

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-845-3

CODE: (SP)

DATE: 8/24/2014

SUBJECT: Coating Existing Structural Steel

**PROJECT: BR-0015-01(129) / 106736301 – Adams County, Mississippi
Concordia Parish, Louisiana**

Section 907-845, Coating Existing Structural Steel, is added to the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction as follows.

SECTION 907-845 – COATING EXISTING STRUCTURAL STEEL

907-845.01--Description. This work consists of furnishing all labor, material, and equipment required for coating existing structural steel in accordance with the requirements of this Section, by removing and replacing the existing coating where shown in the plans or described herein.

907-845.02--Materials.

907-845.02.1--Coating Systems. One of the following organic zinc/epoxy/urethane three-coat systems, or an approved equal, shall be used for removal and replacement of paint.

| | 1st | 2nd | 3rd |
|---------------------|------------------------------------|----------------------------------|------------------------------------|
| Carboline | Carbozinc 859 dft = 3-5 mils | Carbogaurd 888 dft = 3-5 mils | Carbothane 133LH dft = 3-5 mils |
| Ameron | Amercoat 68HS dft = 3-5 mils | Amercoat 399 dft = 4-8 mils | Amercoat 450H dft = 3-5 mils |
| Sherwin Williams | Zinc Clad III HS dft = 3-5 mils | Macropoxy 646 dft = 5-10 mils | Acrolon 218HS dft = 3-6 mils |

907-845.02.2--Thinners, Solvents and Cleaners. Only thinners, solvents and cleaners listed on the coating manufacturer's product data sheet shall be used.

907-845.02.3--Caulking. Only Caulks that are paintable, compatible with the coating system, and recommended by the coating manufacturer as part of the coating system shall be used.

907-845.02.4--Soluble Salts Test Kit. Soluble salts test kit shall be in accordance with SSPC-Guide 15 utilizing a Class A retrieval method. The test sleeve or cell shall create a sealed, encapsulated environment during ion extraction and be suitable for testing all structural steel surfaces.

907-845.02.5--Abrasives. Properly sized abrasives shall be used to achieve the required cleanliness and surface profile. Abrasives shall meet the requirements of SSPC-AB 1, Mineral and

Slag Abrasives, SSPC-AB 2, Cleanliness of Recycled Ferrous Metallic Abrasives, or SSPC-AB 3, Ferrous Metallic Abrasive and shall not introduce any contamination that interferes with the coating application and performance. The Contractor shall provide a certification to the Engineer that the abrasives used meet the requirements of this specification and do not contain any chlorides and other salts.

For recycled abrasives, the Contractor shall verify compliance with the conductivity and cleanliness requirements of SSPC-AB 2 after each recycling or more frequently if required by the Engineer. A sample shall be selected from each recycling machine in use and water-soluble contaminant and oil content tests conducted as outlined in SSPC-AB 2 at least one time each week or more frequently if directed by the Engineer. The non-abrasive residue and lead content tests shall be conducted as directed by the Engineer. If test results do not meet requirements, the Engineer shall be notified immediately, the abrasive shall be removed and replaced, the recycling equipment shall be cleaned, and tests conducted each day to confirm the equipment is functioning properly. Testing shall return to the weekly testing interval as directed by the Engineer.

907-845.02.6--Rust Preventative Compound. The rust preventative compound shall be a Class 3 compound meeting the requirements of Military Specification MIL-C-11796C, Corrosion Preventative Compound, Petrolatum, Hot Applied.

907-845.02.7--Storage. Materials shall be stored in conformance with the manufacturer's recommendations.

907-845.03--Construction Requirements.

907-845.03.1--Compressed Air. The compressed air system shall be capable of delivering clean, dry, continuous nozzle pressure to achieve the required surface cleanliness and profile or spray pattern. The system must comply with the instructions and recommendations of the manufacturer of the abrasive blasting system or coating application system.

907-845.03.2--Abrasive Blasting System. The blasting system shall be designed to produce the specified cleanliness and profile.

