

## 2.30 CONSTRUCTION PERIOD

### 2.31 ADMINISTRATION OF THE CONTRACT PERIOD

Administration of any contract period and determination of the controlling item of work requires a fair and equitable assessment of work performed (either working or calendar days).

- [Specification 1108.02](#) identifies how a contract period is identified in the contract documents and provides guidance for contract administration.
- [Specification 1108.03](#) supplements by outlining working days on non-Incentive/Disincentive (I/D) projects during holidays.
- [Specification 1111](#) provides direction for Incentive/Disincentive projects.
- [Appendix 2-27](#) shows "Charging of Contract Time."

#### Contract Types

Three types of working day contracts are:

- Approximate Start Date
- Late Start Date
- Specified Start Date

In addition, a contract may include an intermediate contract period (completion date) for completing certain phases of work. In all cases, the contract documents will identify a maximum project duration, i.e., working days. Project durations, identifying the time allowed to complete work, are used to calculate dollar amounts of liquidated damages and incentive/disincentive assessments.

#### A. Approximate Start Date

It is expected that the site will be available by the approximate start date. If it appears a project site may not be available by the expected start date, the project engineer will notify the contractor of a delay and, if possible, length of the expected delay. Contractors are expected to remain informed about site conditions and be prepared to start work with minimal delay when a site becomes available.

An approximate start date is designated for the purpose of allowing a contractor some leeway in planning their work. The contractor and project engineer are to develop an agreed starting date.

A contractor may request to start work anytime after execution of the contract and before the approximate start date. This request is subject to approval by the project engineer and if approved, working days will be charged when work is actually started. If approval is given, contractors will be required to sign a waiver giving up any right to claim extra compensation for damages due to delays related to their early commencement. Any contractor asking to start early, shall not interfere with operations of other contractors who have first right to the site.

The guidelines for charging working days are explained in [Specifications 1108.02 and 1108.06](#) and in the following case:

Frequently a paving contract is let following a grading or structure contract which has not been completed when expected.

The policy on charging of working days in this situation is as follows: Whenever paving operations are in progress, working days are charged when paving is identified as the controlling operation, even though there may be a section of the project that cannot be paved because of some uncompleted work. If paving

operations must be suspended or cannot start because of this uncompleted work, charging of working days should also be suspended. The contractor and project engineer shall agree on a date for resuming paving operations.

The site is considered not available if the contractor's operation would be restricted or curtailed to the extent that production is reduced because of insufficient or excluded areas. Examples of contracts often delayed are:

- Bridges delayed due to uncompleted berms
- Paving work delayed because of grading construction

Working days will be charged whenever the contractor is working on the controlling operation, whether before or after the approximate start date. A "Notice to Proceed" shall be issued if the project engineer determines there are sufficient reasons and available areas to expect the contractor to be working. If the contractor does not start on or before the 15th day following a "Notice to Proceed," charging of working days will begin on the 15th day.

Factors to be considered are amount of work available to the contractor, safety, other contracts, other work, opening the road to traffic, etc.

Examples of this type of contract are interstate fencing and signing. In either case, a contractor will only be able to work as areas are completed and become available. Contractors may be expected to work in somewhat confined or limited areas due to other contractors.

#### B. Late Start Date

When a contract includes a late start date, the contractor may start work any time after execution of the contract if permitted by specifications and weather. If an early start is allowed, working days will be charged commencing when work is actually started. Otherwise, working days will be charged starting on the late start date.

Occasionally a contractor will start a project, complete several items of work, and then request that working days be suspended. The charging of working days may be suspended only when the contractor begins work on the project before the late start date and with the approval of the project engineer. Project suspensions should normally not be allowed after the late start date, unless the project has been opened to traffic. See "Project Suspensions" that follows.

Example of an intermediate project suspension:

Usually the road will not be closed and construction work will be accomplished while maintaining traffic. Before work is suspended, the road must be left in a condition that is at least as safe as it was before the start of any preliminary work. (Refer to "Project Suspensions" in the following section.) After suspending work, a new late start date is calculated using the number of working days remaining at the time of suspension. A statement indicating work is suspended and the new late start date should be reported on the appropriate "Weekly Report of Working Days." The charging of working days would be resumed starting on the new date or when the contractor resumes work, if earlier.

### C. Specified Start Date

When a contract includes a specified start date, the contractor can expect the site to be available by the start date specified. The guidelines for charging working days are covered in the applicable specifications. Starting work after the specified start date, except as noted in the specifications, is unacceptable. Therefore, a contractor is expected to have a sufficient work force available to start work not later than the specified date.

### Working Day

A working day assumes that work is able to be performed on the controlling item (or operation) of work and is defined as any calendar day except:

- Saturdays on non-accelerated projects, when inspection is not required
- If not worked, Saturdays, Sundays and days defined in [Specification 1108.03](#) for state observed holidays on non-accelerated projects. (Refer to the note following this section.)
- If not worked, Sundays and state observed holidays when an accelerated work schedule (mandatory 6-day work week) is specified. If weather and specifications allow, a working day will be charged for all:
  - A. Saturdays
  - B. Days preceding and following a state recognized holiday, excluding Sunday (Refer to the note following this section.)
- Days where conditions identified in the contract documents require the contractor to suspend construction operations.
- Days with inclement weather, site conditions, or other conditions beyond the contractor's control, that prevent prosecution of the controlling item of work at least 25 percent of the daily hours routinely worked.

[Specification 1108.02](#) further refines this by charging 1/2 a working day for construction activities that occur for less than 75 percent, but more than 50 percent of the daily hours routinely worked.

**NOTE:** With the exception of Sundays, it is not intended to automatically restrict work on highways where traffic volumes are not a concern. In fact, contractors should be allowed to work on activities that can be accomplished with minimal impact on traffic. The specification is intended to allow a project engineer the authority to approve (or deny) a contractor's request to work on normally excluded working days. Permission should be evaluated as to how the proposed work impacts traffic - based on site experience, contractor's operation, and project schedule. Any decision to allow work during normally excluded times, shall be pre-approved by the District Construction Engineer.

Working days (reference [Appendix 2-27](#)) will be charged when work actually begins on the contract, unless:

- A. The contractor does not start work on the Specified Start, or Late Start, date required by the contract documents. In this case, working days will be charged commencing with the date specified.
- B. For Approximate Start date contracts, the contractor does not start work on the date agreed to at the preconstruction conference. In this case, the project engineer shall issue (or has already issued) a "Notice to Proceed." Working days will start on the 15th day following a "Notice to Proceed," or when the contractor starts, whichever is earlier. (Refer to [Specification 1108.02](#).)

- C. The contractor begins to work, or is working, during winter shutdown (November 15 to April 1) and:
- Working days remain for the contract, or
  - the contract does not require winter work.

### **Calendar Day**

Calendar days are typically used on Incentive/Disincentive projects. As the name implies, calendar days are every day shown on the calendar beginning at 12:01 AM and ending at 12:00 midnight.

There is clarification for charging calendar days noted in [Specification 1111](#). It states in part: Additional closure days for weather delays will not be allowed for the first 5 consecutive closure days by adverse weather (i.e. rain, snow, extreme heat, etc.). The specification identifies non-weather related extraordinary circumstances which will be considered provided they cause a delay.

NOTE: Additional closure days have to be authorized by writing a "Substantial" Change Order to the project.

### **Controlling Item of Work**

The controlling item (or operation) of work is: Work that is (or could be) in progress at any given period of time, and would have the greatest influence on the duration of the contract.

Stated another way: At a given point in time, any task which has the greatest impact on completing the project on time, will be considered the controlling item of work.

There can be only one controlling item (or operation) of work at any given time. Also, by definition: A controlling item (or operation) of work should change as the project progresses from start to finish, and the item (or operation) need not be completed to change. For example:

- Placement of reinforcing steel may be a controlling operation at some point in time. However, placing all reinforcing steel in a bridge need not be completed before another operation such as placing structural concrete would become controlling.
- Fabrication and delivery of tower lighting poles may be a controlling item of work. However, delivery of "all" towers and masts need not occur before construction of tower bases or erection of some towers would become the controlling operation.
- Placing granular subbase is a task which obviously needs to occur prior to placing pavement. However, once placing the subbase has advanced far enough to stay ahead of placing pavement, the paving operation would become controlling.

