



Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois / 62764

June 14, 2005

SUBJECT: FAI Route 74 (I-74)
Project ACIM-074-4 (234) 094
Section (90-11) R-2; 90 (13, 14, 14-1) R-1
Tazewell County
Contract No. 68201
Item No. 2P, June 17, 2005 Letting
Addendum B

NOTICE TO PROSPECTIVE BIDDERS:

Attached is an addendum to the plans or proposal. This addendum involves revised and/or added material.

1. Revised page ix of the Table of Contents to the Special Provisions.
2. Revised pages 85 – 88 & 164 – 170 of the Special Provisions.
3. Added pages 419 – 421 to the Plans.

Prime contractors must utilize the enclosed material when preparing their bid and must include any Schedule of Prices changes in their bidding proposal.

Bidders using computer-generated bids are cautioned to reflect any and all Schedule of Prices changes, if involved, into their computer programs.

Very truly yours,

Michael L. Hine
Engineer of Design
and Environment

A handwritten signature in black ink, appearing to read 'Ted B. Walschleger' followed by a small 'P.E.' monogram.

By: Ted B. Walschleger, P. E.
Engineer of Project Management

cc: J. E. Crowe, Region 3, District 4; N. R. Stoner; Roger Driskell; Jim White;
Design & Environment File

TBW:MS:jc

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Revise Article 356.11 of the Standard Specifications to read:

Basis of Payment. This work will be paid for at the contract unit price per metric ton (ton) for BITUMINOUS BASE COURSE WIDENING.

EXISTING BITUMINOUS MIXES CONTAINING STEEL SLAG

Effective April 21, 2004

The Contractor is reminded to verify the existence of bituminous surface course mixes that may contain steel slag prior to removal and recycling. Much of the bituminous to be milled or otherwise removed within the project limits contains steel slag. The use of RAP containing steel slag shall be in accordance with the Standard Specifications and Special Provisions.

EXTENDED LIFE PAVEMENT (30 YEAR)

Effective June 21, 2001

Revised June 14, 2005

The requirements of this special provision are only applicable to I-74 mainline and ramp Portland Cement Concrete pavements.

Description. This work shall consist of constructing an extended life Portland cement concrete pavement, shoulders, and gutter, curb, and median, according to Section 420 for Portland Cement Concrete Pavement (PCCP), Section 421 for Continuously Reinforced Portland Cement Concrete Pavement (CRCP), Section 483 for Portland Cement Concrete Shoulders, and Section 606 for Concrete Gutter, Curb, Median, and Paved Ditch, of the Standard Specifications for Road and Bridge Construction, except as follows:

Definitions.

Aggregate Subbase – The aggregate above the subgrade and below the aggregate subbase cap.

Aggregate Subbase Cap – The 75 mm (3 in.) of aggregate above the aggregate subbase and below the base.

Base – The Superpave IL-19.0L placed over the aggregate subbase cap and immediately below the pavement.

Materials. Materials shall be according to Article 420.02 for PCCP, 421.02 for CRCP, and 483.02 for PCC Shoulders, of the Standard Specifications except:

The freeze-thaw rating expansion limit for coarse aggregate shall be a maximum 0.040 percent according to Illinois Modified AASHTO T 161, Procedure B.

Equipment. Equipment shall be according to Article 420.03 for PCCP, 421.03 for CRCP, and 483.03 for PCC Shoulders, of the Standard Specifications, except:

The Contractor shall submit to the Engineer, for approval before paving, the proposed internal type vibrator spacing for the paver. The Contractor shall also provide the proposed operating

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frequencies for a paving speed greater than or equal to 0.9 m (3 ft.) per minute, and for a paving speed less than 0.9 m (3 ft.) per minute.

Base. The base shall be constructed according to Section 312 of the Standard Specification, except that the material used shall be Superpave IL-19.0L.

When the surface temperature, as measured on the surface with a device as approved by the Engineer, of the Stabilized Sub-Base is 115 °F or greater the Contractor shall spray the Stabilized Sub-base with a water mist with equipment that meets the approval of the Engineer. The Stabilized Sub-base shall be cooled below 115 °F prior to paving on top. The water spray shall not produce excessive water runoff or leave puddles on the Stabilized Sub-base at the time of paving. All cooling shall be completed a minimum of 10 minutes prior to paving. The surface temperature shall be monitored during the paving operation to determine in the stabilized Sub-base required re-spaying. The water used shall meet the requirements of Section 1002.

