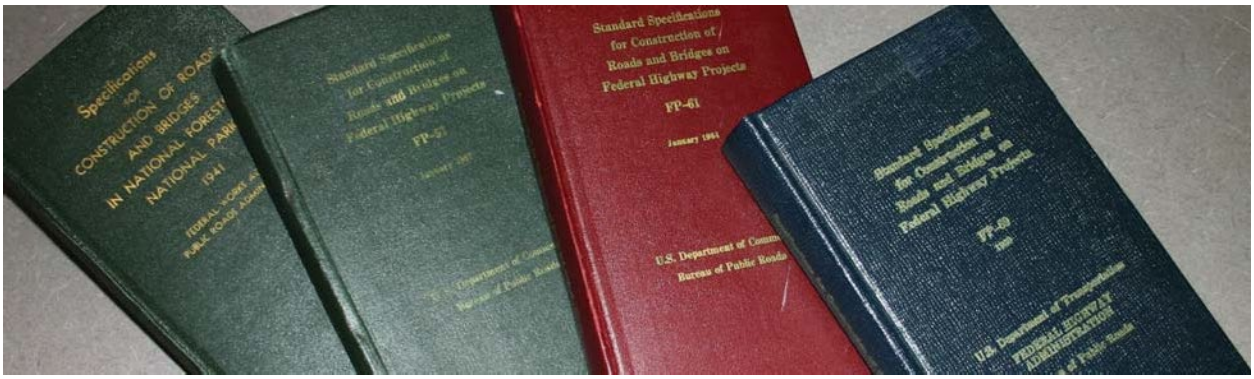
SPECIFICATION WRITERS' GUIDE
For Federal Lands Highway

December 2024



U.S. Department of Transportation

Federal Highway Administration

Federal Lands Highway

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COVER PHOTOS: *(Top) FP Specifications for 1941, 1957, 1961, and 1969. (Bottom) FP Specifications for 1974, 1979, 1985, 1992, 1996, 2003, 2014, and 2024.*

CHAPTER 1 – SPECIFICATION DEVELOPMENT

1.1 GENERAL

There are two basic specification types that are developed by writers in Federal Lands Highway (FLH): Project-specific Specifications to address a requirement for a single project and Supplemental Specifications to be approved for standard use on specified projects. Both types of specification are used in the Special Contract Requirements (SCRs) for FLH construction projects. This document provides general guidance for developing specifications within FLH. Division-level documents also exist to provide guidance on unique practices at FLH Divisions; where these exist, they should be followed for work within that Division.

1.2 INSTRUCTIONS TO READERS

All SCRs either add, delete, or amend the requirements of the *Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects (FP)*. To convey the intent of the revision to the reader, instructions must be given. The following are some common instructions for adding, deleting, and amending requirements of the FP:

(Added Section)
(Added Subsection).
Add the following:
Add the following after the second paragraph:
Add the following to the Material List:
Delete Section XXX and substitute the following:
Delete this Subsection and substitute the following:
Delete Subsection (a) and substitute the following:
Delete the third paragraph and substitute the following:
Delete Table ###-# and substitute the following:

Example:

101.03(a) Acronyms. Add the following:

EEBACS – Engineer's Estimating, Bidding, Award, and Construction System

CHAPTER 2 – ORGANIZATION OF SPECIFICATIONS

2.1 GENERAL

Specifications are divided into various Divisions and Sections

Each Section uses the hierarchy shown below to distinguish varying levels of information. Use only as many sublevels as necessary to clearly organize and convey specification requirements. Add content-specific headings where possible.

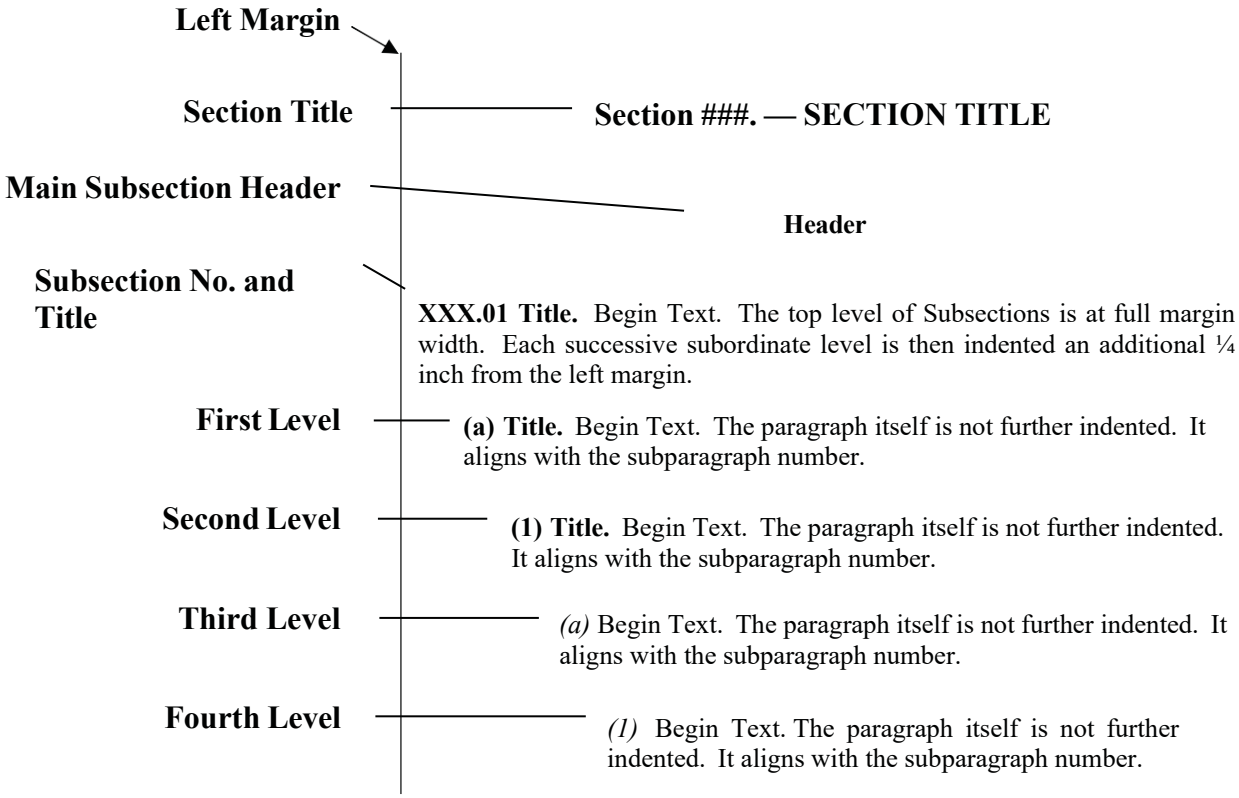

Figure 2-1. Hierarchical Organization of FLH Specifications

With the exception of Division 100 (which consists of general contract requirements for which no direct payment is made) and Division 700 (which contains material requirements for which no direct payment is made), Sections are organized into the five main Subsections: Description, Material, Construction Requirements, Measurement, and Payment.

2.2 DESCRIPTION SUBSECTION

The Description Subsection contains a concise statement of the work required in the Section. Occasionally it may also be used to define terminology specific to the work.

2.3 MATERIAL SUBSECTION

The Material Subsection identifies and describes materials to be used to accomplish the work. It usually consists of an alphabetical listing of materials and references in tabular form. References are made to other Subsections within the contract specifications.

