PROPOSAL NOTE 101-2002

BOILER-PLATE PROPOSAL NOTE TO BE USED ON ALL PROJECTS USING THE 2002 CONSTRUCTION & MATERIAL SPECIFICATIONS (7-18-2003)

108.07 Failure to Complete on Time; Revisions to Schedule of Liquidated Damages. [5-16-03]

On this project the Liquidated Damages in 108.07 (Failure to Complete on Time) of the Construction and Material Specifications are modified by the following table:

<table>
<thead>
<tr>
<th>Original Contract Amount (Total Amount of the Bid)</th>
<th>Amount of Liquidated Damages to be Deducted for Each Calendar Day of Overrun in Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>From More Than $0.00 To and Including $500,000.00</td>
<td>$700.00</td>
</tr>
<tr>
<td>$500,000.00 To and Including $2,000,000.00</td>
<td>$750.00</td>
</tr>
<tr>
<td>$2,000,000.00 To and Including $10,000,000.00</td>
<td>$1,250.00</td>
</tr>
<tr>
<td>Over $10,000,000</td>
<td>$2,000.00</td>
</tr>
</tbody>
</table>

CELLULAR TELEPHONES (12-14-00)

The Contractor shall NOT provide cellular telephones to ODOT personnel for either business or personal use. This prohibition includes the use of cellular telephones that the Contractor or its subcontractors may own or lease either currently as an overhead item or have obtained as a result of being awarded this project. ODOT personnel shall utilize only state owned, public or cellular private communication devices in order to conduct state business.

FLOODPLAIN CLEARANCE FOR WASTE LOCATIONS

The following is in addition to 105.16. Ensure that any proposed waste location is not within the FEMA mapped 100-year floodplain. If the proposed waste location is within the FEMA mapped 100-year floodplain, submit written approval from the local floodplain coordinator for the site. The floodplain coordinator contacts for each county are available through the Ohio Department of Natural Resources, Division of Water, (614) 265-6750. For waste sites shown on the plan, the plan will indicate if the clearances have or have not been obtained for the project right-of-way locations. No extension of time or additional compensation will be paid for any delays due to not having the written permit(s) to waste in a floodplain.

ITEM 614 MAINTAINING TRAFFIC: CONFORMANCE OF WORK ZONE DEVICES TO NCHRP 350 (4-18-03)

Erect signs used on item 614 Maintaining Traffic on supports conforming to standard drawings MT-105.10, MT-105.11 at spacings conforming to TC-52.10, TC-52.20, and details conforming
The following devices must meet NCHRP 350 and acceptable written manufacturer certification submitted to the Engineer before the devices are installed on the project. Only ballasting specified by the manufacturer is allowed.

- Drums, with or without lights.
- Cones, with or without lights.
- Vertical panels, with or without lights, and the panel support.
- Portable sign supports.
- Workzone impact attenuators.
- Portable concrete barrier.
- Barricades.

This certification submission requirement is waived if the device is specified in the plans or other bid documents by manufacturer and product number, or if the device appears on the FHWA web page, http://safety.fhwa.dot.gov/fourthlevel/pro_res_road_nchrp350.htm, listing Roadway Hardware meeting NCHRP 350.

Portable concrete barrier, 32-inches high, and manufactured according to standard construction drawing RM-4.2 or J-J Hook Barrier as identified in RM-4.2 is NCHRP 350 approved. Use of RM-4.2 barrier is allowed without certification if the project verifies that the sections are marked according to RM-4.2.

Contractors are allowed to use the following devices in their inventory, that are not certified to meet NCHRP 350, for their useful life or until January 1, 2005, if they were purchased before October 1, 2000. Contractor certification of purchase or fabrication dates will be acceptable in lieu purchase invoices.

- Portable sign supports.
- Barricades (including barricades made by the Contractor before October 1, 2000).
- Vertical panels with lights and supports.
- Drums with lights.

Contractors are allowed to use GREAT CZ impact attenuators, manufactured by Energy Absorption Systems Inc., in their inventory for their useful life until January 1, 2007, if they were purchased before October 1, 1998.

Contractors are allowed to use portable concrete barrier in their inventory for its useful life or until January 1, 2008, provided it was manufactured according to construction standard drawings MC-9.1 or MC-9.2 (or subsequently RM-4.1 or RM-4.2) and purchased before October 1, 2002.

**ITEM 451**

451.09 Finishing Follow all requirements of 451.09 except use transversely textured grooves only .05” and .08” (1.3 to 2.0 mm) in depth. Demonstrate methods to the Engineer for controlling and checking the depth of the groove meets the required depth.

**OPTIONAL USE OF BLENDED CEMENT OR Pozzolanic Material OTHER THAN 701 FOR USE IN 499 CONCRETE MIXES.**

The following alternate cementitious materials may be used in ODOT 499 concrete mixes as
listed below. Proportion the alternate cementitious material as shown below and only use in the 499 mixes that are listed. Follow the sampling and acceptance requirements defined below. Follow all other specification requirements for the bid concrete item.

