

2002 Standard Specifications

Major Changes and Revisions



Prepared by
Design Services Unit
Highway Design Branch
N.C. Department of Transportation

January 2002

2002 STANDARD SPECIFICATIONS

SIGNIFICANT REVISIONS

OVERALL - ENTIRE BOOK

- The 2002 Standard Specifications Book is written in the ACTIVE VOICE (**except for Division 1**). This means that the book is written with NCDOT talking directly to the Contractor. Also, "by the Engineer" is understood in Active Voice.

Example:

"The markers shall be installed vertically in the ground to the depth shown on the plans or as directed by the Engineer" becomes "Install the markers vertically in the ground to the depth shown on the plans or as directed".

- The pages in the 2002 Standard Specifications Book are numbered differently. Each Division is numbered individually instead of the entire book being numbered consecutively from page 1.

Example:

Division 1 is numbered 1-1, 1-2, 1-3, etc. Division 8 is numbered 8-1, 8-2, 8-3, etc.

2002 STANDARD SPECIFICATIONS

SIGNIFICANT REVISIONS

DIVISION 1 - GENERAL REQUIREMENTS

ARTICLE

- 101-2** Added the abbreviation NTPEP - National Transportation Product Evaluation Program.
- 101-7** Added the definition for AMOUNT BID. Renumbered the rest of Section 101 from this point forward.
- 101-57** Added the definition for MOBILIZATION. Renumbered the rest of Section 101 from this point forward.
- 101-61** Added the definition for PREBID CONFERENCE. Renumbered the rest of Section 101 from this point forward.
- 101-84** Added the definition for SUCCESSFUL BIDDER. Renumbered the rest of Section 101 from this point forward.
- 102-2** PREQUALIFYING TO BID
- Added requirements for a Safety Index Rating.
- 102-3** PROPOSAL FORMS AND PLAN HOLDER LISTS
- Changed title from 'Contents of Proposal Forms' and added information about plan holder lists.
- 102-9** COMPUTER BID PREPARATION
- Modified the wording to state that the diskette will contain electronic copies of the itemized proposal sheets included in the proposal.
- 102-16** DISQUALIFICATION OF BIDDERS
- Added the following:
 14. Failure to maintain a satisfactory safety index as required by Article 102-2.
 15. Recruitment of Department Employees for employment as prohibited by Article 108-5.
- 104-12** VALUE ENGINEERING PROPOSAL
- Added the Standard Special Provision (SSP) 'Value Engineering' to this section.
- 104-13** RECYCLED PRODUCTS OR SOLID WASTE MATERIALS
- New article incorporating a Project Special Provision (PSP).

DIVISION 1 - GENERAL REQUIREMENTS

ARTICLE

106-3 CONTRACTOR FURNISHED CERTIFICATION

- Revised the definition for a Type 7 - Contractor's Certification.

106-7 SCALES AND PUBLIC WEIGHMASTER

- Added the following to the list of items needed on the ticket furnished:
 9. Division of Highways' Job Mix Formula Number, if ticket if for asphalt plant mix.
 10. Division of Highways' Asphalt Plant Certification Number, if ticket if for asphalt plant mix.

108-5 CHARACTER OF WORKMEN, METHODS, AND EQUIPMENT

- Added PSP for 'Recruitment of Department Employees' to this article.

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DIVISION 2 - EARTHWORK

ARTICLE

Section 200 CLEARING AND GRUBBING

Added definition for 'Select Tree Removal' and added it as a pay item per each.

210-5 Added special provision which provides NO direct payment for Demolition of Buildings and Appurtenances. Payment for demolition is incidental to the lump sum price for "Clearing and Grubbing".

215-5 Added special provision which provides NO direct payment for Removal of Existing Buildings. Payment for removal of existing buildings is incidental to the lump sum price for "Clearing and Grubbing".

Section 220 RELOCATION OF EXISTING BUILDINGS - This provision was deleted in its entirety.

225-7 Included a provision to allow the use of Digital Terrain Modeling (DTM's) and other technologies in computing earthwork quantities.

230-4 (C) Added a requirement that the Contractor must obtain a permit for borrow sources located within the Corps of Engineer's Regulatory Jurisdiction.

(C)3(a.)thru(e.) Reworded these provisions as well as added a requirement that the Contractor furnish and pay for and Evaluation for Potential Wetlands and Endangered Species.

Section 250 Added special provision which provides for payment of Removal of Asphalt Pavement and Removal of Concrete Pavement as well as payment for Breaking of Existing Asphalt Pavement and Breaking of Existing Concrete Pavement.

Section 265 Added project special provision "Select Granular Material".

Section 270 Added project special provision "Fabric for Soil Stabilization".

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DIVISION 3 - PIPE CULVERTS

ARTICLE

- 300-2** Requirements for Bedding Material has been deleted and replaced with Foundation Conditioning Material must meet the requirements of Article 1016-3 for Class II or III as shown in the plans.
- 300-5** Special provision for INVERT ELEVATIONS has been added which allows invert elevations and includes a pay adjustment factor which is used if the average proposed elevation shown on the Drainage Summary Sheet varies in the field by more than one foot (0.3 m)
- 300-9** Deleted all references to Bedding Material. All material placed under pipe will now be paid for as Foundation Conditioning Material.
- Section 310** Sections 310, 315, 320, 322, 324, 325, 326, and 340 have been combined into one new Section 310 - PIPE CULVERTS.
- 310-4** Special Provision for SIDE DRAIN PIPE added.
- 310-5** Special Provision for PIPE END SECTIONS added.
- Section 320** CORRUGATED STEEL and ALUMINUM ALLOY STRUCTURAL PLATE PIPE, AND PIPE ARCH. Sections 328 and 330 in 1995 Spec Book have been combined into new Section 320. This pipe is now measured along the flow line, NOT including elbows, wyes, and tees. Added pay items for elbows, wyes, and tees.
- Section 330** WELDED STEEL PIPE. Former Section 342 in 1995 Spec Book.
- Section 340** PIPE REMOVAL. Moved from Section 810 in 1995 Spec Book.
- Section 350** PIPE CLEAN OUT. Special provision added that includes a pay item for pipe cleanout.