907-845.03.3--Coating Application System. The coating application equipment shall be approved by and in accordance with the Coating Manufacturer's technical data requirements.

907-845.03.4--Quality Control. The Contractor shall provide a current Corporate Quality Control Plan approved by SSPC under the SSPC QP1 and SSPC QP2 certifications as appropriate and a site specific Coating Quality Control Plan to the Engineer at least 14 calendar days prior to beginning coatings work. The Contractor shall not begin coatings work until the site specific Coating Quality Control Plan has been approved by the Engineer.

The Contractor shall submit a specific traffic control plan for each phase of the work that conforms to the project plans and specifications. The Contractor shall not begin work until the traffic control plan is approved by the Department.

907-845.03.5--Inspection. All inspection equipment shall be maintained in accordance with the manufacturer's instructions, calibrated, and in good working condition. All activities shall be observed and approved by a quality control coatings inspector meeting the requirements of this specification. Daily inspection reports shall be maintained at the job site for review by the Engineer. All daily inspection reports shall be proved to the Engineer upon completion of the project, or more frequently as requested by the Engineer.

907-845.03.6--Qualifications.

907-845.03.6.1--Field Contractor. The Field Contractor shall provide documentation to the Engineer at least 14 days prior to beginning work that the field contractor performing any work in accordance with this specification is certified by SSPC to the requirements of SSPC-QP1 and/or SSPC-QP2 as appropriate.

907-845.03.6.2--Quality Control Inspectors in the Shop and Field. The Contractor shall provide documentation to the Engineer that all personnel performing quality control inspections are certified at a minimum as a National Association of Corrosion Engineers (NACE) Coating Inspector Level I or a SSPC Level 1 Bridge Coating Inspector, and that they report directly to a Quality Control Supervisor who is certified either as a NACE Coating Inspector Level 3 or a SSPC Level 2 Bridge Coating Inspector.

907-845.03.6.3--Certifications. Certifications shall be maintained for the duration of the Contract. If the certifications expire, no work shall be performed until certifications are reissued. The Engineer shall be notified of any change in certification status.

907-845.03.7--Surface Preparation.

907-845.03.7.1--General. The portions of the existing coating designated to be removed and replaced shall be cleaned, washed, tested, and soluble salts removed. This shall be accomplished by abrasive blasting or hand and power tool cleaning to remove all existing coating and corrosion in the intended locations. The edges of all existing coating shall be feathered back to remain a minimum of three inches (3") around the area of existing coating to provide a smooth transition. The edges of the existing coating shall be intact and verified by probing with a dull putty knife in accordance with SSPC SP 2. The existing coating in the feathered area shall be roughened to ensure proper adhesion of the new coating. The Engineer shall be notified immediately when any structural steel appears to be defective.

The portions of the existing coating to remain shall be cleaned, washed, tested, and soluble salts removed. All surfaces to be coated shall be clean, dry, and free from oil, grease, dirt, dust, soluble salts, corrosion, peeling, caulking, weld spatter, mill scale and any other surface contaminants. The surface preparations and coating operations shall be performed so that freshly applied coatings will not be contaminated by dust or foreign matter. The Contractor shall protect all equipment and adjacent surfaces not to be coated from surface preparation operations. In the event that any rusting or contamination occurs after the completion of the surface preparation, the surfaces shall be prepared again to the initial requirements. Surface preparation work shall be performed only when the temperature of the steel surface is at least 5°F above the dew point temperature.

907-845.03.7.2--Mechanical Removal of Surface Defects. All corners resulting from sawing, burning, or shearing shall be broke. In areas where burning has been used, the flame hardened surface of the steel shall be removed to the extent necessary to achieve the required surface profile after abrasive blast cleaning. All weld slag and weld spatter shall be removed. In addition, all pack rust shall be removed prior to solvent cleaning. All of this work shall be conducted in accordance with AASHTO/NSBA Steel Bridge Collaboration S 8.1.

907-845.03.7.3--Cleaning. All steel surfaces shall be cleaned in accordance with the requirements of SSPC-SP 1.

