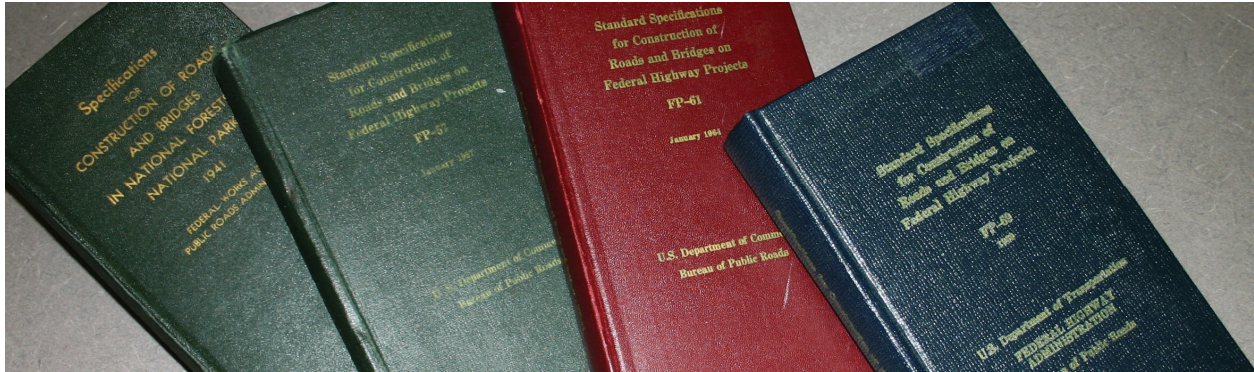


SPECIFICATION WRITERS' GUIDE For Federal Lands Highway

Publication No. FHWA-CFL/TD-08-001

May 2008



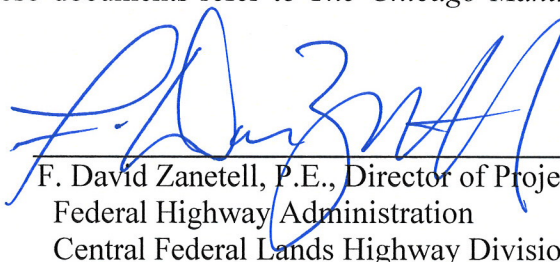
U.S. Department
of Transportation
**Federal Highway
Administration**



FORWARD

This Guide is intended for writers that develop specifications for the Federal Highway Administration's (FHWA) Federal Lands Highway Program (FLH). This Guide is to promote and facilitate the writing of specifications that conform to the five Cs of specification writing -- clear, concise, complete, correct, and consistent. Adherence to the guidance provided in these chapters and Chapter 9.4.11 of the FLH's Project Development and Design Manual will help writers develop well-written specifications for use with the *Standard Specification for Construction of Roads and Bridges on Federal Highway Projects (FP)*. The FP in and of itself is a good example of proper style and format.

For questions not addressed in these documents refer to *The Chicago Manual of Style* or to a standard English dictionary.



F. David Zanetell, P.E., Director of Project Delivery
Federal Highway Administration
Central Federal Lands Highway Division

Notice

This document is disseminated under the sponsorship of the U.S. Department of Transportation in the interest of information exchange. The U.S. Government assumes no liability for the use of the information contained in this document. This report does not constitute a standard, specification, or regulation.

The U.S. Government does not endorse products or manufacturers. Trademarks or manufacturers' names appear in this report only because they are considered essential to the objective of the document.

Quality Assurance Statement

The FHWA provides high-quality information to serve Government, industry, and the public in a manner that promotes public understanding. Standards and policies are used to ensure and maximize the quality, objectivity, utility, and integrity of its information. FHWA periodically reviews quality issues and adjusts its programs and processes to ensure continuous quality improvement.