2002 STANDARD SPECIFICATIONS

SIGNIFICANT REVISIONS

DIVISION 4 - MAJOR STRUCTURES

ARTICLE

- Entire Division** Revised ASTM material and test designations to AASHTO designations where appropriate.
- 402-2** Added statement requiring non-shattering methods for bridge removal over water.
- 410-12** Added requirement for approval of blasting plan prior to blasting adjacent to structures.
- 420-1** Added reinforced concrete deck slab to description.
- 420-2** Added Metal Stay-In-Place Forms to materials list.
- 420-3** Added lengthy discussion of precast concrete panels and metal stay-in-place forms for bridge forming systems from Structure Design Project Special Provision (PSP).
- 420-5** The following changes were made:
- Added statement regarding protection of painted steel girder from PSP.
 - Added requirement to use rubber heads when vibrating concrete containing epoxy coated reinforcing steel.
- 420-15** The following changes were made:
- Added several discussions regarding pouring, curing, and inspection of bridge decks from PSP.
 - Clarified grooving requirements for bridge decks from PSP.
- 420-17** Added paragraph regarding removal of forms on bent diaphragms from PSP.
- 420-20** Added restrictions for construction traffic during barrier rail pours.
- 420-21** The following changes were made:
- Revised payment of grooving bridge decks form "as measured in the field" to "by quantity shown on the plans."
 - Added method of measurement for bridge decks from PSP.
- 420-22** Added payment for bridge decks form PSP.
- 422-1** Removed waiting period for construction of approach slab as this has been covered by a plan note.

DIVISION 4 - MAJOR STRUCTURES

ARTICLE

- 425-2** Added spiral reinforcing steel to list of materials from PSP.
- 425-3** The following changes were made:
- Added three statements clarifying the protection of reinforcing steel. Done per request of Construction Unit.
 - Added requirements for shoring and protecting epoxy coated reinforcing steel.
- 425-4** The following changes were made:
- Added requirement for tying reinforcing steel in drilled piers. Repeated here from PSP per request of Construction Unit.
 - Clarified limits for exposing barrier rail steel.
- 425-6** Added method of measurement of spiral reinforcing steel from PSP.
- 425-7** Added payment for spiral reinforcing steel in multiple locations from PSP.
- 430-2** Added elastomeric bearings to material list to reflect new Section 1079.
- 430-5** Added reference to new Section 1079.
- 430-6** The following changes were made:
- Added statement regarding recess of tie rods for prestressed concrete girders from PSP.
 - Added direction for erecting prestressed concrete cored slabs from PSP.
- 430-8** The following changes were made:
- Added measurement of prestressed concrete cored slabs from PSP.
 - Added qualifier about payment of high strength concrete as per new definition of high strength concrete in Subarticle 1078-4(A) from PSP.
- 430-9** The following changes were made:
- Added payment for prestressed concrete cored slabs from PSP.
 - Added payment for elastomeric bearings to accommodate new Section 1079.
- 440-2** The following changes were made:
- Added direct tension indicators to list of materials from PSP
 - Added elastomeric bearings to list of materials to accommodate new Section 1079. Note: Elastomeric bearings may be used on both steel and prestressed concrete girders, hence the dual reference.

DIVISION 4 - MAJOR STRUCTURES

ARTICLE

- 440-3** The following changes were made:
- Clarified that shipping diagrams are only required when not conforming to Figure 1072-1.
 - Changed the size of shop drawing plan size.
- 440-6** Added reference to new Section 1079.
- 440-9** Added direction for removing galvanizing prior to field welding.
- 440-10** The following changes were made:
- Added instruction regarding direct tension indicators from PSP.
 - Clarified that galvanized bolts shall be mechanically galvanized.
 - Added Table 440-3 and related discussion regarding inspection of connections using direct tension indicators from PSP.
- 440-12** The following changes were made:
- Changed title of unpainted steel to "Weathering Steel".
 - Simplified cleaning requirements for weathering steel.
- 440-13** Added payment for elastomeric bearings in accordance with Article 430-9.
- 442-1** Added safety equipment to the description.
- 442-5** The following changes were made:
- Changed title from weather to "Application Conditions".
 - Moved discussion on painting requirements to Section 442-11 'Field Painting'.
- 442-7** Added five (5) paint systems to be required as noted on the plans. Deleted old paint System 1.
- 442-8** The following changes were made:
- Clarified blast cleaning requirements.
 - Moved abrasive requirements to Division 10.
- 442-9** The following changes were made:
- Added requirements for quality control for paint application.
 - Tightened restrictions on paint thinning.
 - Clarified usage of stripe coat

