

104.00 -- CONSTRUCTION INSPECTION

104.01 CONTRACT TIME DETERMINATION (*SSHC Subsection 108.02*)

Tentative Beginning Date - The proposal will show a tentative date on which it is anticipated that the contractor may begin operations.

In most cases, the tentative beginning dates are established several weeks in advance of the letting date by determining the latest possible date the Department would like to see the work completed and backing out the estimated number of days required to complete the work. Consequently, any requests to delay the start of work on a project are examined very carefully before being approved. Additionally, the approval to delay the start of work on a project may be made contingent upon certain concessions by the contractor (such as the imposition of a disincentive payment for a late completion).

In the case of contracts involving multiple time allowances, extensive utility relocation, or work to be performed by others (e.g., railroads, cities, counties), it may be necessary to delay the start of work for several weeks after the tentative starting dates shown in the proposal.

If the tentative beginning date shown in the proposal appears to be earlier or later than believed possible or practical due to job, weather, traffic, or other conditions relevant to the project, the Construction Engineer should be notified promptly.

Notice to Proceed - The contractor will be given a Notice to Proceed by the Construction Division, and work should not begin until the notice has been issued (or at least verbally acknowledged) by the Construction Division.

Normally, the Notice to Proceed date will coincide with the tentative beginning date shown in the proposal; and the Notice to Proceed will automatically be issued after the contract is in place, usually a week or two prior to the starting date. In some cases, however, such as for seeding or landscaping projects, the Construction Division will check with the District Construction Engineer to verify that the site is ready for work to proceed before issuing the notice. The issuance of the Notice will also be delayed when a project is let far in advance of the tentative starting date -- almost always resulting in a request for an early start by the contractor.

It should be noted that in SiteManager, the Notice to Proceed date is recorded in SiteManager under “Key Dates” as the “Notice to Begin Work” date. SiteManager’s “Notice to Proceed” date is actually the contract execution date.

Some contracts contain an “early start provision”. For those projects, the contractor may begin work prior to the tentative starting date by notifying the District Engineer of his/her intent to begin work early. The notice must be given two weeks prior to the intended starting date and is not subject to review by the Department. When such notice is given, the District should notify the Construction Division of the need to issue the notice and the date for which it should be issued.

For those contracts which do not contain the “early start provision”, requests to begin work prior to the tentative starting date should be made by the contractor directly to the Construction Engineer in Lincoln. In many cases, such requests are made following issuance of the original Notice to Proceed. If the request is approved, a revised notice will be issued.

Requests to begin work after the tentative starting date shown in the proposal should be made by the contractor to the Construction Engineer in Lincoln.

Beginning the Counting of Working Days - The counting of working days or calendar days must begin on the date established in the written Notice to Proceed or on the actual beginning date, whichever is earlier. Accordingly, working day report entries should be made beginning with the established beginning date or actual beginning date – whichever occurs first. Entries should continue for each and every day (seven days per week) until the project has been tentatively accepted. Reports may be suspended when the work is suspended for an extended period.

Under specified conditions, some items of work may be performed for which working days or calendar days will not be charged. Even under these circumstances, however, working day reports must be created to document that work was performed without the charge of working days or calendar days. Work subject to this rule is listed in *SSHC Subsection 108.02*.

Calendar Day - *SSHC Subsection 101.0313* gives the definition of a calendar day.

Working Day - *SSHC Subsection 101.0399* gives the definition of a working day.

Current Controlling Operation - *SSHC Subsection 101.0326* gives the definition of the current controlling operation.

While the counting of calendar days is quite straightforward and is usually dependent only on the passage of time, the counting of working days requires a determination of the current controlling operation. A basic test for the determining the current controlling operation on any given day is whether or not the non-performance of that operation will delay the completion of the work.

The contractor's project schedule can be a very useful tool in determining the current controlling operation. The specifications require that the critical path activities be shown on the schedule; and those activities, in essence, are the controlling activities. Because the specifications allow several types of schedules and because contractors possess varying degrees of skill in preparing the progress schedule, it is strongly recommended that the Project Manager and Project Superintendent discuss the project schedule and come to some mutual agreement concerning the path of critical activities - as may be the case when a bar graph shows several activities occurring at the same time.

The contractor has the right to object to the charge of working days, and those kinds of objections will be minimized if there is an "up front" agreement regarding the controlling operation. There usually will be little dispute regarding whether or not the work was performed.

The current controlling operation should be shown in the Project Manager's diary and on the working day reports. Any discussions or agreements with the contractor regarding it should also be documented in the diary. The assessment of working days is a very important task for the Project Manager, but should not be considered extremely difficult. Common sense and fairness should prevail.

Following are the basic criteria for determining the charging of working days:

1. Weekdays, Monday through Friday, except for Martin Luther King Day, Presidents' Day, Arbor Day, Columbus Day, and Veterans Day, are to be counted as working days -- whether the contractor works or not -- if he/she is not prevented by weather, soil conditions beyond his/her control from proceeding on the current controlling operation for at least 50 percent of the hours in a normal schedule with 80 percent of the normal work force. Martin Luther King Day, Presidents' Day, Arbor Day, Columbus Day, and Veterans Day -- regardless of whether or not the contractor works -- are never counted as working days.
2. Saturdays will not be counted as working days, except for certain cases when New Year's Day, Independence Day, and Christmas Day fall on Saturday and the contractor works (any work) **and** inspection or engineering work by the Department is required.
3. Sundays will not be counted as working days unless the contractor works (any work) **and** inspection or engineering work by the Department is required.
4. New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the day after Thanksgiving Day, and Christmas Day will not be counted as a working day unless the contractor works (any work) **and** inspection or engineering work by the Department is required.

It is emphasized that if the Project Manager does not count working days because of delays "beyond the contractor's control", the situation involved should be clearly beyond the contractor's control. The Project Manager should be thoroughly familiar with the provisions of Specification 108.02. For example, Paragraph 7 provides consideration will not be given to possible "loss of efficiency" due to prosecution of the work during the winter months in the charging of working days when the special provisions require performance of work during cold weather periods. The following example illustrates the application of this provision:

On a clear, cold day in January, a pile-driving operation may be 80 percent as efficient as it would be on a fair, warm day in July. Under this provision, a working day would be counted against the current controlling pile-driving operation even though the relative efficiency of the operation was reduced. When bidding on work that is to be accomplished during the winter months, the contractor is presumed to have accounted for the loss of efficiency. However, if sufficient snowfall or extremes of wind or temperature make it physically impractical to prosecute the pile driving operations, working days would not be counted under such conditions.

Shortages of material delaying prosecution of the controlling operation would not normally be considered beyond the contractor's control. Unusual, extensive, or industry-wide situations (strikes, transportation tie-up conditions, industry-wide shortages) may constitute delays beyond the contractor's control if the contractor has used due care and planning in ordering and scheduling delivery of the materials. The

Project Manager investigates and determines when shortages of materials are beyond the contractor's control.

Shortages of labor are specifically eliminated as justification for an extension of time (*SSHC Subsection 108.02, Paragraph 9*).

SSHC Subsection 108.05 requires the contractor to employ sufficient equipment of adequate size and in such mechanical condition as to meet the requirements of the work. Accordingly, delays resulting from breakdown or malfunction of the contractor's equipment are not considered to be beyond the contractor's control.