For contracts with a critical path method (CPM) schedule, the controlling item (or operation) is identified by its appearance on the critical path. For contracts without a CPM, determining the controlling item (or operation) is not as straightforward and is decided by the project engineer. In these cases, the project engineer should include input from the prime contractor and then decide:

- What task is, or should be, in progress (at that time) to keep the project on schedule?
- What task (at that time) has the greatest influence on completing the project on time?

Construction operations must be able to occur on the controlling item (or operation) before a working day will be assessed. A working day will not be charged unless work can be performed on the controlling item (or operation) of work, even if a contractor is working elsewhere on the project. Factors considered outside the contractor's control are:

- A. Adverse weather which results in site inaccessibility or non-workability of materials. Further, a contractor will not be required to perform any task under unsafe conditions resulting from (or during) adverse weather. Suspension of working days is allowed only if the contractor is working, or ready to work, on the controlling item (or operation). In the event of adverse weather, working days will not be charged during inclement weather, even if the contractor has not mobilized to the project.
- B. Insufficient survey stakes, late acceptance or testing of materials, or lack of inspection support could result in suspension of working days **PROVIDED** the item in question is a controlling item (or operation) of work **AND**:
- These delays were caused as a result of inaction by the contracting authority. For example: Insufficient survey will not be a reason for suspending working days, unless the contracting authority has not provided adequate preliminary survey staking or there is a plan error.
  - The contractor provided adequate advance notice indicating a specific need. Timely notice and communication between all project team members are of the utmost importance.
- Note:** There has to be a clear impact to completing the project on time before a suspension, or additional contract days will be considered.
- C. Strikes which are not directed against the contractor. For example: A labor strike against a material fabricator, after the project has started. Or a trucking strike which at a minimum affects all transportation in a particular region where materials or supplies must come from.
- D. Legal stoppages are reason to suspend charging of contract time if they are a result of legal action: (1) against the contracting authority, or (2) against the contractor and are not based on a specification interpretation or violation of the contract documents.
- E. A controlling item (or operation) could be impacted for reasons such as:
- Delays resulting from redesign or a plan revision
  - Redirecting traffic onto a project by State personnel due to some unforeseen emergency
  - Awaiting contract pile lengths based on test pile results
  - Awaiting a preceding contractor to complete their work
  - Delays associated with environmental problems
- F. Late Delivery of Material. Procurement of material for a project is solely the contractor's responsibility. Contract time credits for late delivery will be considered only when the contractor documents:
- Orders were placed with a reliable supplier, in sufficient time for materials to be delivered on schedule.
  - The supplier has made a reasonable attempt to secure equal materials elsewhere within the industry.
  - A supplier has the capability and ability to provide materials at the rate promised.

Contract time credits (working or calendar days) may be allowed for the difference between promised and actual delivery dates. However, the promised delivery date must have been realistic, acceptable, and fully documented to the satisfaction of the project engineer. Time credits could be allowed for late delivery if the problem developed after a project was let because of:

- An area or nationwide shortage of the material
- A natural disaster
- An industry wide strike
- Transportation strike which delays the delivery of material
- Delays due to a change in material commitments when caused by a federal emergency or order
- Delays due to specially fabricated material which are damaged during shipment to the project

- G. Redoing work that had been completed, but was damaged or destroyed for reasons beyond the contractor's control. For example: A grading contractor is working on a project and rain occurs. The contractor starts back to work and has to disk previously placed material to dry it out. Working days should not be charged until the site is back to "reasonably" the same condition it was prior to the rain. (Note: Drying borrow material, after a rain, would also be included in this scenario.)

RATIONALE: If a contractor is willing to place special "early" effort into a project, or if the contractor has to redo work which was damaged, the intent is not to penalize that effort by charging contract time until the site is back to its "original" condition.

Obviously, an alternate would be for a contractor to wait until site conditions are perfect and then resume work. This is not beneficial to either the contracting authority or the contractor.

- H. Change orders and plan revisions could affect the controlling operation. Impacts on time should be considered for extra work and plan revisions and addressed when the impact is known. A contract modification for additional time may be executed when the impacts are quantified. For projects with a CPM schedule, simply providing an updated schedule, without substantiating information detailing changes, will be inadequate for a comprehensive review.

For large overruns, the magnitude and impact may not be readily known until the final quantities have been determined. In such situations, relative information should be included as notes on the Working Day Report.

- I. Natural Disasters are typically a result of storms which produce catastrophic results and supersede "adverse weather" described in "A" above. In Iowa, the Governor's office issues disaster proclamations.

A suspension order may be issued on any project in a declared disaster area. Recommendations for a disaster suspension will be initiated by the project engineer, reviewed by the District Construction Engineer, and forwarded to the Office of Construction for final approval. Disaster suspensions will be considered for projects regardless of a contractor's working status, i.e., actively working or not yet mobilized to the site. Time credits could also be considered for damages to plant facilities, equipment, supplies, partially completed work, and completed work which must be redone.

- J. The "Weekly Working Day Report" (Form 830238) becomes a very important document in providing a historic record of events. This form should include notes about delays and other pertinent information that can be used later to assist in resolving disputes that may arise.

### Special Considerations

#### A. Adjusting Liquidated Damages

[Specification 1108.09](#) states in part that the contracting authority may waive liquidated damages which accrue after the work is in condition for safe and convenient use by the traveling public. This specification also identifies conditions which must be met before considering any credit.

Further, a contractor would be expected to retain or obtain sufficient equipment and work force necessary to complete the remaining work within a reasonable time. Normally 30 calendar days would be considered adequate time to allow for completing minor work under this provision. One method for administering working days on projects that are substantially completed with only clean-up/punchlist items remaining to be completed (typically in the following spring) is to advise the contractor that charging of working days will resume in 31 days. This allows the contractor to complete the project with no working days for clean-up work if it is completed with the 30-day period.

#### B. Winter Work

Determination of contract days (working or calendar days) charged during winter shut down (November 15 through April 1) will be according to [Specification 1108.02](#) and [Specification 1111](#), and the contract proposal. Unless otherwise noted, contract proposals allow a contractor to work between November 15 and April 1 with no time charged. Irregardless if working days are charged, Working Day Reports are to be issued whenever the contractor is working on the project. The reports provide documentation of project status and contractor's progress.

However, a contract period ends when the contractor has used all the specified number of working days. Therefore, if a contractor has used all allowed working days and has not completed the project and continues (or is required) to work after November 15, working days will be charged.

This could also apply on intermediate completion dates. If all specified working days for an intermediate completion are used, but contract time remains for completing the project and the contractor continues (or is required) to work after November 15, working days would be charged until the intermediate completion work is completed. But, charging working days would then be suspended until April 1.

The two situations above assume work can be completed sometime after November 15. This is not always the case. Anytime working days are charged during winter free time because of uncompleted work, a contractor will be required to work as long as conditions are favorable for work to occur. At the point where weather and/or site conditions prohibit acceptable constructive work to continue, a suspension will be issued and work will be commenced at the first opportunity in the spring.

The project engineer 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 15, **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.

If the contractor wishes to start work prior to April 1 and the contract proposal allows winter free time, the contractor is required to request authorization to commence work prior to April 1. If the project engineer approves the request, a condition shall be imposed that the contractor is not entitled to compensation for delays when not able to work during the winter free period. This condition shall also be used when a contractor submits a CPM schedule indicating work performed prior to the contract period.

#### C. Project Suspensions

The project engineer may approve a suspension when either of the following two conditions are met:

- when a contractor starts work prior to the late start date
- when a project is substantially completed

However, if it is apparent the intended suspension would make it impossible for a contractor to complete the project within the intended construction season, the contractor will be advised that suspension of work will not be approved and charging of working days will continue.

If it is necessary, or required, that the road be closed to traffic because of the preliminary work, a suspension will not be allowed and working days will be charged unless there are extenuating circumstances or situations.

Charging of working days may be suspended on substantially completed contracts when only clean-up of the project site and/or completion of minor work remains. The specification that provides for this allowance depends on whether liquidated damages have accrued at the time of suspension.

For contracts that have not accrued liquidated damages at the time of suspension, [Article 1108.06](#), "Temporary Suspension of Work" is to be followed and working days will not be charged when the following conditions are met:

- Only minor work or clean-up of the project remains to be completed
- The contractor submits to the project engineer a written request for suspension of work and a schedule for satisfactory completion of the work.

If approved, the project engineer will notify the contractor that working days will be suspended. This may be accomplished by the project engineer noting on the weekly working day report that charging of working days is suspended. If the request is not approved, the project engineer must advise the contractor in writing of the reasons the suspension is denied. The contractor should be provided with a response to their request in a timely manner.



