



2014 SPECIFICATIONS UPDATE

Book Cover for the 2014 Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges



TEXAS DEPARTMENT OF TRANSPORTATION

STANDARD SPECIFICATIONS FOR
CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS AND BRIDGES



STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS AND BRIDGES

ADOPTED BY THE
TEXAS DEPARTMENT OF TRANSPORTATION
NOVEMBER 2014



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Hierarchy of Organizational Elements

HIERARCHY OF ORGANIZATIONAL ELEMENTS

- ◀ Here “XXX” represents the Item number. The hierarchy of organizational elements available below the Item level is as follows:

XXX.1., Article

XXX.1.1., Section

XXX.1.1.1., Section

XXX.1.1.1.1., Section

XXX.1.1.1.1.1., Section

XXX.1.1|1.1.1.1., Section

The term Section is used for all breaks below the Article.

TXDOT SPECIFICATION FORMAT

2004 Format

204.1 to 204.6

200 ITEMS — SUBGRADE TREATMENTS AND BASE

ITEM 204 SPRINKLING

204.1. Description. Apply water for dust control, earthwork, or base construction.

204.2. Materials. Furnish water free of industrial wastes and other objectionable matter.

204.3. Equipment. Use sprinklers and spray bars equipped with positive and rapidly working cut-off valves.

204.4. Construction. Apply water at a uniform rate and in the required quantity, or as directed.

204.5. Measurement. This Item will be measured by the 1,000 gal. applied.

204.6. Payment. Unless sprinkling is specified as a pay item, the work performed and materials furnished in accordance with this Item will not be paid for directly but will be subsidiary to pertinent Items.

When sprinkling is specified on the plans as a pay item, the work performed and water furnished will be paid for at the unit price bid for "Sprinkling (Base)," "Sprinkling (Earthwork)," or "Sprinkling (Dust Control)." This price is full compensation for furnishing and applying water; furnishing and operating sprinklers and measuring devices; and hauling, equipment, labor, fuel, materials, tools, and incidentals.

2014 Format

204

Item 204 Sprinkling



1. DESCRIPTION

Apply water for dust control, earthwork, or base construction.

2. MATERIALS

Furnish water free of industrial wastes and other objectionable matter.

3. EQUIPMENT

Use sprinklers and spray bars equipped with positive and rapidly working cut-off valves.

4. CONSTRUCTION

Apply water at a uniform rate and in the required quantity, or as directed.

5. MEASUREMENT

This Item will be measured by the 1,000 gal. applied.

6. PAYMENT

Unless sprinkling is specified as a pay item, the work performed and materials furnished in accordance with this Item will not be paid for directly but will be subsidiary to pertinent Items.

When sprinkling is specified on the plans as a pay item, the work performed and water furnished will be paid for at the unit price bid for "Sprinkling (Base)," "Sprinkling (Earthwork)," or "Sprinkling (Dust Control)." This price is full compensation for furnishing and applying water; furnishing and operating sprinklers and measuring devices; and hauling, equipment, labor, fuel, materials, tools, and incidentals.



GENERAL REQUIREMENTS

ITEMS 1 – 9

Roxana Garcia, P.E.

ITEM 1 – Definitions of Terms

New Definitions:

- **Concrete Construction Joint.** A joint formed by placing plastic concrete in direct contact with concrete that has attained its initial set.
- **Intelligent Transportation System.** An integrated system that uses video and other electronic detection devices to monitor traffic flows.
- **Monolithic Concrete Placement.** The placement of plastic concrete in such a manner and sequence to prevent a construction joint.
- **Replacement Alternate.** A bid item identified in the proposal form that a Bidder may substitute for a specific regular item of work.
- **Suspension.** Action taken by the Department or federal government pursuant to regulation that prohibits a person or company from entering into a Contract, or from participating as a subcontractor, or supplier of materials or equipment used in a highway improvement Contract as defined in Transportation Code, Chapter 223, Subchapter A.

ITEM 2 – Instructions to Bidders

- Incorporated the current special provisions for Item 2.
- Clarifies that a bid proposal form will not be issued to a Bidder who is suspended or debarred by the Commission, Department, or any federal agency.
- Separates the language regarding confidential questionnaire and bidder's questionnaire.
- Separates the language for electronic and manual bids.
- Updates the section regarding Home State Bidding Preferences with the latest legislative requirements.

ITEM 3 – Award and Execution of Contract

- For projects with railroad requirements, the Contractor submits the right of entry agreement and associated insurance during contract execution.
- All insurance required by the contract must be kept for the full duration of the contract. This includes railroad insurance.
- For projects with additive alternate bid items, the Department makes no guarantee that the additive alternate work will be required.

ITEM 4 – Scope of Work

- Reorganized. Begins with language regarding the preconstruction conference, project pledge, issue resolution process, and partnering.
- Changes to standby equipment costs. Defined in Item 9.
- Dispute and claims procedure has been added.

ITEM 5 – Control of the Work

- Requires the removal of any employee or representative of the Contractor or a subcontractor who, in the opinion of the Engineer, does not perform work in a proper and skillful manner or who is disrespectful, intemperate, disorderly, uncooperative, or otherwise objectionable.
- Moves some of the language regarding railroads to project specific plan sheets.
- Adds language regarding the railroad right of entry agreement.

ITEM 6 – Control of Materials

- Minor changes. Incorporated SP 006-030.
- When the work for removal of paint or asbestos abatement is to be performed by a third party, the traffic control will be provided by the third party, the Department, or the Contractor as shown on the plans or as agreed. Traffic control not shown on the plans and provided by the Contractor will be paid for in accordance with Item 9, “Payment for Extra Work and Force Account Method”.

ITEM 7 – Legal Relations and Responsibilities

- In general, most sections have been reorganized with no changes to the language. Sections regarding public safety, barricades, and traffic handling moved to Item 502.
- Ethics has been added. The Contractor is expected to honor the Department's ethics policy. Failure to do so may result in action taken by the Department.
- Adds the current language regarding the safety point of contact, safety preconstruction meeting, and the safety contingency.
- Requires that Contractor and Subcontractor employees use the appropriate personal protection equipment (hard hats, safety vests, protective footwear, etc.)

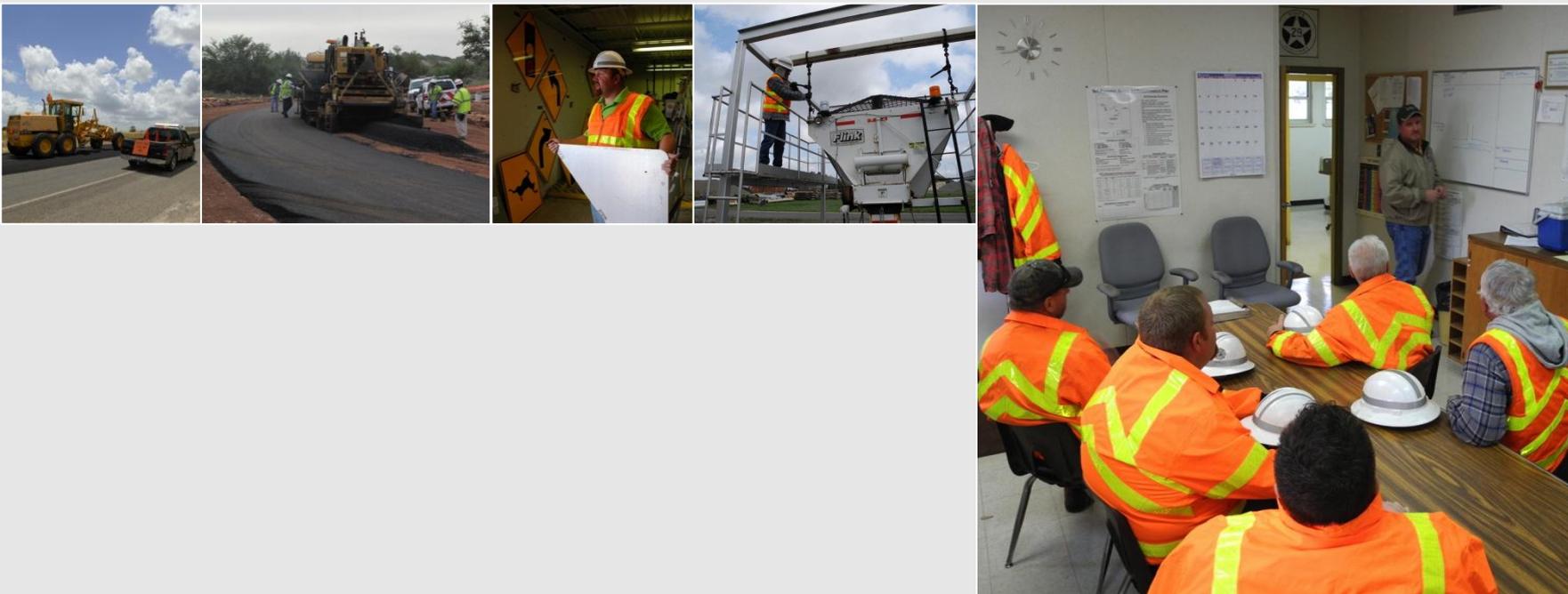
ITEM 8 – Prosecution and Progress

- Moves all the language regarding subcontracting to Item 8, except for the payment provisions in Item 9.
- Changes the language for project schedules. Requires a bar chart or critical path method as shown on the plans.
- Adds requirements for the Contractor to prepare and submit the project schedule summary report (PSSR) when shown on the plans.
- Adds the language regarding a time impact analysis.