Working Day Report and Diary Record - *SSHC Subsection 108.02, Paragraph 5* provides that the contractor will be furnished with a copy of the weekly report of working days. These reports are generated, compiled, and mailed from the Lincoln office at mid-week, so it is very important that the working day information is entered promptly following the completion of the week's work. Special efforts should be made to impress upon consultants employed by the Department or other governmental agencies that they must submit their working day report information without delay at the beginning of each week.

In addition to our contractual requirement to furnish a copy of the working day report to the contractor, these reports are reviewed by one or more individuals in the central office. The following information should be included on each report:

- Notice to Proceed date (Notice for Work to Begin)
- Actual starting date (Work Begin)
- Current Controlling Operation
- Hours Worked on the CCO
- Hours worked on non-CCO work if CCO hours are zero
- Reason for charge or non-charge of a day if the charge is not what might normally be expected. (Such comments must be entered into the "CCO" field in SiteManager to be visible on the report.)

It is the contractor's obligation to review the working day report when it is received and promptly file any objections to it. The Project Manager is obligated to promptly review the objections and rule on their validity. When such reviews are delayed until the project is complete, there is too great a risk that the details affecting the decision can be forgotten. Whatever the result, the decision should be documented -- either by letter (preferably) or diary entry when the objection is denied or by the issuance of a Time Extension Document when an adjustment to the time allowance is justified.

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Although the contractor is required to file an objection to the working day count within 14 days, claims often fail to surface until the latter stages of a job when the remaining working days are few. For this reason, it is especially important that a complete and accurate diary record be maintained. For purposes of making the initial assessment of working days -- and any subsequent review -- the following information, if applicable, should be recorded or documented daily in the Project Manager's diary:

1. The current controlling operation
2. The weather
3. The work performed
4. Unusual or adverse weather or soil conditions encountered
5. Other unusual occurrences impacting work on the project
6. The times that major work operations halted and resumed and the reasons why
7. Changes in the work force effecting work on the controlling operation
8. Major deviations from the contractor's approved progress schedule
9. Conversations pertaining to any of the above

The need for this information isn't always apparent until the work is completed or until a request has been made for reconsideration of the charging of working days.

104.02 CHARACTER OF WORKPERSONS, METHODS, AND EQUIPMENT

The Project Manager may have the contractor remove intemperate or incompetent superintendents or workers (*SSHC Subsection 108.05*). The PM may also order the removal of unsatisfactory equipment (*SSHC Subsection 107.01*). However, the contractor should be given complete latitude in the supervision, methods, and equipment used in performing the work unless the specifications specifically prescribe the methods and equipment to be used.

104.03 **TEMPORARY SUSPENSION OF WORK** (*SSHC Section 108*)

Specification Provisions - If weather or other conditions are such as to clearly determine the unsuitability of prosecution of the work for more than two weeks, the Project Manager should discuss the situation with the District Construction Engineer, and with his/her approval, temporarily suspend the work and the counting of working days. The working day report should be clearly marked "Work Temporarily Suspended". The condition or situation which makes the suspension necessary should be briefly described under "Explanation of Delays" in the report which will constitute the written order suspending the work. The term or estimated length of suspension should be included in the explanation. Typical explanations are listed:

1. "One-half application of detour gravel placement completed. Work and working day reports are suspended until approximately (date) when second one-half application will be placed."
2. "Bituminous base (or mat) surface course operations and working day reports are suspended because of lateness of season. The consideration of working days resume approximately (date) with the return of weather conditions favorable to the prosecution of this work."
3. "Grading operations and working day reports suspended until approximately (date) when progress of the bridge work will permit backfilling and finishing around the structures."
4. "Bridge operations and working day reports suspended until approximately (date) when progress of grading work will permit construction of concrete approach slabs and guard rail at the bridge locations."
5. **Winter Work Provision:** When the contract includes special provisions allowing work through the winter without the charging of working days, reports must be submitted showing the hours the contractor worked even though working days are not charged. If the contractor suspends operations on the project, reports may be suspended; but they must resume on the date specified in the special provisions for the end of the winter work season or when the contractor resumes work, whichever is first.

Specialty Items, Time Suspensions - There have been inquiries regarding the propriety of temporarily suspending the work for short or limited periods of time, in the performance of minor, specialized work items which are usually performed by subcontractors or specialized personnel or technicians, rather than with the contractor's own forces. Examples of such work items would be small quantities of electrical, traffic control or lighting work, the painting of one or two small bridges, etc. Small quantities of normal work items which are outside the contractor's field of skill and qualification would also be included. Examples of the latter would be minor quantities of concrete items, sodding, waterway protection, etc. included in a grading contract or minor items of grading work included in a contract for bridges or for surfacing.

It is recognized that at times the contractor may have difficulty in getting the specialized personnel or subcontractor, skilled in performing minor specialized items of work, to

schedule and perform such work precisely when the site is available. Accordingly, it is considered proper to authorize a temporary suspension of the work in such cases, subject to the following:

1. The work is minor, specialized work, which is to be performed by specialized forces rather than the usual work forces.
2. The suspension will be for a limited, reasonable length of time; that such suspension will not adversely affect the scheduled use of the completed facility by the state; and that the suspension will not delay the work of any other contractor.
3. The contractor should make written request for such suspension to the Project Manager, listing the reasons for and the length of the proposed suspension.

The Project Manager should discuss the matter with the District Construction Engineer and may, with his/her approval, make such temporary suspension of the work, subject to meeting the conditions listed above.

104.04 PROGRESS OF WORK (*SSHC Subsection 108.07*)

The Project Manager should monitor the contractor's progress in relation to his/her progress schedule and the requirements of *SSHC Subsection 108.07*. If a contractor's progress falls seriously behind the schedule necessary to complete the work in the allotted time, the Project Manager and the District Construction Engineer should review the possible causes for this situation. If the contractor's progress is behind in proportion to the working days charged, one of the three conditions listed will probably be the cause.

1. Working days are being improperly charged. Weather or other adverse conditions or conditions beyond the contractor's control may be preventing the contractor from working with 80 percent of forces or from working on the controlling operation. If work days appear to have been improperly charged, the matter should be discussed with the Project Manager; and, if necessary, revised working day reports or Time Extension Documents should be prepared to correct the working days charged.
2. Work is being delayed by causes beyond the contractor's control. If this is true, it should be documented by letter from the contractor and also in field records (diary). The District Construction Engineer must approve an extension in the time allowance.
3. The contractor is not prosecuting the work with sufficient forces and equipment to complete the contract within the specified time allowance.

Progress is considered not satisfactory if the work falls 10 percent behind the contractor's work schedule. When this occurs and condition three appears to be the cause, the District Construction Engineer shall immediately notify the contractor in writing of the steps considered necessary to expedite completion of the work in a satisfactory manner. The Construction Division will maintain a log of this action and, if necessary, shall have the responsibility of taking further action as provided under the specifications.

104.05 WINTER WORK (Special Provision)

Determination of contract working days charged during the winter is made according to the rules set forth in the Specifications unless the proposal contains what is commonly referred to as the Winter Work Provisions. This special provision will generally permit the contractor to work without the charge of days during the months of December, January, February, and March. (Days near December 1 and March 31 may be selected to delimit the period so that the affected period of time begins and ends on a Sunday or Saturday, respectively.)