2.4 CONSTRUCTION REQUIREMENTS SUBSECTION

The Construction Requirements Subsection describes how work is to be accomplished. Use the following guidelines when developing requirements:

Describe the construction operations, special equipment, controls, limitations, tolerances, and acceptance criteria in sequential order.

Provide sufficient specification requirements to ensure quality of workmanship and satisfactory completion of the work.

To the extent possible, minimize specific requirements about methods and equipment to encourage Contractors to apply new and innovative ideas and methods in construction. If specifying using performance requirements, describe the required end product.

Specify allowable tolerances and applied penalties, if any, for exceeding specified tolerances.

Do not duplicate information already on the plans.

The last Subsection is always used to describe how the work will be accepted. The Acceptance Subsection references to one or more of the following four methods of acceptance:

Subsection 106.02, Visual Inspection;
Subsection 106.03, Certification;
Subsection 106.04, Measured or Tested Conformance; or
Subsection 106.05, Statistical

Most Sections summarize sampling and testing requirements in a table.

2.5 MEASUREMENT SUBSECTION

The Measurement Subsection describes how items of work are to be measured. Include the standard language:

Measure the Section XXX pay items listed in the bid schedule according to Subsection 109.02.

2.6 PAYMENT SUBSECTION

The Payment Subsection describes how the Government will pay for measured items. Include the standard language:

The accepted quantities will be paid at the contract price per unit of measurement for the Section XXX pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

CHAPTER 3 – FORMATTING GUIDELINES

The FP contains varying numbers and levels of subordinate Sections. This format helps achieve a visually appealing document in which information is organized into a logical hierarchy that readers can use to quickly find the content they are seeking.

Table 3-1 summarizes general formatting guidelines regarding font, alignment, indentation, and spacing for the various hierarchal levels used in FLH specifications. These guidelines are based on the styles used by the FLH Divisions in their Library of Supplemental Specifications (LOS).

Table 3-1
Formatting Guidelines for FLH Specifications

Example	Font	Alignment	Indentation	Spacing
Section ###. — TITLE	Times New Roman 14 pt Bold	Centered	None	Before: 12 pt After: 24 pt
Subsection Header (e.g., Construction Requirements)	Times New Roman 12 pt Bold	Centered	None	Before: 12 pt After: 12 pt
XXX.XX Title. Text.	Times New Roman 12 pt Bold numbering and Subsection title only	Justified	None	After: 12 pt Line Spacing: at least 12 pt
(a) Title. Text.	Times New Roman 12 pt Bold numbering and Subsection title only	Justified	Left: 0.25"	After: 12 pt Line Spacing: at least 12 pt
(1) Title. Text	Times New Roman 12 pt Bold numbering and Subsection title only	Justified	Left: 0.5"	After: 8 pt
(a) Text.	Times New Roman 12 pt Italicized lettering, not bold.	Justified	Left: 0.75"	After: 8 pt
(1) Text.	Times New Roman 12 pt Italicized numbering, not bold.	Justified	Left: 1.0"	After: 8 pt

Note that the FP is also set with top and bottom margins of 0.8 inches, and inside and outside (mirror) margins of 0.5 inches.

CHAPTER 4 – WORDING OF SPECIFICATIONS

4.1 VOICE AND MOOD

A specification's goal is to be *specific*. Constructing sentences using the active voice and imperative mood is the most efficient way to give a command, direction, or instruction, but is not appropriate for every situation. In writing specifications for FLH, follow these guidelines:

1. Use the active voice and imperative mood to give a command to the Contractor. This style is most appropriate for conveying Contractor responsibilities in the Material, Construction Requirements, and Measurement Subsections of an FLH specification.

   Examples (Active voice to give a command):

   Scarify gravel roads to a minimum depth of 6 inches.

   Clear the area of vegetation and obstructions according to Sections 201 and 203.

2. Use the active voice and indicative mood when it is necessary to clarify the party responsible for the action. This can occur when both Government/CO and Contractor responsibilities are discussed in the same sentence and for optional or alternative actions on the part of either the Contractor or Government (that is, discretionary clauses using *may*).

   Examples (Active Voice to Clarify Responsible Party):

   The Contractor and Government will share the direct cost of partnering facilities. The Government will reimburse the Contractor for 50 percent of the agreed costs.

3. When stating a fact as opposed to directing an action, the indicative mood is most appropriate. The Description Subsections are typically written in indicative mood.

   Examples (Indicative Mood to State Facts):

   This work consists of providing, erecting, removing, and resetting bridge railings.

4.2 WORDING

The most accurate, direct way to state a requirement is affirmatively. Positive sentences are typically shorter and easier to understand than their negative counterparts — People typically prefer to be told what to do, instead of what they cannot do.

For example,

> Do not use material from a source that is unacceptable to the Government.

could be stated more simply as,

> Use material from approved sources.

Similarly, phrases are wordy when they can be replaced with fewer words that convey the same meaning. Needless words add clutter and can hinder a reader's ability to grasp what is important.

Table 4-1 suggests some alternatives to common wordy phrases and negative words.

Table 4-1
Alternatives to Common Wordy Phrases or Negative Words

Instead of:	Consider:	Instead of:	Consider:
a minimum of	at least	in lieu of	instead of
a number of	some	in many cases	often
absolutely essential	essential	in many instances	sometimes
aforementioned	the, that, those	in order to	to
as concerned with	concerns	in the amount of	for
as may be necessary	as needed	in the event of	if
as stated in	states	in the event that	if, when
at a later date	later	in the near future	soon
at the option of the Contractor	the Contractor may	in such a manner as to	so as to
at the present time	now	initiate	start
by means of	by	is applicable to	applies to
capability	can	is hereby authorized	may
cease and desist	stop	is indicative of	shows
commence	start	make payment	pay
consequently	so	make preparations for	prepare for
contract requirement	contract	make use of	use
cost thereof	cost of	methodology	method, way
does not have	lacks	not able	unable
does not include	excludes, omits	not accept	reject
due to the fact that	because	not certain	uncertain
enclosed herewith	enclosed	not less than	at least
endeavor	try	not many	few
for a period of	for	not often	rarely
for the purpose of	for, to	not unlike	similar, lacks
free from	without	not the same	different
give consideration to	consider	not…unless	only if
give recognition to	recognize	not…except	only if
however	but	on a quarterly basis	quarterly
if the Contractor so elects	the Contractor may	on a regular basis	regularly
impracticable	impractical	practicable	practical
in a manner such that	so that, to ensure that	prior to	before
in a timely manner	promptly, on time	subsequent to	after
in accordance with	according to	successfully complete	complete
in advance of	before	terminate	end
in an effort to	to	the month of June	June

4.3 WORDS AND PHRASES NOT TO USE

Many of the words or phrases in Table 4-2 confuse readers, do not add meaning, or introduce passages that are unnecessary because the same information is covered elsewhere in the specifications (for example, in the General Requirements).

Table 4-2
Words and Phrases to Avoid

Aforesaid	in a workmanlike manner
and/or	in accordance with these specifications
as per	latter
at the Contractor's expense	means and includes
authorize and direct	must
care shall be taken	necessary and desirable
Department (use *Government*)	neither…nor
Engineer (use *Contracting Officer or CO*)	order and direct
entirely	pertinent
etc.	shall
former	shall function as intended
full and complete	should
herein	special attention of the Contractor
hereinafter	subsidiary
hereinbefore	the attention of the Contractor is directed to

4.4 SPECIFIC WORDS OR PHRASES

Use the following words and phrases in the appropriate context.

