals
8. Various quantity slips (These should be kept in manila envelopes, by item)
9. Inspector Daily Work Reports
10. Contractor Claims
11. Contractor Payroll Certifications

Sections should be cross-referenced, if necessary. The file should be started as soon as the Resident Engineer sets up their office on the project, and should be kept up, expanded, and revised as necessary to keep the file workable. These files should be kept in the fire proof file drawer supplied by the Contractor as part of the field office item.

2-100.90 Construction and Traffic Control Signs

Refer to Subsection 107.08, Traffic Control Devices of the Standard Specifications for Construction.

The Contractor is required to provide proper signs for the project; this is covered in the above referenced sections/subsections of the Standard Specifications for Construction. Construction signs are shown on the E Series sheets of the Design Standards, found in the contract plans, and must be in place before the start of construction. During construction, the traveling public must be protected by the proper use of barricades, warning, and detour signs.

The manual referred to in Subsection 107.08, Traffic Control Devices, is the Manual of Uniform Traffic Control Devices for Streets and Highways, and has been made available to every Resident Engineer. The Resident Engineer should continuously survey their project for proper signing and maintenance of existing signs, with special attention to night signing and lighting, and should require the Contractor to make any corrections which are found to be necessary. If the Contractor refuses to properly provide for traffic control the Resident Engineer may hold the contract estimate or suspend work on all, or a portion of, the project until the required work is complete.

After the proper construction signs are in place, the Resident Engineer should confirm that the Contractor has covered, relocated, or removed any conflicting VTrans owned traffic signs. Prior to completion of project, VTrans owned traffic signs should be salvaged and reinstalled or installed new as per project plans or as directed by the Resident Engineer.

2-100. 100 Maintenance Of Traffic

Refer to Subsections 104.04, Maintenance of Traffic, 105.17; Maintenance of Project During Construction; and 107.07, Public Convenience and Safety of the Standard Specifications for Construction.

Proper maintenance of traffic is one of the primary responsibilities of the Resident Engineer. Before construction starts, the Resident Engineer should discuss this with the Contractor's representative to stress its importance and to determine the Contractor's plans for the use of detours and traffic control. If traffic must travel over sections of the highway which are under construction, the Contractor must plan their work so that traffic can be maintained at all times, in any weather, and with as little delay as possible.

Item 607.10, Roadway Patrol Maintenance is to be used in connection with the maintenance of traffic, but is not to be paid to the Contractor during the normal construction operation of excavation, filling, or spreading of gravel. This item is normally used when traffic must travel a section of the road not currently being worked on, and where the surface is dirt or gravel.

Resident Engineers are encouraged to contact the Traffic Operations Section if and when they have questions, comments, or concerns dealing with the traffic control on their project(s). The Traffic Operations Section will conduct audits of the traffic control and signing packages and their recommendation must be acted upon.

2-100.110 Visit To The District Transportation Administrator (DTA)

As soon as possible after his arrival on the project, the Resident Engineer should pay a visit to the District Transportation Administrator (DTA) for the area in which the project falls. This visit will be of mutual benefit to the Resident Engineer and the DTA, as it will give the DTA a chance to point out possible trouble spots that they can foresee with future maintenance operations and it will introduce the Resident Engineer to a source of help and consultation throughout the duration of the project. As noted in Subsection 2-130.30, Starting the Project, the Resident Engineer should supply the DTA with the name, address, and telephone number of the Contractor's representative to be notified in case of trouble on the project during non-working hours.

2-110 SCOPE OF WORK

2-110.10 Project Control Documents

The exact amount of work to be accomplished under the contract is set forth in, and controlled by, a variety of documents. The Resident Engineer must understand what is covered in each document in order to effectively control the project.

In many cases, procedures described in one document are superseded or revised in another document, so the Resident Engineer must know in what order the various documents take precedence. The document precedence is covered in the Standard Specifications for Construction, Subsections 105.03, Plans and Working Drawings through 105.05, Coordination of Contract Documents.

Project permits are the highest order of precedence. Any permit conditions must be followed even if they are contradictory to the Special Provisions, General Special Provisions, and/or Contract Plans.

The Special Provisions contain directions, provisions, or requirements pertaining to the particular project under consideration. They may indicate a specific order in which the work is to be accomplished, and set forth the final contractual intent as to the matters involved.

The Contract Plans are the main source of information as to the extent of the work to be done. The Contract Plan sheets may also include special notes about work to be done for property owners, or special items of construction.

The General Special Provisions are supplementary to the Standard Specifications for Construction, and contain additions or modifications to the Standard Specifications for Construction common to all the current contracts.

Supplemental Specifications cover items adopted after publication of the Standard Specifications for Construction, or items substantially changed in some aspect from the description in the Standard Specifications for Construction.

The Standard Specifications for Construction book is the primary document for the control of the work. The directions for each item are found in this book, plus general requirements for the performance of the contract.

The contract, which includes the above documents, also includes the basic agreement between the Contractor and VTrans, whereby the Contractor agrees to furnish the labor and materials and do the work; VTrans agrees to pay for the items according to the schedule of prices.

Right-of-Way documents may include certain items of work to be done for property owners, and may show rights obtained from the property owner such as slope rights or drainage rights. The most important of these documents to the Resident Engineer are the *Right-of-Way Detail Sheet*, and the *Special Agreements*. The *Right-of-Way Detail Sheet* is a separate sheet bound with the plans and shows parcel numbers, property owners' names, acreage taken, and rights (such as drainage rights) obtained from the property owner. The *Special Agreements* sheet is made up by the Right-of-Way Section which summarizes the agreements made with the property owners, showing the rights obtained from the owner, such as slope rights and drainage rights; and the construction features granted to the property owner, such as drives or cattle passes.

A third Right-of-Way document is the *Right-of-Way Plan*, which is a reduced scale layout of the project, showing the property lines and right-of-way lines, and the stations and offset of all property corners. The property deeds make reference to this *Right-of-Way Plan* by parcel number and use the plan to describe the property boundaries instead of using a verbal description of these boundaries. The Resident Engineer's copies of *Right-of Way Agreements* should be sent to the District Transportation Administrator's office when the project is completed. Copies of drive permits for all drives to be constructed on State highways will be on file in the Right-of-Way and Utilities Section.

2-110.20 Changes Within and Outside the Scope of the Contract

As soon as the Resident Engineer is assigned to a project, they must carefully study the plan and other contract documents, and make a visual inspection of the job site to see that all items of construction are properly covered by the contract, they should take action to see that is it included. This might require a *Change Order* (Appendix A-1). It is critical that these required changed be found early in the construction so that the work can be done by the Contractor.

In determining whether or not a change or addition to be planned work should be made, the Resident Engineer should be guided by the determination of whether the proposed change is a "nicety" or a "necessity". A change which is a "nicety" is one which may be an improvement to the project, but is not actually required for the successful completion of the project. A change classified as a "necessity" is one which is required in order to complete the project according to sound engineering principles, or would be of considerable importance to future maintenance or public safety. Changes determined as necessary should be initiated immediately, but changes falling in the category of "nicety" must be carefully weighed in terms of added cost to the project and delays to the Contractor. Minor changes involving a small amount of money and not requiring items to be added to the contract, may be made in the field, but changes of a major nature or requiring new items must be documented by a *Change Order*. See Subsection 2-160.10 for the proper use of a *Change Order*.

2-120 CONTROL OF WORK

2-120.10 General

Refer to Division 100, Section 105, Control of the Work on the Standard Specifications for Construction.

The Resident Engineer should maintain control over their project at all times. This does not mean that they should try to control the Contractor's operations, but that they know what the Contractor is presently doing, what the contractor's plans are for the immediate future, an at what stage of completion the project stands. The Resident Engineer can plan the inspection, field work, and record keeping staying in control of the situation. To maintain this control, the following steps should be followed:

1. Inspect the Contractor's equipment for proper operating condition and compliance with VTrans specifications. If discrepancies are found, they should immediately be pointed out to the Contractor.
2. Become thoroughly familiar with the plans, permits, and specifications before the work starts. This will aid in proper inspection of the work, and will allow proper interpretation of the job requirements for the Contractor, if this information is requested.
3. Require the Contractor to furnish proper supervision, and proper layout for all operations.
4. Provide for inspection of all items of work. The Contractor's operations should be given continuous inspection if possible, but if this is not possible, inspection must be arranged so that an Inspector will be present during the critical phases of all operations. Specific directions for inspectors are included in Subsection 2-100.30, Instructions to the Resident Engineer.
5. Require the Contractor to make their requests for engineering work well in advance of the time the stakes or grades will actually be needed. The Resident Engineer should draw their attention to Subsection 105.09, Construction Stakes of the Standard Specifications for Construction to make sure that the Contractor is provided with the appropriate amount of layout, as per the contract. This will allow the Resident Engineer time to give proper layout, and still have the work done at the time when it is needed by the Contractor. The contractor must be realistic in their requests and not ask for engineering that will not be used for a considerable time, as the stakes may be destroyed by intermediate operations before they are used. This will cause a waste of effort on the Resident Engineer's part, and a loss of time for the Contractor.
6. Make instructions to the Contractor clear, concise, and timely. Instructions which may cause a later disagreement, or which affect a quantity or payment, must be in writing, by the use of the a *Written Order* (Appendix A-2). The Contractor should also be informally kept abreast of any anticipated changes in the construction, possible trouble areas, or anything which might affect their progress schedule.
7. The Resident Engineer, after discussions with the Regional Construction Engineer, shall issue a *Written Order* to the Contractor to establish the substantial completion date. This *Written Order* shall list all weather days granted, for the purpose of later determining applicable extensions of time.

8. Request the final inspection only after the project is completely finished. Preliminary and informal final inspections are often held by the Regional Construction Engineer or the Resident Engineer prior to the formal final inspection. The Resident Engineer will arrange a meeting with the DTA so they may view the contract prior to final inspection. The same applies for Town Managers or Selectpersons where town highways or city streets are involved, to assure that all agreements have been carried through and that all reasonable requests have been taken care of. The Regional Construction Engineer will set the date of the final inspections. Hopefully, with this kind of advance activity, no further work will be found to be necessary at final inspections.

The Resident Engineer has the authority to suspend work on any phase of the construction or on the whole project if necessary.

This authority is covered in Subsection 105.01, Authority of the Engineer of the Standard Specifications for Construction. Another alternative, if the Contractor fails to carry out work ordered by the Resident Engineer, is for the Resident Engineer to have the work done by another party, and have the cost deducted from money which may come due the Contractor under the contract. Prior to any of the above actions, the Contractor should be given ample warning in the form of a *Written Order*, and if the action is going to be taken, the Regional Construction Engineer must be immediately notified.