The “winter work” provisions are usually included in contracts where the Department anticipates work to carry over from one construction season to the next. They may be added to a contract by preparing a supplemental agreement to that affect, but they should not be added automatically. For example, a contractor should not be rewarded with the winter work provisions when he or she has failed to complete a project as scheduled because of inadequate prosecution of the work.

On the other hand, a contractor desiring to start a project early or a contractor delayed for reasons beyond his or her control should probably be granted the winter work provisions as an encouragement to pursue the work.

The Project Manager may require the contractor to place temporary materials prior to a suspension in the following situations:

- A project (or a required intermediate portion) is not completed within the allowed contract time, **and**
- Work continues (or is required) after November 30th, **and**
- Due to weather conditions, work cannot be completed.

Typically, temporary materials will be required for safety or soil erosion considerations. All temporary materials shall be furnished, placed, and removed (if required) prior to start-up at the contractor's expense.

Project Suspensions

If work is suspended, with approval of the District Engineer, working days would not be charged.

104.06 WEEKLY REPORT OF WORKING DAYS

Working day reports are maintained in and generated by SiteManager.

104.07 RENTAL RATE GUIDELINES (SSHC Subsection 109.05 and Section 919)

Contractor-Owned Equipment

The following guidelines apply to the determination of rental rates for contractor-owned equipment used on an “extra work” basis.

1.
 - a. The *Rental Rate Blue Book for Construction Equipment* should be used to determine the hourly rental rate of the equipment in question.
 - b. In order to determine the proper rental rate, equipment should be identified as completely as possible (make, model, year of manufacture). When practical to do so, it may prove helpful to examine the *Blue Book* before beginning the task of identifying the equipment. Such an examination may lend some insight into the identifying characteristics of the equipment (such as bucket capacity, horsepower, fuel type, etc.) and the potential equipment attachments that may qualify for additional payment.
 - c. The *Serial Number Guide for Used Construction Equipment* may be helpful in identifying the age of a piece of equipment.
2. The hourly rental rate shall be calculated by dividing the monthly rental rate shown in the *Blue Book*, including that of attachments actually used, by 176.
3. The hourly rental rate shall be:
 - a. increased or decreased by the regional/climatic ownership factor published in the *Blue Book*. The *Blue Book* publishes an individual table in each section showing the adjustment factor for each state. The tables showing the regional/climatic factors are usually located at the beginning of each section with other rate adjustment tables.
 - b. decreased (or allowed to remain the same) by the age factor found in the *Blue Book*. (See 1.c. above)
4. The estimated hourly operating costs, including those of attachments used in the prosecution of the work, shall be determined from the information shown in the *Blue Book*. Adjustments due to age or regional/climatic conditions ARE NOT applied to the estimated hourly operating costs.
5.
 - a. The total hourly rate (sum of adjusted hourly rate and estimated operating costs) shall be increased by 15% to compensate the contractor for overhead and profit. (See “Additional Considerations”)
 - b. The *1995 Metric Supplemental Specifications* have already incorporated this change in policy (as will the *1997 Standard Specifications*). By this directive, dated March 28, 1997, authorization is granted to pay the additional 15% for overhead and profit on contracts being built under the *1985 Standard Specifications*. A change order will not be required.

6.
 - a. Equipment operators, when applicable, shall be compensated according to the rules set forth in the *Specifications*, average hourly wages being calculated by dividing the total hours worked during the week, including overtime, into the gross wages earned during the week.
 - b. Equipment may be shown as “fully operated” by adding an amount equal to 150% of the operator’s average hourly wage to the rental rate. When this method is chosen, the equipment rate will be eligible for the additional 15% for overhead and profit; the adjusted operator’s rate is not.
7.
 - a. The number of hours of “equipment rental” for which payment will be made for each item of equipment must be determined on a case-by-case basis.
 - b. In general, when equipment is already on the project, payment hours shall be limited to the actual hours of use, with no deductions being made for minor interruptions of the work. If the equipment has been dedicated to another operation and was actively being used in that operation when it was reassigned to the “extra work”, consideration may be given to paying for “standby time” for idle periods exceeding two consecutive hours which are not the fault of the contractor.

Rented or Leased Equipment

The following guidelines apply to the determination of rental rates for rented or leased equipment used on an “extra work” basis.

1. When it becomes necessary for the contractor to rent or lease equipment to complete extra work, the contractor shall be compensated 115% of the actual invoice cost of the rented or leased equipment. This procedure provides compensation for overhead and profit.
2.
 - a. The rental or lease rate shown on the invoice may be compared to rates published in the *AED Green Book* to determine if it is reasonable.
3. Because the estimated hourly operating costs shown in the *Blue Book* include costs associated with the maintenance and replacement of items such as tires, pumps, and other components which are the responsibility of the owner, the operating costs shown in the *Blue Book* shall not be included for payment. However, if the contractor itemizes and documents the daily costs incurred for fuel, lubricants, etc., those costs can be included for payment.
4.
 - a. Equipment operators, when applicable, shall be compensated accordingly to rules set forth in the *Specifications*, average hourly wages being calculated by dividing the total hours worked during the week, including overtime, into the gross wages earned during the week.

- b. In some cases, where the invoice provides a convenient way to do so, equipment may be shown as “fully operated” by adding an amount equal to 150% of the operator’s average hourly wage to the rental rate.

Additional Considerations

1. Mobilization

- a. If the equipment needed to perform extra work is not located on the project, the contractor is entitled to compensation for mobilizing and demobilizing the equipment. Labor and hauling equipment used to transport the equipment to and from the project is eligible for compensation. The equipment needed for the extra work is eligible for compensation at “standby” rates if it is transported during normal working hours.
- b. Reasonable costs associated with readying the equipment for transport (assembly and disassembly) shall also be allowed.

2. Standby Time

- a. If the contractor is required to idle equipment engaged on “extra work” and the equipment was:
 - 1) already located on the project site and engaged in other productive activities, or
 - 2) brought onto the project for the specific purpose of performing extra work,

he/she may be entitled to compensation for “standby time”. The equipment must be idled due to reasons beyond the contractor’s control and not be used for the performance of other work.

- b. When payment for standby time is justified, payment for the idle hours should be made at one-half of the established rental rate (excluding estimated operating costs).
- c. Additional compensation for overhead and profit shall not be made for any equipment considered to be “on standby”.
- d. Operators of idled equipment are eligible for compensation according to the procedures previously described provided they are not reassigned to other duties or taken off the payroll.
- e. The sum of “active” and “standby” time for any piece of equipment or its operator will generally be limited to 8 hours per day, but must be monitored to insure that an unreasonable limitation is not placed on the standby hours. For example, if a piece of machinery is utilized from 8:00 to noon, stops for lunch until 12:30, and then resumes working until 2:30

when an unavoidable delay stops activity on the “extra work” until the next morning, the standby time should be limited to 2 hours -- the hours which would have been utilized to complete an 8-hour day.

3. Reconciliation of Records

It is highly recommended that the Department’s records and the contractor’s records of labor, equipment, and materials used on any “extra work” be compared, reconciled, and documented daily.

