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PRACTICES TO COMPENSATE PARTIES FOR DELAYS IN HIGHWAY CONSTRUCTION PROJECTS

SUPPLEMENTAL REPORT

**Prepared for
National Cooperative Highway Research Program
Transportation Research Board
National Research Council**

TRANSPORTATION RESEARCH BOARD

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16. Abstract <p>This Supplemental Report present a synthesis of the best practices for compensating parties for delays in highway construction projects. Delays are categorized into three types: excusable, compensable, and noncompensable. Methods and management procedures for determining the amount of delay days are discussed. Procedures for determining the cost of compensable delays are presented. Cost issues are covered for direct cost items of labor, material, equipment, and subcontract costs. Additionally, indirect or overhead cost determination is presented. Example contract specifications from various state highway agencies are included. Delay claim issues regarding acceleration and no-damage-for-delay contract clauses are discussed. The more specific subject of resolving compensation issues for utility-related delays is discussed. Recommended best practices are given, including fundamental principals and specific recommendations.</p>			
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SUMMARY

This report originated as part of a larger study, "Avoiding Delays During the Construction Phase of Highway Projects," NCHRP Project 2-24(12). The primary report identifies the leading root causes of delays and recommends strategies to avoid and mitigate the effects of delays (Thomas and Ellis, 2001). In the event a delay does occur, the issue of compensation must be also be resolved. As the research evolved, it became clear that in the event of a delay, the effective resolution of the delay was an issue of critical importance. The subject was considered significant enough to warrant a separate reference document. This report addresses state highway agency (SHA) practices used to compensate parties for delays during highway construction projects. It is a supplement to the primary final report, providing additional specific information on the administration and management of contract issues when a delay event occurs.

The process of resolving delay compensation issues begins with determining the appropriate category of delay. Delays are classified in three categories:

Excusable – The contractor is granted additional time because of the delay but no monetary compensation.

Compensable – The delay is the responsibility of the owner. The contractor is compensated by the granting of additional time and may be due additional monetary compensation.

Non-Excusable – The delay is the responsibility of the contractor. The contractor is not granted additional time or money.

Determining appropriate time compensation for excusable and compensable delays requires an analysis of the project record and the updated project schedule. These two project management tools are critical in resolving delay compensation issues. Only activities that affect the project's completion should be considered. These types of activities may be called "controlling work items" on projects scheduled with bar charts, and are called "critical" activities on projects scheduled with CPM schedules. Care must be given to checking for concurrent delays that may exist and be the responsibility of the other party.

Calculation of delay cost requires an understanding of the division of indirect and direct construction costs for the contractor. Indirect costs are those costs that are general in nature and cannot be assigned to a specific project. Direct costs are attributable to a specific project. The first step in determining direct costs involves the identification of appropriate cost items that are typically established from project records. Quantities of cost items, such as equipment, are extended based upon the established delay time analysis. The next step is to determine an appropriate unit price for each of the cost items. The use of a standard equipment cost reference facilitates determining appropriate equipment unit pricing. Specifying a set overhead and profit percentage simplifies the

calculation of these compensation components. Other related delay cost issues such as acceleration, loss of productivity, and extended home office overhead are also discussed.

Utility delays remain a leading cause of construction delays on highway projects. Some, but not all utility delays are caused by the performance of the utility. Typically, these delays result from a failure to accomplish a relocation by the required date. In the short term, the partnering approach using communication and coordination appears to be the best strategy. SHAs can work toward developing a project team environment where all parties accept responsibility for their performance. However, for most SHAs, the long-term goal should be to revise utility right-of-way agreements to provide a more equitable accountability.

Based upon the lessons learned while conducting the research, the following four fundamental principles are offered, which relate directly to the successful resolution of delay issues.

Allocation of Risk—Responsibility should be clearly assigned to the party best able to manage the issue.

Clear Language—Contract provisions should clearly define procedures and responsibilities for all parties in the event of a delay.

Equitable Compensation—Compensation procedures should attempt to return the injured party to the position they were in prior to the delay.

Early Resolution—Procedures for determining entitlement and compensation for delays should provide for the earliest possible resolution of issues.

In this report, a number of recommendations are suggested for improving the delay resolution process. These recommendations were selected because they address the most frequent problems encountered in resolving delay issues.

Finally, a number of the delay-avoidance recommendations included in the previously cited final report are also recommended as good procedures to improve the process of determining delay compensation.

CHAPTER ONE

INTRODUCTION

THERE ARE NO PERFECT PROJECTS

Change and unexpected events during construction projects are inevitable. Even with the best delay-avoidance practices, delays can occur. Highway construction is a dynamic process subject to the effects of many factors. Common causes of delays include adverse weather conditions, differing site conditions, changes to the work, utility conflicts, and late material deliveries. Some delay causes are beyond the control of the parties to the contract. However, projects may be delayed because one of the parties has failed to fulfill a contractual obligation.

Clearly, time is money. When a delay to a highway construction project occurs, there is additional cost. Typically all of the project participants are affected. The owner incurs additional costs for administrating and financing the project. Project delays also result in additional costs to road users and affected businesses. The construction contractor's project cost is directly affected by project delays.

Although compensation by one party to another as a consequence of project delay is provided for in current construction contracting practice, considerable variability exists in the procedural rules from one state highway agency (SHA) to another. Disputes involving contract time extensions, assessment of liquidated damages, and delay claims by contractors are disruptive and divisive. This type of conflict can damage relationships and jeopardize the success of the project. What is needed first is an equitable allocation of delay risk among the contract parties, and second, an efficient management process for resolving delay-compensation issues.

STATEMENT OF THE PROBLEM

The way in which delay issues are resolved and injured parties are compensated can directly affect the successful completion of the project. Without an efficient and fair system for resolving delay issues, disputes can arise. Unresolved disputes damage working relationships and can cause a deterioration in project performance.

Even though the contract issues are the same in every state, many variations exist in the manner in which the issues are approached. Some owners have attempted to protect themselves through onerous risk-shifting contract language. Quite often, implementing risk-shifting contract language without regard to each party's reasonable ability to manage the risk will not produce the desired outcome. Contractors equate risk with cost, and therefore construction costs may rise.

Given the complexity of today's construction contracts and the variability of procedures among SHAs, there is a need for a common reference that addresses the fundamental issues and provides recommendations for best practices.

OBJECTIVES

The goal of this report is to present practices that, when used, will facilitate the efficient and equitable resolution of delay issues relating to construction delays on highway projects. Specifically, the objectives are:

- Provide a discussion of the fundamental contracting issues relating to delays in highway construction, with examples of current practices.
- Provide recommendations for best practices and procedures for resolving contract issues relating to delays in highway construction, including compensation of injured parties.

SCOPE

The content of this report was originally to be included in the NCHRP research final report, *Avoiding Delays During the Construction Phase of Highway Projects*, for NCHRP Project 2-24(12). However, the subject of compensating parties for the consequences of delays was thought to be important enough to merit a separate publication. Therefore, this document is offered as a supplemental reference report to the above-referenced final report.

This report provides a synthesis of the relevant issues with regard to managing compensation as a result of project delay. Representative examples of procedures and practices from different SHAs are included. Finally, recommendations for best practices are suggested.

CHAPTER TWO

DIFFERENT TYPES OF DELAYS

Delays may be classified by the way in which they are addressed by the contract between the owner and the contractor. Different actions and obligations are provided in the contract for different types of delays.

EXCUSABLE DELAYS

When an excusable delay occurs, additional contract performance time is granted to the contractor. Usually, the contract specifies which types of delays are to be considered excusable. The general test for qualification as an excusable delay is:

1. The delay must have been unavoidable.
2. The delay must have been unforeseeable by the contractor at the time of bid.

Common excusable delays are: unusual weather conditions, labor strikes, and Acts of God. Some contract forms attempt to enumerate all possible qualifying excusable delays, while others end the list with a catch-all phrase such as “other causes beyond the control and without fault or negligence of the contractor.” Most SHAs use a “working day” concept when addressing contract time-performance issues. The allocated time provided for the contractor’s work performance is expressed in working days. A working day is a day when work on a major work item of the project could have proceeded. Usually holidays and weekend days are not counted. Days when work could not proceed because of weather or other causes beyond the control of the contractor are also not counted as working days. As an example, consider the following contract language from the Washington State DOT.

**Washington State Department of Transportation, Construction Manual
M41-01**

1-2.5B Working Day Charges

Time associated with each phase of work established in the contract is to be shown on the Weekly Statement of Working Days.” “The purpose of this statement is to advise the Contractor about the Project Engineer’s decision for each passing day. Was it a non-working day, a chargeable working day or an unworkable day? In evaluating each day, the Project Engineer should take into consideration the following conditions:

- 1. The effect of inclement weather on critical activities.**
- 2. The effect of conditions caused by inclement weather on critical activities.**
- 3. Traffic restrictions imposed by the contract or the Project Engineer or other events or conditions beyond the control of the Contractor that affect a critical activity, except where the contract prevents the allowance of unworkable days for specific reasons.**

If any of the above conditions prevent work or reduce the Contractor's efficiency on critical activities on the project, working-day charges must be adjusted accordingly. If no work can be performed on critical activities, an unworkable day should be granted. If the Contractor is able to continue work on critical activities but the efficiency is significantly reduced, a partial day may also be charged. However, the use of partial days should be limited to the nearest one-half day.

Some SHAs use the "calendar day" approach to accounting project performance time. In the calendar day method, the specified contract performance time is given in calendar days. The project is to be completed within a set number of calendar days. The contract time in calendar days is normally adjusted by contract change when excusable delays occur.

