

FEBRUARY 1, 2019
REHABILITATION OF BRIDGE 00061 STRAWBERRY HILL
AVENUE OVER I-95
FEDERAL AID PROJECT NO. 1102(122)
STATE PROJECT NO. 0102-0363
CITY OF NORWALK

ADDENDUM NO. 2

This Addendum addresses the following questions and answers contained on the “CT DOT QUESTIONS AND ANSWERS WEBSITE FOR ADVERTISED CONSTRUCTION PROJECTS”:

Question and Answer Nos. 18, 32, 33, 35, 39, 40, 43 and 48.

SPECIAL PROVISIONS
NEW SPECIAL PROVISION

The following Special Provision is hereby added to the Contract:

- ITEM #0686000.15A – 15” R.C. PIPE - 0’ - 10’ DEEP

REVISED SPECIAL PROVISIONS

The following Special Provisions are hereby deleted in their entirety and replaced with the attached like-named Special Provisions:

- ITEM #0202000A – EARTH EXCAVATION
- ITEM #0406125A – BITUMINOUS CONCRETE SURFACE PATCH
- ITEM #0507902A – DRIVEWAY DRAIN
- ITEM #0603061A – STRUCTURAL STEEL (SITE NO. 1)

DELETED SPECIAL PROVISION

The following Special Provision is hereby deleted in its entirety:

- ITEM #0401152A – CONCRETE PAVEMENT REPLACEMENT FOR ROADWAY (FULL DEPTH)

CONTRACT ITEMS

NEW CONTRACT ITEM

<u>ITEM NO.</u>	<u>DESCRIPTION</u>	<u>UNIT</u>	<u>QUANTITY</u>
0207000	BORROW	C.Y.	532

REVISED CONTRACT ITEMS

<u>ITEM NO.</u>	<u>DESCRIPTION</u>	<u>ORIGINAL QUANTITY</u>	<u>REVISED QUANTITY</u>
0202000A	EARTH EXCAVATION	680 C.Y.	1,320 C.Y.
0822002	RELOCATED TEMPORARY PRECAST CONCRETE BARRIER CURB	2,080 L.F.	4,680 L.F.

DELETED CONTRACT ITEM

<u>ITEM NO.</u>	<u>DESCRIPTION</u>	<u>ORIGINAL QUANTITY</u>	<u>REVISED QUANTITY</u>
0401152A	CONCRETE PAVEMENT REPLACEMENT FOR ROADWAY (FULL DEPTH)	10 C.Y.	0

PLANS

REVISED PLANS

The following Plan Sheets are hereby deleted and replaced with the like-numbered Plan Sheets:

- 02.01.A2
- 03.17.A2
- 03.18.A2
- 03.19.A2
- 05.06.A2

The Bid Proposal Form has been revised to reflect these changes.

The Detailed Estimate Sheets do not reflect these changes.

There will be no change in the number of calendar days due to this Addendum.

The foregoing is hereby made a part of the contract.

ITEM #0686000.15A – 15” R.C. PIPE - 0’-10’ DEEP

The work shall conform to Section 6.86 supplemented as follows:

Article 6.86.01 – Description add the following:

The 12’ - 15” R.C. Pipe at Norden Place from the catch basin Station 20+63, 24’ Left shall include a 15” Elbow with a deflection angle of 20 degrees.

Article 6.86.03 – Construction Methods add the following:

The 15” Elbow shall be installed at the catch basin located on Norden Place Station 20+63, 24’ Left and shall be installed to align the new pipe with the existing pipe.

Article 6.86.04 – Method of Measurement is supplemented with the following:

There will be no measurement for the 15” Elbow. The 15” Elbow will be included in the lineal foot measurement for 15” R.C. Pipe.

Article 6.86.05 – Basis of Payment is supplemented with the following:

There will be no separate payment for the 15” Elbow. The 15” Elbow will be included in the lineal foot payment for 15” R.C. Pipe.