@ **104.08** **CHANGE ORDER - SUPPLEMENTAL AGREEMENTS**
(SSHCH Subsection 104.02)

Change Orders are used to:

- Change the authorized quantity of a contract item. This includes increases, decreases, or deletions to contract quantities.
- Add a new item or material to an existing contract. Often this is a result of plan revisions or a change in scope from what was originally envisioned at time of letting.
- Serve as a source document for the Controller Office.
- Officially document changes to the contract documents. CO/SAs and work orders are written orders to a prime contractor which are initiated and prepared by the Project Manager. Once signed by all parties, these documents become a legally binding part of the contract ordering a specific change to the original contract.

Policy for Change Orders

A. Contractor Markup

Subcontracted Items. Extra work performed by a subcontractor entitles a prime contractor an allowance to cover administration expenses. This markup is not to apply to incentive payments. The percentage allowed for administration expense is discussed in SSHCH Subsection 109.05.

Contract Unit Price. Change orders covering an overrun/underrun (SSHCH Subsection 104.02) of items at contract unit prices are NOT eligible for any additive like an allowance for administration expenses. This includes work which was done by a subcontractor. The contract unit price should have already considered any necessary additives for administrative expenses.

The contractor may request a change order when additional work differs materially in kind or nature from the work included in the originally proposed construction.

A major item of work is defined as an item whose total original contract cost exceeds 10 percent of its original group total amount. The price for a pay item may require adjustment when a major item is increased in excess of 125 percent or decreased below 75 percent of the original contract quantity. Any allowance for an increase in quantity shall apply only to that portion in excess of 125 percent of the original contract item quantity, or in case of a decrease below 75 percent, to the actual amount of work performed.

A contractor may request a price adjustment to recover lost administration expense for underruns amounting to more than 25 percent of the bid amount for a major item of work. A contractor is allowed to recover only that portion of lost administration expense represented by the underrun.

By the same reasoning, a like price adjustment may be made to reduce the cost of major items of work which overrun by more than 25 percent, since the contractor should have already included overhead expenses in their bid. Overrun price adjustments apply to only that portion/quantity which is more than 125 percent.

Agreed Unit Price. Extra work orders based on an agreed price or lump sum should have overhead considered as a part of the negotiation. The agreed unit price may include the cost of overhead for handling subcontracted items. It may be included in lump sum items if justified. However, if negotiations specifically excluded markup, the item may be shown as a separate entry on a cost work up sheet.

Force Account. (*SSHC Subsection 109.05*) Specified force account percentages for labor and material are intended to cover all costs that a contractor may incur due to the work, regardless of who does that work (prime or subcontractor). Force account work to a subcontractor will be authorized for additional administration percentage to a prime.

Plan Revisions

Often, plan revisions result in Change Orders having to be negotiated. Processing Change Orders resulting from plan revisions is sometimes delayed due to disagreement on prices, lack of success in obtaining qualified subcontractor(s), or various other reasons.

It is imperative that Project Managers actively pursue Change Order negotiations to an early conclusion, especially if proposed work involves public safety (guardrail, safety enhancement, etc.) or work related to a prolonged detour. Obviously, agreement on unit prices is desirable. However, there are times that work will have to proceed on a Force Account basis. In all cases, documented agreements on the Method of Measurement and Basis of Payment for extra work items must be obtained before the Change Order is written. NOTE: No work can begin until the contractor has either agreed to a Change Order or agreed to a basis of computing force account costs.

Change Order Approval Limits

Contracts are awarded for a specific dollar amount. Overruns or change orders expend additional funds and can only be authorized by specific people.

FHWA/Certification Acceptance

FHWA projects that have full oversight have "FHWA" stamped in red on the front page of the proposal. The Contracts Section makes the determination and affixes the red stamp.

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On FHWA oversight projects, current rules require that expenditures in excess of **\$50,000** be discussed with the FHWA.

The following table shows the Department's approval limits:

APPROVAL LIMITS	
Deputy Director	Over \$150,000.00
Construction Engineer	\$50,000.00 to \$150,000.00
District Engineer & DCE	\$0 to \$50,000.00

Preparation of Change Order

The following instructions are applicable in the preparation of a Change Order-Supplemental Agreement:

- Create a brief description of the work not in the contract.
- Show reasons for the change; or, if the document is a combination change order-supplemental agreement, show purpose of the agreement. When the work to be performed is not covered in the specifications, the name of the items shall be worded to define the work to be performed. References should be made to similar items in the specifications or plans and the method of measurement and basis of payment definitely established.
- Show the basis of the unit prices established, such as comparison with unit prices for similar contract items or the previous year's average contract unit prices.
- Include statement as to the determination of a change in the contract time allowance.
- Show the name of the FHWA engineer and date of discussion with him/her when the Change Order is for more than **\$50,000.00** and the federal-aid contract is for more than \$1,000,000 and on the Interstate.
- Enter estimated increased and decreased changes in quantities of items of work. Use standard item numbers and standard specification/contract wording, when applicable, for the new item description you define.

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All Change Orders (CO) and Change Order-Supplemental Agreements (CO/SA) shall address the subject of additional working days or calendar days, if any, to be added to the contract time allowance.

The original working day or calendar day allowance is calculated by assigning some average rates of progress to the various items of work and then making some assumptions as to which items might tend to overlap during the actual performance of

the work. The system is not perfect; but, regardless of the result, it does provide all bidders with a time frame upon which they can estimate a schedule for completion of the work and prepare a bid.

The performance of extra work should not be cause to suspend the working day or calendar day count. Working days or calendar days should be assessed for all extra and originally contracted work according to the guidelines for doing so, and then any relief to which the contractor might be entitled should be granted by issuing a time extension document or addressing the time in a CO or CO/SA.

@ In SiteManager under Reference Tables/Standard Definitions there several option clauses to be added to the Change Order. Four of the options pertain to working/calendar days. They are further described below:

1. No additional working days or calendar days to the contract time allowance are being granted. Additional working day or calendar day consideration is not applicable to this change.
2. “_____” additional working days or calendar days to the contract time allowance are being granted.
3. Additional working days or calendar days to the contract time allowance shall be granted on the basis of the actual working days or calendar days charged for performing the work under this agreement, provided that said work is judged to be the controlling operation.
4. Additional working days or calendar days to the contract time allowance, if any, shall be granted on the monetary value in accordance with Paragraph 10. of Subsection 108.02 of the Standard Specifications.

The writer of the CO or CO/SA must use some judgment when determining which note is appropriate. In fact, there may be instances when it will be necessary to write more than one CO/SA because the items to be added to the contract do not all subject themselves to the same rule. A little extra work, perhaps; but the right thing to do. The discussion that follows should be helpful in determining which note to select.

Note 1 - No additional days

No additional working days or calendar days to the contract time allowance are being granted. Additional working day or calendar day consideration is not applicable to this change.

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This note could be used on any CO/SA which addresses subjects which are not financial in nature. An example would be an early starting date coupled with the conditional addition of the winter work special provision to the contract. A condition might be that the contractor not make any claims for delays due to utilities not being out of the way --- thus the need for a supplemental agreement requiring the contractor's signature. The work remains the same, however; and no change would be made in the contract time allowance.