Accept vs. Approve. In a document with legal consequences, such Specifications, *accept* and *approve* have a difference in meaning that is important to recognize and preserve.

To *accept* is to recognize an obligation to pay, and is used in the context of, or in reference to, contracts. To avoid misunderstanding, reserve *accept* and related forms, such as *acceptance* and *acceptable*, for use in reference to the contract between the Government and the Contractor.

In contrast, to *approve* is to confirm agreement with, or to indicate satisfaction with, a situation or circumstance. Use *approve* and related forms, such as *approval*, to indicate official sanction or endorsement of designs, documents, plans, or processes.

All vs. Any. *Any* and *all* should not be used interchangeably. *All* refers to the entire amount, whereas a*ny* is a limited number selected at the discretion of the reader. In most situations involving specified requirements, *all* is the more appropriate word and can usually be removed without changing the meaning.

Restrict the use of *any* to those logical situations in which meeting one criterion among several is enough to satisfy a condition.

Amount vs. Quantity. Use *amount* when money is the subject. Use *quantity* when volume, mass, or other unit of measurement is the subject.

And/Or. This construction is both awkward and confusing. Write *A, B, or both*, not *A and/or B*.

As approved by the CO. Often this phrase is not necessary as the General Requirements have already established the CO's authority over the job. See Subsection 101.01. However, a variant of the phrase *–Obtain approval before –* is often quite useful to ensure that the Contractor consults with the CO at a critical decision point or before proceeding from one stage to another in a multi-step process.

At no additional cost to the Government. Use *at no additional cost to the Government* instead of *at the Contractor's expense*. The Government cannot insist that the Contractor pay for something (because the Contractor might well turn to another source to cover a cost), but it can indicate that *the Government will not pay*. Typically, the phrase shouldn't be needed because payment is tied to pay items and the statement of "Payment will be full compensation for the work prescribed in this Section."

Bidder vs. Contractor. *Bidder* is reserved for use in General Requirements related to bid procedures, the Notice to Bidders, press releases, amendments, and other similar purposes. In general, use *Contractor* in the specifications.

Contracting Officer vs. Engineer. Refer to the *Contracting Officer* or *CO*, not to the *Engineer*. The Federal Acquisition Regulations define the CO as including all the CO's representatives.

Each vs. Either. Use *either* only when a choice is implied; otherwise, use *each*.

Ensure vs. Insure vs. Assure. These are three different verbs with three different meanings.

The correct word in specifications will almost always be *ensure*, which means "to make sure."

Only use *insure* when speaking of financial protection of the sort offered by insurance companies. Misusing *insure* can create or suggest an obligation vastly different from that which is intended.

Use *assure* only when giving reassurance to another person. *Assure* will rarely be the right word in a specification.

May. Use *may* when either the Contractor or Government is the subject and either or both have options or alternatives. Use *may* instead of *exercise its option to*, *reserve the right to*, or similar phrases that simply describe a party's choice or prerogatives.

Per. Use *per* when describing a rate or ratio. To avoid confusion, do not use *per* in the sense of *according to.*

Plans vs. Drawings. The FP makes a distinction between these terms when dealing with graphical design content. *Plans* are prepared by the Government and *drawings* are prepared by the Contractor.

However, based on context, *plan* could also refer to a document provided by the Contractor to describe a particular program (for example, a blasting plan, quality control plan, erosion and sedimentation control plan).

Provide vs. Furnish. Though similar, these words are not identical in meaning. *Provide* has a broader meaning, which is "to supply or make available." In contrast, *furnish* means "to equip."

Use *provide* when requiring a Contractor to supply an item; because this is usually the intention in a specification, *provide* is usually the better choice of the two words.

When the intention is to additionally require that a Contractor not only provide an item but also do something with it, couple *provide* with such additional verbs as *use*, *place*, or *install*.

For consistency with the FAR, use *furnish* when referring to an item that the Government makes available to the Contractor.

Place vs. Construct. *Place* should generally be reserved for items that are prefabricated. *Construct* should be used for items that are built or assembled in the field.

Section vs. Subsection. Use S*ection* when referring to a Section within the FP in its entirety (for example, Section 109). Use *Subsection* to refer to specific clauses (for example, Subsection 109.02) within a Section.

Shall vs. Will. The term *shall* indicates an obligation to act and is reserved for Contractor responsibilities. (Use the imperative mood, active voice to avoid the use of *shall*.)

The term *will* is used to indicate an anticipated future action or result and is reserved for actions and responsibilities of the Government and Contracting Officer.

That vs. Which. Do not use *that* and *which* interchangeably. *That* is properly used to introduce information essential to the meaning of a sentence. *Which* introduces nonessential information. *That* will be the right word choice in a specification more often than *which*, for the simple reason that specifications express essential requirements.

Use the following rules to decide if a clause should start with *that* or *which*:

- If you can drop the clause and not lose the point of the sentence, use *which*. If dropping the clause would change the meaning of the sentence, use *that*.
- A *which* clause goes inside commas, a *that* clause does not.

When vs. Where vs. If. These words are not interchangeable; a writer's precision will be improved by reserving each for its most appropriate use. *When* refers to time. *Where* refers to place. *If*, among its many uses, introduces a conditional clause or sentence.

Use *when* in discussions about time or chronology. The presence of words about time, periods of time, dates, or duration are clues that point to *when* as the appropriate choice. Another clue is that *before* or *after* can often replace *when* without changing the meaning of the sentence. Use *when* in discussions about weather limitations.

Use *where* to discuss or refer to a physical place, location, or area.

Use *if* to introduce, or as part of, an *If A, then B* sentence. Do not use *when* or *where* for this purpose.

4.5 COMPOUND WORDS, HYPHENATION, AND WORD SEPARATION

English changes over time and words that are commonly used together tend to migrate, first staying paired but separate, then finding frequent use with a linking hyphen, then joining eventually into a single word.

It can be hard to know where a word pair or phrase is in this progression. Table 4-3 shows some common combinations as they should be used in FLH specifications.

Table 4-3
Compound Words, Hyphenated Words, & Word Separation

Instead of:	Use:
air entraining	air-entraining
center line	centerline
cross section	cross-section
guard rail	guardrail
job mix	job-mix
multi-lane	multilane
pre-construction	preconstruction
right of way	right-of-way
sub-base	subbase
worksite	work site

4.6 CROSS-REFERENCES AND CITATIONS

Cross-References within the FP

Cross-references are useful to reduce repetition and to eliminate possible conflicts and ambiguities.

Examples:

Backfill according to Section 209.

Follow the requirements of FAR Clause 52.214-18 Preparation of Bids — Construction.

Citations

1. Treat the titles of separately issued and handled forms, certificates, standards, and similar documents as complete publications and italicize the title. Do not use quotation marks. Use the appropriate punctuation required by the sentence overall. (If, for example, the word *Form* and the form's number accurately identify a document, the title is providing supplementary information and should be set off by commas.)

   Examples:

   Maintain an OSHA Form 300, *Log of Work-Related Injuries and Illnesses* and make it available for inspection.

   Submit concrete mix designs for approval on Form FHWA 1606, *Minor Portland Cement Concrete Mix Design*, at least 30 days before production.

2. When specifying standards or test methods, identify them by their identification number such as ASTM A 307, AASHTO T 27, AASHTO M 31M, or Federal Specification TT-P- 641. Do not include the year in the identification number. A reference made to a specification, standard, or test method adopted by AASHTO, ASTM, GSA, or other recognized national technical association, refers to the approved procedures that were in effect on the date of the contract solicitation. (For example, when specifying AASHTO T 27-93 use AASHTO T 27 and drop the "-93" that indicates the specification adopted for use in 1993.) An "M" after the standard number indicates a metric specification and should be included in the reference.