2-130 PROSECUTION AND PROGRESS OF THE WORK

Refer to Division 100, Section 108, Prosecution and Progress of the Standard Specifications for Construction.

2-130.10 Progress of The Work

After the award of the contract, the Contractor will be required to submit a progress schedule to the Resident Engineer to show when they intend to complete the various items in order to complete the entire project by the completion date and/or interim completion date(s). This schedule is useful to the Resident Engineer for determining whether the work is on or behind schedule.

Construction work must not begin on the project until this schedule has been approved by VTrans. Please refer to Subsection 108.03, Prosecution and Progress of the Standard Specifications for Construction for the specifics regarding the Critical Path Method (CPM) Specifications.

2-130.20 Preconstruction Conference

After the contract has been executed, a Preconstruction Conference should be held as soon as possible. The purpose of this conference is to introduce the Contractor's and VTrans' personnel, and to hold frank discussions as to the Contractor's general plan of operation and any special requirements of the contract. The Contractor should submit and discuss their construction schedule, the *Erosion Prevention and Sediment Control Plan* (if required by Special Provision 652), any special methods or equipment they intend to use, and questions they might have as to the intent of the plans, permits, or specifications. VTrans representatives should discuss any special or complicated part of the project, explaining the requirements for sampling and certification of materials, and various labor and payroll requirements. The authority of the Resident Engineer should be explained to the Contractor, and the fact stressed that all matters pertaining to the project will be handled through the Resident Engineer.

The persons that should be invited to the Preconstruction Conference are, for VTrans: the Regional Construction Engineer, the Resident Engineer, the appropriate Construction Specialists, Materials and Research Representatives, Civil Rights representatives, Project Manager, Environmental Unit and Regulatory representatives and the District Transportation Administrator or their representative. The Contractor is usually represented by an officer of the company, the superintendent, and possibly several of the top forepersons. In addition, there may be representatives of the Federal Highway Administration, local utility companies, and the local town or city government.

The Preconstruction Conference should be recorded with the digital recorders that are assigned to the Regional Construction Engineers. The digital file from the meeting shall be saved in the project correspondence files on the construction network drives. The Preconstruction Conference shall have official minutes that are prepared from the digital recording and sent to the following once the conference has been conducted:

1. The Prime Contractor
2. Any Subcontractors in attendance
3. The Construction Headquarters
4. Any other individuals in attendance

A letter to the Contractor shall accompany the minutes, and the letter shall indicate that any discrepancies in the meeting record shall be brought to the attention of the Regional Construction Engineer within 10 working days. Failure to respond shall indicate acceptance of the meeting minutes.

2-130.30 Starting The Project

After the contract documents have been completed, the Regional Construction Engineer will give the Contractor a written *Notice to Proceed* (Appendix B-2), except for duration projects, once the preconstruction conference has occurred and the *Erosion Prevention and Sediment Control Plan* (*EPSCP*) (if required by Special Provision 652) and progress schedule has been approved, the Contractor may begin operations. As soon as operations actually begin, the Resident Engineer will so note on the appropriate *Daily Work Report* (Appendix B-1), and let the Regional Program Services Clerk know so the date may be entered into the Construction Tracking System.

The Resident Engineer should notify the District Transportation Administrator (DTA) and Construction Headquarters in writing of the name, address, and phone number of the Contractor's employee responsible for the maintenance of the project during nights, week-ends, and holidays. An Emergency Contact Sheet is provided for this purpose. Whenever work is suspended or resumed it should be noted on the *Daily Work Report*.

2-130.40 Completing the Project

When the project is nearing completion the Regional Construction Engineer should be kept informed so they may schedule a final inspection. When this has been held and all work is complete the Regional Construction Engineer will issue the *Completion and Acceptance Memo* (Appendix B-3). The *Completion and Acceptance Memo* should be prepared by the Regional Construction Engineer and distributed to the following:

1. Construction Engineer
2. Construction Services Engineer
3. Finals Engineer
4. Construction Specialists
5. Resident Engineer
6. Project Manager
7. Specific Program Manager
8. Program Manager of Materials and Research
9. Certification and Independent Assurance Supervisor
10. Prime Contractor
11. All Subcontractors
12. Municipality
13. Finance
14. Right-Of-Way (ROW)

This memo will list the official completion date for the project, which is the last day the Contractor performs physical work on any of the contract items; the acceptance date, which is the date VTrans agrees that all contract work is complete to our satisfaction; the substantial completion date, as defined in the specifications book; and whether an extension of time is necessary. The Regional Program Services Clerk is responsible for entering various dates as in the Construction Tracking System.

When the project is nearing completion the Resident Engineer, with the concurrence of the Regional Construction Engineer, will establish the substantial completion date by *Written Order* (Appendix A-2). There will be no additional liquidated damages charged after this date as per Standard Specifications for Construction, Subsection 108.12; Failure to Complete Work on Time. The substantial completion date is defined in the Standard Specifications for Construction. VTrans further defines it as when all work in the traveled portion of the roadway is complete; all safety features are in place, including guard rail; and final pavement markings and traffic signs have been installed.

2-130.50 Extension Of Time

For a variety of reasons a Contractor may not complete a project by the date set forth in the contract, or they may not meet the interim completion date as established in the contract. If the reasons for the delay are beyond their control, as listed in Subsection 108.11, Determination of Extension of Contract Time for Completion of the Standard Specifications for Construction, the Contractor may be granted extra working days by the Director of Program Development. This extension of time means that the Contractor will not have to pay liquidated damages, as described in Subsection 108.12, Failure to Complete Work on Time unless the contract goes beyond the extension of time. As the basis of the extension may be the number of days lost due to weather conditions or the conditions related to the job site, it is a duty of the Resident Engineer to carefully note in his/her diary and on the *Daily Work Report* (Appendix B-1) the days when the Contractor actually did not work at all, or could not work certain operations, and the reasons therefore. Inclement weather days should be recorded as spelled out in Section IX, Site Manager of this manual. A day of rain does not qualify for credit towards an extension of time if the Contractor actually carried on normal operations that day. The Resident Engineer should make a specific recommendation on the *Daily Work Report* when they feel that a day should be allowed as the basis for a future extension of time. Weather days shall not be credited as partial days. It is the responsibility of the Contractor to request any desired extension of time. However, *Change Orders* (Appendix A-1) are changes to the contract that are allowed regardless of whether the Contractor fills out a *Request for Extension of Time* (Appendix B-4) or not. Any extension should be checked for compliance with seasonal constraints of environmental permits.

2-130.60 Subcontractors

Refer to Subsection 108.01, Subletting or Assignment of Contract, of the Standard Specifications for Construction

The Prime Contractor shall be asked to provide the names of any known Subcontractors at the time of the Preconstruction Conference.

Each request to sublet (subcontract) must be approved by VTrans before the Subcontractor will be allowed to work on the project. It is the responsibility of the Prime Contractor to ensure that all required documentation is submitted for consideration of the request to sublet and that the company is in full compliance with any restrictions; as outlined on the *Subcontractor Check Off Sheet* (Appendix B-5) provided with each *Notice to Proceed* (Appendix B-2) as listed below:

A. Letter(s) from the Prime Contractor requesting permission to (re)sublet must contain the following information:
    1. The name and address of the intended Subcontractor
    2. Employer Identification Number (EIN) or Social Security Number
    3. Telephone Number
    4. The intended start and completion dates
    5. List of Item Number(s) with Description of Item(s)
    6. Item quantity and corresponding percentages

B. If the proposed Subcontractor has not worked previously for VTrans, a letter of performance from the Prime Contractor shall be submitted with the request stating that the organization to perform the work is particularly equipped and experienced.

C. A completed *Equal Opportunity Statement Form – CA-109* (Appendix B-6) for each subcontract valued over $10,000.00; using the original contract unit prices, not prices from the subcontract.

D. A copy of the actual subcontract (with attachments) and executed by both parties of the contract, namely the Prime Contractor and the Subcontractor.

E. The subcontract shall contain the following written statement for all Federally funded projects:

    1. "The Required Provisions Form FHWA-1273 and the Special Provisions pertaining to Specific Equal Opportunity Responsibilities, Women/Disadvantaged Business Enterprise Policy, and the Wage Determination Decision of the Secretary of Labor are attached to, and are made part of, the subcontract"

F. The Subcontractor must be fully registered with the Secretary of State's Office, unless they are an individual working as a sole proprietor and have a registered trade name.

G. The subcontract shall contain a copy of the Disadvantaged Business Enterprise (DBE) Policy (CA-110). This form shall be included in all subcontracts regardless of whether the subcontractor is a DBE.

The Resident Engineer shall not make any payment for work performed under a subcontract until final approval has been processed for the request to sublet.

The Regional Construction office will notify the Resident Engineer, by *Subcontractor Approval Letter* (Appendix B-7) and *Subcontractor Approval Memo* (Appendix B-8) of the particular items that a Subcontractor has been approved to perform. Each Subcontractor must comply with the same labor requirements as the Prime Contractor, and on all Federal Aid work, must submit Contractor payrolls and required pay date sheet to the Resident Engineer to be logged and forwarded to the VAOT Civil Rights Labor Compliance Program Manager on a weekly basis.

The Resident Engineer shall only process an *Interim Subcontractor Approval* (Appendix B-9) form in emergency situations; where the form will be used to temporarily authorize a Subcontractor to perform work on a VTrans project before formal approval of the actual request to sublet can be obtained; provided they are registered with the Secretary of State (check with the Regional Construction office, the Construction Headquarters, or the Secretary of State's Website at http://www.sec.state.vt.us/seek/keyword.htm). This form can not be used to circumvent the typical Subcontractor approval process. All interim subcontractor approvals shall be followed up with the formal Subcontractor approval process as outlined herein. The Resident Engineer shall not make any payment for work performed under an *Interim Subcontract* until final approval has been processed for the request to sublet. Total work subcontracted may not exceed 50% of the original Contract amount (using contract unit prices.)

It should be noted that the Prime Contractor remains responsible for the satisfactory completion of all Items, even though assigned to a Subcontractor. Inspectors may deal directly with the representative of the Subcontractor during normal inspection, but if a Subcontractor fails to do acceptable work, the matter is to be brought to the attention of the Prime Contractor for resolution. Payment of all quantities is made to the Prime Contractor through a *Bi-weekly Estimate*, and it is up to the Contractor to pay their Subcontractors, in conformance with the prompt pay provisions of the Contract.