ITEM 9 – Measurement and Payment

- Sections for extra work and force account method have been combined. Clarifies that markups are the same for both.
- Payment for extra work may be established by agreed unit prices or by force account method.
- Agreed unit prices are unit prices that are comparable to recent bid prices for the same character of work. These unit prices may be established without additional breakdown justification.
- Changes have been made to contractor-owned equipment and leased equipment. Adds language regarding standby equipment costs.
- Clarifies that the Department will not withhold retainage on the Contractor. The Contractor may withhold retainage on subcontractors in accordance with state and federal regulations.

Questions?



100 SERIES CHANGES

Gina Gallegos, P.E.

Tom Kolko, P.E.

- Item 100 – Preparing Right of Way
 - Addressed cases where the contractor encounters unforeseen (i.e. buried) items. To be handled per Article 4.5, “Differing Site Conditions”

- Item 105 – Removing Treated and Untreated Base and Asphalt Pavement
 - Changed title from “Stabilized” to “Treated and Untreated”
 - Added surface treatments to this item
 - Clarified that material not designated for salvage is the contractor’s property

- Item 132 – Embankment
 - Left computer-generated moisture-density curves as an optional SP

- Item 161 – Compost
 - Removed differentiation between Blended On Site, Blended In Place, and Pre-blended under the heading of Compost Manufactured Topsoil

- Item 164 – Seeding for Erosion Control
 - Significant changes to permanent rural seed mixtures
 - PAR, FTW, WFS, ODA, SJT, ABI, WAC, YKM, AUS, SAT, CRP, DAL, PHR, LRD, BWD and ELP
 - Tables available for handout

- Item 192 – Landscape Planting
 - Revised plant maintenance period from “90 days” to “final acceptance”

Questions?

Email CST_RDWY_SPECS@txdot.gov



2014 SPECIFICATION CHANGES

Items 204 - 292



Subcommittee Members

- Caroline Heinen, CST, Chair
- Miguel Arellano, Austin, Member
- Noe Cabazos, CST, Member
- Darlene Goehl, Bryan, Member
- Eric Lykins, Brownwood, Member
- Brad Martin, Paris, Member
- Mark McDaniel, MNT, Member
- Valente Olivarez, Corpus, Member
- Jesus Valdez, CST, Member

Item 204 – Sprinkling

No Changes



Item 210 – Rolling



Item 210 - Rolling

- *Revisions to Table 1 - Roller Requirements*
 - Light Pneumatic Roller: Allow for Embankment, Subgrade, Surface Treatment and Asphalt Concrete.
 - Reference to 'Base' removed
 - not appropriate for flexible base materials

- No other changes.

Item 216 – Proof Rolling



Item 216 – Proof Rolling

- No changes

Item 247 – Flexible Base



Item 247 – Flexible Base, Table 1

Property	Test Method	Grade 1-2	Grade 3	Grade 4 ²	Grade 5
Master gradation sieve size (cumulative % retained)	Tex-110-E			As shown on the plans	
2-1/2 in.		0	0		0
1-3/4 in.		0-10	0-10		0-5
7/8 in.		10-35	-		10-35
3/8 in.		30-65	-		35-65
No. 4		45-75	45-75		45-75
No. 40		65-90	50-85		70-90
Liquid Limit, % max.	Tex-104-E	40	40	As shown on the plans	35
Plasticity Index, max. ¹	Tex-106-E	12	12	As shown on the plans	10
Plasticity index, min. ^{1,3}		3	3	As shown on the plans	3
Wet ball mill, % max.	Tex-116-E	40	-	As shown on the plans	40
Wet ball mill, % max. increase passing the No. 40 sieve		20	-	As shown on the plans	20
Min. compressive strength, psi	Tex-117-E			As shown on the plans	
lateral pressure 0 psi		35	-		-
lateral pressure 3 psi		-	-		90
lateral pressure 15 psi		175	-		175

1. Determine plastic index in accordance with [Tex-107-E](#) (linear shrinkage) when liquid limit is unattainable as defined in [Tex-104-E](#).
2. Grade 4 may be further designated as Grade 4A, Grade 4B, etc.
3. Unless otherwise shown on the plans

Tem 247 – Table 1

Property	Test Method	Gr 1	Gr 2	Gr 1-2	Gr 5
Master Gradation, Cumulative % Retained	Tex-110-E				
2 – ½ in.		0	0	0	0
1 ¾ in.		0	0 – 10	0 - 10	0 - 5
7/8 in.		10 - 35	-----	10 - 35	10 - 35
3/8 in.		30 - 50	-----	30 - 65	35 - 65
No. 4		45 - 65	45 - 75	45 - 75	45 - 75
No. 40		70 - 85	60 - 85	65 - 90	70 - 90

Tem 247 – Table 1

Property	Test Method	Gr 1	Gr 2	Gr 1-2	Gr 5
Liquid Limit, % Max.	Tex-104-E	35	40	40	35
Plasticity Index, max.	Tex-106-E	10	12	12	10
Plasticity Index, min.	Tex-106-E	As shown on the plans	As shown on the plans	As shown on the plans	3
Wet ball mill, % max.	Tex-116-E	40	45	40	40
Wet ball mill, % max. increase passing No. 40	Tex-116-E	20	20	20	20

Item 247 – Table 1

Property	Test Method	Gr 1	Gr 2	Gr 1-2	Gr 5
Min. compressive strength, psi	Tex-117-E				
lateral pressure 0 psi		45	35	35	-----
lateral pressure 3 psi		-----	-----	-----	90
lateral pressure 15 psi		175	175	175	175

Item 247 – Flexible Base

- **4.3.2. Density Control.** Compact to at least 100% of the maximum density determined by Tex-113-E, unless otherwise shown on the plans. **Maintain moisture during compaction within ± 2.0 percentage points of the optimum moisture content determined as determined by Tex-113-E. Measure the moisture content in accordance with Tex-115-E or Tex-103-E during compaction daily and report the results the same day to the Engineer, unless otherwise shown on the plans or directed. Do not achieve density by drying the material after compaction.**
- The Engineer will determine roadway density *and moisture content* of completed sections in accordance with Tex-115-E.



Item 247 – Flexible Base

4.6. Ride Quality.

This section applies to the final travel lanes that receive a 1 or 2 course surface treatment for the final surface, unless otherwise shown on the plans. Measure ride quality of the base course after placement of the prime coat and before placement of the surface treatment, unless otherwise approved. Use a high speed or lightweight inertial profiler certified at the Texas A&M Transportation Institute. Provide the Engineer with equipment certification documentation. Display a current decal on the equipment indicating the certification expiration date. Use a certified profiler operator from the Department's MPL. When requested, furnish the Engineer documentation for the person certified to operate the profiler.



Item 247 – Flexible Base

4.6. Ride Quality.

Provide all profile measurements to the Engineer in electronic data files within 3 days after placement of the prime coat using the format specified in Tex-1001-S. The Engineer will use Department software to evaluate longitudinal profiles to determine areas requiring corrective action. **Correct 0.1-mi.sections having an average international roughness index (IRI) value greater than 100.0 in. per mile to an IRI value of 100.0 in. per mile or less for each wheelpath, unless otherwise shown on the plans.**

Item 251 – Reworking Base Courses

4.1. Types of Work.

- Renamed ‘Type B’ to ‘Scarifying, salvaging, and replacing relaying’
- Removed ‘Type C’ - ~~Type C. Scarifying, salvaging, and stockpiling~~
- Replaced ‘Type C’ with ‘Type D’ – ‘Type D. Scarifying and reshaping’
- Replaced ‘Type D’ with ‘Type E’ - ‘Type E. Refinishing’

4.2. Performance of Work

Replacing renamed to **Relaying**

Item 251 – Reworking Base Courses

6. Payment

Additional restrictions for measurement and payment are as follows:

- **Type A.** Work will be restricted to station and square yard measurement.
- **Type B.** Work will be restricted to station, square yard, and cubic yard in the original position measurement.
- **Type C.** Work will be restricted to station, square yard, and cubic yard in the original position measurement.
- **Type D.** Work will be restricted to station and square yard measurement.
- **Removed** 'Work will not be restricted to any measurement.'



Item 260 – Lime Treatment (Road – Mixed)



Item 260 – Lime Treatment (Road-Mixed)

2. Materials.

2.2 Subgrade. The Engineer will determine the sulfate content in accordance with Tex-145-E and organic content in accordance with Tex-148-E before lime treatment begins.



Item 260 – Lime Treatment (Road-Mixed)

4. Construction.

4.1. Preparation of Subgrade or Existing Base for Treatment.

When material is imported from a borrow source, notify the Engineer of the location of the borrow source well in advance to allow time for testing and approval to avoid delay to the project. Stockpile as directed. The Engineer will test the borrow source and determine the sulfate and organic contents. When the borrow source has a sulfate content greater than 3000 ppm or an organic content greater than 1.0%, proceed as directed.



Item 260 – Lime Treatment (Road-Mixed)

4.3. Application of Lime

Uniformly apply lime using dry or slurry placement as shown on the plans or as directed. Add lime at the percentage determined in Section 260.2.E, “Mix Design.” Apply lime only on an area where mixing can be completed during the same working day. **Suspend operations when material to be treated has a sulfate content greater than 7000 ppm or an organic content greater than 1.0% and proceed as directed.**



Item 260 – Lime Treatment (Road-Mixed)

4.4. Mixing.

When the material to be treated has a sulfate content greater than 3000 ppm but ≤ 7000 ppm, **mellow for a minimum of 7 days**. Maintain in a continuously moist condition by sprinkling in accordance with Item 204, “Sprinkling”, as approved.

When sulfates are not a concern, mellowing is 1 – 4 days.



Item 260 – Lime Treatment (Road-Mixed)

6. Payment.

Where subgrade to be treated under this contract has sulfates greater than 7000 ppm, work will be paid for in accordance with Article 4.2, “Changes in the Work.”