Pay Item

Pay Unit

15” R.C. Pipe – 0’-10’ Deep

L.F.

ITEM #0202000A – EARTH EXCAVATION

Work under this item shall conform to Section 2.02 supplemented as follows:

Article 2.02.01 – Description:

Add the following: The work shall include the excavation, removal and disposal of bituminous concrete pavement, sidewalk and curbing as called for on the plans or as directed by the Engineer. The work will include all sidewalk and curb type.

Article 2.02.04 – Method of Measurement:

Add the following: Bituminous concrete pavement, sidewalk and curbing to be removed will be measured for payment by the volume in cubic yards of the bituminous concrete pavement, sidewalk or curbing removed.

Article 2.02.01 – Basis of Payment:

Add the following: Bituminous concrete pavement, sidewalk and curbing to be removed will be paid for at the contract unit price per cubic yard for “Earth Excavation”.

Pay Item

Earth Excavation

Pay Unit

C.Y.

ITEM #0406125A – BITUMINOUS CONCRETE SURFACE PATCH

Description: This work shall consist of milling out deteriorated bituminous concrete pavement to a depth between 1.5 to 2.5 inches and milling to expose existing concrete pavement as shown on the plans, disposing of pavement millings, removing loose and spalled concrete pavement, cleaning concrete pavement of loose and foreign material, sweeping and cleaning, application of tack coat on all surfaces within milled area, and placement of Hot-Mix Asphalt (HMA) or an equivalent Polymer Modified Asphalt (PMA) to match the elevation of the surrounding pavement.

For road sections being milled and paved, all patching operations must be completed after milling is complete and before paving begins. All patching operations shall be completed within one working day following milling and shall be completed before traffic is permitted to resume on the exposed roadway.

For concrete pavement the work shall consist of the removal of spalled, delaminated or otherwise deteriorated concrete from the existing Portland Cement Concrete (PCC) Pavement by milling or other methods.

Materials: Materials for this work shall meet the requirements of Section M.04 and shall consist of the following:

1. HMA S0.375 or an equivalent PMA. All HMA, or PMA, shall be Traffic Level 2 unless indicated otherwise on the plans.
2. Tack coat.

Construction Methods:

Equipment for this work shall include, but is not limited to, the following:

1. Milling machine: A milling machine designed and built for milling flexible and rigid pavements. It shall be self-propelled with sufficient power, traction, and stability to maintain depth and slope and shall be capable of removing the existing bituminous concrete pavement or concrete pavement.

The rotary drum of the machine shall use carbide tip tools spaced not more than 5/8 inches apart. The forward speed of the milling machine shall be a maximum of 45 feet/minute. The tools on the revolving cutting drum must be continually maintained and shall be replaced as warranted to provide a uniform pavement texture.

The machine shall be equipped with an integral pickup and conveying device to immediately remove milled material from the surface of the roadway and discharge the millings into a truck, in one operation. The machine shall also be equipped with a means of effectively limiting the amount of dust escaping from the milling and removal operation. When milling smaller areas or areas where it is impractical to use the above described equipment, the Contractor may be permitted to use a lesser equipped milling machine, if approved by the Engineer.

In addition, the minimum milling width shall be 20 inches, making the minimum achievable patch size 20 inches by 20 inches, or 0.30 square yards.

2. 10 foot straight edge.

3. Sweeper: A sweeper, equipped with a water tank, capable of remove millings and loose debris.
4. Air compressor: An air compressor capable of producing 100 psi, oil free, compressed air for cleaning the milled pavement surface.
5. Hot air lance: A hot air lance that can deliver 100 psi, oil free heated air to clean and dry the pavement surface. The compressed air emitted from the tip of the lance shall achieve a temperature of at least 1500° F.
6. Paving and compaction equipment: Paving and compaction equipment meeting the requirements of Section 4.06. It is expected that much of the placement will require hand work or a mixture of equipment and hand tools to achieve the required results. Smaller compaction equipment, including vibratory plate compactors, will be allowed by the Engineer to achieve the required results. At all times the Contractor is required to meet the density and compaction and all other requirements specified in Sections 4.06 and M.04.
7. Portable lighting equipment: If the work is performed at night a truck towed light tower and driver shall be provided for use by the Engineer for all marking, installation and inspection of the patches.
8. Tack Coat Distributor: A minimum 150-gallon capacity tank that is trailer mounted or self-propelled and capable of applying tack coat meeting the requirements of Section 4.06.