The maintenance of accurate and timely accounts of excusable delays is essential. Both of these requirements are covered in the Washington specification. The responsibility for determining whether a day was a work day or not has been assigned to the DOTs Project Engineer. A weekly statement of working days and non-work days is kept and provided to the contractor. Additionally, the issue of partial-day delays is addressed. When appropriate, one-half-day non-working days may be applied.

Excusable delays are a shared contract risk for the contractor and the owner. When an excusable delay occurs, the contractor is granted additional performance time. However, the contractor and the owner absorb their own delay costs.

COMPENSABLE DELAYS

A compensable delay is an excusable delay caused by actions or circumstances within the owner's responsibilities as prescribed by the contract. Common causes of compensable delays are differing site conditions, changes in work, design errors and omissions, and delayed utility relocations. When a compensable delay occurs the contractor may be entitled to both additional performance time and compensation for the cost incurred as a result of the delay (Smith et al. 1997).

Generally, courts have held that contractors are entitled to complete the project in less time than allocated by the owner. Consequently, late completion of the project is not a prerequisite to establishing a compensable delay. If the contractor is prevented from achieving an early finish, both time and delay cost compensation may be due. Of course, the contractor's early completion schedule must be reasonable and achievable.

The two fundamental considerations when dealing with a compensable delay are:

1. Determining the number of delay days.
2. Calculating the cost compensation amount.

Additionally, most contract forms provide a notice requirement whereby the contractor is required to advise the owner of the delay within a specified time after commencement of

the delay. The following contract language from the South Carolina DOT is typical of the delay notice requirements.

105.16 Claims for Adjustment and Disputes

Within two weeks after determining that a delay has occurred, the Contractor must give the Department written notice of its intention to file a claim for delay damages. Notification shall be submitted to the Department on SCDOT Form No. 616, *Contractor Notice of Claim*.

NON-EXCUSABLE DELAYS

Non-excusable delays occur when a contractor fails to complete the project within the performance time allocated in the contract and no excusable cause exists. When a non-excusable delay occurs, compensation to the owner is generally provided by a liquidated damages amount stipulated in the contract. The liquidated damages are a prescribed daily amount to be charged to the contractor for each day of delay in lieu of determining actual damages.

For the purpose of assessing liquidated damages, many owners consider a project complete when the project is “substantially complete.” A project is substantially complete when it can be reasonably fully utilized by the owner for its intended purpose. For example, Washington State DOT provides the following definition of substantial completion in its Construction Manual.

1-2.5E Substantial Completion

Substantial Completion may be granted when only minor, incidental items of work, replacement of temporary facilities or correction or repair remain in order to physically complete the contract. In determining Substantial Completion, the Project Engineer should consider whether or not:

- **The public has full and unrestricted use and benefit of the facility.**
- **Major safety features are installed and functional, including guardrail, striping, and delineation.**
- **Illumination, if required, is installed or a temporary system with equal functional capabilities is operating.**
- **Signals, if required, are installed or a temporary system with equal functional capabilities is operating.**
- **The need for temporary traffic control on a regular basis has ceased. There will be no need for lane closures during the hours of darkness nor outside the contract-allowed lane restriction times during daylight hours. Where the contract does not provide lane-closure restrictions, traffic control will not be utilized during rush hour.**
- **The traffic is operating in its permanent configuration.**

CHAPTER THREE

DETERMINING DELAY DAYS

CRITICAL AND NONCRITICAL WORK ACTIVITIES

Determining whether or not the delayed work activities were actually critical activities is the first step in determining the delay days. A critical work activity is an activity that, if delayed, will result in a delay to the project completion. A delay to a noncritical activity will not result in a delay to the project completion. Critical activities are readily identified on a CPM schedule as activities with zero float. However, many highway construction projects are not scheduled with CPM schedules. When bar charts are used to schedule the project, generally the concept of “controlling items of work” is used. A controlling item of work is another name for a critical activity. The contractor and the owner agree, usually at the start of the project, as to which activities are controlling items of work. The following language from the Wisconsin DOT specifications illustrates the requirement to identify controlling work items.

108.4.2.1 Initial Bar Chart Progress Schedule

At least 5 business days before the preconstruction meeting, submit to the engineer for review an initial bar chart progress schedule that meets the following minimum requirements:

- 1. Include activities that describe essential features of the work and activities that might potentially delay contract completion. Identify activities that are controlling items of work.**

CALCULATING DELAY DAYS

Calculating the delay days requires two essential items of information:

1. An updated project schedule.
2. An accurate project daily record of events.

Schedule Analysis

The determination of whether or not delayed activities were critical must be based upon a schedule that has been updated to show actual as-built progress. Activities that were critical on the original schedule may not be critical at some future date during the project. Therefore it is important that project control procedures involve regular schedule updates. Generally, for projects scheduled with CPM schedules, the delay impact on the project's completion date can be determined from an analysis of the applicable updated schedule.

When bar chart schedules are used, the determination of delay days is less straightforward. The analysis is based upon the delay's impact on controlling work items. However, using an updated schedule is also important when working with bar charts. Work items that were originally designated as controlling work items should be reviewed within the context of the updated schedule to confirm that they remain critical.

Another related issue that should be examined is the possibility of concurrent delays. A concurrent delay exists when an owner-caused delay and a contractor-caused delay occur during the same time period. Typically, the contractor would be requesting both a time extension and cost compensation for the owner-caused delay. If analysis indicates the existence of a contractor-caused delay at the same time, cost compensation to the contractor is not appropriate. Generally, time extensions are granted in concurrent delay situations.

The following language from the Washington State 2000 Specification is representative of the requirements for a contractor-requested time extension when a CPM schedule is used:

1-08.8 Extensions of Time

The Contractor shall submit any requests for time extensions to the Engineer in writing no later than 10 working days after the delay occurs. The request shall be limited to the change in the critical path of the Contractor's schedule attributable to the change or event giving rise to the request. To be considered by the Engineer, the request shall be in sufficient detail (as determined by the Engineer) to enable the Engineer to ascertain the basis and amount of the time requested. The Contractor shall be responsible for showing on the progress schedule that the change or event:

- (1) had a specific impact on the critical path, and except in cases of concurrent delay, was the sole cause of such impact, and**
- (2) could not have been avoided by resequencing of the work or other reasonable alternatives.**

If a request, combined with previous extension requests, equals 20 percent or more of the original contract time, the Contractor's letter of request must bear consent of Surety. In evaluating any request, the Engineer will consider how well the Contractor used the time from contract execution up to the point of the delay and the effect the delay has on any completion times included in the special provisions.

Project Record

Determining the specific facts relating to a delay situation requires a comprehensive examination of the project record. Both owners and contractors maintain daily records of construction. It is important that these records be accurate and complete. Events that may result in schedule delays should be specifically noted in the reports. The facts related to a specific delay situation are required to determine the extent of the delay and to determine

the cost impact of the delay. Sharing the information as it is reported will facilitate the resolution of any contradictions, which will minimize the likelihood of a dispute.

An example of a typical Daily Report used on transportation projects is included in Appendix A. The Daily Report is completed each day by the owner's project representative. The report typically includes the following types of information:

1. Weather
2. Construction activity
3. Contractor personnel and equipment
4. Results of inspections and testing
5. Comments on specific events (delays, nonconformance, other issues)

Usually the owner places additional record-keeping requirements on the contractor relating to a request for additional compensation due to a compensable delay. For example, South Carolina DOT requires that the contractor maintain and submit a separate detailed report on the delay.

105.16 Claims for Adjustment and Disputes

After giving the Department notice of intention to file a claim for delay damages, the Contractor must keep separate daily records of all labor, material, and equipment costs incurred for operations affected by the delay. The daily records must identify each operation affected by the delay.

On a monthly basis after giving notice of intention to file a claim for delay damages, the Contractor shall prepare and submit to the Department's representative, written reports providing the following information:

- 1. Potential effect to the schedule caused by the delay.**
 - 2. Identification of all operations that the Contractor claims have been delayed, or are to be delayed.**
 - 3. Explanation of how the Department's act or omission delayed each operation and an estimation of how much time is required to complete the project.**
 - 4. Itemization of all extra costs being incurred, including:**
 - a. An explanation as to how these extra costs relate to the delay and complete details of the Contractor's method of measurements, calculations, and resultant quantifications.**
 - b. Identification of all project employees for whom the Contractor seeks additional compensation.**
- NOTE: When the status of the information or condition of Items 1, 2, 3, or 4 above is unchanged from the previous report, it is sufficient for the**

Contractor to so state, in writing, "*The status is unchanged from the previous report,*" and specify the date of the previous report.

c. Identification by make, model and manufacturer's number of all items of equipment for which the Contractor seeks additional compensation.

The requirement that the contractor maintain an accurate record of the delay facts and itemized cost information is not unreasonable. Establishing a complete record that is shared by the contractor and the owner facilitates the resolution of compensation issues relating to delays.

CHAPTER FOUR

DETERMINING COMPENSATION DUE TO A CONTRACTOR FOR A COMPENSABLE DELAY

Generally the development of any construction cost requires two basic steps. First, the quantities of cost items must be established. Second, an appropriate unit price for each different cost item must be developed.

QUANTIFICATION

Idle Equipment and Labor

Quantity in this context refers to the amount of the direct cost items rather than the amount of the work product. For example a compensable delay may have resulted in certain equipment items being idle for a period of time. The quantity calculation might be as follows:

<u>Cost Item</u>	<u>Number</u>	<u>Days of Delay</u>	<u>Quantity</u>
Loader, Wheeled	1	3	3 days
Tractor, Dozer	2	3	6 days

Quantities are best determined from daily project records. The contractor and the owner both keep daily records of the labor and equipment resources on the project. Determining the quantity for equipment that is actually idle is relatively straightforward. On the other hand, quantifying lost efficiency and productivity can be challenging.

