

Colorado Department of Transportation

Standard Specifications
for
Road And Bridge Construction



No. _____



PREFACE

These standard specifications are to be used on contract work awarded by the Colorado Department of Transportation (CDOT). They may be supplemented or modified to suit specific contracts.

These specifications are expressed in United States Standard Measure (English units). The international System of Units (SI, Modernized Metric) is used only where standardized testing requires metric units. For clarity, aggregate sieve sizes appear in both SI and English Units. The dimensions, measurements, and requirements stated in English units are the specification requirements. All Contractor submittals shall be prepared in English Units. Pay item quantities will be measured in English units.

Unless otherwise identified, forms herein referred to (e.g. Form 605) are CDOT forms. Forms from other organizations or agencies are clearly identified (e.g. FHWA Form 1273).

Use of these specifications by any other organization or individual will be at the user's risk. Organizations or individuals citing these specifications by reference in their contract work will be responsible for furnishing prospective bidders copies of the specifications along with any addenda that may affect their contract.

Copies of this book may be obtained from the Colorado Department of Transportation, Office of Bid Plans, 4201 E. Arkansas Avenue, Denver, CO 80222.

Addenda to these specifications may be issued by the Department to suit its needs. Addenda may be accessed on the CDOT web site and will be available for purchase at prices established by the Department.



TABLE OF CONTENTS

	Page
Section 100 General Provisions	1
Section 101 Definitions and Terms	1
Section 102 Bidding Requirements and Conditions	12
102.01 Prequalification of Bidders	12
102.02 Contents of Proposal Forms	12
102.03 Interpretation of Quantities in Proposal Form	12
102.04 Interpretation of Plans and Specifications	13
102.05 Examination of Plans, Specifications, Special Provisions, and Site of Work	13
102.06 Preparation of Proposal	13
102.07 Irregular Proposals	14
102.08 Combination or Conditional Proposals	15
102.09 Anti-Collusion Affidavit	15
102.10 Material Guaranty	15
Section 103 Award, and Execution of Contract	16
103.01 Consideration of Proposals	16
103.02 Award of Contract	16
103.03 Requirement of Contract Bonds	16
103.04 Execution and Approval of Contract	16
Section 104 Scope of Work	17
104.01 Intent of Contract	17
104.02 Differing Site Conditions, Suspensions of Work, and Significant Changes in the Character of Work	17
104.03 Extra Work	18
104.04 Maintaining Traffic	19
104.05 Rights in and Use of Materials Found on the Work	20
104.06 Final Cleaning Up	20
104.07 Value Engineering Change Proposals by the Contractor	20
Section 105 Control of Work	25
105.01 Authority of the Engineer	25
105.02 Plans, Shop Drawings, Working Drawings, other Submittals and Construction Drawings	25
105.03 Conformity to the Contract	30
105.04 Conformity to the Contract of Superpave Performance Graded Binders	33
105.05 Conformity to the Contract of Hot Mix Asphalt	35
105.06 Conformity to the Contract of Portland Cement Concrete Pavement	40

105.07	Conformity to Roadway Smoothness Criteria	44
105.08	Coordination of Plans, Specifications, Supplemental Specifications, and Special Provisions	54
105.09	Cooperation by Contractor	54
105.10	Cooperation with Utilities	55
105.11	Cooperation Between Contractors	56
105.12	Construction Stakes, Lines and Grades	56
105.13	Authority and Duties of the Project Engineer	57
105.14	Duties of the Inspector	57
105.15	Inspection and Testing of Work	58
105.16	Removal of Unacceptable Work and Unauthorized Work	58
105.17	Load Restrictions	59
105.18	Maintenance During Construction	59
105.19	Failure to Maintain Roadway or Structure	60
105.20	Acceptance	60
105.21	Disputes and Claims for Contract Adjustments	60
Section 106	Control of Material	70
106.01	Source of Supply and Quality Requirements	70
106.02	Material Sources	70
106.03	Samples, Tests, Cited Specifications	71
106.04	Qualification of Testing Personnel and Laboratories	72
106.05	Sampling and Testing of Hot Mix Asphalt	72
106.06	Sampling and Testing of Portland Cement Concrete Paving	80
106.07	Material Inspection at Plant	87
106.08	Storage of Materials	88
106.09	Handling Materials	88
106.10	Department Furnished Materials	88
106.11	Buy America Requirements	88
106.12	Certificates of Compliance	89
106.13	Certified Test Report	90
Section 107	Legal Relations and Responsibility to Public	91
107.01	Laws to be Observed	91
107.02	Permits, Licenses, and Taxes	91
107.03	Patented Devices, Materials, and Processes	91
107.04	Restoration of Surfaces Opened by Permit	91
107.05	Federal Aid Provisions	92
107.06	Sanitary, Health, and Safety Provisions	92
107.07	Public Convenience and Safety	92
107.08	Railroad-Highway Provisions	92
107.09	Construction over and Adjacent to Navigable Waters	92
107.10	Barricades and Signs	92
107.11	Use of Explosives	93
107.12	Protection and Restoration of Property and Landscape	93
107.13	Forest Protection	94
107.14	Interruption of Irrigation Water Flow	94