A subcontract must be executed:

1. When material is supplied and installed by another firm.
2. When personnel work on the project site but are not carried on the Prime Contractor's payroll (includes operators of rented equipment).
3. When a company provides fleet service to the Prime Contractor (more than one truck and/or operator). (Will not count towards the 50%)
4. In order to satisfy DBE requirements of the contract.

It is not necessary to execute a subcontract for the following:

1. When an individual truck owner/operator is hired directly by the Prime Contractor to deliver equipment or supply material to the project.
2. When the work being performed is for the project but not physically associated to on-site production; such as with the development of an *Erosion Control Plan* or *Detailed Drawings*.

No Subcontractor shall re-sublet, assign, sell, transfer, or otherwise dispose of any portion of the work they have been approved to perform without written consent by VTrans, via the formal subcontractor approval process as outlined herein.

If a *Change Order* (Appendix A-1) is processed that included items to be added to the contract or existing items where the quantity is being increased and work associated to those items will be done by a Subcontractor, then the following guidelines are to be followed:

1. When items are added by *Change Orders* and are to be done by a Subcontractor who is not currently approved to work on the project, the Prime Contractor must submit to VTrans a complete request to sublet for those items.
2. When items are added by *Change Orders* and are to be done by a Subcontractor who has already been approved to work on the project under another subcontract; a signed letter of request from the Prime Contractor asking to add the items to the current subcontract and a new subcontract agreement signed by both parties, must be submitted and approved by VTrans.
3. When there is an increase in quantity due to *Change Orders* and the additional quantity is to be done by a Subcontractor that is not currently approved to work on the project, the Prime Contractor must submit to VTrans a complete request to sublet for the increased quantity of that item.
4. When there is an increase in quantity due to *Change Orders* and the additional quantity is to be done by a Subcontractor that is already approved to work on the project; the Prime Contractor shall identify the item(s) on the *Change Order* document; by doing so, the Subcontractor's contract value will be automatically increased without a request.

The Resident Engineer shall not make any payment for work added by *Change Orders* that is to be performed by a subcontractor until final approval has been processed for the request to sublet.

When items are added or quantities are increased by *Change Orders* the 50% subcontractor limit will not be affected by this work as specified in Subsection 108.01 of the Standard Specifications for Construction.

The cost of Subletting or Assignment of Contract may be deducted from the total contract price before computing the amount of work required to be performed by the contractor's own organization. Specialty items will be designated in the contract specifications and may be performed by subcontract without affect to the 50% subcontractor limit.

Additional guidance can be found in the VTrans Policy on Contracting and Subcontracting dated March 29, 1985.

All Subcontractors shall receive a rating once their work on the project is complete; as stated in this manual Section VIII – Evaluations, of this manual.

2-140 CONTROL OF MATERIALS

Refer to Division 100, Section 106, Control of Material of the Standard Specification for Construction and Materials Sampling Manual.

2-140-10 General

One of the most important responsibilities of the Resident Engineer is to assure that only acceptable materials are incorporated into the project. Nearly all materials used are tested for quality, but the time and location of testing varies for the different types of materials. Many materials are sampled and tested by project personnel, and sent to the Materials & Research Section for testing. Some items are sampled at the source, and still other materials are covered by Certification by the manufacturer. In any event, all materials should be known to meet the specifications before they are incorporated into the work.

The Resident Engineer will find the current status of material testing results and certifications for their project by running the *Sampling Checklist Report* (Appendix B-22). The steps necessary to access the report can be found under Section 9-100.60 SiteManager Materials.

Upon completion of the project the Completion & Acceptance Memorandum is issued by the Regional Construction Engineer. After the Completion & Acceptance Memorandum is received by the Materials and Research Section a final review of the project tests and product certifications takes place by the Materials & Research Section to verify that all requirements have been accomplished. During this review it may be necessary to seek further clarification or justification from the project's Resident Engineer or explanations for the use of any material which deviates from the specifications. Refer to Section 4-120 for guidance on material testing and sampling.

2-140.20 Materials Supplied In Overloaded Vehicles

The Resident Engineer should discuss overweight vehicles with the Contractor, making sure the Contractor is aware that we cannot accept vehicles hauling in excess of the legal load limit. However, if a Contractor brings trucks overloaded, we may deduct any amount above the legal load from the pay quantity for the specific load, as per Subsection 105.16 Load Restrictions, of the Standard Specifications for Construction.

If an overweight problem exists and the Contractor/Subcontractor/Supplier does not take corrective action, notify your Regional Construction Engineer. Posted bridge weight limits supersede all permits in restricting the load that can be hauled over that bridge. Permits are issued by the select board.

2-140.30 Use of Materials Found Within the Roadway

The use of materials found within the roadway limits is discussed under Subsection 104.06, Use of Materials Found in the Roadway; Authorization; Payment of the Standard Specifications for Construction.

Approval for the use of such materials will be given by the Regional Construction Engineer after a written request by the Contractor in which the proposed use of the materials is indicated. Borrow pits may be allowed within the right-of-way by written permission of the Construction Engineer. Materials from state-owned pits cannot be utilized in construction unless so designated in the Special Provisions.

2-140.40 Material Substitutes

Refer to Subsection 105.04, Conformity with Plans and Allowable Deviations of the Standard Specifications for Construction.

Occasionally a Contractor will propose the use of substitute material from that shown on the plans. If the Resident Engineer feels that the request is reasonable it should be discussed with the Regional Construction Engineer. If it is agreed that the proposed material will meet the design requirements, the Resident Engineer must reach an agreement with the Contractor on the new material specification and price. A *Change Order* (Appendix A-1) will have to be submitted.

2-140.50 Stockpiles

Subsection 106.09, Stockpiling of Materials of the Standard Specifications for Construction allows for the payment of stockpiles. Very careful attention to the requirements of Subsection 106.09 should be heeded whenever stockpile payment is to be made. Payment of stockpiled materials should never exceed the bid amount. The specification caps the stockpile payment at 75% of the total contract bid amount for the item. Stockpile payments shall not be made for materials whose total bid prices are less than $25,000. As an example, stockpile payment may be granted on pipes, as long as all the like pipe items total at least $25,000.

The Contractor must make the request in writing and must supply the following, before any stockpile payments are made:

1. List of materials to be stockpiled includes:
    a. Pay item number
    b. Quantity to be stockpiled.
2. Invoice of all materials, or a receipt of delivery. A paid invoice must be supplied within 28 calendar days of the stockpile payment estimate cutoff date. Failure of the Contractor to provide a paid invoice or cancelled check shall result in the removal of the stockpile amount. (You must inform your Regional Technician about the removal.)
3. Certification of Title showing that the title to the materials, without encumbrances, is in the name of the Contractor and that title is warranted to VTrans.
4. Proper certifications and/or passing samples as specified for the specific items.
5. Statement that the material is clearly marked with permanent markings; to be easily identified as to which project the material will be incorporated and that the material is available for inspection by VTrans.
6. The locations where and conditions under which the material will be stockpiled.

For raw material stockpiles, the additional requirements apply:

All raw material stockpile payments must receive the approval of the Director of Program Development, and, when structural steel is involved, it is advisable to have a recommendation to support the payment from the Structures Shop Inspector. This should be done via e-mail, with a copy being sent to the Regional Engineer and Construction Services Engineer. If the Director approves the payment of the raw material stockpile, the approval should be printed out for the project records.

The e-mail should include the Contractor Name, Supplier Name, Project Name, Project Number, and dollar amount of the materials to be stockpiled. This e-mail shall also include a statement that the Contractor has complied with all of the requirements of Subsection 106.09, Stockpiling of Materials (c).

Payments for raw material stockpiles are handled just like the payments for normal stockpiles.

2-150 RECORDS AND REPORTS

Project personnel will spend most of their time in maintaining records and completing reports. Although the Resident Engineer may not do all the paper work themselves, they are responsible for this phase of the project and they must see to it that the work is done neatly, completely, correctly, and on time.

On large more complicated projects, an Office Engineer may be assigned to the project; however, it is still the Resident Engineer's responsibility to ensure that the project documentation is being done as spelled out in this manual.

2-150.10 Project Diaries

The Resident Engineer may keep a diary of each project or combination of projects under their control. In addition, each Inspector assigned to a major operation should prepare a separate Inspector's *Daily Work Report* (Appendix B-1). The Resident Engineer's diary need not repeat the detailed information required of the Inspector, but should contain general information about the project.

The Resident Engineer's diary should contain a day-to-day record of all the significant events relating to the project. Since it may become important evidence in the decision of claims or the establishment of responsibilities or liabilities, it is essential that the entries be complete and factual. The Resident Engineer may use a bound field book for the diary.

Some of the items to be noted in the diary are:

1. Weather
2. Orders given to the Contractor
3. Important discussions with the Contractor or their representatives

4. Official visitors and inspections including any pertinent orders or decisions
5. Work or materials rejected and the reasons
6. Time of shutting down or resuming work, with explanations
7. Work done by the Contractor's forces during the day
8. Account of any time spent by the Contractor's forces on disputable items or work
9. Length and cause of any delay
10. Arrival and departure of major equipment
11. Unusual conditions, such as high water, slides, etc.
12. Progress of stakeout work and surveying
13. Progress of the day-to day work
14. Quality and quantity of Contractor's supervision
15. Any notes required to fill out the prime contractor evaluation as spelled out in the evaluation section of this manual
16. Accidents within the project limits

2-150.20 Inspector's Daily Report

A *Daily Work Report* (Appendix B-1) should be done for each day the Contractor is on the project working. The main purpose of these reports is to keep the Regional Construction Engineer informed regarding the progress of the project, as a means of keeping track of the daily pay quantities and to serve as the project daily diary. These reports should be accurately and conscientiously filled out under the direct supervision of the Resident Engineer, as they may come to play an important role in determining the granting of an extension of time if the project is not finished by the contract's anticipated completion date. This report could be admitted as evidence in a court case, could be used to resolve a claim by the Contractor, Subcontractor, supplier, property owner, or anyone from the general public. Special attention should be given to the inclusion of the following information on the daily report:

1. The daily report should contain a day to day account of what work the Contractor is doing, in what location they are working, and any unusual conditions that occur. Conversations between the Resident Engineer and the Contractor pertaining to matters affecting the project should be noted. Of particular importance are discussions of orders pertaining to extra work required and the payment of extra items of work. Entries made by anyone other than the person signing the *Daily Work Report* should be initialed by the person making the entry.

