



**Arizona**  
**Department of Transportation**

# **Supplemental Agreements**

**Course TCH 3039**

February 2012

A training course for Construction

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# Directions to Workbook Users

## This Workbook

The most current copy of the [Supplemental Agreement workbook](#) is available on-line from the Construction Group, Training.

The Workbook is designed to help you on the job; prepare for promotional opportunities; and as a useful reference. It is a guide through the [Standard Specifications](#), and the [Arizona State Department of Transportation Construction Manual](#) requirements for preparing a Supplemental Agreement (*changes to a Construction Contract*).

## Course Goals & Objectives

1. To give engineers, supervisors, and staff an **understanding** of the Supplemental Agreements (SA) **process**.
2. To **ensure adherence** to Public Law.
3. To provide **consistency** in the application of the policies and procedures in the development and creation of SAs.

This course addresses the development process for creating SA: Letter Agreements, Change Orders (CO), and Force Accounts. **These documents are legal contract documents and must be correct!**

This is an Open Book process: After completing this course, students using Standard Specifications, ADOT Construction Manual, and this workbook will be able to:

- Define a contract change and describe what is allowable when changing a contract.
- Navigate in the Specifications and determine what is allowable, relative to changes.
- Select the proper type, and prepare each of the three types of SAs.
- Name and describe the roles of authorities involved in approving SAs.

## Evaluation

At the end of the course there is a final examination of true-false and multiple choice questions. It is an open book exam in which students are allowed to use any references. An 80% score on the final exam is necessary to achieve credit for the course. There is also a course evaluation sheet. We value your opinions and if you have any ideas or suggestions on how to improve the course, please list it on the critique form and hand it to your instructor or e-mail suggestions to [Construction Group Training](#).

## Learner Responsibilities

An important part of this course is student participation. You are expected to add your experiences and knowledge to the group discussions and to ask questions. Everyone in the class will benefit more from this class with increased individual participation.

## References:

This workbook is a synopsis of the Standard Specifications with guidance from the Construction Manual; it does not replace either of them.

**ADOT Standard Specifications for Road and Bridge Construction 2008 (Standard Specification)** available online at:

- <http://www.azdot.gov/Highways/ConstGrp/contractors/pdf/2008StandardSpecifications.pdf>
  - Section Definitions, *Major Items of Work*, page 11
  - Section Definitions, *Supplemental Agreement*, page 17
  - Section 104.02, *Revisions to the Contract*, pages 37-40
  - Section 104.03, *Notification*, pages 40-41
  - Section 104.13, *Value Engineering*, pages 51-56
  - Section 108.08, *Determination and Extension of Contract Time*, pages 113-114
  - Section 109.03, *Compensation for Altered Quantities*, pages 123
  - Section 109.04, *Adjustments in the Contract Price*, pages 123-130

## ADOT Construction Manual

- **ADOT Construction Manual** available online at:  
[http://www.azdot.gov/Highways/ConstGrp/construction\\_manual/index.asp](http://www.azdot.gov/Highways/ConstGrp/construction_manual/index.asp)
- **ADOT Construction Bulletins** available online at:  
[http://www.azdot.gov/Highways/ConstGrp/Value\\_Quality/Bulletins.asp](http://www.azdot.gov/Highways/ConstGrp/Value_Quality/Bulletins.asp)  
See CB 10-1.
- **ADOT's Project Development Process Manual** available online at:  
<http://spsprod/sites/projectdevmanual/default.aspx>. See Section 6.04.08, Contract Modifications.
- **ADOT Stored Specs** available for download at:  
[http://www.azdot.gov/highways/cns/CNS\\_Stored\\_specs.asp](http://www.azdot.gov/highways/cns/CNS_Stored_specs.asp)
- **ADOT Standard Specifications for Road and Bridge Construction, 2008** available for download at:  
<http://www.azdot.gov/Highways/ConstGrp/Contractors/PDF/2008StandardSpecifications.pdf>
- **ADOT Historic Unit Prices** available at:  
<https://www.azdot.gov/e2c2/HistoricalPrice.aspx>
- **ADOT (Project) Information Center** available at:  
<http://aidw/aidw2/Default.aspx?d=1>

- **Local tax rates (for cost estimating):**  
<http://modelcitytaxcode.org/pdf/CombinedRateSheet.pdf>
- **Force Account detail (the Contractor's weekly summary for payment)**  
[http://www.azdot.gov/Highways/ConstGrp/Field\\_Reports/docs/ForceAccountDetail.xls](http://www.azdot.gov/Highways/ConstGrp/Field_Reports/docs/ForceAccountDetail.xls)
- **Alternative Design Contracts' Contract Modification Request Form**  
[http://www.azdot.gov/Highways/ConstGrp/Value\\_Quality/PDF/Contract\\_Modification\\_Request\\_for\\_Review.pdf](http://www.azdot.gov/Highways/ConstGrp/Value_Quality/PDF/Contract_Modification_Request_for_Review.pdf)

# Unit One: Understanding the Process

## Standard Specification 101.02 Definitions:

Contract: The written agreement between the Department and the contractor setting forth the obligation of the parties, including the performance of the work, the furnishing of labor and materials and the basis of payment. The contract includes the advertisement for bids, proposal, bidding schedule, contract agreement and contract bonds, certificates of insurance, Standard Specifications, Special Provisions, project plans, Standard Drawings, documents incorporated by reference, and any supplemental agreements that are required to complete the construction of the work in an acceptable manner, including authorized time extensions, all of which constitute one instrument.

Supplemental Agreement (SA): A written agreement between the Department and the contractor covering work not otherwise provided for in the contract, for extensions or reductions of contract time or revisions in or amendments to the terms of the contract. A Supplemental Agreement becomes a part of the contract when signed by the contractor and the Department.

## Standard Specification 105.06 Coordination of Plans, Specifications, and Special Provisions:

The Special Provisions, the Plans, the Standard Specifications, and all supplementary documents are essential parts of the contract and a requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete work. In case of discrepancy or conflict, the order in which they govern shall be as follows:

- (A) Supplemental Agreements (SA)
- (B) Special Provisions
- (C) Project Plans
- (D) Standard Drawings
- (E) Standard Specifications

The contractor shall take no advantage of any error or omission in the plans, estimated quantities, or specifications. In the event the contractor discovers an error or omission, it shall immediately notify the Engineer in accordance with Standard Specification 104.03.

\*\*\*\*\*

The purpose of Unit One is to stress the importance of the Supplemental Agreement as a contract document that must be legally correct. This unit requires careful reference to the ADOT Standard Specifications 2008, and a thorough review of the Construction Manual sections for detailed explanations on the proper application of the Specifications.

## **Navigating in the Standard Specs**

ADOT Standard Specifications are modeled after the Guide Specifications of the American Association of State Highway and Transportation Officials and the format is standard throughout most Transportation agencies. The standard format is:

- Division 1 - General Provisions
- Division II through IX - Technical Specifications
  - ◆ Description
  - ◆ Construction Requirements
  - ◆ Materials
  - ◆ Method of Measurement
  - ◆ Basis of Payment
- ◆ Division X - Materials

## **The Contract and Project Plans**

Standard Specification 104, *Scope of Work*, addresses the processes and procedures for making changes to the construction contract. The Scope of Work of the construction contract is detailed in the Standard Specifications, Standard Drawings, Contract Plans, and the Contract Special Provisions. The Special Provisions contain any revisions to the Standard Specifications and any specific requirements for the project to be built. It is necessary for the construction staff to thoroughly review and understand these documents to determine if a change in the construction Scope of Work has occurred and if a Supplemental Agreement is necessary to address revisions to the contract.

## **Scope of Work**

To better understand “Scope of Work” it is necessary to briefly look at the development of the project. Long before a project is ready for construction, it is “scoped” in the Planning phase to establish the intent and purpose of the project. This sets the limits and elements of work. It also sets a budget. The Scope and Budget then goes through an approval process.

The approved scope of work is conveyed to the designer in by Scoping Letter, Project Assessment (PA), or a Design Concept Report (DCR). Any of these can be the starting point for the designer to begin work. The designer develops plans and Special Provisions which follow the scope, schedule, and budget for the project.

These documents contain basic information on:

- Project identification
- Project location
- Purpose and background
- Objectives to be obtained
- Accident analysis
- Major construction components of the work
- Right of way issues
- Environmental issues
- Design exceptions

- Possible engineering solutions
- Items which effect schedule, such as utility relocation or seasonal considerations
- Cost estimates
- Preliminary schedule

An understanding of these design documents is necessary to determine if a “revision to the contract” has occurred. The Project Manager can assist in the determination of a change in the Scope of Work, and is the reason why they must be contacted for concurrence with Supplemental Agreements.

## **Revisions to the Contract**

A contract change or revision is merely something required which is different than what the contract requires. The Department reserves the right to revise the contract and the Contractor is obligated to complete the contract as revised. The Contractor shall not proceed with work for which a revision to the contract is required without prior approval of the Engineer.

Changes or revisions are done by Supplemental Agreement. See Standard Specification 104.02. It allows contracts to be changed ONLY for reasons given in Subsections A-E:

### **A. Extra Work** (Std Spec 101.02, page 10)

- Work to be performed by the contractor not provided for in the contract, but found essential for the satisfactory completion of the project.

### **B. Differing Site Condition**

- Subsurface (usually Utilities).
- Latent physical conditions

Examples of differing site conditions could be changes in earthwork type, substantial difference in water table elevations, old pavement not identified on plans, difference in specified type of foundation conditions. There will not be any adjustment allowed for effects caused on unchanged work.

### **C. Work is suspended**

- By the Department for an unreasonable period of time.
- Beyond the control and not the fault of the contractor.
- Not caused by weather except as noted in Standard Specification 104.11 (A) when the Governor declares an emergency.

### **D. Significant changes in the character of work**

- Necessary to satisfactorily complete the project
- Differs materially in kind or nature.
- Major Item increased in excess of 125% or decreased less than 75% of the original contract quantity. (See Standard Specification 101.02, p. 11.)

*Character of Work* is based upon the normal construction techniques and equipment needed to accomplish an item of work as specified in the contract documents. A change in character is justified when the equipment, labor efforts and techniques change. Examples:

- Change cast in place concrete wall to masonry wall.
- Change a section of pavement from asphalt to concrete.
- Change the size of plants needed on a landscape project.
- Change type of fence from barbed wire to chain link fence.

#### **E. Revise the Contract Time**

##### **Notification**

See Standard Specification 104.03, p. 40.

When an issue arises, the Contractor notifies the Department of any perceived changes to the contract. This issue is reviewed by the project personnel to determine if it is a Supplemental Agreement candidate. Usually a resolution is reached.

If no resolution is reached within two days of issue submission, the Contractor must submit written notice to the RE which details (at a minimum) a description of the issue, time and date discovered, and location of the unresolved issue. The Escalation Process of the Partnering Program is the method ADOT uses to resolve issues. In ADOT contract administration, Partnering is intended to quickly resolve all ongoing issues in a win-win, cooperative atmosphere.

##### **Other**

**Good points to remember are that Supplemental Agreement (SA) work (except by Force Account - FA) cannot begin until there is an agreement between the Department and the contractor.**

**Payment for new work cannot be made until a Contract Revision Notification (CRN) is entered with all approval dates and an item number (for new items) is established.**

**Alternative delivery projects (Design-Build & CMAR) require an extra step to determine if an SA for “new” work is required.**

**ARS 28-6923, “Bid requirements; procedure; bond”**

**K. This section does not prohibit a change to a construction contract that either:**

- 1. Does not alter the scope of the work under a contract and the cost of the change does not exceed ten per cent of the contract amount or fifty thousand dollars, whichever is greater.**
- 2. Does alter the scope of the work if the cost of the change does not exceed ten per cent of the contract amount or fifty thousand dollars, whichever is greater, and the changed work is within twenty per cent of the total project length.**

## **Question & Answers:**

How is extra work defined & where is it defined?

Name two examples that may be defined as differing site conditions?

1.

2.

Name at least three examples of delay for which a time extension may not be considered:

1.

2.

3.

What is a Controlling Item of Work?

When can the Engineer change the work?

What determines a Major Item of Work?

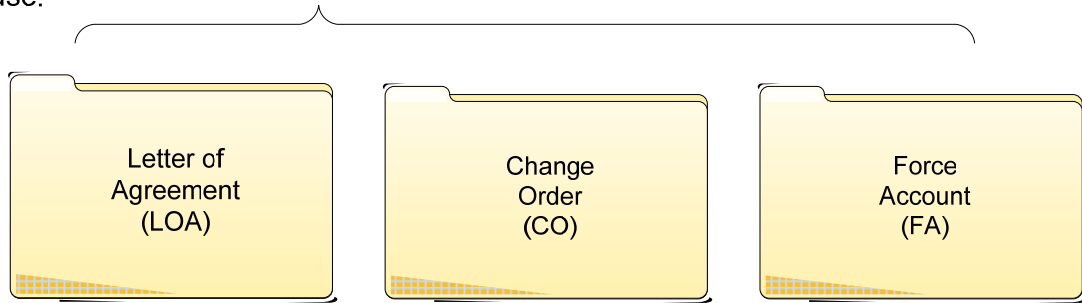
## Unit Two: Selecting a Document Type

### Document Types

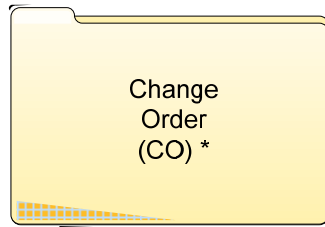
A change in the scope of work is processed as a Supplemental Agreement using one of three different documents:

A Supplemental Agreement is needed.  
What Document Type should be used?

For changed **COSTS**  
use:

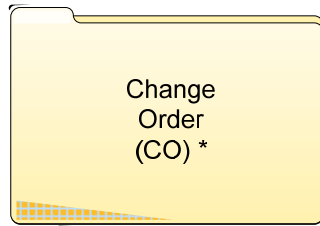


For changed **TIME** with or without Compensation  
use:



A Procedural Change Order is a special case with zero costs.

For changed **SPECIFICATIONS** or **DRAWINGS**  
use:



A Procedural Change Order is a special case with zero costs.