Item 263 – Lime Treatment (Plant-Mixed)



Item 263 – Lime Treatment (Plant-Mixed)

- No significant changes.

Item 265 – Fly Ash or Lime – Fly Ash Treatment (Road-Mixed)



Item 265 – Fly Ash or Lime-Fly Ash Treatment (Road-Mixed)

2. Materials.

2.2 Subgrade. The Engineer will determine the sulfate content in accordance with Tex-145-E and organic content in accordance with Tex-148-E before lime treatment begins.

- Same wording added to preparation of subgrade, mixing, application of additives, and payment sections as in Item 260 to address sulfates and organics.



Item 265 – Fly Ash or Lime-Fly Ash Treatment (Road-Mixed)

4.3. Application and Mixing of FA or LFA.

- When treating with LFA, apply, mix, and mellow lime first unless otherwise directed.
- Start treatment operations only when the air temperature is at least 35 °F and rising or is at least 40 °F. **Cease operations if the 24-hour projected air temperature is less than 32 °F for more than 4 hours.** The temperature will be taken in the shade and away from artificial heat. Suspend operations when the Engineer determines that weather conditions are unsuitable.

Item 265 – Fly Ash or Lime-Fly Ash Treatment (Road-Mixed)

4.4. Compaction.

Compact immediately after mixing the last stabilizing agent. Use density control unless otherwise shown on the plans. **Complete all compaction operations within 6 hr. of FA application for type FS and within 2 hr. when using type CS.**

4.6. Finishing.

Complete finishing operations within 2 hr. after final compaction.

Item 265 – Fly Ash or Lime-Fly Ash Treatment (Road-Mixed)

4.7. Curing

- FA or LFA-Treated Sections with **FS. Cure the finished section for 7 days** before adding another course or opening to traffic unless otherwise directed. Apply subsequent courses within 14 calendar days of completion of final compaction of the underlying treated course unless otherwise approved.
- FA-Treated Sections with **CS. Cure the finished section for at least 24 hr.** before opening to traffic unless otherwise directed. Curing may be accomplished by placing material to be used in the subsequent course instead of moist-curing. Allow the treated course to dry for at least 48 hr. before applying a prime coat.

Item 275 – Cement Treatment (Road-Mixed)



Item 275 – Cement Treatment (Road-Mixed)

2. Materials.

2.2 Subgrade. The Engineer will determine the sulfate content in accordance with Tex-145-E and organic content in accordance with Tex-148-E before lime treatment begins.

- Same wording added to preparation of subgrade, mixing, application of additives, and payment sections as in Item 260 to address sulfates and organics.



Item 275 – Cement Treatment (Road-Mixed)

4.5. Compaction.

Remove or **rework** areas that lose required stability, compaction, or finish, as directed. Provide additional work and material at no additional cost to the Department.

4.5.2. Density Control.

Achieve at least 95% of the maximum density determined in accordance with Tex-120-E **when compaction is complete**. The Engineer will determine roadway density **and moisture content** in accordance with Test Method Tex-115-E. The Engineer **may verify strength in accordance with Tex-120-E and adjust cement content to achieve the target strength for work going forward.**



Item 275 – Cement Treatment (Road-Mixed)

4.7. Microcracking.

When shown on the plans, maintain moisture content of the finished cement treated base for a period of 24 to 48 hr.. During this time, but not sooner than 24 hr., roll the finished course with a vibratory roller to induce microcracking. The vibratory roller shall be in accordance with Item 210, “Rolling,” with a static weight equal to or more than 12 tons and the vibratory drum shall be not less than 20 inches wide. The roller shall travel at a speed of 2 mph, vibrating at maximum amplitude, and make 2 to 4 passes with 100% coverage exclusive of the outside 1 ft. of the surface crown, unless otherwise directed by the Engineer. Additional passes may be required to achieve the desired crack pattern as directed. Notify the Engineer 24 hours before the microcracking begins.



Item 275 – Cement Treatment (Road-Mixed)

4.8. Curing.

Cure for at least 3 days by sprinkling in accordance with Item 204, “Sprinkling,” or by applying an asphalt material at the rate of 0.05 to 0.20 gal. per square yard, as shown on the plans or directed. **When a section is microcracked, cure section for an additional 2 days after microcracking.** Maintain the moisture content during curing at no lower than 2 percentage points below optimum. Do not allow equipment on the finished course during curing except as required for sprinkling, unless otherwise approved. Continue curing until placing another course or opening the finished section to traffic.

Item 276 – Cement Treatment (Plant-Mixed)



Item 276 – Cement Treatment (Plant-Mixed)

4.5. Compaction

4.5.2. Density Control.

Achieve at least 95% of the maximum density determined in accordance with Tex-120-E **when compaction is complete**. The Engineer will determine roadway density **and moisture content** in accordance with Test Method Tex-115-E. The Engineer **may verify strength in accordance with Tex-120-E and adjust cement content to achieve the target strength for work going forward.**



Item 276 – Cement Treatment (Plant-Mixed)

4.7. Microcracking.

When shown on the plans, maintain moisture content of the finished cement treated base for a period of 24 to 48 hr.. During this time, but not sooner than 24 hr., roll the finished course with a vibratory roller to induce microcracking. The vibratory roller shall be in accordance with Item 210, “Rolling,” with a static weight equal to or more than 12 tons and the vibratory drum shall be not less than 20 inches wide. The roller shall travel at a speed of 2 mph, vibrating at maximum amplitude, and make 2 to 4 passes with 100% coverage exclusive of the outside 1 ft. of the surface crown, unless otherwise directed by the Engineer. Additional passes may be required to achieve the desired crack pattern as directed. Notify the Engineer 24 hours before the microcracking begins.



Item 276 – Cement Treatment (Plant-Mixed)

4.8. Curing.

Cure for at least 3 days by sprinkling in accordance with Item 204, “Sprinkling,” or by applying an asphalt material at the rate of 0.05 to 0.20 gal. per square yard, as shown on the plans or directed. **When a section is microcracked, cure section for an additional 2 days after microcracking.** Maintain the moisture content during curing at no lower than 2 percentage points below optimum. Do not allow equipment on the finished course during curing except as required for sprinkling, unless otherwise approved. Continue curing until placing another course or opening the finished section to traffic.

Item 292 – Asphalt Treatment (Plant-Mixed)

2.2. Recycled Materials.

The use of recycled materials is allowed unless otherwise shown on the plans. Recycled asphalt shingles (RAS) is only allowed when shown on the plans. Crushed concrete, RAP (except for Department-furnished RAP), and other recycled materials must meet the requirements of this Article. RAP is salvaged, milled, pulverized, broken or crushed asphalt pavement. Crush or break RAP so that 100% of the particles pass the 2-in. sieve.

2.2.1 Limits on Percentage.

Use no more than 30% RAP unless shown on the plans. The percentage limitations for other recycled materials will be as shown on the plans.

Item 292 – Asphalt Treatment (Plant-Mixed)

4.1. Mixture Design.

Using **Tex-126-E** and the materials proposed for the project, the Engineer will determine the target asphalt content required to produce a mixture meeting the requirements in Table 2 for the grade shown on the plans.

Item 292 – Asphalt Treatment (Plant-Mixed)

Table 2
Mix Requirements

Master Gradation Bands Tex-200-F, Part I, % Passing by Weight				
Sieve Size	Grade 1	Grade 2	Grade 3	Grade 4
1-3/4"		100	100	As shown on the plans
1-1/2"	100	90–100		
1"	90–100			
3/8"	45–70			
#4	30–55	25–55		
#40	15–30	15–40	15–40	
Strength Requirements				
Indirect tensile strength, psi, min. ¹	85	85	85	85

1. At optimum asphalt content.

Item 292– Asphalt Treatment (Plant-Mixed)

4.1. Mixture Design.

The mixture must contain between 3.0% and 6.0% asphalt when designed in accordance with Tex-126-E. The Engineer will evaluate the mixture for moisture susceptibility in accordance with Tex-530-C unless otherwise shown on the plans. A maximum of 10% stripping is allowed unless otherwise shown on the plans. The test sample will be retained and used to establish a baseline for comparison to production results. The Engineer may waive this test if a similar design using the same materials has proven satisfactory.

Questions?





2014 SPECIFICATIONS UPDATE

300 Series

Items with No Revisions

- ❑ Item 301 – *Asphalt Antistripping Agents*
- ❑ Item 305 – *Salvaging, Hauling, and Stockpiling RAP*
- ❑ Item 310 – *Prime Coat*
- ❑ Item 314 – *Emulsified Asphalt Treatment*
- ❑ Item 315 – *Fog Seal*
- ❑ Item 351 – *Flexible Pavement Repair*
- ❑ Item 354 – *Planning & Texture*

Item 300 – *Asphalts, Oils, and Emulsions*

- ❑ AC-20XP and AC-10-2TR added to Polymer-Modified Asphalt Cements.
- ❑ Removed and replaced penetration test with viscosity test for rapid & medium-curing cutback.
- ❑ Revised % of distillate for medium-curing cutback.
- ❑ CHFRS-2P, CMS-1P, and CMS-2P added to Polymer-Modified Cationic Emulsified Asphalt.



Item 302 – *Aggregate for Surface Treatments*

- All references to limestone rock asphalt removed.
- Departmental Material Specification (DMS) 9210 Limestone Rock Asphalt (LRA) includes all of the references.