107.15	Responsibility for Damage Claims	94
107.16	Opening Sections of Project to Traffic	96
107.17	Contractor's Responsibility for Work	97
107.18	(unused)	98
107.19	Furnishing Right of Way	98
107.20	Personal Liability of Public Employees	98
107.21	No Waiver of Legal Rights	98
107.22	Third Party Beneficiary	98
107.23	Archaeological and Paleontological Discoveries	98
107.24	Air Quality Control	99
107.25	Water Quality Control	99
Section 108	Prosecution and Progress	104
108.01	Subletting of Contract	104
108.02	Notice to Proceed	104
108.03	Schedule	104
108.04	Limitation of Operations	109
108.05	Character of Workers; Methods and Equipment	109
108.06	Workplace Violence	110
108.07	Determination and Extension of Contract Time	110
108.08	Failure to Complete Work on Time	113
108.09	Default of Contract	114
108.10	Termination of Contract	115
Section 109	Measurement and Payment	118
109.01	Measurement of Quantities	118
109.02	Scope of Payment	121
109.03	Compensation for Altered Quantities	121
109.04	Compensation for Changes and Force Account Work	121
109.05	Eliminated Items	125
109.06	Partial Payments	125
109.07	Payment for Material on Hand (Stockpiled Material)	128
109.08	Reserved	129
109.09	Acceptance and Final Payment	129
109.10	Compensation for Compensable Delays	130
Sections	200 through 600 Construction Details	
Section 200	Earthwork	131
201	Clearing and Grubbing	131
202	Removal of Structures and Obstructions	133
203	Excavation and Embankment	139
206	Excavation and Backfill for Structures	150
207	Topsoil	155
208	Erosion Control	157
209	Watering and Dust Palliatives	169
210	Reset Structures	171

212	Seeding, Fertilizer, Soil Conditioner, and Sodding	175
213	Mulching	182
214	Planting	187
215	Transplanting	195
216	Soil Retention Covering	199
217	Herbicide Treatment	203
250	Environmental, Health and Safety Management	205
Section 300	Bases	221
304	Aggregate Base Course	221
306	Reconditioning	223
307	Lime Treated Subgrade	224
Section 400	Pavements	231
401	Plant Mix Pavements-General	231
403	Hot Mix Asphalt	247
405	Heating and Scarifying Treatment	249
406	Cold Bituminous Pavement (Recycle)	251
407	Prime Coat, Tack Coat, and Rejuvenating Agent	256
408	Joint and Crack Sealant	258
409	Seal Coat	260
411	Bituminous Materials	263
412	Portland Cement Concrete Pavement	265
420	Geosynthetics	284
Section 500	Structures	289
501	Steel Sheet Piling	289
502	Piling	291
503	Drilled Caissons	298
504	Cribbing	302
506	Riprap	304
506.06	Riprap (Gabions) and Slope Mattress	306
507	Slope and Ditch Paving	309
508	Timber Structures	313
509	Steel Structures	317
510	Structural Plate Structures	348
512	Bearing Device	351
514	Pedestrian and Bikeway Railing	360
515	Waterproofing Membrane	363
516	Dampproofing	367
517	Waterproofing	368
518	Waterstops and Expansion Joints	370
Section 600	Miscellaneous Construction	381
601	Structural Concrete	381
602	Reinforcing Steel	427
603	Culverts and Sewers	431

604	Manholes, Inlets, and Meter Vaults	436
605	Subsurface Drains	439
606	Guardrail	442
607	Fences	447
608	Sidewalks and Bikeways	450
609	Curb and Gutter	453
610	Median Cover Material	457
611	Cattle Guards	459
612	Delineators and Reflectors	460
613	Lighting	464
614	Traffic Control Devices	472
615	Water Control Devices	505
616	Siphons	506
617	Culvert Pipe	508
618	Prestressed Concrete	509
619	Water Lines	542
620	Field Facilities	545
622	Rest Areas and Buildings	549
623	Irrigation System	564
624	Corrosion Resistant Culverts	576
625	Construction Surveying	579
626	Mobilization	584
627	Pavement Marking	586
629	Survey Monumentation	596
630	Construction Zone Traffic Control	604
Section 700	Materials Details	617
701	Hydraulic Cement	617
702	Bituminous Materials	620
703	Aggregates	628
704	Masonry Units	636
705	Joint, Waterproofing, and Bearing Materials	637
706	Concrete and Clay Pipe	644
707	Metal Pipe	646
708	Paints	649
709	Reinforcing Steel and Wire Rope	653
710	Fence and Guardrail	654
711	Concrete Curing Materials and Admixtures	657
712	Miscellaneous	658
712.01	Water	658
712.02	Calcium Chloride	658
712.03	Hydrated Lime	658
712.04	(unused)	658
712.05	Precast Concrete Units	658
712.06	Frames, Grates, Covers, and Steps	658
712.07	(unused)	659
712.08	Geosynthetics	659

712.09	Gabions and Slope Mattresses	665
712.10	Epoxy	667
712.11	Plastic Pipe For Underdrains	668
712.12	Geocomposite Drains	668
712.13	Plastic Pipe	668
713	Traffic Control Materials	669
714	Prestressed Unit Materials	680
715	Lighting Materials	681
716	Water Line Materials	687
717	Rest Area and Building Materials	690
Index	699