Loss of Productivity

Sometimes a delay situation can result in all or a portion of the contractor's work force being utilized in a way that is less efficient or productive than it would be without the delay. In the typical highway construction delay situation, the contractor's work is held up at a particular location. The reason could result from any of a number of causes, with utility problems being one of the most common. The contractor will normally be expected to try to redirect and relocate the work force to another location along the project until the delay problem is resolved. The relocation of the work crews to another location, if it can be done, will result in some loss of productivity. After the transfer occurs there still may be a loss of productivity. The equipment and labor are not idle, but they may be less productive than they would have been if not for the delay.

Different methods exist in practice for quantifying productivity loss. In general the approach is to compare established (or baseline) productivity to the productivity experienced during the impacted period. Professionals who are experienced in this

specialized field of practice should do productivity quantification. A comprehensive discussion of the subject is provided by H. Randolph Thomas (Thomas, 1988, 1999).

Determining Appropriate Unit Prices for Delay Direct Cost Items

Labor Costs

Once the quantity of cost items has been established, the next step is to determine the appropriate unit cost for each cost item. Labor should be priced at the hourly wage rate plus the applicable labor burden. Payroll reporting requirements are well structured in most highway construction projects. Therefore, verification of hourly wage rates is not a difficult task. Labor burden is the additional cost to the employer above the direct hourly wage. This generally includes items such as workmen's compensation insurance, unemployment insurance, vacation, and other employee benefits. Verification of the labor burden rate is somewhat more complicated than verifying hourly rates. Individual cost components of the labor burden should be identified and verified by examination of the appropriate cost documentation.

Materials

Materials are not a common component of delay cost. However, if they are involved, reviewing purchasing documentation such as purchase orders and the material supplier's invoices can provide verification of unit costs. In the event that the materials were taken from the contractor's store of material and not purchased, price verification is more problematic. Current quotations of the market price of the material from other sources may be used to establish the fair price of the materials.

Equipment

Highway construction is normally equipment intensive. Equipment costs represent a large portion of the direct cost of construction. Therefore, delays may result in a substantial additional equipment cost for the contractor. The first consideration is whether or not the equipment is owned by the contractor. If the equipment is rented, a review of the rental documentation should provide verification of the rental cost.

Because owned equipment cost is influenced by many factors, determining the precise cost can require a complex calculation. Generally, the owned equipment cost components are separated into costs relating to ownership and costs relating to operation. Table 1 presents a breakdown of equipment cost components and the influencing factors. Clearly, it is important to distinguish between idle equipment costs and the cost of equipment that is being operated. Idle equipment costs consist of only the ownership cost items. The cost of equipment that is being operated consists of both ownership costs and operating costs.

Table 1. Owned Equipment Cost Components and Influencing Factors

Ownership Cost Components	
Depreciation	Original Purchase Price Age of Equipment Method of Depreciation Salvage Value
Investment	Interest Rate for Financing Interest Rate of Investment
Taxes	Type of Equipment Original Purchase Price
Transportation and Storage	Type of Equipment Frequency of Moves
Operating Cost Components	
Fuel	Rate of Consumption Market Price
Lubrication and Engine Oil	Rate of Consumption Market Price
Tires	Type of Equipment (Tire Size) Operating Conditions
Maintenance and Repairs	Type of Equipment Operating Conditions

Many SHAs specify the use of a nationally recognized equipment cost reference for establishing equipment prices. *The Rental Rate Blue Book for Construction Equipment*, published by Primedia Information, Inc., is most frequently cited. Most SHA specifications referring to the Blue Book also require the application of the adjustments provide in the reference. The following specification language used by Wisconsin DOT is a representative example of the use of the Blue Book for establishing equipment rates.

109.4.5.5.2 Hourly Equipment Expense Rates (Without Operators)

(1) **The contractor shall determine, and the department will confirm, hourly equipment expense rates as follows:**

$$\text{HEER} = [\text{RAF} \times \text{ARA} \times (\text{R}/176)] + \text{HOC}$$

Where:

HEER = **Hourly equipment expense rate**

RAF = **Regional adjustment factor shown in the blue book**

ARA = **Age rate adjustment factor shown in the blue book**

R = **Current blue book monthly rate**

HOC = **Estimated hourly operating cost shown in the blue book**

Idle or standby equipment cost rates are specified by many SHAs at one-half the calculated Blue Book rate for operated equipment. The advantage of specifying the Blue Book as a reference for establishing equipment cost rates is that both the contractor and the owner are spared the task of calculating the actual cost. The cost rates are readily available and are not subject to dispute. The potential disadvantage to using the Blue Book as a cost standard is that the Blue Book ownership costs are considered by some to be higher than actual contractor ownership costs, and if used would result in an overpayment to the contractor. In the event that a standard equipment cost record is not used, the equipment cost calculation must be established from company depreciation and operating records. The following specification excerpt from the Connecticut DOT provides an example of an approach where the Blue Book is specifically not used.

SUPPLEMENTAL SPECIFICATION

SECTION 1.11 - CLAIMS

1.11.04 – Claim Compensation: The payment of any claim, or any portion thereof, that is deemed valid by the Engineer shall be made in accordance with this Section.

Compensable Items: The liability of the Department for claims will be limited to the following specifically identified, compensable items, insofar as they have not otherwise been paid for by the Department or its agents:

(5) Additional Equipment Cost. Only actual equipment costs shall be used in the calculation of any compensation to be made in response to claims for additional project compensation. Actual equipment cost shall be based upon records kept in the normal course of business and generally accepted accounting principles. Under no circumstances shall Blue Book or other guide or rental rates be used for this purpose (unless the contractor had to rent the equipment from an unrelated party, in which case the actual rental charges paid by the contractor, so long as they are reasonable, shall be used).

CALCULATING THE TOTAL COST OF THE DELAY

Direct and Indirect Cost

Generally accepted cost accounting standards divide contractor costs into direct and indirect costs. Understanding this division of costs is important when addressing contractor compensation issues.

Direct Costs

Direct costs are those costs that are directly assignable to a specific project. Typical examples of direct costs are:

1. Project labor costs
2. Project material costs
3. Project equipment costs
4. Project subcontract costs

These costs are recorded and charged directly to the specific project in the contractor's job cost accounting system. The general rule is that any cost that can be directly traced to a specific project must be accounted for as a direct cost.

Indirect Costs

Indirect costs are those costs that are general in nature and cannot be attributed to a single project. Indirect costs may be called home office overhead or general expenses. Typical indirect costs are items such as:

1. Home office staff salaries
2. Home office rental expenses
3. Home office utilities costs
4. Legal costs
5. Accounting costs
6. Professional licensing costs

When a contractor is delayed, usually both additional direct and additional indirect costs are incurred. A variety of methods are used in the industry to calculate both direct and indirect costs for compensable delays to contractors.

Calculating Contractor Direct Cost of Delays

Adjustments in Work Quantities

The majority of transportation construction projects are administered with a unit-cost type contract. Usually the owner provides a bidding format consisting of an itemized list of bid items with estimated total quantities for the project. The contractor provides a bid unit price for each of the bid items. The total contract amount is the sum of all bid item total costs determined as the product of the unit cost times the estimated quantity. The contractor is paid the unit bid costs for the actual quantity of work performed.

If the delay results in an increase in quantity of a work item already included in the contract bid/pay item list, simply adjusting the completed quantity for the appropriate pay item provides compensation. For example, traffic control devices are typically included in the project bid item list. The cost of additional days of control devices can be settled through the normal contract payment process. However, when the delay involves items that are not on the original pay item list, a separate itemization and cost calculation must be performed.

Direct Labor and Equipment Costs

Generally, delay cost to a contractor involves equipment and/or labor that are unproductive (idle) or producing at a less-than-normal rate as a result of the delay. Direct cost items such as labor and equipment costs are calculated by multiplying the quantity by the unit cost. Therefore, the two basic issues are:

1. Determining the quantities of the cost items
2. Determining the appropriate unit cost of the cost items

The issues of determining quantities and unit pricing have been previously presented. Calculating the cost is a simple matter of multiplying the quantity by the appropriate unit price. Table 2 presents a sample labor cost calculation.

Table 2. Sample Labor Cost Calculation.

Labor Item	Quantity	Units	Unit Price	Total Cost
Laborer	24	Man-hours	\$9.65	\$231.60
Operator	16	Man-hours	\$14.80	\$236.80
Welder	6	Man-hours	\$15.10	\$90.60
Subtotal				\$559.00
Labor Burden	@ 65%			\$363.35
TOTAL				\$922.35

Note that in addition to the direct hourly rate of pay provided to the worker, the employer incurs other costs associated with labor. These additional costs include items such as:

- Social security taxes
- Unemployment compensation taxes
- Workmen's compensation insurance
- Vacation
- Union contributions

These additional direct costs are normally applied to the direct hourly wage cost as a percentage, typically referred to as labor burden.

The calculation of equipment cost follows the same format as the above labor calculation. That is, the hourly or daily rate is determined and applied to the appropriate quantity of equipment hours.

Project Overhead

Contractors must maintain a certain support infrastructure on each project. This typically consists of supervisory and engineering staff, other support personnel, and temporary facilities and equipment. Although often called project overhead, these costs are direct

costs. They are normally time-dependent. For each day of the project, the contractor incurs a relatively fixed daily project overhead cost. This project overhead is sometimes called general conditions. Calculating the extended project overhead cost requires first developing an itemized list of cost items. Individual cost items are priced and verified in accordance with their specific cost category: labor, equipment, or materials.

Typical project overhead items are:

1. Supervision
2. Job office trailer and other temporary facilities
3. Job utilities
4. Maintenance and security

The cost of most project overhead items is time-dependent. That is, the total cost is the daily unit cost of the labor or equipment items times the number of days.