Item 300 Series - 2014 Specification Book Rewrite

Item 316 – *Surface Treatments* and Item 318 – *Hot Asphalt-Rubber Surface Treatments*

- Combined into one specification, Item 316 - *Seal Coat*.
- Similar to Special Specification 3278 Seal Coat (2014 District-wide Seal Coat Projects)
- Difference is asphalt material will be *measured by volume or ton.*



Item 320 – *Equipment for Asphalt Concrete Pavement*

- Specifies minimum of one bin for each stockpile of RAP and RAS.
- Revised wording such that waterproof tarps are not always required. They will be required when deemed necessary.
- In-line viscosity measuring device required between blending unit and mixing drum when A-R binder is used.
- Removed requirement to furnish skis or mobile string line at least 40 ft. Type and length of grade reference will not be specified.
- Thermal camera added meeting requirements of Tex-244-F Thermal Profiles.

Item 330 – *Limestone Rock Asphalt Pavement*

- Removed references to material requirements.
- Material requirements in Departmental Material Specification (DMS) 9210 Limestone Rock Asphalt (LRA).
- Requires test procedure Tex-212-F, Part II for measuring moisture content.
- Specifies CST will measure moisture content when determining payment at the plant.



Item 334

Hot-Mix Cold-Laid Asphalt Concrete Pavement

- Revision of gradation requirements for No. 4 sieve for Type F mixture.
- No tolerance allowed for maximum sieve size.



Item 340

Dense-Graded Hot-Mix Asphalt (Small Quantity)

- ❑ Similar to special specification 3267 that replaced Item 340.
- ❑ Voids in the Mineral Aggregate (VMA) increased 0.5% for plant produced mixture.
- ❑ Miscellaneous areas are not subject to in-place air voids except for temporary detours if shown on the plans.
- ❑ Link to Department's protocol for using security bags to maintain custody of roadway cores included.



Item 341 – *Dense-Graded Hot-Mix Asphalt*

- ❑ Similar to special specification 3268 that replaced Item 341.
- ❑ Voids in the Mineral Aggregate (VMA) increased 0.5% for plant produced mixture.
- ❑ Infrared thermometer no longer allowed to perform thermal profiles (use either Pave IR or thermal camera).
- ❑ Link to Department’s protocol for using security bags to maintain custody of roadway cores included.

**THERMAL
IMAGING
SYSTEM**



Item 342 – *Permeable Friction Course (PFC)*

- ❑ Similar to special specification 3269 that replaced Item 342.
- ❑ Overlay tester minimum number of cycles requirement reduced from 300 to 200 for PFC-F mixtures.
- ❑ Infrared thermometer no longer allowed to perform thermal profiles (use either Pave IR or thermal camera).

**THERMAL
IMAGING
SYSTEM**



Item 344 – *Superpave Mixtures*

- ❑ Similar to special specification 3270 that replaced Item 344.
- ❑ Infrared thermometer no longer allowed to perform thermal profiles (use either Pave IR or thermal camera).
- ❑ Link to Department's protocol for using security bags to maintain custody of roadway cores included.

**THERMAL
IMAGING
SYSTEM**



Item 346 – *Stone-Matrix Asphalt*

- ❑ Similar to special specification 3271 that replaced Item 346.
- ❑ Infrared thermometer no longer allowed to perform thermal profiles (use either Pave IR or thermal camera).
- ❑ Overlay requirement of 200 cycles.



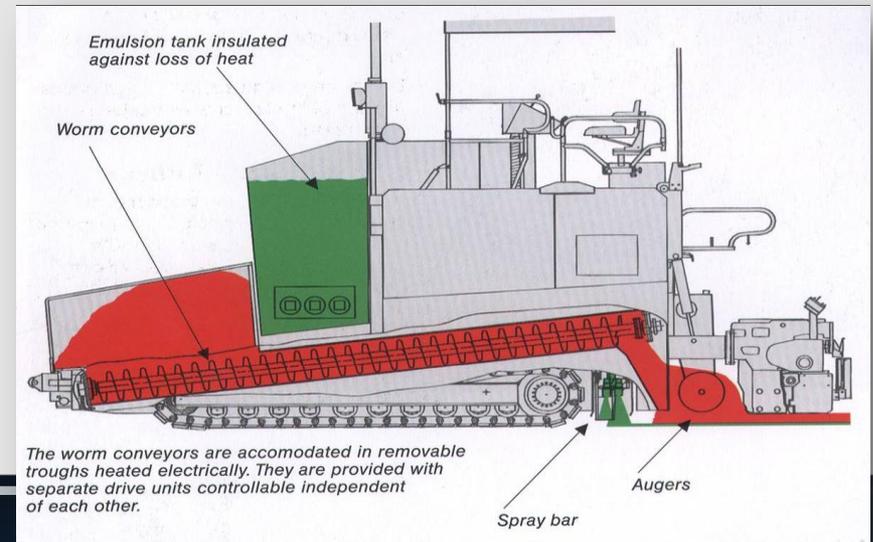
**THERMAL
IMAGING
SYSTEM**

Item 347 – Thin Overlay Mixtures (TOM)

- ❑ New Item number, includes coarse and fine mixtures (TOM-C & TOM-F).
- ❑ Similar to special specification 3283.
- ❑ Class B aggregate may be disallowed when shown on the plans.
- ❑ Crushed face count requirement reduced from 100% to 95%.
- ❑ Overlay requirement of 300 cycles.
- ❑ Water flow rate should be greater than 120 seconds when using Tex-246-F.

Item 348 – *Thin Bonded Friction Courses*

- ❑ New Item number, includes Ultra-Thin Bonded Hot-Mix Wearing Course and Thin Bonded Permeable Friction Course (TBPFC).
- ❑ For use with the spray paver.
- ❑ Combines special specifications 3142 and 3127.
- ❑ Language modified to be consistent with other HMA items.



Item 350 – *Microsurfacing*

- ❑ Requires SAC 'A' – *from existing special provision.*
- ❑ Combined gradation changed from % retained to % passing.
- ❑ Asphalt content determined from asphalt meter readings only.
- ❑ Mix design verification required unless otherwise directed by the Engineer.
- ❑ Suspend production when Engineer's test results exceed operational tolerances.
- ❑ Corrective action required for poor workmanship.
- ❑ Language consistent with other HMA items where applicable.

Item 356 – *Fabric Underseal*

- ❑ Reference to DMS 6220 – Fabric for Underseals.
- ❑ Included *Non-Woven Fabric and Binder* and *Reinforced Joint Fabric* in Fabric Placement section.

Item 358 – Hot In-Place Recycling of Asphalt Concrete Surfaces (HIR)

- ❑ Existing item replaced with special specification 3178.
- ❑ Engineer providing material and pavement information from roadway cores prior to bidding.
- ❑ Potential bidders are allowed to take additional cores prior to bidding.
- ❑ Overlay Test requirement of a minimum of 150 cycles.
- ❑ Production and placement acceptance language consistent with Item 341.



Thank You!





ITEMS 360, 361, 421 AND 585

Andy Naranjo, P.E.

CST-M&P

Item 360 Concrete Pavements

- Strength Requirements
 - Reduced Design Strength Requirements
 - Aligned Design Strength Requirements with Job Control Testing Requirements
- CoTE
 - 5.5×10^{-6} in/in/°F limits now in Item 360
 - CoTE values will be published in the CQRSC
- Alternate Reinforcing Steel allowed by Plan Note
- DMS for Multi-Piece Tie Bars
- Allow the use of Longitudinal Tining by Plan Note
- Discharge time refer to Item 421 for agitated delivery.
- Removed Date Imprinting requirement
- Fast Track Concrete Pavement
- Early Opening Strength Increased to 3,200 psi.

Item 361 Repair of Concrete Pavement

- Half-Depth Repairs
 - Minimum Repair Area
 - Full depth repair if removal operations damaged long. steel
- Repair Standard will also incorporate Half-depth repair details.
- Full Depth Repairs
 - Default epoxy grout is Type III Class C
 - Epoxy grout 10" tie-bar
 - Engineer will stop operations if epoxy process is not grouting procedure is not followed
 - Removed use of polyethylene sheeting



ITEM 421 “HYDRAULIC CEMENT CONCRETE”

- Decant Limits Increased
 - 3.0% for Structural Classes of Concrete
 - 5.0% for Class A, B, and P
 - Material passing No. 200 sieve must be at least 85% CaCO_3
- Requires pre-bagged grout for miscellaneous applications (ie. removed formula for grout)
- CA gradation limits changes No. 4 sieve for Grades 1-3
- Alternate to AI requirement using Micro Deval
- Concrete Classes Table significantly changed
 - No longer Require Overdesign Strengths
 - High Performance Concrete (HPC) Designation Defined
 - Sulfate Resistant Concrete (SRC) Designation Defined (Loosened Requirements)
 - SRC will only require moderate sulfate resistant cements
 - Type I or Type III + Class F fly ash will be considered SRC

ITEM 421 “HYDRAULIC CEMENT CONCRETE”

- Non-air entrained concrete is the default
 - include note in general notes if air-entrainment required
 - No specified entrained air content
 - Use of AEA limited to maximum AEA dosage
 - Contractor must provide data showing that at least 3% air content is capable during trial batch
 - No field testing of air content
 - Aggregate requirements tied to when air entrainment is specified, not to when AEA is used.
 - Mag Soundness Limits 18% vs. 25% loss.
- Slump
 - job control test performed by contractor
 - High slump: retest immediately; contractor option to use, TxDOT will make strength specimens.

