

**SIGNIFICANT CHANGES IN CDOT's 2021
STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION**

The following are significant changes from the 2019 Standard Specifications Book to the new 2021 Standard Specifications Book. Most of the changes were previously adopted by CDOT's Specification Committee as standard special provisions and have been applicable to projects put under construction since their adoption.

The following general changes have been made:

- **Each** subsection has its own page numbering, starting with xxx-1, where “xxx” is the subsection number. The book doesn't have continuous page numbering from subsection to subsection. This facilitates changes to one section without having to renumber the entire book. The Table of Contents and Index reflect this change.
- **The Table of Contents** has a table format, with lines across to facilitate reading the corresponding page numbering.
- **Section 101** Subsection numbers have been removed from each definition, they are listed alphabetically.
- **CDOT's Procedural Directive 508.1** - Requirements for the Use of the Professional Engineer's Seal, dated May 21, 2019, requires that licensed engineers performing work on behalf of CDOT **electronically** seal documents under their Responsible Charge or Control. The proposed changes are to replace the current references and to use electronic seal. These changes affected the following specifications:
 - Section 101 – Record Set definition
 - Section 104 – Scope of Work 104.07 (b) (3) and 104.07 (d) (3)
 - Section 105 – Control of Work 105.02 (b), Table 105-1 and 105.08
 - Section 106 – Control of Material 106.02 (b)
 - Section 107 – Legal Relations and Responsibility to Public 107.15 (a) 4 (2)
 - Section 206 – Excavation and Backfill for Structures 206.09
 - Section 208 – Erosion Control 208.10 (b)
 - Section 250 – Environmental Safety and Health 250.03 (c)
 - Section 502 – Piling 502.09 (b)
 - Section 503 – Drilled Shafts 503.19, 503.21
 - Section 504 – Walls 504.07
 - Section 509 – Steel Structures 509.27
 - Section 518 – Waterstops and Expansion Joints 518.05 (a)
 - Section 601 – Structural Concrete 601.05, 601.10 (c) 8., 601.11 (a)
 - Section 618 – Prestressed Concrete 618.04 (a), 618.07 (c) 2., 618.13 (b), 618.14 (c)
 - Section 625 – Construction Surveying 625.01, 625.11, 625.13
 - Section 629 – Survey Monumentation 629.03, 629.05

The following Sections of the Specification Book contain significant revisions [there are less significant changes that are not listed]:

Significant Changes to the 2019 Standard Specifications

Specification Sections with Significant Changes	What was Changed (by Subsection Number)
101 <i>Definitions and Terms</i>	Add: NSPS/National Society of Professional Land Surveyors
	Holidays: Remove Columbus Day as a holiday, add Cabrini Day (first Monday in October)
	Add the definition of "Record Set".
102 <i>Interpretation of Plans and Specifications</i>	102.04: Outdated, CDOT currently posts/provides Revisions with the associated plans and specs in the Bid Express and B2G Systems.
103 <i>Award and Execution of the Contract</i>	103.03: Add "Performance Bond shall remain in full force and effect for the term of the Contract."
105 <i>Control of Work</i>	105.02 (f): Add a requirement to supply the pile and caisson tip elevations.
	105.03(a): Revised " <i>Retroreflectivity of High Build Acrylic Waterborne Paint and Modified Epoxy Pavement Marking. . .</i> " (connected with 630.11)
	105.05 Remove and replace Conformity to the Contract of Hot Mix Asphalt (connected with 106.05)
	105.06 (g): Changes to sand equivalence requirements. (connected with 106.06)
	105.22: Notice of Issue revisions: revised so the written notice is defined in detail, also added ". . .suffered prejudice . . ." clause Audit revisions: details 90 day deadline
	105.23: Audit Revisions: details quantum
	105.24: Audit Revisions: removes audit clause here, added to .22 and .23; increases written decision deadline from 60 to 90 days.
106 <i>Control of Material</i>	106.05 Remove and replace Sampling and Testing of Hot Mix Asphalt (connected with 105.05)
	106.06: Made several revisions to the requirements for sampling and testing of Portland cement concrete pavement. (connected with 105.06)
107 <i>Legal Relations and Responsibility to Public</i>	107.06: addition to Project Safety Management Plan (for COVID)
202 <i>Removal of Structures and Obstructions</i>	202.13 thru 202.17: Added these sections to detail Diamond Grinding of Concrete Pavement
401 <i>Plant Mix Pavements General</i>	401.02(b): Include "After the Form 43 is executed, and all ingredients are available on the project, the Contractor shall notify the Engineer a minimum of one working day in advance of beginning production of the hot mix asphalt. Any changes in the Form 43 will require the same notification unless otherwise approved by the Engineer."