The work shall include, but is not limited to, the following:

1. Demarcating: The Engineer will mark out areas for patching and will determine the appropriate milling depth between 1.5 inches and 2.5 inches. The minimum length and width dimension of the patch shall be 20 inches. Any area to be patched shall completely encompass the entire distressed pavement area and extend at least 6 inches beyond into the surrounding pavement wherever possible.
2. Milling: Mill marked out areas to specified depths
3. Sweeping, Cleaning and Drying: Sweep the milled and PCC repair area surface clean and allow milled areas to dry. Any moisture in or on the milled areas must be allowed to evaporate or be removed with the assistance of the hot air lance. When the milled area is dry to the satisfaction of the Engineer, it shall be blown clean of any residual dust or debris using compressed air.
4. Applying Tack Coat: Apply tack coat to the entire clean and dry milled and PCC repair area, including the sides/walls of the area to be patched, and in accordance with the requirements of Section 4.06.
5. Placing Patch Material: After the tack coat has had sufficient time to cure or break, HMA S0.375, or equivalent PMA, shall be placed and compacted to the requirements above and in Section 4.06. The Contractor shall confirm that the surface elevation of the finished patch matches the elevation of the surrounding pavement surface to within 1/4 inch using the 10 foot straightedge. The Contractor shall confirm that all patch material placed is uniform in appearance without segregation.
6. Existing PCC Pavement shall be repaired so as to provide a clean, sound, and durable surface throughout. The areas to be removed shall be identified and marked by the Engineer. All spalled, delaminated, and deteriorated concrete shall be identified and marked for repair. Remove the existing concrete pavement from the repair area to a

maximum depth of 2” using a milling machine meeting the requirements stated above. Other removal methods and equipment may be used for deeper repairs or for smaller areas where a milling machine is impractical to use, as approved by the Engineer.

Method of Measurement: This work will be measured by the number of square yards of patched bituminous concrete completed and accepted.

Basis of Payment: This work will be paid for at the Contract unit price per square yard of “Bituminous Concrete Surface Patch.” The price shall include all tools, materials, labor and equipment; milling, removing, and disposing of pavement millings and loose and spalled PCC from repair areas; sweeping and cleaning of the milled and PCC repair area; drying the milled and PCC repair area; applying tack coat to the milled and PCC repair area; and placement and compaction of HMA or PMA.

Pay Item	Pay Unit
Bituminous Concrete Surface Patch	s.y.

ITEM #0507902A – DRIVEWAY DRAIN

This work shall conform to Section 5.07 of Form 817 supplemented as follows:

Article 5.07.01 – Description:

Add the following:

The work shall include the installation of a driveway drain at the location and dimensions as shown on the plans or as directed by the Engineer. The work shall include the excavation, placement of the drain, concrete collar, drain pipe and fittings and connection to the catch basin in Strawberry Hill Avenue.

Article 5.07.02 – Materials:

Add the following:

The trench grate shall be cast iron to the dimensions as shown on the plans or as approved by the Engineer.

Concrete shall be Class C in accordance with M.03.02.

Reinforcing steel shall be in accordance with Section 6.02.

Outlet pipe and bends shall be 6 inch HDPE in accordance with M-08.

Transition fitting at drain outlet to be compatible for use with cast iron and HDPE.

Article 5.07.04- Method of Measurement

Add the following:

Driveway Drain will be measured for payment by the actual number of driveway drains installed, completed, and accepted which shall include the excavation, drain structure, installation, concrete collar, drainage pipe and connection to the catch basin.