   Refer to a national reference standard by the name of the issuing organization, followed by a space, and then the letter and the number of the standard. Place a hard (non- breaking) space between the letter and number of the standard. Do not include the title for national reference standards.

   Refer to the issuing organization's website to verify that the cited standards are current.

   Examples:

   Determine the 7-day unconfined compressive strength of the 3 mixtures according to ASTM D 633, method A.

   Determine the in-place density and moisture content according to AASHTO T 310.

3. When specifying a FAR Clause include the title name but do not include title names for Parts or Subparts.

Websites

It is best to avoid using websites in specifications. However, when necessary to include a website address, provide the entire URL.

CHAPTER 5 – LISTS AND TABLES

5.1 LISTS

Vertical lists are often the best way to present multiple items, conditions, options, and exceptions.

As used in the FP, lists generally follow a hierarchal scheme similar to that described in Chapter 2, the exception being the exclusion of a heading title for each list item. Otherwise, list items follow the same numbering, font, alignment, spacing, and indentation guidelines as provided in Table 3-1.

Numbering

Follow the FP format for Section and Subsection numbering of lists. Do not use bullets.

Wording

To incorporate vertical lists into a specification:

1. Use a lead-in sentence punctuated with a colon to introduce the list items and to indicate the meaning or purpose of the list. If possible, explicitly identify in the lead-in sentence whether one, more than one, or all of the items apply. For example,

   To indicate an **OR** situation, use "…one of the following:" when only one item applies.
   To indicate an **AND/OR** situation, use one of the following:
   "…one or both of the following:" when one or two items apply in a list of two.
   "…one or more of the following:" when more than one item can apply individually.
   "…one or a combination of the following:" when items can be combined.
   To indicate an **AND** situation, use "…all of the following:" to indicate that all items apply.

2. Ensure that each item in the list fits grammatically with the lead-in sentence.

3. Make list items parallel in phrasing.

Capitalization

Capitalize the first letter of the first word of each list item.

Punctuation

The lead-in phrase introducing a list should be followed by a colon.

In a series consisting of two or more simple items, separate the items with semicolons (;) and place a period at the end of the last item. Following the second to last item in the list, include the word *and* or *or* as appropriate.

Example:

Within 24 hours after each inspection, submit an inspection report. Include the following:

(a) Date and time of the inspection;

(b) Names and titles of persons making the inspection;

(c) Summary of the inspection;

(d) Locations where additional erosion and sediment control measures are needed; and

(e) Other necessary corrective actions including action taken, locations, dates, and times.

If the list items are complete sentences, punctuate each item with a period.

Example:

(b) Tabulated schedule. The following apply to the tabulated schedule:

(1) For arrow diagrams, show activity beginning and ending node numbers. For precedence diagrams, list activities and show lead or lag times.

(2) Show activity durations.

(3) Show activity descriptions.

5.2 TABLES

Tables are an effective method of summarizing and communicating requirements. General conventions regarding tables are provided below.

Table Numbers and Titles

Each table should have a unique number. Precede the number with the word *Table*. Begin the number with the FP Section number in which the table appears, followed by a dash and the sequential number of the table within the Section, starting with the numeral 1. Begin renumbering with each new Section.

On the line following the table number, provide a distinct table title that conveys the contents included in the table. Capitalize the first letter of significant words in the title. Do not place a period at the end of the title.

Use bold typeface and center alignment for table numbers and titles. The table number and title should precede the table itself.

Referencing Tables

In text, introduce tables by referring to their number. Introductory phrases such as "the following table" or similar terms are not necessary.

Example:

Include the design discharge time limit shown in Table 552-3.

Table Layout

Center the table, number, and title horizontally on the page. Do not allow tables to exceed the margins of the paper. Note that tables containing sampling and testing requirements (see, for example, Table 204-1) are typically rotated 90 degrees to allow them to fit on a page that has portrait orientation.

Table Notes

Place notes to a table immediately after the table to which they belong. Align notes flush with the table's left edge. Notes are in 10-pt Times New Roman font.

General notes apply to the table as a whole. Introduce general notes with the word *Note* set in bold and followed by a colon.

Example:

Table 106-1
Estimated Percent of Work Within Specification Limits

Estimated Percent within Specification Limits (P_U or P_L)	Upper Quality Index Q_U or Lower Quality Index Q_L								
	n=3	n=4	n=5	n=6	n=7	n=8	n=9	n=10 to n=11	n=12 to n=14
100	1.16	1.49	1.72	1.88	1.99	2.07	2.13	2.20	2.28
99	–	1.46	1.64	1.75	1.82	1.88	1.91	1.96	2.01
98	–	1.43	1.58	1.66	1.72	1.75	1.78	1.81	1.84
97	1.15	1.40	1.52	1.59	1.63	1.66	1.68	1.71	1.73
96	–	1.37	1.47	1.52	1.56	1.58	1.60	1.62	1.64
95	1.14	1.34	1.42	1.47	1.49	1.51	1.52	1.54	1.55

Note: If the value of Q_U or Q_L does not correspond to a value in the table, use the next lower Q value. If Q_U or Q_L are negative values, P_U or P_L is equal to 100 minus the table value for P_U or P_L.

Notes on specific parts of the table are introduced by a number, placed within parentheses, that refers to a numeric superscript within parentheses placed in the table.

Example:

Table 213-1
Subgrade Stabilization Compressive Strength Requirements

Stabilization Mixture	Test Procedure	Average Unconfined Compressive Strength (3 specimens minimum)
Lime-Soil	ASTM D5102, Procedure B	100 psi minimum(1)
Lime-Fly ash-Soil	ASTM D5102, Procedure B	150 psi minimum(1)
Cement-Soil, Cement-Fly ash-Soil, or Fly ash-Soil	ASTM D1633, Method A	200 psi minimum(2)

(1) At 7-day cure at 105 °F.
(2) At 7-day cure.

CHAPTER 6 – ADDITIONAL STYLE CONVENTIONS

6.1 SHORTENED FORMS: ABBREVIATIONS, ACRONYMS, AND SYMBOLS

Definitions

Abbreviations. Shortened forms of a single word or phrase, usually followed by a period and often including lowercase letters.

Examples:

min., max.

Acronyms. Shortened forms, often initialisms, that can be pronounced as a word. Do not use periods in an acronym.

Examples:

AASHTO and OSHA

Symbols. Free-standing characters, letters, or signs with unique agreed-on meanings. Do not treat or punctuate symbols as if they were abbreviations. Use a space before and after a symbol; do not precede a symbol with a hyphen or follow with a period.

Example:

ft, in^3

General Guidelines for Shortened Forms

As a general principle, shortened forms should be used as much for the convenience of the reader as of the writer. Adherence to the guidelines presented below will help prevent shortened forms from burdening the reader.

1. Be consistent in the use of short forms. Distinct short forms used repeatedly in FLH specifications are listed in Subsection 101.03 of the FP.

   If a shortened form is defined in Subsection 101.03, such as PVC for polyvinyl chloride, it is not necessary to precede the shortened form with the complete name in the specifications.