DIVISION 4 - MAJOR STRUCTURES

ARTICLE

- 442-10** The following changes were made:
- Reorganized and reformed entire article.
 - Revised list of surfaces to be left unpainted.
 - Added list of definitions for paint terms.
 - Added discussion regarding surface preparation for shop painting.
- 442-11** The following changes were made:
- Added further direction for touch-up of painted non-weathering steel.
 - Added restrictions for field application of paint.
- 442-12** New article added to give guidance on inspection criteria for both shop and field applications of paint. These guidelines were taken from national committee work on the subject.
- 442-13** The following changes were made:
- Re-numbered accordingly.
 - Shifted responsibility of monitoring air quality when removing hazardous paint from the Department to the Contractor.
 - Clarified OSHA exposure limit for hazardous paint removal.
 - Added Section 107 as a requirement for safety and health responsibilities.
- 442-14** The following changes were made:
- Re-numbered accordingly.
 - Added payment for pollution control.
- 450-3** Added requirement for removal of material resulting from augering or jetting.
- 450-7** Clarified driving accuracy required for piles from PSP.
- 450-8** Deleted submittal requirements for steel pile points.
- 450-11** Provided additional option to cutting off piles and payment therefore from PSP.
- 460-1** Revised description to fully include list previously under compensation and added three (3) items from PSP.
- 460-3** The following changes were made:
- Emphasized construction load limits while casting barrier rail.
 - Completed article to include portions of the applicable concrete barrier rail PSP that were not already stated here.
 - Revised article to apply uniformly to concrete barrier rails, median barrier rails, and concrete parapets on bridges.

DIVISION 4 - MAJOR STRUCTURES

ARTICLE

- 460-4** Added method of measurement for concrete barrier rail, median barrier rail, and concrete parapets on bridges.

- 460-5** Added payment for concrete median barrier and concrete parapet form PSP.

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SIGNIFICANT REVISIONS

DIVISION 5 - SUBGRADE, BASES, AND SHOULDERS

ARTICLE

- 520-5** Increased the maximum lift thickness for ABC from 8 inches to **10 inches (254 mm)**.
- 520-6** Revised to reflect the Aggregate QC/QA program requirements that aggregate producers must follow.
- 520-7** 'Contractor Furnished Laboratory' from 1995 Spec Book deleted. The remainder of Section 520 is renumbered from this point forward.
- 520-9** Revised to reflect new Nuclear Density Testing procedures that are contained in the Nuclear Gauge Operator's Manual.
- 530-4(C)** Reworded these provisions as well as added a requirement that the Contractor furnish and pay for and Evaluation for Potential Wetlands and Endangered Species.
- Section 540** CEMENT TREATED BASE COURSE. Combined Section 540 - 'Plant Mixed Cement Treated Base Course' and Section 541 - 'Road Mixed Cement Treated Base Course' from 1995 Spec Book into New Section 540.
- 540-10(B)** Revised to reflect the Aggregate QC/QA program requirements that aggregate producers must follow.
- 540-13** Method of measurement for cement revised to reflect the theoretical number of tons of portland cement incorporated in the mixture based upon the job mix formula.
- Section 541** Deleted.

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SIGNIFICANT REVISIONS

DIVISION 6 - ASPHALT BASES AND PAVEMENTS

ARTICLE

- 605-7** Increased application rate from "0.02 to 0.05" to "**0.04 to 0.08 gallons per square yard**".
- Section 607** MILLING ASPHALT PAVEMENT - moved from old Section 612.
- Section 609** Section revised to include the latest Project Special Provision which includes Superpave mix types.
- Section 610** Section revised to include the latest Project Special Provision which includes Superpave mix types.
- Section 611** **Deleted** - Distributed into Section 610 and 1012.
- Section 612** Moved to Section 607.
- Section 615** **Deleted** - Included in Section 609.
- Section 620** The following changes have been made:
- Re-written to use Performance Grading for asphalt materials (in lieu of viscosity).
 - Changed term "asphalt cement" to "**asphalt binder**".
- Section 622** **Deleted** - Included in Section 620.
- Section 630** **Deleted** - will be retained as a project special provision.
- Section 635** **Deleted** - will be retained as a project special provision.
- Section 640** **Deleted** - will be retained as a project special provision.
- Section 645** **Deleted** - will be retained as a project special provision.
- Section 650** Renamed the mix types as follows:
FC-11/2" maximum aggregate with neat asphalt (PG 64-22)
FC-1 Modified1/2" maximum aggregate with polymer modified asphalt (PG 76-22)
FC-2 Modified3/4" maximum aggregate with polymer modified asphalt (PG 76-22)

DIVISION 6 - ASPHALT BASES AND PAVEMENTS

ARTICLE

- 650-2** Added the following:
(A) Mineral Fibers
(B) Cellulose Fibers
(C) Cellulose Pellets
- 650-3** Revised Article to include information about mix design and job mix formula.
- Table 650-1** Changed from "Mixture Range" to "**OGAFC MIX DESIGN CRITERIA**".
- 650-4** Added article on 'Plant Equipment'.
- 650-6** Added article on 'Quality Management System for Asphalt Pavements'.
- Table 652-1** Changed low mixing temperature for P-78M from 200°F to **225°F**.
- 652-5** Added article on 'Quality Management System for Asphalt Pavements'.