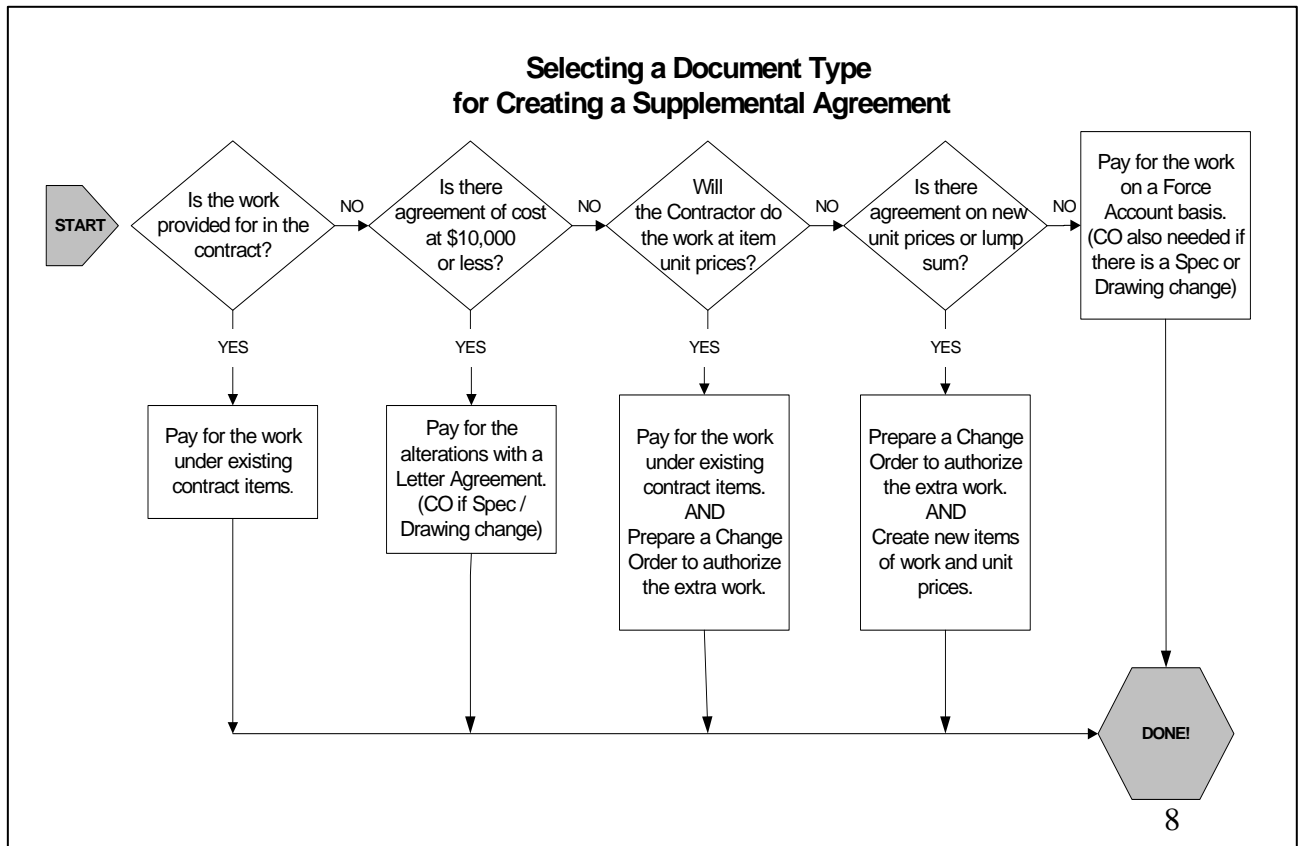
**NOTES:**

- 1. Do not confuse a Force Account Supplemental Agreement with a Line Item Force Account established by the contract.**
- 2. Alternative delivery projects (Design-Build & CMAR) require an extra step to determine if an SA for "new" work is required, or if it is already provided for in the contract. See Appendix P.**

## Selecting the Right Document Type

Document Type	Change of...	Used when...
Letter of Agreement (LOA)	Work (Cost)	Changes are minor, <\$10,000.
Change Orders (CO)	Work (Cost) and / or Time Extension and / or Plans or Specifications	Contract unit prices or new agreed upon prices are used.  Time extensions with or without compensation when time is added to the contract.  Plans or Specifications are changed (Requires the approval of the Assistant State Engineer for Construction).
Force Account (FA)	Work (Cost)	An agreement cannot be reached on cost.

Use the flow chart in determining the type of document to be used for changed price of work.



## Letter of Agreement SAs

Standard Specification 109.04 (A)

The Letter of Agreement (LOA or LA) is best suited when the changes are simple, can be easily identified and estimated, and the cost is \$10,000 or less. LOA's are the easiest for the Department to administer and do not require an extensive approval process.

Refer to Appendix D on page 38 for a sample Letter of Agreement. Each Letter of Agreement includes the following information.

- The project number and contract information
- Date of authorization
- A description of the work authorized
- The lump sum cost of the alteration
- The Contractor is paid under Item No. 9240101, Miscellaneous Work, which needs to be established with the first Letter of Agreement. All subsequent Letters of Agreements are paid under Item No. 9240101.

The cost proposal (analysis/estimate) submitted by the contractor is transmitted with the LOA and is included in the project file. The Field Office shall also prepare the Engineer's Estimate of Probable Costs (ADOT's independent cost analysis) to verify the cost proposal submitted by the contractor. ADOT's estimate should be signed by the preparing (approving) RE. Both the contractor's proposal and the RE's estimate are transmitted to Field Reports with the SA package to explain how the cost of the LOA was arrived at, but they are not part of the SA -- The agreed costs are stated in the LOA.

**Letters of Agreement can never be used to change plans or specifications. Plan or specification changes always require a Change Order, regardless of cost.**

## Change Order SAs

**Cost, Time, or Plans / Specification changes?**

A Change Order must be used for changes over \$10,000 (except Force Account), but can be used for any dollar amount: Positive, Negative, or No Cost.

A Change Order is used to change the amount or type of work. The change can CREATE new pay items, INCREASE or DECREASE existing pay item quantities, or change Plans and/or Specifications. A Change Order cannot delete a pay item of work: it can only revise the pay item to a zero quantity.

A Change Order is also used to ADD contract time.

**There is a special case called a Procedural Change Order for Change Orders with a zero cost.**

A Procedural Change Order is only used when there is no change to the project's cost or to any pay item.

Change Orders use existing items and unit prices in the bidding schedule or establish new items with unit prices to pay for extra work. If there is an existing pay item, then it must be used unless it is a **Major Item of Work** and there is a quantity change of plus or minus 25%. If the price of a Major Item of Work with a quantity change of 25% is re-negotiated, the change only affects quantities 25% above or below the original contract amount (CREATE a new pay item for the quantities outside of this range).

When the need for a change is first identified, the Resident Engineer must prepare an analysis / Estimate of Probable Costs: If the change only requires the use of existing pay items, then the RE uses drawings / cross sections with supporting calculations to document the changed quantities and impact on the construction costs.

If new items of work are required, the RE requests the contractor to prepare a detailed cost estimate / unit prices (a cost proposal) for the work. Standard Specification 109.04C specifies 10 calendar days for the contractor to prepare his estimate.

If the change cannot be handled by adjusting the quantities of existing contract items (Standard Specification 109.04 (B), then a detailed cost analysis of the extra work must be developed per (Standard Specification 109.04(C). The RE's Estimate of Probable Costs and the contractor's cost proposal are used as the basis of negotiation; insuring a fair and equitable agreement on the changes and their costs. Since Change Order prices are generally agreed on before the extra work begins, contractors may attempt to include many contingencies in their cost estimates to offset any perceived risks. These risks must be carefully evaluated for validity prior to developing the formal document and pricing.

All contract documents that are modified by the Change Order such as plans or specifications must be included with the Change Order as an attachment or clearly incorporated by reference (e.g.: ASTM or MAG standards, ADOT Standard Drawings, etc.).

After agreements and approvals, the Change Order describing the change(s) and listing the pay items and quantities affected by the change is printed, then sent to the contractor for signature.

The RE's and the contractor's detailed analysis' of costs are not a part of the Change Order – the agreed upon quantities and costs are already stated in the C.O. These estimates are used to support the agreement: They explain to an audit how the Resident

Engineer determined the equitable cost of the work. They are a part of the supporting documentation package forwarded to Field Reports (with copies kept in the project file).

**Time Extensions:**

If time is requested, the contractor must prepare his request on a Request for Extension of Time Form (Construction Bulletin 10-1).

Approval of Time Extensions is solely at the Department's discretion; Standard Specification 108.08. As part of the negotiation of the Change Order, either party may decide that both cost and time must be agreed upon together. In this case, the contractor and the Department should work diligently to resolve the issue in a timely manner using the contractor's Request for Extension of Time process.

If the contractor requests additional contract time because of external forces (national shortages, weather, disasters, etc.), added work, or ADOT action, the request must be analyzed using the contractor's approved CPM (Critical Path Method schedule – See Standard Specification 108.03). Only impacts to items of work on the Critical Path (original or added work), justifies additional time. The CPM provides answers to four questions that every engineer faces: 1) How long will the project take? 2) Are we on schedule? 3) How long will the project be delayed because of a setback to a Critical Item of Work? 4) How long did the project really take?

The Resident Engineer analyses the request. If the additional time requested is non-compensatory, the RE forwards the form with his analysis to the District Engineer for determination. If approved in whole or part by the District Engineer, the form is signed by both the DE and the contractor, and the Resident Engineer prepares a Procedural Change Order for additional contract time with the signed Request for Extension of Time Form attached.

If the additional time requested is compensatory, the Resident Engineer contacts the Assistant State Engineer for Construction for assistance in analyzing the request. The RE forwards the form with the analysis to the District Engineer for determination. If approved by the District Engineer, the form is signed by both the DE and the contractor. The Resident Engineer then prepares a Change Order to establish an item for compensation to the contractor, and granting additional contract time. The signed Request for Extension of Time Form is attached to the Change Order. The form is at the end of CB 10-1, Appendix O, page 57.

If the contractor does not agree with the District Engineer's determination, the matter is escalated using the Dispute Resolution form:-

The District Engineer has the authority to approve time extensions, but Authorization Levels (the total increase in costs to the project by the Change Order) are unchanged. Remember that only Working Day or Calendar Day contracts can have time added.

**Fixed Date completion contracts must use a Change Order to change the date – from the original stated completion date, to a new stated completion date.**

If an agreement is reached on the cost of the change, but NOT on additional time, process the Change Order for cost with a statement in the Specification/Stipulation section that **“Contract Time is unresolved.” This will keep work from being delayed while the Request for Extension of Time Form (Construction Bulletin 10-1) is processed.**

**If time is not required, state that:**

**“By agreeing to this Change Order, (*THE NAME OF THE CONTRACTOR GOES HERE*) waives all rights to claim against the Department on any matter related to this and interrelated effects of this Agreement.” in the Specification/Stipulation section of the Change Order.**

#### **Parts of a Change Order:**

1. REQUEST which lists the extra work (to CREATE, DECREASE, or INCREASE Pay Items and or quantities).
2. REASON or background on the need for the work.
3. Pay Item Adjustments (Not on Procedural Change Orders) which includes Item Numbers, Descriptions, Units of Measurements, Unit Prices, Quantities, individual Item Extended Amounts, and the Total change to the contract amount.
4. SPECIFICATIONS/STIPULATIONS listing stipulations, specification requirements, plans, and/or reference to attachments (as needed).

When writing a Change Order, the author should think like a reporter. Assume the reader is unfamiliar with the project, thus the explanation needs to clearly provide the change(s) requested. It must be complete, clear and accurate, and answer Who? What? Where? When? Why? and How? Using this questioning in writing a Supplemental Agreement makes the process easier. This is especially important when projects are audited after project completion by people unfamiliar with the project.

## Request

Ask...	Include...
What?	Create, Decrease, or Increase Pay items identified by number. Compensation for Time also requires the creation of a new pay item identified by number.

## Reason

Ask...	Include...
Why?	Why the change is being made. Explain in sufficient detail and reasoning: <ul style="list-style-type: none"><li>– Identify the cause for the change.</li><li>– Explain why the change is needed.</li></ul>
Who?	It is appropriate to note who is initiating the change. Attach any correspondence requesting the change.
Where?	Specify where the changes are to take place, i.e. station reference, area limits, or other specific location information.
How?	Specify how the change will be done, i.e. method of construction, etc. This may require a new Specification and/or Plans for the work.

## Specifications/Stipulations

Ask...	Include...
How?	The RE should list or attach drawings, specifications and/or referenced Standards to completely describe the method to complete the work. Remember to list deleted or superseded Plan sheets or Specifications. Restrictions are also included: Is work limited by day of the week, time of day, or listed special events or dates? List them.
What?	Specify or stipulate all conditions affecting the change: Is Time being added? (Attach the signed Request for Extension of Time form). Is Time unresolved or not an issue? Say so as a Stipulation!

## Cost Analysis

Cost Analysis by both the Resident Engineer and the contractor are not part of the Change Order because the costs are stated on the SA document. **They are both required as backup to how prices were determined, or negotiated.** See Standard Specification 109.04(C) and page 31 of this Workbook for estimate preparation format. The Contractor submits a cost proposal (detailed estimate) and the RE or consultant designer independently prepares a detailed Engineer's Estimate of Probable Costs.

## **Force Account SAs**

The Force Account (FA) Supplemental Agreement is only used when the Contractor and ADOT are unable to reach agreement on the cost of additional work. Force Account may be the only agreement possible at times when the scope of work of a change is unknown or the scope of additional work cannot be otherwise clearly defined.

It requires the most intense administrative efforts and record keeping both for the contractor and for the Department.

The Force Account process requires the engineer to use two forms: the Force Account Work Request and the Detail Daily Reports. The FA Work Request is prepared on the same Supplemental Agreement Form as a Change Order, with only minor changes to the body. The body consists of:

- **REQUEST** which defines the work to be done by this process...**What** is to be done? These are pay items identified by item number. A new item of work requires the creation of a new pay item number.
- **REASON** why the work is being done...**Why** we are doing it / why are we doing it this way?

Again, Cost Analysis' by both the Resident Engineer and the contractor are not part of a Force Account Supplemental Agreement. But both estimates are required in the package sent to Field Reports to document how prices were determined, or negotiated. It should also state conditions or limitations on the quantities. There is little difference between estimating for a Force Account from that of either a Letter Agreement or a Change Order. The difference is some items need a guesstimate of quantities – sometimes approaching a SWAG (you have to work with what you have). See Standard Specification 109.04(C) and page 31 of this Workbook for estimate preparation format. See page 33 of this Workbook on how FA are PAID.

Because of the guesstimate / SWAG nature of the quantities, the actual labor, equipment and labor used to do the work must be accurately tracked on detail sheets by the contractor using ADOT's FA Detail. Force Accounts require that the both the contractor and ADOT inspectors keep complete and accurate record of the Contractor's labor and equipment hours as well as the materials used on force account work. Daily labor, material and equipment use are recorded by the Contractor on ADOT's, [Force Account detail](#) (the Contractor's weekly summary for payment) and are submitted weekly (No form; no payment). ADOT uses the Daily Diaries to track of the work: The Daily Diaries are used to check the contractor's detail.

### **Non-Allowable Charges (Standard Spec 109.04 (E):**

For both estimating and compensation / reimbursed the contractor is not paid for:

- (1) Profit in excess of that provided by specification.
- (2) Loss of profit.
- (3) Home office overhead.

- (4) Consequential damages, including loss of bonding capacity, loss of bidding opportunities and insolvency.
- (5) Indirect costs or expenses of any nature.
- (6) Attorneys fees, claims preparation expenses or costs of litigation.
- (7) Interest.

Refer to the Construction Manual for detailed information on documenting and processing Force Account work. Additional information is found in the Standard Specification 109.04 (D).