Subcontractor Cost

Subcontractors will submit their delay costs including markups to the prime contractor. The subcontractor costs then become a direct cost to the prime contractor. The subcontractor direct costs are calculated and verified just as the direct costs of the prime contractor. The same costing considerations apply. However, the subcontract costs to the prime contractor will include both subcontractor general overhead expense and subcontractor profit. Many owners specify limitations on general overhead and profit markups on changes to the contract. These specified limitations would also apply to the subcontractor's pricing. The subjects of overhead and profit will be discussed in a later section of this chapter.

Determining General Overhead Expense for Compensable Delays

General expenses, sometimes called home office overhead, are those costs that are not assignable to a specific project. These are costs that are not directly part of the project activity but are necessary to support the general operation of the company.

Calculating Overhead Expense as a Percentage of Direct Cost

The general overhead expense or home office overhead for a contractor must be supported by all of the projects being performed by the contractor. The annual profits for a company are calculated by subtracting the general overhead expense for the year from the sum of all project sales (billings), less the project direct costs. Expressed as a percentage, the general overhead calculation would be:

$$\text{General Overhead \%} = \frac{\text{General Overhead Expense}}{\text{Total Direct Costs}}$$

In this calculation general overhead expenses are all costs incurred during the period that are not attributable to a specific project. The total direct cost is the cost of all direct costs charged to all projects performed during the period.

Normally, the overhead percentage calculated from the previous year's financial statement is used to estimate the overhead cost for the current year. This is an appropriate assumption provided that this year is essentially the same as last year. Significant changes in total work volume or in the general expense cost structure would make the current year's overhead percentage differ from the previous year.

Of all the delay cost components, there is more variability in the way home office overhead is treated among different SHAs than any other cost component. Procedures range from allowing the contractor to submit the contractor's own method of calculation to disallowing any payment for home office overhead.

Some owners allow the contractor to calculate general overhead at the contractor's established percentage of direct cost. Most owners who follow this procedure require that the contractor submit certified financial statements prepared by an independent accounting firm to verify the overhead rate. In some cases certain overhead cost categories may not be allowed by regulation. Owners may require the contractor to remove items such as entertainment costs or bad debt costs, thus making the overhead percentage smaller. Additionally, the financial statement should be carefully reviewed with regard to the general overhead cost items. Cost items that are included in the direct cost calculation should not be also included in the general overhead calculation. For example, if project engineering salaries are included in the general overhead, it would not be appropriate to also include project engineer labor in the direct cost calculation.

On the other hand, other SHAs specify a fixed overhead rate for all additional compensation to the contractor. This approach has the advantage of greatly simplifying the calculation and removing the need for verifying overhead rates. For example, consider the following language from the South Carolina DOT:

D. Recoverable Damages. Only the following items may be recovered by the Contractor as with respect to "delay" claims or "other" claims. The Department shall have no liability for damages beyond the following items.

- 1. Additional job site labor expenses.**
- 2. Documented additional costs for materials.**
- 3. Equipment costs, as determined in accordance with this subsection.**
- 4. Documented costs of extended job site overhead.**
- 5. An additional 10% of the total of items 1, 2, 3, and 4 above, for home office overhead and profit; however, in no case will this amount exceed the anticipated margin for home office overhead and profit provided for in the Contractor's original bid**

estimate. Additionally home office overhead margins paid to the Contractor, included in supplemental agreements, will be considered as partial or final compensation for these costs.

6. Bond costs.

7. Subcontractor costs, as determined by, and limited to, those items identified as payable under paragraphs 1, 2, 3, 4, 5, and 6 above.

For purposes of computing extra equipment costs, rates used shall be based on the Contractor's actual costs for each piece of equipment. These rates must be supported by equipment cost records furnished by the Contractor. In no case will equipment rates be allowed in excess of those in the *Rental Rate Blue Book*, with the appropriate adjustments noted in Subsection 109.04. Stand-by rate will be 50% of the operating rate.

Finally, some SHAs simply do not pay for home office overhead. This item is excluded from payment under their changes and delays contract provisions. The following contract language from the Wisconsin State DOT illustrates this approach:

109.4.7.1 General

If the department agrees that it has caused a delay under items 2 through 5 of 108.10.3(2), the department will pay for the costs specified here in 109.4.7.2. The department will not pay for non-allowable charges specified in 109.4.6 nor duplicate payment made under 109.4.2 through 109.4.5.

Whether contract revision price adjustments are based on contract bid prices, agreed lump sum prices, negotiated prices, or force account, the department will not reimburse the contractor for the following:

1. Profit in excess of that specified in 109.4.2 through 109.4.5.
2. Loss of anticipated profit.
3. Home office overhead.
4. Consequential damages, including loss of bonding capacity, loss of bidding opportunities, and insolvency.
5. Indirect costs.
6. Attorneys fees, claims preparation expenses, or costs of litigation.
7. Interest.

Unabsorbed Home Office Overhead

When the delay time is long in relationship to the direct delay cost, calculating overhead cost as a percentage of direct cost may not properly define the real cost to the contractor.

One approach to calculating unabsorbed home office overhead is the application of the Eichleay Formula. Under the Eichleay approach, a unit of daily overhead is created from the relationship of total home office overhead to the pro-rata percent value of the subject project, to the sum of all projects. Courts have varied in their acceptance of the mechanical application of the Eichleay formula. In general, SHAs do not address extended overhead in their specifications, except to deny it in some instances. The legal status of Eichleay claims is unsettled. The fact is, the use of the Eichleay method of overhead calculation has been permitted in many trials. However, the criteria or test that must be met by the plaintiff who wishes to use Eichleay appears to vary somewhat from court to court.

When allowed, the Eichleay formula calculation is usually as follows:

$$\text{Project Share of General Overhead} = \frac{\text{Project Billings}}{\text{Total Billings}} \times \text{Total General Overhead}$$

$$\text{Project Daily General Overhead} = \frac{\text{Project Share of General Overhead}}{\text{Total Days of the Project}}$$

$$\text{Delay General Overhead Cost} = \text{Project Daily General Overhead} \times \text{Number of Delays}$$

The Florida DOT, as an exception to the rule, has addressed this issue by specifying a daily overhead cost for the contractor on a project.

5-12.6.2.2 Compensation for Indirect Impacts of Delay: When the cumulative total number of calendar days granted for time extension due to delay of a controlling work item caused solely by the Department is, or the cumulative total number of calendar days for which entitlement to a time extension due to delay of a controlling work item caused solely by the department is otherwise ultimately determined in favor of the Contractor to be, greater than ten calendar days the Department will compensate the Contractor for jobsite overhead and other indirect impacts of delay, such indirect impacts including but not being limited to unabsorbed and extended home office overhead, according to the formula set forth below and solely as to such number of calendar days of entitlement that are in excess of ten calendar days. No other jobsite overhead and other indirect impacts of delay shall be compensable under any circumstances whatsoever, nor shall the Contractor be entitled under any circumstances to receive compensation for jobsite overhead and other indirect impacts of delay beyond the amount provided for herein.

All calculations under this provision shall exclude weather days, days used for performing additional work, days included in supplemental agreements, and days of suspended work.

$$D = \frac{A \times C}{B}$$

Where: A = Original Contract Amount
B = Original Contract Time
C = 8%
D = Average Overhead Per Day

Note that the Florida approach assumes a general expense amount for the project equal to 8% of the contract amount. The daily overhead charge is calculated by distributing the total overhead evenly over the contract time.

This procedure recognizes the reality of unabsorbed home office overhead and avoids the complex legal arguments associated with the Eichleay formula approach.

OTHER RELATED ISSUES

Acceleration

Acceleration occurs when a contractor applies greater-than-normal work effort in order to increase the rate of production and reduce the performance time. The increase in work effort may take many forms, such as:

- Working overtime
- Increasing the labor and equipment force
- Working activities concurrently

Frequently acceleration is less efficient and results in increased costs.

If the owner shortens the contract performance time, the result may be acceleration costs for the contractor. However, it is more common for the acceleration to result from the denial of a time extension for an excusable or compensable delay. Given the contractor's contractual obligation to complete the project prior to the established completion date, if the contractor's performance time is shortened by a delay, the contractor must accelerate to achieve the required completion date. In this case, the contractor may be due reimbursement for the acceleration costs.

Contractor claims for acceleration costs arise from a dispute concerning a requested time extension. Clearly, resolving time-extension issues is an important project management activity for both the owner and the contractor. Time extension requests, as with all contract issues, should be resolved on the merits of the specific situation. However, there are several important reasons for the early resolution of time issues:

- Generally, the facts are more easily established and less likely to be disputed within the immediate time frame of the relevant events.
- Experience has shown that early resolution benefits all parties by returning management attention to project progress and away from adversarial issues.

- Finally, a postponed decision concerning a time extension may result in unintended consequences. In the absence of a clear decision from the SHA concerning a request for a time extension, a contractor is forced to assume that the contract time will not be extended and, as a consequence of the delay, the performance time has been reduced. Given the contractual obligation to complete the project on time, the contractor may elect to accelerate the work. If the delay in question ultimately proves to be an excusable delay, the contractor may be due the additional costs of accelerating the work.

It should be noted that some SHAs have inserted an acceleration clause in their contracts that precludes compensation to the contractor for any acceleration costs. The following language from the South Carolina DOT is representative:

B. Claims for Acceleration. The Department shall have no liability for any constructive acceleration. If the Department gives express written direction for the Contractor to accelerate its effort, then both parties shall execute a supplemental agreement as defined in Subsection 101.74.

No-Damages-for-Delay Clauses

In recent years a new controversial approach to mitigating delay costs has been implemented by some owners. This approach is to insert a No Damage for Delay clause in the construction contract. This clause precludes reimbursement to the contractor for any delay damages regardless of the cause of the delay. A strict interpretation of this clause would disallow any compensation to the contractor for delays even if they were directly caused by the owner.