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DIVISION 7 - CONCRETE PAVEMENTS AND SHOULDERS

ARTICLE

- 700-13** Added new requirement that Traffic will NOT be allowed on the pavement after the final sawing of the pavement UNTIL 3 DAYS AFTER the joints are sealed.
- 700-15(B)(2)** 'Exception for Partial Lot' has been deleted.
- 700-15(E)** Outlier checks, flexural strength ranges, and T factors have been eliminated.
- 700-15(F)** The following changes were made:
- Cores taken to measure thickness are to be taken when test beams have attained a flexural strength of at least 450 psi.
 - Take cores no sooner than 72 hours and no later than 30 days after placement.
 - Patch all core holes with an approved nonshrink grout.
- 710-4** The following changes were made:
- Lots have been redefined to 1,333.3 square yards or the equivalent of 500 linear feet of a 24 foot wide pavement.
 - Concrete is accepted on a lot by lot basis.
 - The average flexural strength of two beams from each lot form the basis for acceptance.
 - The same requirements apply to shoulders as well as for mainline pavement.
- 710-4** When the measurement of any core is less than the plan thickness by more than 1 inch:
- The actual thickness will be determined by taking additional cores at not less than 10 foot intervals parallel to the center line in each direction until a core is found which is not deficient by more than an inch.
 - Areas found to be deficient by more than 1 inch (as determined above) will be removed and replace with concrete of the correct thickness.
- 710-11(C)** The following changes were made:
- For 100% pay, the average flexural strength of 2 beams tested at 14 days must be equal or greater to **600 psi**.
 - **NO** incentives are given for flexural strength in excess of 600 psi.
 - For flexural strengths between 550 and 600 psi, a **NEW FORMULA** is used with the pay factors ranging nonlinearly from approximately 85% at 550 psi to 100% at 600 psi.
 - Any pavement that fails to attain 550 psi is subject to removal.

DIVISION 7 - CONCRETE PAVEMENTS AND SHOULDERS

ARTICLE

Section 720 Lot definitions, strength, and thickness requirements are the same for shoulders as for the mainline pavement (Section 710).

725-3 The following changes were made:

- Partial payments are to be made with the first and last partial pay estimates which include concrete pavement and/or concrete shoulders.
- Partial payments will be made at the rate of 50% of the lump sum price on each of these estimates.

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DIVISION 8 - INCIDENTALS

ARTICLE

- Section 801** Complete rewrite of this section.
- 802-2** Included project special provision "Disposal of Waste & Debris". Reworded these provisions as well as added a requirement that the Contractor furnish and pay for and Evaluation for Potential Wetlands and Endangered Species.
- Section 820** Incorporated project special provision "Funnels & Funnel Drains" into this section.
- Section 828** TEMPORARY STEEL COVER FOR MASONRY DRAINAGE STRUCTURES. New section that incorporates the current project special provision of the same name.
- Section 838** ENDWALLS - Section almost completely rewritten. It includes the current project special provision of the same name.
- Section 846** Added the current project special provisions "Expressway Gutter" and "Concrete Valley Gutter".
- Section 855** PRECAST CONCRETE NOISE BARRIER
New section that incorporates the current project special provision of the same name.
- Section 862** GUARDRAIL. Added the following:
- 20" Tubular Triple Corrugated Steel Beam Guardrail from a project special provision.
 - Guardrail Delineators and End Delineation from project special provisions. Both of these items are incidental to the cost of the guardrail.
- Section 864** REMOVE AND RESET EXISTING GUARDRAIL. New section from a current project special provision.
- Section 865** CABLE GUIDERAIL. New section from a current project special provision.
- Section 866** FENCE. Added "___ Strand Barbed Wire Fence" to this section from a project special provision.

DIVISION 8 - INCIDENTALS

ARTICLE

Section 869 RELAPPING GUARDRAIL. New section from a current project special provision.

Section 876 RIP RAP. Moved here from 1995 Spec Book Section 868.

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DIVISION 9 - SIGNING

ARTICLE

- 900-3** Deleted the 1995 Article - "Department Furnished Signs" and Added new Article - "**Acceptance of Signs**".
- 900-4** Deleted the 1995 Article - "Damage to Facility" and Added new Article - "**Alternate Design**".
- 900-5** Deleted the 1995 Article - "Compensation" and Added new Article - "**Covering of Signs**".
- 901-3** Made the following changes to this article:
- Added subarticle (A) General.
 - Added subarticle (B) Department and Contractor Furnished Signs.
 - Added Table 901-1 'Sign Type Parameters'.
 - Modified Table 901-2 'Aluminum Thickness Requirements for Signs'.
 - Added subarticle (D)(2)(c) "Random Test".
 - Added subarticle (J) 'Mounting Hardware'.
 - Revised subarticle (K) 'Packaging, Shipping, and Storage'.
- 901-4** Deleted "Alternate Design" (moved it to 900-4) and Added "**INSPECTION PROCEDURE**".
- 901-5 & 901-6** Revised these articles to now have the pay items of :
- "**Contractor Furnished, Type ____ Sign**".....**Square Feet (Square Meter)**
 - "**Department Furnished, Type ____ Sign**".....**Square Feet (Square Meter)**.
- Section 902** Section retitled "**FOOTINGS FOR SIGNS**". Section revised to cover footings for ground mounted signs and overhead sign supports.
- 902-3** Added (A) General, (B) Ground Mounted, and (C) Overhead subarticles.
- 902-5** Added pay item for "**Overhead Footing**".