#### **NOTES:**

- **Use the S.A. EXACTLY as it is printed from SATS! Do not modify it by clipping, cutting & pasting, or montaging.**
- **All printed pages must be signed (executed) by all parties to the Supplemental Agreement.**

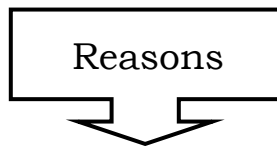
## Unit Three: Developing the Documents

### Process Improvement

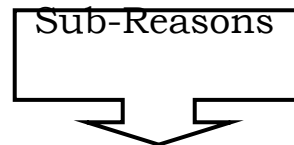
In 1997 the Auditor General requested the Department to classify reasons for Supplemental Agreements. Based on the information collected, the various ADOT sections and consultant engineers can use the information to improve future plans; and hopefully prevent the problem from reoccurring. This should result in substantial savings in the cost of construction. If the reason for each Supplemental Agreements wasn't documented, we wouldn't know what needs to be improved.

### Selecting Reasons/Sub-Reasons for Minor Alterations and Change Orders

When a Minor Alteration or Change Order is determined to be the right document type for creating a Supplemental Agreement, reasons and sub-reasons MUST be included.



Value Engineering  
Additional or Extra Work  
Out of Scope  
Quantity Omissions  
Plans Revisions and  
Oversights  
Changed Condition  
Penalty or Bonus  
Other



Roadside  
Contracts and Specs  
Materials  
Traffic  
Structures  
Civil  
Drainage  
Utilities

One of the principle motivators for developing the automated Supplemental Agreement & Tracking System (SATS) is to determine the cause of Change Orders and Minor Alterations. Thus, the Supplemental Agreement author needs to assign both reasons and sub reasons.

Note: When preparing a Change Order to add Contract Time, the Reason Code is for the underlying cause for the need. Was it because of additional work caused by Changed Conditions, Added Work, Omissions, etc.? There is no Reason Code “Add Time.”

See Appendix L for a bar graphs of calendar years 2007, 2008, 2009 & 2010 costs of Supplemental Agreements by Reason Code.

## **Value Engineering (VE)**

This is a contract change in which both the owner and the Contractor agree to alter the contract to reduce the total contract amount: Any change must perform the functions of the original design. Savings are split 50/50. The Contractor initiates this change, and the owner accepts or rejects it. See Standard Specification 104.13 Value Engineering Proposals by the Contractor:

Proposed changes are examined so that future designs may include Value Engineered improvements. By improving the process through plan changes, ADOT realizes all of the savings in subsequent projects.

### **EXAMPLE A**

Remain-in-place, metal, deck forms are now sometimes called for on Structure Sheets in the General Notes. This VE introduced a new product.

### **EXAMPLE B**

Non-reinforced, cast-in-place, concrete pipe is now specified on the Pipe Summary Sheets when permitted to be used.

Savings from traffic control modifications or construction phasing changes may only be considered when it is part of a systematic change. There is no payment for unused traffic control that was provided in the contract but was not needed or never implemented during the execution of the work as planned.

Complete details and requirements for a Value Engineering proposal are in Standard Specification 104.13. They should be reviewed and followed when evaluating any Value Engineering SAs.

Requirements are briefly summarized as:

- The Contractor can request a change in plans, specifications, or other contract requirements after execution of the contract.
- Any resultant savings are shared equally between the Department and Contractor.
- An independent cost analysis must be developed, not just relying on the contractor’s unit prices.
- Proposal is reviewed within specified time limits.
- Several conditions need to be met for an item to be considered a Value Engineering SA.

- ADOT makes the formal acceptance or rejection decision on a case by case basis by the VE Engineer.
- It isn't a VE if the concept has been used in the past. To review past VEs, visit VE's web site:  
[http://www.azdot.gov/Highways/ConstGrp/Value\\_Quality/Value\\_Engineering/ChangeOrders.asp](http://www.azdot.gov/Highways/ConstGrp/Value_Quality/Value_Engineering/ChangeOrders.asp).
- Concurrence from the Value Engineering Manager is required prior to initiating an SA.
- In all cases, the statutory requirement to have plans / specifications signed and sealed by a Professional Engineer are unchanged.

When setting up a VE change order, the Resident Engineer needs to keep in mind that the Contractor's portion of the savings is added back into the change order as a separate item. In other words, all negative quantity adjustments and new work items are listed first. A new item called "VE savings" is then created to pay for the Contractor's half of the savings. Separate pay items should be created for any administrative expenses the Department may have. The Contractor's administrative expenses are usually included in any new items of work.

It is important for the VE change order to clearly show the savings to both the Department and Contractor. This can be done on the cover sheet or within the body of the change order. In addition, any documents used to develop the VE should also be referenced.

### **Additional or Extra Work Out-of-Scope**

This is work for which a price is not included in the original contract, but where the work is deemed necessary or desirable for satisfactory completion of the contract. There are two SA reasons codes for this category: One each for 'ADOT' and 'Other Jurisdictions' (cities, towns, counties, etc.).

The key words "Out of Scope" indicates that these items were not in the original contract. Some of the items that can be extra work may include aesthetic treatment to walls, sound walls, additional landscaping, and other work generated by Intergovernmental Agreements (IGA's), or Joint Project Agreements (JPA's).

If the work should have been constructed but wasn't included in the plans, use the Plans Revisions and Oversights reason. Examples include required work not described (such as a missing attenuation device).

Additional/Out of scope improvement costs compete with new projects and can adversely impact ADOT's Work Program. ADOT funded work on this SA type should only be done with good cause.

### **Quantity Omissions**

This SA reason is for missing pay items for work described in plans or specifications or when a major item quantity is increased or decreased more than 25% of the plan quantity

### **Plans Revisions and Oversights**

Use this SA reason when the plans did not accommodate existing, visible field conditions at the time of design, and a change to the design is desirable for obvious design oversights or omissions.

**EXAMPLE C**  
Sidewalk is built 8 feet beyond curb and no provision is made for the earthwork embankment quantity needed to be placed under the sidewalk.

The changes are within the original scope and should have been on the original plans. This is another situation where improvements could be made to the design process.

### **Changed Condition**

Use this SA reason when an unusual and unknown condition occurs on the project after award of the contract, such as for: unknown utility conflicts or other subsurface conditions; unknown or unusual material characteristics; acts of nature; vandalism.

**EXAMPLE D**  
Rapid population growth of an area has created new roadside conditions, thereby creating the need for additional driveways, sidewalks, etc.

This SA reason is a condition that could not have been known at the time the contract was awarded, or a hidden condition that could not have been controlled, estimated, or decreased. This SA reason would also allow for an explanation that a certain percentage of the construction budget must be spent to fix construction conditions that were not and could not be predicted.

### **Penalty or Bonus**

Use this SA type when paying for items where construction quality or time was modified and the change was not included in the contract documents.

**Example E**  
ADOT chooses to accept a substandard product at a reduced price.

**Example F**  
ADOT wants to Accelerate the Contractor's schedule with a bonus.

**Example G**  
ADOT accepts a different product at a discount (penalty) or bonus when the plan's materials are unavailable.

## **Other**

This SA reason is used **ONLY** when none of the other six types fit the situation that exists on the project. Write in any items not included in the previous SA types and provide detailed explanations.

### **Example H**

When there is agreement that a contract change has occurred and the price is being negotiated, negotiated settlements should be included in any of the above categories for Change Order / Letters of Agreement.

### **Example I**

When a contract issue is escalated and a settlement is reached, the reason of *Other* is used for the Change Order SA and the negotiated settlement should be explained in detail.

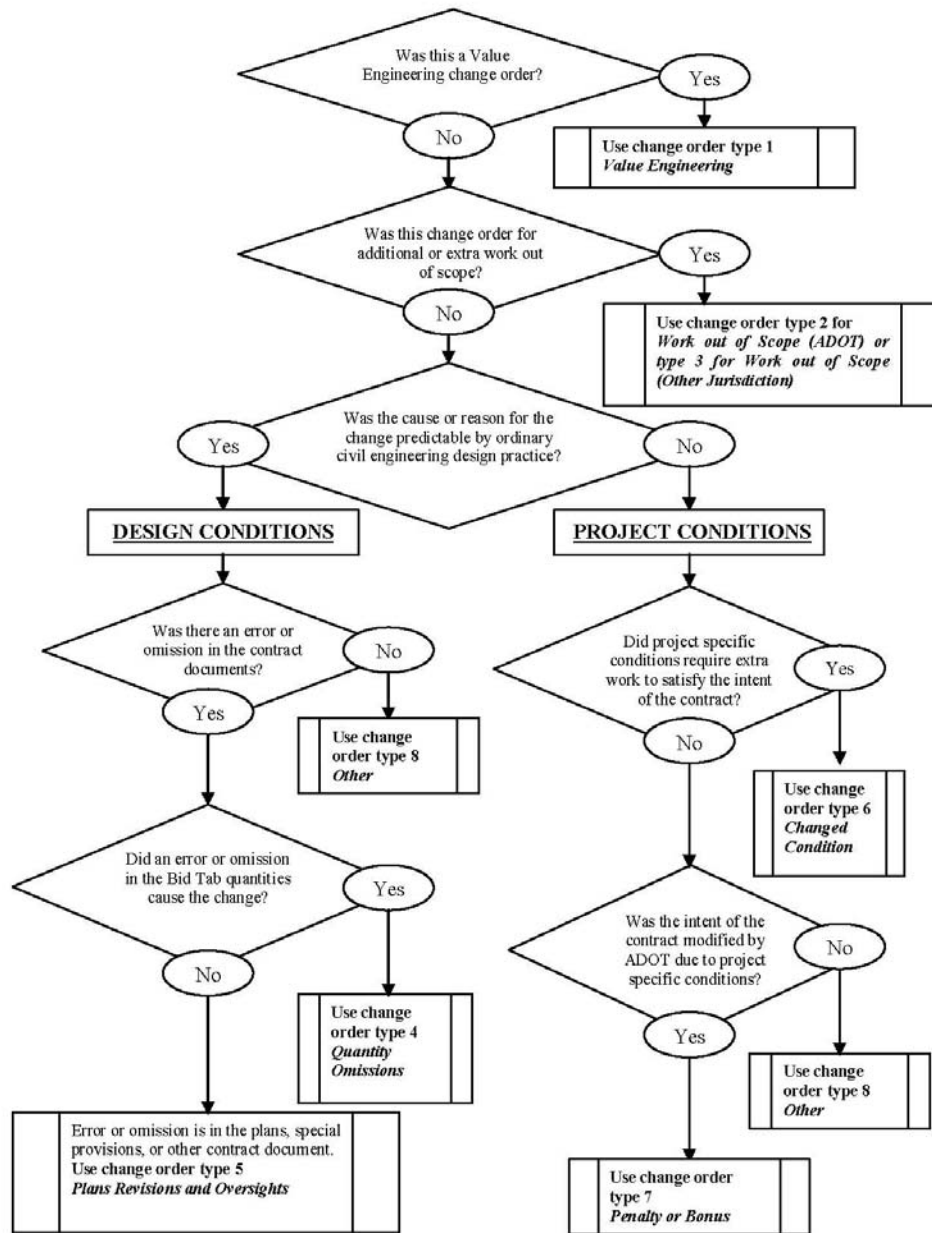


Exhibit 104.02-1. Choosing Supplemental Agreement Type

**Q & A about Reasons:**

1. What reason for change would be used when a drilled shaft hit material different than that shown on the drilling logs?
2. The plans did not provide a method of payment for removal of pavement markers which were not listed in the contract as an item to be removed. What reason should be used?
3. What reason would be used to change from AB Class 3 to AB Class 2?  
At the Department's request?

At the contractor's request?

4. What reason would be used if a concrete structure's dimensions were out of specifications, yet the structure was allowed to remain in place at a reduced price.

## **Project Development/Management Process**

ADOT is committed to the Project Development/Management Process.

An ADOT **Project Manager (PM)** maintains direction of the project through the financial allocation and control, design, stakeholders involvement, construction and maintenance. This responsibility requires the PM to stay in contact with the project. All changes need PM approval to assure the Department the original scope of the project is being met without added or deleted features. Construction personnel must contact the PM regarding any contemplated changes and to receive approval before taking proceeding. **The PM is not to be confused with the Resident Engineer (Construction Manager), who is responsible for day to day construction activities.**

The Construction Manual contains a very good discussion of this process in Section 100, pages 100-10 through 100-11. Refer to these pages regarding involving the PM in the Supplemental Agreement process.

### **Errors and Omissions Policy**

See Appendix M for the ADOT Intermodal Transportation Division Policy, MGT 00-2 Error and Omissions by Consultants Policy. This policy was implemented because:

- ◆ Approximately 75% of the highway plans are designed by consulting engineering firms.
- ◆ At ADOT, approximately 50% of the Change Order SAs are to correct plan errors and omissions.

From this process improvement, a concerted effort is made to recover additional costs generated by correcting plan errors. The policy defines a procedure to follow when the cumulative total of the cost of correcting plans errors or omissions exceeds 5% of the construction bid amount, or \$20,000, (whichever is less).

This same process improvement awareness is needed for projects designed by ADOT. Become familiar with the MGT 00-2 Error and Omissions by Consultants policy in order to advise the Resident Engineer, Project Manager, and Designer when a plan error/omission is encountered.

**NOTE: As of 8/29/2011, the policy is being revised.**

## **Unit Four: Processing the Documents**

Learning the principles and application of this unit requires careful referral to the Construction Manual and the Standard Specifications.

### **Monetary Authority**

The Resident Engineer is responsible for monitoring the cumulative value of all changes to the original contract amount. Contracts are typically funded with a 5% contingency, so when the cumulative amount of changes reaches 5% of the original contract amount, there isn't sufficient funding to complete the project. An RE / DE should not approve any supplemental agreements without a funds increase which requires approvals from both the Project Manager and the Assistant State Engineer, Construction.

The authority rules apply to negative as well as positive cost adjustments.

### **Authorization Levels of Authority**

#### **Professional Engineer / Registered Landscape Architect.**

ARS 28-6921B1 states: The state engineer shall be a civil engineer registered to practice in this state. To be in compliance with laws and rules, the Department requires that all contract documents are signed by a registered Professional.

Changing a professional's sealed work can only be done by a registered professional: Usually a **Professional Engineer (PE)**, this also applies to work signed / sealed by a **Registered Landscape Architect (RLA)**, which can only be done by an RLA. Changes shall be signed and sealed in accordance with ARS 32-142 and Article R4-30-304 of the Code & Rules of the Arizona State Board of Technical Registration.

#### **State Engineer: Up to \$10 million.**

The State Engineer has authority to approve all Supplemental Agreements up to \$10 million. This authorization includes changes to specifications, design, and unit price adjustments. Concurrence from the Project Designers is needed on all design-related changes.

#### **Deputy State Engineer: Up to \$750,000.00.**

The Deputy State Engineer has authority to approve all Supplemental Agreements that equal or exceed \$350,000 and up to \$750,000. This authorization includes changes in specifications, design, and unit price adjustments. Concurrence from the Project Designers is needed on all design-related changes.