Article 5.07.05 – Basis of Payment

Add the following:

Driveway Drain will be measured for payment by the actual number of driveway drains installed, completed, and accepted which shall include the excavation, drain structure, installation, concrete collar, drainage pipe and connection to the catch basin labor and materials incidental thereto.

Pay Item	Pay Unit
Driveway Drain	Each

ITEM #0603061A – STRUCTURAL STEEL (SITE NO. 1)

Section 6.03 is supplemented and amended as follows:

6.03.01—Description: *After the third paragraph, add the following:*

“This special provision provides additional requirements for the surface preparation, shop painting, and field touch-up painting of new structural steel.

The requirements herein are waived for temporary works, including any structural steel that is not to be left in place upon completion of the project.”

6.03.02—Materials: *After the second paragraph, add the following:*

“Painting materials for this work shall conform to the following:

- The Contractor shall select a three-coat system from the qualified product List A or B, issued by the Northeast Protective Coating Committee (NEPCOAT). The approved NEPCOAT listings may be found at the NEPCOAT website at <http://www.nepcoat.org/>
- The system chosen shall have a prime coat that has achieved a Class ‘B’ slip coefficient for faying surfaces. Top coat paint color shall be as noted on the plans.
- Both the shop painted and field touchup applied coating systems shall be of the same three-coat system. A compatible organic zinc rich primer shall be used for any necessary field touch up.
- The same coating material manufacturer shall furnish all materials for the complete coating system. Intermixing of materials within and between coating systems will not be permitted.
- Thinning of paint shall conform to the manufacturer’s written instructions.

All components of the coating system and the mixed paint shall comply with the Emission Standards for Volatile Organic Compounds (VOC) Content Limits and Emission Standards stated in the Connecticut Department of Energy and Environmental Protection's Administration Regulation for the Abatement of Air Pollution, Sections 22a-174-41 through 41a and 22a-174-20(s), respectively.”

6.03.03—Construction Methods: *Revise Subarticle 4(f) “Field Erection - High Strength Bolted Connections” as follows:*

Replace the first sentence of the fourth paragraph “Surface Conditions: At the time of assembly ... other foreign material.” with the following:

“Connection faying surfaces within portions of structural steel designated to be painted shall receive a single coat of primer in accordance with requirements stipulated elsewhere in this special provision.”

Delete the fifth paragraph of Subarticle 4(f) and the three bulleted paragraphs after it:
“Paint is permitted on ... wire brushing is not permitted.”

After the last paragraph of Article 6.03.03, before Tables A through C, add the following:

“The painting application shall be done in compliance with the following requirements:

Qualifications of Shop Painting Firm: All shop painting of structural steel must be performed by and in an enclosed shop that is certified by the SSPC Painting Contractor Certification Program QP-3, entitled “Standard Procedure for Evaluating Qualifications of Shop Painting Contractors” in the enclosed shop category or by a shop that holds an AISC Quality Certificate with a “Sophisticated Paint Endorsement” in the enclosed shop category. The firm shall be fully certified, including endorsements, for the duration of the surface preparation and coating application. A copy of the subject certification shall be provided to the Engineer prior to commencing any surface preparation or coating application.

The shop painting firm is required to have at least one (1) **Coating Application Specialist (CAS) (SSPC ACS/NACE No. 13)**-certified (Level II-Interim Status-Minimal) craft-worker. CAS-certified (Level II-Interim Status-Minimal) craft-worker(s) are required for all crews/craft-workers up to four (4) crew members. For each crew larger than four (4), an additional CAS-certified (Level II-Interim Status-Minimal) craft-worker shall be present on each painting/blasting crew during blast cleaning and spray application (Atmospheric and Immersion Service) operations. A crew-member is a person who is on the job performing hand-held nozzle blast cleaning and/or spray application of protective coatings on a steel structure. The certification(s) must be kept current for the duration of the Project work.