ITEM 421 “HYDRAULIC CEMENT CONCRETE”

- Mix Design Options
 - Option 8 modified – requires more testing
- Includes requirements for concrete with optimized aggregate gradation
- Includes Self-Consolidating-Concrete (SCC) requirements for precast concrete and drilled shafts
- Trial Batches no longer required
 - Base acceptance on historical data. If none, trial batch required.
 - More flexibility on admixture adjustments
- Discharge Time
 - Reverted back to ‘93 spec
 - Exceeding discharge time requires additional testing in order to use concrete

ITEM 421 “HYDRAULIC CEMENT CONCRETE”

- Acceptance of Concrete
 - Structural Classes of Concrete: must meet design strength
 - Non-Structural Classes of Concrete: target strength
 - Payment adjustment criteria now included in this Item (moved from Item 420)

Item 585

- Surface Type A: Allows use of inertial profiler and rolling straight edge simulation.
- Areas between Leave-out sections use Surface Type A
- Localized Roughness: Treats concrete pavement similar to asphalt pavements, allow option to apply bump penalty to concrete pavement.
- Editorial changes to make spec flow better.



2014 STANDARD SPECIFICATIONS 400 SERIES & 700 BRIDGE RELATED

Graham Bettis, PE

Leon Flournoy, PE

Kevin R. Pruski, PE

DELETED SPECIFICATIONS

ITEM 430 – “EXTENDING STRUCTURES”

- Incorporated substructure into Item 420 for extending Substructures
- Incorporated into Item 422 for extending Superstructures

ITEM 452 – “REMOVING RAILING”

- New Item 451 “Retrofit Railing” covers removal for retrofit situations
- Item 496 “Removing Structures” can be used for non-retrofit situations or make removal subsidiary to other items

ITEM 453 – “TEMPORARY RAILING”

- Very rarely used
- Item 512 “Portable Concrete Traffic Barrier” can be used

NEW STANDARD SPECIFICATIONS

ITEM 410, “SOIL NAIL ANCHORS” & ITEM 411, “ROCK NAIL ANCHORS”

- Covers anchor installation, testing, and pneumatically placed concrete
- Payment by the foot of anchor installed

ITEM 451, “RETROFIT RAILING”

- Pay item for retrofit railing compared to past use of Item 450 to pay for
- Includes removal of existing railing or incorporate with retrofit railing
- Construction in accordance with Item 450
- Two “Retrofit Guides” for Concrete and Curb Mounted Retrofit Railing
 - C-RAIL-R
 - T131RC
- Default is to require contractor to take possession of removed railing

NEW STANDARD SPECIFICATIONS (Maintenance)

ITEM 778, “CONCRETE RAIL REPAIR”

- Repair or replaced damaged concrete rail
- Requires plans showing what needs to be done

ITEM 785, “BRIDGE JOINT REPAIR or REPLACEMENT”

- Repair or replace damaged bridge expansion joint
- Requires plans showing what needs to be done

ITEM 786, “CARBON FIBER REINFORCED POLYMER (CFRP)”

- Identifies two uses: protecting or strengthening
- BRG will maintain list of approved systems (Working on DMS)

ITEM 789, “TREATMENT FOR ASR-AFFECTED CONCRETE”

- Waterproof (Silane Penetrating Concrete Surface Treatment or other Primer)
- Caulk Cracks
- Apply Silicone Resin Emulsion Paint (SREP)

STANDARD SPECIFICATIONS with NAME CHANGE

- Item 405 – Foundation Test Load (~~Foundation Load Test~~)
- Item 420 – Concrete Substructures (~~Concrete Structures~~)
- Item 422 – Concrete Superstructure (~~Reinforced Concrete Slab~~)
- Item 426 – Post-Tensioning (~~Prestressing~~)
- Item 428 – Penetrating Concrete Surface Treatment (~~Concrete Surface Treatment~~)
- Item 434 – Bridge Bearings (~~Elastomeric Bridge Bearings~~)
- Item 438 – Cleaning and Sealing Joints (~~Cleaning and Sealing Joints and Cracks~~)
- Item 439 – Bridge Deck Overlays (~~Concrete Bridge Deck Overlays~~)
- Item 440 – Reinforcement for Concrete (~~Reinforcing Steel~~)
- Item 446 – Field Cleaning and Painting Steel (~~Cleaning and Painting Steel~~)
- Item 471 – Linear Drains (~~Frames, Grates, Rings, and Covers~~)
- Item 481 – Pipe for Drains (~~PVC Pipe for Drains~~)
- Item 483 – Concrete Bridge Deck Surfacing (~~Scarifying Concrete Bridge Slab~~)
- Item 780 – Concrete Crack Repair (~~Epoxy Injection~~)
- Item 784 – Steel Bridge Repair (~~Repairing Steel Bridge Members~~)

ITEM 5 – “CONTROL OF THE WORK”

- Table 1 includes Erection Drawings but did not require department approval
- Now requires TxDOT Approval if Engineer deems Work could affect Public Safety

ITEM 404 – “DRIVING PILING”

- An electronic stroke indicator and blow count logging device (Saximeter) will be required unless otherwise shown on the plans. Contractor should provide for inspection of pile driving.
- Will need to specifically include a note stating the “calibrated rod mounted on hammer” (Jump Stick) is allowed to override this requirement.



ITEM 405 – “FOUNDATION LOAD TEST”

- Modified name from “FOUNDATION TEST LOAD” to “FOUNDATION LOAD TEST”
- Static Load Test was the Standard
- Specify other type load tests:
 - Pile Dynamic Analyzer (PDA) testing (ASTM D 4945) (only for Piling) - \$
 - APPLE load tests (ASTM D 4945) (only for Drilled Shafts) - \$\$
 - Statnamic Test (ASTM D 7383) - \$\$\$\$\$
- Bid Items are by the Type of Test

PILING SPECIFICATIONS

ITEM 407 – “STEEL PILING”

- Included Pipe Piling
- Default paint system remains inorganic zinc primer (IOZ) with appearance coat applied - if specified
- Added high corrosion resistant coating system for marine environments – Reference NORSOK
- Removed drawings showing pile tip reinforcement from specification – Added them to FD Standard
- Includes measurement and payment for reinforced pile tips (new bid Item)

ITEM 409 – “PRESTRESSED CONCRETE PILING”

- References TxDOT Concrete Repair Manual for repair of damage
- Still does not include Cylinder Piling

ITEM 420 CONCRETE SUBSTRUCTURES

- Changed name from “Concrete Structures” to “Concrete Substructures”
- Focuses on the structure below the bearings
- Includes extending concrete substructures
- Culvert construction included in both Items 420 & 422
- Mass Placements
 - Recommend use of ConcreteWorks for heat analysis
 - Clarifies positioning of sensors for measuring temperature differential
- Concrete Curing Changes
 - Options Given for Vertical Surfaces
 - As little as 12 hours form cure followed by membrane cure allowed
 - HPC requires longer curing
- Post-Tensioning subsidiary to this item
 - CL H CONC (PT CAP)
 - CL H CONC (PT CAP)(MASS)
- Payment Adjustment for low strength concrete test moved to Item 421

ITEM 422 “CONCRETE SUPERSTRUCTURES”

- Construction of Cast-in-Place Superstructure Elements
- Includes approach slabs
- Specifies Hold Points for Inspection
 - Beam Erection and Bracing
 - Formwork
 - Placing Reinforcing Steel
 - Thickness and steel cover checks
 - Post curing crack inspection
- Requires pre-pour meeting
- Modified Curing Method – 8 to 10 days
 - Allow contractor more options for interim curing but with greater responsibility
 - Deck surface will be inspected after curing removed to check for finishing/curing related cracks
 - Contractor will be required to seal cracks attributed to their actions/inactions
- Measured by SF except Pan Girder and CIP Slab Spans
- Items for various deck types (typical beam/girder, box beam, or slab beam)

ITEM 423 “RETAINING WALLS”

- Modify requirements for Select Backfills
- Revise names of Select Backfills to avoid confusion with other fill materials (AS, BS, CS, and DS)
- Require proof rolling of retaining wall foundation area to identify any problem areas

ITEM 426 “POST-TENSIONING”

- Changed name to reflect only Post-Tensioning
 - Prestressing moved to Item 424
- Reduce size of specification from 18 pages to 4 pages.
- Reference industry standard specifications
 - Post-Tensioning Institute’s Guide Specification for Grouted Post-Tensioning (PTI/ASBI M50)
 - Post-Tensioning Institute’s Specification for Grouting of Post-Tensioned Structures (PTI M55)
- Qualification of Contractor Personnel
 - PTI Level 2 Bonded PT Field Specialist
 - Grouting Technician Certification from the American Segmental Bridge Institute (ASBI)
- Remove as pay Item – No longer paying MFK – Subsidiary to Item 420

ITEM 427 “SURFACE FINISHES FOR CONCRETE”

- Add two surface finishes
 - Slurry Coat Finish
 - Silicone Resin Paint
- Slurry Coat Finish
 - What we are seeing previously called “Rub Finish”
 - Cement/Latex/Sand Mixture Rubbed on Surface
- Silicone Resin Paint
 - Water-resistant coating
 - Long term performance
 - Expensive
- Removed Two Coating Types
 - 742 Appearance Coat
 - Type X Epoxy Paint

ITEM 428 “PENETRATING CONCRETE SURFACE TREATMENT”

- Changed name from “Concrete Surface Treatment”
- Removed Class I Treatment – Linseed Oil
- Silane is only option

ITEM 429 “CONCRETE STRUCTURE REPAIR”

- Significantly reduced in scope
- Referenced “Concrete Repair Manual”
- Expanded use of neat epoxy or epoxy mortar for shallow repairs

ITEM 432 “RIPRAP”

- Test riprap stone in accordance with ASTM D5519
- Removed figures and referenced Stone Riprap Standard