Embankment. The embankment shall be constructed according to Section 205 of the Standard Specifications, except that the embankment shall be compacted to not less than 95 percent of the maximum dry density determined according to AASHTO T 99. The embankment shall not be compacted at a moisture content in excess of 110 percent of the optimum moisture content determined according to AASHTO T 99.

All material that is proposed for use in embankment construction must be approved by the Engineer. The proposed material shall have a Standard Dry Density of not less than 1450 kg/m³ (90 lb./ft³) when tested according to AASHTO T 99 and shall not have an organic content greater than 10 percent when tested according to AASHTO T 194. Soils that demonstrate the following properties shall be restricted to the interior of the embankment:

- a. A grain size distribution with less than 35% passing the 75 µm (#200) sieve.
- b. A plasticity index (PI) of less than 12.
- c. A liquid limit (LL) in excess of 50.

Such soils shall be covered on the sides and top of the embankment by a minimum of 900 mm (3 ft.) of soil not characterized by any of the items a, b or c above. Other materials which may be considered by the Engineer as having the potential for erosion or excess volume change shall not be used in the 3 ft. (900 mm) cover on the sides or the top of the embankment.

Subgrade. The subgrade shall be constructed according to Section 301 of the Standard Specifications.

Delete the third paragraph (including subparagraphs a, b, and c) of Article 301.03 of the Standard Specifications and replace it with the following:

In cut sections the contractor responsible for the rough grading shall obtain not less than 95% of the standard laboratory density and not more than 110% of the optimum moisture for the top 300mm (1 ft.) of the subgrade.

The Contractor may, at his/her option, add a drying agent to lower the moisture content as specified. The drying agent must be approved by the Engineer prior to use. Additional

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compensation will not be allowed for the use of a drying agent, but will be considered as included in the cost of the various earthwork items.

In the first sentence of the fourth paragraph delete "listed in the steps".

Aggregate Subbase. This work shall consist of furnishing, transporting, and placing Aggregate Subbase, Type C, as specified in Section 311 of the Standard Specifications, except:

The quality requirement in Article 1004.04(b) shall not apply.

The material shall be classified as Category III in the Aggregate Gradation Control System (AGCS), and shall meet the following gradation requirements:

1. Crushed Stone, Crushed Slag, and Crushed Concrete

<u>Sieve Size</u>	<u>Percent Passing</u>
200 mm (8 in.)	100
150 mm (6 in.)	97±3
100 mm (4 in.)	90±10
50 mm (2 in.)	45±25
75 µm (#200)	3±3

2. Crushed Gravel

<u>Sieve Size</u>	<u>Percent Passing</u>
150 mm (6 in.)	100
100 mm (4 in.)	90±10
50 mm (2 in.)	55±25
4.75 mm (#4)	30±20
75 µm (#200)	5±5

The aggregate subbase shall be well-graded from coarse to fine. Aggregate subbase that is gap-graded or single-sized will not be accepted.

The material finer than the 75 µm (No. 200) sieve shall consist of the dust from fracture and shall be essentially free of clay or silt.

The aggregate shall be placed to the thickness specified in one lift. When aggregate meeting the Aggregate Subbase requirements is used to replace unstable material, the Aggregate Subbase may be placed simultaneously with the material for subgrade replacement, when the total thickness to be placed is 600 mm (24 in.) or less. The Aggregate Subbase (and subgrade replacement material, if any) shall be rolled with a vibratory roller meeting the requirements of Article 1101.01 of the Standard Specifications to obtain the desired keying or interlock and compaction. The Engineer shall verify that adequate keying has been obtained.

Aggregate Subbase Cap. This work shall consist of furnishing, transporting, and placing an Aggregate Subbase, Type C, as a cap as specified in Section 311 of the Standard Specifications, except the material gradation shall be CA 6. The lift thickness shall be 75 mm

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(3 in.), nominal. Reclaimed Asphalt Pavement (RAP) meeting Article 1004.07 of the Standard Specifications and having 100% passing the 37.5mm (1-1/2inches) sieve and well graded down through the fines may also be used as capping aggregate. RAP shall not contain steel slag or other expansive material. The results of the Department's tests on the RAP material will be the determining factor for consideration as expansive.

Placing Concrete Pavement. Placement shall be according to Article 421.05 of the Standard Specifications except that, if the shoulder and mainline pavements are of different reinforcement designs, they shall not be placed in a single operation.

Concrete Mixture Temperature. Article 1020.14 of the Standard Specifications shall apply except that, prior to paving, the Contractor shall indicate to the Engineer how the concrete mixture temperature will be controlled. If the mixture temperature exceeds the value stated in Article 1020.14, production of additional mix shall stop until action to reduce mixture temperature is taken or conditions causing elevated temperatures change. The Engineer will allow the Contractor to deliver concrete mixture en route to the paving site.