It is important to note that this procedure is not intended to allow a suspension for an indefinite period of time without a planned and approved schedule for completing the work. The project engineer may resume working day charges when the approved suspension expires if the contractor fails to complete the work in accordance with the schedule submitted with the request for suspension.

On contracts that have exceeded the allowable number of working days allowed and are accruing liquidated damages, [Article 1108.09](#), "Failure to Complete Work Within Contract Period" is to be followed. In this case, working days should not be charged when the following conditions are met:

- Traffic must have complete use of the roadway, shoulder to shoulder, with no delays or one way traffic and no obstructions except for signs warning of construction work ahead.
- The remaining work to be completed is confined to the areas outside the shoulder edge
- Only minor work is left for completion such as clean-up or erosion control work if it is a small item, not part of an erosion control contract, and the erosion control work is completed during the first available seeding period.
- The remaining work is completed without excessive delay on the part of the contractor.

#### D. Projects Behind Schedule

Typically, bar charts and Critical Path Method (CPM) schedules have been used as a means of relating construction progress versus time for various types of construction projects. The project engineer will monitor progress by using these schedules and the "Weekly Report of Working Days."

No mandatory acceleration action is required of the contractor unless a project is 10 percent, or more, behind schedule.

- 10% Behind Schedule  
When the contractor is 10 percent or more behind schedule, the project engineer may issue a notice as provided in [Specification 1108.02, I](#). Further action may be taken if it appears that the rate of progress is such that the contract will not be completed within the allowed time. Ten percent behind schedule may warrant written or verbal assurances from the contractor of what they will do to bring the project back on schedule.
- 20% Behind Schedule  
When the contractor is 20 percent (or more) behind schedule, and it appears that completing the project on time is in jeopardy, the project engineer (working with the District Construction Engineer) will recommend actions described in [Specifications 1102.03, 1103.01B](#), and may take further action described in [1108.02, I](#).

A letter to the contractor will be required when a project is more than 20% behind schedule. This letter should reiterate the contractor's obligation to expedite the work and remind them of the various provisions of [Specifications 1103.01B and 1108.02, I](#). The letter should also request a reply from the contractor on steps which will be implemented to improve work progress within the next two weeks, and to ultimately have the project completed on time.

The District Construction Engineer and Office of Construction should be notified at the end of 14 additional working days if:

- The contractor has failed to respond to the letter, and/or
- The contractor has not taken positive, measurable actions to improve project deficiencies.

### 2.32 NOTICE TO PROCEED (FORM 830237)

Historically, a "Notice to Proceed" has not been widely used due in part to good coordination efforts and communication skills of project team members. The form was developed for Approximate Start Date contracts (where there is no specified starting date on the contract) to formalize contractor notification relative to a project start date. However, the form may be used for any special situation needing a formal time notice not imposed by the contract documents.

Generally, formal notification is not necessary if:

- A start date has been agreed to at the preconstruction conference and the agreed date is recorded in the minutes. These minutes must then be distributed to all participants including the contractor. A week will be allowed for comments and revisions. After that time, the minutes become documentation of agreements made during the meeting.
- The contractor has started work prior to the critical time for issuing a "Notice to Proceed."
- An early work waiver has been approved.

If a contractor does not appear to be ready to start on the agreed date, or project conditions warrant an earlier start date, the project engineer may issue a "Notice to Proceed." Examples of these cases are:

- The contractor agreed at the preconstruction conference to mobilize and begin work on the second week in July. It is now the first week in July, the project engineer has been unable to reaffirm the start date or the project engineer has reason to believe the contractor has no intention of starting as agreed.
- Assume: There is a contract for an HMA overlay. This contract includes some patching with an approximate start date of June 1. At the preconstruction conference, the contractor noted they would mobilize and begin patching work on July 15. Sometime after the preconstruction conference, but before the contractor starts to work, the project engineer becomes aware that the highway in question is experiencing rapid deterioration and patching must begin earlier, say mid June. In this case, a "Notice to Proceed" could be used to require the contractor to begin work.

NOTE: Cannot "mandate" a contractor to begin work prior to the approximate start date. If the contractor is agreeable and the site is ready, work can begin before that date but forcing a contractor to start early could result in the potential for an acceleration claim.

In either case the contractor should be contacted to discuss relevant issues and attempts made to redefine a new start date. However in the absence of an agreement, or if the contractor is not amenable to starting work as needed, the project engineer should issue a "Notice to Proceed."

## NOTE:

1. In the absence of an agreement, a "Notice to Proceed" must be issued before working days can be charged.
2. A starting date in the "Notice to Proceed" must not be less than 15 calendar days after date of issuance.
3. Working days will be charged beginning on the 15th calendar day after the Date Issued on the "Notice to Proceed," or when the contractor begins work, whichever comes first.

**2.33 WEEKLY REPORT OF WORKING DAYS (FORM 830238)**

"Weekly Report of Working Days" (working day report) is an Iowa DOT form used to document time charged versus actual work completed. The use of computer generated forms is acceptable PROVIDED the computer form is modeled around Form 830238 and has few modifications. Two forms currently used for reporting of time charges are:

- The "Weekly Report of Working Days" (Form 830238) is the standard form used for all construction and/or maintenance contracts.
- Incentive/Disincentive contracts require charging of calendar days during critical closure periods. The "Weekly Report of Working Days for Incentive/Disincentive Clause" (Form 830241) is available on request from the Office of Construction. An electronic version of the form is also available in Excel format.

Except for tracking Critical Closure Days, the forms look about the same and their preparation is similar.

**Preparation of Form 830238**

The form is divided into two basic sections, one for reporting working days used and the other for reporting work progress. Instructions for preparation are as follows:

1. Contract Start Date  
If an approximate start date is designated, enter that date in the appropriate blank in the upper left-hand corner of the form. If a specified start or late start date is designated, that date is entered and the word "approximate" is crossed out. (In FieldManager, the date that the contractor starts work should be entered in the "Construction Start Date" field.)
2. Length of Project  
Enter the length of the project in kilometers (miles), if applicable. Note: Bridge, culvert, and other site specific projects need not be included in this section.
3. Type of Work  
Enter the type of work such as PCC paving, AC resurfacing, shoulder stabilization, structures, etc. For structures, (bridge or culverts) enter individual design number.
4. Days of Week  
For reporting contract time, a day starts at 12:01 AM and ends at 12:00 midnight.
5. Controlling Operation  
During the contract period, list the controlling item (or operation). If work is not progressing on the controlling item (or operation), note controlling item in appropriate column and actual work item in the "Remarks" column.

When work is stopped or suspended and working days are not charged, the reason for not charging time should be noted under "explanation of delays."

When a contractor is not working and working days are being charged, give the reason why there is no work in progress, if known. For example, under "Explanation of Delays" and/or "Remarks" note something like: Waiting for subcontractor to mobilize.

6. Working Days Charged

If conditions allow work on the controlling item (or operation) of work, tabulate time charged for that day. (Refer to [Appendix 2-27](#) for charging of contract time.) Listed values will be either 1/2 or 1 for days where conditions allow work on the controlling item and 0 (zero) if days are not charged. The sum of all days charged that week are entered in the appropriate space at the bottom.

Refer to [Construction Manual 2.34](#) for adjustment of time charged in FieldBook/Field Manager contracts.

7. Work Progress

Three blanks are provided for major items or phases of construction. Items entered in this section are intended to provide a "quick reference" of progress for various major items. Since working day reports are continuous, it is easy to look back in a file to glean relevant data. Thus, it is preferable to allow a project inspector the flexibility to include various major phases rather than rigidly adhering to 3 items for an entire project. In so doing, anyone looking retrospectively can obtain a quick mental reference as to major work in progress at any given time. For example:

- On report #6 an inspector included Pier 2, North Abutment, and South Slope Protection.
- On report #7 the list changed to Piling, Pier 3 Footing, and Reinforcing Steel.
- On report #8 list reverted back to report #6's items.

Report Number	Type of Work	% Complete
6	Pier 2	40
	North Abutment	60
	S. Slope Protection	20
7	Piling (Furnish & Drive)	90
	Pier 3 Footing	10
	Reinforcing Steel	30
8	Pier 2	70
	North Abutment	95
	S. Slope Protection	100

Such reporting may seem nonsensical; however, individuals using this report often need "quick" historical data that is unavailable elsewhere.