DIVISION 9 - SIGNING

ARTICLE

- Section 903** Section retitled "**SIGN SUPPORTS**". Section revised to cover supports for all signs.
Added the following pay items:
- "Supports, Barrier (Small)"
 - "Supports, Barrier (Large)"
 - "Supports, Overhead Structure- ___ "
 - "Supports, Wood"
- Section 904** Section retitled "**SIGN ERECTION**". Section revised to cover erection of all sign types.
Added the following pay items:
- "Sign Erection, Type ___ (Overhead)"
 - "Sign Erection, Type ___ (Ground Mounted)"
 - "Sign Erection, Overlay (Overhead)"
 - "Sign Erection, Overlay (Ground Mounted)"
 - "Sign Erection, Reposition Overhead"
 - "Sign Erection, Logo to Panel"
 - "Sign Erection, Logo Trailblazer"
 - "Sign Erection, Walkway"
- Section 905** Section retitled "**SIGN LIGHTING SYSTEMS**". Section revised to cover sign lighting systems, specifically for overhead sign assemblies.
The 1995 Section 905 'Overhead Sign Assemblies' has been redistributed into Sections 902, 903, and 904.
- New pay item "Sign Lighting System ___ "
- Section 906** **RELOCATING SIGNING COMPONENTS**. This is a new section that deals with relocation of signs and other components.
- Section 907** Section retitled "**DISPOSAL AND STOCKPILING OF SIGNING COMPONENTS**". Wording revisions throughout the section. Pay item list expanded.
- Section 908** Section retitled "**TEMPORARY SIGNS AND SUPPORTS**". The 1995 Section 908 'Miscellaneous Signing Work' has been redistributed into Sections 903 and 904.

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DIVISION 10 - MATERIALS

ARTICLE

Section 1000 Eliminated Class S Concrete.

Section 1005 Added the following:
- Table 1005-3 "Tolerances for Comparisons of Coarse Aggregate QC/QA Gradations"
- Table 1005-4 "Tolerances for Comparison of Fine Aggregate QC/QA Gradations"

Section 1006 AGGREGATE QUALITY CONTROL / QUALITY ASSURANCE. New Section.

1008-1(A) Added requirement that aggregate must be supplied from approved sources participating in NCDOT QA/QC Program (Aggregate QA/QC program).

1008-1(C) Added requirement that quality control samples must be tested by a Department Certified Laboratory according to Aggregate QA/QC Program manual.

1008-1(D) Modified sampling procedure.

1010-1(A) Added requirement that aggregate must be supplied from approved sources participating in NCDOT QA/QC Program (Aggregate QA/QC program)

1010-1(B) Added requirement that aggregate must be supplied from approved sources participating in NCDOT QA/QC Program (Aggregate QA/QC program)

1010-2 Revised Article and included three new subarticles:

- (A) Type A Aggregate Base Course
 1. Producer's Quality Control Sampling
 2. NCDOT Quality Assurance Sampling
- (B) Type B Aggregate Base Course
 1. Producer's Quality Control Sampling
 2. Producer's Placement of Material
 3. NCDOT Quality Assurance Sampling
- (C) NCDOT Roadway Assurance Sampling

Table 1010-1 Revised this table by added columns D and E.

1010-4 Revised to include provisions for Aggregate QA/QC Program.

Table 1010-4 Deleted old table 1010-4 and replaced with new one.

DIVISION 10 - MATERIALS

ARTICLE

Section 1012 Section retitled "**AGGREGATE FOR ASPHALT PAVEMENTS AND SURFACE TREATMENTS**".

1012-1(B)(1) Added requirement that aggregate must be supplied from approved sources participating in NCDOT QA/QC Program (Aggregate QA/QC program)

Table 1012-1 NEW TABLE.

1012-1(C)(1) Added requirement that fine aggregate must be supplied from approved sources participating in NCDOT QA/QC Program (Aggregate QA/QC program)

1012-1(E) HYDRATED LIME ANIT-STRIP ADDITIVE. Added this provision.

1012-1(F) RECLAIMED ASPHALT SHINGLE MATERIAL (RAS). Added this provision.

1012-1(G) RECLAIMED ASPHALT PAVEMENT (RAP). Added this provision.

1012-1(H) RECLAIMED ASPHALT SHINGLES (RAS). Added this provision.

Table 1012-2 NEW TABLE.

1014-1(A) Added requirement that fine aggregate must be supplied from approved sources participating in NCDOT QA/QC Program (Aggregate QA/QC program)

1014-2(A) Added requirement that aggregate must be supplied from approved sources participating in NCDOT QA/QC Program (Aggregate QA/QC program)

1020-2 ASPHALT BINDER. New article that replaces old Asphalt Cement provision.

1020-4 SILICONE. New article that replaces old Cut-Back Asphalt, Rapid Curing provision.

1020-5 BLANK. Deleted old Cut-Back Asphalt, Medium Curing provision.

1020-8 Renamed article "**ANIT-STRIP ADDITIVE**". Modified requirements within the article.

1020-9(E) BLANK. Deleted old Asphalt Plank provision.

1024-1(A) Revised paragraph dealing with alkali content in cement.

1024-1(B) Deleted "Cement for Class S Concrete" and renumbered remainder of article.

DIVISION 10 - MATERIALS

ARTICLE

- 1024-4** WATER. Revised wording in this article.
- 1024-7** SILICA FUME. Added this provision.
- 1026-2(C)** Deleted this subarticle.
- 1028-2** Changed manufacturer's certification requirement from Type 1 to **Type 3**.
- 1028-3** Added requirement for a Type 3 Manufacturer's certification.
- 1028-4** Made the following changes to this article:
- Must meet the requirements of ASTM D 5893.
 - (A) Silicone Sealant Types changed to:
 - Type NS - a non-sag silicone
 - Type SL - a self-leveling silicone
 - (B) Requirements of this subarticle were completely revised.
- 1032-10** CORRUGATED POLYETHYLENE CULVERT PIPE. New article.
- 1036-7(C)** Tapping Valves. Added this subarticle.
- 1036-8** Renamed article to SLEEVES, COUPLINGS, AND MISCELLANEOUS. Revised this article to include subarticles (A) Tapping Sleeves and (B) Transition Sleeves and Couplings.
- 1036-9** SERVICE LINE VALVES AND FITTINGS. New article. Deleted old 1036-9 'Tapping Saddles, Sleeves or Valves'.
- 1036-10** Deleted.
- 1040-2** Added requirement that blocks must be supplied from approved sources participating in NCDOT's Solid Concrete Masonry Brick/Unit QA/QC Program.
- 1040-3** Added requirement that blocks must be supplied from approved sources participating in NCDOT's Solid Concrete Masonry Brick/Unit QA/QC Program.
- 1040-9** CEMENT GROUT. This is a new article. Deleted old 1040-9 'Grout for Slope Protective Paving'.
- 1046-3(D)** OFFSET BLOCKS. Added provisions for Recycled offset blocks.
- 1046-7** CABLE GUIDERAIL. Added provisions for cable guiderail materials.