2. Before introducing a shortened form not listed in Section 101.03 of the FP, write out the complete name or phrase at the first usage, followed immediately with the shortened form in parentheses. When the word or phrase contains common nouns and adjectives, use lowercase letters in the full words and capital letters in the short form.
3. Do not introduce a shortened form that will not be reused in the same Section; instead, simply write the words out. When reintroducing a short form in another Section, write out the complete name or meaning, followed by the short form in parentheses, at the first usage.
4. Do not put an abbreviation or acronym in Section titles (Section 101) and numbered Subsection titles (Subsection 101.01). They may be used in the subordinate Subsection titles (Subsection 101.01(a)).

5. Use the indefinite article *an* before abbreviations and acronyms that are pronounced as if they begin with a vowel. If the short form begins as though pronounced with a consonant, use *a*.
6. Form plural short forms by adding the lowercase letter *s*. Do not use an apostrophe. For example, the plural for the abbreviation for Special Contract Requirement, *SCR*, is *SCRs* not *SCR's*.

6.2 STYLE FOR MEASUREMENTS

Measurements describe quantities and consist of a *numeric value* and a *unit of measure*. General conventions regarding the use of measurements in the FP are provided below.

1. Use numerals for the value of measurement. Provide a hard space, as described in Section 8.2, between the numeral and measurement unit. A hard space prevents the number and symbol from becoming separated across lines of text.

   Example:

Correct	Incorrect
Overlap geotextile filter splices at least 4 inches.	Overlap geotextile filter splices at least four inches.

2. For units of measure provided in text (as opposed to tables), write the full word instead of using symbols or abbreviations (with the exception of temperature measurement). In tables, symbols may be used.

   Example:

Correct	Incorrect
Construct at intervals no more than 10 feet.	Construct at intervals no more than 10 ft.
Apply asphalt prime coat at a uniform rate of 0.20 to 0.30 gallons per square yard.	Apply asphalt prime coat at a uniform rate of 0.20 to 0.30 gallons per yd^2.

3. For temperature, use the degree symbol and the abbreviation for Fahrenheit. Provide a hard (nonbreaking) space between the numeral and symbol. Provide no space between the degree symbol and the temperature abbreviation (for example, 100 °F).

   Example:

   Apply asphalt binder to the pavement surface according to Subsection 407.09 at 290 to 325 °F.

4. For angular measurement, write out the word *degree* (for example, 90-degree angle to the vertical).

   Example:

   Place elongated pipes with the minor axis within 5 degrees of vertical.

5. Names of basic and derived units of measurement are always lowercased even if they are derived from a personal name (for example, newton, hertz, pascal).

   Example:

   Provide single-phase, 240/480-volt primary, 120/240-volt secondary, dry type, 60 hertz, 1 KVA transformers for indoor or outdoor use, conforming to UL 506, *Specialty Transformers*.

6. Use plural forms for numbers greater than 1 and singular forms for less than or equal to 1 (for example, 0.5 foot, 1 foot, 1.5 feet, 2 feet).

   Example:

   Elevate material at least 8 inches above the ground. To indicate dimensionality, use the word *by* not the multiplication cross symbol (x).

   Example:

   Limit drawings to a maximum size of 24 by 36 inches.

7. When measurements are used as adjectives, connect the numeric value and the unit of measure with a hyphen (see Section 7.7).

6.3 MEASUREMENT SYMBOLS

Measurement symbols (for example, ft, lb, in, min) are to be used in tables and figures only. To use measurement symbols properly in tables:

1. Do not follow measurement symbols with a period unless dictated by placement at the end of a sentence. Measurement symbols are not abbreviations.
2. Do not add an *s* to form a plural. The symbol remains the same whether the quantity is one or many.

   Examples:

Correct	Incorrect
2 lb	2 lbs
24 h	24 hrs

3. Type a space between the quantity and the symbol.

   Examples:

   1 lb, 2 ft, 60 °F

4. Precede symbols only with numerals, never words.

   Example:

Correct	Incorrect
2 ft	two ft

5. Do not mix symbols and names in the same expression.

   Example:

Correct	Incorrect
ft/s	feet/s
feet per second	feet/second

6. Print symbols and quantities in normal, upright (roman) type regardless of surrounding text.

   Example:

Correct	Incorrect
2 ft	*2 ft*

7. Do not use symbolic representations.

   Example:

Correct	Incorrect
2 ft	2'
6 in	6"

6.4 MATHEMATICAL AND OTHER SIGNS AND SYMBOLS

Use signs and symbols as shown in Table 6-1:

Table 6-1
Signs and Symbols

Sign or symbol	Meaning	Tables only	Text and tables
+	Plus	✓	
—	Minus	✓	
±	plus or minus		✓
=	equal to	✓	
<	less than	✓	
≤	less than or equal to	✓	
>	greater than	✓	
≥	greater than or equal to	✓	
×	multiplied by; dimensional indicator	✓	
μ	10^{-6} ("micro")	✓	
°	degree (for temperature)		✓
&	and	✓	
—	em dash		✓
–	en dash		✓
:	ratio; proportionality		✓
$	U.S. dollar		✓
/	Per	✓	
%	Percent	✓	

Note: When using mathematical and other signs and symbols in text (as opposed to in tables or table footnotes), use the words indicated in Table 6-1. Use symbols in equations.

Example:

Correct	Incorrect
Provide maximum coarse aggregate size less than or equal to 1 inch.	Provide maximum coarse aggregate size ≤ to 1 inch. When installing culvert pipe ≤ 48 inches in diameter…
If the centerline curve radius is greater than 250 feet...	If the centerline curve radius is > 250 feet...

Use a colon for slope notation (vertical : horizontal). For slopes flatter than 1V:1H, express the slope as the ratio of one unit vertical to a number of units horizontal. For slopes steeper than 1V:1H, express the slope as the ratio of a number of units vertical to one unit horizontal.

6.5 RANGES

A range is defined by two endpoints. The endpoints may be inside and part of the range, or outside and excluded from the range.

Whether in text or in tables, when defining a series of related ranges that together describe a complete set of possibilities, ensure that no number or measurement can fall in more than one range. That is, make the ranges mutually exclusive.

Example: One large range (20 to 150 feet) is divided into three mutually exclusive ranges by two internal endpoints (70 and 100 feet) that fall into the first and second ranges, respectively, and cannot fall elsewhere.

Correct: Provide pole sections from 20 to 70 feet, over 70 to 100 feet, and over 100 to 150 feet.

Incorrect: Provide pole sections from 20 to 70 feet, 70 to 100 feet, and 100 to 150 feet.

Ranges in Text

In text, indicate a range that includes the endpoints by using the words *from* and *to*. The words *inclusive* or *minimum* and *maximum* may be added as appropriate to enhance clarity. Do not use a dash to indicate a range (–), as this can too easily be confused with a minus sign.

Indicate a range from which the endpoints are to be excluded by using the words *between* and *and*. Most such ranges will be defined by discrete physical objects or boundaries, rather than by numeric measurements.

Avoid using *between* and *and* with measurements because this wording leads to uncertainty over how close the range should approach the endpoints. *Between 25 °F and 30 °F*, for example, could mean from 26 °F to 29 °F, or it could mean from 25.1 °F to 29.9 °F — the wording is uncertain.

Examples:

Provide an accurate and calibrated thermometer having a range from 200 to 600°F in 5 °F graduations.

Limit joint widths from 1 inch minimum to 2 inches maximum.

Plot the offset and elevation of natural ground at the end section and at proposed template break points between centerline and the end section.

Perform in-water work from July 1 to April 30 (dates inclusive) of any given year unless otherwise approved.

