

## 7. Construction Contracts

---

- 7.1 Contract Documents
- 7.2 Special Provision Preparation

The Bridge Section performs specific support activities for contract advertising and award when structural items are a part of a contract. See the *Alaska Highway Preconstruction Manual* (Section 470) for more discussion on advertising and award.

### 7.1. Contract Documents

The *Alaska Department of Transportation and Public Facilities Standard Specifications for Highway Construction (Alaska Standard Specifications)*, *Standard Modifications* and *Special Provisions* to the Standard Specifications, Plans, and *Standard Drawings* are all essential elements of a contract. They are intended to complement each other and are used to provide complete instructions for the work to be accomplished.

If a discrepancy exists among these documents, the order of precedence is:

1. Special Provisions
2. Plans
3. Standard Modifications
4. Standard Specifications
5. Standard Drawings

All bridge related construction specifications must comply with the documents referenced in 23 CFR 625.4 as minimum standards. When the *Alaska Standard Specifications* are more strict than the AASHTO LRFD Construction Specifications, the *Alaska Standard Specifications* take precedence.

#### 7.1.1. Standard Specifications for Highway Construction

Statewide Design & Engineering Services (D&ES) is responsible for the *Alaska Standard Specifications*, which present the construction requirements and materials to construct highway, traffic, and bridge projects.

#### 7.1.2. Standard Modifications

D&ES is responsible for the *Standard Modifications to the Standard Specifications for Highway Construction* (Standard Modifications), which update the requirements set forth in the latest version of the *Alaska Standard Specifications*. Standard Modifications cannot be revised once they have been adopted by DOT&PF.

#### 7.1.3. Special Provisions

*Special Provisions to the Standard Specifications for Highway Construction* (Special Provisions) are additions or revisions to the *Alaska Standard Specifications* setting forth conditions and requirements on a specific project.

Special Provisions, which are prepared by the bridge designer, are included in the contract documents for that project and are not intended for general use. Section 7.2 discusses guidelines for preparing Special Provisions.

#### Special Provision Types

The two basic types of Special Provision presentations are performance-based and material or method-based.

The performance-based specification that describes the end result of construction is the preferred type. The procedures and resources to achieve the end result are at the Contractor's discretion.

The material or method-based presentation (usually referred to as "prescriptive specifications") describes in detail the procedure and materials that should be used to construct the element.

#### 7.1.4. Standard Drawings

##### Bridge Standard Drawings

The Bridges and Structures Standard Drawings provide details on various bridge and transportation structural elements that are consistent from project-to-project (e.g., retaining walls, bridge rail to guardrail transitions). The *Standard Drawings* are available from the Department's website. The Bridge Section updates the bridge standard drawings as needed.

##### Standard Drawings

The *Standard Drawings* provide road and traffic details for various design elements that are consistent from project-to-project (e.g., guardrail, sign posts, fencing, drainage appurtenances).

The *Standard Drawings* are available from the Department's website.

## 7.2. Special Provision Preparation

Special Provisions are required when a project contains work, material, a sequence of operations, or any other requirements necessary for the completion of the project but not addressed in the construction plans, *Alaska Standard Specifications* or Standard Modifications.

Write the Special Provision so that the prospective bidder can clearly understand the work, materials and construction requirements, how the item of work will be measured, and the basis of payment.

Use the following steps when preparing a Special Provision:

### Define Need

Review the *Alaska Standard Specifications*, Standard Modifications, *Standard Drawings*, and construction plans to ensure the Special Provision is needed. Prepare a Special Provision only if the topic is not adequately covered in one of the other contract documents.

### Research

Research the topic so that complete and detailed information is available before writing the Special Provision. This may require contacting manufacturers, contractors, or suppliers for the latest information. Local conditions and problems should also be fully investigated.

### Type of Special Provision

Analyze the type of construction to be covered in the Special Provision to determine whether a performance-based or material or method based Special Provision is needed.

The performance-based specification is the preferred type of Special Provision. Under some circumstances, both types may be necessary within the compiled Special Provisions, but do not mix the presentation types within an individual section of the Special Provision.

### Develop Outline

Outline the basic work and material requirements. Organize all relevant factors under each appropriate heading.