907-845.03.7.4--Washing. All steel surfaces shall be washed during removal of soluble salts in accordance with the requirements of SSPC-SP WJ-4.

907-845.03.7.5--Soluble Salts Detection and Removal. The chloride, sulfate and nitrate concentrations shall be determined on all steel surfaces using soluble salts test kits meeting the requirements of subsection 907-845.02.4. The concentration levels shall be measured using the method described in SSPC-TU 4. The tests shall be performed after washing and after each applied coat of the coating system. Five random locations shall be tested in the first 1,000 square feet and one random location for each subsequent 1,000 square feet. The non-visible surface contaminant concentrations on blast-cleaned surfaces shall not exceed $7 \mu\text{g}/\text{cm}^2$ for chloride ions, $10 \mu\text{g}/\text{cm}^2$ for ferrous ions, $17 \mu\text{g}/\text{cm}^2$ for sulfate ions, and $10 \mu\text{g}/\text{cm}^2$ for nitrate ions. When any concentration exceeds these levels, the entire surface area shall be rewashed and retested. If additional washing does not reduce the concentration to the acceptable level, a surface treatment or water additive may be used. Surface treatment or water additive shall be approved by the coating system supplier and the Engineer.

907-845.03.7.6--Abrasive Blast Cleaning. Steel shall be prepared by abrasive blast cleaning to "Near-White" metal condition as defined in SSPC-SP 10. SSPC VIS 1 shall be used as an aid in establishing cleanliness. After abrasive blast cleaning, the surface profile shall meet the requirements of the coating manufacturer's product data sheet. The surface profile shall be determined by using replica tape in accordance with ASTM D 4417, Method C.

All abrasive blast cleaning shall be performed within a containment system to ensure confinement of all particulates. The containment system shall be designed to comply with all applicable Federal, State, and Local regulations. The abrasive blast cleaning shall not produce holes, cause distortion, remove metal, or cause thinning of the substrate.

907-845.03.7.7--Hand and Power Tool Cleaning. Steel shall be prepared by power and hand tool cleaning as defined in SSPC-SP 11, SSPC-SP 3, and SSPC-SP 2 for touch up and repair when approved by the Engineer. SSPC-VIS 3 shall be used as an aid in establishing cleanliness.

907-845.03.8--Application.

907-845.03.8.1--General. All of the paint on the exposed steel surfaces shall be removed and re-coated, unless otherwise noted or otherwise directed by the Engineer. A coating of rust

preventative compound shall be applied to all machine finished or similar surfaces not to be coated as directed by the Engineer. Prior to the application of any coating, the substrate shall be inspected for contamination and defects, and the surface prepared before application of the next coat. Each coat including a stripe coat shall be applied in a color that contrasts with the substrate or preceding coat.

907-845.03.8.2--Weather and Temperature Limitations. Spray coating shall not be performed when the measured wind speed in the immediate coating area is above 15 miles per hour. Coatings shall not be applied when contamination from rainfall is imminent or when the ambient air temperature, relative humidity, dew point temperature, or temperature of the steel is outside limits of the coating manufacturer's product data sheet.

907-845.03.8.3--Sealing Using Caulk. The perimeter of all faying surfaces, cracks and crevices, joints open less than 1/2 inch, and skip-welded joints shall be completely sealed using caulk. The caulk shall be applied to the joint following the caulk manufacturer's recommendations. The caulk bead shall have a smooth and uniform finish and be cured according to the caulk manufacturer's recommendation prior to the application of the coating system.

907-845.03.8.4--Protection of Adjacent Surfaces. All surfaces and working mechanisms not intended to be coated during the application of coatings shall be protected. Surfaces that have been contaminated with coatings shall be cleaned until all traces of the coating have been removed. Material from cleaning and coating operations shall not be dispersed outside the work site.

907-845.03.8.5--Mixing and Thinning. All coatings shall be mixed in accordance with the manufacturer's product data sheet. Only complete kits shall be mixed. Thinners and solvents shall be in accordance with the requirements of the coating manufacturer's product data sheet. The amount of thinner added shall not exceed any State and Federal regulations regarding Volatile Organic Compounds (VOC). All mixing operations shall be performed over an impervious surface with provisions to prevent runoff to grade of any spilled material.