Curing. Curing of the pavement shall be according to Article 1020.13 of the Standard Specifications, except:

Method 4 shall be completed within 10 minutes after tining.
The curing period shall be 7 days minimum.

Opening to Traffic. The pavement shall not be opened to public traffic or construction vehicles before the minimum curing period is completed.

Method of Measurement. The method of measurement for aggregate subbase shall be as follows:

- (a) Contract Quantities. Contract quantities shall be in accordance with Article 202.07(a).
- (b) Measured Quantities. Aggregate subbase will be measured for payment in metric tons (tons) according to Article 311.08 (b).

Basis of Payment. This work will be paid for at the contract unit price per metric ton (ton) for AGGREGATE SUBBASE, including the Aggregate Subbase Cap.

All other items will be measured and paid for according to the appropriate section of the Standard Specifications.

PAVEMENT REINFORCEMENT

Effective June 7, 2002

Revised November 7, 2002

All tie bars, reinforcement, and chair supports in I-74 mainline and ramp pavements, shoulders, gutters and curb and gutter and bridge approach pavement shall be epoxy coated in accordance with Article 420.02 of the Standard Specifications.

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The Contractor shall make arrangements to have other hazardous waste, which he/she generates, such as used paint solvent, transported to the Contractor's facility at the end of each day that this waste is generated. These hazardous wastes shall be manifested using the Contractor's own generator number to a treatment or disposal facility from the Contractor's facility. The Contractor shall not combine solvents or other wastes with cleaning residue wastes. All waste streams shall be stored in separate containers.

The Contractor is responsible for the payment of any fines and undertaking any clean up activities mandated by State or federal environmental agencies for improper waste handling, storage, transportation, or disposal.

Contractor personnel shall be trained in the proper handling of hazardous waste, and the necessary notification and clean up requirements in the event of a spill. The Contractor shall maintain a copy of the personnel training records at each bridge site.

It is understood and agreed that the cost of all work outlined above, unless otherwise specified, has been included in the bid, and no extra compensation will be allowed.

Basis of Payment: This work will be considered included in the cost of "Furnishing and Erecting Structural Steel", "Erecting Structural Steel", or "Structural Steel Repair", as applicable, according to the Standard Specifications, unless otherwise specified on the plans.

CLEANING AND PAINTING NEW METAL STRUCTURES

Effective Date: September 13, 1994

Revised Date: March 30, 2005

Description. The material and construction requirements that apply to cleaning and painting new structural steel shall be according to the applicable portion of Sections 506 of the Standard Specifications except as modified herein. The three coat paint system shall be the system as specified on the plans and as defined herein.

Materials. All materials to be used on an individual structure shall be produced by the same manufacturer. The Bureau of Materials and Physical Research has established a list of all products that have met preliminary requirements. Each batch of material must be tested and approved by that bureau before use.

The paint materials shall meet the requirements of the following articles of the Standard Specification:

<u>Item</u>	<u>Article</u>
(a) Inorganic Zinc-Rich Primer	1008.22
(b) Waterborne Acrylic	1008.24
(c) Aluminum Epoxy Mastic	1008.25
(d) Organic Zinc-Rich Primer (Note 1)	
(e) Epoxy Intermediate (Note 1)	
(f) Aliphatic Urethane (Note 1)	

Note 1: These material requirements shall be according to the Special Provision for the Organic Zinc-Rich Paint System.

Submittals. At least 30 days prior to beginning field painting, the Contractor shall submit for the Engineer's review and acceptance, the following applicable plans, certifications and information for

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completing the field work. Field painting can not proceed until the submittals are accepted by the Engineer. Qualifications, certifications and QC plans for shop cleaning and painting shall be available for review by the QA Inspector.

- a) Contractor/Personnel Qualifications. Except for miscellaneous steel items such as bearings, side retainers, expansion joint devices, and other items allowed by the Engineer, or unless stated otherwise in the contract, the shop painting Contractors shall be certified to perform the work as follows: the shop painting Contractor shall possess AISC Sophisticated Paint Endorsement or SSPC-QP3 certification. Evidence of current qualifications shall be provided.

Personnel managing the shop and field Quality Control program(s) for this work shall possess a minimum classification as a National Association of Corrosion Engineers (NACE) Coating Inspector Technician, or shall provide evidence of successful inspection of 3 projects of similar or greater complexity and scope that have been completed in the last 2 years. Copies of the certification and/or experience shall be provided.