The complete coating system shall be applied in an enclosed shop except for field touch-up painting which shall be applied after all bolts are fully tensioned and deck formwork removed. The enclosed shop shall be a permanent facility with outside walls to grade and a roof where surface preparation and coating activities are normally conducted in an environment not subject to outdoor weather conditions or blowing dust.

Quality Control Inspection of Shop Painting: The firm performing shop painting of the structural steel shall have a written quality control (QC) program. A copy of the QC program and record keeping procedures shall be provided to the Engineer prior to commencing any surface preparation or coating application. The program shall contain, but not be limited to, the following:

1. Qualifications of QC staff.
2. Authority of QC staff. QC staff must have the authority to stop non-conforming work.
3. Procedure for QC staff to advise operation supervisor, in writing, of non-conforming work.
4. Sample copy of QC inspection reports that will document compliance with specifications.
5. Procedure for calibrating inspection equipment and recording calibration.
6. Procedure for repairing defective coating applications.

The Contractor or Shop shall provide at least one Quality Control Inspector for the duration of the shop application to provide Quality Control. The QC Inspector must be a National Association of Corrosion Engineers (NACE) Certified Coating Inspector Level 3 with Peer Review. The QC Inspector shall verbally inform the Engineer on a daily basis, of the progress and any corrective

actions performed on the coating work. The QC Inspector shall be present during all cleaning and coating operations.

The Contractor or Shop shall be responsible for purchasing and providing the latest version of the NACE Coating Inspector Log Book(s) and all necessary inspection tools. The Contractor's QC Inspector shall stamp the front page of each inspector's log book used during painting operations. The stamped book(s) shall indicate the inspector's NACE certification number, certification expiration date and shall also be signed. All daily coating activity shall be recorded in the Log Book. Copies of the log entries shall be provided on a daily basis to the Department's Quality Assurance (QA) shop representative. Upon completion of the coating, the log book(s) shall then be furnished to the Department's QA shop representative.

Technical Advisor: The Contractor or Shop shall obtain the services of a technical advisor who is employed by the coating manufacturer to assist the Engineer and shop painting firm during this work. The technical advisor shall be a qualified representative and shall be made available at the Shop upon request by the QC Inspector or the Engineer.

Surface Preparation: The following steps shall be performed prior to abrasive blast cleaning of steel members:

1. All corners and edges shall be rounded to a 1/16-inch radius or chamfered to a 1/16-inch chamfer.
2. All fins, slivers and tears shall be removed and ground smooth.
3. All rough surfaces shall be ground smooth.
4. Flame cut edges shall be ground over their entire surface such that any hardened surface layer is removed, and subsequent abrasive blast cleaning produces the specified surface profile depth.

Immediately before abrasive blast cleaning all steel members shall be solvent cleaned in accordance with SSPC-SP1 - "Solvent Cleaning."

Abrasive blast cleaning shall be performed in accordance with SSPC-SP 10 - "Near White Blast Cleaning" using a production line shot and grit blast machine or by air blast. The abrasive working mix shall be maintained such that the final **surface profile** is within the range described herein.

The QC Inspector shall test the abrasive for oil, grease or dirt contamination in accordance with the requirements of ASTM D7393 and document the test results. Contaminated abrasive shall not be used to blast clean steel surfaces. The blast machine shall be cleared of all contaminated abrasive and then solvent cleaned thoroughly in accordance with SSPC-SP 1 "Solvent Cleaning." New uncontaminated abrasive shall be added. Abrasive shall be tested for contaminants in accordance with the requirements of ASTM D7393 prior to the start of blast cleaning operations and at least every four hours during the blast cleaning operations.

All compressed air sources shall have properly sized and designed oil and moisture separators, attached and functional, to allow air at the nozzle, either for blast cleaning, blow-off, painting or breathing, to be oil-free, and moisture-free. The equipment shall have sufficient pressure to accomplish the associated work efficiently and effectively.