907-845.03.8.6--Application Methods. The Contractor shall use coating application equipment and apply coatings per the coating manufacturer's product data sheet. Application with brushes may be permitted for minor touchup of spray applications, stripe coats, or when otherwise approved by the Engineer. Spray equipment shall be adjusted to produce an even, wet coat with minimum overspray. Coatings shall be applied in even, parallel passes, overlapping fifty percent (50%). Coatings shall be agitated during application as required by the coating manufacturer's product data sheet.

907-845.03.8.7--Stripe Coating. Stripe coats shall be applied to achieve complete coverage and proper thickness on welds, corners, crevices, sharp edges, bolts, nuts, rivets, and rough or pitted surfaces.

907-845.03.8.8--Thickness of Coats. Coatings shall be applied to the thickness as identified in the manufacturer's product data sheet. After application of each coat, the surfaces shall be thoroughly inspected and the dry film thickness (DFT) measured in accordance with SSPC-PA 2. When the DFT is deficient or excessive, corrections shall be made in accordance with the coating

manufacturer's recommendations and retest the area.

907-845.03.8.9--Coating Drying, and Curing. Coatings shall be applied within the time specified by the coating manufacturer's product data sheet for drying and recoating. Before handling, cure shall be tested in accordance with the manufacturer's recommended method. When the manufacturer's technical data sheet does not state a specified cure test, the requirements of ASTM D 5402 for organic zinc primers shall be met. The Contractor shall obtain the acceptance criteria from the coating manufacturer and report the results to the Engineer.

907-845.03.8.10--Coating Finish. Each coat shall be applied free of runs, sags, blisters, bubbles, and mud cracking; variations in color, gloss, or texture, holidays, excessive film buildup, foreign contaminants, orange peeling, and overspray.

907-845.03.9--Touchup and Repair. All welds, rivets, bolts, and all damaged or defective coating and rusted areas shall be cleaned and coated. Upon approval by the Engineer, aluminum mastic may be used in accordance with the manufacturer's recommendations. Aluminum mastic shall contain aluminum pigment and minimum 80% volume solids.

907-845.03.10--Protection of the Environment, Public, and Workers.

907-845.03.10.1--General. Plans and programs shall be established to protect the environment, public, contractor employees, and other workers from exposure to toxic heavy metals as well as releases and emissions of hazardous materials and nuisance dusts. All coating application and removal operations shall be conducted in compliance with EPA, OSHA, and other applicable Federal, State and local regulations. A contingency plan shall be provided for the remediation of water and land in the event of contamination by solid or liquid paint and contaminated water.

907-845.03.10.2--Environmental Protection. Plans and programs for the protection of the environment and public based on the applicable EPA requirements, the requirements of this Specification, and the Contract Documents shall be prepared and submitted to the Engineer. The plans and programs shall also include the protection of the air, soil/ground, and water.

907-845.03.10.2.1--Pollution Control. The Contractor shall submit a written pollution control and monitoring plan at the preconstruction meeting or as directed by the Engineer which clearly describes the means for complying with all Local, State and Federal regulations including pollution control provisions specified herein. The written plan shall be in accordance with SSPC Project Design: Industrial Lead Paint Removal Handbook, Volume II, Phase 6, Environmental Monitoring, and specifically include, but not be limited to, providing a scaled map of the work site layout showing the proposed number and location of soil sampling, Total Suspended Particulate (TSP) monitoring sites, waste storage areas, staging areas, temporary waste storage areas, and ambient air and personnel sampling frequency.

The Contractor shall comply with all applicable Federal, State, and Local rules and regulations. In the event a violation of any environmental regulation or a failure to properly execute any pollution control provisions occurs, the Contractor shall immediately cease all operations. Operations shall only resume after written proposed corrective procedures have been submitted to and approved by

the Engineer and implemented.