The personnel performing the QC tests for this work shall be trained in coatings inspection and the use of the testing instruments. Documentation of training shall be provided.

- b) Quality Control (QC) Program. The shop and field QC Programs shall identify the following; the instrumentation that will be used, a schedule of required measurements and observations, procedures for correcting unacceptable work, and procedures for improving surface preparation and painting quality as a result of quality control findings. The field program shall incorporate the IDOT Quality Control Daily Report form, as supplied by the Engineer.
- c) Field Cleaning and Painting Inspection Access Plan. The inspection access plan for use by Contractor QC personnel for ongoing inspections and by the Engineer during Quality Assurance (QA) observations.
- d) Surface Preparation/Painting Plan. The surface preparation/painting plan shall include the methods of surface preparation and type of equipment to be utilized for solvent cleaning, abrasive blast cleaning, washing, and power tool cleaning. The plan shall include the manufacturer's names of the materials that will be used, including Product Data Sheets and Material Safety Data Sheets (MSDS).

A letter or written instructions from the coating manufacturer shall be included, indicating the required drying time for each coat at the minimum, normal, and maximum application temperatures before the coating can be exposed to temperatures or moisture conditions that are outside of the published application parameters.

Field Quality Control (QC) Inspections. The Contractor shall perform first line, in process QC inspections of each phase of the work. The Contractor shall implement the submitted and accepted QC Program to insure that the work accomplished complies with these specifications. The Contractor shall use the IDOT Quality Control Daily Report form supplied by the Engineer to record the results of quality control tests. The completed reports shall be turned into the Engineer before work resumes the following day.

The Contractor shall have available at the shop or on the field site, all of the necessary inspection and testing equipment. The equipment shall be available for the Engineer's use when requested.

Field Quality Assurance (QA) Observations. The Engineer will conduct QA observations of any or all phases of the work. The Engineer's observations in no way relieve the Contractor of the responsibility to provide all necessary daily QC inspections of his/her own and to comply with all requirements of this Specification.

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The Engineer has the right to reject any work that was performed without adequate provision for QA observations.

The Engineer will issue a Non-Conformance Report when cleaning and painting work is found to be in violation of the specification requirements, and is not corrected to bring it into compliance before proceeding with the next phase of work.

Inspection Access and Lighting. The Contractor shall facilitate the Engineer's observations as required, including allowing ample time to view the work. The Contractor shall furnish, erect and move scaffolding or other mechanical equipment to permit close observation of all surfaces to be cleaned and painted. This equipment shall be provided during all phases of the work. Examples of acceptable access structures include:

- Mechanical lifting equipment, such as, scissor trucks, hydraulic booms, etc.
- Platforms suspended from the structure comprised of trusses or other stiff supporting members and including rails and kick boards.
- Simple catenary supports are permitted only if independent life lines for attaching a fall arrest system according to Occupational Safety and Health Administration (OSHA) regulations are provided.

When the surface to be inspected is more than 1.8 m (6 ft) above the ground or water surface, the Contractor shall provide the Engineer with a safety harness and a lifeline according to OSHA regulations. The lifeline and attachment shall not direct the fall into oncoming traffic. The Contractor shall provide a method of attaching the lifeline to the structure independent of the inspection facility or any support of the platform. When the inspection facility is more than 800 mm (2 1/2 ft) above the ground, the Contractor shall provide an approved means of access onto the platform.

The Contractor shall provide artificial lighting in areas where natural light is inadequate, as determined by the Engineer, to allow proper cleaning, inspection, and painting. Illumination for inspection shall be at least 325 LUX (30 foot candles). Illumination for cleaning and painting, including the working platforms, access, and entryways shall be at least 215 LUX (20 foot candles).

Construction Requirements. The Contractor shall be responsible for any damage caused to persons, vehicles, or property, except as indemnified by the Response Action Contractor Indemnification Act. Whenever the intended purposes of the protective devices are not being accomplished, as determined by the Engineer, work shall be immediately suspended until corrections are made. Painted surfaces damaged by any Contractor's operation shall be removed and repainted, as directed by the Engineer, at the Contractor's expense.

The Contractor shall comply with the provisions of the Illinois Environmental Protection Act. Paint drips, spills, and overspray are not permitted to escape into the air or onto any other surfaces or surrounding property not intended to be painted. Containment shall be used to control paint drips, spills, and overspray, and shall be dropped and all equipment secured when sustained wind speeds of 64 kph (40 mph) or greater occur, unless the containment design necessitates action at lower wind speeds. The contractor shall evaluate project-specific conditions to determine the specific type and extent of containment needed to control the paint emissions and shall submit a plan for containing or controlling paint debris (droplets, spills, overspray, etc.) to the Engineer for approval prior to starting the work. Approval shall not relieve the Contractor of their ultimate responsibility for controlling paint debris from escaping the work zone.