The QC Inspector shall perform the blotter test and document the results at the start of each blasting shift and at least every four hours during the blasting operation to ensure that the compressed air is free of oil and moisture. The blotter test shall be performed in accordance with the procedure outlined in ASTM D4285. For contaminated air sources, the oil and moisture separators shall be drained and the air retested.

No surface preparation or coating shall be done when the relative humidity is at or above 80 percent or when the surface temperature of the steel is less than five (5) degrees Fahrenheit above the dewpoint temperature as determined by a surface thermometer and an electric or sling psychrometer.

Surface Profile: The steel surface profile shall be 1 to 3 mils. Each girder or beam shall have the surface profile measured at a minimum of three locations in accordance with the test requirements of ASTM D4417, Method C. Smaller pieces such as diaphragms shall have the surface profile measured at a minimum of three locations on one piece at the beginning of abrasive blast operations and at least every four hours and at the end of abrasive blast cleaning operations. This measurement shall be performed with both coarse (0.8-2.0 mils) and extra coarse (1.5-4.5 mils) replica tape. During this measurement, special attention shall be given to areas that may have been shielded from the blast wheels, such as the corners of stiffeners and connection plates. The impressed tapes shall be filed in the NACE Coating Inspector's Log Book.

Application Methods: The coating system shall be applied by spray equipment of a type and size capable of applying each coat within the required thickness range. The applicator shall strictly adhere to the manufacturer's written recommendations for application methods, cure times, temperature and humidity restrictions and recoat times for each individual coat of the specified system. However, in no case shall coatings be applied in ambient conditions that exceed the relative humidity and dewpoint temperature control limits specified herein. Brushes shall be used in areas where spray application will not achieve acceptable results. Brushing technique shall be performed in a manner that will provide a uniform, blended finish.

Conventional spray equipment with mechanical agitators shall be used for prime coat application.

All storage, mixing, thinning, application and curing techniques and methods shall be accomplished in strict accordance with the printed material data sheets and application instructions published by the respective coating material manufacturer.

Surfaces shall be painted with the specified prime coat material before the end of the same work shift that they were blast cleaned and before any visible rust back occurs. Applied coatings shall not have runs, sags, holidays, pinholes or discontinuities.

The dry film thickness shall be within the range specified in the manufacturer's printed literature for the specified coating system. Dry film thickness shall be measured in accordance with SSPC-PA 2. The prime, intermediate and top coats shall be of contrasting colors as determined by the Engineer. There shall be no color variation in the topcoat as determined by comparison with Federal Standard 595.

Areas Requiring Special Treatment: All steel surfaces shall receive the three-coat shop applied system as specified except the following particular area types which shall be treated as follows:

1. Faying surfaces of connections shall receive a single application of primer. The dry film thickness shall be no greater than the thickness tested on the coating manufacturer's Certified Test Report for slip coefficient.
2. All steel surfaces within four (4) inches of field welds shall receive a single mist coating of primer at 0.5 - 1.5 mils dry film thickness.
3. Top surfaces of top flanges that will be in contact with concrete shall receive a single mist coating of primer at 0.5 - 1.5 mils dry film thickness.
4. Edges and shop welds shall be locally hand-stripped with a brush in the longitudinal direction with an additional coat of an appropriate zinc-rich primer prior to application of the full intermediate coat. The application of the striping materials shall be in accordance with the coatings manufacturer's written instructions. The striping material shall be a contrasting color to distinguish it from the primer and intermediate coats.
5. The interior surfaces of box girders, including bracing, shall be prepared in accordance with these specifications then coated with the first two coats of the three-coat system. The intermediate coat in these areas shall be white and match Federal Standard 595 Color Number 27925.

Adhesion: Adhesion strength of the fully coated assemblies shall be the more restrictive of the manufacturer's specified adhesion strength or at least 600 psi for systems with organic zinc primers and at least 250 psi for systems with inorganic zinc rich primers measured as per ASTM D4541 using apparatus under Annex A4. All adhesion test locations shall be recoated in accordance with this specification at no additional cost. The QC Inspector shall perform adhesion strength tests every 500 sf and shall document the adhesion strength test results.