2. Disposition of material: Indicate on the daily reports the disposition of all major excavation and borrow, so that the order of work can be determined at a later time, if it should become necessary. This means that when material is excavated, the stations of the fill in which the material is used will be noted as well as the stations of the excavation. When using borrow show the name of the pit from which this borrow is being obtained, the stations of the fills into which the material is going. Also note when excavation is being wasted; and indicate where the waste material is placed. These notes can go on the bottom of the Daily work Report, with an additional form being used if additional space is required.
3. Personnel assignments: Indicate daily VTrans personnel assigned to the project, and their present duties; i.e., survey, pipe inspections, paving, etc.
4. Loss of work time: Note the loss of time by the Contractor due to weather conditions or other conditions related to the job site. State the fact that conditions or other conditions related to the job site. State the fact that the Contractor did not work at all, or could not work certain operations. A day of rain does not qualify for credit toward an extension of time if the Contractor actually carries operations that day.
5. Resident Engineers should be documenting any areas of non-conformance by the Prime Contractor on their daily reports.
6. Daily Work Reports should be reviewed by the Regional Construction Engineer, so that they may keep apprised of the activities going on in the various projects within their region. Refer to *Daily Work Report – Guidance & Procedures – New 2013* (Appendix B - 1c) for a description of the exact process for entering the Daily Work Report in SiteManager.

20-150.30 Detail of Contract Estimate

The Regional Technician runs a series of reports for each *Bi-weekly Estimate*; these reports include the *Estimate Summary to Contractor* (Appendix B-10), *Summary by Project* (Appendix B-11), *Contract Item Summary* (Appendix B-12), *Estimate Item Detail* (Appendix B-13), and *Sampling Checklist Report* (Appendix B-22). Each report provides various levels of detailed information that pertains to installments during the bi-weekly estimate period as well as project to-date totals. The *Estimate Item Detail* specifically has the potential of reducing the number of discrepancies on various items in the finals stage, because it make the Contractor aware of what is being paid per item on each *Bi-weekly Estimate*. The *Estimate Summary to Contractor* report contains any payment adjustments due to lack of material certification or due to failing material samples that have not been resolved. The *Sampling Checklist Report* contains the project items that require testing and certifications (including what type of certification).

2-150.40 Bi-weekly Estimate

The Resident Engineer is responsible for making sure that all *Daily Work Reports* (Appendix B-1) are entered into SiteManager, preferably on a daily basis, but at the very minimum on a weekly basis. Once a Resident Engineer authorizes a *Daily Work Reports*, the quantities are accepted as payable on the next *Bi-weekly Estimate*. Estimates shall be run in conformance with Subsection 109.08, Partial and Final Payments of the Standard Specifications for Construction.

Once a Resident Engineer is satisfied that the *Daily Work Reports* for the estimate period are complete and that all necessary *Daily Work Reports* have been authorized in the Diary, the Resident Engineer shall contact the Regional Technician with the following information:

Project Name
Estimate Number
CES Number (*** PPMS number if change over to Z:\ ***)
Estimate End Date
Any anomalies (number of liquidated damage days, etc.)

Notifications of the *Bi-weekly Estimate* shall be sent to the Regional Technician by Friday noon. If for any reason the Resident Engineer cannot make this deadline, the Resident Engineer shall contact the Regional Technician to inform them why the estimate will be late and when the estimate will be ready for processing.

The Resident Engineer may choose, prior to contacting the Regional Technician, to run an *Installed Work Report*. The report can be found in SiteManager under Contractor Payments(+) / Reports (CP+). This report will give the Resident Engineer an overview of what items and quantities will be paid for in the estimate and what the total value of those items will be. This report is also a good check to compare with any computation sheets and/or individual Inspector Reports to verify that values were entered correctly for the estimate period. *Note: The total value of the estimate period reflected in this report does not account for any stockpiles, certifications, or other adjustments.*

2-150.50 Field Books

The hard bound Field Book is the permanent record of quantities used for a construction project. The number of books required for each project varies with the size of the project from one for a small project to thirty or more books for a large and complex project.

In these books are item by item summaries of the quantities used, along with supporting measurements and computations. For items where the quantity computations are more easily done on special forms or sheets, the field book will contain references to the location of these supporting documents.

Enough emphasis cannot be made as to the importance of keeping Field Books up-to-date, and making them accurate and neat. It is very important to completely index the books and to cross-reference items from page to page and book to book so that any person, even though not familiar with the project, can inspect the books and easily find all quantities and computations.

Over the years many methods have been tried for setting up the various field books and arranging the contents. Section V, Sample Field Book illustrates the preferred system of numbering the various books going to make up the complete set, also the preferred method of setting up each item and maintaining the necessary information. This sample field book is based on the best of the methods observed in the field books over the past years, with the idea of finding the arrangement that will be easiest to set up and use in the field while still furnishing all the information required in a manner easy to check by a person unfamiliar with the particular project.Entries should be made in the book as soon as quantities are in place. All entries will be dated and initialed by the person making the entry, and corrections to entries will be dated and initialed by the person making the correction. All field entries will be made with a lead pencil, with a red pencil being reserved for checking. Anyone who enters or initials quantities in the field books shall appear in the engineering force list in the front of the summary books.

A complete, separate set of books is required for each separately numbered project within each contract. Separate books are also required for each bridge on the project. It is imperative that the books be locked into the fire proof cabinet supplied as part of the field office item when they are not in use.

[1]2-150.60 Written Orders

The *Written Order* (Appendix A-2) is a form used on the project for correspondence between the Resident Engineer and Contractor. This is used when it is desired to make the subject material a matter of permanent record, and may be used under the conditions as follows, but may be used for the documentation of any other issues, as deemed necessary by the Resident Engineer or Regional Construction Engineer:

1. To order the Contractor to do work which is covered by the plans and specifications, but which the Contractor either refuses to do, or has failed to do properly.
2. To order the Contractor to do work not included in the contract (extra work) for which the method of payment will be specified.
3. To document any other order, quantity, or subject matter which should be made a matter of record for the future protection of either VTrans or the Contractor. Examples under this condition include:
    a. Undercutting of sub-grade or side slopes to remove unsuitable material. Indicate the depth and width ordered and the station-to-station length of the excavation. Also indicate the material to be used to backfill the excavation area.
    b. Cutting of solid rock slopes beyond the lines shown on the plans in order to meet field conditions.
    c. Clearing and grubbing to be paid in addition to the lump sum quantity.
    d. Flattening of fill slopes, even though waste material is used for this purpose.
    e. Changing the bottom elevation of structure excavation from that shown on the plans.
    f. To document any "deviation from the contract" (see Subsection 105.05, Coordination of Contract Documents of the Standard Specifications for Construction).
4. To document when a pay item is eliminated from the contract.
5. To document inclement weather days as defined in Subsection 108.11, Determination of Extension of Contract Time for Completion part (a) of the Standard Specifications for Construction.
6. To document the substantial completion of a project.
7. To document a specific change to the method of measurement of basis of payment as allowed in the specification for specific pay items.
8. To document a change in the Resident Engineer, or to allow for an Interim Resident Engineer.

[1] Text Shift – 2013 update

A *Written Order* should be issued to document any other order, quantity, or subject matter which should be made a matter of record for the future protection of either VTrans or the Contractor, such as to substantiate *Change Order* (Appendix A-1), *Stop Work Orders*, etc. It should state clearly the payment or lack off it for the activity indicated.

Written Orders should be numbered sequentially, should be assigned by the Resident Engineer or alternate, and dated with the date of issuance. Copies of the finalized version of the *Written Order* should be made for the following:

1. Project Files
2. Regional File via the Regional Construction Engineer
3. Construction Headquarters via the Finals Engineer

A *Written Order* may be requested by the Contractor if he feels that his interests will be protected by the order. Such a request should be honored.

2-150.70 Project Plans

To facilitate the preparation of Record Plans (Refer to Section 6-150.70, Final Disposition of Record Plans), Resident Engineers are to note in red all changes in the project plans on their full sized field prints. Upon project completion, these prints are to be submitted to the Finals Unit with the rest o the project records to assure that all field changes get properly recorded on the record plan originals. Changes to the plans should be recorded as they are made. The Record Plans should not be postponed for preparation during the finals process, because this could lead to errors or omissions in the Record Plans since the material is not as familiar after the fact, and, in some instances, impossible to reproduce.

2-160 CONTRACT CHANGES

Refer to Subsection 104.02, Alteration of Plans or Character of Work; 104.03, Extra Work; and 109.06, Extra and Force Account Work; of the Standard Specifications for Construction.

2-160.10 Changes in Design/Supplemental Agreements

Many projects will require work to be done which is not detailed or covered by the plans or contract documents. As stated in Subsection 2-110.20, Changes Within and Outside the Scope of the Contract the Resident Engineer must be careful in making changes during construction. If it is determined that a change is necessary, the use of the form *Change Order* (Appendix A-1) is necessary. The proposed change should be discussed with the Regional Construction Engineer and Project Manager before making all but minor changes. On all projects with full oversight by the Federal Highway Administration (FHWA) it is also necessary to discuss the proposed change with the FHWA Area Engineer, as this will give him a better understanding of the necessity for the change when the *Change Order* goes to FHWA for approval. The areas that should be covered during those discussions (essentially questions that need to be answered) include:

1. Is the work eligible (Federal aid eligibility)?
2. What is the impact on the original "scope of the work"?
3. What is the basis of payment, and what cost analysis must be accomplished to support the negotiated prices that are part of the Change Order?

Changes of a minor nature may be made in the field without the use of a formal *Change Order* as long as the work is done under the appropriate bid items. Such changes include minor changes in the alignment or grade of culverts, and the undercutting of small sections of the sub-grade to remove unsuitable material. If work which starts out with the appearance of being minor later develops into a major change, a *Change Order* form should be initiated immediately to document the work and quantities. An example of this is found when the amount of sub-grade undercutting gradually increases during the progress of the project, through the excavation of many small areas, until a large quantity of excavation is involved. In a case like this, the Regional Construction Engineer, Project Manager, and the FHWA Area Engineer, if applicable, should be kept informed of the situation during the progress of the work. In all cases where there is a question as to whether the change required is of a "major" or "minor" nature, the Regional Construction Engineer should be consulted. Changes that require work outside of the project construction limits as well as changes regarding drainage features, impervious surface area, or illicit discharges may require review by the Environmental Unit as described in Section 11-110 Waste, Borrow, and Staging Areas and Sections 11-150.20 Operation Stormwater Permits and 11-150.30 Illicit Discharge Detection and Elimination, respectively.