Specification Sections with Significant Changes	What was Changed (by Subsection Number)
412 <i>Portland Cement Concrete Pavement</i>	412.13(b) 2.: Remove and replace this subsection, Dowel Bars for Joints.
	412.15: Remove and replace this subsection, Cold Weather Concrete Paving.
	412.25 through 412.29: Add these subsections for Cross Stitching.
	412.30 through 412.35: Add these subsections for Slot Stitching.
	412.36 through 412.41: Add these subsections for Concrete Pavement Dowel Bar Retrofit.
504 <i>Walls</i>	504.06 Pre-Cast Concrete Panel Facing Unit and Panel Joint Material: Remove the 1 st paragraph and (1), (2), and (3) under it and replace with revised paragraph. (connected with 606.02)
	504.01 through 504.26: revise these sections as pertains to Soil Nail Wall (connected with 641.07 and 641.09)
518 <i>Waterstops and Expansion Joints</i>	518.01, 518.06, 518.11, 518.12 and 518.13 Add into these sections as pertains to Polyester Concrete End Dam. Include new text, "This work consists of furnishing and placing a Polyester Concrete End Dam system which includes Polyester-based Polymer Concrete (PPC) and High-molecular-weight Methacrylate (HMWM) resin primer. The system shall be used for Portland Cement Concrete blockouts (PCC) of bridge expansion devices on the concrete bridge deck, abutment backwalls, and approach slabs as shown on the plans."; Removed subsection 518.06 and replaced with new text; removed and replaced Subsection 518.11.
601 <i>Miscellaneous Construction</i>	<ul style="list-style-type: none"> • Removed and replaced subsections 601.01 through 601.07; • 601.09 (h), include additional text, "When ESCAs are used, the removal of forms, supports and housing, and the discontinuance of heating and curing may begin when the concrete is found to have the required compressive strength."; • 601.12(g) removed and replaced 5th paragraph; • 601.15 removed and replaced 2nd paragraph; removed 601.15 (b); removed 601.15 (c) paragraphs 3 through 8; • 601.16 removed and replaced paragraphs 1 through 3; Delete 601.16 (e); removed and replaced 601.17.
	601.21 through 601.25 Add into these sections as pertains to Concrete Deck (Patching) and Expansion Joint Concrete

Specification Sections with Significant Changes	What was Changed (by Subsection Number)
602 <i>Reinforcing Steel</i>	602.01 through 602.08 Revisions to these sections as pertains to Reinforcing Steel
606 <i>Guardrail</i>	606.02 Deleted 3 rd thru 7 th paragraph and replaced with new text. (connected with 504.06)
613 <i>Lighting</i>	<p>613.01 through 613.14 General language updates and specification clarification have been added to match current design & industry standards.</p> <ul style="list-style-type: none"> - grounding system updated to include multiple options for grounding electrodes - conduit and wiring installation has been updated to match industry standards: trenched conduit will include PVC coated GRC elbows; splice boxes only need to be installed every 400 feet, and conduit burial depth has been updated to match the Utility Accommodation Code. - pre-cast concrete has been removed per Staff Bridge. <p>Meter power pedestals and temporary lighting have been added per the S-613-1 and S-613-2 details.</p> <p>Heavy duty safety switch specifications have been added for ITS equipment installations. (connected with 715)</p>
614 <i>Traffic Control Devices</i>	614.15 through 614.24: Add these subsections for Blank Out Sign (LED) (Speed Radar).
	Pedestrian Push Buttons: new paragraphs 614.08 (f) and (g)
625 <i>Construction Surveying</i>	<p>625.01 Add information about 3D Engineered Construction Surveying (3DECS).</p> <p>625.04 Remove and replace the first paragraph.</p> <p>625.13 Add "All costs associated with 3DECS surveying will not be measured and paid for separately, but shall be included in the work."</p>
630 <i>Construction Zone Traffic Control</i>	<p>Automated Flagger Assistance devices</p> <p>630.01 Add to sentence 1: "Automated Flagging Assistance Devices (AFAD)".</p> <p>630.14 (d) Add information about AFADs.</p> <p>630.17 Add information about AFADs.</p> <p>630.18 Add information about AFADs.</p>
	<p>Barrier (Temporary)</p> <p>630.08 Remove and replace the existing information.</p> <p>630.17 Remove and replace the third paragraph.</p> <p>630.18 Remove and replace the pay item.</p>
	<p>Construction Zone Traffic Control</p> <p>630.11 Revisions to the first and second paragraph for Traffic Control Management and add to Traffic Control Supervisor duties in the third paragraph. (connected with 105.03(a))</p>