907-845.03.10.2.2--Permits. The Contractor shall submit all required permits from all applicable regulatory agencies to the Engineer prior to the commencement of any work. The Contractor shall seek permit determination from these regulatory agencies to avoid any potential permit non-compliance issues during work activities. The Contractor shall be responsible for all liability resulting from non-compliance with pertinent rules and regulations including permit requirements.

907-845.03.10.2.3--Ambient Air Quality Compliance and Protection of the Air.

907-845.03.10.2.3.1--Visible Emissions. The visible emissions shall be accessed using EPA Method 22, Timing of Emissions as defined by 40 CFR 60, Appendix A, Standards of Performance for New Stationary Sources. During abrasive blasting, the Contractor shall not allow visible emissions from a containment to exceed a random cumulative duration of more than one percent (1%) of the workday (SSPC Guide 6, Level 1 Emissions). During pressurized water cleaning for removal of soluble salts, The Contractor shall not allow visible emissions from a containment to exceed a random cumulative duration of more than ten percent (10%) of the workday (SSPC Guide 6, Level 3 Emissions).

907-865.03.10.2.3.2--Total Suspended Particulate (TSP) Matter. Emissions from the containment area shall be controlled to prevent exceeding the TSP Lead of 1.5 µg/m³ over a 90-day period, or the daily and adjusted daily allowances of SSPC-TU 7. TSP Lead monitoring shall be conducted in accordance with 40 CFR 50, Appendix B, Reference Method for Determination of TSP Matter in the Atmosphere (high volume sampler required), and 40 CFR 50, Appendix G, Reference Method for Determination of TSP Matter Collected from Ambient Air. The TSP Lead monitoring equipment shall be positioned in general accordance with 40 CFR 58, Ambient Air Quality Surveillance.

When lead is present in the coating, TSP Lead background monitoring shall be performed for a period of three (3) days prior to the beginning of abrasive blast cleaning operations. The results from background monitoring and the first week of monitoring during abrasive blast cleaning shall be submitted to the Engineer for review within five (5) calendar days after the first week of work. Monitoring shall continue unless otherwise directed by the Engineer.

907-865.03.10.2.3.3--Regulated Area. A regulated area around the work site shall be established to prohibit unauthorized persons from areas where exposure to hazardous airborne metals may exceed the following action levels:

| <u>Airborne Metals</u> | <u>Action Level</u> |
|----------------------------|-----------------------|
| Lead | 30 µg/m ³ |
| Cadmium | 2.5 µg/m ³ |
| Arsenic | 5 µg/m ³ |
| Hexavalent Chromium (Cr6+) | 2.5 µg/m ³ |

Monitoring shall be conducted in accordance with the National Institute for Occupational Safety and Health (NIOSH) procedures upon initiation of dust producing operations and the test results

shall be submitted to the Engineer within 72 hours of sampling. Sample results shall be reported as 8-hour Time Weighted Averages (TWA). The regulated area shall be re-established and additional sampling shall be performed when the results exceed the action levels or when directed by the Engineer. All pertinent data shall be documented in a field logbook. Air-sampling pumps shall be positioned around the project perimeter where the public or personnel can approach the work area. Sampler inlets shall be placed at breathing height. The regulated area shall be clearly marked by the use of warning signs, rope, barrier tape, or temporary construction fencing.

907-845.03.10.2.4--Soil/Ground Quality. The ground beneath and in proximity to the structure shall be inspected in the presence of the Engineer for visible paint chips to establish an initial job site cleanliness standard. When heavy metals are in the existing coatings, soil samples shall be tested prior to the beginning of operations and after project completion for heavy metals. The number and specific locations where the initial samples are taken shall be documented as outlined in the SSPC Project Design-Industrial Lead Paint Removal Handbook, Volume 2 to ensure the post samples are collected from the same locations. All samples shall be submitted to the Engineer for review. If the project activities increase the heavy metal content in soil to more than 20% above the pre-job geometric mean or 100% at any one location, the site shall be returned to the pre-job levels. Additional soil testing shall be conducted as necessary to determine the extent of contamination.