**Approved List**

1. **Blended Cement for use in HP3 and HP4 mixes**

**Lafarge Type SF**

This approved blended cement, nominally composed of 92% type 1 cement and 8% microsilica, may be used in 499.03 table 499.093-4 HP3 and HP4. The blended cement will replace the microsilica and type 1 cement content in HP3 and HP4 as shown below:

<table>
<thead>
<tr>
<th></th>
<th>Aggregate</th>
<th>Fine Aggregate</th>
<th>#8 Coarse Aggregate</th>
<th>Blended Cement Content</th>
<th>Fly Ash</th>
<th>Micro-Silica</th>
<th>Water to Cementitious</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Class HP3 (Fly Ash + Microsilica)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>(lb)</td>
<td>(lb)</td>
<td>(lb)</td>
<td>(lb)</td>
<td>(lb)</td>
<td></td>
<td>Ratio Max</td>
</tr>
<tr>
<td>Gravel</td>
<td>1355</td>
<td>1475</td>
<td>510</td>
<td>150</td>
<td>0</td>
<td></td>
<td>0.40</td>
</tr>
<tr>
<td>Limestone</td>
<td>1355</td>
<td>1490</td>
<td>510</td>
<td>150</td>
<td>0</td>
<td></td>
<td>0.40</td>
</tr>
<tr>
<td>Slag</td>
<td>1355</td>
<td>1295</td>
<td>510</td>
<td>150</td>
<td>0</td>
<td></td>
<td>0.40</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Aggregate</th>
<th>Fine Aggregate</th>
<th>#8 Coarse Aggregate</th>
<th>Blended Cement Content</th>
<th>Fly Ash</th>
<th>Micro-Silica</th>
<th>Water to Cementitious</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Class HP4 (GGBF Slag + Microsilica)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>(lb)</td>
<td>(lb)</td>
<td>(lb)</td>
<td>(lb)</td>
<td>(lb)</td>
<td></td>
<td>Ratio Max</td>
</tr>
<tr>
<td>Gravel</td>
<td>1370</td>
<td>1475</td>
<td>470</td>
<td>190</td>
<td>0</td>
<td></td>
<td>0.40</td>
</tr>
<tr>
<td>Limestone</td>
<td>1370</td>
<td>1490</td>
<td>470</td>
<td>190</td>
<td>0</td>
<td></td>
<td>0.40</td>
</tr>
<tr>
<td>Slag</td>
<td>1370</td>
<td>1295</td>
<td>470</td>
<td>190</td>
<td>0</td>
<td></td>
<td>0.40</td>
</tr>
</tbody>
</table>
ITEM 509 REPAIRING EPOXY COATED REINFORCING STEEL

The last sentence in the first paragraph of section 509.09 shall be replaced as follows:
Repair physical damage to the epoxy coating as follows:
Repair with a patching material all damaged coating areas greater than 1/4-inch (6 mm) square or 1/4-inch (6 mm) diameter; approximately 1/8-inch (3 mm) square or 1/8-inch (3 mm) diameter if the opening is within 1/4-inch (6 mm) of an equal or larger opening; or, a length of 6 inches (150

---

**Metric**

### Class HP3 (Fly Ash + Microsilica)

<table>
<thead>
<tr>
<th>Aggregate</th>
<th>Fine Aggregate</th>
<th>#8 Coarse Aggregate</th>
<th>Blended Cement Content</th>
<th>Fly Ash</th>
<th>Micro-Silica</th>
<th>Water to Cementitious</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>(kg)</td>
<td>(kg)</td>
<td>(kg)</td>
<td>(kg)</td>
<td>(kg)</td>
<td>Ratio Max</td>
</tr>
<tr>
<td>Gravel</td>
<td>804</td>
<td>875</td>
<td>303</td>
<td>89</td>
<td>0</td>
<td>0.40</td>
</tr>
<tr>
<td>Limestone</td>
<td>804</td>
<td>884</td>
<td>303</td>
<td>89</td>
<td>0</td>
<td>0.40</td>
</tr>
<tr>
<td>Slag</td>
<td>804</td>
<td>768</td>
<td>303</td>
<td>89</td>
<td>0</td>
<td>0.40</td>
</tr>
</tbody>
</table>

### Class HP4 (GGBF Slag + Microsilica)

<table>
<thead>
<tr>
<th>Aggregate</th>
<th>Fine Aggregate</th>
<th>#8 Coarse Aggregate</th>
<th>Blended Cement Content</th>
<th>Fly Ash</th>
<th>Micro-Silica</th>
<th>Water to Cementitious</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>(kg)</td>
<td>(kg)</td>
<td>(kg)</td>
<td>(kg)</td>
<td>(kg)</td>
<td>Ratio Max</td>
</tr>
<tr>
<td>Gravel</td>
<td>813</td>
<td>875</td>
<td>279</td>
<td>113</td>
<td>0</td>
<td>0.40</td>
</tr>
<tr>
<td>Limestone</td>
<td>813</td>
<td>884</td>
<td>279</td>
<td>113</td>
<td>0</td>
<td>0.40</td>
</tr>
<tr>
<td>Slag</td>
<td>813</td>
<td>768</td>
<td>279</td>
<td>113</td>
<td>0</td>
<td>0.40</td>
</tr>
</tbody>
</table>

Do not use these mix proportioning tables if not choosing the blended cement option. Inform the Engineer at the pre-construction conference whether the blended cement option is to be used.