Additional guidance on drafting Change Orders can found under *Drafting and Executing Change Orders – Guidance and Procedures* (Appendix B-21), and *Field Memo #1 2010 – Independent Cost Analysis For New Items added by CO* (Appendix B-20).

2-160.20 Prime Contractor Claims

In accordance with Subsection 105.20, Claims for Adjustment of the Standard Specification for Construction a prime contractor must file a written *Notice of Intent* to file a claim, prior to performing any of the disputed work. The Prime Contractor must file the claim, in writing, within 90 calendar days of the *Notice of Intent*, or within 90 days of acceptance, whichever would occur first.

Once the prime contractor files the *Notice of Intent*, the Resident Engineer and/or Inspector shall track and agree with the superintendant on a daily basis, on all labor, equipment, and materials involved with contentious work. The excel spreadsheets that have been prepared for force account work should be utilized for tracking this information. After the *Notice of Intent* has been filed the Resident Engineer will:

1. Send a copy of the *Notice of Intent* to the following:
    a. Regional Construction Engineer
    b. Construction Service Engineer
    c. Construction Engineer
    d. Project Manager
    e. FHWA (if full oversight project)The Resident Engineer shall prepare a *Written Order* (Appendix A-2) that acknowledges receipt of the *Notice of Intent* to file a claim. It shall not deny, accept, reject or direct any other action relating to the claim; it is solely to acknowledge receipt.

Once the actual claim is submitted, the Resident Engineer shall forward the final copy of the claim to the following:

1. Regional Construction Engineer
2. Construction Services Engineer
3. Construction Engineer
4. Project Manager
5. FHWA (if full oversight project)

Anyone involved in the claims process is encouraged to seek counsel from the Assistant Attorney General's Office any time a *Notice of Intent* or claim is filed.

Claim Tracking: The Regional Office staff is responsible for entering the claim information into the Construction Tracking System (CTS).

The Construction Services Engineer in concert with the Regional Construction Engineer shall formulate an early opinion on the claim once the notice of intent is filed. If the claim has merit, it may be appropriate to negotiate an amicable settlement to the claim before the work is done, however, if this is a full oversight project, FHWA must be included in this decision. If it appears to have no merit, the tracking of labor, equipment, and materials will be done as outlined above, to document costs in the event of loss on appeal.

Once the actual claim has been filed, the Construction Services Engineer in concert with the Regional Construction Engineer and FHWA (if a full oversight project) shall develop a formal letter stating the status of the claim. This letter shall go out under the Construction Engineer's signature. All of the individuals listed above shall receive copies of the final status letter on the claim.

If the claim is to be rejected, the letter shall indicate that the Contractor may appeal the decision to the Director of Program Development, the *Change Order* only needs to be signed at that level.

A report has been established to report he current claim information to the Director of Program Development and any other interested individuals. The Project Manager should be kept informed for budgetary purposes also if the project is a full FHWA oversight project, FHWA must be kept informed on all discussions relating to the claim.

The Director of Program Development or Assistant Attorney General may ask for additional information surrounding the claim, so all notes pertaining to the claim shall be kept separated in the project documentation for the purpose of easy access.

2-160.30 Formal Contractor Meetings

As stated for the Preconstruction Conference, the Regional Construction Engineers have been assigned digital recorders. The digital file from the meeting should be saved in the project correspondence files on the construction network drives. If there is a decision(s) being made about contract work as a result of the meeting, the meeting shall have meeting minutes that are sent to the Contractor with a letter to indicate that any discrepancies in the meeting record shall be brought to the attention of the Regional Construction Engineer within 10 working days. If the decision results in a change in contract, the change must be worked into a *Change Order* (Appendix A-1). Failure to respond shall indicate acceptance of the meeting minutes. It is also imperative that Resident Engineers memorialize the record of project meetings in their daily reports.

2-170 MEASUREMENT, DOCUMENTATION, AND PAYMENT

Refer to Section 109, Measurement and Payment of the Standard Specifications for Construction.

2-170.10 General

The general basis for payment to the Contractor for work performed and materials furnished is covered in Section 109, Measurement and Payment of the Standard Specifications for Construction. More explicit directions for the measurement and payment of contract items are found under each item specification in the Standard Specifications for Construction under the Subsection 109.01 Measurement of Quantities.

In addition, Section IV, Construction and Inspection Details contain more specific guides for the measurement of work items based on VTrans policy and experience.

It is the policy of the Construction Section to pay only once for work performed at any one location. For example, if an excavated pipe trench should slump or be washed in before the pipe could be laid, the Contractor will not be paid for bringing the trench to flow-line grade the second time.

The Contractor should be fairly paid for all work performed. Measurements must be made accurately, and enough measurements taken, to establish the true quantity involved. The Contractor should be invited to have one of their representatives participate in the measurement of quantities, as this will eliminate some duplication and assure an early agreement between the Contractor and the Resident as to the quantities to be paid.

When estimating the payment of items such as common excavation or solid rock excavation, the Resident Engineer should cap the payment for the specific item at the contract quantity, until final sections can be taken, plotted, and the quantities calculated. Load count, or truck measurement, will only be acceptable as the method of measurement for quantities when authorized in the contract provisions, or as approved in writing by the Resident Engineer in the case of small quantities where other methods of measurement are impractical. See Sections 109.01, Measurement of Quantities and 203.13, Method of Measurement of the Standard Specifications for Construction.

Quantities paid on any *Bi-weekly Estimate* must be substantiated so that the Contractor will only be paid for work performed. This substantiation, which is a form of documentation, must be clear enough to be checked by persons not familiar with the project. Such evidence may take the form of scale tickets, diary entries, material receipts, etc. For example, earthwork quantities might be supported by load count entries in the Inspector's *Daily Work Report* (Appendix B-1), or be limiting stations and quantity balances. Pipe lengths may be initialed entries in the Field Book or the Inspector's *Daily Work Report*. A positive method of referencing each quantity on the *Bi-weekly Estimate* to its supporting measurements must be initiated on each project, but the method will vary with the complexity of the project. Measurements should be kept up-to-date, and work should be paid for on the first bi-weekly estimate following the performance of acceptable work.

2-170.20 Documentation

A very important part of measurement and payment is the documenting of quantity records. This means that all measurements and computations appearing in the Field Books or computation sheets will be initialed and dated by the person doing the work. Again, it is imperative that as soon as someone works on a project that they enter their name and initials into the engineering force record in the summary books.

All weight slips or delivery slips to be used as the basis for payment for specific items will bear the project name and number and will also be initialed and dated by the person receiving the slip, and their initials will be taken to mean that they certify that the material was actually incorporated into the project. A person having occasion to initial slips will sign their full name on the first slip they receive each day, but subsequent slips will require only the initials.

If any deductions are to be made from the quantity shown on the slips, the computations or other basis should be shown on the particular slip in question, it would also be beneficial to have the paving foreman sign the slip indicating that they agree with the pay quantity for that specific slip. Items for which the quantity is determined by computations based on typical sections for plan dimensions must be checked in the field to assure that the completed work actually does substantially conform to these typical sections or plans.

Documentation for the last category may consist of a log in a field book showing the sections checked and approved, the date, and the signature of the person doing the inspection, or may be recorded in the Inspector's *Daily Work Report* (Appendix B-1), or by any other means that will ensure that all areas are adequately checked. Examples of Items requiring this type of documentation are fine grading, the various sub base courses, and concrete pours. Survey notes may become a part of the documentation, and should always bear the project name and number, the date, and the names of the people working on the survey party. Section IV, Construction and Inspection Details gives specific requirements for all items.

2-170.30 Extra Work

Extra work is defined as work to be performed or labor and/or materials to be furnished by the Contractor in order to complete the project in an acceptable manner, but for which there is no applicable basis of payment provided in the contract. (Refer to Subsections 101.02, Definitions; 104.03, Extra Work; and 109.06, Extra and Force Work Account of the Standard Specifications for Construction). There are three methods of paying for extra work, and are labeled in the preferred order of precedence, as follows:

1. Unit price basis, with prices established by a *Change Order* (Appendix A-1) to show necessity for additional work.
2. Lump sum basis, with total price established by a *Change Order* to show necessity for additional work.
3. Force account basis (cost plus), with prices for labor established by a *Change Order* with labor and materials being paid for on a cost plus basis. Equipment is paid at the agreed upon rental rates which shall not exceed the adjusted FHWA rate as spelled out in the applicable edition of the Blue Book rental rates (Monthly rate/176). A *Change Order* will be required to show necessity for extra work.

This type of payment should never be combined with the payment of contract items for extra work, since contract items should already account for overhead, labor, equipment, and incidentals necessary to do the work.

Extra work which can be done by using items found in the Standard Specifications for Construction should be done by the unit price basis. Under this procedure, the necessary items are added to the contract by *Change Order* and the work is paid for in the normal way. The *Change Order* should be executed before the start of work.

Extra work, for which there are no appropriate items, may be paid for on the lump sum basis. In this case, the Contractor agrees to complete the work by furnishing all the required labor, equipment, and materials for a specified total price.

The extent of the work and the price is established by a *Change Order* executed before the start of work. The Resident Engineer is responsible for keeping documentation that will support the lump sum unit price.

Extra work for which there are no appropriate items, or for which the Contractor and VTrans cannot agree upon a lump sum price, can be done on a force account basis. Under this method, the Contractor is paid his actual cost for labor and materials, plus various percentages for overhead and profit (Refer to Subsection 109.06, Extra and Force Work Account of the Standard Specifications for Construction). Equipment is paid for at the agreed upon rental rates which shall not exceed the FHWA rate as spelled out in the applicable edition of the blue book rental rates. The labor rates and equipment rental rates are established by *Change Order* before the start of the work. The *Change Order* will show the model or size of the equipment for which the rate is given. Material costs are based on the actual costs to the Contractor, including shipping costs. The Contractor must present actual receipted bills for the materials used. Detailed instructions for the performance of extra work on a force account basis are found in Subsection 109.06, Extra and Force Work Account of the Standard Specifications for Construction.

The Resident Engineer will keep accurate daily reports of the work as it is done, by the use of the *Daily Work Report* (Appendix B-1) form. Record of extra work shall be signed by the Resident Engineer and the Contractor's representative to show that they are in agreement as to the amount of labor, materials, and equipment used that day. There should be three copies made of this record, with one copy each for the Contractor, the field office, and Construction Headquarters.