#### **District Engineer / State Construction Engineer: Up to \$350,000.00.**

The District Engineer (DE) has authority to approve changes to the contract that equal or exceed \$75,000 and up to \$350,000. This authorization includes changes in specifications, design, and unit price adjustments. Concurrence from the project's designer and ADOT Technical Managers is required (See CB 04-01, Appendix K, page 45). If the District Engineer is unavailable for approval, the Assistant State Engineer for Construction has the authority to approve changes.

## **Resident Engineer: Up to 75,000.00**

Resident Engineers (REs) are authorized to approve changes to the contract up to \$75,000. This authorization includes changes in contract specifications\*, design\*\* and unit price adjustments. Contact and consensus with both the Project Manager and Project Designers are required on design changes that are greater than \$25,000. Project Managers are to be kept informed of all significant changes. If the RE cannot reach a consensus with the Project Manager (PM) or Designer on a change, then the issue should be immediately escalated.

\* Also Requires State Construction Engineer Approval.

\*\* Concurrence from the project designer and ADOT's Technical Managers is also required (See CB 04-01, Appendix K, page 46).

## **Contacts for Supplemental Agreements**

The authorization levels apply to the financial approval of a supplemental agreement. Resident Engineers should contact the Project Manager and all applicable Technical Managers for proposed Supplemental Agreements. The Technical Manager(s) should concur with the contract revision prior to implementation of the Supplemental Agreement (See CB 04-01, Appendix K, page 46).

## **FHWA**

FHWA APPROVAL is required for all **Full Oversight** federal-aid projects. FHWA Full Oversight projects can be identified by the last letter in the Project Number: N (National Highway System - NHS) or X (non NHS). Typically a project change over \$1 million on the Interstate Highway System is an **N** project - **Full Oversight**.

Project numbers that end in an A are in the **Certification Acceptance** program: ADOT has the authority to approve supplemental agreements for federal-aid projects in the Certification Acceptance program.

Although FHWA does not need to approve supplemental agreements for Certification Acceptance (A) projects, they do need to be advised that the supplemental agreement is being processed. Any local government or agency with participation (funding) in a project also must be contacted for approval.

See the ADOT – [FHWA Stewardship Agreement March 2010](http://www.azdot.gov/Highways/ConstGrp/PDF/FHWA-ADOT_StewardshipAgreement.pdf), Tables 2 and 3 (Construction) at: [http://www.azdot.gov/Highways/ConstGrp/PDF/FHWA-ADOT\\_StewardshipAgreement.pdf](http://www.azdot.gov/Highways/ConstGrp/PDF/FHWA-ADOT_StewardshipAgreement.pdf)

## **Financial Increase Approval**

ARS 28-6923 K provides the legal limits for a change to a construction contract. A change is allowed if the SA:

*1. Does not alter the scope of the work under a contract and the cost of the change does not exceed ten per cent of the contract amount or fifty thousand dollars, whichever is greater.*

***2. Does alter the scope of the work if the cost of the change does not exceed ten per cent of the contract amount or fifty thousand dollars, whichever is greater, and the changed work is within twenty per cent of the bid project's original length.***

## **Application of the Laws**

### **Scope of Work**

The contract must include the same type of work being considered in the change. For example pavement cannot generally be added to a grade and drain job which has no paving contract items. Likewise, Intelligent Highway Systems cannot generally be added to any contract not containing this type of work in the original work.

### **Cost of Work**

On projects with a total value of \$500,000 or less, any one cost increase is limited to ten per cent of the work or \$50,000. On projects with a total value over \$500,000 the total amount of any one change can be ten per cent of the contract value.

### **Location of Additional Work Covered by a Change**

Any additional work must be within 20 % of the project limits. This allows the engineer to do additional work sometimes required to make modifications or connections at the ends of the project such as detours, signs, markings, or adjustment to local conditions which may have changed since original design. For example, any additional work on a project ten miles long must be within two miles of either end of the original project length.

Exceptions: Any Supplemental Agreements being considered in excess of these limits must be discussed with the State Construction Engineer and must be thoroughly justified as needed prior to issuing any approval to commence the work. Often times these exceptions will require legal review and approval of the State Engineer's Office.

## **ADOT Administrative Services Requirements**

When a project Budget is established a contingency amount of 5% of the contract amount is provided for unforeseen changes that may occur during the construction process.

When an individual change exceeds 2% of the contract amount, a Resident Engineer or District Engineer may **not** approve any supplemental agreement without the approval of the Assistant State Engineer for Construction. The RE is responsible for monitoring the cumulative value of all changes to the original contract amount. The RE must verify the project budget can accommodate all supplemental agreement amounts by referencing the Finance Card found in the Contract Card of the FAST Desktop. If not, a Request for Additional Project Funds, Construction Manual exhibit 109.04-5 (See Appendix I, page 44) must be submitted and approved by the Assistant State Engineer for Construction.

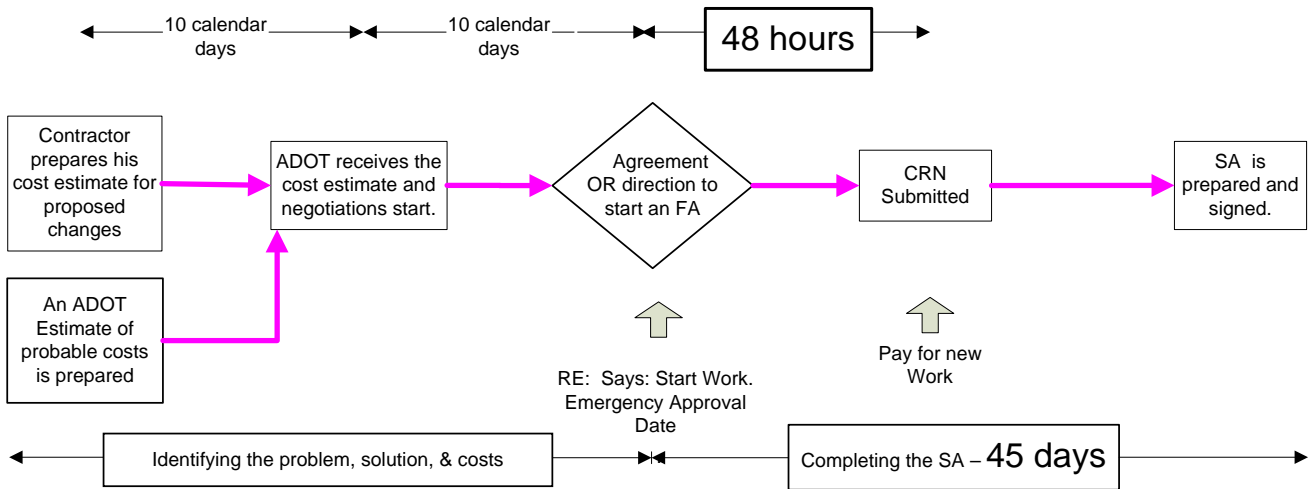
Once the 5% contingency amount is reached, the project should request approval in writing to exceed the budgeted contingency amount. An evaluation is made to determine adequate funds are

available in the ADOT Construction budget to approve the change. Continued overrunning of project budgets could result in the need to drop a planned project from the program.

## Summary of Activities

1. Contractor and ADOT verbally agree to additional work that is not included in the contract.
  - ◆ Contractor is asked to prepare a detailed Cost Estimate or unit prices for the work. ADOT also prepares an Engineers' Estimate of Probable Costs and identifies a reasonable time for completion of the work if it is / will be a Critical Path Activity. The time frame for preparing estimates and analyzing time requirements is specified in Standard Specification 109.04 C: **10 calendar days for preparation of the estimate.**
  - ◆ If work starts before formal approval is received, ADOT documents the work as if it is a Force Account.
2. Cost Estimate is submitted to ADOT.
  - ◆ Start SA negotiation. See 109.04 (D).
  - ◆ If the Prime Contractor's cost proposal / estimate includes an attached estimate from a subcontractor which does not detail P&OH, assume that it was included. The Prime Contractor is entitled to a 5% mark up on that portion of the work for a total of 20% P&OH (15% for the sub, and 5% for the Prime).
  - ◆ If the Cost Estimate is not received on time OR if a contract price adjustment cannot be agreed upon, the work is processed as a Force Account and the RE prepares the Force Account request.
3. Agreement to proceed on the Supplemental Agreement is reached.
  - ◆ If the SA is a Force Account then only the ADOT estimate is required.
4. A Contract Revision Notification (CRN) document is prepared.
  - ◆ No pay outs on existing pay items are permitted prior to the submission of the CRN.
  - ◆ No pay outs on new items until they are contractually established in CPE.
5. SA is completed and signed as the official contract document.

## Time Line for SAs



### NOTES:

- The “Emergency Approval Date” is when the contractor is instructed to begin work by the R.E.
- The 10 calendar days between identifying the problem and starting time / cost negotiations using the contractor’s and RE’s estimates [Std Spec 104.03 (D)] is a guideline – if the work urgent, a Force Account could be directed on day one.
- The 10 calendar days between identifying beginning negotiations and the RE directing the start of work is a guideline that should generally be adhered to.

## Questions & Answers:

On an \$8 million project how large can an SA be?

On a \$200,000 project, how large can an SA be?

A project is 8 miles long. It has box culverts to be built. Can a box be added 2 miles from the end of the project? Yes or No; Why?

What percentage requires the State Construction Engineer to approve of a change?

What type of Supplemental Agreement reason code would be selected for the following scenarios and why?

- A. It is necessary to add 200 L.Ft. of 36" pipe culvert under a new roadway because of a channel built by a private owner adjacent to the project. The channel was built prior to ADOT's construction project, but after Right-of-Way acquisition.
- B. A storm caused the water table in a streambed to rise 20 feet. This required the contractor to pump the footing dry prior to placing box culvert floor.
- C. After the start of construction, ADOT Traffic Engineering decided to change the lane widths on a new roadway from 12 foot to 11 foot lanes to increase shoulder widths. The contractor agrees to use the contract's bid prices; the total estimated cost of the change is \$17,200.00.

## **Contract Revision Notification Document (CRN)**

The CRN is the initial document prepared in SATS to make notifications that an SA is being prepared and to get all required permissions. The completed CRN is used as a coversheet for a SA. It summarizes the SA and documents verbal authorization to proceed with the requested changes.

A Supplemental Agreement is approved by ADOT, and then sent to the Contractor for signature. Once returned from the Contractor, the signed SA package is sent to Field Reports.

- It lists the people contacted who technically approved the SA.
- It summarizes any important internal discussions within the Department regarding the reasons for developing the SA which are not appropriate to include in the Supplemental Agreement form in the Comments section.
- It summarizes any discussion with FHWA when federal aid is involved.
- It provides a cost estimate of the changes.

The CRN is where options that were considered during the development of the Supplemental Agreement are discussed, and other issues of interest to those who review or approve the change are listed.

## **Sealing of Agreements**

Resident Engineers are responsible for sealing Supplemental Agreements only when the RE has been in Responsible Charge of a design issue. Design issues requiring a seal are:

- changes to drawings
- changes to technical specifications
- new drawings or specifications

Engineer seals are NOT required for contract administrative issues such as quantity, cost, and time adjustments.

When the change is to an existing design sealed by an engineering registrant, the RE shall coordinate with the registrant. When consulting designers develop changes, they shall send sealed drawings or specifications to the RE for inclusion with the Change Order. When a Value Engineering proposal requiring new drawings is submitted, it shall be sealed by the Contractor's registered engineer prior to final approval of the proposal. (Because of "Responsible Charge" of the work, the contractor may elect to reimburse the Engineer of Record – ADOT's designer). When an issue has been escalated beyond the RE, it shall be sealed by the responsible registrant making the final decision. Drawings and specification must be sealed in accordance with Article R4-30-304 of the Code & Rules of the Arizona State Board of Technical Registration.

## **Packaging**

After the Supplemental Agreement has been signed by ADOT (RE, Assistant DE, DE, Assistant State Engineer, and/or SE as appropriate) and the Contractor, the packet is ready to send to the Field Reports / District Office. The packet should be a self-contained set of the critical parts of the document (see below). The RE should designate a person in charge of putting together the packet for the District Office. When the Supplemental Agreement comes back from the Contractor signed, it should be given to the designated person and the packet assembled, copied and sent. A copy should be given to the inspector(s) in charge of inspection and payment.

What is in the contractor's packet? Only the signed SA and drawings / materials necessary to describe the change to the contract.

All new / revised sealed drawings or specifications are attached to the Supplemental Agreement forms or referenced on the first page.

The plans should normally be originals with the changes clearly noted. These plans can be reduced to 8 1/2 x 11 inches, but may be larger to ensure enough detail for reviewing and copying. Include all other detail sheets or drawings needed to show what is being built and the location. Thick / detailed submittals, such as shop drawings, cut sheets, etc., should be referred to by reference in the SA - THEY ARE PART OF THE CHANGE – with copies to the contractor and the Project Office, but not included in the District packet.

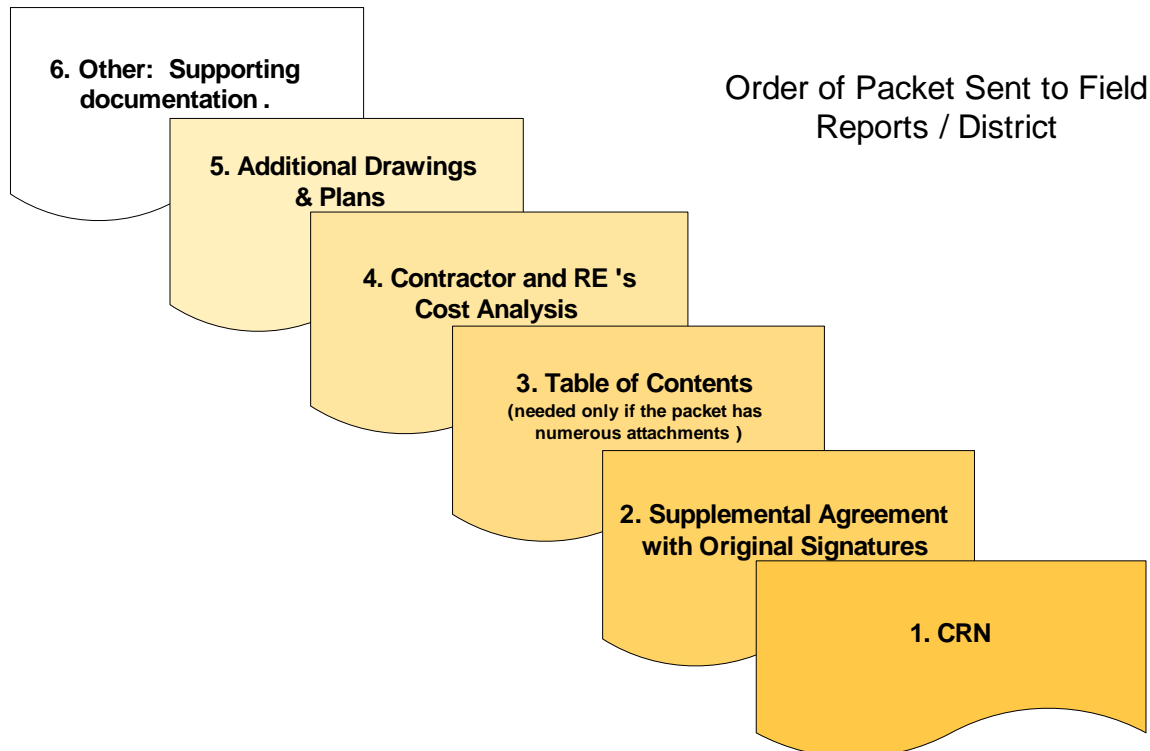
What is included in Field Reports' packet? They get a copy of everything. Each district sets its own policy on what is forwarded to district.