Specification Sections with Significant Changes	What was Changed (by Subsection Number)
630 <i>Construction Zone Traffic Control (continued)</i>	Mobile Pavement Marking Zone (Group 1 without Attenuator 630.10, item (3) delete and replace the third paragraph.
	Rolling Roadblock 630.01, 630.02, 630.17, 630.18 and 630.19 Add information on Rolling Roadblocks.
641 <i>Shotcrete</i>	641.07 includes new text “Initial Shotcrete Facing for soil nail wall, including the shotcrete steel and mesh reinforcement used for the temporary facing, will be measured by the actual square feet of shotcrete that is applied to the depth shown on the plans. Square feet of wall will be determined using the height measured at 20 foot maximum intervals along the wall layout line.” Subsection 641.09 has a new pay item. (connected with 504.01 and 504.26)
705 <i>Joint, Waterproofing and Bearing Material</i>	Delete subsection 705.01 (a) and replace with the following: (a) Joint Sealant with Backer Rod. The joint sealant material shall be an approved ASTM D5893 silicone sealant or ASTM D6690 Type II hot applied sealant on the Department’s Approved Products List. The materials shall be stored and applied in accordance with manufacturer’s recommendations, but they shall not be exposed to ambient temperatures in excess of 125 °F or stored in direct sunlight. The backer rod placed prior to joint sealant shall be an approved ASTM D5249 backer rod compatible with the joint sealant material chosen by the Contractor.
	705.03: Revised the reference specification for gaskets.
709 <i>Reinforcing Steel and Wire Rope</i>	709.01: Revised the reference specification for epoxy coated reinforcing bars.
	709.03: Revised the reference specification for dowel bars and tie bars.
715 <i>Lighting and Electrical Materials.</i>	715.01 through 715.04: Revised to implement the use of LED luminaires. General language updates and specification clarification have been added to align with current industry design practices. - structural references have been updated to AASHTO's LRFD Bridge Design document. - BUG ratings have been updated to reflect current technology. Alternative power source specifications have been added for solar powered and wind powered electrical products. Heavy duty safety switches have been added to match current ITS equipment installations. (connected with 613)

Specification Sections with Significant Changes	What was Changed (by Subsection Number)
715 <i>Lighting and Electrical Materials. (continued)</i>	715.05: Replaced subsection with the requirements for LED drivers.

Following is a list of standard special provisions incorporated into the 2021 Standard Specifications:

STANDARD SPECIAL PROVISIONS
incorporated into the 2021 Standard Specifications for Road and Bridge Construction

- Revision of Section 101 – Holidays
- Revision of Section 101 – Record Set
- Revision of Section 102 – Interpretation of Plans and Specifications
- Revision of Section 103 – Award and Execution of Contract
- Revision of Section 104 – Scope of Work
- Revision of Section 105 – Control of Work (105.02 b)
- Revision of Section 105 – Control of Work (105.02 f)
- Revision of Section 105 – Control of Work (105.03)
- Revision of Section 105 – Control of Work (105.08)
- Revision of Section 105 – Control of Work and Revision of 106 – Control of Material
- Revision of Section 106 – Control of Material
- Revision of Section 107 – Legal Relations and Responsibility to Public
- Revision of Section 107 – Project Safety Management Plan
- Revision of Section 202 – Diamond Grinding Concrete Pavement
- Revision of Section 206 – Excavation and Backfill for Structures
- Revision of Section 208 – Erosion Control 208.10 (b)
- Revision of Section 250 – Environmental Safety and Health
- Revision of Section 401 – Plant Mix Pavements
- Revision of Section 412 – Concrete Pavement Dowel Bar Retrofit
- Revision of Section 412 – Cross Stitching
- Revision of Section 412 – Dowel Bar for Joints
- Revision of Section 412 – Portland Cement Concrete Pavement
- Revision of Section 412 – Slot Stitching
- Revision of Section 502 – Piling
- Revision of Section 503 – Drilled Shafts

- Revision of Section 504 – Walls
- Revision of Section 504 and 606 – Precast Concrete
- Revision of Sections 504 and 641 – Soil Nail Wall
- Revision of Section 509 – Steel Structures
- Revision of Section 518 – Polyester Concrete End Dam
- Revision of Section 518 – Waterstops and Expansion Joints
- Revision of Section 601 – Concrete Deck (Patching) and Expansion Joint Concrete
- Revision of Section 601 – Structural Concrete
- Revision of Section 602 – Reinforcing steel
- Revision of Section 613 – Lighting
- Revision of Section 614 – Blank Out Sign (LED) (Speed Radar)
- Revision of Section 614 – Pedestrian Push Buttons
- Revision of Section 618 – Prestressed Concrete
- Revision of Section 625 – Construction Surveying
- Revision of Section 625 – Construction Surveying (e-sealing)
- Revision of Section 629 – Survey Monumentation
- Revision of Section 630 – Automated Flagger Assistance devices
- Revision of Section 630 – Barrier (Temporary)
- Revision of Section 630 – Construction Zone Traffic Control
- Revision of Section 630 – Mobile Pavement Marking Zone (Group 1 without Attenuator)
- Revision of Section 630 - Rolling Roadblock
- Revision of Section 705 – Joint, Waterproofing and Bearing Material
- Revision of Section 709 – Reinforcing Steel and Wire Rope
- Revision of Section 715 – Lighting and Electrical Materials
- Affirmative Action Requirements – Equal Employment Opportunity