La Farge Type SF Blended Cement Specific Gravity = 3.06

Sampling requirements for La Farge Type SF
Provide a 1 gallon sample of the cement in a sealed metal container to the Office of Materials Management, Cement and Concrete Section, 1600 W. Broad Street, Columbus, Ohio 43223.

Acceptance for La Farge Type SF
Provide the Engineer with a copy of the La Farge's delivery ticket showing the concrete producer has received the Type SF cement.

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ITEM 509 REPAIRING EPOXY COATED REINFORCING STEEL

The last sentence in the first paragraph of section 509.09 shall be replaced as follows:
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Repair with a patching material all damaged coating areas greater than 1/4-inch (6 mm) square or 1/4-inch (6 mm) diameter; approximately 1/8-inch (3 mm) square or 1/8-inch (3 mm) diameter if the opening is within 1/4-inch (6 mm) of an equal or larger opening; or, a length of 6 inches (150
mm) regardless of area. Coating damage in cases where the damaged area is less than specified above, need not be repaired. Use patching material of the same composition and quality as the original coating. Prepare the surface to a near white metal.

ITEM 514 QUALITY CONTROL SPECIALIST FOR BRIDGE PAINTING

In addition to the requirements as set forth in 514.03, provide documentation that the quality control specialist is NACE certified or has receive formal training or retraining. Formal training or retraining shall be provided by one of the following: KTA Tator or a trainer who is a NACE (National Association of Corrosion Engineers) certified coating Inspector or a SSPC (The Society for Protective Coatings, SSPC) protective coating specialist. Provide documentation that the trainer is employed by KTA Tator or is a NACE certified coating Inspector or a SSPC protective coating specialist.

Documentation shall consist of a copy of a NACE or SSPC certificate and a letter or certificate signed and dated by the trainer.

Retrain the quality control specialist every five years.

515.15 CONCRETE

In addition to 515.15 requirements, provide a concrete mix design while will achieve 2000 coulombs or less @ 90 days when tested per AASHTO T277. Use samples for the test that were mixed without corrosion inhibitors and that were cured with the same methods that will be used to produce the prestressed concrete bridge members. Do not apply additional cure to samples that have reached the required design strength. Submit the test results when submitting the concrete mix design to the Office of Materials Management.

ITEM 524 DRILLED SHAFTS

In addition to the material requirements in 524.02, furnish epoxy coated steel reinforcement as specified in 509.

ITEM 526 APPROACH SLABS

When the approach slab is to be used as a wearing surface, finish and test the surface according to 451.12 prior to grooving.

GALVANIZED REINFORCING STEEL OPTION FOR BRIDGE STRUCTURE SPIRALS

When providing reinforcing steel for spiral cages, galvanized steel conforming to ASTM A767, Class 1, may be provided only for the spiral reinforcing steel in lieu of epoxy coated reinforcing steel. The galvanized coated reinforcing steel will meet all other requirements of 509. Where a sample splice is needed use the lap length requirements for epoxy coated. The Galvanized coating will be applied after the reinforcing has been fabricated. If the galvanized surface becomes damaged during handling in the field, repairs will conform to ASTM A780.

Use bar supports and tie wires which are plastic coated or epoxy coated.
Only suppliers certified under S1068 may provide this reinforcing.

SHOP DRAWING APPROVAL FOR STRUCTURES CARRYING RAILROAD TRAFFIC

In addition to the requirements of Item 501.04A, submit four copies of the prepared shop drawings at least 40 days prior to the pre-fabrication meeting to each railroad company involved for review and approval. Resolve all railroad comments prior to supplying the letter of written acceptance to the Department. The acceptance submission to the Department shall include one set of shop drawings approved by each railroad company involved; copies of all documentation between the railroad(s) and the Contractor; and four sets of Contractor accepted shop drawings for each railroad company involved.

TREATING CONCRETE BRIDGE DECKS WITH HMWM RESIN [8-14-02]

On this project, when treating concrete bridge decks with HMWM Resin, as specified in section 511.22, the following requirements apply:
   A. Replace the reference to SS 954 with 705.15.
   B. Broadcast sand over the entire treated area of the bridge deck by mechanical means to effect a uniform coverage of 0.80 to 1.2 lb/yd$^2$ (0.43 kg/m$^2$ to 0.65 kg/m$^2$). The sand shall conform to the following grading limits:

<table>
<thead>
<tr>
<th>Sieve Size%</th>
<th>Passing Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 4 (4.75mm)</td>
<td>100</td>
</tr>
<tr>
<td>No. 8 (2.36mm)</td>
<td>90-100</td>
</tr>
<tr>
<td>No. 20 (850um)</td>
<td>5-15</td>
</tr>
<tr>
<td>No. 50 (300um)</td>
<td>0-5</td>
</tr>
</tbody>
</table>

The use of commercially available blast sands applied by a common lawn broadcast type seeder/spreader is acceptable. Place sand 10 to 15 minutes after spreading the resin and before any jelling of the resin occurs.