Attach letters, e-mail approvals, sketches, etc. that provide back-up, explanation, or detail in case of later audit.

Note that both the contractor's and ADOT's cost estimates are forwarded to Field Reports. The contractor gets neither estimate because the SA lists the AGREED COST of the change.

Log all signature / transmittal dates in SATS!

**Documents to Field Reports/District:**



## Engineer's Cost Estimate for Supplemental Agreements (LOA, CO & FA)

### Std Spec 109.04 (C)

WHAT	HOW CALCULATED
Labor	Wages + Labor Burden + Fringes = (Wages x 1.35) + Fringes
Materials	Cost
Equipment	Cost
Other	As needed
Subtotal	
Taxes	Subtotal x rate x 0.65
Bond	Subtotal x 0.005* (which is ½%)
Total	
Profit & Overhead	total x 15% or 20%
<b>ESTIMATE</b>	<b>\$\$\$.</b>

\* **REGARDLESS OF AMOUNT PAID**

LABOR “Burden” is the total of all indirect labor costs: Costs necessary for an employee to perform the work that they were hired to do.

ADOT calculates it as 35% of wages. This includes 6.2% Social Security Tax, 1.45% Medicare Tax, Workers’ Comp (Insurance the employer must purchase) and State and Federal Unemployment Insurance (another insurance the employer must purchase). It also includes training, paid holidays, use of vehicles, computers, equipment, PPE, office furniture, air conditioning, pens, pencils, paper, etc.

LABOR “Fringes” are the non take home portion of wages which can include Pension / 401K, paid vacation and sick leave, contributions to Health Insurance, etc. ADOT verifies fringe benefit rates (FR) from payrolls. “The contractor shall provide the hourly wage rates and fringe benefit rate at the preconstruction conference. The rates will be verified by comparison to the contractor’s payrolls.” [SS 109.04 (D) (1)]. A recent ADOT audit did not find a current fringe benefit plan on file with the ADOT Field Reports Section. The Construction Manual, Page 1210-12 states:

“It is necessary that at the time payrolls are submitted to each field office, the distribution of fringe benefits be reviewed. If the Contractors indicate on the Statement of Compliance that fringes are contributed to a plan and there is no current plan on file in ADOT Field Reports, request a copy of the complete plan including the *Explanation of Benefits*. Submit it to Field Reports to review for Davis-Bacon compliance.”

The use of Certified Payrolls for actual employees' data is preferred to applying a fringe rate to the Davis Bacon scale.

Tax rate is based on the location of the project. Use <http://modelcitytaxcode.org/pdf/CombinedRateSheet.pdf> to find current rates. If a project goes through different cities / counties, you may have different tax rates which must be apportioned. Work on an Indian Reservation may also have a tribal tax rate.

Profit & Overhead (P&OH) for SA's is 15% (maximum) for work done by the Prime Contractor alone. If work is done with a subcontractor, 20% P&OH may be used on the subcontractor's portion only. Note, when a contractor's estimate includes a quote from a subcontractor whose P&OH is not listed, a 15% mark up is assumed; add an additional 5% P&OH for the Prime Contractor.

There are two distinct overhead items: Fixed and variable.

For instance, a Carpenter will cost wages + Social Security (FICA) + Workers Compensation (WC) + Medicare + Unemployment Insurance (SUTA) + Medical (Health, Dental, Vision) + Long Term Disability (LTD) + Retirement + Life Insurance + cell phone + truck reimbursement + etc. This is the Burdened Labor or Burden, which is basically the same thing as variable overhead. If the Carpenter was not hired, the labor burden (or variable OH) will decrease by 100%.

Fixed overhead would contain the cost of running the office, rent, phones, fax, etc. Most salaried (supervisory) staff are also overhead. It is fixed because if half of the field staff were fired, the fixed overhead amount would stay relatively constant.

The correct way to calculate the Navajo Nation tax:

Construction	\$ 12,587.42
Tax (6.1% X .65)	\$ 499.09
Navajo Tax (3%)	\$ 377.62
Grand Total	\$ 13,464.13

**For analyzing a contractor's request for Compensatory Time, contact the State Construction Engineer.**

**NOTE: Take care when using Excel spread sheets for estimates! Imbedded formulae can be corrupted, especially when reusing a spreadsheet (Do the math!).**

**If the Contractor does not submit a detailed estimate, state that in place of the contractor's estimate & attach what was received.**

## Force Account payments

### Do not confuse a Force Account Cost Analysis with the method of payment.

The Cost Estimate for a Force Account is prepared in the exact same manner as any other Supplemental Agreement, except that the quantities may be more “Guesstimates.” Although the paragraphs follow each other, Spec.109.04(D) is the method office staff calculates payment from inspected / documented work.

### **Office Procedure in calculating PAYMENT for Force Account Work**

#### **Std Spec 109.04 (D)**

WHAT	HOW CALCULATED
Labor	(Wages + Fringes) x 1.5
Materials	Cost + 15%
Equipment	Cost + 15%
Equipment (rented)	Cost + 10%
Direct Charges	Cost + 5%
Subtotal	
Taxes	Subtotal x rate x 0.65
Bond	Subtotal x 0.005 (Which is ½%)
Profit & Overhead	Zero, Zip, Zilch, Nada
<b>PAYMENT</b>	<b>\$\$\$.</b>

Direct Charges include “pass through” billing for utility bills / invoices (water, sewer, electric, dumpsters, landfill charges, etc.)

Force Account’s (FA) do not include P&OH calculated from the totals: Labor, Materials, and Equipment are marked up individually. P&OH is therefore ZERO, ZIP, ZILCH, NADA!

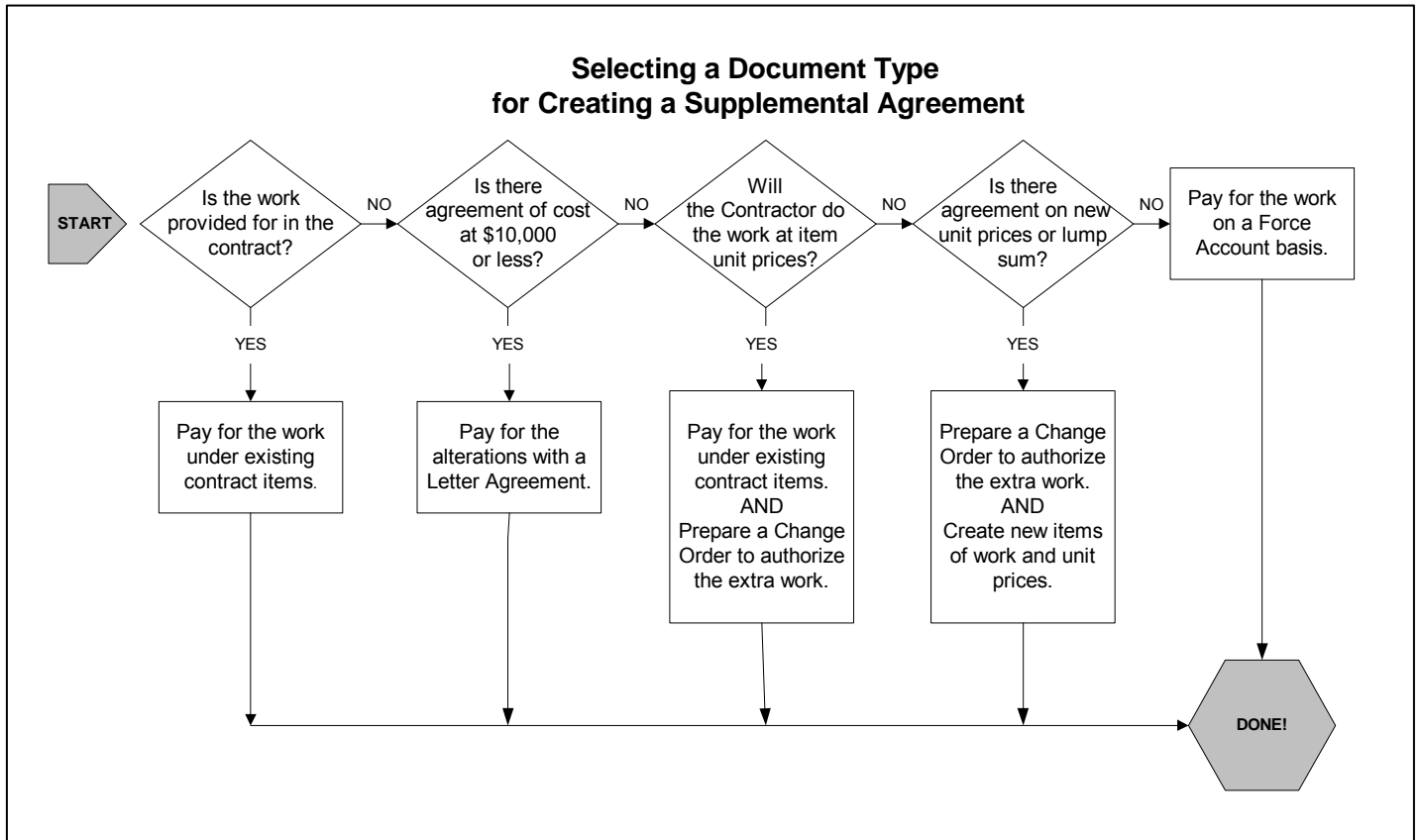
When Paying for LABOR on Force Account work, “No part of the salary or expense of anyone connected with the contractor’s forces above the grade of foreman, and having general supervision of the work will be included in the labor items.” Exception; See 109.4 (D) (4).

ADOT reimburses the contractor for work performed – the contractor submits the “[PRIME CONTRACTOR FORCE ACCOUNT WEEKLY DETAIL SHEET - OUTSIDE RENTED EQUIPMENT](#)” form weekly for approval.

# Appendices

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# Selecting the SA Document Type



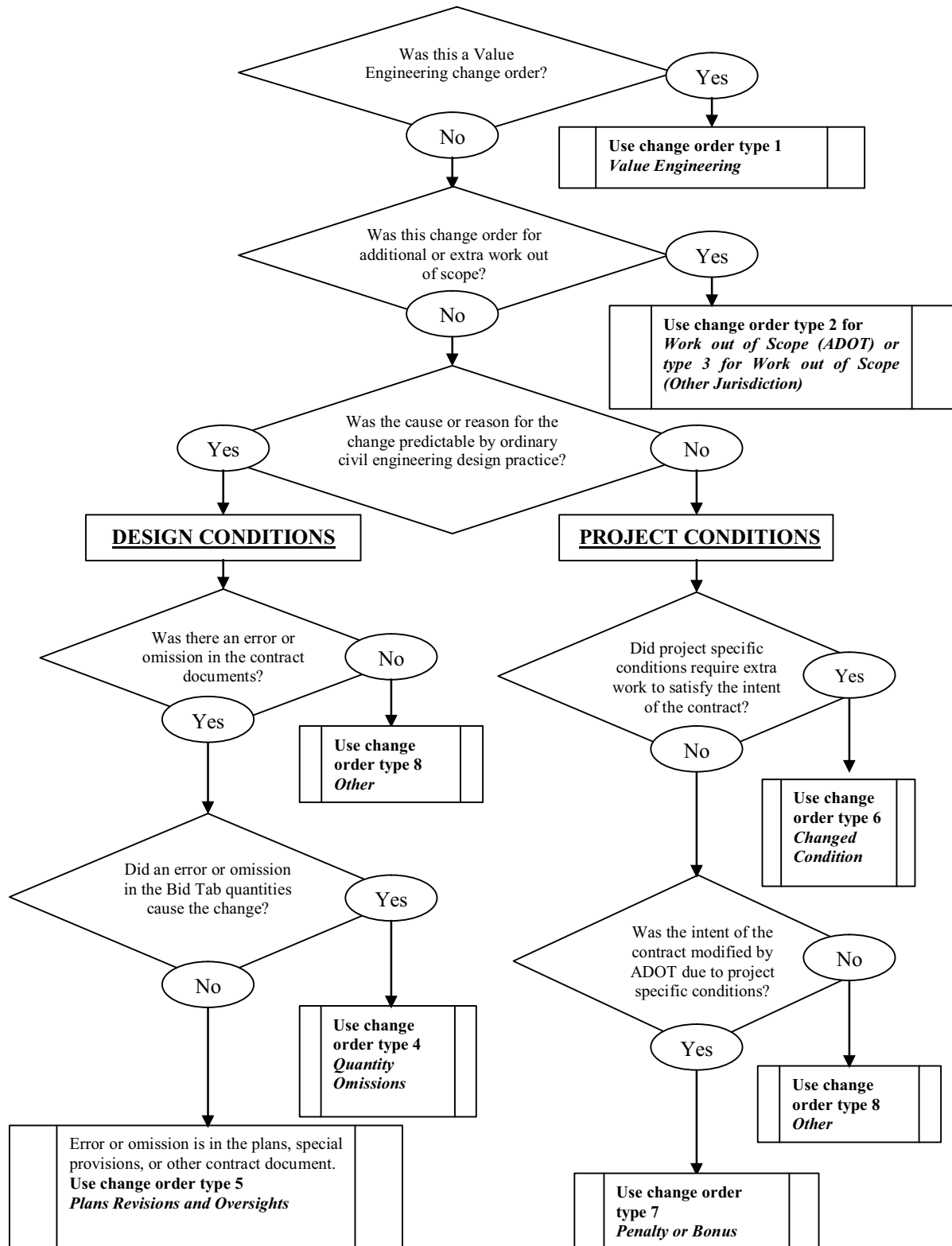


Exhibit 104.02-1. Choosing Supplemental Agreement Type

**Arizona Department of Transportation**  
 Intermodal Transportation Division  
 Contract Revision Notification

10/08/03

To: R.U.Sure  
 District Engineer  
 From: I.M. Right  
 Resident Engineer

Signature \_\_\_\_\_

Signature \_\_\_\_\_

<b>Tracs#</b> H1234501C	<b>Project#</b> I-10-4(001)	<b>Project Name</b> I-10-TI, ANYWHERE		
<b>Contractor</b> Quality Construction Co.	<b>Contract Amt</b> \$11,555,000.00	<b>Contingency %</b> 5 %	<b>Contingency Adjustment %</b> %	<b>Contingency Amt</b> _____
<b>Original Amt</b> \$85,000	<b>Percentage of Contract</b> .74 %	<b>Accumulated Amt</b> \$278,000.00	<b>Accumulated % of Contract</b> 2.41 %	
<b>Agreement Type</b> Change Order	<b>Document Num</b> _____	<b>SATS Doc Num</b> 1004	<b>Emergency Approval Date</b> 10/06/2003	
<b>Prime Designer</b>	Errorless Design Engineering			
<b>Reason Code</b>	Plans, Revisions, and Oversights			

**Brief Description**

Add a 6" dedicated waterline to the pump station for the fire suppression system.