This note should also be used on any CO/SA that increases the value of the contract but does not necessarily require additional time to perform the work. An example might be the substitution of one type of asphaltic concrete for another. The concrete actually used might be more expensive; but the time to mix, haul, lay, and roll it remains the same. (This does not, however, preclude the granting of some additional time due to an overrun of the final quantities.)

In general, this note could also be used on a CO/SA that has a negative financial impact on the project. An example might be the substitution of an 18" culvert pipe for a 24" pipe. The cost of the pipe and excavation is probably going to result in a savings to the project, but it is not the Department's policy to reduce the contract time allowance.

Note 2 - Specified number of days

“ _____ ” additional working days or calendar days to the contract time allowance are being granted.

This note is the preferred note in many cases and should be utilized whenever possible. The Construction Division will rarely question the number of days granted, no calculations are required by the Final Reviewers, and the fact that the CO/SA is signed by the contractor leaves little opportunity for it to be contested. Obviously, the use of this note is restricted to situations where the supplemental agreement is created after the work is performed and the number of days required is known.

This note can appropriately be used in cases where the extra work is determined to be the controlling operation when it was performed. It definitely should be used when the time required to perform the work is grossly disproportionate to its monetary value. As an extreme example, it may take just one day to add a million-dollar traffic controller on a fifty-thousand-dollar project. Determination of an additional time allowance on the basis of cost would obviously not be correct.

This note can also be used on a CO/SA that is more administrative in nature. As an example, the contractor and the Department may negotiate some changes to the contract for which a time adjustment is a condition of the agreement. This note is a proper method to document the adjustment to the contract time allowance. It functions in the same way as would a Time Extension Document.

Note 3 - Unspecified number of days (controlling operation)

Additional working days or calendar days to the contract time allowance shall be granted on the basis of the actual working days or calendar days charged for performing the work under this agreement, provided that said work is judged to be the controlling operation.

This note should be used in situations similar to those described for Note 2 when the CO/SA is completed prior to the work being performed. When it can be anticipated that the additional work will be the controlling operation or the value of the work is disproportionate to the time required to perform it (especially when the work takes a long time to complete but is not very expensive), this note should be used. In some cases, it may be appropriate to grant some additional time on the basis of monetary value for extra work performed when the work is not the controlling operation for the entire time required to complete it.

The Project Manager should closely monitor the work when choosing this method of calculating an increase to the contract time allowance. The completion of other work is certainly not discouraged or prohibited, but the contractor should not be allowed to intentionally slow the progress of the extra work to gain the advantage of allowing other contract work to be completed concurrently during the time period being added.

Note 4 - Unspecified number of days (monetary value)

Additional working days or calendar days to the contract time allowance, if any, shall be granted on the monetary value in accordance with Paragraph 10. of Subsection 108.02 of the Standard Specifications.

This note serves to cover those situations not addressed by Notes 1, 2, or 3. It is an inexact method, but is usually a fair way to provide additional time to the contract time allowance when the methods associated with Notes 1, 2, and 3 are clearly not more appropriate.

It should be used to address those additional items of work which are similar in nature to other items of work in the contract but for which it is difficult to determine or monitor the actual amount of time required to complete. An example might be additional work performed sporadically over a long period of time or the addition of more work of a type already in the contract --- such as may be added by a plan revision.

The use of this note does require the Finals Reviewers to calculate the amount of extra time to be granted. The calculation should be done on the basis of the monetary value alone, and no consideration should be given to whether or not working days or calendar days were charged during the performance of the work. If the extra work to be added by the CO/SA could have been anticipated prior to the letting, time certainly would have been allowed for it; and it is only fair that an additional time allowance be considered after the fact.

The Project Manager should have the best feel for the type of working day or calendar day consideration that is most appropriate. He/she is encouraged to make a fair

evaluation of the situation and select the method that fits. As indicated in the discussion above, the use of Note 2 is encouraged.

Cost Overrun/Underrun Notification (DR Form 74)

When project costs overrun or underrun by \$50,000 or more and the change in cost is not reflected in a "Change Order/Supplemental Agreement", the Project Manager shall prepare and send a "Cost Overrun/Underrun Notification" (DR Form 74) to Laurie Burling (BURLING) as an attachment via Lotus Notes. Laurie will print the form and circulate it for the appropriate approval signatures.

DR Form 74 is available on Server 50 in the folder titled DORFORMS. Space is provided in the identification block in the lower-left corner to provide a unique identification before saving the file. The Project Manager's name must be shown in the "Prepared by" window, but an actual signature is not required to submit to the DR Form 74 to the Controller Division.

Please note that the net change in the total project cost --- not an individual group --- shall be the determining factor when deciding if an event should trigger the preparation of DR Form 74. Caution is necessary as it is not always apparent when the costs have overrun by more than \$50,000. However, as soon as an overrun/underrun of \$50,000 is noticed, then a DR Form 74 must be initiated by the Project Manager.

Work Orders

(SSHHC Subsection 109.05) - If there is sufficient time to execute a change order-supplemental agreement or force account agreement prior to beginning the extra work, no work order need be issued. The change order-supplemental agreement or force account agreement shall provide the basis for authorization and payment for extra work. The change order-supplemental agreement and force account agreement shall be prepared in accordance with the instructions in this manual. The work order shall state that the work will be done either by change order-supplemental agreement or by force account agreement.

If prices can be agreed upon at the time of writing the work order (see SSHHC Subsection 109.05, Paragraphs 8 and 9 regarding rental rates), but insufficient time exists to permit execution of a change order-supplemental agreement, a work order shall be prepared authorizing such work and then be followed by a change order-supplemental agreement formalizing the prices or basis of payment stated in the work order.

If negotiated prices cannot be agreed upon at the time of writing the work order, the work will be done by force account. Under certain circumstances, when approved by the Construction Engineer, this may be changed at a later date to a change order-supplemental agreement.

The work order shall be signed by both the Project Manager and the contractor or his/her superintendent.

The Project Manager and District Office shall implement the following procedures to expedite payment for extra work.

1. The Project Manager shall keep a file of work orders issued on a project and shall take the necessary steps to get agreements consummated.
2. The Construction Division shall track the change orders progress.
3. Contractors must furnish back-up information to justify prices they quote for extra work. Contractors should notify the state immediately of items of work that they do not think are covered in the contract.
4. The introduction of any new item of work not included in the contract items, no matter how small the quantity, must be covered by a change order-supplemental agreement establishing a unit price for the new item.
5. Canceled items (materials furnished by the contractor and not used due to a change in plans) will require the Project Manager to prepare an Imprest Inventory Form 329 and a Change Order-Supplemental Agreement when the material involved is to become the property of the State. Most often involved are pieces of culvert pipe ordered but not installed. In some cases the contractor may wish to retain the materials and no further action need be taken when this is true. (See *SSHC Subsections 109.06* for further information.)

Force Account Agreements and Statements (*SSHC Subsection 109.05*)

Force Account Agreements - It is necessary that force account agreements be executed when the nature of the proposed work is such that the costs involved cannot be accurately estimated or when there are no similar items included in the contract which may be used as a basis in determining unit prices.

Before beginning the work or preparing the agreement, the Project Manager should have a definite understanding with the contractor's representative regarding the labor, equipment, and materials to be used and the manner in which the work is to be prosecuted, and the rates to be paid for the equipment. If a satisfactory understanding cannot be reached, the matter should be referred to the District Engineer.