ITEM 740 PAVEMENT MARKING MATERIAL

Contractors are allowed to use the following pavement marking materials listed on the Departmental Prequalified list either evaluated by the Department and/or selected from the National Transportation Product Evaluation Program (NTPEP) test deck. Pavement marking materials selected from the NTPEP test deck meet the Field Performance requirements as described in Supplement 1047.

ITEM 614 PORTABLE CHANGEABLE MESSAGE SIGN

In lieu of the requirement in 614.03 requiring the use of portable changeable message signs prequalified according to Supplement 1061 (i.e., evaluated by NTPEP), the use of portable changeable message signs prequalified via ODOT evaluation is also acceptable until December 31, 2006. (Essentially, two prequalified lists, ODOT-based and NTPEP-based, will exist until that date.) After December 31, 2006 only those portable changeable message signs prequalified according to Supplement 1061 will be allowed for use on ODOT contract projects.
CHAIN LINK FENCE POSTS

Reference is made to Roadway Engineering Services Standard Drawings Chain Link Fence F-1.1, Dated 7-28-00, and Walk Gates F-3.2, Dated 7-28-00. A 8' 8" line post length may be substituted in lieu of the line post length shown on these two standard drawings. This shall be accomplished by reducing the 4'-0" depth as necessary to accommodate the shorter posts, all other dimensions shown in the standard drawings shall remain unchanged.

SUPPLEMENT 1019 (11-01-01) REQUIRED FOR CORRUGATED METAL PIPE COMPONENTS.

Corrugated Metal Pipe and its components sold under item 603 will be furnished by producers who are certified under supplement 1019, CERTIFICATION PROCEDURE FOR CORRUGATED METAL PIPE. Supplement 1019 is required for the following construction and material specifications:

707.01 Metallic Coated Corrugated Steel Conduits and Underdrains
707.02 Metallic Coated Corrugated Steel Conduits
707.03 Structural Plate Corrugated Steel Structures
707.04 Pre-coated, Galvanized Steel Culverts
707.05 Bituminous Coated Corrugated Steel Pipe and Pipe Arches with Paved Invert
707.07 Bituminous Coated Corrugated Steel Pipe and Pipe Arches with Paved Invert
707.11 Mortar Lined Corrugated Steel Pipe
707.12 Corrugated Steel Spiral Rib Conduits
707.13 Bituminous Lined Corrugated Steel Pipe
707.14 Bituminous Lined Corrugated Steel Pipe
707.15 Corrugated Steel Box Culverts
707.21 Corrugated Aluminum Alloy Conduits and Underdrains
707.22 Corrugated Aluminum Alloy Conduits
707.23 Aluminum Alloy Structural Plate Conduits
707.24 Corrugated Aluminum Spiral Rib Conduits
707.25 Corrugated Aluminum Box Culverts

SUPPLEMENT 1022 (7-19-02) REQUIRED FOR AGRICULTURAL SEED.

The Department will accept agricultural seed in 659.07, 659.08 and 659.09 under Supplement 1022.

SUPPLEMENT 1068 (11-01-2001) REQUIRED FOR REINFORCING STEEL AND MECHANICAL SPLICES, WELDED WIRE MESH, AND DOWEL BARS.

Reinforcing steel and mechanical splices, weld wire mesh, and dowel bars supplied for use under this contract will be furnished by producers who are certified under supplement 1068, REINFORCING STEEL AND WELDED WIRE MESH CERTIFICATION PROGRAM. Supplement 1068 is required for the following construction and materials specifications:

509.08 Mechanical Reinforcing Steel Connectors
709.00 Epoxy Coated Reinforcing Steel
Deformed and Plain Billet Steel Bars for Concrete Reinforcement
Rail Steel Deformed and Plan Bars for Concrete Reinforcement
Axle Steel Deformed and Plain Bars for Concrete Reinforcement
Cold-Drawn Steel Wire for Concrete Reinforcement
Fabricated Steel Bar or Rod Mats for Concrete Reinforcement
Welded Steel wire Fabric For Concrete Reinforcement
Deformed Steel wire for Concrete Reinforcement
Welded Deformed Steel Wire Fabric for Concrete Reinforcement
Coated Dowel Bars
Epoxy coated Steel wire and Welded Wire Fabric for Reinforcement

SUPPLEMENT 1067 (11-01-01) REQUIRED FOR FENCE COMPONENTS.

Fence components sold under item 607 will be furnished by producers who are certified under supplement 1067, 607 FENCE CERTIFICATION PROGRAM. Supplement 1067 is required for the following construction and material specifications:

Barbed Wire
Woven Steel Wire Fence Type 47
Chain-Link Fence
Fence Posts and Braces
Pressure Treated Guardrail and Fence Posts, Braces and Blocks

SUPPLEMENT 1042 (11-01-01) REQUIRED FOR GUARDRAIL COMPONENTS.