In addition, a pre- and post-soil sampling plan shall be submitted for storage areas identifying the sample location, depth, analyses list, lab certification, and turnaround time. Once approved by the Engineer, sampling results shall be submitted along with a scaled drawing indicating designated sample locations.

907-845.03.10.2.5--Water Quality. The Contractor shall not release, discharge or otherwise cause hazardous materials, debris, waste, or paint chips to enter the water. The Contractor shall also protect against releases due to rain and methods of surface preparation from reaching rivers, streams, lakes, storm drains, or other bodies of water.

907-845.03.10.3--Containment System. The Contractor shall submit a written containment system design plan in accordance with this subsection and the contract documents at the pre-construction conference or as directed by the Engineer which clearly describes the proposed containment system applicable to the intended removal method and in accordance with the requirements outlined herein and SSPC Guide 6, Guide for Containing Debris Generated During Paint Removal Activities. The plan shall include, but is not limited to, removal method; methods for collecting debris; and containment enclosure components. Fire retardant materials shall be used. Containment drawings, calculations, and assumptions, including ventilation criteria if applicable, shall be provided signed and sealed by the Contractor's Engineer of Record experienced with containment systems. A complete structural impact analysis prepared by a Specialty Engineer shall be provided to verify the existing structure can withstand the dead, live and wind loads imposed upon the structure due to the containment system. The lighting inside the containment shall be in accordance with SSPC Guide 12, Guide for Illumination of Industrial Painting Projects. Lighting shall have a minimum intensity of 10 ft-cd for general, 20 ft-cd for work, and 50 ft-cd for inspection. All drawings and calculations shall be submitted and accepted before any work begins. A clear description of the ventilation system components and information

shall be provided including the fan curve and design point on the proposed dust collector. The Design shall provide ventilation according to the notes provided in SSPC Guide 6: 100 feet per minute for cross draft and 50-60 feet per minute for downdraft.

The immediate area of the structure shall be isolated to ensure compliance with current and permit requirements for air, water, soil, and pollution prevention. The containment system shall be protected from vehicular and pedestrian traffic. Paint, paint chips, or other debris shall not fall outside of the containment area under any circumstances. Any damage created by fastening, bracing, or handling the scaffolding and staging shall be repaired. If a suspended platform is constructed, rigid or flexible materials shall be used as needed to create an air and dust impenetrable enclosure. The platform and its components shall be designed and constructed to support at least four (4) times its maximum intended load without failure, with wire cables capable of supporting at least six (6) times their maximum intended load without failure. The Contractor shall strictly comply with all applicable OSHA regulations regarding scaffolding. The category and class of containment shall be as required in the Contract Documents.

907-845.03.10.4--Protection of Adjacent Areas. All areas adjacent to abrasive blast cleaning, including machinery and deck grating, shall be protected. Before the commencement of any cleaning and coating operations, a control plan shall be provided for the protection of adjacent surfaces from damage by nearby blasting and coating to the Engineer for review. Any damage to adjacent areas shall be repaired. The repair procedure shall be submitted to the Engineer for acceptance prior to any remediation.

907-845.03.10.5--Worker Protection. The Contractor shall be responsible for complying with all current OSHA regulations regarding worker protection as it relates to the duties required by this Specification. Appropriate safety procedures shall be implemented for all hazards on the job site whether specifically identified herein or not.

907-845.03.11--Waste Handling and Management.

907-845.03.11.1--General. A waste management program plan shall be prepared which addresses the applicable requirements from EPA regulations for hazardous waste management and the Contract Documents. Include provisions for the handling and disposal of non-hazardous waste. The Contractor shall dispose of all waste in accordance with all federal, state, and local laws and regulations.

907-845.03.11.2--Collection and Handling of Waste. All paint removal debris, both solid and liquid, shall be properly classified, packaged and stored in accordance with SSPC Guide 7, Guide for the Disposal of Lead-Contaminated Surface Preparation Debris, the Federal Water Pollution Control Act with amendments, and all other current government regulations and guidelines. The Contractor shall comply with the Resource Conservation and Recovery Act to include, at a minimum, CFR 40 260 through CFR 40 268. Prior to identification and storage, the Contractor shall separate solid and liquid waste, and separate individual waste streams.