In preparing the agreement, the Project Manager should be very careful to include rates for all labor and equipment that may be used in the work. If it becomes necessary to use labor or equipment for which rates are not established in the agreement, the Project Manager normally shall negotiate the rental rates and shall immediately prepare and submit for approval a force account agreement supplementing the original agreement and establishing the rates to be paid for such labor and equipment. However, it will not usually be necessary to issue supplemental force account agreements for additional labor rates if the original agreement covers a rate range from the minimum required by the detailed schedule listed in the contract Special Provisions to the rate the contractor is paying or which he/she anticipates he/she will pay due to future rate increases.

Equipment rental rates are negotiated or determined as indicated in *Construction Manual Section 104.07*.

The approved rental rates shall only apply to equipment used under the following conditions:

The contractor's equipment that is available on the project. If equipment not available on the project is needed only for the extra work, it may be necessary to pay rates in excess of the approved rates or to pay compensation for the cost of moving in the equipment. (Mobilization is explained in *Construction Manual Section 104.07*.)

If it is necessary for the contractor to rent equipment for the extra work from a third party, the rate established shall be the actual rental cost plus fifteen percent for overhead and profit.

Equipment used on extra or additional work performed under normal working conditions on a force account or contingent item basis.

If the equipment is to be used under working conditions involving abnormal expenditures for maintenance, fuel, or service, it may be necessary to pay rates in excess of the approved rates.

If major quantities or extended amounts of work are involved, it may be equitable and necessary to negotiate rates at less than those indicated above.

The approved rates shall be paid only for the time actually used in the performance of the work ordered by the Project Manager. Standby time, time involved moving to and from the work and repairing and greasing time shall not normally be included for payment.

If the contractor is required to hold equipment which he/she has brought in specifically for the extra or additional work "on standby" because of circumstances beyond his/her control, consideration may be given to payment for normal schedule "standby time". In such cases, it will be necessary to negotiate lower hourly rates with the contractor which will not include compensation for fuel, oil, grease, repairs and other costs which would not be incurred on the equipment "standing by".

The Project Manager should be careful to obtain the correct name, model size, series number, and type of the equipment and major attachments - (loader or dragline bucket, etc.) involved for each item of equipment for which a rental rate is to be established. This information should be furnished to the District Office and they may then determine the approved rate from the "Rental Rate Blue Book". Complete information is needed to determine the proper rate since the rates vary considerably depending on the model, series, etc. The name of the established item should be descriptive but brief, for example, "Crawler Tractor Loader, 1 Cu. Yd." The body of the force account or supplemental agreement should then include all of the information necessary to determine and verify the correct rate, for example "Caterpillar, Model 955 'H', 100 horsepower, 1 Cu. Yd."

If fully operated rates, including operators' wages are to be established, the rate paid the operator shall be increased by 50 percent to cover insurance, social

security taxes and profit and added to the approved rental rate, rounding to the nearest five cents. When such rates are established, the words "fully operated" shall be included in the equipment rental item.

The Project Manager should call or write to the general office of the contractor advising him/her of the nature of the proposed work to be performed on a force account basis and request that they advise by letter regarding their insurance premium rates for workmen's compensation, public liability, and property damage. Request that the contractor send copies of his/her letter to the District and Construction Engineers. The letter stating the insurance rates should be attached to the force account agreement to be filed as a part of the permanent records. The agreement may also be prepared without the insurance rates and sent to the contractor's office for signature with instructions that the contractor place the rates on the agreement.

The reverse side of the agreement form must contain the "Estimate of Cost". This itemized estimate of the cost of the work shall include an item for each class of labor or piece of equipment for which a rate is established in the agreement. The estimated number of hours that it is contemplated that each item of labor and equipment will be employed shall be shown, extended at the established rates, and totaled. Allowances for insurance, social security taxes, and profit shall be shown and included in the total cost. In the event that the contractor will be required to furnish materials in performing the work, the quantity and estimated cost of each item of material should be shown and included in the totals.

The hourly labor rates to be used in the itemized estimate shall be the average rates that would be earned, including overtime, if the laborer worked a full week. Such rates shall be referenced with asterisks to the following note to be entered below the estimate:

"Average rates earned at the established basic rates in a 40 hour week."

The heading of the "Estimate of Cost" on the reverse side should be on the same end of the sheet as the signatures on the face of the form so that it will not be obscured when it is placed in the Lincoln Office file.

Force Account Statements - A force account statement, signed by both the Project Manager and the contractor's representative, is required for each calendar week during which work is performed. These reports should be prepared and signed weekly. In the event that overtime payment is involved and the agreement requires that reimbursement be made at the average hourly rate earned during the week, the statement shall be prepared and signed on the Monday following the week in which the work is performed.

A daily record of labor, equipment and materials used on force account work shall be kept in **SiteManager**. Work on force account and contract items will often occur at the same place at the same time. It will be the duty of the Project Manager or inspector to record his/her estimate of the force account labor and equipment hours and check with the contractor's foreman each day.

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A receipted invoice is required for all items of expense incurred by the contractor except insurance, social security taxes, and the items for which rates are established in the force account agreement. The quantity or amount of such services furnished or materials used during each week may be included in the statement for that week, or the total quantity or amount for all materials or other expense covered by the same agreement may be included for payment on a later statement, substantiated by receipted invoice. Payment cannot be made for such items until the receipted invoices are received.

The contractor shall furnish the Project Manager with a copy of his/her weekly labor payroll which contains the names of those personnel working on force account items. The hours worked and the rates paid to labor on force account work shall be compared with this transcript. Any discrepancies should be investigated and corrected to insure the accuracy of the force account statements. See Pages 492 through 497 for instructions and examples of force account agreements and statements.

Alterations of Plans or Character of Work (SSHC Subsection 104.02)

This subsection in the specifications authorizes the Department (Project Manager) to increase or decrease quantities of contract items for which there are unit prices included in the contract, if changes in plans or alterations of construction make such increases or decreases necessary or desirable.

A CO/SA may be necessary when there is a significant change in the character of the work. A "significant change" is defined in Subsection 104.02. A CO/SA will not be required if the Project Manager and contractor agree that the additional work can be done at the bid price. Such agreement, preferably including the contractor's initials or signature, should be documented in **SiteManager and** in the Project Manager's diary.

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Sign Deductions

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The change order for sign deductions must indicate that "State Funds Only" shall be used.

104.09 VALUE ENGINEERING (SSHC Subsection 104.03)

In accordance with *SSHC Subsection 104.03* a contractor may submit a value engineering proposal to the Project Manager with copies to the District and Construction Division. The purpose of value engineering is to encourage alternative, cost effective measures which produce equal or better quality end products.

Value Engineering proposals will not be accepted for:

- Changes in basic design of a bridge or pavement type. For example: Value engineering a project from PCC to ACC will not be acceptable. Changing a designed bridge to a box culvert is not acceptable.
- Changes which the contracting authority may already be considering.
- Basing a value engineering proposal on, or similar to, existing standard Specifications, Special Provisions, or design plans and standards adopted by the contracting authority. For example: A plan was let using **15 foot (4.6 m)** PCC joint spacing. A value engineering proposal would not be accepted changing this to **20 feet (6 m)** because Roadway Design Division standards have included this spacing as an acceptable standard.