8. Percent Complete

Blanks are on the form for entering percent of the total contract completed, and percent of time used. All the percentages need only be approximate calculations, rounded to the nearest 1 percent. When the rate of progress on a project is behind schedule to the extent that there is danger work will not be completed on time, note such situations on the "Weekly Report of Working Days."

### Preparation of Incentive/Disincentive Form

As noted above, the Office of Construction has pre-printed a "Weekly Report of Working Days" form for projects specifying Incentive/Disincentive (I/D). This form (Form 830241) tracks both working and calendar days on the same form.

Preparation of Form 830241 for incentive/disincentive is generally the same as for Form 830238 except:

1. Under "Controlling Operation" there are two columns, one for CPM and the other for ACTUAL. When charging contract time (working or calendar days), complete the CPM controlling column. An entry in both columns would be appropriate to document when a contractor is working, but not working on the CPM controlling item (or operation) identified by a CPM.  
NOTE: CPM schedules show a critical path. Any item (or operation) on this path is, by definition, a controlling item (or operation).
2. Columns headed "Working" or "Critical Closure" days are self explanatory. (Refer to [Appendix 2-28](#).) NOTE: Working days are assessed when site conditions permit work on the controlling item (or operation) during noncritical closure time(s), and calendar days are charged every day during critical closure time(s).

### Multiple Sites on a Contract

A contract may consist of multiple "sites" in addition to the overall contract, which is known as Site 00. Multiple sites are used when smaller specific portions of the contract are required to be completed in a time frame that is different than the overall contract. The site numbers, site description, start date, and time allowed are described in the "Proposal Details."

Multiple site contracts include:

- Contracts with intermediate completion periods  
Example: a grading contract with intermediate completion periods for completion of bridge berms.
- Multi-project contracts  
Example: a contract consisting of more than one project

For multiple site contracts, working days for each site, including the overall contract (Site 00), will be administered independently based on the controlling operation for the site. A work day will be charged to a site when work is done on the controlling item of that site.

An example of a proposal that includes multiple sites:

- The overall grading contract (Site 00 with 120 working days allowed)
- A hot mix asphalt paving project (Site 01 with 90 working days allowed)
- An intermediate completion period for constructing a bridge berm (Site 02 with 50 working days allowed)
- A RCB culvert project (Site 03 with 30 working days allowed)

A typical scenario may be that, due to wet weather, conditions allow work on controlling operations of Sites 01 and 03, but not on Site 00 nor 02. In this example, time would be charged to sites 01 and 03, but not to the overall contract (Site 00) or Site 02.

Occasionally a proposal will include an intermediate construction period, have a liquidated damage clause, and a statement which paraphrasing states: *Liquidated damages will not be charged for work prior to (XXX date) regardless of working days used.* In this case, the "XXX date" will be the date (typically approximate start date) for a following contract. Use of this clause is intended to allow a contractor flexibility and latitude in their schedule, while fixing a point in time that a future contractor can reasonably assume a site will be available. If the first contractor does not meet that date, liquidated damages will be assessed because a future contractor/contract is impacted.

When intermediate construction period requirements have been met, the "Remarks" section on Form 830238 should be noted with "final" and:

- Date intermediate work was complete or when contract requirements were met.
- Total contract time charged to an intermediate construction phase of the work.
- Total contract time charged in excess of the number of days specified, if an intermediate construction date is not completed on time.

### **2.34 LIQUIDATED DAMAGES & EXTENSION OF CONTRACT TIME**

If the number of allowable working days is exceeded and it is later determined that previously charged days should not have been charged, the length of the contract period is to be extended. The number of allowable days is increased by processing a time extension modification to the contract.

Retained funds held by the Contracting Authority are not intended to offset credit payments for deficient work and/or liquidated damages.

When liquidated damages are anticipated, item progress of Prime Contractor items shall be withheld to cover liquidated damages. These items will be increased to the final quantities after a contract modification for liquidated damages is processed.

If project level good faith efforts fail to resolve differences, the project engineer shall request negotiation assistance from the District Construction Engineer, and if needed, the District 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 Office of Construction.

If liquidated damages remain after considering possible working day credits or time extensions, a contract modification is to be written. The amount of liquidated damages shall be written as a non-substantial credit contract modification using the item numbers of 6200-110810 (metric) or 6200-1108010 (English). The Office of Construction will not process a Final Voucher until all liquidated damage claims are settled.

### 2.35 EQUIPMENT RENTAL RATES

On construction projects, unanticipated costs for equipment can arise as a result of work that was unforeseen at the time a contract was awarded. Such unforeseen work is often necessary in order to complete a project. Data on actual costs for equipment used for such additional, unanticipated work is usually not available, primarily because it is difficult to separate equipment costs from items bid in the contract documents.

Preferably the project engineer and contractor successfully negotiate a price for unanticipated work and execute a change order to the contract. In formulating the costs for such change orders, [Specification 1109.03B](#) allows a contractor to use Rental Rate Blue Book (Blue Book) rate guides or actual lease invoices to calculate equipment costs.

#### Rental Rate Blue Book

The Rental Rate Blue Book is a recognized standard rate guide which can be used to determine rental rate cost in force account work and to substantiate equipment costs for agreed price work. Typically, this method of determining rental costs is used when a contractor owns, or has a long term lease for any equipment in question, but does not have an established rental cost per unit of time. Rental Rate books are published semi-annually as a 3 volume set. The set covers a broad range of types and ages of construction equipment. The volumes are arranged to include information based on the age of equipment:

Volume 1 - past 5 years

Volume 2 - 6 to 10 years

Volume 3 - 11 to 20 years

One of the greatest challenges in using Rental Rate books is finding a particular piece of equipment. It is important that contractors provide complete, definitive, information relative to a particular piece of equipment, i.e., manufacturer, model number, type, size, horsepower, bucket or box capacity, equipment weights, and age. Such information is equally important as equipment ages beyond 10 years because the listing breakdown becomes less detailed. Further, it is often necessary for the project engineer to use all available information in finding reasonable alternates for non-listed equipment.

Data published in Rental Rate books provide a detailed guide to costs associated with equipment ownership, rental, and usage. (NOTE: Operator wages are not included.) To use Rental Rate costs, several adjustment factors must be applied before a user gets to the "bottom line." A detailed explanation of individual adjustments is provided in Volume 1's "Introduction" section. For Iowa DOT applications, equipment monthly rental rates shall be adjusted by:

#### A. Regional Adjustment Factor

In the first few pages of each section will be a United States map divided into "Adjustment" regions. To the side of this map, adjustment factors are shown by regions. These adjustments reflect variations that affect equipment ownership costs. The most significant item in this factor is an adjustment for climate and its effect on an equipment's average annual use. (A shorter working season means rates will be higher to recover fixed annual costs.)

U.S. maps have Iowa divided into two regions by a line running roughly from Dubuque to Council Bluffs. For uniformity of application, projects on and north of Highway 30 will be included in the northern region and work south of Highway 30 in the southern region. Regional adjustment factors apply to rental rates only and are not to be used to adjust hourly operating costs.

To make Regional Adjustments, multiply the monthly rental rate times the appropriate adjustment factor.

**B. Rate Adjustment Factor**

Equipment rental rate listings contain allowances for depreciation and replacement costs. FHWA has ruled that Rental Rate costs are not eligible for reimbursement unless the rate has been adjusted to eliminate depreciation and replacement costs. Therefore, Iowa DOT policy will be to apply Rate Adjustment Factors to both federal aid and non-federal aid projects.

Rate Adjustment Tables included in the front of each section list equipment in that section, date of equipment manufacture, and an adjustment factor. Instructions for using Rate Adjustment Tables are included in the "Introduction" section. Rate adjustments apply to rental rates only and are not to be used to adjust hourly operating costs.

To make Rate Adjustments, multiply the previously adjusted monthly rental rate times the appropriate adjustment factor.

**C. Rate Element Adjustment (Indirect Cost)**

Care needs to be exercised when applying rental rates to avoid cost duplication. [Specification 1109.03B](#) states: "No profit percentage shall be added to the rental rate." This is because rental rates published in the Rental Rate Book include indirect costs, i.e. some overhead and profit costs, insurance, taxes, licenses, office support, etc. Since specifications do not allow adding profit, the potential for duplication is eliminated and there is no need to use a factor for removing indirect costs. (This means: Pay what the previously noted adjustments amount to in rental rate, but no more.)

Rental Rate Books include a Rate Element Adjustment Factor for removing indirect costs. (Refer to the Rental Rate Book "Introduction" section should a deduction be needed.)