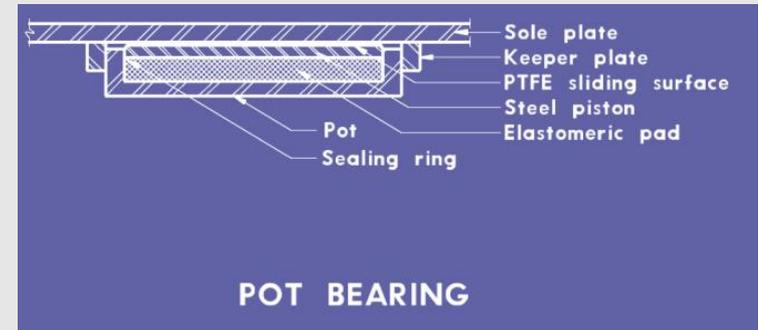
ITEM 434 “BRIDGE BEARINGS”

- Changed name removing “Elastomeric”
- Incorporates High Load Multi Rotational (HLMR) Bearings into Spec (formerly OTU Special Specification)
 - Pot and Disk Bearings (did not include Spherical)
 - Higher Load Capacities (tub girders, segmental structures, tied arches, etc)
 - Multiple Modes of Movement/Rotation
 - Incorporate Guide to Control Direction
 - PTFE Used to Allow Translation
- Eliminated preformed fabric pads and generalized definition of sliding bearing

ITEM 434 – BRIDGE BEARINGS (cont)

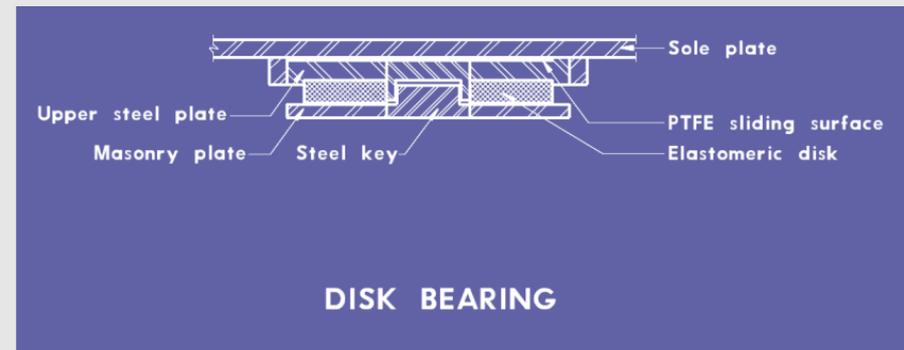
■ Pot Bearings

- Plain elastomeric disk confined in a shallow steel ring
- Vertical load transmitted through piston
- Rings seal small gap between confining pot and the piston



■ Disc Bearings

- Hard elastomeric (polyetherurethane) disk supports vertical loads
- Center steel pin key transfers lateral loads
- Elastomer deformation allows rotation



ITEM 439 “BRIDGE DECK OVERLAYS”

- Changed name removing “Concrete”
- Removed Dense Concrete Overlay
- Include Multi-layer Polymer Overlay (MLPO)
 - Epoxy
 - Modified Epoxy
 - Methyl Methacrylate (MMA)

ITEM 440 “REINFORCEMENT FOR CONCRETE”

- Changed name making more inclusive of type of reinforcement
- Removed Grade 40 Steel
- Added grades higher than Grade 60 Steel
- Changed Welded Wire Reinforcing (WWR) to ASTM 1064
- Included Fiber Reinforcement (CST maintains Approved List)
- Added:
 - Stainless Steel Reinforcement (Included Table of allowable Types)
 - Low Carbon/Chromium Bar, ASTM A 1035 (MMFX)
 - Dual Coated Bar, ASTM A 1055 (Z-Bar)
 - GFRP
- Removed note for dimensions show are to centers of bar
- Bar supports are called out by Class according to CRSI Manual

ITEM 438, “CLEANING AND SEALING JOINTS”

- Name changed removing “Cracks”
- Other Standard Specification Items Include Concrete Crack Repair
 - Item 713, “Cleaning and Sealing Joints and Cracks (Concrete Pavements)”
 - Item 780, “Concrete Crack Repair”
- Include resizing joints in concrete pavements and approach slabs

ITEM 454, “BRIDGE EXPANSION JOINTS”

- Removed reference to header type joint systems that BRG approved
 - Choose header from DMS-6140, “Polymer Concrete for Bridge Joint Systems”
 - Choose sealant from DMS-6310, “Joint Sealants and Fillers”

ITEM 441 – “STEEL STRUCTURES”

- Specifies to prepare drawings in accordance with AASHTO/NSBA Steel Bridge Collaboration S10.1 (Section 2.2) and lists the minimum required information.
- Specifies to perform girder erection analyses using TxDOT provided software UT-Lift and UT-Bridge when applicable, or use other suitable commercial software.
- Provide actual input files and output results.
- Clarifies that any changes to previously approved erection drawings/procedures requires re-approval.
- Use Galvanized Bolts for Painted Steel (A325)
 - We allow both hot dipped or mechanically galvanized
- Require contractor to have pre-erection meeting prior to beginning work

ITEM 446 “FIELD CLEANING AND PAINTING STEEL”

- Field painting new or repainting existing steel
- Removes shop painting (DMS-8104, “Paint, Shop, Application for Structural Steel”)
- Includes One-coat Overcoat System
- Special Protection System (High Corrosion – NTPEP Tested)
- SSPC QP Certification Requirements May be Waived by Plan Note
- Includes “Hold Points” for inspection

ITEM 447 “STRUCTURAL BOLTING”

- Allow the use of Direct Tension Indicator (DTI) washers
- Require field qualification of contractor personnel installing and tightening bolts

ITEM 450 “RAILING”

- Clarify epoxy anchorage requirements
 - Address materials (Only allow dual cartridge systems)
 - Address hole cleanliness and installation
- Provide slipforming language to guide inspector what to look for
- Require contractor to perform pull testing on initial installation of epoxy anchorage system

Drainage Items

ITEM 465 “MANHOLES AND INLETS”

- Include precast manholes and inlets
- New Standards showing Precast Versions are posted
- New bid codes created for precast

ITEM 474 “LINEAR DRAINS”

- Changed name to be inclusive of other drain types
- Now includes:
 - Cast-in-Place Trench Drain
 - Pre-cast Trench Drain
 - Slotted Drain

ITEM 481 “PIPE FOR DRAINS”

- Changed name to be inclusive of other materials for drain pipes, (not just PVC)
- If other kinds of pipe wanted, will need to specify on the plans
- Will need to create bid codes for other types of pipe or use the preset bid code designation PIPE (MISC)(size?)

ITEM 483 “CONCRETE BRIDGE DECK SURFACING”

- Changed name to be inclusive of other types of surfacing
- Now includes:
 - Milling (Scarification)
 - Hydro-Demolition
 - Shot-Blasting
 - Diamond Grinding
 - Saw Grooving
- Previous version focused on preparation of deck surface for concrete overlay
- Current version allows for creating a final surface finish such as diamond ground or saw grooved

ITEM 780 “CONCRETE CRACK REPAIR”

- Changed name to include other methods
- Includes Special Specification 4100, “Gravity-Feed Crack Repair for Concrete”
- Now includes:
 - Pressure-Injected Epoxy
 - Gravity-Fed Epoxy
 - Routing and Sealing
 - Surface Sealing
- Construction Methods Outlined in Concrete Repair Manual
- Payment by the LF, Gallon, SF, or Lump Sum

Questions?



2014 SPECIFICATION BOOK UPDATE

500 Series Changes

- Item 500 – Mobilization
 - Clarifies that cost of bonds and insurance are part of mobilization
 - Simplifies language re: limits for combined bonds and insurance
- Item 502 – Barricades, Signs, and Traffic Handling
 - Only addresses Temporary Traffic Control. Transportation Management Plans and Public Information to be project-specific if required (latest FHWA regulatory requirement)
 - Added alternate Contractor Responsible Person
 - Added section on Work Zone personnel (latest FHWA reg. requirement)
 - Allows contractor-developed training of Work Zone personnel in lieu of other training
 - Training under development

500 Series

- Items 500 and 502
 - Callout Work, Non-site-specific, and Work Order contracts handled by Special provision /special specification
- Item 506 – Temporary Erosion, Sedimentation, and Environmental Controls
 - Basically same as Special Specification 1122
 - Will issue a SP to 506 similar to SP 1122-002 for projects that don't meet the definition of “road construction”
 - Added requirement to select devices from “Erosion Control Approved” or “Sediment Control Approved Products” lists
 - Clarified that daily reports are not required in certain instances unless there is a rain event
 - Time suspended and
 - No ongoing work

- Item 508 – Constructing Detours
 - Deleted payment by the station and by each. Only paid by square yard

- Item 510 – One-Way Traffic Control
 - Added flagger control and portable traffic signal methods as allowed by the TMUTCD
 - Kept flagger and pilot car method
 - Allows Automated Flagger Assist Devices if approved

- Item 528 – Colored Textured Concrete and Landscape Pavers
 - Incorporated Special Provision 528-010 (pavers furnished by TxDOT) and Special Specification 5926 (Remove, store, and relay pavers)

- Item 530 – Intersections, Driveways, and Turnouts
 - Measured and paid by square yard only. (Eliminated “by each”)

- Item 531 – Sidewalks
 - Measured by square yard only. (Eliminated “by the foot”)
 - Added option for measurement of ramps by “square yard” in addition to “each”

- Item 533 – Milled Rumble Strips (Formerly Shoulder Texturing)
 - Eliminated rolled-in rumble strips
 - Deleted dimensions, as they are shown on the standard sheet
 - Incorporated special provision 533-014
 - Measurement by foot instead of station to clarify that each shoulder is measured separately

- Item 543 – Cable Barrier System
 - New item based on Special Specification 5367

- Item 545 – Crash Cushion Attenuators
 - Table listing various categories of attenuators moved to Standard Drawing.