DIVISION 10 - MATERIALS

ARTICLE

- Table 1050-1** Added sizes of Coated Wire to the table.
- 1054-2** PREFORMED BEARING PADS. Deleted this article.
- 1056-2** Added information for Type 4 fabric to be used for Soil Stabilization.
- Table 1056-1** Added Type 4 material.
- 1060-12** DELETED old article "Wrapping for Tree Trunks".
- 1070-3** COLD DRAWN STEEL WIRE AND WIRE FABRIC. Changed the referenced requirements from ASTM standards to AASHTO standards.
- 1070-9** SPIRAL COLUMN REINFORCING STEEL. New article from a project special provision.
- 1072-7(C)** C4. Direct Tension Indicators. Added this subarticle from a project special provision.
- 1072-9(D)** Charpy V-Notch Tests. Added this subarticle from a project special provision.
- 1074-1** WELDING. Added this article and renumbered the remainder of the section.
- 1074-12** METAL STAY-IN-PLACE FORMS. New provision added to Section 1074.
- 1077-5** Added **Table 1077-1 "PRECAST CONCRETE STRENGTH REQUIREMENTS (AT AN AGE OF 28 DAYS)**.
- 1078-4(A)** Added **Table 1078-1 "REQUIREMENTS FOR CONCRETE"**.
- 1078-4(B)** 'AIR ENTRAINMENT' Subarticle deleted and remainder of section 1078 renumbered.
- New subarticle 1078-4(B) "**TESTING**" revised.
- Table 1078-7** TOLERANCE FOR PRESTRESSED CONCRETE PANELS. This table has been added to Section 1078.
- Section 1079** BEARINGS AND BEARING MATERIALS. New section added to spec book from current project special provisions. Contains material provisions for Preformed Bearing Pads and Elastomeric Bearings.

DIVISION 10 - MATERIALS

ARTICLE

- 1080-4** INSPECTION AND SAMPLING. Revised the submittal requirements.
- 1080-7** SELF CURING INORGANIC ZINC PAINT. Completely revised this article.
- 1080-9** Retitled article "ORGANIC-ZINC REPAIR PAINT" and revised provision. Changed one of the referenced material specifications to SSPC Paint 20 Type II. Added requirement that this paint cannot be in aerosol spray cans.
- 1080-12** Retitled article "WATERBORNE PAINTS" and revised by combining old articles 1080-12 and 1080-13. Added Tables 1080-1(A), 1080-1(B), 1080-1(C), 1080-1(D), 1080-2(A), 1080-2(B), 1080-2(C), and 1080-2(D).
- 1080-13** Deleted this article. Now blank.
- 1080-15** Revised article to include two alternatives:
- Expandable Abrasive
- Recyclable Steel Grit
- 1086-3(A)** GENERAL. Revised the general requirements for snowplowable pavement markers to include:
- Snowplowable pavement markers must be evaluated by NTPEP prior to use.
 - Used snowplowable markers must meet all of the requirements of new snowplowable markers except for minimum area of each reflective surface requirement.
- 1087-4** Added Subarticle 1087-4(D) "Chemical Resistance" and 1087-4(E) "Moisture Resistance".
- 1087-7** TESTS TO BE PERFORMED. Expanded this article to include the information for test procedures that was formerly available by request only.
- 1088-1(B)(2)** High Performance Sheeting Type. Revised this subarticle to require Type III or Type IV high intensity reflective sheeting per Section 1093.
- 1088-6** Deleted "Mini-Drum Delineators" and replaced with "**Drum Type Delineators**" from a project special provision.
- 1088-7** TUBULAR MARKERS. Added this provision from an existing project special provision.
- 1088-8** FLEXIBLE DELINEATOR. Added this provision from an existing project special provision.

DIVISION 10 - MATERIALS

ARTICLE

- 1089-1(A)** Revised by breaking out the retroreflective sheeting requirements for Stationary Work Zone Signs, Barricade Mounted Work Zone Signs, and Portable Work Zone Signs.
- 1089-2** WORK ZONE SIGNS SUPPORTS. Added this article and renumbered the remainder of the section.
- 1089-5(D)(3)** Added "Preformed Weighted Base Ballast Method" as an acceptable ballast method for drums.
- 1089-7(A)** Changed requirement to: Changeable Message Signs may be LED matrix type, flip-disc matrix type, or a combination of both. Deleted the allowance of bulb matrix types.
- 1089-8(A)** Modified requirements to the following:
- Must provide Temporary Crash Cushion that meets or exceeds the requirements of NCHRP 350 for work zone category II for work zones with speed of 45 mph or less.
 - Must provide Temporary Crash Cushion that meets or exceeds the requirements of NCHRP 350 for work zone category III for work zones with speed of 50 mph or greater.
- 1089-9(A)** Modified this subarticle to include the Standard Special Provision for Truck Impact Attenuators.
- 1089-10** WARNING FLAGS. Deleted 'Panel Type' flags.
- 1089-12** FLAGGERS. Included material requirements for both the "Stop & Slow" paddle and the Vest.
- 1092-2** RETROREFLECTIVE SHEETING. Revised the General Requirements with the following:
- Deleted "Patching"
 - Deleted Table 1092-3
- 1093-1** Deleted the definitions of the various types of retroreflective sheeting from this article.
- 1093-3** Complete and total rewrite of this article.
- 1097-2** Changed from "Mercury Vapor Luminaries" to **HIGH PRESSURE SODIUM LUMINARIES**.