**SA Description**

During the construction of the pump station it was determined that the new 4" water line would not supply enough flow to run the fire suppression system. The pressure and flow problems were not determined until after the majority of the 4" line had already been installed. The designer recommended installing an unmetred, dedicated 6" ductile iron line for the fire suppression system.

Name	Title	Date Contacted	Comments
R. U. Sure	District Engineer	10/06/2003	Concurs
M. I. Sane	ADOT Valley PM	10/06/2003	Acknowledged Change
C. Y. Bass	Errorless Design Engineering	10/06/2003	Recommended Change
Y. Knott	Quality Construction Co.	10/06/2003	Contractor's Authorizing Agent
B. Ware	FHWA	10/06/2003	Authorized FHWA participation

Arizona Department of Transportation

Intermodal Transportation Division

Supplemental Agreement

12/18/2003

Letter of Agreement No. 2

<b>Tracs No.:</b> H508801	<b>Project No.:</b> AC* 600-7-( 1)	<b>Org:</b> 7742	Phoenix
<b>Project name:</b> I-10 TI, PH 2(INCL CHNDLR BLV)		<b>Contractor:</b> EDWARD KRAEMER & SONS, INC.	

- Federal Aid
- Non-Federal Aid

**Request:**

To compensate the Contractor for removal of reinforced concrete curb from the top ends of Equipment Overpass.

**Reason:**

This work is necessary to accommodate the roadway section and is not identified in the plans as a removal item. This curb required the use of jackhammers and compressors for removal. Reference subitem 56.

Pay Item Adjustments:						
Sec	Item Nbr	Description	Unit	Unit Price	Quantity	Amount
1	9240101	MISCELLANEOUS WORK (RESIDENT)	L.SUM	1.00	0.000	\$ .00
		Subitem: LOA56 Unit Price Adjustment:	.00	1.00	761.580	\$761.58
				<b>Total:</b>		\$761.58
				<b>Plus</b>	<b>Minus</b>	
				<b>Total Difference:</b>	\$761.58	\$ .00

Approved for ADOT

\_\_\_\_\_  
Robert J. Samour Date

Approved for Edward Kraemer & SONS, INC.

\_\_\_\_\_  
Contractor Signature Date

cc: Field Reports

Exhibit 109.04-4. Letter Agreement

**Arizona Department of Transportation  
Intermodal Transportation Division  
Supplemental Agreement**

12/01/03

**Change Order No. 1004**

**Tracs No.:** H1234S01C      **Project No.:** I-10-4(001)      **Org:** 7777      Phoenix

**Project Name:** I-10 TI, Anywhere      **Contractor:** Quality Construction Co.

- Federal Aid
- Non-Federal Aid

**Request:**

To create;  
 Bid Item No. 8073999 - 6" Tapping sleeve  
 Bid Item No. 8080039 - 6" Backflow Preventor  
 Bid Item No. 8082106 - Pipe, Ductile Iron, 6"  
 Bid Item No. 8089399 - Misc. (Concrete Coring)  
 Bid Item No. 8089999 - Misc. (City Permit)

**Reason:**

During the construction of the pump station it was determined that the new 4" water line would not supply enough flow to run the fire suppression system. The pressure and flow problems were not determined until after the majority of the 4" line had already been installed. The designer recommended installing an unmetred, dedicated 6" ductile iron line for the fire suppression system.

**Pay Item Adjustments:**

Sec	Item Nbr	Description	Unit	Unit Price	Quantity	Amount
1	8073999	6" Tapping Sleeve	EACH	2,000.00	1.000	2,000.00
1	8080039	BACKFLOW PREVENTION ASSEMBLY, 6"	EACH	6,000.00	1.000	6,000.00
1	8082106	PIPE, DUCTILE IRON, 6"	L.FT.	50	1250.000	62,500.00
1	8089399	MISC (Concrete Coring)	EACH	1,500.00	1.000	1,500.00
1	8089999	MISC (City Permit)	L.SUM	13,000.00	1.000	13,000.00

**Total**      **\$85,000.00**

<b>Total Difference</b>	<b>Plus</b>	\$85,000.00	<b>Minus</b>	\$ .00
-------------------------	-------------	-------------	--------------	--------

Date: \_\_\_\_\_ Date: \_\_\_\_\_ Date: \_\_\_\_\_ Date: \_\_\_\_\_

\_\_\_\_\_  
 Resident Engineer      City/County Engineer      District Engineer      Field Reports

**For valuable consideration, it is mutually agreed that the matter detailed above shall be done and payment made as shown herein for a Supplemental Agreement Change Order, all in accordance with the terms of the contract. For work being performed as a Supplemental Agreement Force Account Work Order, final payment shall be made as stipulated in the Standard Specifications and its supplements upon completion of said work.**

Date: \_\_\_\_\_ Date: \_\_\_\_\_ Date: \_\_\_\_\_

Approved for: \_\_\_\_\_ Approved for State of Arizona      \_\_\_ Approved without Federal participation  
 Contractor      \_\_\_\_\_ Approved with Federal participation

By: \_\_\_\_\_ By: \_\_\_\_\_ By: \_\_\_\_\_



Arizona Department of Transportation  
 Intermodal Transportation Division  
**Supplemental Agreement**  
**11/17/2010**

Procedural Change Order No. 1

Approval Date: 9/17/2010 (em)

Tracs No: H066701C

Project No: 091-E-(200)A

Org: 111

Two Guns

Project Name: HELLINGONE HIGHWAY - SOUTH

Contractor: AVERY BIG CONSTRUCTION COMPANY

Federal Aid

Non-Federal Aid

**Request:**

To extend contract time by Thirty (30) Non-Compensatory Working Days.

**Reason:**

Avery Big Construction Company requested thirty (30) Non-Compensatory Working Days be added to the contract time because of (put a short synopsis of reason here: e.g.: flooding in bridge foundation work area) as detailed in the attached Request for Extension of Time form. The Department agrees with Avery Big Construction Company and will allow Thirty (30) Non-Compensatory Working Days be added to contract time.

**Specifications/Stipulations:**

Attachment A - Request for Extension of Time form signed by the District Engineer and the Contractor.

This Change Order constitutes full and final compensation related to this extension of contract time as agreed to in the attached Request for Extension of Time form as described herein. By executing this Change Order, Contractor expressly waives the right to pursue any further claims or requests for compensation related to this contract modification, including, but not limited to, materials, labor, services, overhead, profit and damages.

**An Extension of Contract Time is Authorized for 30 days as a result of this Supplemental Agreement**

Date: \_\_\_\_\_ Date: \_\_\_\_\_ Date: \_\_\_\_\_ Date: \_\_\_\_\_

\_\_\_\_\_  
Resident Engineer

\_\_\_\_\_  
City/County Engineer

\_\_\_\_\_  
Field Reports

For valuable considerations, it is mutually agreed that the matter detailed above shall be done and payment made as shown herein for a Supplemental Agreement Change Order, all in accordance with the terms of the contract. For work being performed as a Supplemental Agreement Force Account Work Order, final payment shall be made as stipulated in the Standard Specifications and its supplements upon completion of said work.

Date: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

Approved for:  
AVERY BIG CONSTRUCTION COMPANY  
Contractor

Approved for State of Arizona  
DISTRICT ENGINEER

Approved without Federal participation  
 Approved with Federal participation

By: \_\_\_\_\_



Arizona Department of Transportation  
 Intermodal Transportation Division  
**Supplemental Agreement**  
**02/08/2012**

Change Order No. 7

Approval Date: 9/7/2007 (em)

Tracs No: H066601C

Project No: I 015-B-515

Org: 1111 Two Guns

Project Name: HELLINGONE HIGHWAY - NORTH

Contractor: AVERY BIG CONSTRUCTION COMPANY

Federal Aid  
 Non-Federal Aid

**Request:**

To create Item Number 9240130 (Compensatory Time)

**Reason:**

Avery Big Construction Company requested Compensatory Calendar Days be added to the contract time because of (put a short synopsis of reason here: e.g.: ADOT redesign of bridge foundation) as detailed in the attached Request for Extension of Time form. The Department reached an agreement with Avery Big Construction Company to extend contract time by 40 Working Days: Ten (10) Compensatory and thirty (30) Non Compensatory. Compensatory Time and per day costs were reviewed and approved by the Assistant State Engineer for Construction on 9/03/2010.

**Specifications/Stipulations:**

Attachment A - Request for Extension of Time form signed by the District Engineer and the Contractor.

This Change Order constitutes full and final compensation related to this extension of contract time as agreed to in the attached Request for Extension of Time form as described herein. By executing this Change Order, Contractor expressly waives the right to pursue any further claims or requests for compensation related to this contract modification, including, but not limited to, materials, labor, services, overhead, profit and damages.

Date: \_\_\_\_\_ Date: \_\_\_\_\_ Date: \_\_\_\_\_ Date: \_\_\_\_\_  
 \_\_\_\_\_  
 Resident Engineer City/County Engineer Field Reports

For valuable considerations, it is mutually agreed that the matter detailed above shall be done and payment made as shown herein for a Supplemental Agreement Change Order, all in accordance with the terms of the contract. For work being performed as a Supplemental Agreement Force Account Work Order, final payment shall be made as stipulated in the Standard Specifications and its supplements upon completion of said work.

Date: \_\_\_\_\_ Date: \_\_\_\_\_ Date: \_\_\_\_\_  
 Approved for: AVERY BIG CONSTRUCTION COMPANY Contractor  
 Approved for State of Arizona DISTRICT ENGINEER  
 \_\_\_ Approved without Federal participation  
 \_\_\_ Approved with Federal participation  
 By: \_\_\_\_\_ By: \_\_\_\_\_ By: \_\_\_\_\_



Arizona Department of Transportation  
Intermodal Transportation Division  
**Supplemental Agreement**  
**02/08/2012**

Change Order No. 7

Approval Date: 9/7/2007 (em)

Tracs No: H066601C

Project No: I 015-B-515

Org: 111 Two Guns

Project Name: HELLINGONE HIGHWAY - NORTH

Contractor: AVERY BIG CONSTRUCTION COMPANY

**Pay Item  
Adjustments**

Sec	Item Nbr	Description	Unit	Unit Price	Quantity	Amount		
1	9240130	MISCELLANEOUS WORK (Compensatory Time)	EACH/ DAY	\$2,605.92	10.000	\$26,059.20		
							<b>Plus</b>	<b>Minus</b>
							<b>Total Difference:</b>	<b>\$26,059.20</b>

**An Extension of Contract Time is Authorized for 40 days as a result of this Supplemental Agreement**

For valuable considerations, it is mutually agreed that the matter detailed above shall be done and payment made as shown herein for a Supplemental Agreement Change Order, all in accordance with the terms of the contract. For work being performed as a Supplemental Agreement Force Account Work Order, final payment shall be made as stipulated in the Standard Specifications and its supplements upon completion of said work.

Date: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

Approved for:  
AVERY BIG CONSTRUCTION COMPANY  
Contractor

Approved for State of Arizona  
DISTRICT ENGINEER

\_\_\_ Approved without Federal participation  
\_\_\_ Approved with Federal participation

By: \_\_\_\_\_

By: \_\_\_\_\_

By: \_\_\_\_\_

Arizona Department of Transportation  
Intermodal Transportation Division  
Supplemental Agreement

12/17/2003

Force Account No. 1

Tracs No.: H541701C

Project No.: AC\* 202-C(006)B

Org: 7742

Phoenix

Project Name: SANTAN, I-10/MARICOPA ROAD TI

Contractor: PULICE CONSTRUCTION INC.

Federal Aid

Non-Federal Aid

Request:

To compensate the Contractor for extra work necessary to remove and replace unsuitable material.

Reason:

After milling off the existing AC from WB I-10 the Contractor started preparation of the subgrade for placement of the 50% AB - 50 millings mix. The large hauling vehicles started to break down the existing subgrade causing it to pump badly. The subsurface is randomly saturated in both small and large areas and is at optimum moisture. After an inspection by ADOT's Geotech Engineer it was determined that existing material would have to be removed up to 2' in depth and replaced with suitable material.

Section:	Labor:	20,000.00	
1	Equipment:	40,000.00	
	Materials:	15,000.00	Original Request Amount
	Fa Amount	\$75,000.00	75,000.00
		Plus	Minus
	Total Difference	\$75,000.00	\$.00

Date: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

\_\_\_\_\_  
Resident Engineer

\_\_\_\_\_  
City/County Engineer

\_\_\_\_\_  
District Engineer

\_\_\_\_\_  
Field Reports

For valuable consideration, it is mutually agreed that the matter detailed above shall be done and payment made as shown herein for a Supplemental Agreement Change Order, all in accordance with the terms of the contract. For work being performed as a Supplemental Agreement Force Account Work Order, final payment shall be made as stipulated in the Standard Specifications and its supplements upon completion of said work.

Date: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

Approved for: \_\_  
Contractor

Approved for State of Arizona

\_\_ Approved without Federal participation  
\_\_ Approved with Federal participation

By: \_\_\_\_\_

By: \_\_\_\_\_

By: \_\_\_\_\_

## ARIZONA DEPARTMENT OF TRANSPORTATION

### OFFICE MEMO

May 8, 2003

TO: JULIO ALVARADO  
Assistant State Engineer  
Construction Group 172A

FROM: Resident Engineer  
Org Name

RE: TRACS #, PROJECT #  
PROJECT NAME  
Project Location

ORG:

The referenced project requires additional work in order to adequately address the construction needs at this location. Pertinent fiscal information is as follows:

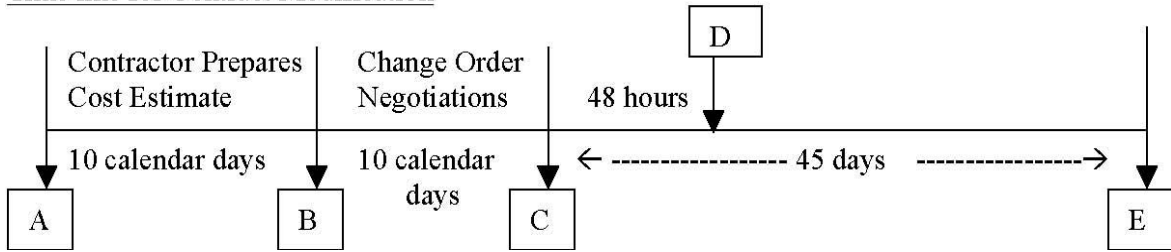
Original contract amount:	\$ 1,637,003.74
Five percent contingency:	34,335.55
15% CE	103,006.65
DPS	21,000.00
Incentives	120,000.00
<b>Original Available:</b>	<b>\$ 1,915,345.94</b> (Agreement Estimate Recap/Finance Card)
Actual Construction Costs	\$ 1,626,342.58
Actual CE	142,389.74
Contract Work Remaining	165,000.00
Additional Supplemental Agreements	98,000.00
Additional CE Costs	45,000.00
<b>Proposed New Total Needed:</b>	<b>\$ 2,076,732.32</b>
<b>Less Previous Increases</b>	<b>\$ (25,000.00)</b>
<b>Requested Amount:</b>	<b>\$ 136,386.38</b>

**Reason for increase: (Be specific)**

RESIDENT ENGINEER

DISTRICT ENGINEER

Exhibit 109.04-5. Request for Additional Funds

Time line for Contract Modification

- A. Contractor or ADOT agree to additional work that is not included in the contract.
1. Contractor is asked to prepare a detailed cost estimate or unit prices for the work, and ADOT specifies a reasonable time for the Contractor to complete the estimate. Std Spec 109.04C specifies 10 calendar days for the Contractor to prepare a cost estimate.
  2. If work is required to start prior to "C", ADOT starts documenting the work as if it were force account.
- B. Cost Estimate is received from the Contractor.
1. Start change order negotiations [see 109.04(D)].
  2. If the cost estimate is not received from the Contractor on time or if a contract price adjustment cannot be agreed upon, the work is processed as a force account and the Resident Engineer will prepare the force account request.
- C. Emergency Authorization Date  
ADOT and Contractor agree to proceed as either a change order or force account.  
If Force Account then ADOT estimate is required.
- D. Contract Revision Notification Document prepared for a force account or a change order.
- E. Change order is completed and signed as the official contract document.