Ranges in Tables

As best warranted to ensure clarity, ranges may be described in tables using words only or with both words and symbols. However defined, do not create adjoining ranges with shared endpoints.

Table 6-2 compares the use of these two methods to divide a range from 0 to 100, inclusive, into four contiguous smaller ranges.

Table 6-2
Displaying Ranges in Tables

Symbols and words combined	Words only
≤ 25	25 or less
>25 to 50	over 25 to 50
>50 to 75	over 50 to 75
>75 to 100	over 75 to 100

6.6 MINIMUM, MAXIMUM, MINUTES

In text, spell out the words *minimum* and *maximum* in full or use alternatives such as *at least* or *no more than*.

Examples:

Remove topsoil and break up the ground surface to a minimum depth of 6 inches by plowing or scarifying. In tables or lists, minimum and maximum values may be indicated by using their abbreviated forms if they do not fit in the cell (min. and max.).

CHAPTER 7 – NUMERICAL INFORMATION

7.1 NUMERALS VS. WORDS

1. Use numerals for measurements, sizes, and critical or precise quantities.

   Example:

Correct	Incorrect
a depth of 5 feet	a depth of five feet
at least 10 days	at least ten days
wrapped 1½ turns	wrapped one and one-half turns

2. Use numerals when cross-referencing Sections and other parts of the specifications or similar sources.

   Example:

   Federal Acquisition Regulation (FAR), Title 48, Code of Federal Regulations, Chapter 1

3. Use words for quantities or values equal to or less than ten that do not modify measurements, sizes, or other critical or precise quantities.

   Examples:

   A divided highway has two or more roadways.

   Subdrill and ream or drill holes full-size where there are more than five thicknesses…

4. Use numerals for values greater than ten.

5. Use words for numbers at the beginning of a sentence; if a number greater than ten appears at the beginning of a sentence, reorder the sentence if possible.

   Examples:

   Eight hours of labor constitutes a full day of work.

   Thirty minutes before installation, begin preparing the material.

   Or:

   Begin preparing the material 30 minutes before installation.

6. When quantity and size are expressed together, always use words for the quantity and numerals for the size.

   Example:

   Prepare ten 6-inch by 12-inch concrete cylinders…

7. Be consistent. Within the same context, treat similarly all numbers that refer to the same category of things.

Example:

Thirty minutes before starting, and again sixty minutes later …

7.2 TIME AND DATE

8. Use the words *noon* and *midnight* to indicate twelve o'clock. Do not use the numeral 12 followed by a word or abbreviation.

   Example:

   Day — A calendar day starting and ending at midnight.

9. Use numerals for clock times. Keep zeros when describing times "on the hour." Use the standard 12-hour system, with all numerals accompanied by the appropriate a.m. or p.m. designation (using lower-case letters, followed by periods); leave a space between the numeral and abbreviation but no spaces inside the abbreviation. Do not use the abbreviation *o'clock*.

   Examples:

   9:00 a.m., 10:30 p.m.

10. Use words (written in full) for the names of months and numerals for days of the month and years. Do not use ordinal designators (for example, *th* and *rd*) in dates.

    Examples:

    on June 15

    from May 1 to September 30 (dates inclusive)

11. Use numerals with an ordinal designator to specify a fixed number of days from an event or starting point.

    Examples:

    on the 15th day following receipt

    the 21st day of the month

7.3 MONEY

Use numerals for monetary amounts. Use commas according to Subsection 7.8. Do not include the decimal and zeros for cents when amounts are in whole dollars; do not leave a space between the dollar sign ($) and the numeric value.

Examples:

The Government's share will not exceed $5,000.
No progress payment will be made in a month in which the work accomplished results in a net payment of less than $1,000.

7.4 DECIMALS

1. Express decimals in numerals, not words.

   Example:

Correct	Incorrect
0.1	one-tenth

2. A decimal should always have numerals on both sides.

   Example:

Correct	Incorrect
0.1	.1

7.5 FRACTIONS

1. Use numerals for mixed numbers; do not leave a space between the whole number and fraction.

   Example:

   Over 1 to 1½

   Some fractions are available through word processing software. Format other fractions by using the superscript/subscript commands and the fraction slash.

   Examples:

   $^{7}/_{11}$, $^{13}/_{22}$, $^{11}/_{33}$

2. Use words for simple fractions that do not describe a measurement or a precise quantity, for fractions that stand alone, and for fractions that come before the words *of a* or *of the*. Connect the numerator and denominator with a hyphen.

   Examples:

   Replace the pile cushion if it is compressed more than one-half of its original thickness or starts to burn.

   Do not remove mortar beyond one-third of the diameter of the coarse aggregate.

7.6 DECIMALS VS. FRACTIONS

1. Use decimals, not fractions, in metric expressions.
2. Follow industry convention to choose between decimals or fractions in U.S. customary units.

7.7 HYPHENS AND UNIT MODIFIERS

When a numeral and measurement unit work together to describe something else (usually an object or material, like a pipe, bolt, or board), they are acting as a single word, or adjective, called a *unit modifier*.

Examples:

Scarify to a 6-inch depth.

Use a 10-foot metal straightedge…

7.8 COMMAS VS. SPACES

In dollar figures, use commas in expressions with four or more digits (that is, amounts greater than $999).

Examples:

$800; $1,000; $10,000; $2,000,000.

In measurements, use commas in numeric values with five or more digits (that is, quantities greater than 9999).

Examples:

temperature of 2000 °F

10,000 pounds per square

inch 1000-volt megger

CHAPTER 8 – CAPITALIZATION AND PUNCTUATION

8.1 CAPITALIZATION

Capitalize the following words or categories of specific names and things:

1. Acronyms (see Section 6.1);
2. Titles of documents and forms;

   Examples:

   Inspector's Daily Record of Construction Operations (Form FHWA 1413)

   OSHA Form 300
3. Laws and legislative acts;

   Example:

   Clean Air Act
4. References to divisions, Sections, Subsections, tables, and figures in the FP;

   Examples:

   … as provided in Subsection 106.07

   … as shown in Tables 401-1 and 703-12
5. Proper nouns;
6. Subsection titles. Capitalize each word of a numbered Subsection title (Subsection 109.08 Progress Payments). Capitalize only the first word of a lettered Subsection title (Subsection 109.08(b) Invoice requirements);
7. Materials Lists. In Materials lists only capitalize the first letter of each material name; and the
8. Common nouns identified below:

   - Contractor;
   - Government;
   - Contracting Officer or CO;
   - Standard Specification; and
   - Division, Section, Subsection (when referring to a numbered portion of the FP).

Do not capitalize the following terms unless required by sentence structure or formatting conventions (for example, the first word in a sentence, first item in a list, Subsection header):

- contract;
- inspector;
- state;

- agency;
- fabricator;
- subcontractor;
- supplier;
- portland cement concrete; and
- manufacturer.

8.2 PUNCTUATION

Spaces After a Period

Place one space between a period and the first letter of the next sentence.

Serial Commas

In a series of three or more elements, separate the elements with a comma. Use a comma before the conjunction (*and* or *or*) joining the last two elements of the series.

Examples:

Shoring, bracing, and cofferdams will be evaluated under Subsections 106.02 and 106.04.

Complete the mixing within 2 hours after the cement, fly ash, or both are added.

Closing Quotation Marks

Place periods and commas required by a sentence *inside* closing quotation marks, regardless of whether the period or comma is part of the quoted matter.

Examples:

Use strands having similar properties, from the same source, and having the same "twist" or "lay."

Carefully pack and adequately ventilate plants to prevent "sweating."