- Item 560 – Mailbox Assemblies
 - Clarified that mailbox is not part of the assembly

Email questions to
CST_RDWY_SPECS@txdot.gov



2014 SPEC BOOK UPDATE

600 Series Changes

Illumination Specs

(Item 610 – Item 628, Item 652)

Minor Changes

- Item 616 – Performance Testing of Lighting Systems
- Item 617 – Temporary Roadway Illumination

No Changes

- Item 625 – Zinc Coated Steel Wire Strand

Deleted

- Item 652 – Highway Sign Lighting Fixtures

Item 610 – Roadway Illumination Assemblies

- Added replacement of luminaires.
- Added requirements for RIP fabricators to be approved as per DMS-7380 “Steel Non-Bridge Member Fabrication Plant Qualification” and be listed on MPL. This includes aluminum RIP fabricators.
- Added requirements for RIP fabricators to permanently mark base plates with fabrication plant’s insignia or trademark.



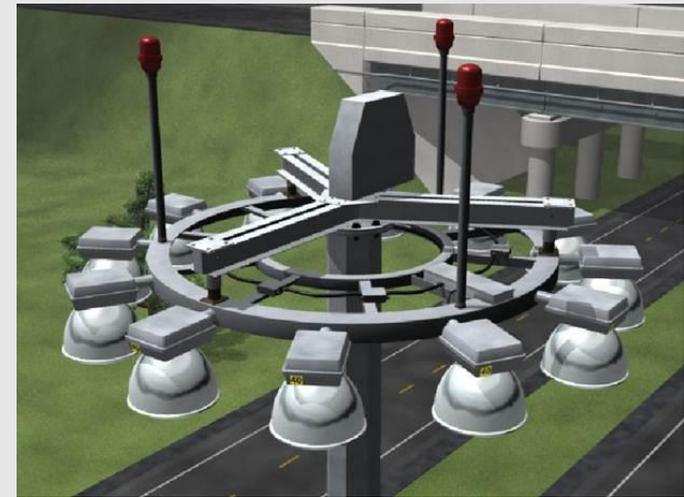
Item 613 – High Mast Illumination Poles

- Removed alternate designs
- Added requirements for HMIP fabricator to be approved as per DMS-7380 “Steel Non-Bridge Member Fabrication Plant Qualification” and be listed on MPL.
- Added requirements for fabricators to permanently mark high mast poles with their insignia or trademark.



Item 614 – High Mast Illumination Assemblies

- Added requirements for fabricators of high mast ring assemblies to be approved in accordance with DMS-7380 “Steel Non-Bridge Member Fabrication Plant Qualification” and be listed on MPL.
- Added requirements for fabricators to permanently mark high mast ring assemblies with their insignia or trademark.
- Removed the need for shop drawings except for first time non-structural deviations from plans.
- Added payment for system performance testing.



Item 618 – Conduit

- Removed material information already covered in DMS-11030 “Conduit”.



- Item 620 – Electrical Conductors
- Added wording specifying that conductors inside of traffic signal pole assemblies will be paid for under this item.



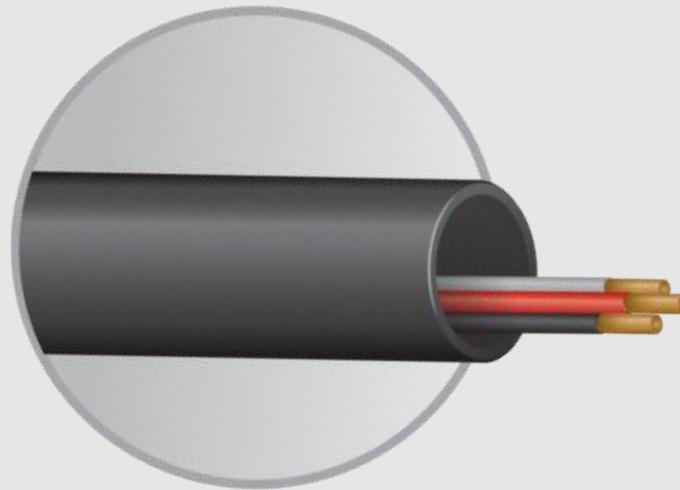
Item 621 – Tray Cable

- Removed material information already covered in DMS-11050 “Tray Cable”.
- Updated resistance testing requirements.



Item 622 – Duct Cable

- Removed material information already covered in DMS-11060 “Duct Cable”.



Item 624 – Ground Boxes

- Added removal of ground boxes.



Item 627 – Treated Timber Poles

- Reworded to allow timber poles to be paid for under this item.



Item 628 – Electrical Services

- Added relocation of electrical services.
- Added “consumption charges” as item to be paid for by the Department.



Signing Specs
(Item 634 – Item 658)

Minor Changes

- Item 654 – Sign Walkways
- Item 656 – Foundations for Traffic Control Devices

No Changes

- Item 643 – Sign Identification Decal

Deleted

- Item 634 – Plywood Signs

Item 636 – Aluminum Signs

- Changed title of specification to “Signs”.
- Incorporated SW-SP 636-014 except references to fiberglass signs since these signs are not being used.
 - Will create new optional statewide special provision for fiberglass sign use.



Item 636 – Aluminum Signs (Cont.)

- Added requirement that sign fabricators be approved per DMS-7390 “Permanent Highway Sign Fabrication Plant Qualification” and be listed on MPL.
 - Places sole responsibility of quality control on the sign shop
 - Sign shops will stamp approved signs w/their designated fabricator approval stamp
- Added requirement that sign fabricators submit copy of Form 2273 and a notarized certification statement with each shipment of signs.

Item 636 – Aluminum Signs (Cont.)

- Impact to District:
 - Must verify that Contractor is providing permanent highway signs from a Department approved source;
 - Obtain a notarized original of Form 2273 “Signing Material Statement” with the proper attachments for verification of compliance;
 - Obtain a notarized certification stating that the completed signs were fabricated in accordance with Item 636 and the contract plans;
 - Continue inspecting signs for damage, correctness of message and overall uniform appearance.
 - Ensure the Contractor is properly storing signs;

Item 636 – Aluminum Signs (Cont.)

- Storage and Handling:
 - Store all finished signs off the ground and in a vertical position; and
 - Store finished sheet aluminum substrate signs in a weather proof building.

Proper Storage



Improper Storage



Item 636 – Aluminum Signs (Cont.)

- Storage and Handling:
 - Extruded aluminum and fiberglass substrate signs may be stored outside.



Item 644 – Small Roadside Sign Supports and Assemblies

- Changed title of spec to “Small Roadside Sign Assemblies”.
- Incorporated overhead bridge clearance signs

– New codes will be:

IN BRIDGE MNT CLEARANCE SGN ASSM (TY N)

IN BRIDGE MNT CLEARANCE SGN ASSM (TY S)



- Reworded “Relocation” to require all new materials to be furnished by contractor except for the sign.

Item 647 – Large Roadside Sign Supports and Assemblies

- Added wording requiring contractor to remove steel protruding from the remaining concrete foundation when removing signs (this language is consistent with Item 650).

Item 650 – Overhead Sign Supports

- Prohibits alternate designs of mono-tube overhead sign supports.
- Added requirement that fabricators of OSS structures be approved per DMS-7380 “Steel Non-Bridge Member Fabrication Plant Qualification” and be listed on MPL.
- Added requirement for fabricators to permanently mark base plates with their insignia or trademark.
- Removed payment of concrete columns as these are now to be paid for under Item 420.

Item 658 – Delineator and Object Marker Assemblies

- “Type C” Reflectors now referred to as “Barrier Reflector (BR)”



**Pavement Marking
Specs
(Item 662 – Item 678)**

Item 662 – Work Zone Pavement Markings

- Clarified wording regarding removal of temporary pavement markings to where removal of these markings must be to the satisfaction of the Engineer.



Item 666 – Retroreflectorized Pavement Markings

- Incorporated retroreflectivity requirements and profile marking applications per SS 8251 “Reflectorized Pavement Markings with Retroreflectivity Requirements” and SS 8020 “Reflectorized Profile Pavement Markings”.
- Removed “Contrast Pavement Markings”
- Clarified wording that replacement markings must also meet all of the requirements of this item for a minimum of 30 days after they have been installed.

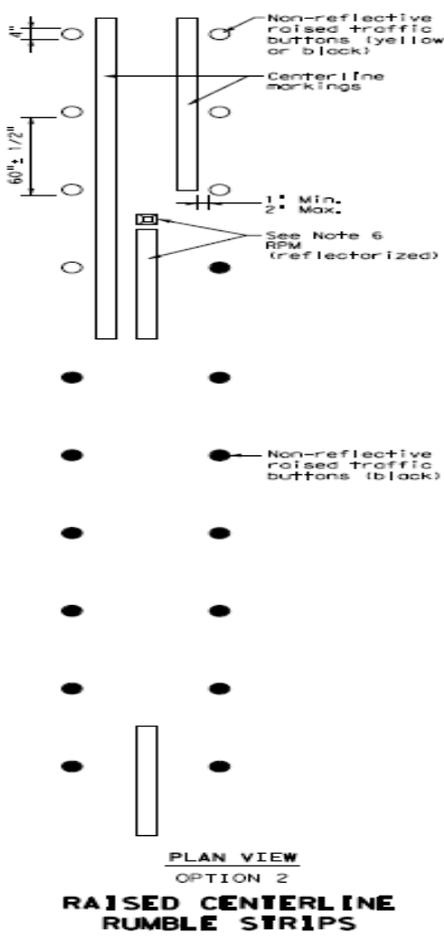
Item 668 – Prefabricated Pavement Markings

- Added wording addressing contrast prefab markings.
- Changed performance period from 15 days to 30 days. This is consistent with other pavement marking time periods.
- Clarified wording that replacement markings must also meet all of the requirements of this item for a minimum of 30 days after they have been installed.