The labor rates include only that which is actually paid plus benefits as described by Section 108.06 - Wages and Conditions of Employment, of the Standard Specifications for Construction. The Contractor is required to complete an overhead sheet and affirm the various insurance rates for each employee involved with the extra work. Immediately upon completion of the work of any given extra work operation, the Resident Engineer should forward the *Daily Work Report* to the Finals Engineer.

The Finals Engineer will assist the Resident Engineer in compiling the summary sheet and returns to the Resident Engineer the daily *Extra Work Records* plus a copy of the summary. The Resident Engineer can then pay for the extra work in its entirety on the next Bi-weekly Estimate, following the formal approval of the *Change Order.*

An *Extra Work Record* should be set up in the Summary Book. Title would be "*Extra Work*" #; followed by a brief description of the work. The Summary should show:

Original	Final	
0	1	(unit)

Extra work shall be memorialized within a *Written Order* (Appendix A-2). All daily work activities, including days worked and any other information directly related to the extra work shall be documented within the Daily Reports. All changes to the contract shall be formalized by a *Change Order*.

2-170.40 Instructions for the Completion of an Extra Work Order

A spreadsheet has been prepared for this purpose and should be used, which can be found in the Field Forms electronic directory.

2-180 LEGAL RELATIONS AND RESPONSIBILITIES

Refer to Section 107, Legal Relations and Responsibility to the Public of the Standard Specifications for Construction.

2-180.10 Integrity

Absolute integrity on the part of all VTrans personnel is essential if public confidence in the VTrans is to be maintained. Integrity embraces everything that touches a person's ability to do their job; resourcefulness, decisiveness, adaptability, stability, professional and ethical.

Project personnel are prohibited from doing engineering work for the Contractor, and receiving compensation. No one at VTrans, whose job involves negotiating, approving, or administering any contract or transaction on behalf of VTrans shall have any financial or personal interest, direct or indirect, in the case. If any VTrans employee has any interest in real property to be acquired for highway purposes, they shall fully document the facts and circumstances of their interest.

The employee shall not participate in acquisition of the property as agent of VTrans. No employee shall use VTrans equipment for personal business. An employee should not seek to acquire VTrans property which is offered for sale without express written approval of the Director of Program Development. The solicitation or acceptance of a cash loan by a VTrans employee from any Contractor doing business with the VTrans, or form any of the Contractor's representatives, is another example of serious conflict of interest. Any case of dishonestly or serious conflict of interest may result in the immediate dismissal of the person or persons involved.

2-180.20 Hatch Act

By virtue of the use of Federal aid funds for highway construction VTrans, employees are subject to the provisions of the Hatch Act, a Federal Law concerning political activity. A portion of this Act is quoted below:

Title 5 (Section 118K) HATCH ACT –

(A) No officer or employee of any State or local agency whose principal employment is in connection with any activity which is financed in whole or in part by loans or grants made by the United States or by any Federal agency shall:

1. Use his official authority or influence for the purpose of interfering with an election or a nomination for office, or affecting the result thereof, or
2. Directly or indirectly coerce, attempt to coerce, command, or advise any other such office or employee to pay, lend, or contribute any part of his salary or compensation or anything else of value to any party, committee, organization, agency, or person for political purposes. No such official or employee shall take any active part in political management or in political campaigns. All such persons shall retain the right to vote as they may choose and to express their opinions on all political subjects and candidates.

2-180.30 Labor Regulations

As a part of the contract, it is required that all regulations with regard to labor be properly followed. Requirements of the Contractor and VTrans regarding the contract labor provisions are well covered in the proposal and the referenced regulations. A working knowledge of these regulations is expected of the VTrans personnel involved to assure compliance by the Contractor. Federal compliance manuals are available for reference from the VTrans Compliance Officer.

This Subsection provides an explanation of regulations involving labor compliance.

A. Required Notices and Posters - Federal Aid Projects

The proposals for highway construction contracts state that certain information must be displayed in a conspicuous place on the project so that interested persons may be readily aware of their contents.

- **Fraud Poster - (Form PR-1022)**
  This poster, required by Section 1020, Title 18, United States Code, must be displayed by the Contractor during the course of the work on all Federal Aid projects. It points out the consequences of impropriety on the part of any employees working on the project. The Resident Engineer's name and the appropriate Federal official's name appear on this form.
- **Equal Opportunity Poster**
  The Contractor is required to post the prescribed Equal Opportunity poster on all projects. These posters will be supplied by the VTrans Compliance Officer.

- **Wage Rate Information Poster**
  This poster, and the accompanying Schedule of Wage Rates, is required on Federal Aid projects. The Schedule of Wage Rates, as shown in the contract and as subsequently modified or amended, shall be posted where all the workers can view it. If more than one wage area is listed, it would be well to clearly define the wage area applicable to the project. This poster is signed by the Resident Engineer.
- **Safety and Health Poster**
  The Vermont Occupational Safety and Health Code provide safety and health protection for workers. The purpose of this law is to assure safe and healthful working conditions throughout the State. Even though this Safety and Health Act is administered and enforced by the Vermont Department of Labor and Industry, it would be advisable for the Resident Engineer to see that the Contractor places this poster along with the above mentioned posters.
- **Summary of the Equal Employment Opportunity Program**
  This document is normally comprised of one sheet which contains a very brief resume of the Contractor's Affirmative Action Plan and Equal Employment Program.

B. **<u>Enforcement of Labor Provisions on Federal Aid Highway Projects</u>**

In order to properly fulfill the contract, the Contractor must conform to labor provisions included therein. It is thus the Engineer's responsibility to be certain that the requirements regarding labor are properly carried out. Documentation related to labor regulations take a variety of forms, such as:

- **Posters (Projects <u>with</u> Wage Schedules):**
  Summary of the EEO (Equal Employment Opportunity Program)
  Form FHWA-1495 (Wage Rate Information, FHWA Project)
  Emergency Phone Numbers
  Equal Employment Opportunity is the Law
  Safety and Health Protection on the Job
  Form PR-1022 - NOTICE - The highway construction underway
  Federal Wage Schedule(s)
  Vermont Minimum Labor and Truck Rates - CA101
  Notice to Employees Working on Federally Financed Projects
- **Posters (Projects <u>without</u> Wage Schedules):**
  Summary of the EEO (Equal Employment Opportunity Program)
  Emergency Phone Numbers
  Equal Employment Opportunity is the Law
  Safety and Health Protection on the Job
  Form PR-1022 - NOTICE - The highway construction underway

The above posters must be displayed on the project in a location convenient to all personnel prior to the beginning of any work on the project.

C. Interviews

The Compliance Officer for VTrans may, in conjunction with the Resident Engineer, conduct random on-the-job interviews with several employees of the Contractor to determine the actual wages being paid and whether the employee is properly classified in the work being performed. Any wage discrepancies should be brought to the attention of the Contractor without delay. Resident Engineer's certification relative to wage rates paid on Vermont Federal Aid Highway Projects (Certified Engineer) is used for this purpose.

D. Statement of Compliance

The Contractor is required to submit a weekly statement of compliance on all Federal Aid projects. This affidavit relates to anti-kickback regulations and is required throughout the course of the work. Form WH 347 or WH 348, *Weekly Statement of Compliance* may be used for this purpose.

E. Payrolls

On all Federal Aid contracts, the Contractor must submit to the Resident Engineer a weekly payroll copy along with a certificate of compliance indicating that the attached payroll is current and complete. Subcontractors must provide the same information weekly. Prior to forwarding the payroll and the certification to Construction Headquarters, the Resident Engineer is to examine the payroll(s) for conformance with the wage provisions of the contract. A detailed check list to use in this determination of compliance follows:

- **Payroll check - Entries to be checked on every payroll**
    1. Work classifications, title code number for each employee.
    2. Hourly wage rates for each employee, including fringe benefits, if applicable.
    3. Are daily and weekly total hours shown?
    4. Is the certification signed?
    5. Are deductions itemized?
    6. Are all deductions approved?
    7. Wage rates verified with those provided in the contract.

At least the first two payrolls submitted by each Contractor or Subcontractor on each project should be fully checked with respect to:

1. Arithmetical accuracy.
2. Overtime computations.

1. Wage rates verified with those shown in the applicable contract.
2. Employee's full name, address, and Employee Identification Number being shown on the payroll where his name first appears.

If full compliance is shown on the initial payrolls, the steps listed above can be performed on a sampling basis on subsequent payrolls, at the Engineer's discretion to verify wage reported on the employee interviews with the rates shown on the payroll. Resident Engineer's Certification relative to wage rates paid on Vermont federal aid projects is used for this purpose and is to be submitted with each payroll. Use payroll checklist forms to keep track of payroll submission for the prime and all subcontractors. These checklists are to be submitted to the Civil Rights Section as the payrolls are checked.

- **Corrections to payrolls**

If it is found that the payroll has discrepancies and clerical errors, such errors should be called to the attention of the Contractor(s) and corrections should be promptly made. The original submitted payroll should not, under any circumstances, be returned to the Contractor. Corrections are to be made by supplemental payrolls prepared and submitted in the same manner as the original. It is necessary that a completely revised payroll transcript be submitted. The payroll period usually ends on Friday or Saturday and the Contractor must submit the payrolls to the Resident Engineer no later than seven (7) days from the date the employee was actually paid. The payroll should be transmitted to the Civil Rights Section as soon as possible after adequate checking has been done. When a wage dispute arises, the Resident Engineer should obtain and assemble all the information available and consult the Labor Compliance Officer concerning the problem.

A. <u>Employment Records</u>

Terms of the contract require that the Contractor's employment records be available during progress of the work. The Labor Compliance Officer will make spot checks of these records to establish:

- Whether the wages being paid to laborers and mechanics are not less than required in the Contract.
- If the work being performed by any specific class of employees, including helpers or apprentices, conforms to the classification set forth in the contract for the wage they are being paid.
- Whether the wage classification is correct or if there appears to be a disproportionate number of lower paid help (laborers, helpers, or apprentices) indicating avoidance of minimum wage rules.

G. **Violations**

The Labor Compliance Officer is to investigate any complaints of violation of the labor standards that are referred. A report of each investigation and the action taken is to be prepared and submitted to the Construction Engineer. The provisions indicate the disposition in case there is substantial evidence that the violations with regard to payrolls are willful or if restitution by the Contractor or Subcontractor is not made. Deliberate violation of the labor requirements regarding wages is a serious matter and cannot be tolerated.

Form PR-1273 for all Federal Aid projects is a part of the contract proposal and describes the required labor regulations. The form is the first colored sheet in the proposal.