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Surface and Weather Conditions. Surfaces to be painted after cleaning shall remain free of moisture and other contaminants. The Contractor shall control his/her operations to insure that dust, dirt, or moisture does not come in contact with surfaces cleaned or painted that day.

The surface temperature shall be at least 3°C (5°F) above the dew point during final surface preparation operations. The paint manufacturers' published literature shall be followed for specific temperature, dew point, and humidity restrictions during the application of each coat.

The Contractor shall monitor temperature, dew point, and humidity every 4 hours during surface preparation and coating application in the specific areas where the work is being performed. The frequency of monitoring shall increase if weather conditions are changing. The Engineer has the right to reject any work that was performed under unfavorable weather conditions. Rejected work shall be removed, recleaned, and repainted at the Contractor's expense.

Seasonal Restrictions on Field Cleaning and Painting. Field cleaning and painting work shall be accomplished between April 15 and October 31 unless authorized otherwise by the Engineer in writing.

Inorganic Zinc-rich/ Waterborne Acrylic Paint system. This system shall be for shop and field application of the coating system, shop application of the intermediate and top coats will not be allowed.

In the shop, all structural steel designated to be painted shall be given one coat of inorganic zinc rich primer. In the field, before the application of the intermediate coat, the prime coat and any newly installed fasteners shall be spot solvent cleaned per SSPC-SP 1 and all surfaces pressure washed to remove dirt, oil, lubricants, oxidation products, and foreign substances. Washing shall involve the use of potable water at a pressure between 7 MPa (1000 psi) and 34 MPa (5000 psi) and according to "Low Pressure Water Cleaning" of SSPC-SP12. Paint spray equipment shall not be used to perform the water cleaning. All damaged shop primed areas shall then be spot cleaned per SSPC-SP3 and spot primed with aluminum epoxy mastic. The structural steel shall then receive one full intermediate coat and one full topcoat of waterborne acrylic paint.

- a) Paint drips, spills, and overspray must be controlled. If containment is used to control paint drips, spills, and overspray, the containment shall be dropped and all equipment secured when sustained wind speeds of 64 kph (40 mph) or greater occur. When the protective coverings need to be attached to the structure, they shall be attached by bolting, clamping, or similar means. Welding or drilling into the structure is prohibited unless approved by the Engineer in writing.
- b) Coating Dry Film Thickness (dft), measured according to SSPC-PA2:
Zinc Primer: 75 microns (3 mils) min., 150 microns (6 mils) max.
Epoxy Mastic: 125 microns (5 mils) min., 180 microns (7 mils) max.
Intermediate Coat: 50 microns (2 mils) min., 100 microns (4 mils) max.
Topcoat: 50 microns (2 mils) min., 100 microns (4 mils) max.

The total dry film thickness, excluding the spot areas touched up with epoxy mastic, shall be between 180 and 355 microns (7 and 14 mils).

- c) The pressure washing requirement above may be waived if the QC and QA Inspectors verify the primed surfaces have not been contaminated.
- d) Damage to the paint system shall be spot cleaned using SSPC-SP3. The cleaned areas shall be spot painted with a penetrating sealer as recommended by the manufacturer, which shall overlap onto the existing topcoat. Then the aluminum epoxy mastic shall be spot applied not to go beyond the area painted with the sealer. The acrylic intermediate and topcoat shall be spot applied to the mastic with at least a 150 mm (6 inch) overlap onto the existing topcoat.

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Organic Zinc-Rich/ Epoxy/ Urethane Paint System. This system shall be for full shop application of the coating system, all contact surfaces shall be masked off prior to application of the intermediate and top coats.

Additional Surface Preparation. In addition to the requirements of Section 3.2.9 of the AASHTO/AWS D1.5M/D1.5:2002 Bridge Welding Code (breaking thermal cut corners of stress carrying members), rolled and thermal cut corners to be painted with organic zinc primer shall be broken if they are sharper than a 1.5 mm (1/16 in.) radius. Corners shall be broken by a single pass of a grinder or other suitable device at a 45° angle to each adjoining surface prior to final blast cleaning, so the resulting corner approximates a 1.5 mm (1/16 in.) or larger radius after blasting. Surface anomalies (burrs, fins, deformations) shall also be treated to meet this criteria before priming.