The legal and political consequences of the No Damage for Delay clause are still unsettled. Interpretation and validity have become mostly a local issue. The courts in some states have upheld the clause, and in other states the courts have limited enforcement. Some state legislatures have even banned the clause from their state contracts.

The following is an example of a typical No Damages for Delay clause:

No payment or compensation of any kind shall be made to the contractor for damages because of delay from any cause in the progress of the work, whether such delay is avoidable or unavoidable.

The effectiveness of the clause has also been variable. In some situations, particularly when the work was not entirely stopped, the contractors have been able to successfully argue that they had been “hindered” and not delayed. Therefore, the clause did not apply and compensation for the lost productivity resulting from the hindrance was allowed.

CHAPTER FIVE

RECOMMENDED PRACTICES

Delays are a part of highway construction. Project participants should seek to minimize delays but when they do occur, the delay issues should be managed in a manner that equitably assigns responsibility and compensation in the most efficient method. The delay issue must not be allowed to disrupt the entire project and become an obstacle to project success.

FUNDAMENTAL PRINCIPLES FOR RESOLVING DELAY COMPENSATION ISSUES

In developing the details of contract procedures for dealing with delay issues, certain fundamental principles should be adopted. The following principles are a prerequisite to successfully resolving delay issues and providing equitable compensation to injured parties.

Allocation of Risk—Responsibility should be clearly assigned to the party best able to manage the issue.

Contract provisions should allocate risk associated with various types of delays to the party best able to manage that type of risk. For example, the owner is best able to manage pre-design site investigations and should assume risk for differing site conditions. On the other hand, the contractor is best able to manage means and methods issues.

Clear Language—Contract provisions should clearly define procedures and responsibilities for all parties in the event of a delay.

Contract provisions should clearly define the responsibilities of each party in dealing with delay issues. Procedures should be defined for each step in managing delay situations. Relevant items such as contractor's responsibility for notice, duty to mitigate costs, procedures for record-keeping and disclosure, and specific procedures for requesting compensation should be included.

Equitable Compensation—Compensation procedures should attempt to return the injured party to the position that party was in prior to the delay.

Contract provisions for compensation due to delays should provide adequate compensation so that the contractor and the owner are no better off or worse off than they were before the delay. The resolution of delay issues should not present an opportunity for either party to gain advantage over the other.

Early Resolution—Procedures for determining entitlement and compensation for delays should provide for the earliest possible resolution of issues.

All parties benefit from early resolution of contract issues. Delays in reaching settlement add to the overall cost and make resolution more difficult. Unresolved disputes can affect the working relationships between all project participants and affect future project performance. Additionally, the facts concerning a delay become more difficult to establish with time. It is also important to ensure that the resolution is comprehensive and complete. It is unwise to leave portions of a claim issue unresolved. All damage issues should be resolved.

RECOMMENDED PRACTICES

Recognizing that many local variations exist among SHAs, the following general recommendations are offered because of they have proven to produce satisfactory results in a wide variety of contracting situations and because they address are the most frequent problems with regard to providing compensation relating to delays.

Use Appropriate Scheduling Procedures and Documentation

Recommended Practice 1: Use Appropriate Scheduling Procedures and Documentation. Require and enforce the utilization of scheduling procedures appropriate for the complexity and duration of the project. More specifically, the following procedures should be followed:

1. Clearly specify the format for the original schedule.
2. Choose the appropriate scheduling method based upon project complexity.
3. Require that the original schedule be submitted for approval by the SHA.
4. Require that monthly updates of the schedule be prepared and submitted by the contractor.

Work should not be allowed to begin without an approved schedule.

Delay issues are directly connected to the project schedule. An accurate and updated project schedule is a critical tool for determining the facts associated with delay issues. Therefore it is important that the development and maintenance of the project schedule be made a priority. Scheduling requirements are often not enforced. Contractors are permitted to begin work before submitting a schedule. It may be many weeks or months before a schedule is finally approved. Additionally, the requirement to prepare and submit schedule updates may not be enforced. The first update in the record may be the one accompanying the contractor's delay claim.

The existence of an accurate and continuously updated project schedule is a major asset in resolving delay compensation issues. This tool will enable both parties to readily determine the effect of any delay situation on the project's completion.

Clearly Define What Qualifies as an Excusable Delay

Recommended Practice 2: Clearly Define What Qualifies as an Excusable Delay. Both the contractor and the owner should be clear on what constitutes an excusable delay. The contract language must be clear and unambiguous.

Certain types of delays are treated as excusable delays. When an excusable delay occurs, the contractor is not penalized and is given additional time to complete the project. When the delay is judged to be a non-excusable delay, the contractor is not given additional time and may be forced to accelerate the project work or incur liquidated damages. Therefore the determination of whether or not a delay is excusable is an important issue and may be subject to dispute. Contract language must clearly spell out what types of events qualify as excusable delays.

Probably weather events are the most common factor in excusable delays. If the contract time is based upon work days, weather delay days are not counted as working days. The owner's representative or project engineer normally makes the determination of weather delay days. However, if the contract time includes an allowance for weather-related delays, the time would only be extended for an unusual number of weather-related delays. Either approach is workable, but all parties must understand how excusable delays will apply.

Maintain Complete and Accurate Project Records

Recommended Practice 3: Maintain Complete and Accurate Project Records. Maintain daily records of project activity, including a daily report and photographic records. The sharing of project records among the project participants is encouraged.

The resolution of all delay situations begins with a determination of fact. Determining the facts without good project records can be extremely difficult. Memories are not perfect, and people may have different perceptions of what took place. Records should be in sufficient detail to permit reconstruction of the work activities and the labor and equipment resources being used at any time during the project. Additional explanation and amplifications should be given when a possible delay event occurs.

Both the contractor and the owner typically maintain daily records. Owners should share their daily records with the contractor and invite the contractor's input into the record.

Differences of opinion are much easier to resolve in real time rather than months after the fact.

It is important to note that the usual project daily report is not adequate with regard to equipment records. A precise identification of each individual item of equipment is often needed to accurately evaluate delay-related claims. A supplemental equipment log should be maintained including all contractor and subcontractor equipment. The equipment log should list daily the following equipment information:

1. Item description
2. Contractor's fleet or equipment number
3. Manufacturer
4. Model number
5. Contractor or subcontractor
6. Activity status: A=Active, I=Idle, O=Off Site

In the Event of a Compensable Delay, the Contractor Should Maintain and Submit a Detailed Daily Record of All Costs Associated with the Delay

Recommended Practice 4: Contractor Maintains and Submits a Detailed Daily Cost Record. In addition to requiring notice of a delay situation, the contract should also require the contractor to begin immediately to maintain a detailed record of all delay costs, including an itemized listing of all labor, equipment, materials, subcontract and project overhead items. This itemized listing should be submitted to the owner at reasonable intervals.

The purpose of this requirement is to facilitate an accurate and mutually agreed-to accounting of the delay costs. This requirement forces the contractor to keep and update record of delay costs and to share the cost record with the owner. The owner is able to more precisely verify the contractor's record because of its timely receipt. Any differences can be resolved while the events and memories are fresh.

Also, note that the itemized cost breakdown should be accompanied by copies of supporting documentation such as job payroll records, material invoices, equipment rental invoices and other proof of costs. The requirement to provide full supporting documentation should be a clear part of the contract language.

Clearly Define the Requirements for Substantial Completion

Recommended Practice 5: Clearly Define the Requirements for Substantial Completion. Contract language should clearly define qualifying project status for substantial completion.

If substantial completion is used as a criterion for the cessation of work time and exposure to liquidated damages, it must be clearly defined to avoid project-level disputes. Generally, substantial completion exists when the project can be fully used by the owner for its intended purpose. However, a specific itemization of items that must be in place at substantial completion is helpful. Safety devices, signalization, and no requirement for temporary traffic control devices are common requirements. Appendix A provides an example of contract language pertaining to substantial completion.

Use a Standard Reference for Determining Equipment Costs or, Alternatively, Provide Clear Contract Language Specifying the Procedures for Determining Equipment Cost from Actual Contractor Records

Note that there are differences of opinion concerning the use of the Blue Book for equipment costing. There is some indication that the Blue Book rates may overly compensate the contractor for equipment ownership costs. If the SHA feels that the disadvantage of possible additional costs is not offset by the advantage of using a standard reference, then the recommended alternative is to specify the determination of equipment costs by actual contractor records. Both options are include here as Recommended Practices 6 and 7.

Recommended Practice 6: Use a Standard Reference for Determining Equipment Costs. Use a reference standard such as the Blue Book or the AGG Equipment Cost reference for equipment costs.

The use of a standard reference for establishing owned equipment costs has one major advantage: It avoids the need for complicated and often controversial ownership cost calculations. All personnel representing the owner or contractor can easily determine the appropriate cost for each item of equipment. The cost of idle equipment can be specified to be a percentage (50% appears to be most common) of the cost of working equipment. See Appendix A for examples of contract language.

Recommended Practice 7: Provide Clear Contract Language Prohibiting the Use of Published Equipment Rates and Specifying the Procedure for Determining Equipment Costs from Contractor Records. If the SHA prefers not to use a published guide for pricing equipment costs, then clear contract language concerning the allowed procedures should be provided.

Establish a Specified Percentage for General Overhead and Profit

Recommended Practice 8: Establish a Specified Percentage for General Overhead and Profit. Specify a set percentage to be applied to direct costs to be used for overhead and profit.