Technical Report Documentation Page

1. Report No. FHWA-CFL/TD-08-001	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle <i>Specification Writers' Guide For Federal Lands Highway</i>		5. Report Date May 2008	
		6. Performing Organization Code	
7. Author(s) Linda Konrath, Sydney Scott P.E., and Lauralee Marsiglio		8. Performing Organization Report No.	
9. Performing Organization Name and Address Trauner Consulting Services, Inc. 1617 JFK Boulevard, Suite 600 Philadelphia, PA 19103		10. Work Unit No. (TRAIS)	
		11. Contract or Grant No. DTFH68-06-P-00182	
12. Sponsoring Agency Name and Address Federal Highway Administration Central Federal Lands Highway Division 12300 W. Dakota Avenue, Suite 210 Lakewood, CO 80228		13. Type of Report and Period Covered Final Report: Guidelines August 2006 – April 2008	
		14. Sponsoring Agency Code HFTS-16.4	
15. Supplementary Notes <i>COTR: Roger Surdahl, FHWA-CFLHD. FHWA-FLH Specification Coordination Group: David Green, FHWA-FLH, Wade Johnson, FHWA-WFLHD, Michael Peabody, FHWA-CFLHD, Steve Arnold, FHWA-EFLHD. Advisory Panel Members: Greg Dolson, John Seabrook, Mark Taylor, and Karen Pinell, FHWA-FLH; Ron Andresen and Shari Brandt, FHWA-CFLHD; Gary Brown, Mark Clabaugh, Rajan Patel, FHWA-EFLHD; Amit Armstrong, Brent Coe, Marty Flores, Brian Minor, and John Snyder, FHWA-WFLHD; Bernie Kuta, FHWA-RC; and Ken Jacoby, FHWA-HQ. This project was funded under the FHWA Federal Lands Highway Technology Deployment Initiatives and Partnership Program (TDIPP).</i>			
16. Abstract This document contains guidelines to help writers develop specifications for the Federal Highway Administration's Federal Lands Highway program. Topics addressed include: <ul style="list-style-type: none"> • Specification writing style; • Organization and format, • Proper terminology and phrasing; • Capitalization and abbreviation; and • Punctuation and grammar rules. 			
17. Key Words SPECIFICATIONS, STYLE GUIDE, WRITING, DEVELOPMENT OF SPECIFICATIONS, ACTIVE VOICE, IMPERATIVE MOOD		18. Distribution Statement No restriction. This document is available to the public from the sponsoring agency at the website http://www.cflhd.gov .	
19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of Pages 44	22. Price

SI* (MODERN METRIC) CONVERSION FACTORS

APPROXIMATE CONVERSIONS TO SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
LENGTH				
in	inches	25.4	Millimeters	mm
ft	feet	0.305	Meters	m
yd	yards	0.914	Meters	m
mi	miles	1.61	Kilometers	km
AREA				
in ²	square inches	645.2	square millimeters	mm ²
ft ²	square feet	0.093	square meters	m ²
yd ²	square yard	0.836	square meters	m ²
ac	acres	0.405	Hectares	ha
mi ²	square miles	2.59	square kilometers	km ²
VOLUME				
fl oz	fluid ounces	29.57	Milliliters	mL
gal	gallons	3.785	Liters	L
ft ³	cubic feet	0.028	cubic meters	m ³
yd ³	cubic yards	0.765	cubic meters	m ³
NOTE: volumes greater than 1000 L shall be shown in m ³				
MASS				
oz	ounces	28.35	Grams	g
lb	pounds	0.454	Kilograms	kg
T	short tons (2000 lb)	0.907	megagrams (or "metric ton")	Mg (or "t")
TEMPERATURE (exact degrees)				
°F	Fahrenheit	5 (F-32)/9 or (F-32)/1.8	Celsius	°C
ILLUMINATION				
fc	foot-candles	10.76	Lux	lx
fl	foot-Lamberts	3.426	candela/m ²	cd/m ²
FORCE and PRESSURE or STRESS				
lbf	poundforce	4.45	Newtons	N
lbf/in ²	poundforce per square inch	6.89	Kilopascals	kPa

APPROXIMATE CONVERSIONS FROM SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
LENGTH				
mm	millimeters	0.039	Inches	in
m	meters	3.28	Feet	ft
m	meters	1.09	Yards	yd
km	kilometers	0.621	Miles	mi
AREA				
mm ²	square millimeters	0.0016	square inches	in ²
m ²	square meters	10.764	square feet	ft ²
m ²	square meters	1.195	square yards	yd ²
ha	hectares	2.47	Acres	ac
km ²	square kilometers	0.386	square miles	mi ²
VOLUME				
mL	milliliters	0.034	fluid ounces	fl oz
L	liters	0.264	Gallons	gal
m ³	cubic meters	35.314	cubic feet	ft ³
m ³	cubic meters	1.307	cubic yards	yd ³
MASS				
g	grams	0.035	Ounces	oz
kg	kilograms	2.202	Pounds	lb
Mg (or "t")	megagrams (or "metric ton")	1.103	short tons (2000 lb)	T
TEMPERATURE (exact degrees)				
°C	Celsius	1.8C+32	Fahrenheit	°F
ILLUMINATION				
lx	lux	0.0929	foot-candles	fc
cd/m ²	candela/m ²	0.2919	foot-Lamberts	fl
FORCE and PRESSURE or STRESS				
N	newtons	0.225	Poundforce	lbf
kPa	kilopascals	0.145	poundforce per square inch	lbf/in ²