In the shop, all structural steel designated to be painted shall be given one coat of organic zinc rich primer. Before the application of the intermediate coat, the prime coat and any newly installed fasteners shall be spot solvent cleaned per SSPC-SP 1 and all surfaces pressure washed to remove dirt, oil, lubricants, oxidation products, and foreign substances. Washing shall involve the use of potable water at a pressure between 7 MPa (1000 psi) and 34 MPa (5000 psi) and according to "Low Pressure Water Cleaning" of SSPC-SP12. Paint spray equipment shall not be used to perform the water cleaning. All damaged shop primed areas shall then be spot cleaned per SSPC-SP3, and the structural steel shall then receive one full intermediate coat of epoxy and one full topcoat of aliphatic urethane.

- (a) Paint drips, spills, and overspray must be controlled. If containment is used to control paint drips, spills, and overspray, the containment shall be dropped and all equipment secured when sustained wind speeds of 64 kph (40 mph) or greater occur. When the protective coverings need to be attached to the structure, they shall be attached by bolting, clamping, or similar means. Welding or drilling into the structure is prohibited unless approved by the Engineer in writing.
- (b) Coating Dry Film Thickness (dft), measured according to SSPC-PA2:
 - organic Zinc Primer: 75 microns (3 mils) min., 125 microns (5 mils) max.
 - Aluminum Epoxy Mastic: 125 microns (5 mils) min., 180 microns (7 mils) max.
 - Epoxy Intermediate Coat: 75 microns (3 mils) min., 150 microns (6 mils) max.
 - Aliphatic Urethane Top Coat: 65 microns (2.5 mils) min., 100 microns (4 mils) max.
- (c) The total dry film thickness, excluding the spot areas touched up with epoxy mastic, shall be between 215 and 375 microns (8.5 and 15 mils).
- (d) When specified on the plans or as requested by the Contractor, and approved by the Engineer, the epoxy intermediate and aliphatic urethane top coats shall be applied in the shop. All faying surfaces of field connections shall be masked off after priming and shall not receive the intermediate or top coats in the shop. The intermediate and top coats for field connections shall be applied, in the field, after erection of the structural steel is completed. The pressure washing requirement above may be waived if the QC and QA Inspectors verify the primed surfaces have not been contaminated.
- (e) Erection and handling damage to the shop applied system shall be spot cleaned using SSPC-SP3. The surrounding coating at each repair location shall be feathered for a minimum distance of 40 mm (1 1/2 in.) to achieve a smooth transition between the prepared areas and the existing coating. The existing coating in the feathered area shall be roughened to insure proper adhesion of the repair coats. The areas cleaned to bare metal shall be spot painted with aluminum epoxy mastic. The intermediate and finish coat shall be spot applied to with at least a 150 mm (6 inch) overlap onto the existing finish coat.

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Aluminum Epoxy Mastic/ Waterborne Acrylic Paint system. This system shall be for shop or field application of the entire coating system.

Before priming with aluminum epoxy mastic the steel the surfaces to be primed shall be prepared according to SSPC SP6 for Commercial Blast Cleaning. In the field, before the application of the intermediate coat, the prime coat and any newly installed fasteners shall be spot solvent cleaned per SSPC-SP 1 and all surfaces pressure washed to remove dirt, oil, lubricants, oxidation products, and foreign substances. Washing shall involve the use of potable water at a pressure between 7 MPa (1000 psi) and 34 MPa (5000 psi) and according to "Low Pressure Water Cleaning" of SSPC-SP12. Paint spray equipment shall not be used to perform the water cleaning. All damaged shop primed areas shall then be spot cleaned per SSPC-SP3 and spot primed with aluminum epoxy mastic. The structural steel shall then receive one full intermediate coat of aluminum epoxy mastic and one full topcoat of waterborne acrylic paint.

- d) Paint drips, spills, and overspray must be controlled. If containment is used to control paint drips, spills, and overspray, the containment shall be dropped and all equipment secured when sustained wind speeds of 64 kph (40 mph) or greater occur. When the protective coverings need to be attached to the structure, they shall be attached by bolting, clamping, or similar means. Welding or drilling into the structure is prohibited unless approved by the Engineer in writing.
- e) Coating Dry Film Thickness (dft), measured according to SSPC-PA2:
Epoxy Mastic Primer: 125 microns (5 mils) min., 180 microns (7 mils) max.
Epoxy Mastic Intermediate Coat: 125 microns (5 mils) min., 180 microns (7 mils) max.
Acrylic Topcoat: 50 microns (2 mils) min., 100 microns (4 mils) max.

The total dry film thickness, excluding the spot areas touched up with epoxy mastic, shall be between 300 and 460 microns (12 and 18 mils).