The measured torque at a tension "P," after exceeding the turn test tension required in…….

Letters as Shapes

Type letters used as shapes in regular Times New Roman font. Do not use quotes around the letter. Link the letter and following word with a non-breaking hyphen.

Examples:

H-pile, O-ring, U-bolts, U-shaped staples

Parentheses

Use parentheses to insert and set off additional information relevant to the sentence.

Examples:

Any material misstatement by the surety, overstatement of assets (either as to ownership or value) or understatement of liabilities is cause for rejection of the surety.

A lot containing an unsatisfactory percentage of non-specification material (less than 1.00 pay factor) is accepted provided the lowest single pay factor has not fallen into the reject portion of Table 106-2.

Parentheses can be particularly useful to show related information in long or complicated sentences, or in sentences with many commas or other punctuation.

Example:

Drawings include, but are not limited to, layouts that show the relative position (vertical and horizontal as appropriate) of work to be performed, fabrication details for manufactured items and assemblies, installation and erection procedures…

Place commas, semicolons, periods, or other punctuation that the main sentence might need *after* the closing parenthesis mark. Do not use brackets — [ ] — or french brackets — { } — in place of parentheses; reserve brackets for mathematical formulas and equations.

Hyphens and Dashes

Although they appear relatively similar, the following are four distinct typographic characters, each with its own uses:

Hyphen, -

The shortest of the four characters is the hyphen, which is produced directly from the keyboard. Use the hyphen to hyphenate two words in a compound adjective or words with a hyphenated prefix. Do not use a hyphen to indicate a numeric range, to connect a measurement symbol with a numeral, or as a minus sign.

Examples:

two-way

pneumatic-tired rollers

12-inch layer

En Dash, –

Use the en dash in tables to indicate a numeric range (in MSWord select Insert, Symbol, Special Characters).

Em Dash, —

Use the em dash in Section headers, in definitions, and in tables to designate empty cells (in MSWord select Insert, Symbol, Special Characters).

Examples:

Section 101. — TERMS, FORMAT, AND DEFINITIONS

Award — The written acceptance of a bid by the CO.

Minus Sign, -

Use the minus sign in mathematical formulas and with numerals to show negative values.

Example:

temperature range from -40 to -74 °F

Hard Spaces

Use a nonbreaking (hard) space as needed to hold together parts of a measurement, dimension, or phrase that could cause confusion if allowed to separate at a line break (in MSWord select Insert, Symbol, Special Characters).

Use a hard space:

- between a numeral and an accompanying word (for example, July 4);
- between numerals and units (for example, 5 meters);
- between numerals and the word *percent* (for example, 90 percent)
- between the words S*ection* and *Subsection* and an accompanying number (for example, Section 201); and
- between the letter and the number of an ASTM and similar specifications (for example, ASTM C 595).

Example:

Remove structures and obstructions in the roadbed to 3 feet subgrade elevation.

A hard space between numerals and symbols keeps the elements of a measurement from separating.

Not:

Remove structures and obstructions in the roadbed to 3 feet below subgrade elevation.

8.3 ITALICS

Use italics (characters set in type that slants to the right *like this*) as opposed to roman type in the following circumstances:

1. Use italics to denote certain hierarchal levels in specifications as identified in Table 3-1.

2. Use italics to cite complete titles of books, forms, standards, and similar documents as discussed in Section 4.6. Note that italics do not include punctuation marks (end marks or parentheses, for instance) next to the words being italicized unless those punctuation marks are meant to be considered as part of what is being italicized.

3. Use italics and quotation marks, to refer to words that are being talked about.

   Example:

   Wherever "*directed*", "*required*", "*prescribed*", "*requested*", or "*ordered*" are used, the "*direction*", "*requirement*", "*prescription*", or "*order*" of the Contracting Officer is intended.

4. Use italics to identify mathematical symbols used in equations.

   Example:

   (3) Calculate the upper quality index (Q_U):

   $$Q_U = \frac{USL - \bar{x}}{s}$$

   where: *USL* = upper specification limit

APPENDIX

- **Acronyms**
  - If an acronym is used in more than one Section, add it to Subsection 101.03(a). Use the acronym in additional locations within the specifications.
  - If an acronym is only contained in one Section, spell it out in its entirety, with the acronym is parentheses the first time it is used. Use the acronym in additional locations within the Section.
  - Acronyms in titles - Spell out Acronyms in Section titles (Section 101) and Subsection titles (Subsection 101.01) but not in the lower level Subsection titles [Subsection 101.01(a)]. Job-Mix Formula is NOT an exception.
  - Acronyms like SCR are singular ("Special Contract Requirement" instead of "Requirements"). Add the "s" when plural (SCRs).
- **Materials list**
  - Do not include full Sections in the Materials lists. If a full Section needs to be added, include information under construction requirements and acceptance as needed. (This does not apply to Section 257 or when referencing an entire 700 Section).
    - A sentence is needed under the Construction Requirements - "Construct minor concrete according to Section 601."
    - A sentence is needed in the Acceptance subsection - "Material for minor concrete pavement will be evaluated under Section 601."
  - If a Sub-subsection is referenced but the name does not include the material use the subsection title instead. [See Section 256.02 with 717.01(b)(3)]
- **Other Lists**
  - When there is a lead in sentence with "the following" a verb is not needed in the list.
  - If a list starts with "Include the following" each item needs to start with a noun (not a verb.)
  - Do not repeat the verb from the lead in sentence.
  - Add a semicolon after each item (even if there are only 2 items.)
  - If there is a list within a list, try to avoid the need for semicolons. But if unavoidable, continue as part of the full list and use semicolons in the sub-list without the word "and" and no period.
  - If a list is needed but does not merit a Subsection list, put it in parenthesis.
- **Referencing titles**
  - When referencing titles include the associated reference numbers and the full title.
  - Give the full name once per Section and then just the number for other uses in the same Section.
  - Use italics only for full titles of books or references.
  - Do not use italics for sections of books or references .

  - Use this format for references: Reference number, reference title (this does not include FAR clauses).
  - Use this format when referencing a table or appendix or part of a reference: Reference number, reference name, Appendix/table number, Appendix/table name.
  - AASHTO and ASTM - do not add title names. (If there is not a number associated with the reference use the full title.)
  - FAR clauses - include title names but not for Parts or Subparts.
- **Spacing**
  - No space before or after a dash between numbers.
  - Single space after periods.
  - Use "72±7 °F" with no spaces before and after the ± and units placed at the end (there is a space before the degree symbol).
- **Tables**
  - Do not include a space between the word and the superscript.
  - For 2 or more superscripts in one location, use commas without space to separate the superscript numbers.
  - Generally, place footnote number at the end of the sentence or clause. The number normally follows any punctuation except a dash.
  - Do not use acronyms in main titles (outside of table), however they can be used inside table. If the acronym is used for the first time within a table, use the acronym and define it in a footnote.
  - If an acronym is only used in tables (even in different Sections) do not add it to Subsection 101.03(a). Instead, define it in the footnote of the table.
  - Footnotes in tables - Use superscript by itself (#) not See Note (#).
  - If possible, use one line instead of two in each cell. If not, cells can have multiple lines.
  - For ranges in tables use the word "to" instead of a dash.
  - In tables use abbreviated units instead of full unit name.
  - Use "&" instead of "and" in tables.
  - Use "if requested" in the Sampling, Testing, and Acceptance Requirements tables.
  - Use "minimum" in tables instead of "at least".
  - Show units after a comma (so column headings would show XXX, unit).
  - The superscript should be attached to the word before the unit.
  - Spell out units in headers.
- **Acceptance Subsections**
  - Always include Subsection 106.02.
  - List in sequential order.
  - Everything applies if it is listed. There is no priority.
  - Do not include the redundant phrase "and the quality characteristic".
  - Refer to full Section numbers. Refer to Subsections for Section 106.
  - Use the phrase . . . will be evaluated under . . .