Guardrail components sold under item 606 will be furnished by producers who are certified under supplement 1042, 606 FENCE CERTIFICATION PROGRAM. Supplement 1042 is required for the following construction and material specifications:

Deep Beam Rail
Square, Sawed, and round Guardrail Posts
Pressure Treated Guardrail and Fence Posts, Braces and Blocks
Steel Guardrail Posts
Guard Posts

SUPPLEMENT 1072 (11-01-01) REQUIRED FOR PRESSURE TREATED WOOD PRODUCTS.

Pressure Treated Wood Products supplied for use under this contract will be furnished by producers who are certified under supplement 1072, CERTIFICATION PROCEDURE FOR PRESSURE TREATED LUMBER. Supplement 1072 is required for the following construction and materials specifications:

Square Sawed, and Round Guardrail Posts
Pressure Treated Guardrail and Fence Posts, Braces and Blocks
Structural Timber, Lumber and Piling
Power Service Components

SUPPLEMENT 1069 (2-08-2002). PRE-QUALIFIED AGGREGATE SUPPLIER PROGRAM
Only pre-qualified suppliers will provide aggregate materials to the Ohio Department of Transportation conforming with the requirements of the Construction and Materials Specifications. This supplement applies to all aggregates provided the Department either directly, or indirectly through a contractor or subcontractor. The program applies to all aggregate materials provided in conformance to or referenced to the 703 section of CMS.

This program is currently considered voluntary but will become mandatory for aggregate materials provided the Department after March 1, 2003.

SUPPLEMENT 1074 (2-12-2003) REQUIRED FOR CONCRETE PIPE MATERIALS.

Precast concrete pipe materials will be furnished by producers who are certified under supplement 1074, Concrete Pipe Certification Program. Supplement 1074 will apply to the following construction and materials specifications:

- 603 Pipe Culverts, Sewers, and Drains

and the following construction materials

- 706.01 Non-reinforced concrete pipe
- 706.02 Reinforced concrete circular pipe
- 706.03 Reinforced concrete pipe, epoxy coated
- 706.04 Reinforced concrete elliptical culvert, storm drain, and sewer pipe
- 706.06 Perforated concrete pipe
- 706.07 Concrete drain tile

SUPPLEMENT 1084 (10/18/02) REQUIRED FOR BRIDGE PAINT.

The Department will accept bridge paint in 708.01 and 708.02 under Supplement 1084.

CORRECTIONS TO THE 2002 CONSTRUCTION & MATERIAL SPECIFICATIONS

202.04
On Page 91, Add the following after the second paragraph, third sentence: “Dispose of all asbestos pipe at a solid waste facility that is licensed by the Local Health Department and permitted by the OEPA.”

410.06
On Page 246, Revise lb/ft³ to lb/yd³ in the Table column headings.

411.04
On Page 248, Revise lb/ft³ to lb/yd³ in the Table column headings.

499.03-1 Table

499.03C
On page 315, Replace the first paragraph of 499.03C with:
Concrete Classes. Using the Concrete Tables, the Engineer will determine the weights of fine and coarse aggregate. The Concrete Table aggregate weights were calculated using the following Saturated Surface Dry (SSD) specific gravities: natural sand and gravel 2.62,
limestone sand 2.68, limestone 2.65, and slag 2.30. The assumed specific gravities of portland cement, fly ash, ground granulated blast furnace slag and micro-silica are 3.15, 2.30, 2.90 and 2.20, respectively. For aggregates with specific gravities differing more than ±0.02 from these, the Engineer will adjust the table design weights as specified in 499.03.D.3.

499.04.C
On Page 323, Replace reference to (GGFBS) with (GGBFS)

503.10.C
On Page 342, Revise references 503.01.C.1 to 503.10.C.1 and revise 503.01.C.2.a to 503.10.C.2.a.

503.09
On Page 340, in the first paragraph, Revise the reference to 203.03.R to 203.02.R.

520.11
On page 468, replace Inspection and Testing with the following: After curing and before final acceptance, sound all patched areas. Remove and replace all unsound or cracked areas. In addition to sounding all patches, the Department will base acceptance of the pneumatically placed mortar on 4-inch (100 mm) diameter cores taken from patched areas and tested for compressive strength. The Engineer will determine the location of the cores, with one core being taken for each 200 square feet (20 m2) of pneumatically placed mortar. Drill the cores completely through the patched area and into the underlying sound concrete at least 1/2 inches. Ensure that the depth of the cores is at least 4 inches. The Engineer will visually inspect the cores at the site for hollow areas, sand pockets, voids around reinforcing steel. Test the cores at an independent laboratory for compressive strength. The required minimum average compressive strength is 3000 pounds per square inch (21 MPa) at 7 days, with no single core test less than 2600 pounds per square inch (18 Mpa).

The Engineer will waive coring on small quantities or overhead patches if it is determined by sounding and visual inspection that the patches are sound.

Remove, replace, re-inspect, and re-test all defective patches, as determined by sounding, visible cracks, or unacceptable cores.

Fill core holes with concrete as per 519.