DIVISION 10 - MATERIALS

ARTICLE

Section 1098 New section that contains the material requirements for Signals and Signal systems.

2002 STANDARD SPECIFICATIONS

SIGNIFICANT REVISIONS

DIVISION 11 - WORK ZONE TRAFFIC CONTROL DEVICES

ARTICLE

- 1101-5(F)** Subarticle renamed "Traffic Control Plan not fully covered in the Contract". Requirements modified as follows:
- Notify Engineer of work function not covered by traffic control plan,
 - Allow for the development or a modification of a sealed set of traffic control plan.
- 1101-15** CONSTRUCTION VEHICLE CROSSINGS. Added requirement that required traffic control devices are used as shown in the roadway standard drawings.
- 1101-20** ON-ROAD CONSTRUCTION VEHICLES. This is a NEW article.
- 1101-30** The old article "Maintenance of Traffic" has been deleted and replaced with a new article "HAULING OPERATIONS".
- 1101-40** MATERIAL AND EQUIPMENT STORAGE AND PARKING. Revised article such that all personnel, equipment, machines, tools, construction debris, etc. must be kept 40 feet from active travel lanes.
- 1101-60** Deleted this article "Removal of Debris".
- 1101-65(B)** Included the requirement of providing all necessary traffic control devices.
- 1105-2** MATERIALS. All traffic control devices used must now be listed on the Department's Approved Products List.
- 1105-4** MAINTENANCE. Revised to allow the name and telephone number of the agency, contractor, or supplier to be placed on non-reflective surfaces of channelizing devices. Letters & numbers must be a non-reflective color and no larger than 2 inches in height.
- Section 1110** The following changes have been made to this section:
- Added requirement that products must be on the Department's Approved Products List and added a requirement about Historical Performance.
 - CONSTRUCTION METHODS has been broken into 3 sections: Work Zone Signs (Stationary), (Barricade Mounted) and (Portable)
 - Stationary Sign Supports and Portable Work Zone Sign Stands are not paid for separately. They are incidental to the work zone signs.
- 1115-2** MATERIALS. Added requirement that products must be on the Department's Approved Products List and added a requirement about Historical Performance.

DIVISION 11 - WORK ZONE TRAFFIC CONTROL DEVICES

ARTICLE

Section 1120 CHANGEABLE MESSAGE SIGNS. The following changes have been made:

- MATERIALS. Added requirement that products must be on the Department's Approved Products List and added a requirement about Historical Performance.
- CONSTRUCTION METHODS. Added the requirement that the sign operator must adjust the flash rate so that 2 complete sign panels can be displayed and be legible to drivers while approaching the sign at the posted speed limit.
- BASIS OF PAYMENT. Modified the partial payment percentages.

Section 1145 BARRICADES. The following changes have been made:

- Barricades must meet or exceed the requirements of NCHRP 350 for category II traffic control devices.
- Do not anchor barricades to any pavement surface unless such anchoring method has been tested and passed the crash test requirement of NCHRP 350 for category II devices.

Section 1155 WARNING LIGHTS. Added the following requirement.

- Provide Warning Lights attached to category II traffic control devices, which meet or exceed the requirements of NCHRP 350 for category II traffic control devices.

Section 1160 TEMPORARY CRASH CUSHIONS. The following changes have been made:

- MATERIALS. Added requirement that products must be on the Department's Approved Products List and added a requirement about Historical Performance.
- CONSTRUCTION METHODS, METHOD OF MEASUREMENT, & BASIS OF PAYMENT. Deleted the requirement for Repair Packages.

Section 1165 TRUCK MOUNTED IMPACT ATTENUATORS. The following changes have been made:

- MATERIALS. Added requirement that products must be on the Department's Approved Products List and added a requirement about Historical Performance.
- CONSTRUCTION METHODS: Use only attenuators which meet the crash test requirements of SubArticle 1089-9(A).

DIVISION 11 - WORK ZONE TRAFFIC CONTROL DEVICES

ARTICLE

- Section 1170** PORTABLE CONCRETE BARRIER. The following changes have been made:
- Must provide Portable Concrete Barrier that meets or exceeds the requirements of NCHRP 350 for Test Level II for work zones with speed of 45 mph or less and that meets or exceeds the requirements of NCHRP 350 for Test Level III for work zones with speed of 50 mph or greater.
 - MATERIALS. Added requirement that products must be on the Department's Approved Products List and added a requirement about Historical Performance.
 - 1170-3(B): Renamed this subarticle "Securing Barrier on Concrete and Asphalt Pavement Surfaces" and revised the content.
 - Added subarticle 1070-3(E) "Barrier Delineators".
 - There will be no measurement made for Barrier Delineators as they are considered incidental to the barrier.
- Section 1175** Deleted the old section "Work Zone Asphalt Island" and inserted project special provision "**Temporary Shoring for the Maintenance of Traffic**".
- Section 1190** "Department Furnished Traffic Control Devices". Deleted this section.