- f) The pressure washing requirement above may be waived if the QC and QA Inspectors verify the primed surfaces have not been contaminated.
- d) Damage to the paint system shall be spot cleaned using SSPC-SP3. The cleaned areas shall be spot painted with a penetrating sealer as recommended by the manufacturer, which shall overlap onto the existing topcoat. Then the aluminum epoxy mastic shall be spot applied not to go beyond the area painted with the sealer. The acrylic topcoat shall be spot applied to the mastic with at least a 150 mm (6 inch) overlap onto the existing topcoat.

The paint manufacturer's product data sheets shall be available for QA review in the shop and submitted to the Engineer prior to start of field work and the requirements as outlined in the data sheets shall be followed.

Special Instructions.

Painting Date/System Code. At the completion of the work, the Contractor shall stencil in contrasting color paint the date of painting the bridge, the painting Contractors name, and the paint type code from the Structure Information and Procedure Manual for the system used. The letters shall be capitals, not less than 50 mm (2 in.) and not more than 75 mm (3 in.) in height.

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The stencil shall contain the following wording "PAINTED BY (insert the name of the painting Contractor)" and shall show the month and year in which the painting was completed, followed by "CODE S" for the Inorganic Zinc/ Acrylic System, "CODE X" for the Organic Zinc/ Epoxy/ Urethane System and "CODE U" for the Aluminum Epoxy Mastic/ Acrylic System all stenciled on successive lines. This information shall be stenciled on the cover plate of a truss end post near the top of the railing, or on the outside face of an outside stringer near both ends of the bridge facing traffic, or at some equally visible surface designated by the Engineer.

Method of Measurement. Shop cleaning and painting new structures will not be measured for payment. Field cleaning and painting will not be measured for payment except when performed under a contract that contains a separate pay item for this work.

Basis of Payment. This work will be paid for according to Article 506.07.

CLEANING AND PAINTING EXISTING STEEL STRUCTURES

Effective: October 2, 2001

Revised: February 7, 2005

Description. This work shall consist of the preparation of all designated metal surfaces by the method(s) specified on the plans. This work also includes the painting of those designated surfaces with the paint system(s) specified on the plans. The Contractor shall furnish all materials, equipment, labor, and other essentials necessary to accomplish this work and all other work described herein and as directed by the Engineer.

Materials. All materials to be used on an individual structure shall be produced by the same manufacturer.

The Bureau of Materials and Physical Research has established a list of all products that have met preliminary requirements. Each batch of material, except for the penetrating sealer, must be tested and approved before use. The specified colors shall be produced in the coating manufacturer's facility. Tinting of the coating after it leaves the manufacturer's facility is not allowed.

The paint materials shall meet the following requirements of the Standard Specification and as noted below:

<u>Item</u>	<u>Article</u>
(a) Waterborne Acrylic	1008.24
(b) Aluminum Epoxy Mastic	1008.25
(c) Organic Zinc Rich Primer (Note 1)	
(d) Epoxy/ Aliphatic Urethane (Note 1)	
(e) Penetrating Sealer (Note 2)	
(f) Moisture Cured Zinc Rich Urethane Primer (Note 3)	
(g) Moisture Cured Aromatic/Aliphatic Urethane (Note 3)	
(h) Moisture Cured Penetrating Sealer (Note 4)	

Note 1: These material requirements shall be according to the Special Provision for the Organic Zinc-Rich Paint System.

Revised 06-14-2005

CLEAN EXISTING PAVEMENT EDGE JOINT

Effective January 3, 2000

Description: This work shall consist of removing loose material and vegetation present in the existing edge of pavement joint between the pavement and bituminous shoulders. Any existing vegetation and other loose material shall be removed from the edge joint and deposited on the roadside in a method acceptable to the Engineer. The existing edge joint shall then be cleaned of any loose material using compressed air. After cleaning, any depressions in the edge joint greater than 25 mm (1") in depth shall be filled with leveling binder placed and compacted by hand methods.

Method of Measurement: Cleaning of existing pavement edge joints will be measured for payment in units of 30 m (100 ft.) along each edge of pavement.

Basis of Payment: This work will be paid for at the contract unit price per unit for CLEAN EXISTING PAVEMENT EDGE JOINT, which price shall include the removal and disposal of all vegetation and loose material and the filling with leveling binder of any resulting voids.