The written proposal shall have sufficient detail to be evaluated for compliance with the requirements. The detail provided must also allow for reviewing how a proposal impacts the entire project. It shall include:

- A description of existing requirements and proposed changes
- All affected contract items, including new, extra work items and supporting justification for that extra work
- Unit prices requested for the work
- Effects on crew, equipment, and production needs for the project
- Impact on the construction period
- Schedule for obtaining all required materials

It is very important to pursue these requests quickly to maximize potential savings. Once a proposal is received, the Project Manager should (a) discuss the merits of the VE proposal with the District Engineer, and (b) initiate an office review and forward review comments to the Construction Division within a week. The Construction Division will coordinate the review with other offices, including selected section leaders (Design and/or Bridge) and the FHWA, if appropriate. Following this review, the Construction Division will notify the District and Project Manager of approval or disapproval and any special considerations or requirements. Following notification from the Construction Division, the Project Manager will prepare a written notification to the contractor outlining the review and conclusions of that review.

If a proposal is acceptable, this notification will form the basis for issuing a Change Order and Supplemental Agreement to implement conditions of the value engineering proposal. Therefore, a notification should include:

- A restatement of any changes
- All costs involved, and how costs will be addressed
- Any Specification requirements which result from changes or modifications to the existing contract
- Details pertaining to special requirements for materials inspection and testing, if applicable
- Any other special considerations or conditions

If a proposal is not approved, the notification needs to include reasons for rejection.

The Construction Division has established a goal of ten days to complete the entire review and notification process.

104.10 PLANT INSPECTION

Portland Cement Concrete Paving Plant (*SSHC Subsection 1002.02*)

The National Ready Mixed Concrete Association Quality Control Manual, Section 3, *Certification of Ready Mixed Concrete Production Facilities* lists the minimum monitoring requirements. A plant inspector (Construction Technician) will normally be assigned to each project with duties split between plant and grade inspection. Plant inspectors should schedule work so the plant can be visited daily during production. The amount of time spent at the plant will depend on the overall quality control at the production plant.

Structural Concrete Plant

Ready mix tickets shall be prepared and signed by the person batching the concrete or the plant inspector.

Asphaltic Concrete Paving Plant Inspection (*SSHC Sections 503, and 1028*)

Table 502.40.1 lists the ACC plant monitoring requirements. A plant monitor will normally be assigned to each project with duties split between plant and grade inspection. The plant monitor should schedule work so that the plant can be visited daily during production. The amount of time spent at the plant will depend on the overall quality control at the production plant. The contractor's QC inspector will be providing production and placement information to be entered on the daily plant report. Visits of the plant monitor to the plant laboratory for exchange of information and book work will normally be done daily.

The plant monitor will be responsible for witnessing core sampling and performing verification density tests.

Testing Equipment and Supplies

Necessary plant inspection forms will be furnished to the producer at no cost. The producer can request these through the Materials & Tests Engineer or Project Manager. It is a good idea for the plant monitor to carry a supply of forms and make these available to the producers as needed.

NDR plant monitors can utilize contractor furnished equipment for testing required at the plant site.

Samples

The contractor's inspector and NDR plant inspectors should indicate on the sample submittal form the field lab telephone number and hours they can be contacted for test results.

For QA/QC projects, the contractor is responsible for field sampling. The project monitors should witness sampling to the extent that they are assured the samples are taken properly. Additional witnessing of obtaining, identifying, splitting, testing, and storing samples will be as directed by the QA/QC Specification.

104.11 PLANT REPORTS

The Project Manager should make arrangements with the contractor's plant inspector for timely receipt of plant reports. The original and all copies of the plant report shall be kept at the plant until all documentation is completed. Normally, this will be the day following the end of the reporting period. Review and distribution of the reports will be made by the Project Manager. This distribution will include a copy to be returned to the contractor's plant inspector. Prompt consultation between the plant inspector and the NDR plant monitor shall follow any significant error or omission.

Documentation

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A separate field book **entry in SiteManager** should be set up on each project to document plant inspection. Some flexibility in the suggested format may be necessary depending on project size, type of plant, and if the QA/QC Specification applies. It is important to document discrepancies and corrective action taken by the contractor.

104.20 FIELD TESTS

104.21 FIELD TESTING ON CONSTRUCTION PROJECTS

Materials

All sampling, measuring, and testing for construction project quality control shall be performed as prescribed in the NDR Materials Sampling Guide and the NDR Standard Method of Tests.

Project Acceptance Sampling and Testing

Both construction inspection personnel and the contractor are responsible for the field sampling and testing portion of project acceptance tests. The Project Manager must review inspector assignments and maintain a program of continuing training for personnel and training of additional employees if required. Samples taken by inspectors and submitted to District or Central materials laboratories must be properly and completely identified on "Sample Identification Form" (DR Form 12) or other appropriate forms as required.

The *Materials Sampling Guide* shows the minimum required frequency of tests for various types of work. Additional tests should be made as necessary for adequate project control. Reports showing test results must include all tests made.

Reports do not need to be included in field books or diaries.

Assurance Sampling and Testing

SSHC Section 1028 discusses the requirements related to asphalt assurance sampling and testing, most of which are Materials and Research Office responsibilities. Occasionally, assurance samples have not been taken on some projects because timely notification of ongoing work was not made. This has been more common with test cylinders from bridge deck pours and culvert projects.

While the actual taking of assurance samples remains the responsibility of Materials and Research personnel, it is of equal importance that project inspectors provide timely notification regarding available dates for testing.

104.30 TRUCKS/HAULING OF MATERIALS

The Motor Carrier Permit Office is responsible for the monitoring and enforcement of truck weights on roadways outside the project limits and on roadways within the project limits utilized to maintain through traffic. Our involvement in monitoring hauling units in these situations should normally be limited to notification of the appropriate Motor Carrier Permit personnel if obviously overloaded trucks are suspected. The primary focus of our attention should be insuring compliance with legal axle loads on pavements and structures on roadways within the project limits that are closed to the traveling public.

104.40 SCALES

Aggregates are generally measured in the delivery vehicle on a platform scale. Asphaltic mixtures may be measured over platform scales, in silos on load cells, in hoppers, or by counting batches.

104.41 SCALE TICKETS

The contractor shall provide a scale ticket for each load showing the required mass information on the procedure being used, the project number or contract description, the truck number, the date, and the type of material.

The required data to be automatically printed on the scale tickets will vary according to the method of measurement (hopper, silos on load cells, batch scales, or platform scales) and type of system (automatic or semi-automatic).

Automatic or Semi-Automatic Measuring

- For hoppers, batch scales, or silos on load cells, all tickets printed automatically shall include the gross mass, empty mass of the hopper or mass not discharged, net mass of material for each drop, and the total net mass for the load. When measured under the semi-automatic procedure, the scalemaster may include on the ticket the calculated total net mass.
- For batch scales, the batch mass and batch count are to be automatically printed under both procedures. The total net mass may be printed with a system or calculated by a scalemaster with a semi-automatic system.
- For truck platform scales, all scale tickets printed automatically shall include gross mass, tare mass of the truck, and net mass of the load. For semi-automatic measuring, the printer shall print the gross mass, and the scalemaster shall conduct all measurements and may enter by hand or by printer the tare mass of the truck and calculate the true net mass.