907-845.03.11.3--Testing and Analysis. Laboratory analyses for all waste stream and environmental samples shall be conducted by an EPA certified, independent laboratory with an

approved Quality Assurance Plan. Laboratory analyses for worker monitoring and regulated area samples shall be conducted by an American Industrial Hygiene Association (AIHA) metals accredited laboratory. A copy of all sampling and test reports shall be provided no later than 72 hours after collection of samples.

907-845.03.11.4--Waste Identification. Samples shall be collected in accordance with EPA SW 846, Test Methods for Evaluating Solid Waste - Physical/Chemical Methods. A random and representative sampling technique shall be used. A minimum of four representative samples shall be collected of each waste stream. These waste streams shall include, but are not limited to, water, paint chips, dust, and paint chips mixed with disposable abrasives and debris. The Contractor shall complete the initial sampling of each waste stream immediately upon filling the first drum, but shall not allow waste to accumulate for longer than seven (7) days before sampling.

After the representative samples are collected, they shall be sent immediately to the EPA certified laboratory for analysis. Unless otherwise directed by the Engineer, required by State regulations, or required by the waste recycling or disposal facility, once each waste stream is sampled, tested, and classified, additional sampling and analysis will not be required for subsequent shipments unless the waste stream changes. Samples shall be submitted to an approved laboratory to be tested for arsenic, barium, cadmium, hexavalent chromium, lead, mercury, selenium, and silver in accordance with EPA Method 3050 and Method 6010 (content) and EPA Method 1311, Toxicity Characteristics Leaching Procedures (TCLP). Each sample shall be clearly marked with sample number, date and time of sampling, name of collector, and location of collection.

Chain of custody forms shall be maintained for each sample. Each sample shall be entered on a sample analysis request form. The sample numbers, type of waste, amount of each sample, distribution of samples, signature and all other information shall be entered into field logbook.

907-845.03.11.5--Waste Storage. Waste from the control devices, equipment, and all work surfaces shall be collected on a daily basis. Hazardous and non-hazardous waste shall be kept separate. Blasting debris shall not be mixed with any other type of waste. Waste shall be placed in approved storage drums.

All hazardous waste within a regulated area shall be located. The maximum weight for each drum, when filled, shall be 821 lbs. All drums shall be properly sealed and labeled. Waste storage drums shall be transported to a secured, marked, temporary storage area. The temporary storage area shall be located on well-drained ground not susceptible to flooding or storm water run-off. Drums shall be placed on pallets and covered with fiber reinforced, impermeable tarpaulins. Drums shall be stored no more than two drums wide and two drums high. Drums shall be arranged so that labels are easily readable. Waste shall not be stored in the temporary storage area longer than 90 days.

907-845.03.11.6--Waste Disposal. All hazardous and non-hazardous waste shall be transported, treated and disposed of. The Engineer shall be notified a minimum of three (3) weeks prior to the date of shipment of any waste to an off-site facility. The Engineer shall be provided with documentation that the receiving disposal facilities are properly licensed. Manifests shall be provided for all hazardous and non-hazardous waste shipments. Any waste disposal subcontractors

shall be identified and provide the Engineer with a copy of their licensing to perform waste disposal and transport operations.

907-845.03.11.7--Permits. The Contractor shall be responsible for all liability resulting from non-compliance with pertinent rules and regulations including permit requirements.

907-845.04--Method of Measurement. Coating Existing Structural Steel will be measured as a lump sum quantity.

907-845.05--Basis of Payment. Coating Existing Structural Steel, measured as prescribed above, will be paid for at the contract lump sum price which shall be full compensation for all materials, labor, tools, equipment, containment systems, testing, , removal and disposal of the existing coating, and all incidentals necessary for completing the work as described herein.

Payment will be made under:

907-845-A: Coating Existing Structural Steel

- lump sum