515.06
On page 442, in the first sentence, Revise the reference from 501.05 to 501.04.

524.10
On Page 480, in the first paragraph, Revise the reference 750.12 to 705.12.

601.11
On Page 491, Add the following after the first paragraph:
“Tied Concrete Block Mats may be used instead of Rock Channel Protection, Dumped Rock, or RipRap with the approval of the Office of Structural Engineering.”

601.12
On Page 491, Add the following to the first sentence after the word Riprap: “Interlock Concrete Blocks,”

601.13
On Page 492, Revise the Tied Concrete Block Mat description to read:
“Tied Concrete Block Mat, Type ____..”

601.13
On Page 492, Add pay item: “601 Square Yard (Square Meter) Interlock Concrete Blocks”
603.02
On Page 499, **Add** the following under Type F conduits:
“Corrugated Polyethylene Drainage Tubing sizes 4, 6, 8 inch (100, 150, 200 mm)... 707.31.”

602.03.C second group
On Page 494, **Revise** the section that begins “Ensure that non-approved...” to read:
“Submit non-approved designs with the manufacturer’s structural design criteria, analysis method and structural details for approval. Re-submit designs for approval when manufacturers change their designs.”

603.03
On Page 502, **Add** the following paragraph at the end of section 603.03.A:
“If plastic pipe is used and the ID is 8 inch (200 mm) or less furnish a minimum trench width of the OD”

603.08
On Page 508, **Add** the following paragraph C at the end of section for Backfill Types A and B conduits except for long span structures: “C. For plastic pipe with an ID 8 inch (200 mm) or less, place and compact structural backfill above the bedding for the full depth of the trench.”

603.08
On Page 509, **Add** the following paragraph C at the end of section for Backfill Type C conduits: “C. For plastic pipe with an ID 8 inch (200 mm) or less, place and compact structural backfill above the bedding for the full depth of the trench.”

**Add** the following paragraph at the end of the section:
“Type F conduits for underdrain outlets backfill per 605.03.C.”

603.13
On Page 513, **Add** the following pay item:
“603 Foot (Meter) Conduit, Type F for Underdrain Outlets”

605.02.B
On Page 518, **Revise** the section title to read: “B. Pipe for 605 Rock-Cut Underdrains, or Shallow Underdrains”

605.06
On Page 521, **Delete** the second sentence which reads “For the backfill use structural backfill Type 1 as defined in Item 603.”

605.09
On Page 522, **Add** the following pay item: “605 Foot (Meter) Shallow Underdrains.”

630.04
On page 605, the first sentence in the third paragraph of Section 630.04 is **Replaced** with the following:
“For flat sheet and ground mounted extrusheet signs, use Type G, H or J reflective sheeting for background and reflective legends. For overhead extrusheet signs, use Type G reflective sheeting for the background, and use Type H or J reflective sheeting for reflective legends, shields and symbols (including hazardous cargo plate, airport symbol, arrows and borders).”

630.04
On page 605, the following new paragraph is **Added** after the fifth paragraph of Section 630.04: For yellow signs, use standard yellow reflective sheeting or fluorescent yellow reflective sheeting.

630.15
On page 617, the pay item for "Sign" in Section 630.15 is **revised** to read as follows:
“630  Square Foot Sign, (Flat Sheet, Ground Mounted Extrusheet, Overhead Extrusheet, (Square Meter) Temporary Overlay)"

631.12  
On Page 622, Revise the seventh paragraph reference to “support arm” to “attachment hardware”

633.06.C Traffic Signal Controllers  
On Page 645, Revise Supplement 1060 to Supplement 1076

645.05  
On Page 686, in the first sentence Revise 642.12 to 641.12.

647  
Throughout the section, Revise "plastic" to "thermoplastic".

647.02  
On Page 693, Revise the list as follows:  
Heat-fused preformed thermoplastic pavement marking material..............740.08  
Glass beads.................................................................740.10

647.03  
On Page 693, Replace the first paragraph with:  
Use manufacturer recommended equipment to apply the heat-fused preformed thermoplastic pavement marking material according to the appropriate type, as follows:

647.03.A  
On Page 693, Revise "Type A" to "Type A90 or Type A125".

647.03.B  
On Page 693, Replace with the following:  
B. Type B90 or Type B125 Material.  
1. Propane torch for ensuring no moisture is present on the pavement and heating the material according to 647.04.C.  
2. A thermometer is not required.

647.04.A  
On Page 693, Replace the first sentence with:  
Apply the heat-fused preformed thermoplastic pavement marking material to clean, dry pavement surfaces according to the appropriate type unless otherwise directed by the manufacturer's recommendation.

On Page 693, Delete the third paragraph.

647.04.B  
On Page 694, Revise "Type A (90-mil thickness)" to "Type A90 and Type A125".  
On Page 694, Revise 350 F(177 C) to 300 F(149 C).  
On Page 694, Replace the second sentence with:  
Place the material on the warm surface as soon as practical, then uniformly post-heat to 400 F(205 C).