**Invoiced Rental Costs**

There are times where a contractor will obtain needed special or extra equipment at a rental facility. Iowa DOT reimburses rental costs for providing equipment and highly specialized attachments, equipment operating costs, and costs for an operator, and if necessary equipment support crew. Care needs to be exercised in checking how a rental arrangement is written. Sometimes operators are furnished in a rental agreement. In that case, the operator and/or support crew have to be removed from equipment rates and included on the force account form as hourly labor.

**Equipment Time Charges**

Charging equipment project time will be as follows:

**A. Equipment on the Project**

This can be equipment on the project that is owned, leased, or rented by the contractor. Rental time is charged when the equipment is physically working at the extra work site. Standby time will not be allowed for equipment which was on the project (prior to extra work) for work required by the contract. Further, rental time will not be charged when equipment is not working, no longer needed for the extra work, or not on the extra work site.



B. Equipment not on the Project

This can be equipment that is owned, leased, or rented by the contractor and is mobilized to the extra work site specifically for extra work. Rental time is charged when the equipment is working or is on standby available for work. Rental or standby time will not be charged when the equipment is no longer needed for extra work or not on the extra work site.

C. Standby Time

Standby time is that time a piece of equipment is at the extra work site, fully functional, and available for work. The use of a standby rate is appropriate when equipment has been ordered to be available for force account work but is idle for reasons which are not the fault of the contractor.

Standby time will not be charged for:

- nonworking hours
- nonworking days (calendar or working days)

D. Set-up Time

Often equipment transported to a work site will have to be assembled (set up) prior to being fully functional and available for work. Set-up time will be charged (on a working day basis) after off loading the equipment from a transporting vehicle and continue until it is assembled and available for work.

### Chargeable Project Costs

As previously noted, rental rates apply to equipment rented or leased for specific extra work items. Equipment often requires highly specialized (not common) attachments to functionally perform the work needed. Rental rates for these attachments will be calculated in the same manner as if they were a separate piece of equipment. For example: A dozer blade would not be considered a specialized attachment for a dozer. However, a special rock ripper for a dozer or a drill table for a crane (used to install drilled shafts) would be considered specialized attachments.

A. Rental Rate Blue Book

The formula to calculate hourly equipment rate is:

$$W = \frac{(\text{RR} \times \text{RF}) \times \text{RA}}{\text{HA}} + \text{HO}$$

Project cost is the hourly equipment rental rate (W), calculated above, times the number of hours charged for that piece during the project. This value is combined with any other extra work equipment costs and entered in the "Equipment" column on a Statement of Force Account. NOTE: Operator wages will be included with other "labor" costs on the Force Account sheet.

B. Standby Costs

Standby rates are calculated as 50 percent of rental rates, excluding operating costs. Using the Rental Rate Blue Book, standby rates are calculated as follows:

$$Y = \frac{(\text{RR} \times \text{RF}) \times \text{RA}}{\text{HA}} \times 0.50$$

Where:

- W = Hourly Equipment Rate (reported as \$ per hour)
- Y = Hourly Equipment Stand-by Rate (reported as \$ per hour)
- RR = Rental Rate (Use listed monthly rates)
- RF = Regional Factor (found in the front of each section)
- RA = Rate Adjustment Factor (found in the front of each section)
- HO = Hourly Operational Cost (as listed for each piece)
- HA = Hourly Adjustment (HA = 176, converts monthly to hourly)

C. Set-up Costs

Project set-up costs will be calculated and charged as standby time. (Refer to "B" above, and section "D" of Equipment Time Charges.)

D. Mobilization Costs

1. Mobilization and demobilization charges will not be allowed for equipment which was at the project for ongoing operations prior to the extra work.
2. Contractor owned (or long term leased) equipment which is brought to the extra work site from another project, or the contractor's yard, will have mobilization costs reimbursed based on hauling time to the project. Rental rates as calculated in Equation Number 1, times the hauling time will be applied for mobilization costs.

NOTE: Only equipment needed for the extra work and not already on the project will be considered for mobilization reimbursement. Demobilization time (or costs) will not be included for payment.

3. Equipment leased specifically for extra work and transported by the contractor will have mobilization time reimbursed as outlined in D. 2. above. Demobilization time (or costs) will not be included for payment.
4. Equipment leased specifically for extra work which is transported by the lessor, or a third party, will be reimbursed on an invoiced basis. Demobilization costs will be reimbursed if the equipment is returned to a lessor's yard.

**Force Account Sheets (Form 181213)**

Equipment force account sheets (Form 181213) completed and signed by the contractor at the end of each day document hours charged to equipment for that day. After the ordered extra work has been completed, total hours charged for equipment can be combined and tabulated on a summary force account sheet.

**2.36 CHANGE ORDERS (FORM 830240)**

A Change Order is a written order to a contractor for extra work, increase or decrease in contract quantities, or changes to the plans or specifications.

Change Orders are used to:

- Change the authorized quantity of a contract item. This includes increases or decreases 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 Office of Finance to enter changes and additions into the Contractor Pay System. Ultimate results of this endeavor are changes to items, or additional items, appearing on a Progress Voucher.

- Officially document changes to the contract documents. Change Orders are written orders to a prime contractor (or consultant) which are initiated and prepared by the project engineer. Once signed by all parties, these orders become legally binding contract documents ordering a specific change to the original contract.

### Policy for Change Orders

#### A. Contractor Markup

**Subcontracted Items.** Items added to a contract, and performed by a subcontractor, entitles a prime contractor an allowance to cover administration expenses. This markup is not to apply to incentive payments or other specified items covered by specifications. The percentage allowed per [Specification 1109.03B](#) is to be applied to each individual item of extra work which is performed by a subcontractor. The amount of mark-up shall be included in the unit price and not as a separate item such as “Contractor’s Mark-up”.

**Contract Unit Price.** Change Orders covering overrun/underrun of items at contract unit price are NOT eligible for any additive. This includes work which was done by a subcontractor. The contract unit price should have already considered any necessary additives for administrative expenses.

A contractor may request a price adjustment to recover lost administration expense for underruns amounting to more than 25% of the bid amount for a major item of work. A contractor is allowed to recover that portion of lost administration expense represented by the difference between the actual quantity and 75% of the original contract quantity.

Price adjustment may be made to reduce the cost of major items of work which overrun by more than 25%, 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%.

**Agreed Unit Price.** Change Orders, based on an agreed unit price, or lump sum, shall 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 workup sheet.

**Force Account.** Specified force account percentages for labor, material and equipment 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.

#### B. Situations that require processing a Change Order:

- Any change in the original scope or intent of the project, i.e. changing the project limits which results in overruns, underruns, or new contract items amounting to \$10,000 or more. (Contact the Office of Construction because processing a Staff Action may be required prior to writing the Change Order.)
- Overrun/underrun amounting to \$50,000 or more on any contract item
- All price adjustments
- Haul road costs
- Liquidated damages

- Authorization for an external voucher
  - Value engineering proposals
  - Incentive/Disincentive payments
  - Added items
  - Change in specification
  - Plan revision
  - Extension of contract time
- C. Price adjustments which reduce payment for an item are occasionally charged because material or quality of work is below minimum specified standard. These adjustments are applied when the project engineer has determined a problem that lacks a level of severity warranting removal and replacement. However, the problem does affect life cycle costs or could cause premature maintenance costs. For example: Rain damage, out of tolerance slump and/or air content, deficient smoothness, and insufficient pavement thickness. On the other hand, price adjustments could provide an "incentive or reward" for exceptional work. In these cases, a project value is added due to increased diligence on the contractor's part. Examples are exceptional smoothness and extra pavement thickness.
- D. Mutual benefit agreements require a Change Order to document changes.
- E. Reducing the final quantity of an item to zero requires a Change Order if the original contract quantity is \$50,000 or more.
- F. Settlement of liquidated damages (See [Construction Manual 2.34](#)). Contract proposals will list a daily rate (dollar value) for liquidated damages. Change Orders written for liquidated damage assessments are written as nonsubstantial for Iowa DOT work. Refer to Incentive/Disincentive provisions below.
- G. Incentive/Disincentive (I/D) provisions are included to provide the contractor with an "incentive" to complete a project early or a "disincentive" if the project is completed late. I/D provisions will list daily rates to be applied to "critical closure" times. Change Orders written for incentive/disincentive payments for early/late completion are considered substantial.
- H. Value Engineering proposals are encouraged for all aspects of Iowa DOT work. (Refer to Value Engineering later in this section.) Change Orders for implementing value engineering proposals are Substantial and shall document the terms and changes being implemented.
- I. External vouchers issued to a vendor, an outside governmental agency, or a third party that are chargeable to a project will require a Change Order. The Change Order must be prepared and forwarded for signature to whomever will generate the invoice. After the Change Order is signed, an external voucher can be processed based on an original invoice. For example: Payments to counties for haul roads will first require a Change Order written to the county, then an external voucher can be processed to pay haul road costs. The Change Order should be attached to the external voucher when it is submitted. In addition, a staff action shall be approved for material and equipment costs charged to a project greater than \$50,000.