Sealing Change Orders

Resident Engineers are responsible for sealing change orders only when they have been in responsible supervisory charge of a design issue. Design issues include changes to or the creation of drawings or technical specifications covering the quality or performance of the finished construction work. For example, seals are not required for contract administrative issues such as quantity, cost, and time adjustments.

When the change is to an existing design sealed by registrant, the RE shall coordinate with the registrant. When consulting designers develop changes, they shall send sealed drawings or specifications to the RE for inclusion with the change order. When a value engineering proposal requiring new drawings is submitted, it shall be sealed by the Contractor's registered engineer prior to final approval of the proposal. When an issue has been escalated beyond the Resident Engineer, it shall be sealed by the responsible registrant making the final decision. Drawings and specification must be sealed in accordance with Article R4-30-304(A)(3) of the Code & Rules of the Arizona State Board of Technical Registration.

All change order forms must originate from and be tracked by the RE in the same manner as all other change orders. Any new or revised sealed drawings or specifications shall be attached to the supplemental agreement forms or referenced on the first page of the form.



# Arizona Department of Transportation

## INTERMODAL TRANSPORTATION DIVISION Construction Group

### CONSTRUCTION BULLETIN 04-01

**To:** District Engineers  
Construction & Materials Orgs  
Consultant Contract Administrator  
William Higgins, State Engineer  
Dan Lance, Deputy State Engineer,  
Valley Transportation  
Doug Forstie, Deputy State Engineer,  
Operations

**Date:** February 12, 2004

**From:** Julio Alvarado, Assistant State  
Engineer, Construction

**Subject:** Technical Manager Concurrence with  
Proposed Supplemental Agreements

## Consultation with Technical Managers on Proposed Supplemental Agreements

Effective immediately, Resident Engineers should contact the Project Manager and all applicable Technical Managers for proposed Supplemental Agreements. The Technical Manager(s) should concur with the contract revision prior to implementation of the Supplemental Agreement.

The contact(s) should be documented in the Supplemental Agreement Tracking System (SATS) Contract Revision Notification (CRN) screen.

In the event that any Technical Manager does not agree with the Supplemental Agreement, the proposed agreement must be escalated to the applicable Deputy State Engineer(s) for approval.

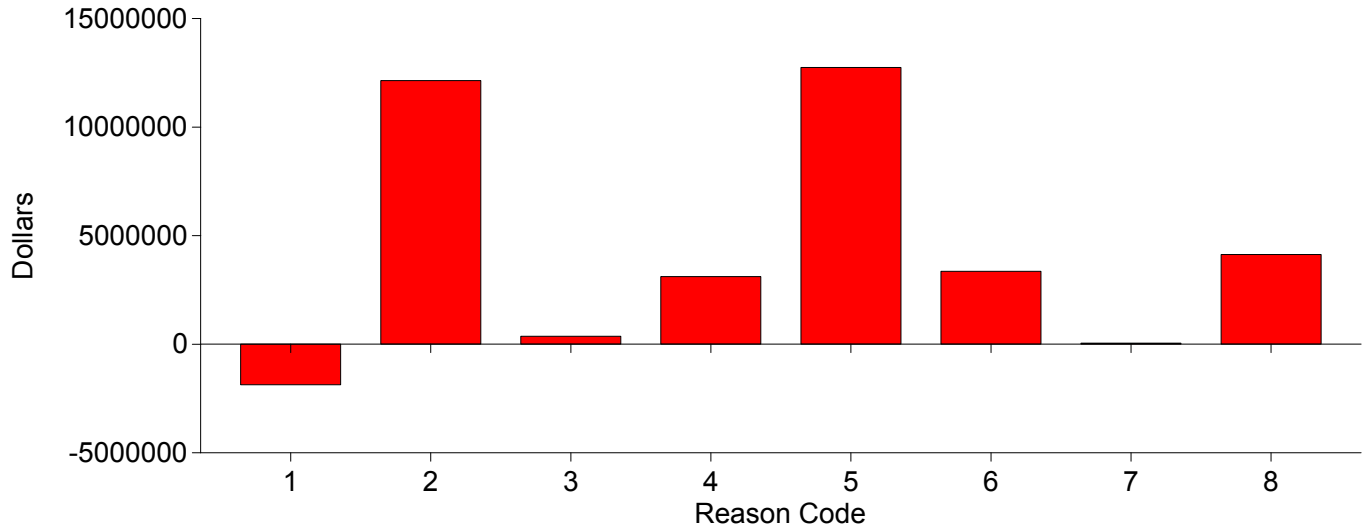
### Current Technical Managers:

Valley Project Management – Steve Jimenez  
State Project Management – Bob Miller  
Value Analysis - Paul Hurst  
Materials - Jim Delton, Acting  
Roadway – Dave Allocco, Acting

Environmental – Richard Duarte  
Traffic Engineering – Mike Manthey  
Engineering Technical Group – Dave Allocco  
Right of Way – Steve Hansen  
Bridge – Jean Nehme, Acting

## Cost by Supplemental Agreement Reason Code

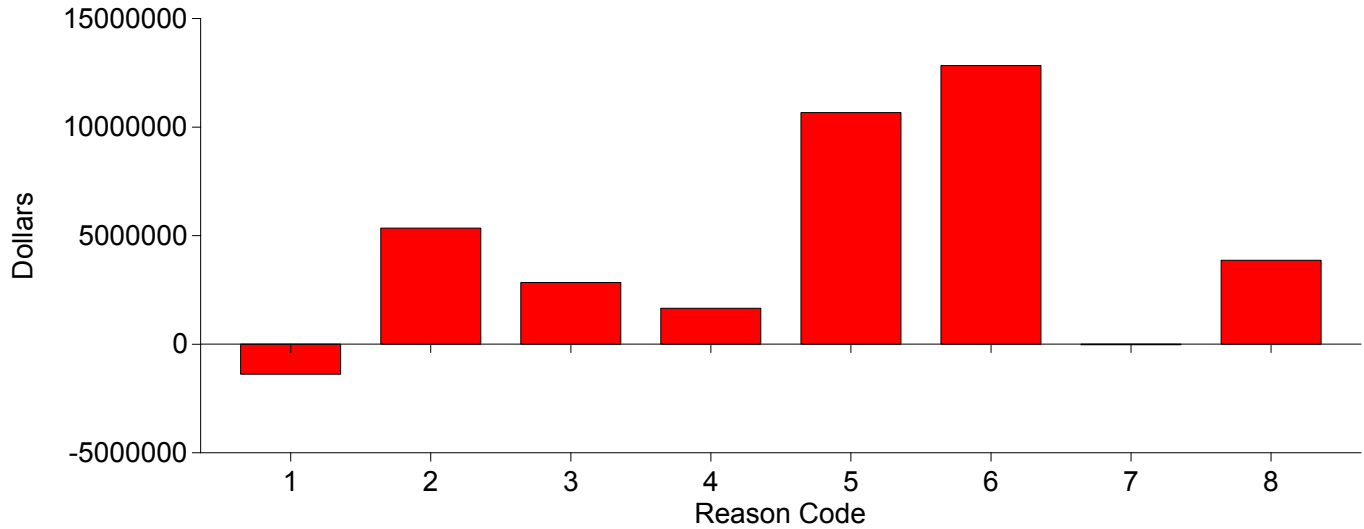
From: 01/01/2008 Thru 12/31/2008 with 1229 supplemental agreements  
 Supplemental agreements include change orders, force accounts, and letters of agreement



SA Reason	Total	Total Number
1 Value Engineering	-1,867,251.23	21
2 Work Out of Scope (ADOT)	12,139,400.92	116
3 Work Out of Scope (Other Jurisdiction)	365,277.54	32
4 Quantity Omissions	3,115,363.04	78
5 Plans, Revisions, and Oversights	12,742,862.77	457
6 Changed Condition	3,353,111.45	201
7 Penalties or Bonuses	49,730.97	5
8 Other	4,128,207.58	319
Grand Total	34,026,703.04	1229

## Cost by Supplemental Agreement Reason Code

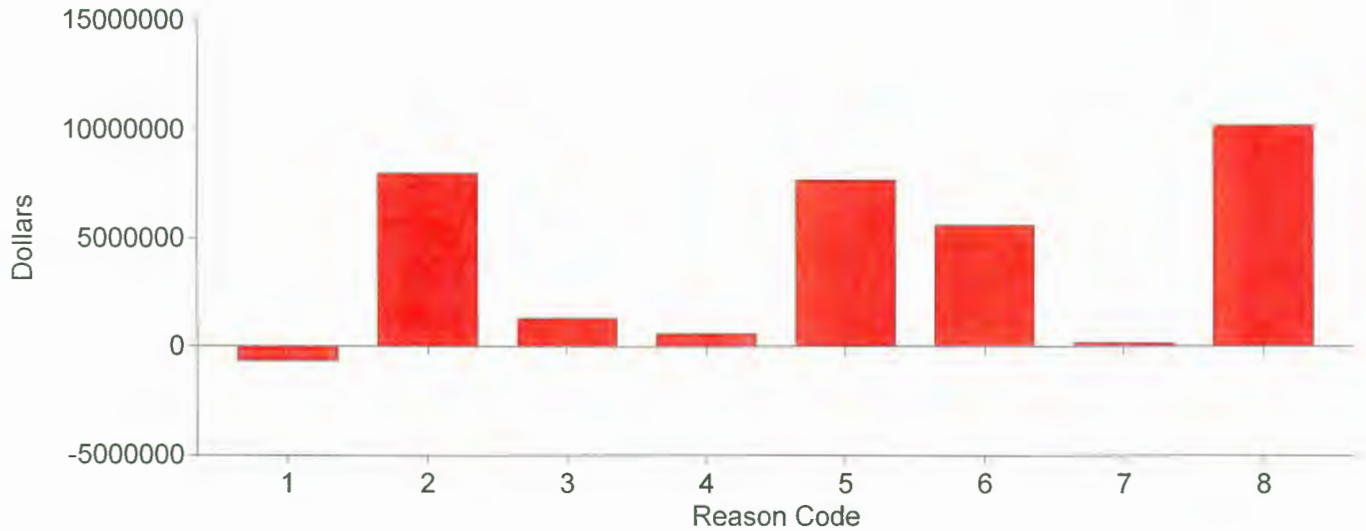
From: 01/01/2009 Thru 12/31/2009 with 1304 supplemental agreements  
 Supplemental agreements include change orders, force accounts, and letters of agreement



SA Reason	Total	Total Number
1 Value Engineering	-1,381,016.90	21
2 Work Out of Scope (ADOT)	5,347,240.41	113
3 Work Out of Scope (Other Jurisdiction)	2,840,366.98	33
4 Quantity Omissions	1,652,600.65	52
5 Plans, Revisions, and Oversights	10,668,370.55	588
6 Changed Condition	12,831,987.49	199
7 Penalties or Bonuses	-25,633.12	2
8 Other	3,868,621.37	296
Grand Total	35,802,537.43	1304

## Cost by Supplemental Agreement Reason Code

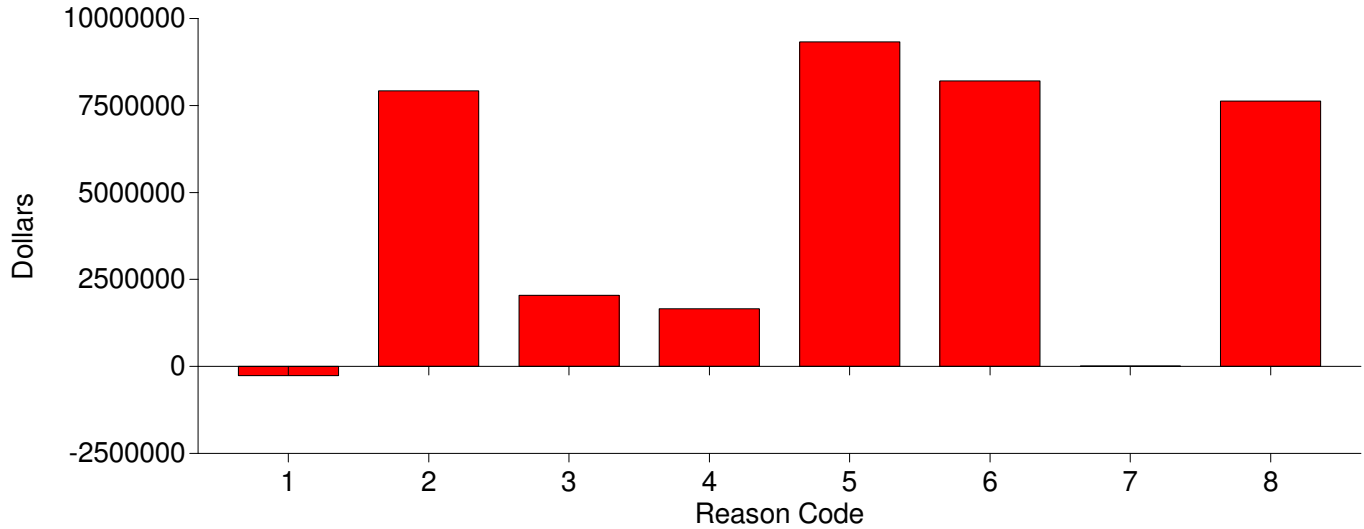
From: 01/01/2010 Thru 12/31/2010 with 1305 supplemental agreements  
 Supplemental agreements include change orders, force accounts, and letters of agreement



SA Reason	Total	Total Number
1 Value Engineering	-643,187.35	3
2 Work Out of Scope (ADOT)	7,954,004.26	121
3 Work Out of Scope (Other Jurisdiction)	1,272,796.22	31
4 Quantity Omissions	566,394.83	47
5 Plans, Revisions, and Oversight	7,638,071.85	545
6 Changed Condition	5,551,821.32	227
7 Penalties or Bonuses	156,750.18	4
8 Other	10,145,085.07	327
Grand Total	32,641,736.38	1305

## Cost by Supplemental Agreement Reason Code

From: 01/01/2011 Thru 12/31/2011 with 1294 supplemental agreements  
 Supplemental agreements include change orders, force accounts, and letters of agreement



SA Reason	Total	Total Number
1 Value Engineering	-262,287.18	8
2 Work Out of Scope (ADOT)	7,919,844.63	154
3 Work Out of Scope (Other Jurisdiction)	2,044,150.78	32
4 Quantity Omissions	1,657,121.34	76
5 Plans, Revisions, and Oversights	9,329,377.57	527
6 Changed Condition	8,208,532.47	204
7 Penalties or Bonuses	9,556.56	4
8 Other	7,623,106.40	289
Grand Total	36,529,402.57	1294



**Intermodal  
Transportation  
Division  
Policy**

November 3, 2000  
Effective Date

November 3, 2005  
Review Date

Supersedes  
ITD Policy 90-01

Dick Wright,  
State Engineer

**MGT 00-2 ERRORS AND OMISSIONS  
BY CONSULTANTS**

**Purpose**

The purpose of this policy memorandum is to develop and implement a Division Claims process for resolution of consultant errors or omissions.