If adhesion test results are less than the specified value, but equal to or greater than 80% of the specified value, four (4) additional adhesion tests shall be taken within the 500 sf area of the failed test. If any of the additional adhesion tests are less than the specified value, the coating shall be removed from the entire piece and re-applied at the Contractor's expense. If any adhesion tests are less than 80% of the specified value, the entire coating system shall be removed from the piece and re-applied at the Contractor's expense.

Smaller pieces such as diaphragms shall be analyzed in lots that have an overall coated surface area of approximately 500 sf.

Protection of Coated Structural Steel: All fully coated and cured assemblies shall be protected from handling and shipping damage with the prudent use of padded slings, dunnage, separators and tie downs. Loading procedures and sequences shall be designed to protect all coated surfaces. Erection marks for field identification of members and weight marks shall be affixed in such a manner as to facilitate removal upon final assembly without damage to the coating system.

Field Touch-Up Painting of Shop Applied Coating: Field touch-up painting shall be undertaken by the Contractor for the purpose of completing coating applications of masked-off areas at splices, connections, and for the repair of coated surfaces damaged during shipment or

construction, as directed by the Engineer. The Aesthetics of any field painting is very important. Every effort must be made to perform any field painting in a professional manner that does not affect the appearance or aesthetic value of the structural steel in any way. Significant color variations or texture changes between the shop painting and field painting will not be allowed. The Contractor will be required to perform any additional field painting work required to provide consistent color and texture throughout the structural steel. This is especially true for all Fascia surfaces and areas exposed to public view. The Engineer will be the sole judge on color variations and textures variations of the field painting.

The Painting Contractor shall submit for approval by the Engineer a complete coating application procedure for all touch-up painting and corrective work. .

The field applied coating for touch-up painting shall be the same system used in the shop applied application. The intermediate and topcoat material for field touch-up painting shall be from the same lot and batch used in the shop provided its shelf life has not expired. If the shelf life has expired, the same material of the same color from a different lot and batch shall be used.

Field application of coatings shall be in accordance with the manufacturer's written application guidelines and these specifications. All areas cleaned to bare metal must be coated with zinc-rich primer before any visible rusting occurs.

After all concrete is placed and the forms are removed, all rust, scale, dirt, grease, concrete splatter and other foreign material shall be completely removed from all painted surfaces. All surfaces to be field painted shall also be cleaned by solvent cleaning in accordance with SSPC-SP 1, hand tool cleaning SSPC-SP 2, and power tool cleaning SSPC-SP 3 and SSPC-SP 11. Areas cleaned to SSPC-SP 11 must have a 1-3 mil profile and must be primed prior to rusting. All debris generated from cleaning operations must be contained and properly disposed of by the Contractor.

Bolts, nuts, washers and surrounding areas shall receive brush applications of intermediate and topcoat after final tensioning. Careful attention shall be given to bolted connections to insure that all bolts, nuts and washers are fully coated and that no gaps are left unfilled and uncoated.

Damage to the coating system that extends to the steel surface (such as scratches, gouges or nicks), shall have the entire three-coat system locally reapplied after power tool cleaning to bare metal in **accordance with SSPC-SP 11. The coating system adjacent to the damage shall be feathered back to increase** the surface area for touch up painting. The area cleaned to SSPC-SP 11 shall be primed with a zinc-rich primer before rusting occurs.

Damage to the coating system that extends back only to the prime or intermediate coat, shall only have the topcoat applied. Application of the touch-up materials in these damaged areas shall be performed by brush only.

During any field painting the Contractor shall protect property, pedestrians, vehicular and other traffic upon, underneath, or in the vicinity of the bridge, and also all portions of the bridge superstructure and substructure against damage or disfigurement from errant coating materials.