Manual Measurement

- For manual measurement of loaded trucks (project quantities less than 10,000 Mg) (11,000 ton), scale equipment on truck platform scales may or may not include a mechanical ticket printer. A scalemaster shall include the gross and tare mass and calculate the net mass on the scale ticket. The Project Manager may arrange for the measurement to be witnessed.

The inspector will collect the accompanying load ticket for each load of material on its arrival at the work site and check to see that the ticket has been validated by the scale inspector when such scale inspection is required. The inspector will observe each load of delivered material to detect any obvious deficiencies in quality or in quantity and reject any loads which are unsatisfactory.

The inspector will sign or initial the scale ticket for each accepted load to verify the material was delivered and accumulate the tickets on a daily basis for determination of

pay quantities. Quantities for each day's operation shall be totaled and checked against the contract records and any discrepancy promptly resolved.

The requirement that an inspector personally receive all load tickets at the time of delivery may be relaxed only in cases of very small quantities or intermittent deliveries under conditions where the Project Manager or inspector can visually determine the approximate quantity delivered.

On asphalt projects, it is permissible for a contractor's employee to collect the tickets and place them on a clipboard. An inspector must be present at the laydown operations at all times and observe the collection of the tickets.

104.42 TRUCK PLATFORM SCALE APPROVAL

The *SSHC Subsection 503.03* explains requirements for scales. A platform scale used for measurement of items such as crushed stone, base and subbase material, and asphaltic mixtures, contracted for and measured by the Megagram, shall meet these criteria.

Truck Platform Scale Use

Each truck to be measured shall be tared twice a day. Taring of trucks should be on a random basis during the day's operation, using the previous day's tare mass until a new tare mass for that day is determined. No truck may be used for hauling material paid for on a mass basis until tared.

104.50 SMOOTHNESS

104.51 TESTING

SSHC Sections 502 and 602 contain the current asphalt and concrete pavement smoothness Specifications.

The special provisions provide the current smoothness Specification for bridge decks and bridge deck overlays. They discuss the requirements of smoothness criteria for bridge decks, new approaches, bridge deck overlays, and overlaid approaches. They will also indicate when evaluation is excluded.

Any pavement and bridge deck areas carrying traffic, but excluded from profilograph testing, must be checked with the 3 m (10 foot) straightedge or “bump buggy”. Deviations in these areas shall not exceed 3 mm (1/8”) in 3 m (10 feet).

If two or more lanes are placed in a single pass with a full width paver, smoothness results of adjoining lanes should be evaluated separately and independently so that each lane has its own profilograph trace.

104.52 EVALUATION

Bridge Approach Smoothness

The final 1.8 m (6 feet) at a section end may be excluded from testing and evaluation only when the contractor is not responsible for the adjacent section, but the entire header-to-header section should be included in computations for price reduction or incentive assessments.

The 1.8 m (6 feet) on either side of a 100 mm (4”) expansion joint may be excluded from testing by the Project Manager, since the small averaging wheels on the profilograph may fall into the joint and possibly damage the profilograph and affect the trace. Contractors should fill these joints or cover them to allow the profilograph to run through the joint area.

A composite header, where one side is ACC and one side is PCC, is excluded from profilograph testing only when this header is at the extreme end of the project (i.e., only where one half of the header joint is existing pavement). If the composite header is constructed as a single project, no exclusions for smoothness testing should occur since both types of pavement (ACC and PCC) are under the same contract. The smoothness index should be determined independently for each surface type, but the bump specification should apply across the header.

Bridge Deck Smoothness

Profilograph tests will be conducted in each traffic lane approximately 1.0 m (3 feet) from the outside lane line of each traffic lane segment of bridge decks and bridge deck overlays.

The final 1.8 m (6 feet) at the end of a bridge and at an expansion joint are not included in testing or evaluation, but should be included in computations for incentive or price adjustment assessments. These areas will be evaluated for deviations exceeding 3 mm (1/8") in 3 m (10 feet).

Profilograph tests for bridge approach sections or overlay of bridge approach sections are run 1.0 m (3 feet) from the outside lane line of each traffic lane. These areas shall be corrected for smoothness and will not be used in the computation for incentive or price reduction of bridge decks or bridge deck overlays.

104.53 BUMP CORRECTION

Exact location of 10 mm (3/8") bumps requiring correction has proven difficult particularly on resurfacing projects. Referencing by station location, string line, and rolling straightedge often lacks the precision necessary for identification of exact bump locations. Locate bumps on the pavement surface during initial profilograph testing with spray paint or have a profilograph available during correction to locate bumps and monitor correction results.

104.60 LIQUIDATED DAMAGES & EXTENSION OF CONTRACT TIME

Liquidated Damages (*SSHC Subsection 108.08*)

The Construction Division will assess liquidated damages based on the District's recommendation.

The Construction Division will be responsible for settling liquidated damage disputes.

If project level good faith efforts fail to resolve differences, the Project Manager shall request negotiation assistance from the District Construction Engineer. In addition, factual information relative to the issue(s) shall be forwarded to the Construction Engineer.

Should combined efforts described above fail to resolve dispute(s), the issue will be considered to have reached an impasse. At this point, a meeting with all affected parties shall be scheduled with representatives from the Construction Division.

Contract Time Extensions (*SSHC Subsection 108.02*)

In SiteManager, all time extensions are change orders and the "Contract Time Allowance Extension Document" (DR Form 16) is obsolete. The value of a time extension is the liquidated damage amount times the number of days extended. The "Approved Limits" chart in Subsection 104.08 applies to time extension change orders.

A good example would be when a contractor was held up due to a delay in delivery of material and it was necessary to charge working days until the contractor provided proper documentation. After proper documentation, the contract time allowance is extended by the District for the amount of working days assessed during the delay.

It is intended to use this means to correct mischarged days rather than going back and revising the working day report. An example of this would be when a contractor

contests the working day charges shown on the working day report and he/she is considered to be correct.

The "Head to Head", "Detour" and "Earth Shouldering" time allowances are specific time allowances within the time frame of the overall contract allowance. They usually are not, but can be, affected by contract time extensions.

SSHC Subsection 108.02, Paragraph 6 says the Project Manager will grant an extension in the working day time allowance consistent with delays resulting from conditions beyond the contractor's control.

The Project Manager should be careful to keep complete and accurate records and information on any conditions or circumstances which delay the work. The Project Manager should keep good records, particularly on circumstances in connection with acts by the State and delays (to the work) caused by other contractors. If such delays are involved and the time allowance is exceeded, the contractor will surely request and be entitled to an extension in the time allowance. In the fair handling of such requests, the Construction Division review relies principally on the records kept by the Project Manager, and accurate, complete records on any such delays are of prime importance.

If the working day time allowance has been exceeded, the Project Manager should prepare a resume of the working days charged to accompany the final records. The resume should be based on a review of the working days charged, considering any requests for extensions in time made by the contractor.

104.70 ACCIDENTS

Whenever a traffic accident occurs in a construction zone, the Attorney General suggests that the Project Manager immediately video tape, photograph, and/or document the area to verify the position of signage, obstructions, traffic control devices, and other pertinent features.

Use the publication *Collecting of Accident Data* as an aid when reporting accidents.