On Page 694, Revise "extended" to "extend" in the fourth sentence.  
On Page 694, Replace the second paragraph with:  
Type A90 and A125 material shall contain intermix beads throughout. Drop-on glass beads are not required unless using a non-surface beaded marking (i.e., for turn or combination arrows).

647.04.C  
On Page 694, Replace with the following:  
C. Type B90 and Type B125 Material Application on Asphalt Concrete and Portland Cement Concrete Pavements. Heat the pavement only to ensure no moisture is present.
Place the material on the dry surface and then uniformly heat the material until it bubbles and changes color to off-white. Material must be able to be applied with no preheating of the pavement to a specified temperature and without the use of a thermometer. Allow the material to cool naturally and solidify before exposing it to traffic.
Type B90 and B125 material shall contain intermix glass beads throughout. Drop-on glass beads are not required unless using a non-surface beaded marking (i.e., for turn or combination arrows).

659.02.A
On page 705, add the following after the third sentence:
If liquid lime is used then use the following application table to achieve a pH of 6.5 or greater. Calculate the difference between the soil pH and 6.5 pH.

<table>
<thead>
<tr>
<th>Difference</th>
<th>.25</th>
<th>.50</th>
<th>.75</th>
<th>1.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>application rate in gals/ac (L/ha)</td>
<td>2.5 (4)</td>
<td>5 (8)</td>
<td>10 (15)</td>
<td>20 (30)</td>
</tr>
</tbody>
</table>

Example: soil test pH=5.75 required pH=6.5 difference=.75 required application rate is 10 gals/ac (15L/ha) Only use Liquid lime on the QPL list. Provide the Engineer with the Liquid Lime manufacturers written application rate. The Engineer will only accept printed application rates.

659.02.B
On page 705, add the following after the third sentence:
If liquid lime is used then use the following application table to achieve a pH of 6.5 or greater. Calculate the difference between the soil pH and 6.5 pH.

<table>
<thead>
<tr>
<th>Difference</th>
<th>.25</th>
<th>.50</th>
<th>.75</th>
<th>1.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>application rate in gals/ac (L/ha)</td>
<td>2.5 (4)</td>
<td>5 (8)</td>
<td>10 (15)</td>
<td>20 (30)</td>
</tr>
</tbody>
</table>

Example: soil test pH=5.75 required pH=6.5 difference=.75 required application rate is 10 gals/ac (15L/ha) Only use Liquid lime on the QPL list. Provide the Engineer with the Liquid Lime manufacturers written application rate. The Engineer will only accept printed application rates.

659.03
On page 705 first sentence, Replace granular lime with granular or liquid lime.

659.03
On page 705 second sentence, Replace lime with granular lime.

659.03
On page 705 fifth sentence, Replace lime with granular lime.

659.03
On page 706 after the first paragraph, Add: If using liquid lime apply liquid lime at a rate of 5 gals/acre (8 L/ha) unless other wise required per the soil or topsoil test . Provide the Engineer with the Liquid Lime manufacturers written application rate. The Engineer will only accept printed application rates. Only use Liquid lime on the QPL list .

659.10.B
On page 716 third paragraph, second sentence, Replace lime with granular lime.

659.10.B
On page 716 third paragraph, after the second sentence, Add: Do not mix Liquid lime into the soil or topsoil. Only apply liquid lime to the top of the soil or topsoil.

659.24
On page 721 third paragraph, **Delete** “and Agricultural Lime” and **Add** at the end of the paragraph: The Department will measure lime or liquid Lime by the number of acres (ha) covered.

**659.25**

On page 722 fourth pay item, **Replace** “Ton (Kilogram) Agricultural Lime” with Acres (ha) Lime.

**700 Table**

On Page 745, **Revise** the glass bead reference 740.10 to 740.09.

**700 Table**

On Page 746, in the table **Delete** reference to 521 under Lumber.

**703.02.A.3**

On Page 762, **Delete** reference to 612 in the Table.

**703.02.B Table**

On Page 763, in the table **Add** Lightweight pieces 0.25 1.0.

**703.04.B Table**

On Page 765, in the table **Delete** Lightweight pieces 1.0.

**703.05.B.2 Table**

On Page 766, in the table **Delete** Lightweight pieces 1.0.

**703.02 A.3**

On page 762 revise Aggregations of soil, silt, etc. by weight from .05 to 0.5

**703.03 B**

On page 764 revise Aggregations of soil, silt, etc from .05 to 0.5

**703.02.B Table**

On page 763, in the table Add lightweight pieces 0.25 1.0

**703.05.B**

On page 766, In the table **Delete lightweight pieces 1.0**

**703.11**

On Page 768, **Add** the following after the first paragraph: “Furnish ACBF Slag that conforms to Supplement 1027:”

**705.04**

On Page 786, **Remove** references to Type 3 Membrane Primer.

**706.02-2M Table**

On Page 802, in the sixth column, **Revise** 51 to 5.

**706.02-4 Table**

On Page 806, in the forth column, **Revise** 0.13 to 1.30, and 0.14 to 1.38.