EARTH AND ROCK EXCAVATION

Effective June 10, 2005

Delete the second paragraph of Article 202.04 and replace with the following:

"Rock Excavation shall consist of all boulders or rocks measuring 0.5 cu m (1/2 cu yd) in volume or greater and all rock of hard material, in natural ledges or displaced masses, which is not practical to excavate and remove without the use of pneumatic tools or continuous drilling and blasting. Material which may be removed with the use of conventional earthmoving equipment will not be considered Rock Excavation."

EXCAVATION FOR STRUCTURES

Effective June 10, 2005

Delete the fourth paragraph of Article 502.03 and replace with the following:

"Rock Excavation for Structures shall consist of the excavation of boulders 0.5 cu m (1/2 cu yd) in volume or greater and all rock of hard material, in natural ledges or displaced masses, which is not practical to excavate and remove without the use of pneumatic tools or continuous drilling and blasting. Material which may be removed with the use of conventional earthmoving equipment will not be considered Rock Excavation. The Contractor may use any method he/she chooses including ripping to remove the rock excavation. Rock Excavation for Structures shall also include existing concrete, masonry, timber grillages, foundation piles and similar materials, which are not exposed to view and are not shown on the plans and for which payment is not otherwise provided."

Added 06-14-2005

BEAM STRAIGHTENING

Effective: December 6, 1994

Revised: January 23, 1997

Description: This item shall consist of furnishing all material, equipment and labor to straighten the deformed beam as shown on the plans and as directed by the Engineer.

Construction Requirements: The Contractor shall mechanically straighten the beam(s) designated on the plans utilizing jacking and/or pulling methods. The Contractor shall provide and locate jacking (pulling) units to satisfactorily straighten the beam to the limits contained herein. The use of heat will not be allowed to facilitate the beam straightening process.

The reaction to the horizontal jacking force from the bent beam shall be transmitted and absorbed through adjacent beams as shown on the plans. The force shall be perpendicular to all beams and in the same horizontal plane except as shown on the plans. The material used shall be capable of sustaining the jacking forces without crushing and shall be installed tightly between beam webs with no intermittent gaps between bearing faces. The horizontal jacking force shall be distributed to the beam through horizontal rigid beams ± 1.2 m ($\pm 4'$) long to prevent distortion of the webs. Vertical jacking may be performed either before or in conjunction with horizontal jacking (pulling). The vertical jacking forces to the bottom flange shall also be distributed along a rigid beam of sufficient length positioned parallel to the axis of the beam to prevent distortion to the flange. During jacking operations the contractor shall support the top flange of the beam being straightened to keep the flange from "rolling" or pulling away from the slab.

The beam shall be straightened as near plumb (web) or horizontal (flange) as practical but not to exceed the "as built" sweep, camber or rolling distortions of the flanges. Previous minor impact damage in remaining beams shall not be used as a measure of straightness.

If the method of beam straightening differs from that shown on the plans, it shall be approved by the Engineer prior to ordering materials and straightening.

Basis of Payment: The work as specified herein shall include all materials, equipment and labor necessary to satisfactorily straighten the beam and shall be paid for at the contract lump sum price for BEAM STRAIGHTENING.

STRUCTURAL STEEL REPAIR

Effective: December 15, 2000

Revised: February 7, 2005

Description. This work shall consist of furnishing all labor, equipment and materials necessary to furnish and install steel repair plates and members, according to Section 505 and removal and disposal of structural steel members as necessary according to Section 501 of the Standard Specifications, as indicated on the plans and in this special provision.

Construction Requirements. Existing members noted in the plans to have structural steel repair, that are also noted to be straightened, shall be straightened prior to the connection of any new steel repair plates or members. If beam straightening is required, it shall not be included in this item and shall be paid for separately.

Added 06-14-2005

Where required to align with existing holes, field drilling of holes in new members shall be accomplished using existing holes as a template unless field measurements are used to verify the plan dimensions. Burning of holes will not be permitted. All field drilling and grinding necessary to furnish and install the new steel plates and members shall be included in this item.

The removal and disposal of any existing members, bolts or rivets necessary for the installation of the new members as shown in the plans shall be included in this item. Burning of existing rivets will only be allowed near steel surfaces which are to be removed and discarded. Burning of existing rivets will not be allowed for members to remain in place or members that are to be removed and reinstalled. When burning of rivets is not allowed, the head of the rivet shall be sheared off and the shank driven or drilled out. Extreme care shall be taken while removing the rivets so as not to damage the existing structural steel which is to remain. All damage to existing members which are to remain shall be repaired or the member replaced to the satisfaction of the Engineer. Repair or replacement of damaged members shall be at the Contractor's expense.

Basis of Payment. This work shall be paid for at the contract unit price per kilogram (pound) for STRUCTURAL STEEL REPAIR.