### Writing the Special Provision

Write the Special Provision in the active voice and the imperative mood (sentence expresses a command). “Active voice” is when the subject of the sentence is

performing the action; “passive voice” is when the subject of the sentence is the receiver of the action. For example:

- Use Active Voice: “Apply rubbed finish to exposed surface.”
- Avoid Passive Voice: “Rubbed finish shall be applied to exposed surface.”

Sentences. Prepare the Special Provision using simple language and words. Strive to keep words and sentences short (20 words or less).

Paragraphs. Limit paragraphs to three to four sentences.

Terminology. Use words consistent with their exact meaning. Use the same word throughout; do not use synonyms. Avoid any words that have a dual meaning. Omit extraneous words and phrases.

Pronouns. Avoid the use of pronouns, even if frequent repetition of nouns is necessary.

Punctuation. Carefully consider the punctuation using the minimum number of punctuation marks consistent with the precise meaning of the language. Ensure that there can be no doubt on the meaning of any sentence.

Parentheses. Avoid the use of parentheses. Instead, use commas or rewrite the sentence.

Numbers. It is usually unnecessary to write numbers both in words and figures. For example, do not write “Use four (4) 1-in bolts.” Instead, write “Use four 1-inch bolts.”

When writing dimensions, always use numerals (e.g., 2.0 inch, 10 feet, 20 cubic yards). Write “2 inch by 4 inch” not “2 in × 4 in.”

Times and dates should be written numerically. Write fractions as decimals. Decimals less than one should be preceded by the zero (e.g., 0.25 inches).

### Reviewing

Review previously completed paragraphs as succeeding ones take shape. Where necessary, redraft preceding paragraphs to reflect later thoughts.

#### 7.2.1. Format

Prepare Special Provisions in the same format as the *Alaska Standard Specifications*. Organize the subsections in this order:

1. Description

2. Materials
3. Construction Requirements
4. Method of Measurement
5. Basis of Payment

### **Description**

Describe the work, with references to the *Alaska Standard Specifications*, plans, or other Special Provisions that further define the work. Where necessary for clarity, describe the relationship of this work item to other work items or other phases of construction.

### **Materials**

Designate the materials used in the work item. Reference, in this order of preference, the Alaska Test Methods (ATM), AASHTO, ASTM, or other recognized specifications when possible. If an existing reference does not adequately describe the material properties, a Special Provision in *Alaska Standard Specifications* Section 700 may be necessary to delineate complete specifications of the properties of each material and the method of tests.

### **Construction Requirements**

Describe the sequence of construction operations or the desired end product. Do not mix performance-based and method-based specifications. Where practical, use only the performance-based presentation. Only use the method-based presentation for the sequence of construction operations if performance-based language would not achieve the desired result. Specify quality control and construction tolerances.

### **Method of Measurement**

Describe the components of the completed work item to be measured for payment, and provide the units of measurement. If the pay unit differs from the defined units in *Alaska Standard Specifications* Section 109, then designate any supplemental requirements needed to establish a definite measured unit, such as when and where to make measurements, how to address waste, and what is excluded from measurement.

### **Basis of Payment**

Describe payment units and define the scope of work covered by such payment.

#### **7.2.2. Guidelines**

Ensure that the Special Provision satisfies the elements of a clearly written and authoritative

document. It must be complete, clear, concise, correct, and consistent.

### **Complete**

Ensure the essentials are included and that each requirement is definitive and complete.

### **Clear**

Clearly delineate the method of measurement and the basis of payment, including any subsidiary items.

Clearly describe the job requirements for general conditions, types of construction and quality of workmanship. Do not leave the bidder in doubt about work requirements. Never conceal difficulties or hazards from the Contractor.

Avoid conflicting or ambiguous requirements. Every specification should have only one meaning.

Do not use phrases such as “as approved by the Engineer,” “at the discretion of the Engineer,” or “as directed by the Engineer” in place of definite workmanship requirements. These types of phrases may lead to confusion or misunderstanding. The Contractor cannot anticipate what the Engineer will want.

Give directions, never suggestions.