- J. Items NOT Requiring a Change Order
  - 1. Deletion of item with original contract amount less than \$50,000.
  - 2. Overruns and underruns less than \$50,000 based on category amount.
- K. Plan Revisions

Often, plan revisions result in Change Orders having to be negotiated due to new and/or changes to contract items. 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 engineers 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 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 Classification and Authorization**

Change Orders are divided into two classifications, substantial and nonsubstantial. These classifications are further divided into Federal participating and Federal nonparticipating. Project engineers are to identify each Change Order as either substantial/nonsubstantial and participating/nonparticipating. Once a Change Order has been classified there are specific approvals, based on a classification, which must be obtained.

With the exception of change orders that exceed \$50,000 involving extension of project limits, all substantial change orders require the approval of the Office of Construction. The District Engineer will provide final approval authority for substantial change orders on projects where the project limits are extended with extra costs greater than \$50,000. In addition, FHWA concurrence is required for substantial change orders on contracts that have FHWA oversight. Refer to [Appendix 2-31](#) for the Change Order Authorization Matrix.

The FHWA will have project oversight (including approval of all Substantial Change Orders, regardless of funding source) on federal-aid interstate contracts that add mainline capacity, include complex features or considered high risk or "major" projects. Projects with FHWA oversight will typically include the prefix IM, BRFIM, etc.

*(Refer to PPM 130.01 for additional information about federal funding on specific types of projects.)*

The following guidelines shall be used to determine classification and approvals needed prior to processing a Change Order.

- A. Substantial
  - 1. Determination

The Office of Construction shall be consulted if there is a question about individual contracts; however, the following general rules apply:

- a. Changes or extra work requiring new contract items to be added amounting to \$50,000 or more per item. This includes lump sum agreements, force account, and agreed price settlements.
- b. Change Orders that include an overrun or underrun of an original contract item amounting to \$100,000 or more.
- c. Changes to the Method of Measurement or Basis of Payment of a contract item or changes to price adjustment schedules for defective work detailed in the Construction Manual.
- d. Re-negotiation of a contract item's unit price.
- e. Haul road costs amounting to \$100,000 or more (Haul road costs are nonparticipating.).
- f. Value Engineering proposals in accordance with [Specification 1105.15](#).
- g. Modifications to the terms of a contract, such as changes in contract periods. An extension to contract time is considered nonsubstantial. Refer to [CM 2.34](#).
- h. Adjustment in time of critical closure periods, including lane rental periods.
- i. Installation of locked gate in interstate right-of-way fence (includes federal-aid and non federal-aid projects. Refer to [C.M. 3.71](#))
- j. Changes in limits of contract or scope of work.  
Prior to the work in the extended area, for federal-aid projects, the following items must be accomplished, regardless of the funding source for the extra work:
  - NEPA – Location and Environment staff have reviewed environmental documents and documented the extended area is clear
  - Document the work to be performed is either cost effective or in response to an emergency.
  - FMIS – Request Office of Finance staff to request a change in scope of work and project limits in FMIS (Financial Management Information System). Also, included are the dates for “revised NEPA clearance” and “cost effectiveness determination”.

## 2. Authorization and Approval

When a Change Order is classified as substantial, the project engineer must obtain pre-approval from the District Construction Engineer who in turn must notify the Office of Construction.

District staff shall initiate a Staff Action for approval by the Division Director for contract modifications involving a net increase of \$50,000 which meets one of the following conditions:

- The work involves changes to the approved project concept
- The work constitutes an extension of project limits.

Interstate reconstruction contracts and other contracts with FHWA oversight must also be approved by the FHWA Transportation Engineer before any substantial extra work can be started, including all non-participating, substantial contract modifications. Concurrence may be obtained by the:

- a. Project engineer during a visit to the project by the FHWA Transportation Engineer. (This method may not be applicable if time is an issue.)
- b. District Construction Engineer contacting the Office of Construction for assistance in obtaining FHWA concurrence.
- c. District Construction Engineer contacting the FHWA Transportation Engineer directly.

When an overrun is approaching \$100,000 on any single item, the Office of Construction shall be advised so FHWA concurrence can be obtained, if required, before the \$100,000 cost is exceeded.

Refer to "Preparation of Change Order" that follows. The original Change Order is sent to the District Construction Engineer for signature. After signing, the District Construction Engineer will forward the original Change Order and 2 copies to the Office of Construction for further processing. Once all signatures have been obtained, the Office of Construction will return three completed copies to the District Office. The District Office will retain one and forward two copies to the project engineer, one for filing and one for distribution to the contractor.

## B. Nonsubstantial

### 1. Determination

Nonsubstantial Change Orders will not be submitted to FHWA, but will be reviewed for approval at the time of FHWA final project inspection.

Examples of nonsubstantial Change Orders are:

- a. Price adjustments made to the contractor in accordance with prescribed guidelines in the *Construction Manual* and/or contract documents, such as (not all inclusive):
  - Changes in piling length
  - Jetting pile
  - Heating and protection of concrete
  - Price adjustments (plus or minus) for smoothness and pavement thickness, fuel adjustment
  - Price adjustments for liquidated damages
  - Price adjustments for rain damaged pavement
- b. Lump sum agreements, force account, and agreed price settlements less than \$50,000.
- c. Change in contract quantity at contract unit price when variations from the estimated plan quantities are not due to a plan or design change and do not equal or exceed \$100,000.
- d. Haul road costs less than \$100,000 (Haul road costs are nonparticipating.).
- e. Change Orders written to a Maintenance Office for project related expenditures. All such costs are also nonparticipating.
- f. Total deletion of a contract item that has a bid amount greater than \$50,000.

### 2. Authorization and Approval

Change Orders classified as nonsubstantial will be prepared by the project engineer and approved by the District Construction Engineer. These can be participating or nonparticipating. District Construction Engineers will review the participating or nonparticipating determination and make corrections if necessary.

After approval, the District Construction Engineer will return two copies to the project engineer, retain one copy, and forward the original and 1 copy to the Office of Construction.

## C. Participating/Nonparticipating

Participating or nonparticipating are applicable to both substantial and nonsubstantial Change Orders and indicate FHWA's approval to participate (or not participate) in

any particular cost item. On federal-aid projects, the project engineer will indicate whether an item is "participating" or "nonparticipating." District Construction Engineers will review the participating or nonparticipating determination and make corrections if necessary.

Most items, on federally funded projects, are eligible for federal participation. REMEMBER: Always ask and obtain approval before proceeding. Examples of items which may not be participating are:

- Costs relating to field mistakes. These could be errors by the contractor or Iowa DOT inspection forces.
- Costs between other Iowa DOT offices or other governmental agencies. For example: Payments to local Maintenance staff for HMA tapers or shoulder aggregate placed in an emergency, or payments to counties for haul road costs.
- Unincorporated material

#### D. Administration Details

- The District Construction Engineer may authorize a project engineer to approve nonsubstantial Change Orders. Iowa DOT project engineers may subdelegate the approval for Change Orders and intermediate progress vouchers to the Construction Technician Supervisor.
- The District Construction Engineer may authorize a senior engineering technician to approve nonsubstantial Change Orders and intermediate pay vouchers at the District Office level.
- The project engineer must perform an analysis of proposed Change Order prices to ensure that costs are reasonable. This justification is to be documented in the project file and summarized on the Change Order. (Refer to "Checklist for Change Orders" for additional information.)

#### Checklist for Change Orders

- All Change Orders shall be agreed to by the contractor, and have all necessary approvals prior to commencing additional work. The only exception to this rule is Force Account Work, where a formal pre-agreement shall be in place identifying: (a) hourly costs for labor and equipment, (b) how to charge materials, i.e. invoice costs.
- Substantial Change Orders for interstate reconstruction contracts and other selected contracts with FHWA oversight shall have FHWA's concurrence prior to starting any extra work.
- Project engineers shall conduct an independent cost analysis for items added or changed by a Change Order, prior to agreeing to those costs. NOTE: Extensions of, or modifications to, existing contract quantities do not require a cost analysis.