Both overhead and profit can be contentious issues, often leading to disputes. If the values are stipulated, both the contractor and the SHA are relieved of the burden of negotiating these issues each time a contract change occurs. Of course the values specified should be within the mainstream of construction practice. Infrequently, one may see an attempt made to specify that no overhead or no profit will be paid on changes. This unrealistic approach is likely to produce problems with resolving a reasonable direct cost on a change.

Encourage Utilities to Accept Responsibility for Their Actions

Recommended Practice 9: Encourage Utilities to Accept Responsibility for Their Actions. Develop business practices that encourage utility companies to fairly compensate contractors for delay costs resulting from their failure to perform.

Normally contractors have no contract privity with the utility organizations. Their only recourse is to request a contract adjustment from the owner. In most states the SHA either does not have the contractual option of recovery from utilities or does not have the political will to seek recovery. However, some SHAs have been relatively successful in facilitating a partnering environment where contractors reimburse utilities for damages that they may cause to the utility, and utilities, in turn, reimburse contractors if they are responsible for delays.

Utilize Partnering

Recommended Practice 10: Utilize Partnering. Partnering remains an effective tool for disputes avoidance. Establishing a voluntary partnering agreement at the start of the project can be very helpful in resolving future disputes.

Partnering is a process where the project participants voluntarily meet at the start of the project and develop a format for a working relationship or partnership. They establish mutual project goals, guiding principles, and dispute resolution procedures.

Partnering has been widely used and its value has been demonstrated. One of its main benefits is in facilitating communications among the project participants. Another benefit is the commitment to a dispute-resolution process. Resolving delay settlement issues is made easier when a partnering agreement is in place.

Utilize Dispute Review Boards

Recommended Practice 11: Utilize Dispute Review Boards. The Dispute Review Board is an independent panel of experts that meets routinely at the project site during construction. Disputes that cannot be resolved by the project participants are submitted to the DRB for a non-binding decision.

In recent years, dispute review boards have proven to be a cost-effective way to resolve disputes at the project level. The advantage of the DRB over other dispute-resolution options is that the DRB is familiar with the project history because they meet regularly at the site during construction and the DRB can provide a decision in a minimum amount of time (usually a matter of days). Other resolution options such as arbitration or trial do not provide an answer until years after the project is complete. It is much better to get issues settled as soon as possible rather than allow the disputes to escalate. Several SHAs have adopted the use of DRBs on all of their significant projects. Contact information for further information on dispute review boards is contained in Appendix A.

Adopt Recommendations from the Final Report, *Avoiding Delays During the Construction Phase of Highway Projects*, NCHRP Project 2-24(12)

Many of the recommendations from the referenced report will directly improve the process of resolving delay-compensation issues. The recommendations that most directly relate to delay compensation resolution are as follows.

Recommendations from *Avoiding Delays During the Construction Phase of Highway Projects*, Final Report from NCHRP Project 2-24(12), That Will Directly Improve the Process of Delay Compensation Resolution:

Recommendation BPP-4: Encourage the Widespread Use of Innovative Contracting Practices.

Recommendation BPP-5: The Experience and Expertise of the DRB Members Should be More Fully Utilized.

Recommendation CP-2: Require Contractors Have Key Planning Documents Approved Prior to Commencing the Work.

Recommendation CA-1: Assign a Senior Project Manager to Lead the Team.

Recommendation CA-2: Develop an Overall Project Schedule and Monitor the Schedule Regularly.

Recommendation CA-5: Develop a Training Course on Contract Interpretation and Administration.

Recommendation U-7: Revise Utility-SHA Agreement.

A detailed discussion of each of the above recommendations can be found in the referenced report.

CHAPTER SIX

RESOLVING DELAY ISSUES INVOLVING UTILITIES

CURRENT SITUATION

Change in the Type of Projects

Clearly, SHAs are performing fewer new roadway projects and more improvements to existing roadways. New roads with new right-of-ways are becoming uncommon. The typical highway project today consists of resurfacing and widening an existing roadway, with other enhancements.

Growth in Number of Utilities

The utility situation within SHAs' right-of-ways has changed dramatically in the last few years. There are many more utilities within the right-of-way today and there are many new types of utilities. Gas lines have become common. The expansion of the communications industry has resulted in many new occupants of SHA right-of-ways. The number of fiber optic communication lines is growing each day. The trend is definitely toward more and more utility occupants of the right-of-ways.

Evolving Location Technology

The technology available for locating utilities has greatly improved. Utilities can be accurately positioned using the latest subsurface utility engineering (SUE) technology. Also the computer-aided drafting and design (CADD) technology has evolved. Three-dimensional drawings can help in resolving conflicts between existing utilities and new construction. However, there are still many older utility systems located within SHA right-of-ways for which the location information is of questionable accuracy.

Contractual Relationships

For the most part, the construction contracts used by SHAs have kept pace with new developments and have evolved with the changing environment. Specifications and contract clauses are updated as the need arises. New, innovative contracting methods are being tried.

However, the relationship between the utility companies and the SHAs remains largely as it was in the past. Generally, the right-of-way occupancy agreements remain as originally drafted. In some cases the terms of the relationship are dictated by statute. Utilities of all

types and ownerships are given the right to locate within the SHA right-of-way. Utilities are typically required to perform relocations required because of new construction. However, the assessment of damages to a utility for a delay in its relocation activity is very rare, partially because of the terms of the agreement and partially because of the lack of political will to enforce accountability. Contractors, on the other hand, have no contractual privity with the utility. Their normal recourse when delayed because of a utility problem is to request reimbursement from the owner.

Summary

Given the above situation, it is not surprising that utility conflicts rank as one of the top causes of highway construction delays. Most work takes place on existing roadways with utilities in the right-of-way, and the number of utilities in the right-of-way is growing. Location technology has improved, but there are still many old, unlocated utility systems in existence. Utilities have been granted a right to be in the right-of-way but are only marginally accountable for their performance with regard to accommodating new construction.

SUGGESTIONS FOR IMPROVEMENT

The subject of utility-caused delays and recommendations for avoiding and mitigating the delays is presented in depth in Chapter 7 of the final report that originated this supplemental report. Many of the issues and recommendations also relate to the subject of compensation procedures.

Short Term

Many SHAs have been relatively successful with a partnering approach to the utility conflict issue. The concept is to involve the utility and the contractor within the project partnering agreement. Partnering provides a relationship environment where each party accepts its commitments and obligations. The emphasis is on coordination and communication. Many cases have been reported where, although not contractually required to do so, utilities reimbursed contractors for the cost of utility delays. Of course, contractors had to pay for any damage they caused to the utility's system.

In the absence of stronger contractual requirements between the utilities and the SHAs, the partnering solution appears to be the best option.

Long Term

Revising the utility-SHA agreement should be a long-term goal. As has been pointed out, the potential for utility conflicts is likely to increase. What is needed is a fair and

reasonable agreement between the utility and the SHA that includes accountability and responsibility.

The Trans 2000 agreement recently implemented in Wisconsin is an example. The Trans 2000 agreement provides that utilities are liable to contactors for damages if they fail to perform in accordance with an agreed-upon work plan. While not perfect, the Trans 2000 plan appears to be a step in the right direction. A copy of the specific language of interest is provided in Appendix A.

CHAPTER SEVEN

SUMMARY AND CONCLUSIONS

SUMMARY

Even with the best practices to avoid delays, delays can occur. Resolving compensation issues efficiently and fairly is important to the overall success of the project. Successfully managing delay compensation on highway construction projects requires knowledge of the following subjects:

- Classification of delays by type
- Determination of delay time (days)
- Calculation of delay costs

Chapters 2 and 3 provide a basic discussion of these subjects.

Research on this project has indicated a number of frequently occurring problem areas relating to resolving delay compensation. Solutions for these problems are presented as recommendations for best practice in Chapter 4. Ten fundamental recommendations are provided.

Finally, the subject of delay compensation relating to utility-caused delays is discussed in Chapter 5. A brief overview of the current problem is provided. Suggestions for both short-term and long-term improvements to the situation are presented.

CONCLUSIONS

The material in this report was originally to be a chapter in the final research report on "Avoiding Delays During the Construction Phase of Highway Construction Projects," NCHRP Project 2-24(12). However, it was decided that the subject of resolving delay-compensation issues was significant enough to warrant a separate publication. Of course, avoiding delays should be adopted as a priority. But even with the best of efforts, delays can occur. Resolving the delays and determining appropriate compensation for injured parties is a fundamental construction management responsibility.

Construction managers and all participants in highway construction projects are encouraged to review the fundamentals contained in this report. Consideration should be given to the best practice recommendations offered. Organizations that have not already done so would benefit from implementation of these recommendations.

REFERENCES

Thomas, H. R., and Ellis, R. D., (2001), *Avoiding Delays During the Construction Phase of Highway Projects*, NCHRP 2-24(12), Final Report, Transportation Research Board, Washington, D.C.

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Smith, G. M., Curry, O. A., and Hancock, E. R. (1997), *Common Sense Construction Law*, Wiley & Sons, Inc., New York, N.Y.

APPENDIX A

Examples of Contract Language, Forms, and Contact Information

Scheduling Requirements

(See Chapter 3)

Sample Specification: Wisconsin DOT

108.4.2.1 Initial Bar Chart Progress Schedule

At least 5 business days before the pre-construction meeting, submit to the engineer for review an initial bar chart progress schedule that meets the following minimum requirements:

1. Include activities that describe essential features of the work and activities that might potentially delay contract completion. Identify activities that are controlling items of work.
2. Identify the contemplated start and completion dates for each activity. Provide a duration, ranging from one to 15 working days, for each activity. Break longer activities into 2 or more activities distinguished by the addition of a location or some other description. Specify the sequencing of all activities.
3. Provide the quantity and the estimated daily production rate for controlling items of work.
4. For working day contracts, provide the estimated number of working days for each month. For calendar day and completion date contracts, provide the estimated number of adverse weather days for each month consistent with the monthly anticipated adverse weather days shown in 108.10.2.2.
5. Show completing the work within interim completion dates and the specified contract time or completion date.