Tarps shall be used to collect all surface preparation debris. The Contractor shall be responsible for disposing of all removed materials, including tarps.

Contractor – Subcontractor Qualifications: Contractors and subcontractors doing field touchup painting work are required to be certified by the SSPC Painting Contractor Certification Program (PCCP) to QP-1, entitled “Standard Procedure for Evaluating Qualifications of Painting Contractors (Field Application to Complex Structures)” at the time of field touchup coating application.

Contractors and subcontractors are required to have at least one (1) **Coating Application Specialist (CAS) (SSPC ACS/NACE No. 13)**-certified (Level II-Interim Status-Minimal) craft-worker. CAS-certified (Level II-Interim Status-Minimal) craft-worker(s) are required for all crews/craft-workers up to four (4) crew members. For each crew larger than four (4), an additional CAS-certified (Level II-Interim Status-Minimal) craft-worker shall be present on each painting/blasting crew during blast cleaning and spray application (Atmospheric and Immersion Service) operations. A crew member is a person who is on the job performing hand-held nozzle blast cleaning and/or spray application of protective coatings on a steel structure. The certification(s) must be full, not interim, and must be kept current for the duration of the Project work. If a Contractor’s, subcontractor’s or any craft-worker’s certification expires, the firm will not be allowed to do any work on this item until the certification is reissued.

Requests for extension of time for any delay to the completion of the Project due to an inactive certification will not be considered and liquidated damages will apply. At the option of the Engineer, if such a delay will adversely impact the successful and timely completion of the Project, the Department may require the Contractor to engage another SSPC certified contractor to do the painting work at the prime contractor’s expense.

Quality Control Inspection of Field Touchup Painting: The Contractor performing field touchup painting of the structural steel shall have a written quality control (QC) program. A copy of the QC program and record keeping procedures shall be provided to the Engineer prior to commencing any surface preparation or coating application. The program shall contain, but not be limited to, the following:

1. Qualifications of QC staff.
2. Authority of QC staff. QC staff must have the authority to stop non-conforming work.
3. Procedure for QC staff to advise operation supervisor, in writing, of non-conforming work.
4. Sample copy of QC inspection reports that will document compliance with specifications.
5. Procedure for calibrating inspection equipment and recording calibration.
6. Procedure for repairing defective coating applications.

The Contractor shall provide at least one (1) Coating Inspector who is a National Association of Corrosion Engineers (NACE) Certified Coating Inspector Level 3 with Peer Review for the duration of the field application to provide Quality Control. The QC Inspector shall verbally inform the Engineer on a daily basis, of the progress and any corrective actions performed on the coating work. The QC Inspector shall be present during all cleaning and coating operations.

The Contractor shall be responsible for purchasing and providing the latest version of the NACE Coating Inspector Log Book(s) and all necessary inspection tools. The Contractor's QC Inspector shall stamp the front page of each inspector's log book used during painting operations. The stamped book(s) shall indicate the inspector's NACE certification number, certification expiration date and shall also be signed. All daily coating activity shall be recorded in the Log Book. Copies of the log entries shall be provided on a daily basis to the Department's Quality Assurance (QA) field representative. Upon completion of the coating, the log book(s) shall then be furnished to the Department's QA field representative.

General: The word "PAINTED" followed by the month and year the painting of the structure is completed along with the ConnDOT Project Number and the manufacturer's abbreviations for each of the three coats, shall be stenciled on the inside of a fascia girder at mid-depth of the girder in three (3) inch high block letters located near the abutment, so as to be clearly visible from the ground below. Paint for stenciling information shall be of a contrasting color and be compatible with the topcoat."

6.03.05—Basis of Payment: *Add the following at the end of the second paragraph:*

"Payment for either method for new structural steel, complete in place, shall also include shop painting, all field touch-up painting and corrective or repair field painting, QC Inspector(s), QC Log Book(s) and testing equipment, technical advisor, "Painted" stencil, equipment, tools and labor incidental thereto."