The requirement above is supplemented by information given in the contract proposal titled "Outline of Federal Requirements Applicable to Labor for projects involving the Expenditure of Federal Aid Funds other than Inter-State."

Any questions the Resident Engineer has in regard to labor should be referred to the Labor Compliance Officer.

2-180.40 Entry on Private Lands for Survey Purposes, Including Survey for Construction

Before entering on private property, the party chief must contact and get permission to do so from the owner. Whenever all reasonable means of seeking permission fail, the party chief is to resort to the following procedure as outlined by the Attorney General:

In cases where a property owner has refused permission for a survey party to enter on his land to accomplish its work, the survey party chief should contact the State's Attorney for the county and ask for a Deputy Sheriff to be assigned to stand by during the accomplishment of the work. VTrans will have to pay for the services of this Deputy Sheriff.

We are proceeding under Title 19 V.S.A., Section 222, of the Vermont Statutes, which states that, "The highway board and its agents may enter upon land adjacent to such highway or upon other lands for the purposes of examination and making necessary surveys. However, that work shall be done with the minimum damage to the land and disturbance to the owners thereof."

Before entering on private property, the party chief must contact and get permission to do so from the owner. Whenever all reasonable means of seeking permission fail, the party chief is to resort to the following procedure as outlined by the Attorney General:

In using this procedure, it would be well to remove stakes and so forth after the work has been completed and the line tied in, and also to keep well in mind the portion of the law which indicates that we "do as little damage as possible."

2-180.50 Improvement Release

During the course of construction it may be necessary or desirable to perform work outside the limits of the State's purchased right-of-way. Such work will often be of benefit to the property owner, as well as to VTrans, and usually will be of a minor, temporary, or one-time nature. Examples of such work are the flattening of slopes, construction of drives, and removal of brush or trees. Such work will not require future maintenance or access off the right-of-way. Even though the property owner agrees to the proposed construction on his land, he should be requested to sign a *Property Owner Release Form* (Appendix B-14) to limit the liability of the State. If the property owner refuses to sign the release, the work should not be performed. No monetary payment is made with the use of this form.

Permanent rights, such as drainage rights, right to install and maintain culverts, ditch and slope rights requiring future maintenance require an easement to the property; therefore the Right-of-Way Section should be contacted for the handling of these situations.

If the property owner insists on payment for temporary work, the Right-of-Way Section should be contacted.

Construction personnel should use only the release form. The Right-of-Way Section is responsible for securing easements (for permanent rights) and agreements (pay for temporary rights).

The form should be made out in quadruplet. Copies should be sent to:

- Right-of-Way Section through Construction Section (original)
- Property Owner
- Project File
- Resident Engineer

2-180.60 Responsibilities of the Resident Engineer Regarding Equal Employment Opportunity

Specific responsibilities of the Resident Engineer are:

1. Know who the Contractor's EEO Officer is and where he/she can be located.
2. Be certain that all posters and wage rates are displayed. Refer to 2-180.30 or this manual, Labor Regulations, paragraph two (2) for a list of the required posters.
3. Be cognizant of the Contractor's EEO policy and procedure to implement such policy, particularly within the area of employment of women, minorities and the disabled.
4. Be aware of the Contractor's On-the-Job Training Program.
5. Know the definition of a "disadvantaged person" and why VTrans is using the classification.
6. Know the Contractor's work force so as to be able to ascertain the information on the Contractor's yearly PF 1391 Report which indicates the number of minority, non-minority, and disadvantaged employees currently engaged in each work classification.
7. Be informed of any deficiencies in the Contractor's EEO Program so that this information can be brought to the attention of the Compliance Officer.
8. Be present when a Compliance Review is made on your project by the Compliance Officer to verify that all the Contractor's EEO responsibilities have been fulfilled.
9. Read and by aware of the Training Special Provisions, specifically Item 634.10 Employee Traineeship, and the Special Provision entitled Specific Equal Employment Opportunity Responsibility, the Supplemental Specifications, DBE Policy Contract Requirements, and DBE Utilization.
10. Monitor and confirm through the use of the *Resident Engineer Verification form* (Appendix B-19) that the DBE is performing a Commercially Useful Function (CUF). A complete explanation of what it means to perform a CUF is described within the VTrans DBE Policy (CA 110- Rev March 2011).

The DBE program is established to provide opportunities for DBE contractors to grow successful businesses; the commercially useful function is one way to help protect against fraud and abuse by confirming the DBE contractor is performing a commercially useful function (CUF). In order for payments made to DBE contractors to be counted toward DBE goals, the DBE contractors must perform a (CUF). It is the responsibility of the Resident Engineer to monitor and confirm that the DBE must be responsible for execution of the work of the contract and must carry out its responsibilities by actually performing, managing, and supervising the work involved, consistent with standard industry practices.

In accordance for VTrans to avail itself to all eligible Federal Aid Funds, VTrans has given its assurance that employment in connection with all proposed projects will be provided without regard to race, color, sex, creed, or national origin.

The directive HPM 6-4-1-2 entitled Equal Employment Opportunity on Federal and Federal Aid Highway Construction Contract; Including Supportive Services consolidates our Equal Employment Opportunity requirements in one document, and supersedes several Instructional Memoranda, FHWA Notices, and FHWA Orders. The only significant changes, not mandated by other authorities which are included in this directive, are as follows:

> Prior to commencing construction, the Contractor shall submit to the VTrans, for approval, the number of trainees to be trained in each selected classification and training program to be used. Furthermore, the Contractor shall specify the starting time for training in each of these classifications.

Training in the laborer classification may be permitted provided that significant and meaningful training is provided and approved by the Division Office. Specific approvals on a project-by-project basis are not required. We have approved specific training programs which you may continue to utilize.

All training provided under these provisions shall be reimbursed at the unit bid price per hour of training for the duration of the approved training period regardless of length. Accordingly, contract proposals shall specify not only the number of trainees to be trained, but also should delineate the number of training hours in order to arrive at the total bid for training.

No payments shall be made to the Contractor if either the failure to provide the required training or the failure to hire the trainee as a journeyman, is caused by the Contractor and evidences a lack of good faith on the part of the Contractor in meeting the requirements of this Training Special Provision.

The Contractor shall furnish the trainee a copy of the program he will be following in providing the training.

2-180.70 Civil Rights

Refer to VTrans Policy and Procedures Manual Section 0500-0550.

VTrans Equal Employment Opportunity (EEO) Policy states that no person shall, on grounds of race, color, religion, sex, handicap, national origin, or age, will be subjected to discrimination in any program or activity. This also means that harassment of employees because of race, sex, national origin, or other reasons will not be tolerated. All contractors, subcontractors, vendors, or consultants utilized by VTrans must also support this policy in accord with all applicable Federal/State Affirmative Actions (AA) and (EEO) laws and regulations.

The Resident Engineer has been designated the primary responsibility for contract compliance in matters of civil rights. The Civil Rights Section should receive complaints from employees with concerns regarding any of these matters.

2-180.80 Contractor's Responsibility For Work

Refer to Subsection 107.18, Contractor's Responsibility For Work of the Standard Specifications for Construction. On occasion, before a project is accepted, damage may occur to constructed elements of the project. In these instances, the Resident Engineer must make a determination if the damage is in any way the fault of the Contractor. If the damage is not the fault of the Contractor, the Agency will reimburse the Contractor the cost to rebuild, repair, or restore the work. When making a determination of the Contractor's responsibility, the Resident Engineer should refer to *Contractor's Responsibility For Work – Guidance and Process* (Appendix B-24).

2-180.90 – Buy America Provisions

In accordance with section 107.22 Buy America Provisions of the Standard Specifications for Construction all steel and iron products incorporated into federal aide projects are subject to the Buy America Regulations. Areas of emphasis for the Regional Construction Engineer and Resident Engineer in enforcing this regulation include the following:

1. The Buy America requirements shall be mentioned at preconstruction conferences.
2. All steel and iron materials shall be inspected when delivered to the project and noted on inspection reports.
3. All steel and iron materials certification will be received and approved before the material is incorporated into the project. On occasion there may be extenuating circumstances where material is to be placed before the materials certification is received. In those cases, the Resident Engineer shall obtain in advance, written approval of the Regional Construction Engineer.

Additional guidance on Buy America Provisions can be found under *Buy America Provisions – Guidance* (Appendix B-25).

2-180.90 – Buy America Provisions

In accordance with section 107.22 Buy America Provisions of the Standard Specifications for Construction all steel and iron products incorporated into federal aide projects are subject to the Buy America Regulations. Areas of emphasis for the Regional Construction Engineer and Resident Engineer in enforcing this regulation include the following:

1. The Buy America requirements shall be mentioned at preconstruction conferences.
2. All steel and iron materials shall be inspected when delivered to the project and noted on inspection reports.
3. All steel and iron materials certification will be received and approved before the material is incorporated into the project. On occasion there may be extenuating circumstances where material is to be placed before the materials certification is received. In those cases, the Resident Engineer shall obtain in advance, written approval of the Regional Construction Engineer.

Additional guidance on Buy America Provisions can be found under *Buy America Provisions – Guidance* (Appendix B-25).

2-190 UTILITY RELOCATION AND ADJUSTMENT[II]

2-190.10 General

When the facilities of utility companies are in conflict with the construction or improvement of a highway, the affected utility companies are obligated to move, relocate, or protect such portions or sections, of their facilities. In some instances, the utility facilities may qualify for reimbursement by VTrans for the cost of such adjustments. In other instances, the cost of such work must be borne by the involved utility. The determination of cost responsibility is made well ahead of project construction by the Utilities Section.

The physical construction of the utility adjustments is usually accomplished by a utility with its own forces, or by a Contractor employed by the utility. However, in some instances the work may be done via bid items in the project contract. The reason for utility work being done as part of the contract is not usually prompted by reimbursement eligibility but rather as being the most expeditious method of getting the work done.

In instances involving the transfer of funds; VTrans will reimburse the utility for eligible adjustments, or where the utility is to reimburse VTrans for non-eligible utility work being done by the Contractor. The Utilities Section will process an agreement between VTrans and the involved utility. The agreement will include plans prepared by, or for, the utility showing the proposed adjustment, as well as an estimate of costs. The estimate will include a breakdown indicating the costs to be borne by VTrans and the Utility.

Resident Engineers are to keep in mind that if changes are requested by a utility, that a *Change Order* (Appendix A-1) should be prepared and signed by the individual authorizing the change for the utility. This will assist the Utilities Section the recouping of costs for the utility work, in the final billing of the specific utility.