In addition to the required activities, the contractor is encouraged to include other activities such as:

1. The procurement of materials, equipment, articles of special manufacture, etc.
2. The furnishing of drawings, plans, and other data required in the contract for the engineer's review.
3. The department's inspections of structural steel fabrication, etc.
4. Third party activities related to the contract.

and drawn schedules are acceptable. If the contractor develops the initial schedule with scheduling software, the contractor is encouraged to provide the engineer a diskette of the schedule and the name of the scheduling software used.

The engineer and contractor will review the initial schedule at the meeting. Within 5 business days after the preconstruction meeting, the engineer will accept the contractor's initial schedule or request additional information. Make

the appropriate adjustments and resubmit the revised initial schedule within 5 business days after the engineer's request. If the engineer requests justification for an activity duration, provide information that may include estimated manpower, equipment, unit quantities, and production rates used to determine the activity duration.

The department will only make progress payments for the value of materials, as specified in 109.6.3.2, until the engineer accepts the initial schedule. The engineer accepts the contractor's initial schedule based solely on whether that schedule is complete as specified in 108.4.2.1(1). The engineer's acceptance of the schedule does not modify the contract or validate the schedule.

108.4.2.2 Monthly Progress Meetings and Bar Chart Progress Schedule Updates

The contractor and the engineer will meet monthly to assess progress and jointly add update information to the initial schedule. At a minimum, updates will include the actual start and finish of each activity and remaining durations of activities started but not yet completed.

Sample Specification Florida Department of Transportation

8-3 Prosecution of Work.

8-3.1 Compliance with Time Requirements: Commence work in accordance with the approved working schedule and provide sufficient labor, materials and equipment to complete the work within the time limit(s) set forth in the proposal. Should the Contractor fail to furnish sufficient and suitable equipment, forces, and materials, as necessary to prosecute the work in accordance with the required schedule, the Engineer may withhold all estimates that are, or may become due, or suspend the work until the Contractor corrects such deficiencies.

8-3.2 Submission of Working Schedule: Within 21 calendar days after Contract award or at the preconstruction conference, whichever is earlier, submit to the Engineer a work progress schedule for the project.

Provide a schedule that shows the various activities of work in sufficient detail to demonstrate a reasonable and workable plan to complete the project within the Contract Time. Show the order and interdependence of activities and the sequence for accomplishing the work. Describe all activities in sufficient detail so that the Engineer can readily identify the work and measure the progress on of each activity. Show each activity with a beginning work date, a duration, and a monetary value. Include activities for procurement fabrication, and deliver of materials, plant, and equipment, and review time for shop drawings and submittals. Include milestone activities when milestones are required by the Contract

Documents. In a project with more than one phase, adequately identify each phase and its completion date, and do not allow activities to span more than one phase.

Conduct sufficient liaison and provide sufficient information to indicate coordination activities with utility owners that have facilities within the limits of construction have been resolved.

Incorporate in the schedule any utility adjustment schedules included in the Contract Documents unless the utility company and the Department mutually agree to changes to the utility schedules shown in the Contract.

Submit a working plan with the schedule, consisting of a concise written description of the construction plan. The Engineer will return inadequate schedules to the Contractor for corrections. Resubmit a corrected schedule within 15 calendar days from the date of the Engineer's return transmittal.

When approved, the Engineer will use this original schedule as the baseline against which to measure the progress.

Submit an updated Work Progress Schedule only when the Engineer requests it. If the Engineer requires revisions to the working schedule, furnish revised charts and analyses within 21 calendar days after the Engineer provides such notification.

If the Contractor fails to finalize either the initial or a revised schedule in the time specified, the Engineer will withhold all Contract payments until the Engineer approves the schedule.

Excusable Delay

(See Chapter 3)

Sample Specification: Washington State DOT

1-2.5B Working Day Charges

“Time associated with each phase of work established in the contract is to be shown on the Weekly Statement of Working Days.” “The purpose of this statement is to advise the Contractor about the Project Engineer’s decision for each passing day. Was it a non-working day, a chargeable working day or an unworkable day? In evaluating each day, the Project Engineer should take into consideration the following conditions:

- 1. The effect of inclement weather on critical activities.**
- 2. The effect of conditions caused by inclement weather on critical activities.**
- 3. Traffic restrictions imposed by the contract or the Project Engineer or other events or conditions beyond the control of the Contractor that affect a critical activity, except where the contract prevents the allowance of unworkable days for specific reasons.**

If any of the above conditions prevent work or reduce the Contractor’s efficiency on critical activities on the project, working-day charges must be adjusted accordingly. If no work can be performed on critical activities, an unworkable day should be granted. If the Contractor is able to continue work on critical activities but the efficiency is significantly reduced, a partial day may also be charged. However, the use of partial days should be limited to the nearest one-half day.”

Sample Specification Florida Department of Transportation

8-7.3.2 Contract Time Extensions: The Department may grant an extension of Contract Time when a controlling item of work is delayed by factors not reasonably anticipated or foreseeable at the time of bid. The Department may allow such extension of time only for delays occurring during the Contract Time period or authorized extensions of the Contract Time period. When failure by the Department to fulfill an obligation under the Contract results in delays to the controlling construction operations, the Department will consider such delays as a basis for granting a time extension to the Contract. Whenever the Engineer suspends the Contractor’s operations, as provided in 8-6, for reasons other than the fault of the Contractor, the Engineer will grant a time extension for any delay to

a controlling item of work due to such suspension. The Department will not grant time extensions to the Contract for delays due to the fault or negligence of the Contractor. The Department does not include an allowance for delays caused by the effects of inclement weather in establishing Contract Time. The Department will handle time extensions for delays caused by the effects of inclement weather differently from those resulting from other types of delays. The Department will consider these time extensions only when rains or other inclement weather conditions or related adverse soil conditions prevent the Contractor from productively performing controlling items of work resulting in:

(1) The Contractor being unable to work at least 50% of the normal work day on pre-determined controlling work items due to adverse weather conditions; or (2) The Contractor must make major repairs to work damaged by weather, provided that the damage is not attributable to the Contractor's failure to perform or neglect; and provided that the Contractor was unable to work at least 50% of the normal workday on pre-determined controlling work items.

No additional compensation will be made for delays caused by the effects of inclement weather. The Engineer will continually monitor the effects of weather and, when found justified, grant time extensions on either a bimonthly or monthly basis. The Engineer will not require the Contractor to submit a request for additional time due to the effects of weather. The Department will consider the delays in delivery of materials or component equipment that affect progress on a controlling item of work as a basis for granting a time extension if such delays are beyond the control of the Contractor or supplier. Such delays may include an area-wide shortage, an industry-wide strike, or a natural disaster that affects all feasible sources of supply. In such cases, the Contractor shall furnish substantiating letters from a representative number of manufacturers of such materials or equipment clearly confirming that the delays in delivery were the result of an area-wide shortage, an industry-wide strike, etc.

The Department will not consider requests for time extension due to delay in the delivery of custom manufactured equipment such as traffic signal equipment, highway lighting equipment, etc., unless the Contractor furnishes documentation that he placed the order for such equipment in a timely manner, the delay was caused by factors beyond the manufacturer's control, and the lack of such equipment caused a delay in progress on a controlling item of work. The Department will consider the affect of utility relocation and adjustment work on job progress as the basis for granting a time extension only if all the following criteria are met:

(1) Delays are the result of either utility work that was not detailed in the plans, or utility work that was detailed in the plans but was not accomplished in reasonably close accordance with the schedule included in the Special Provisions.

(2) Utility work actually affected progress toward completion of controlling work items.

(3) The Contractor took all reasonable measures to minimize the effect of utility work on job progress, including cooperative scheduling of the Contractor's operations with the scheduled utility work at the preconstruction conference and providing adequate advance notification to utility companies as to the dates to coordinate their operations with the Contractor's operations to avoid delays.

Make a preliminary request for an extension of Contract Time in writing to the

Engineer within ten calendar days after commencement of a delay to a controlling item of work. If the Contractor fails to provide this required notice, the Contractor waives any rights to an extension of the Contract Time for that delay. In the case of a continuing delay, the Engineer will require only one request. Include with each request for an extension of time a description of the dates and cause of the delay, a complete description of the magnitude of the delay, and a list of the controlling items of work affected by the delay. Within 30 days after the elimination of the delay or the receipt of a written request from the Engineer, submit all documentation of the delay and a request for the exact number of days justified to be added to the Contract Time. If claiming additional compensation in addition to a time extension, include with the documentation a detailed cost analysis of the claimed extra compensation. The Contractor's failure to deliver the required notice or documentation within the required period constitutes an irrevocable waiver of an extension to the Contract Time for that delay. The Contractor's failure to provide sufficient documentation, justification, records, etc., to support a request for additional Contract Time is a valid basis for the Department to deny the request either in part or entirely.

(See Chapter 3)

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Guide Specification: Washington State DOT

1-2.5E Substantial Completion

Substantial Completion may be granted when only minor, incidental items of work, replacement of temporary facilities or correction or repair remain in order to physically complete the contract. In determining Substantial Completion, the Project Engineer should consider whether or not:

- The public has full and unrestricted use and benefit of the facility.
- Major safety features are installed and functional, including guardrail, striping, and delineation.
- Illumination, if required, is installed or a temporary system with equal functional capabilities is operating.
- Signals, if required, are installed or a temporary system with equal functional capabilities is operating.
- The need for temporary traffic control on a regular basis has ceased. There will be no need for lane closures during the hours of darkness nor outside the contract-allowed lane restriction times during daylight hours. Where the contract does not provide lane-closure restrictions, traffic control will not be utilized during rush hour.
- The traffic is operating in its permanent configuration.