Some acceptable methods to justify change orders are:

- a. Original copies of material quotes
- b. Comparable prices to the "Summary of Awarded Prices"
- c. Independent cost check of area suppliers
- d. Previous Change Order costs for like items
- e. Rental Rate Blue Book (for equipment)
- f. Davis-Bacon wage determinations (for labor)
- g. Contractor's certified payroll (for labor)
- h. Similar contracted items on previous projects

- Impacts on time should be considered when the contract modification for extra work is written. If the impacts can be quantified, the number of days may be addressed in



the contract modification. But, in many situations, the impact on contract time may not be known until the work is performed.

Impact on time to perform extra work should may be addressed in the contract modification in one of three ways:

- a. No change in contract time
- b. Contract period will be increased by “X” working days for this extra work
- c. Impact on time for this extra work will be reviewed at a later date

### **Preparation of Change Order (Form 830240)**

Project engineers are responsible to prepare one original "Change Order" form, obtain the contractor's signature, sign themselves, and forward that original to the District Construction Engineer (DCE) for signature. The DCE forwards the signed original Change Order to the Office of Construction. The DCE shall include two copies of substantial Change Orders for FHWA oversight projects and one copy of Change Orders for all other projects. Ultimately the original Change Order is filed in the Office of Finance.

Each contract, on single project contracts, or each project on multi-project contracts requires preparation of separate Change Orders for changes or additions. If Change Orders are prepared listing both participating and nonparticipating items on one Change Order, there shall be a clear note provided indicating which items are participating.

Currently, there are two systems for processing change orders and contractor payment:

- The Contract Construction Progress Voucher system utilizes paper vouchers (Form 181013, sometimes referred to as 309's) for processing progress payments through the Contractor Pay System (CPS).
- The FieldBook2/FieldManager programs initiate contractor payment and change orders in the field and export the data to CPS for processing of the payment.

Refer to the FieldBook and FieldManager User Guides for instructions for generating Change Orders/Contract Modifications. The reason for proposed changes shall be included for existing and new items. The justification for costs shall be included for new items (Refer to the following instructions in Section C for Form 830240). In addition, the following information should be added to the top of the form:

“Non-substantial” or “Substantial” (and concurrence date)

“Part” or “Non-Part”

The 5-digit Accounting ID Number

Project Number on FieldManager contract modifications

The procedure for completing Change Orders in the Contract Construction Progress Voucher system follows:

The front side of the form may be completed using the PDF version form 830240 (dated 7-00) or the Word version 830240wd (dated 7-00). All information must be furnished (i.e. substantial/non-substantial and participating/non-participating designations).

It is important that the information is in the standard format because the data is manually entered into the Contractor Pay System.

### **Section A**

Section A is used to provide a description of the work to be completed or the change to

be made. All descriptions should be brief and to the point. Typically, new items (8XXX) added to a contract will need to identify new specifications, special design details or standards which are implemented as a result of the change. Section A should include that information. For example:

- |             |   |
|-------------|---|
| 7XXX Change | Increase item for "Class 10 Excavation, Roadway & Borrow".  |
| 8XXX Change | Add an item for "Silt Basins". Work shall be in accordance with the Pollution Prevention Plan provided for in the contract documents. |
| 8XXX Change | Add an item for "Sealing Wells". Work shall be in accordance with <a href="#">Specification 2538.03.D.8</a> .                         |

#### Section B

"Section B" provides space for a brief narrative of reasons (or background) for ordering the extra work, adjustment, or changes outlined in Section A.

The explanation should be in sufficient detail and clarity to provide understandable reasons why the work or change is necessary. A statement such as "Extra Work ordered by the Engineer" or "As per plan revision" is not a sufficient explanation.

#### Back Side of Form

The Accounting I.D. must be included in the 5 spaces in the upper right hand corner. For bridge and culvert projects, a "1" must be entered in the "Group" box.

#### Section C

The basis and justification for the cost of the extra work is to be explained in Section C. An extension of contract unit price(s), and prices established in the contract documents do not need further justification. However, agreed unit price(s), agreed total price, lump sum, and force account basis do require justification.

Examples of justification could be:

- Agreed price is comparable to item xxxx (a similar item).
- Cost is justifiable based on Rental Rate Blue Book values and analysis is included in the project file.
- Agreed price is based on invoiced prices and estimated labor cost is comparable to item xxxx (a similar item).
- Individual costs have been agreed to be based on certified payroll expenses, invoiced rental rate charges, and actual material invoiced.
- Summary of analysis is attached. (Use for very brief analysis.)
- Summary of costs and analysis is included in the project file.

If all or part of the cost is based on an actual invoice from the contractor, do **NOT** attach a copy of the invoice to the work order. Show the invoice cost on the work order and state: A copy of the invoice is filed with the project.

If costs for work cannot be agreed upon, the extra work must be performed on a force account basis. In such case, the Statement of Force Account (Form 181213) is used. [Specification 1109.03B2](#) provides guidance and responsibilities for preparation of Force Account forms.

#### Section D

Changes to "original contract items" are entered in this section. Department policy requires increases, decreases, or deletions to be sequentially numbered beginning with 7001. NOTE: Change Orders written as "Mutual Benefit" do not have entries in this

section.

Section "D" is completed as follows:

- The first column "Change Number" is used to list each change to contract items. As noted above, the first entry will be change number 7001. NOTE: Sequential Item numbering continues from one Change Order to the next. For example: Change Order #3 ended with change no. 7006. The next Change Order with changes to contract items will begin with change no. 7007 and continue.
- The second column "Line Number" identifies the specific contract item affected by a particular change. The line number is the four-digit number identifying the specific contract item and can be found in the contract.
- Third column "Unit Price" is completed by placing the contract unit price of the affected item. All unit prices are entered to 3 decimal places. For example: If Structural Concrete had a contract unit price of \$250.00 per m<sup>3</sup> (yd<sup>3</sup>), it would be entered in column 3 as 250.000.  
NOTE: Lump Sum items are entered with a unit price of 1.000.
- Fourth column "Quantity" is used to enter the adjustment's quantity. (How much quantity is being changed?) Again, quantities are entered to 3 decimal places. For example: Structural Concrete is being increased 53 m<sup>3</sup> (yd<sup>3</sup>). The "Quantity" would be entered as 53.000.  
NOTE: Lump Sum items have the agreed cost (in dollars) entered in the quantity column. For example: Assume some item of work will be deleted. That item was bid as lump sum with a unit price of \$500. Then 500.000 would be entered for the "Quantity." (Do not forget to include "CR" when entering this item's "Amount.")
- Fifth column "Amount" is typically a calculated amount (total dollars) represented by a single entry. For example: Structural Concrete is being increased by 53 m<sup>3</sup> (yd<sup>3</sup>) at a unit price of \$250 per m<sup>3</sup> (yd<sup>3</sup>). The dollar amount of this change would be 53 x 250 = \$13,250.00. "Amounts" are entered to 2 decimal places.

**NOTE:** Care must be exercised to identify decreased and deleted contract items. Obviously, the amount is negative for these types of adjustments. To indicate "negative" values, the letters CR (for credit) must follow the numbers in both the "Quantity" and "Amount" column. Failure to correctly enter negative values could result in increased payments to the contractor, when in reality reduced payments were required.

#### Section E

Changes to the project which involve *items NOT originally included in the contract* are entered in this section. Department policy requires additional, or new, items to be sequentially numbered commencing with 8001. Items added by 8xxx will appear on the pay voucher as an 8xxx item after the Change Order has been processed. Once an 8xxx item has been added, changes to that item shall be considered as original contract items and processed as 7xxx items.

Currently there are two 8xxx items which have special significance. 8998 is used solely for indicating liquidated damages and 8999 is used for stockpile of materials.

NOTE: Change Orders written as "Mutual Benefit" do not have entries in this section.