Details of the Utility Agreement as well as details and locations of the utility adjustments will be in accordance with the Federal Highway Administrations Federal-Aid Highway Program Manuals (FHPM) 6-6-3-1 and 6-6-3-2. Railroad adjustments are in accordance with FHPM 1-4-3. In all projects funded to any extent with Federal monies, federal requirements stipulate that VTrans and the Utility agree in writing on their separate responsibilities. In the remaining instances where no transfer of funds is involved, the Utilities Section will process an occupancy permit. The permit will also include plans prepared by, or for, the utility showing the proposed adjustment.

In all instances, the arrangements with the utilities will be made well in advance of project construction by the Utilities Section, with minimal or no involvement of Construction Section personnel.

The permit satisfies the Federal requirement for a written agreement between VTrans and the utility. Conversely, the processing of a Utility Agreement satisfies with VTrans requirement for an occupancy permit (where the utility occupies State highway right-of-way).

[II] Text shift - 2013 update

[III]Resident Engineers are also reminded that the standard contract language includes a provision that the Contractor will work with the Utilities doing the relocation, but the Contractor cannot seek any additional compensation for these efforts. However, Resident Engineers should document the facts relating to any delays associated to such work in their *Daily Work Reports* (Appendix B-1).

2-190.20 Definitions

UTILITY - shall mean and include all privately, publicly, or cooperatively-owned facilities consisting of telephone, electrical energy, oil, gas, water including sewer, steam and other pipe lines. Dependent upon the meaning intended in this manual, the term "utility" may also mean the utility company, inclusive of any wholly owned subsidiary.

REIMBURSE – shall mean that State or Federal funds may be used to pay back the utility to the extent provided by law.

COST OF RIGHT-OF-WAY – shall mean the costs of land required for the relocation of the utility facility.

PRELIMINARY ENGINEERING – shall mean and include locating, making of surveys and the preparation of plans and estimates prior to execution of agreement.

CONSTRUCTION – shall mean the actual building and all related work including utility relocations or adjustment.

SALVAGE VALUE – shall mean the amount received for utility property removed, if sold, or if retained for re-use, the amount at which the material recovered is charged to the materials and supplies account.

STATE – as referred to herein shall mean the VTrans.

AUTHORIZATION – shall mean authorization to the Utility to proceed with any phase of a project, by the State.

2-190.30 Preconstruction Conference

Following the award of execution on the contract, representatives of the utility companies and other affected and interested parties should attend a preconstruction conference as described in Section 2-130, Prosecution and Progress of the Work.

2-190.40 Progress of Work

The notice to proceed, with the relocation, is the responsibility of the Utilities Engineer. Inspection is also the responsibility of the Utilities Engineer and will be handled by the Utility Section unless manpower is insufficient, in which case a request will be sent either to the Construction Engineer or the District Transportation Administrator asking him/her to assign an Inspector to the project. The Resident Engineer will usually assume inspection responsibility when they arrive on the project.

[III] Text shift - 2013 update.

2-190.50 Inspection of Work

Initial review should be made of the proposed utility adjustment to make sure the facilities are being placed outside the limits of the planned highway improvements, or as otherwise set forth on the highway plans or in the Utility Special Provisions. It should be determined that the utility forces and the project personnel use the same references when staking the utility relocation. The establishment of all installations should be coordinated between the Resident Engineer and the utilities representative.

Details and extent of on-going job inspection will depend primarily on whether there is any transfer of monies. Obviously, if VTrans is reimbursing a utility, there should be accountability of time and materials. Also, if a utility is to be billed for work done on its behalf, VTrans must be in a position to support the billing.

In instances where a utility is relocating at its own expense, inspection may involve ensuring that facilities are relocated as planned utilizing proper construction technique without undue inconvenience to the Contractor or the utility. The only recordkeeping needed would be such notes that might seem advisable in the project diary.

2-190.60 Contract Records

General: Detailed daily construction records are necessary only in situations involving the transfer of money, that is, when there is a Utility Agreement. This is to ascertain that the proposed utility work is accomplished in accordance with the agreement and to provide data necessary to document and substantiate billing to, or from, a utility company.

Force Account Agreements: The Inspector should keep a daily record of the number and classification of employees, material and major equipment used, and other such information needed to verify billing charges. A record should be made of all materials recovered from removed existing facilities. The purpose of inspecting recovered materials is to prevent the junking or scrapping of same without assuring the proper allowance is made for salvaged materials. The Utilities Section should be notified of the time and place where recovered materials will be available for inspection. Since the Utilities Section reviews all billing prior to authorizing payment it is imperative that they be familiar with recovered materials and their values.

Lump Sum Agreements: When a utility relocation is performed by a utility company under a lump sum agreement, daily records are not required of man-hours, materials items or equipment time. However, the Inspector should assure that the work is accomplished in accordance with the requirements of the agreement. Sufficient records of the work performed should be maintained to enable certification that the work has been accomplished in the manner prescribed in the agreement.

Unit Price Basis (General Roadway Contract). When the utility relocation is performed by the general contractor or his agents, a daily record should also be made of work operations by stations, the bid items used and the quantities completed. This should be included in the Inspector's diary for each day work is performed, as well as in the Field Books.

Changes in the Approved Work. Utility companies may be authorized to do work involving changes in quantities or items not included in the approved estimate that may be necessary to accomplish the intent of the approved Utility Agreement. However, the Utilities Section should be apprised of such changes as they are responsible for determining the need for and the administration of, Utility Supplementary Agreements, in these instances, a *Change Orders* (Appendix A-1) should be done as outlined previously.

2-190.70 Utility Adjustment Report

The Utility Adjustment Report form is needed only where a utility is performing reimbursable Force Account work. The form is to be completed weekly by the utility company, and forwarded to the Resident Engineer. The Resident Engineer will initial the form to signify that the entries are correct, based on his inspections, and will forward the form to Construction Headquarters.

2-200 RIGHT-OF-WAY

2-200.10 General

Refer to Section II, Subsection 2-110.10, Project Control Documents.

The Resident Engineer will make a study of the various right-of-way documents prior to the start of construction, and during staking operations, to assure that the roadway is clear for the start of the Contractor's operations. If certain work is to be done by other parties, the Resident Engineer should see that this work is accomplished on such a schedule as to not interfere with the Contractor. A check of the right-of-way documents will also disclose any work to be done for the property owners and this information can be passed on to the Contractor.

During the construction, the Resident Engineer must watch for encroachments back onto VTrans right-of-way by adjoining property owners. This could take place in the form of fences, barns, houses, gas pumps, or signs. If such a case should be noticed, the Resident Engineer will personally contact the Right-of-Way Section, so they can contact the property owner and explain that the object must be moved back onto private land.

Permits are required for all driveway construction on State Highways. These permits along with signed property owner releases, where applicable, are the responsibility of the Right-of-Way Section and will be completely administered by them for all designed drives.

All changes or new drives that are desired must be preceded by a new permit. Resident Engineers will fill these out as outlined in Section 2-200.10, Instructions for Completion of "Permit" Form, and forward them to the Right-of-Way Section for review and distribution. Changes could include: new drive location (if change is significant), change in width, or a change in use (from residential to commercial for example). No work will be done on a driveway until a copy signed by the Director of Program Development has been returned to the Resident Engineer.

2-200.20 Instructions For Completion Of "Permit" Form TA210

Instructions for completion of Information requested on form TA 210 follows:

- Property owner requesting new drive or change from the original permit.
- Town, highway route number, and location of drive by project station, mileage marker and position Right or Left of centerline.
- Descriptions of work, including use of drive (commercial, residential, industrial, or agricultural), width drive is to be, and surface to be used.
- Permit Status.
- Date work is to begin.
- Property owner's signature(s) and date.

Bottom portion of the form is for conditions specified by the Director of Program Development.

2-210 MISCELLANEOUS

2-210.10 Notification of Roadway Restrictions

The Notification of Roadway Restriction form (Appendix B-18) is an in-house form used by the Construction Section to notify interested parties of restrictions, such as one-way detours, or temporary reduction in lane widths, that would hinder normal traffic flow, and especially limit over width traffic. These forms are available from the Regional Construction Engineer. They are to be completed by the Resident Engineer and submitted to the Construction Section, and the Department of Motor Vehicles – Oversize Permit Section, prior to the traffic being restricted. These forms should be submitted at least two weeks prior to the installation of any materials that would restrict traffic flow.

2-210.20 Consultant Inspectors

VTrans has contracts with several Consultant Engineering firms to provide Inspectors on our projects. The Resident Engineer should obtain a copy of the contract between VTrans and the Consultant. The Consultant Inspector is generally allowed to charge expenses using the same guidelines as for VTrans personnel unless otherwise noted in the contract. The Consultant Inspector's name should be noted on the project *Daily Work Report* (Appendix B-1) and a two week summary (salary sheet) of their hours will be signed by the VTrans Supervisor (Resident Engineer/Regional Construction Engineer) and forwarded to Construction's Headquarters for comparison with the Consultants periodic billing. The Resident Engineer and the Consultants should agree on the hours prior to sending them to Construction's Headquarters.

The Consultant Resident Engineer/Inspector should use the following *Consultant Time and Expense Report* (Appendix B-15) form to report their hours worked and expenses incurred every two weeks. The Consultant may substitute their own form if all the required information appears on it.

2-210.30 – Speed Reduction Through Work Zones

During the development of a project, the Project Manager should obtain a speed reduction of 10 MPH on all limited access facilities and all highways with a posted speed limit of 50 MPH or greater. Projects that are located on sharp curves, steep grades, in an area where stopping quickly may be an issue, and areas with limited sight distance, should also be considered for a speed reduction.

The Project Manager will obtain a temporary speed reduction for the duration of the project from the Traffic Operations Section. The speed reduction is not legally enforceable without proper authorization. A copy of the approval will be given to the Resident Engineer, Regional Project Files, Construction Headquarters, Traffic Operations Section, State Police Field Forces office, and the Department of Motor Vehicles Field Forces office.

If, in the opinion of the Resident Engineer and Regional Construction Engineer the speed of traffic through the work zone is still too fast for the safety of all involved, the Resident Engineer will contact the Project Manager and request an additional reduction. The Resident Engineer should contact the Traffic Operations Section to confirm the proper signing necessary at the approaches to, and within, the work zone.

If a temporary speed reduction was not requested prior to the project being let and the Resident Engineer and Regional Construction Engineer requests a speed reduction during construction the Project Manager remains the point of contact for obtaining the required approvals.