Equipment Cost Specifications

(See Chapter 4)

Guide Specification: Washington DOT

109.4.5.5.3 Hourly Equipment Stand-By Rate

For equipment that is in operational condition and is standing-by with the engineer's approval, the contractor shall determine, and the department will confirm, the hourly stand-by rate as follows:

$$\text{HSBR} = \text{RAF} \times \text{ARA} \times (\text{R}/176) \times (1/2)$$

Where:

HSBR = Hourly stand-by rate

RAF = Regional adjustment factor shown in the blue book

ARA = Age rate adjustment factor shown in the blue book

R = Current blue book monthly rate

The department will limit payment for stand-by to 10 hours or less per day up to 40 hours per week. The department will not pay the contractor for equipment that is inoperable due to breakdown. The department will not pay for idle equipment if the contractor suspends work or if the contractor is maintaining or repairing the equipment.

SUPPLEMENTAL SPECIFICATION

SECTION 1.11 – CLAIMS

1.11.01 – General: When filing a claim, the Contractor must follow the procedures set forth in this Section. It is the intent of the Department to compensate the Contractor for actual increased costs caused by or arising from acts or omissions on the part of the Department which violate legal or contractual duties owed to the Contractor by the Department.

1.11.02 – Notice of Claim: In any case in which it is the Contractor's position that extra compensation is due to it for additional costs not clearly covered in the contract and not incurred in performing extra work (as defined in Article 1.04.05 herein) which has been expressly ordered by the Engineer, the Contractor shall notify the Commissioner in writing (in accordance with the terms of Section 4-61 of the Connecticut General Statutes, as revised) of its request for such extra compensation. Such written notice shall contain all pertinent information described in Article 1.11.05 below.

1.11.03 – Record Keeping: The Contractor shall keep daily records of all costs incurred in connection with its construction-related activities on behalf of the Department. These daily records shall identify each aspect of the project affected by matters related to any possible, anticipated or current request for additional compensation, the specific locations where work is so affected, the number of people working on the affected aspects of the project at the pertinent time(s), and the type and number of equipment on the project site at the pertinent time(s). If possible, any potential or anticipated effect on the project's progress or schedule should also be noted contemporaneously with the cause of the effect, or as soon thereafter as possible.

1.11.04 – Claim Compensation: The payment of any claim, or any portion thereof, that is deemed valid by the Engineer shall be made in accordance with this Section.

(a) Compensable Items: The liability of the Department for claims will be limited to the following specifically-identified, compensable items, insofar as they have not otherwise been paid for by the Department, and insofar as they were caused solely by the actions or omissions of the Department or its agents:

- (1) Additional non-salary job site labor expenses.
- (2) Additional costs for materials.
- (3) Additional, unabsorbed job-site overhead.
- (4) An additional ten (10) percent of the total amounts of items identified in Subarticles (1), (2), and (3) above, as complete compensation for additional unabsorbed home office overhead and profit.
- (5) Additional equipment costs. Only actual equipment costs shall be used in the calculation of any compensation to be made in response to claims for additional project compensation. Actual equipment costs shall be based upon records kept in the normal

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- (i) If an extension of time is sought, the specific dates and number of days for which it is sought, and the basis or bases for the extension sought. A critical path method, bar chart, or other type of graphical schedule which supports the extension must be submitted.
- (j) Excerpts from manuals or other texts which are standard in the industry, if available, which support the Contractor's claim.

1.11.06 – Auditing of Claims: All claims filed against the Department shall be subject to audit by the Department or its agents at any time following the filing of such claim. The Contractor and its subcontractors and suppliers shall cooperate fully with the auditors. Failure of the Contractor, its subcontractors, or its suppliers to maintain and retain sufficient records to allow the Department or its agents to fully evaluate the claim shall constitute a waiver of any portion of such claim that cannot be verified by specific, adequate, contemporaneous records, and shall bar recovery thereunder. Without limiting the foregoing requirements, and as a minimum, the Contractor shall make available to Department or its agents the following documents in connection with any claim it submits:

- (1) Daily time sheets and foreman's daily reports.
- (2) Union agreements, if any.
- (3) Insurance, welfare, and benefits records.
- (4) Payroll register.
- (5) Earnings records.
- (6) Payroll tax returns.
- (7) Records of property tax payments.
- (8) Material invoices, purchase orders, and all material and supply acquisition contracts.
- (9) Material cost distribution worksheet.
- (10) Equipment records (list of company equipment, rates, etc.).
- (11) Vendor rental agreements, and subcontractor invoices.
- (12) Subcontractor payment certificates.
- (13) Canceled checks (payroll and vendors).
- (14) Job cost report.
- (15) Job payroll ledger.
- (16) General ledger, general journal (if used), and all subsidiary ledgers and journals, together with all supporting documentation pertinent to entries made in these ledgers and journals.
- (17) Cash disbursements journal.
- (18) Financial statements for all years reflecting the operations on this project.
- (19) Income tax returns for all years reflecting the operations on this project.
- (20) Depreciation records on all company equipment, whether such records are maintained by the company involved, its accountant, or others.
- (21) If a source other than depreciation records is used to develop costs for the Contractor's internal purposes in establishing the actual cost of owning and operating equipment, all such other source documents.
- (22) All documents which reflect the Contractor's actual profit and overhead during the years that the subject project was being performed, and for each of the five years prior to the commencement of the project.

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course of business and generally-accepted accounting principles. Under no circumstances shall Blue Book or other guide or rental rates be used for this purpose (unless the Contractor had to rent the equipment from an unrelated party, in which case the actual rental charges paid by the Contractor, so long as they are reasonable, shall be used).

- (6) Subcontractor costs limited to, and determined in accordance with, Subarticles (1), (2), (3), (4), and (5) above and applicable statutory and case law. Such subcontractor costs may only be paid for by the Department (a) in the context of a claims settlement or (b) if the contractor has itself paid or legally-assumed, unconditional liability for those subcontractor costs.

(b) **Non-Compensable Items:** The Department will have no liability for the following specifically-identified non-compensable items:

- (1) Profit, in excess of that provided for herein.
- (2) Loss of anticipated profit.
- (3) Loss of bidding opportunities.
- (4) Reduction of bidding capacity.
- (5) Home office overhead in excess of that provided for in Article 1.11.04(a)(4) hereof.
- (6) Indirect costs or expenses of any nature.
- (7) Attorneys fees, claims preparation expenses, or other costs of claims proceedings or resolution.

1.11.05 – Required Claim Documentation: All claims shall be submitted in writing, and shall be sufficient in detail to enable the Engineer to ascertain the basis and the amount of each claim, and to investigate and evaluate each claim in detail. As a minimum, the Contractor must provide the following information for each and every claim asserted:

- (a) A detailed factual statement of the claim, with all necessary dates, locations and items of work pertinent to the claim.
- (b) A statement of whether each requested additional amount of compensation or extension of time is based on provisions of the Contract or on an alleged breach of the Contract. Each supporting or breached Contract provision, and a statement of the reasons why each such provision supports the claim, must be specifically identified.
- (c) The specific, detailed circumstances that gave rise to the claim.
- (d) The date(s) on which any and all events resulting in the claim occurred, and the date(s) on which conditions resulting in the claim first became evident.
- (e) The amount(s) of additional compensation sought and a break-down of the amount(s) into the categories specified as payable under Article 1.11.04 above.
- (f) The name, function, and pertinent activity of each Department official, employee or agent involved in or knowledgeable about events that give rise to, or facts that relate to, the claim.
- (g) The name, function, and pertinent activity of each Contractor's or Subcontractor's official, or employee involved in or knowledgeable about events that give rise to, or facts that relate to the claim.
- (h) Specific identification of any pertinent document, and detailed description of the substance of any material oral communication, relating to the substance of such claim.

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- (23) All documents related to the preparation of the Contractor's bid, including the final calculations on which the bid was based.
- (24) All documents which relate to the claim or to any sub-claim, together with all documents which support the amount of damages as to each claim or sub-claim.
- (25) Worksheets used to prepare the claim, which indicate the cost components of each item of the claim, including but not limited to the pertinent costs of labor, benefits and insurance, materials, equipment, and subcontractors' damages, as well as all documents which establish the relevant time periods, individuals involved, and the project hours and the rates for the individuals.

1.11.07 - Exemption from Freedom of Information Act Requests: Any documents or other materials examined or obtained by the Department or its agents under this Section 1.11 shall be deemed by the Department to be commercial information submitted in confidence and not required by statute, and shall therefore be deemed by the Department to be exempt from disclosure to any third parties who make requests for such materials under the Connecticut Freedom of Information Act.

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Profit and Overhead

(See Chapter 4)

Sample Specification: South Carolina DOT

D. Recoverable Damages. Only the following items may be recovered by the Contractor as with respect to "delay" claims or "other" claims. The Department shall have no liability for damages beyond the following items.

1. Additional job site labor expenses.
2. Documented additional costs for materials.
3. Equipment costs, as determined in accordance with this subsection.
4. Documented costs of extended job site overhead.
5. An additional 10% of the total of items 1, 2, 3, and 4 above, for home office overhead and profit;

Disputes Review Board

(See Chapter 6)

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Trans 2000, Wisconsin

(c) If the owner (utility) fails to provide a work plan as provided in s. Trans 220.05, or fails to complete the alteration or relocation of its facilities in accordance with the work plan approved by the department as provided in s. Trans 220.05, the owner (utility) shall be liable to the contractor for all delay costs and liquidated damages incurred by the contractor which are caused by or which grow out of failure of the owner (utility) to carry out and complete its work in accordance with the approved work plan.