### **Concise**

Write each Special Provision as concisely as practical. When reviewing the Special Provision, consider the following suggestions:

- Avoid duplications between the Special Provision and any related contract documents. Do not repeat any instruction, requirement, direction, or information given elsewhere in the contract documents.
- Do not give reasons for a specification requirement.
- Do not provide information that is unnecessary for bid preparation and accomplishing the work.
- Minimize the use of cross-references.

### **Correct**

Ensure the Special Provision is written accurately. Where practical, independently check every factual statement. Do not include items that cannot be required or enforced. Consider the practical limits of

workers and materials to avoid specifying impossibilities.

Ensure that the specification does not unintentionally exclude an acceptable product, construction method, or equipment. Ensure the specification does not change the basic item design.

Specify standard sizes and dimensions wherever practical.

Specify material durability or reliability requirements. When possible, use permanent and recognized standards to ensure specified performance or characteristics are achieved. If not, completely and accurately define the testing criteria.

Make a careful, critical examination of manufacturers' or trade associations' recommendations, and require supporting evidence before adopting them. Do not specify a sole source or show a preference for a specific product without an approved public interest finding.

Keep requirements stringent. A stringent requirement can be relaxed if the need arises; however, adding requirements after the contract has been awarded may increase cost.

### **Consistent**

Give directions in the Special Provision that are consistent with current DOT&PF standard practice.

Ensure the Special Provision is consistent in language selection, usage, format, and organization with the *Alaska Standard Specifications*.

### **7.2.3. Terminology**

**Abbreviations:** Generally, avoid abbreviations; however, abbreviations may be used if they are defined and the definitions are consistent with the accepted meanings.

**Amount, quantity:** Use "amount" when writing about money only. When writing about measures of volume (e.g., yd<sup>3</sup>, gallons), use "quantity."

**And/or:** Avoid using "and/or"; instead, use "and" alone, or "or" alone, or "or ... or both." For example, "Unless otherwise shown on the plans or specified in the Special Provisions or both, ..."

**Any, all:** The word "any" implies a choice and may cause confusion. Use the term "all" in place of "any." For example, "Repair all defects."

**As per:** Do not use "as per"; instead, use "as stated," "as shown," "conforming to" or other similar phrases.

**At the Contractor's expense:** Do not use the phrase "at the Contractor's expense"; instead use, "at no cost to Department" or "subsidiary to the cost of other contract items."

**Balance, remainder:** Use the term "balance" when referring to money. Use "remainder" to describe something or material left over.

**Coarse, course:** Use "coarse" to describe textures and "course" for layers.

**Conform:** Use the word "conform" to refer to dimensions, sizes and fits that must be strictly adhered to (e.g., "cut bolt threads conforming to ASA Standards, Class 2 fit, coarse thread series"). Where a better product is acceptable, use the phrase "meeting the requirements of..."

**Contractor:** Use the word "Contractor" in place of the word "bidder" when writing Special Provisions for construction. Only use "bidder" for proposals.

**Approved Equal:** Do not use the phrase "approved equal." The Contractor may not know what is truly equivalent before awarded the contract.

**Proposal:** Do not use the word "proposal" when the word "contract" is intended. Only use the term "proposal" to describe requirements during the bidding process.

**Resisting, resistant:** Do not use "corrosion-resisting," but instead use "corrosion-resistant."

**Said:** Do not use "said pipe" or "said aggregates" but, instead, use "this pipe" or "these aggregates."

**Shall:** Avoid using the word "shall." DOT&PF has adopted "active voice" specifications. Rewrite the sentence using the active voice.

**Such:** Do not end a sentence with the word "such." "Such" usually means "of this or that kind," or similar to something stated. Instead, state what is actually meant or name the work to be completed, or rephrase the sentence.

**Symbols:** Do not use the following symbols when writing Special Provisions:

<u>Symbol</u>	<u>Write Instead</u>
/	per, or "a"
%	percent

+	plus
-	minus
×	by

**The:** Do not eliminate “the” for brevity.

**Thoroughly:** Avoid using the adverb “thoroughly,” as in thoroughly wet, thoroughly dry, thoroughly clean, etc., because it is unenforceable. Preferably, state the value of the intended requirements in percent, dimensions, number of passes, etc.

This page intentionally left blank.