*SI is the symbol for the International System of Units. Appropriate rounding should be made to comply with Section 4 of ASTM E380. (Revised March 2003)

TABLE OF CONTENTS

CHAPTER 1 — SPECIFICATION DEVELOPMENT	1
1.1 GENERAL	1
1.2 INSTRUCTIONS TO READERS.....	1
1.3 SUBMITTING PROPOSED SPECIFICATIONS FOR CONSIDERATION.....	2
CHAPTER 2 — ORGANIZATION OF SPECIFICATIONS	3
CHAPTER 3 — FORMATTING GUIDELINES.....	5
CHAPTER 4 — WORDING OF SPECIFICATIONS.....	7
4.1 VOICE AND MOOD	7
4.2 WORDING	7
4.3 WORDS AND PHRASES NOT TO USE	9
4.4 SPECIFIC WORDS OR PHRASES	10
4.5 COMPOUND WORDS, HYPHENATION, AND WORD SEPARATION.....	12
4.6 CROSS-REFERENCES AND CITATIONS	13
<i>Cross-References within the Standard Specifications</i>	<i>13</i>
<i>Citations.....</i>	<i>13</i>
CHAPTER 5 — LISTS AND TABLES	15
5.1 LISTS.....	15
<i>Wording.....</i>	<i>15</i>
<i>Capitalization.....</i>	<i>15</i>
<i>Punctuation.....</i>	<i>15</i>
5.2 TABLES	16
<i>Table Numbers and Titles</i>	<i>16</i>
<i>Referencing Tables.....</i>	<i>17</i>
<i>Table Layout</i>	<i>17</i>
<i>Table Notes</i>	<i>17</i>
CHAPTER 6 — ADDITIONAL DRAFTING CONVENTIONS.....	19
6.1 SHORTENED FORMS: ABBREVIATIONS, ACRONYMS, AND SYMBOLS	19
<i>Definitions.....</i>	<i>19</i>
<i>General Guidelines for Shortened Forms.....</i>	<i>19</i>
6.2 STYLE FOR MEASUREMENTS.....	20
6.3 MEASUREMENT SYMBOLS	22
6.4 MATHEMATICAL AND OTHER SIGNS AND SYMBOLS	23
6.5 RANGES	24
<i>Ranges in Text.....</i>	<i>24</i>
<i>Ranges in Tables.....</i>	<i>25</i>
6.6 MINIMUM, MAXIMUM, MINUTES	25
CHAPTER 7 — NUMERICAL INFORMATION.....	27
7.1 NUMERALS VS. WORDS.....	27

7.2	TIME AND DATE.....	28
7.3	MONEY	28
7.4	DECIMALS.....	29
7.5	FRACTIONS	29
7.6	DECIMALS VS. FRACTIONS.....	30
7.7	HYPHENS AND UNIT MODIFIERS	30
7.8	COMMAS VS. SPACES	30
CHAPTER 8 — CAPITALIZATION AND PUNCTUATION		31
8.1	CAPITALIZATION.....	31
8.2	PUNCTUATION.....	32
	<i>Serial Commas</i>	32
	<i>Closing Quotation Marks</i>	32
	<i>Letters as Shapes</i>	32
	<i>Parentheses</i>	32
	<i>Hyphens and Dashes</i>	33
	<i>Hard Spaces</i>	34
8.3	ITALICS	35
APPENDIX A.....		37
A.1	SUBMITTAL EXAMPLE FOR PROPOSED SUPPLEMENTAL SPECIFICATION.....	37

LIST OF TABLES

Table 3-1 Formatting Guidelines for FLH Specifications	5
Table 4-1 Alternatives to Common Wordy Phrases or Negative Words.....	8
Table 4-2 Words and Phrases to Avoid	9
Table 4-3 Compound Words, Hyphenated Words, & Word Separation	13
Table 6-1 Signs and Symbols	23
Table 6-2 Displaying Ranges in Tables.....	25

LIST OF FIGURES

Figure 2-1. Hierarchal Organization of FLH Specifications	3
---	---

COVER PHOTOS: (Top) FP Specifications for 1941, 1957, 1961, and 1969. (Lower Left) FP Specifications for 1974, 1979, 1985, 1992, 1996, and 2003. (Lower Right) Carolyn Burg.