- **Construction Requirements Subsections**
  - Subsections should follow this order: Qualifications, Submittals, General.
- **Description Subsections**
  - Definitions go before Materials as .02 (See Subsection 252.02).
- **What Subsection?**
  - Test results of work being performed DO NOT belong in the Submittals Subsection.
  - When describing an item for the Contractor to buy at the store/pit/yard/etc., it is placed in the 700s.
  - When describing what is done with the item once it's onsite, then it is placed in a construction spec.
  - Do not reference 700s materials in the construction specs; 700s references belong in the .02 Materials list.
  - Remove designated statements from .01 (except guardrail or references to other standards/codes). If needed, reword to active voice and put in construction requirements section.
- Typically, a specification should not state what should be done if the Contractor does not meet the requirement. Subsection 106.01 states that the Contractor has the option to replace non-compliant work or submit corrective action if they do not meet the requirements. Sometimes this is not sufficient and it is ok to include specifications describing actions to take for non-compliance. See Subsections 256.09 and 401.17.
- In formulas when defining variables and units place the units after the variable description, γ = Maximum dry density of aggregate, lb/ft^3.
- When wording is ", including . . ." Change to a separate sentence ". Include . . . "
- Only use quotation marks in locations where there is an actual quote (like Subsection 102.02(a)).
- The italicized numbering level – preference is not to have a title. But if a title is included it should be italic.
- Bold letter level - preferred to have a bold title.
- Define terms, not methods.
- If applicable use the phrase, "Submit . . . according to Subsection 104.06." Subsection 104.06 specifies 14 days for documents and 30 days for drawings. Only include the submittal review period if specifying something other than 14 days and 30 days.

Table A-1
Common Spelling Errors

Correct Spelling	Incorrect Spelling
Cross slope	Cross-slope
Gauge	Gage
Ground-line	Ground line
Hand-held	Hand held, Handheld
Job site	Jobsite, Job-site

Correct Spelling	Incorrect Spelling
Micro milling	Micro-milling, Micromilling
Micro surfacing	Micro-surfacing
Non-shrink	Nonshrink
Overstressing	Over stressing
Pull-off	Pull off
Reapply	Re-apply
Sawcutting	Saw cutting
Saw cut	Sawcut
Sheepsfoot roller	Sheep-foot or other options
Shotblasting	Shot blasting
Shot blast	Shotblast
Slope stake	Slope-stake
Steel-wheel	Steel wheel
Topcoat	Top coat
Watertight	Water tight
12-inch-wide strip	12 inch wide strip or 12-inch wide strip

Table A-2
Word Usage Guidelines

Usage Context	Correct	Incorrect	Comments
Acceptability	Rejected	Unacceptable	
Achieve	Achieve (preferred), reach, attain		Use as applicable in the context
According to	According to	Under	Use "under" in Acceptance or Payment Sections.
All			In general, the word "all" can be removed without changing the meaning
Approval	Obtain approval	Achieve approval	
Approvals	Do not . . . until . . . is/are approved		
Approved by the CO	approved	approved by the CO	If something is approved by anyone else, include the words "by . . ."
Bonding	Bonding to	Bonding with	
Contractor Provided	Provide	Furnish, supply, etc.	For use in the work or getting it on site
Control Strips	Accepted		

Usage Context	Correct	Incorrect	Comments
Drawing Submissions	Drawings	Shop Drawings	From the Contractor
Drawings that have been approved for construction	Approved Drawings	Shop Drawings	From the Contractor
Ensuring	So that, To ensure that	In a manner that, In a manner such that, So, To make sure, So as to	Avoid the phrase if possible.
Examples	(such as . . .)	i.e., for example	In parentheses
Federal or State references	Rules and regulations	Requirements or any other combination	
Fractions	One-third, One-half, One-fourth	Other options	
Fraction usage	One-half of the	Half the	
Government furnished	Furnish	Provide	
Incorporation	Incorporated IN the work	Incorporated INTO the work	
Lump Sum References	By the lump sum	Lump sum	
Manufacturer's recommendations	According to the manufacturer's recommendations	Different variations	
Maximum/Minimum References	At least	Not less than, No less than, A minimum of, Exceeds	With exceptions
Maximum/Minimum References	No more than	Not more than, Not to exceed, At most, A maximum of, Within, Not exceeding	With exceptions
Measurements	1000 feet 10,000 feet	1,000 feet	Use commas in numeric values with five or more digits (that is, quantities greater than 9999)
Only			In general, the word "only" can be removed without changing the meaning
Payment Timing	Paid after	Paid upon, Paid following, Paid when	
Plans	In the plans	On the plans	
Price Breakdown	Price breakdown	Cost breakdown	
Requests	When requested, If requested, As requested		Use as it seems right in the context, Use "if requested" in

Usage Context	Correct	Incorrect	Comments
			the ST&A tables
Section Modifications	Except as modified in this Section	Amended, Herein, or other options	
Start	Start	Begin	
Stop Work References	Stop work order	Stop work, Stop order	When applicable
Submissions to CO	Submit	Submit to the CO or anything else	When submitting test results or other information to the CO. "For approval" depending on the circumstance
Submittals	Approved		
Section References in Construction Specifications	Conform to Section	See Section	
Section references in Payment Specifications	See Subsection		Also, See Table . . .
Tables	Shown in Table	Of Table, Specified in Table, or That in Table	
Test Panels	Approved		
Time References	Immediately before, immediately after	Just before, just after	Use a specific time frame if possible
Time References	Within the past # years	Other options	
Time References	2 years' experience or 1 year's experience	Other options	Do not spell out the number and use the apostrophe. (Same for Days' notice)
Unit Price	Contract unit price	Contract unit bid price	
Units (Plural)	For >1, use plural	Do not add an "s" to plural abbreviated units	1.5 inches, 2 min
Units (Singular)	For ≤1, use singular		0.5 inch, 1 minute
Weather Limitations	When	If	
Weather Limitations			It is okay to say is "above 35 °F and rising"

Table A-3
Changeable Wording Guidelines

Usage Context	Correct Usage	Incorrect Usage	Comments
According to: Action	According to	Conform to	Galvanize XX according to YY.
Conform to: Material	Conforming to	According to	Provide XX conforming to YY.
Comply with: Contractor	Comply with	Conform to	Work is also checked for compliance.
Permits: verb	Allow	Permits	Use "permits" for official authorization
Adjective: High-pressure	High-pressure	High pressure	
On-site: location	On site	On-site	
On-site: adjective	On-site	On site	Subsection 109.02 use without the hyphen for less changes to FP.
Location	Under water	Underwater	
Adjective	Underwater	Under water	

Table A-4
Subsection Usage Guidelines

Usage Context	Correct Usage
Equipment Subsections	Equipment. Provide equipment conforming to the following:
Measurement Subsections	When measuring XXX by the YYY...
Measurement Subsections	When needed, use "Do not measure . . ."
Measurement and Payment Subsections	When needed, use "Do not measure . . . for payment."
Subsection titles	Use "Submittals" instead of "Submittal" or "Submittal List"