Item 672 – Raised Pavement Markers

- Deleted jiggle bars from specification.
- Added Type B marker (black body with no reflective faces)
- Removed 14 day wait period for RPMs as 30 day performance period will cover any RPM failures.



Traffic Signal Specs
(Item 680 – Item 690)

Minor Changes

- Item 687 – Pedestal Pole Assemblies

No Changes

- Item 684 – Traffic Signal Cable

Item 680 – Installation of Highway Traffic Signals

- Incorporated SS 6007 “Removing Traffic Signals”
- Changed title of spec to “Highway Traffic Signals”.
- Added wording to clarify that signal timing is to be provided by the Department.



Item 681 – Temporary Traffic Signals

- Clarified that the materials used for this item do not have to be new so long as deemed in good working condition by Engineer.
- Clarified that materials used under Item 681 are not to be left as part of the location's permanent installation.
- Clarified that signal timing is to be provided by the Department.

Item 681 – Temporary Traffic Signals (Cont.)

- Added “luminaires” to list of items that can be adjusted as part of a temporary signal reconfiguration.
- Clarified what is paid for under Item 681 in order to reinforce how payment for this item is different than payment of Item 680.
- Added “consumption charges” as item to be paid for by the Department.

Item 682 – Vehicle and Pedestrian Signal Heads

- Removed incandescent lenses.



Item 685 – Roadside Flashing Beacon Assemblies

- Removed requirement to submit shop drawings.
- Added wording to allow for payment of solar powered assemblies as a separate pay item.



Item 686 – Traffic Signal Pole Assemblies (Steel)

- Added requirement for TSP fabricators to be approved as per DMS-7380 and be listed on MPL.
- Added requirement for TSP fabricators to permanently mark the pole base plate and fixed mast arm mounting plates with their insignia or trademark.
- Added wording requiring contractor to remove steel protruding from the remaining concrete foundation (this language is consistent with Item 650).

Item 688 – Pedestrian Detectors and Vehicle Loop Detectors

- Added Accessible Pedestrian Signals (APS) including the addition of DMS-11132 “Accessible Pedestrian Signals” to incorporate SW-SS 8835 Accessible Pedestrian Signals into this spec.
- APS pedestrian detector controller unit will now be paid for separately rather than being subsidiary to cost of push buttons.



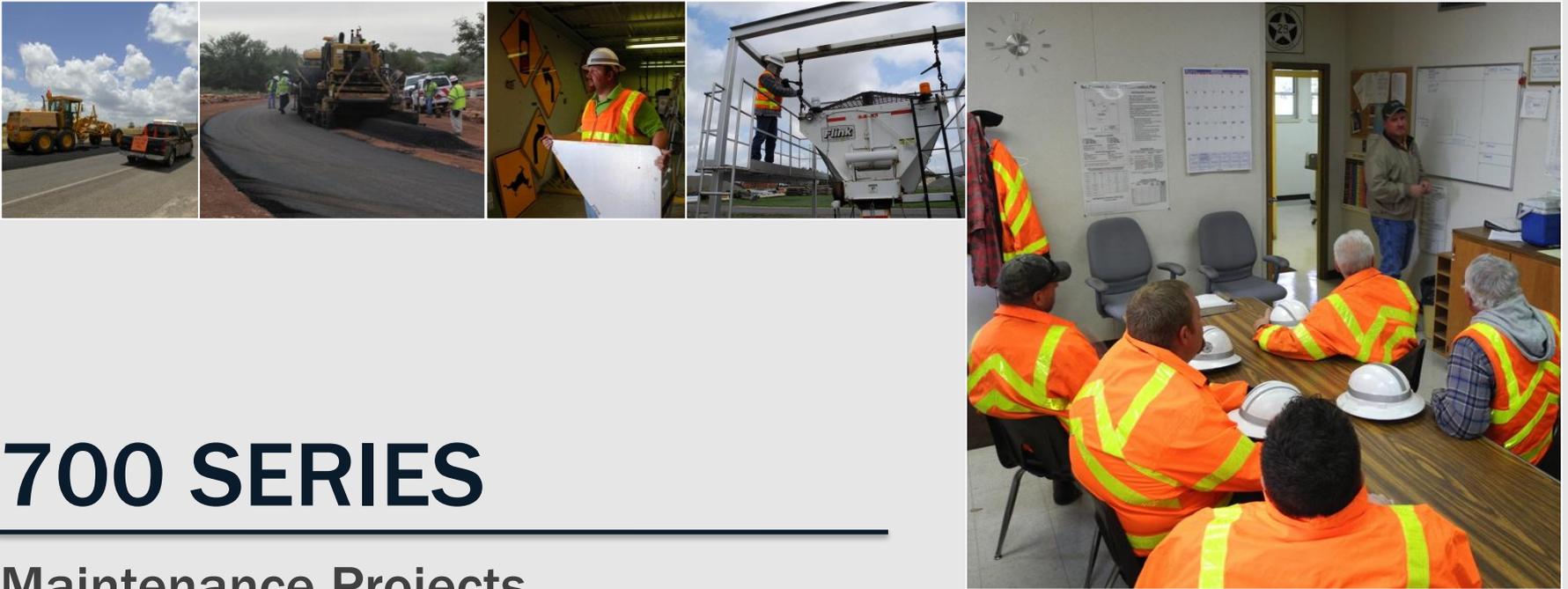
Item 690 – Maintenance of Traffic Signals

- Incorporated most common devices used in Districtwide & One Time Use special provisions to this item. These include:
 - PVC Weatherproof Enclosures
 - LED Lamp Unit
 - Spread Spectrum Radio Antennas
 - Video Imaging Vehicle Detection Systems (VIVDS)

Questions?

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700 SERIES

Maintenance Projects

- Item 700 – Pothole Repair
 - 700.2 Materials: Removed DMS-9201.
 - 700.3.1: Added 2 paragraphs to describe the finish of the repair under the Standard Repair item to match Saw-Cut repair section 700.3.2.
 - 700.4.2 and 700.4.3: Removed statement to dispose of hot mix remaining at end of the day.
- Item 712 – Cleaning and Sealing Joints and Cracks (Asphalt Concrete)
 - 712.2 Materials: Added statement to provide fine aggregate in accordance with Item 340.2.1.3.
 - 712.4 Work Methods: Added statement to apply material when temperature is within manufacturer's recommendations. Added statement for cracks wider than ½ inch to be filled with fine aggregate prior to sealing.

- Item 720 – Repair of Spalling Concrete Pavement
 - 720.4.1: Added statement to protect and re-use reinforcing if encountered (unless otherwise directed) when sawing for the repair.
 - 720.4.2: Added statement to apply primer in accordance with the manufacturer’s recommendations.
- Item 730 – Roadside Mowing
 - Added pressure washing when shown on plans.
- Item 734 – Litter Removal
 - Minor change to clarify definition of litter.
- Item 735 – Debris Removal
 - Added statement to notify Department for removal of hazardous materials.

- Item 738 – Cleaning and Sweeping Highways
 - Added statement to notify Department for removal of hazardous materials.
 - Revised definition of debris to be removed to be consistent with debris definition in Item 735 “Debris Removal”.
- Item 740 – Graffiti Removal and Anti-Graffiti Coating
 - Removed Type I Anti-Graffiti Coating.
 - Separated the cleaning of different substrates (i.e. concrete vs. painted steel).
 - Updated “Anti-Graffiti Coatings”.
- Item 745 – Picnic Area Maintenance
 - Formerly “Picnic and Rest Area Maintenance”. Removed all references to rest areas.

- Item 751 – Landscape Maintenance
 - Minor editing changes.
- Item 752 – Tree and Brush Removal
 - Incorporated several widely used special provisions.
 - Revised disinfectant note for trimming oak trees and added season to avoid pruning.
- Item 760 – Cleaning and Reshaping Ditches
 - Allows silt to be spread on backslope as approved.
- Item 764 – Pump Stations and Drainage System Cleaning
 - Clarified that the equipment to be used is a vacuum truck.

- Item 770 – Guard Fence Repair
 - Added notes concerning location and pickup details for Department-furnished materials.
 - Added “Raise Rail Element” and “Repair of Blockouts”.
 - Added measurement for various replacement items related to repair of SGT’s.
- Item 772 – Post and Cable Fence
 - Added gates to be furnished as shown on plans.
 - Added measurement and pay item for “Repair” by the foot of fence.
- Item 774 – Attenuator Repair
 - Minor editing changes.
- Item 776 – Metal Rail Repair
 - Added statement requiring replacement if rail is beyond repair.

New 700 Series Specs

- Item 713 – Cleaning and Sealing Joints and Cracks (Concrete Pavement)
 - Item 438 “Cleaning & Sealing Joints & Cracks” was revised to “Cleaning & Sealing Joints” removing references to sealing cracks in rigid pavements.
- Item 721 – Fiber Reinforced Polymer Patching Material
 - 2004 Statewide Use SS7622 with no changes.
- Item 731 – Herbicide Treatment
 - Combined 2004 Statewide Use SS7026 and SS7039.
- Item 771 – Repair Cable Barrier System
 - Based on 2004 Statewide Use SS7224.
 - Clarified that providing tension meter, re-tensioning the system, and replacing object markers at terminal ends are included in the repair and not measured or paid separately.

Questions?

Implementation – “Roll-out plan”

- Draft standards are posted at: <http://www.txdot.gov/inside-txdot/division/construction/txdot-specifications.html>
- Routine Maintenance Contracts beginning November 2014
- Construction Contracts beginning January 2015
- All contracts by March 2015

Questions?

Thank You