Section E is completed as follows:

- The first column "Change Number" lists each additional, or new, item being added to the contract. Change numbers begin with 8001 and continue sequentially

- throughout a project.
- The second column "Item Description" identifies an addition by properly describing the bid item according to the items "Method of Measurement" and "Basis of Payment." Since descriptions are now referenced to specification sections, it is mandatory to check and use pre-existing bid item descriptions. For items which have no description, i.e. those which are typically incidental to a bid item, enter a short descriptive phrase. Pre-existing bid item descriptions are provided in the "Bid Item Description" book or listed in the "Summary of Awarded Contract Prices" book. Both books are published annually by the Office of Contracts.
  - Third column "Item Number" is a 12-character code (11 digits and a dash) assigned to each pre-existing bid item description. The first 4 numeric digits of an item code correspond to the section of the Standard Specifications where the item can be found. The last 7 numeric digits are unique coding to a particular bid item. Refer to "Summary of Awarded Contract Prices" or "Bid Item Description" books for these numbers. If not able to determine the item number, enter "None".
  - Fourth column "Function Code" represents a type of work. These codes are 3-digit numbers listed by work type in *PPM 110.03*. Use a code which best describes the type of contract work. For example: Function code 410 would be used for earthwork and grading, while function code 430 would be used for major structures.
  - The last 3 columns (Unit Price, Quantity, and Amount) are used in the same manner as explained for 7xxx items in Section "D" above.

### Value Engineering

In accordance with [Specification 1105.15](#) a contractor may submit a value engineering proposal to the project engineer with copies to the District Office and the Office of Construction. 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 HMA 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 4.6 m (15 ft) PCC joint spacing. A value engineering proposal would not be accepted changing this to 6 m (20 ft) because "RH" standards have included this spacing as an acceptable standard.

The written proposal shall have sufficient detail to be evaluated for compliance with the requirements and limitations of [Specification 1105.15](#). 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 Change Order 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 engineer should (a) discuss merits of VE proposal with the District Construction Engineer, and (b) initiate an office review and forward review comments to the Office of Construction within a week. The Office of Construction will coordinate the review with other offices, including selected section leaders (Design and/or Bridges & Structures) and FHWA if appropriate. Following this review the Office of Construction will notify the District Construction Engineer and project engineer of approval or disapproval, and any special considerations or requirements.

Following notification from the Office of Construction, the project engineer 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 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 as a result of 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 Iowa DOT has established a goal of 10 days to complete the entire review and notification process.

## 2.37 PROJECT ACCEPTANCE AND AUTHORIZATION FOR FINAL PAYMENT

### Project Acceptance (Form 830435)

Immediately after completion and acceptance of a contract, the project engineer will prepare and sign Form 830435 (435). Form 830435 shall be processed when all work is satisfactorily completed on all projects on the contract (only one Form 830435 per contract, rather than one per project). For multi-project contracts, list all "PROJECT NOS. AND ACCOUNTING ID NOS." included in the contract.

Form 830435 shall be completed and forwarded to the District Construction Engineer within one week of "field" completion and acceptance of the contract. In essence, this means construction work is complete and the contractor does not need to come back. However, processing Form 830435 should **NOT** be held up waiting for finalization of paperwork, including material certifications and/or "Change Orders."

#### A. Preparation

Preparing a "Statement of Completion and Final Acceptance of Work" (Form 830435) is self-explanatory. All applicable blanks are to be completed.

1. It is important to list specified and charged working and/or calendar days.  
"Charged" working/calendar days should reflect the project engineer's final determination. If the days are different than indicated on the final "Weekly Report of Working Days" (Form 830238), a corrected "Weekly Report of Working Days" shall be prepared correcting the number of days (working or calendar) charged.
2. The top row and multi-columns are for reporting days charged to individual structural design numbers that may be included in the contract. These extra columns are, also, to be used for reporting any intermediate construction periods

specified on a contract. In all cases, the days (working or calendar) specified and actual days charged should be shown.

3. General Tidbits

- Field Completion Date/All Contract Work Completed: The actual date a "contract" is completed by the contractor
- Actual Start Date/Construction Started Date: The date the contractor commences work on the contract.
- Project Acceptance Forms (830435) will not be revised and resubmitted to document a change in the number of working/calendar days charged. If changes in the contract period occur after submitting Form 830435, submit a corrected "Weekly Report of Working Days" (Form 830238).

B. Disposition

The project engineer, after signing Form 830435, shall forward original to the District Construction Engineer who signs within two weeks and:

- Retains one copy for the District Office
- Returns two copies to the project engineer (one for prime contractor and one for project file)
- Forwards the original and two copies to the Office of Construction for further distribution

**Authorization for Final Payment (Form 830436)**

In executing this form, the project engineer certifies that all tests and measurements have been received, documented, reviewed, and accepted or properly adjusted through price adjustments. NOTE: Price adjustments relating to any issue, on a particular contract, must be made before final payment is released.

Any measurements or test results for material incorporated into the project that fall outside the specification limits are to be reported on a separate sheet or sheets if needed and attached to the original copy of this form.

A. Preparation:

Authorization for Final Payment (Form 830436-dated 10-01) will be required at the conclusion of any "Contract," regardless if the contract contains a single project or multiple projects. One 436 shall be processed for all contracts.

The blanks on Form 830436 are self-explanatory. Price adjustment(s) are entered in the space provided above the Project Engineer's signature block and a list of the non-complying tests shall be attached to the Form 436.

B. "Reasonably Close Conformity"

[Specification 1101.03](#) provides a definition for Reasonably Close Conformity. The District Construction Engineer should be consulted when determining compliance with, or the application of, "reasonably close conformity" for any questionable item. Reviews of test reports and work evaluation are also to be made in the District Office. Before recommending authorization for final payment, the requirements of [Specification 1105.04](#) must be followed, particularly the last three paragraphs. Work which is not in "reasonably close conformity" but allowed to remain in place, shall be price adjusted. Guide schedules for determining price adjustments other than those covered by specifications are included in the [Construction Manual 2.53](#).

If the recommended price adjustment differs appreciably from the schedule, the

recommendation should be submitted to the Office of Construction for approval. All price adjustments must be made using a Change Order. Unacceptable work (for any reason) which affects safety should be removed and replaced.

#### C. Noncomplying Tests

When there have been noncomplying tests, each occurrence must be reported and summarized on a sheet attached to Form 830436. Format used for noncomplying test reporting is provided in [Appendix 2-33](#). The report should include:

1. A list of all tests or measurements that have resulted in price adjustment(s). As shown in the example, only Change Order number, amount of adjustment, and basic information needs to be listed.
2. Amount (dollars and quantity) of the price adjustments are totaled and entered in the appropriate space on the face of the form.
3. Noncomplying items for which no price adjustments were made are listed, measurements of that noncomplying material provided, along with a brief explanation of action taken in the appropriate column. If a detailed explanation is needed, it should be written in a separate letter and attached to the listing. Example of this situation would be noncomplying tests that are within reasonably close conformity.

#### D. Disposition

Project engineers shall assemble a "package" of documents, as listed in [Construction Manual 2.45](#) for all completed contracts. This package shall include a signed Authorization for Final Payment (Form 830436).

- Original Form 830436 and any attachments are forwarded to the District Construction Engineer for signature.
- Original signatures of both the District Construction Engineer and the District Materials Engineer are required.
- The District Office will retain one copy for their office files:
  1. Return two copies to the project engineer (one for prime contractor and one for project file)
  2. Forward the original with other final papers to the Office of Construction for further processing

### 2.38 CONTRACTOR EVALUATION REPORT

For FieldManager contracts, a Contractor's Performance Evaluation (CPE) must be completed and approved for the Contractor and all subcontractors before the final voucher can be created.

Refer to the FieldManager User's Guide Section 6-5 for instructions on completing contractor performance evaluations.

After the contractor performance evaluations are completed, send the file as an email attachment to [contracts@dot.iowa.gov](mailto:contracts@dot.iowa.gov), with the subject line of "CPE".

The intent of an evaluation is to report strength and/or weakness of a contractor's project related activities including paperwork, material documentation, attitude, and cooperation. Special attention should be given to a contractor rating below 50 points. Remarks are required for any individual item(s) that is rated less than 50%. Remarks are also required when a contractor is given a 100% rating.

The Office of Contracts maintains a database of contractor evaluation ratings, reacts to low evaluations, and seeks to improve contractor project administration. Evaluations are also used as a factor to establish bidder qualifications. Therefore, it is very important that contractors are evaluated realistically, factually, and without bias.

It is anticipated that lower than average ratings would have been discussed at a meeting between the project engineer and contractor representatives prior to form submittal. A contractor should have an opportunity to discuss and understand why a low rating was given. Further, a contractor should be given (if requested) a critique of corrective actions which would prevent reoccurrence of low rating(s).