**706.13 4.1.5**

On Page 828, **Revise** the section that begins “Provide epoxy coated steel...” to read: “Provide steel conforming to 709.01, 709.08, 709.10 or 709.12. Provide epoxy coated steel conforming to 709.00 for the manhole flat slab tops, catch basin tops and inlet tops only.”

**707.05**

On Page 834, **Revise** the second sentence to read: “Provide either Type B half bituminous coated pipe, or pipe arches with paved invert or Type C fully coated pipe, or pipe arches with paved invert.”

**707.07**

On Page 834, **Revise** the second sentence to read: “Provide either Type B half bituminous coated pipe, or pipe arches with paved invert or Type C fully coated pipe, or pipe arches with paved invert.”
710.06
On Page 864, **Revise** Supplement 1067 to Supplement 1042

721.01
On page 887, Replace this section with: Ensured that the casting is nodular iron conforming to ASTM A 536, hardened to 45 - 54 RC, snow plowable in the two opposing longitudinal directions and designed to accommodate a replacement prismatic retroreflector.

725.08
On Page 894, Add the following paragraph at the beginning of Section 725.08: "Ensure that manufacturers of precast concrete members are certified by the Laboratory according to Supplement 1073."

730.18
On page 921, **Delete** the first sentence.

730.192
On page 922, the minimum coefficient of retroreflection for fluorescent orange sheeting at an observation angle of 0.2 and entrance angle of +30 is **Revised** to 85 cd/ft² (cd·lx⁻¹·m⁻²).

730.192
On page 923, the following text is **Added** at the end of Section 730.192: Furnish fluorescent yellow reflective sheeting conforming to ASTM D 4956, Type VII or VIII, including supplemental requirement S1, and the following requirements:
A. The color specification limits for fluorescent yellow are as shown for yellow in ASTM D 4956, Table 13. The minimum luminance factor (Y%) is 45. The minimum fluorescence luminance factor (YF%) is 25.
B. The photometric requirements for fluorescent yellow sheeting are as follows:

<table>
<thead>
<tr>
<th>Observation Angle (degree)</th>
<th>Entrance Angle (degree)</th>
<th>Minimum Coefficient of Retroreflection cd/ft² (cd·lx⁻¹·m⁻²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>-4</td>
<td>375</td>
</tr>
<tr>
<td>0.2</td>
<td>+30</td>
<td>170</td>
</tr>
<tr>
<td>0.5</td>
<td>-4</td>
<td>165</td>
</tr>
<tr>
<td>0.5</td>
<td>+30</td>
<td>85</td>
</tr>
</tbody>
</table>

740.08
On Pages 996 and 997, Replace with:
740.08 Heat-Fused Preformed Thermoplastic Pavement Marking Material. Furnish heat-fused preformed thermoplastic pavement marking materials conforming to the following:
Type A90 and Type B90 - 90 mil thickness (2.29 mm)
Type A125 and Type B125 - 125 mil thickness (3.18 mm)

730.193
On page 924, the following text is **Added** at the end of Section 730.193: Furnish fluorescent yellow reflective sheeting conforming to ASTM D 4956, Type IX, including supplemental requirement S1, and the following requirements:
A. The color specification limits for fluorescent yellow are as shown for yellow in ASTM D 4956, Table 13. The minimum luminance factor (Y%) is 45. The minimum fluorescence luminance factor (YF%) is 25.
B. The photometric requirements for fluorescent yellow sheeting are as follows:
<table>
<thead>
<tr>
<th>Observation Angle (degree)</th>
<th>Entrance Angle (degree)</th>
<th>Minimum Coefficient of Retroreflection (cd/ft^2 (cd/\text{lx} \cdot \text{m}^2))</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>-4</td>
<td>240</td>
</tr>
<tr>
<td>0.2</td>
<td>+30</td>
<td>150</td>
</tr>
<tr>
<td>0.5</td>
<td>-4</td>
<td>165</td>
</tr>
<tr>
<td>0.5</td>
<td>+30</td>
<td>75</td>
</tr>
<tr>
<td>1.0</td>
<td>-4</td>
<td>45</td>
</tr>
<tr>
<td>1.0</td>
<td>+30</td>
<td>24</td>
</tr>
</tbody>
</table>

733.03.C.6
On Page 966, **Revise** Supplement 1060 to Supplement 1076

740.10
On Page 997, **Revise** section 740.10 to 740.09.

748
Throughout the section, **Replace** references to C500 with C509.

748.06
On Page 1001, in the Wall Thickness Table **reverse** the first two rows metric and English columns.

748.08
On Page 1001, paragraph one, **Replace** gate valves with ductile iron gate valves. After paragraph two **insert**: “Provide gate valves from suppliers listed on the Department’s Qualified Products List.”

748.15
On Page 1003, paragraph three, **Replace** 1/4" diameter with 1" (25mm) diameter or 1" (25mm) square. And **Delete**: “Use U.S. Standard Pipe thread between the operating nut and the stem”.
On Page 1003, paragraph six, **Replace** “screw into the hydrant body casting using U.S. Standard Pipe threads” with “lock into the hydrant body using locking lugs or threads”.