**Scope**

The Intermodal Transportation Division will actively pursue the resolution of claims as a result of consultant errors or omissions.

**Authority**

This procedure applies to all consultant contracts issued through and/or administered by Engineering Consultants Section (ECS). All contracts will follow the procedures outlined in this policy.

**Definitions**

“Consultant” means a business concern or individual that enters into a contract with the Department to furnish professional services such as, but not limited to, project design or construction contract administration.

**Background**

As a result of the Intermodal Transportation Division’s extensive use of consultants, it is anticipated that contract changes during the course of a project’s construction will occasionally involve allegations of consultant errors or omissions. This policy has been developed to determine responsibility and expedite resolution.

Claims avoidance is a primary consideration throughout the duration of the project from design conception. During design, maximum emphasis should be placed on delivering a quality product. A clear, comprehensible, and complete scope of work sets the stage for a quality product. Implementation of quality control plans, complete submittals at various stages of project design and a consultant evaluation program are critical to quality products.

Field reviews are an essential part of the design process to ensure that the design product is understood and meets the needs of the Department. Operation and maintenance considerations of a project should also be emphasized during these reviews.

During the construction phase, there are a number of steps that can be utilized to avoid claims arising from errors and omissions. Daily documentation, soliciting the consultant’s input before any significant change order, and the timely processing of any potential construction claims, are examples of avoidance techniques.

The initiation of errors or omissions claims against the consultant normally begins during the construction phase of a project. At this point, steps must be taken to collect information for determining the validity of the claim, specific responsibilities, and extent of the claim. The communication between the District, Construction Contractor, the Federal Highway Administration (if applicable), Project Manager, and Consultant must be clear, open, and well documented.

When an error or omission is perceived by District, it is imperative that the Project Manager and Consultant be immediately notified of the error or omission and invited to participate in corrective action in order to mitigate the cost. If the notification is oral, it must be followed up in writing. This notification should be forwarded through the District to the Project Manager. Responsiveness by the Consultant is crucial to this process.

The Department will estimate the value of errors or omissions as they are identified. The value shall include those additional costs to ADOT above the amount that would have been expected in the contractor's bid, had the error or omission not occurred. In the event that the cumulative total value of errors or omissions exceeds five percent of the construction contractor's bid, or \$20,000 (whichever is less), the Department may pursue a claim against the Consultant. Claims filed will be for that amount which exceeds five percent of the construction contractor's bid, or \$20,000 (whichever is less).

If it is determined that a claim will be filed against the consultant, Engineering Consultant Section will issue a formal Notice of Claim to the Consultant. Three things need to be present throughout the process: a professional attitude, complete preparation, and responsive action. A professional attitude will set the stage for future negotiation. Complete preparation is a must in order to know and document the facts and circumstances. Responsive action is important to resolve differences when facts are fresh in all parties' minds.

The following steps will be utilized to facilitate the review and processing of claims:

1. Errors or omissions are identified, normally at the Project level.
2. An initial review is conducted by the Department to determine the validity, responsibility, and extent of the problem.
3. Notification is given to the consultant.
4. If the value of the errors / omissions is determined to be less than five percent of the construction contractor's bid, or \$20,000 (whichever is less), the Engineering Consultant Section will maintain the documentation for a possible future claim.
5. If the errors /omissions exceeds five percent of the construction contractor's bid, or \$20,000 (whichever is less); or if the cumulative total of claims held by the Engineering Consultant Section exceeds five percent of the construction contractor's bid, or \$20,000 (whichever is less) the Department may file a formal claim. The Project Manager and the Resident Engineer will review the data and reconcile the costs to determine if the Agency should pursue a claim.

6. The amount of the initial claim will be the cost as determined by the Department less five percent of the construction contractor's bid, or \$20,000 (whichever is less). Any future claim will not be subject to this reduction.
7. The claim will, as minimum, cover the following areas:
  - Statement of circumstances: brief description of who, what, where, when, and why;
  - ADOT's intention: dollar amount of consultant's liability for the claim
  - A copy of the construction force account and/or construction change order, and
  - An explanation of the Department's administrative review process.
8. The Consultant may pay the claim or may request an administrative review. There will be two levels of administrative review. The claim review shall not escalate to the second level without an attempt to resolve it at a lower level. The first level administrative review shall involve the Project Manager, the Resident Engineer, and the Assistant State Engineer – Construction Group, and an Assistant State Engineer from Development
9. If the claim is not resolved at a lower level, the Department will appoint a review panel, which will be chaired by the Deputy State Engineer for Development and consist of the Deputy State Engineer for Operations and a third party selected by the Chairman. The panel will review all documents and conduct such investigations and interviews as necessary to make a determination on the validity and extent of the claim. Engineering Consultants Section will provide administrative support to this process.
10. If the review process does not resolve the claim, the Department may pursue the claim through arbitration or litigation, as appropriate.
11. For all unresolved claims of \$100,000 or less, the Construction Group will file a Demand for Arbitration with the America Arbitration Association. The Arbitration will follow the guidelines set forth in the latest version of the ADOT Construction Manual at the time of contract. Unresolved claims in excess of \$100,000 will be forwarded by the Construction Group to the Office of the Attorney General.
12. When claims are resolved Engineering Consultants Section will notify all parties in writing.

## SPEC. PAY ITEM LIST

### THE FOLLOWING PAY ITEMS ARE ALLOWED TO BE CREATED IN CPE PER SPEC:

- 1080200 PROSECUTION AND PROGRESS ADJUSTMENT  
Liquidated Damages  
Payroll Submittal Retention (*\$500 per payroll retained for Liquidated Damages*)
- 1090001 DIESEL FUEL PRICE ADJUSTMENT  
Needs a Change Order if spec. is not in Special Provisions  
Call Field Reports to see if a project qualifies to have this item included in the contract.
- 1090010 ASPHALTIC CONCRETE PAVEMENT SMOOTHNESS INCENTIVES
- 1090011 ASPHALTIC CONCRETE PAVEMENT QUALITY LOTS  
Sub-items for Spread, Mix and Compaction
- 1090020 PORTLAND CEMENT CONCRETE PAVEMENT SMOOTHNESS INCENTIVES
- 1090021 PORTLAND CEMENT CONCRETE PAVEMENT THICKNESS INCENTIVES
- 1090022 PORTLAND CEMENT CONCRETE PAVEMENT STRENGTH INCENTIVES
- 1090030 PAYROLL SUBMITTAL RETENTION (*Retention of \$2500 per payroll*)
- 1090035 MISCELLANEOUS INCENTIVES / DISINCENTIVES  
Quality Control  
Penalties on Asphalt Binder (*sub-item for each %*)  
Agreed upon penalties for AB  
Strength Penalty for Structural Concrete  
Temporary Penalty for Retention Spec (*This is failure of prime to pay sub within so many days after sub has completed all work, including partial payments, final payments and retention payments*)
- 1090040 MISCELLANEOUS ADJUSTMENTS  
Sales Tax on Estimates (*A CO is needed to pay this item*)  
Referee Testing (*The cost for the testing*)  
Cost of developing a new mix design
- 4040000 BITUMINOUS PRICE ADJUSTMENT
- 9250101 ONE-PERSON SURVEY PARTY
- 9250102 TWO-PERSON SURVEY PARTY
- 9250103 THREE-PERSON SURVEY PARTY
- 9250104 FOUR-PERSON SURVEY PARTY
- 9250105 OFFICE SURVEY TECHNICIAN
- 9250106 SURVEY MANAGER



# Arizona Department of Transportation

## INTERMODAL TRANSPORTATION DIVISION Construction Group

### CONSTRUCTION BULLETIN 10-01

**To:**  
 Floyd P. Roehrich, Jr., State Engineer  
 Dallas Hammit, Deputy State Engineer, Operations  
 Robert J. Samour, Deputy State Engineer, Valley Transportation  
 Sam Maroufkhani, Deputy State Engineer, Development  
 Todd Williams, Director, Office of Environmental Services  
 Jim Delton, Asst. State Engineer, Materials  
 Larry L. Langer, Asst. State Engineer, Valley Project Management  
 Vincent Li, Asst. State Engineer, Statewide Project Management  
 Mike Manthey, Asst. State Engineer, Traffic Engineering Group  
 Mary Viparina, Asst. State Engineer, Roadway Design Group  
 Jean Nehme, Asst. State Engineer, Bridge Group  
 District Engineers  
 Construction Orgs  
 Consultant Contract Administrator

**Date:** August 2, 2010

**From:** Julio Alvarado, Assistant State Engineer, Construction

**Subject:** Request for Extension of Time

### *Request for Extension of Time* form Revised

#### **Purpose**

- To improve documentation of the process for requesting and approving time extensions;
- To differentiate between *compensatory* and *non-compensatory* days requested;
- To emphasize that all time extensions must be forwarded to the District Engineer (DE) for approval;
- To provide for the Contractor’s signature concurrence with the decision rendered by the DE;
- To ensure that FHWA is advised of the time extension request, in accordance with the Department’s Stewardship Agreement, and concurrence is obtained when applicable;
- To clarify that a Change Order must be executed to process the time extension (Request for Extension of Time documentation must be attached to the Change Order).

## Background

The previous time extension form created some misunderstandings between the Department and Contractors, particularly in regard to compensatory vs. non-compensatory time requested/granted. On too many occasions the misunderstandings surface at the end of the contract. In some cases the Sr. R.E./R.E. incorrectly interpreted that the extension didn't require District Engineer approval (because the dollar amount was within their authorization level). In other cases it was assumed by one or both parties that a time extension automatically was accompanied by entitlement to home office overhead expenses.

## Procedure

There are now only three types of supplemental agreements:

1. Letters of Agreement (LOA)
2. Change Orders (CO)
3. Force Accounts (FA)

Time extensions will no longer be processed separately; contract time is only extended by Change Order. It is emphasized that after completion of the "Request for Extension of Time" form, a Change Order must be executed through the SATS program (see Standard Specification 108.08).

- The new form requires differentiating the contract days requested by classifying as either compensatory or non-compensatory. Signature/date requirements will assist in tracking the request and documenting action taken.
- When compensatory days are requested, prior to agreeing on price, contact the Assistant State Engineer for Construction, for guidance on the price negotiations and method of payment.
- All extensions of time must be approved by the District Engineer. The Supplemental Agreement Tracking System (SATS) will be changed to ensure that time extensions must have DE approval.
- The DE will obtain the Contractor's concurrence with the approved compensatory and non-compensatory days and document it on the form. If the Contractor does not agree, the escalation process must be followed.

Attachment



# ARIZONA DEPARTMENT OF TRANSPORTATION REQUEST FOR EXTENSION OF TIME

Project No. \_\_\_\_\_ TRACS No. \_\_\_\_\_ Request No. \_\_\_\_\_

Project Name \_\_\_\_\_ Contractor \_\_\_\_\_

Working Days  
Calendar Days  
Fixed Date

Total Days Requested

Requested Amended Fixed Date

The work has been impacted for the following **attached** reasons. Include a schedule (CPM if applicable) detailing the impact to the contract. **ALL ATTACHED JUSTIFICATION DOCUMENTS MUST SHOW TRACS NUMBER, REQUEST NUMBER AND CONTRACTOR.**

Compensatory Days Requested

Non-Compensatory Days Requested

\_\_\_\_\_  
Contractor Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

\_\_\_\_\_  
Contractor Printed Name

The days claimed and reasons thereof have been studied. If fewer days are recommended than claimed, attach explanation.

Compensatory Days Recommended

Non-Compensatory Days Recommended

\_\_\_\_\_  
Sr./Resident Engineer

\_\_\_\_\_  
Date

**NOTE:**

**This recommendation must be sent to the District Engineer for approval.**

Compensatory Days Approved

Non-Compensatory Days Approved

\_\_\_\_\_  
District Engineer

\_\_\_\_\_  
Date

**NOTE:**

If additional comments are necessary, attach to this request.

\_\_\_\_\_  
Contractor Concurrence Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

\_\_\_\_\_  
Contractor Concurrence Printed Name

**IF THE CONTRACTOR DOES NOT AGREE THE ESCALATION PROCESS MUST BE FOLLOWED.**

After a review of the facts,  
an additional \_\_\_\_\_ Compensatory Days and \_\_\_\_\_ Non-Compensatory Days are approved.

\_\_\_\_\_  
Federal Highway Administration

\_\_\_\_\_  
Date



**ALTERNATIVE DELIVERY**  
**CONTRACT MODIFICATION REQUEST FOR REVIEW**

CMAR <input type="checkbox"/> Design-Build <input type="checkbox"/>
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Page \_\_\_\_ of \_\_\_\_

Contractor:	Project No.:	TRACS No.:	Date:
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Project Manager:	Design Firm:	Initiator:
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**Requested Change (What):**  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Reason/Justification (Why):**  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

<b>General Supplemental Agreement Types</b>  <i>If Other, please explain</i>	<b>List Technical Managers</b>   
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**ADOT Recommendation**  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Concept Recommended By: \_\_\_\_\_ Date: \_\_\_\_\_  
 ADOT Sr./Resident Engineer

Concept Recommended By: \_\_\_\_\_ Date: \_\_\_\_\_  
 ADOT Sr./Resident Engineer

Concept Recommended By: \_\_\_\_\_ Date: \_\_\_\_\_  
 Assistant State Engineer, Construction

Concept Recommended By: \_\_\_\_\_ Date: \_\_\_\_\_  
 FHWA