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SIGNIFICANT REVISIONS

DIVISION 12 - PAVEMENT MARKINGS, MARKERS & DELINEATION

ARTICLE

- 1205-3(B)(3)** Added several new requirements for Paint Application Equipment.
- 1205-3(B)(4)** Added specifications for Removable Tape Application Equipment instead of installing per the manufacturer's recommendations.
- 1205-3(B)(6)** Revised the requirements for Epoxy Application Equipment.
- 1205-3(B)(8)** HEATED IN PLACE THERMOPLASTIC APPLICATION EQUIPMENT has been added.
- 1205-3(C)(3)** Added the following seasonal limitations for the placement of Thermoplastic:
- East of I-95: Dec. 15th thru the following March 16th.
 - East of I-77 to and including I-95 November 30th thru the following April 1st.
 - West of and including I-77 November 15th thru the following April 16th.
- 1205-3(C)(6)** Added weather limitations for Heated In Place Thermoplastic.
- 1205-3(D)** New subarticle "Time Limitations for Placement and Replacement" has been added.
- 1205-3(E)** Added the following requirements:
- Review and record the existing pavement markings prior to resurfacing and place new pavement markings using the record of the existing pavement markings.
 - Submit a pavement marking plan 7 days prior to placing any pavement markings.
- 1205-3(G)(5)** Deleted the use of Hydrocarbon Thermoplastic.
- 1205-3(G)(8)** Subarticle for the application of Heated in place Thermoplastic has been added.
- 1205-3(I)** Removal of Pavement Markings subarticle has been revised as follows:
- Remove a minimum of 85% of existing pavement markings if the new markings are of a different material.
 - Use black paint or tape (color #37038) to cover any remaining conflicting pavement markings after removal from asphalt surfaces.
- 1205-3(J)** New subarticle "Pavement Marking Installer Qualifications" has been added.

DIVISION 12 - PAVEMENT MARKINGS, MARKERS & DELINEATION

ARTICLE

- 1250-2** MATERIALS. Added requirement that products must be on the Department's Approved Products List and added a requirement about Historical Performance.
- 1250-3** Deleted PREMARKING from this article.
- 1251-4** MAINTENANCE. Replace all damaged or missing temporary raised pavement markers if any of the following occurs:
- 3 segment failures occur in any roadway section. 3 consecutive damaged or missing markers in any group of 7 represents a segment failure.
 - 20% of total number of markers in any roadway section are damaged or missing.
 - Engineer determines replacement is necessary.
- 1253-3(C)** This subarticle entitled "Recycled Snowplowable Pavement Marker Castings" has been added.
- Section 1261** GUARDRAIL AND BARRIER DELINEATORS. This section has been deleted and redistributed into Sections 862 and 1170.
- Section 1262** GUARDRAIL END DELINEATION. This section has been deleted and redistributed into Section 862.
- 1264-3** A physical description has been added to this article for each type of object marker.
- Section 1265** The existing Section 1265 "Mini-Drum Delineators has been deleted and replaced with DRUM-TYPE DELINEATORS which is currently a project special provision.
- Section 1266** TUBULAR MARKERS (FIXED). This is a new section added from a current project special provision.
- Section 1267** FLEXIBLE DELINEATORS. This is a new section added from a current project special provision.

2002 STANDARD SPECIFICATIONS

SIGNIFICANT REVISIONS

DIVISION 14 - LIGHTING

ARTICLE

1400-2(I) PULL LINES. Added this subarticle.

1408-2 Revised the material requirements for the stainless steel enclosure for the light control system.

Section 1411 The following changes have been made:

- Added material requirements for a Cast-Metal (BR) box.
- Added installation requirements for Cast-Metal (BR) boxes.

Section 1412 UNDERPASS LIGHTING. This is a new section that has been added. The remainder of the Division has been renumbered accordingly.

1413-6 Changed the way partial payments will be made for portable construction lighting.

2002 STANDARD SPECIFICATIONS

SIGNIFICANT REVISIONS

DIVISION 15 - UTILITIES

ARTICLE

- 1510-5** The following changes have been made:
- Added statements that make the furnishing of all fittings, valves, extra pipe, and incidentals necessary to perform pressure, chlorinating, and leakage tests incidental to the cost of the proposed water pipe.
 - Made the furnishing of all water necessary to perform these tests incidental to the cost of the proposed water pipe.
- 1510-7** Added the following pay items:
- "Ductile Iron Restrained Joint Water Pipe Fittings"
 - " __ " (__ mm) Transition Coupling, ___"
- Section 1520** The following changes have been made:
- Changed the hydrostatic testing requirements for Force Main Sewers from 200 psi to **150 psi**.
 - Deleted the following pay items:
 1. __ " (mm) ABS Truss Sewer Pipe
 2. __ ' (mm) ABS Solid Wall Lateral Sewer Pipe SDR
- Section 1540** ENCASEMENTS. New section.

2002 STANDARD SPECIFICATIONS

SIGNIFICANT REVISIONS

DIVISION 16 - EROSION CONTROL AND ROADSIDE DEVELOPMENT

ARTICLE

Section 1608 BRUSH BARRIER. Deleted this section.

Section 1637 Renamed this section from "Silt Basin, Type A" to "RISER BASIN".

Section 1675 RESPONSE FOR EROSION CONTROL. Added this section from an existing project special provision.

2002 STANDARD SPECIFICATIONS

SIGNIFICANT REVISIONS

DIVISION 17 - SIGNALS AND TRAFFIC MANAGEMENT SYSTEMS

This Division is new in the Standard Specifications.