PART 1 - GENERAL

1.1 RELATED SECTIONS

.1 Section 01 33 00 - Submittal Procedures.

.2 Section 01 35 29 - Health and Safety Requirements.

.3 Section 01 35 43 - Environmental Procedures.

.4 Section 01 45 00 - Quality Control.

.5 Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.6 Section 05 70 10.02 – Decorative Metal Restoration.

1.2 PRICE AND PAYMENT PROCEDURES

.1 Dismantling, cleaning, repairs, shop painting, reinstallation of iron work fence components, and field painting will be included in lump sum bid.

1.3 REFERENCES

.1 The Master Painters Institute (MPI)
- .1 MPI Painting Manual, 2010.

.2 Environmental Choice Program (ECP)
- .1 CCD-047-98(R2005), Architectural Surface Coatings.
- .2 CCD-048-98(R2006), Surface Coatings - Recycled Water-borne.

.4 Federal Standard (FS)
- .1 FED-STD-595B-89, Colours Used in Government Procurement.

.5 The Society for Protective Coatings (SSPC)
- .1 SSPC-SP 1-82(R2004), Solvent Cleaning.
- .2 SSPC-SP 2-82(R2004), Hand Tool Cleaning.
- .3 SSPC-SP 3-82(R2004), Power Tool Cleaning.
- .4 SSPC-SP 6/NACE No. 3-07, Commercial Blast Cleaning.
- .5 SSPC-SP 7/NACE No. 4-07, Brush-off Blast Cleaning.
- .6 SSPC-Vis-1-89, Visual Standard for Abrasive Blast Cleaned Steel (Standard Reference Photographs) Editorial Changes September 1, 2000 (Steel Structures Painting Manual, Chapter 2 - Surface Preparation Specs.).
- .8 SSPC-PA 204, Measurement of Dry Coat Thickness with Magnetic Gauges.
- .9 SSPC Good Painting Practices, Volume 1, 4th Edition.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

.2 Product Data:
- .1 Submit manufacturer's instructions, printed product literature and data sheets for painting exterior metal surfaces and include product characteristics, performance criteria, physical size, finish and limitations.
- .2 Submit 2 copies of WHMIS MSDS in accordance with Section 01 35 30 - Health and Safety Requirements and Section 01 35 43 - Environmental Procedures.

.3 Samples:

.1 Submit for review and acceptance of each unit.

.2 Submit 3 sets of manufacturers colour swatches in black range for selection of black colour.

.3 Submit 3 colour draw samples on black and white card stock base on selected colour swatch.

.4 Paints that do not appear on MPI Approved Products List must be approved by Departmental Representative before use on project. When it is proposed to use non-qualified paint, submit 1L sample of paint to Departmental Representative at least four (4) weeks prior to commencement of painting for analysis and acceptance. Mark samples with name of project, its location, paint manufacturer's name and address, name of paint, MPI standard number and manufacturers paint code number.

.5 Enable Departmental Representative to take 1L samples of each paint delivered to site, one sample from manufacturer's containers and one sample from painters' pot.

.4 Certificates: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

.5 Test Reports:

.1 Submit test reports showing compliance with specified performance characteristics and physical properties and in accordance with Section 01 45 00 - Quality Control.

.2 Construction Waste Management:

.1 Submit project Waste Management Plan highlighting recycling and salvage requirements.

.2 Submit calculations on end-of-project recycling rates, salvage rates, and landfill rates demonstrating that 75% of construction wastes were recycled or salvaged.

.3 Recycled Content:

.1 Submit listing of recycled content products used, including details of required percentages or recycled content materials and products, showing their costs and percentages of post-consumer and post-industrial content, and total cost of materials for project.

1.5 QUALITY ASSURANCE

.1 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

.2 Test Reports: Departmental Representative shall engage independent testing agency to verify the quality and specified thickness of coatings applied in this Section.

1.6 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.

.2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labeled with manufacturer's name and address.

.3 Develop Construction Waste Management Plan related to Work of this Section.

.4 Packaging Waste Management: remove for reuse by manufacturer of pallets, crates, padding, and packaging materials as specified in Construction Waste Management Plan in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

PART 2 PRODUCTS

2.1 MATERIALS

.1 Decorative Metal Restoration, Paint Finishes:

.1 Primer: MPI Product # 20, Multi component epoxy zinc rich primer, Premium Grade.
- .1 Primer for second coat: tinted sufficiently off finish colour of first coat to show where second coat is applied.
- .2 Tinting material: compatible with primer and not detrimental to its service life.

.2 Two Coat Epoxy Base Coats: MPI Product # 98, two component epoxy, high build, glass, Premium Grade:
- .1 Colour of second coat: tinted sufficiently off finish colour of first coat to show where second coat is applied.
- .2 Tinting material: compatible with primer and not detrimental to its service life.

.3 Two Coat Top Coats: MPI Product # 72, Polyurethane, two component, pigmented gloss, MPI Gloss Level 6, Premium Grade:
- .1 Colour of first coat: tinted sufficiently off second coat to show where second coat is applied.
- .2 Tinting material: compatible with primer and not detrimental to its service life.
- .3 Colour of second coat: Gloss Black.

.4 Media blasting of surface: to SSPC (Steel Structures Painting Council).
- .1 To SSPC (Steel Structures Painting Council)..
- .2 See Section 05 70 10.02 – Decorative Metal Restoration for additional direction.

PART 3 EXECUTION

3.1 EXAMINATION

.1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for painting exterior metal surfaces installation in accordance with manufacturer's written instructions.
- .1 Visually inspect substrate in presence of Departmental Representative.
- .2 Carry out tests to determine existence of lead base paint on existing exterior metal surfaces.
- .3 If lead exists stop work and report findings to Departmental Representative.
- .4 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
- .5 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

3.2 PREPARATION

.1 See Section 05 70 10.02 – Decorative Metal Restoration for paint removal from metal,

.2 Metal surfaces to be repainted:
- .1 Clean surfaces by removing loose, cracked, brittle or non-adherent paint, rust, loose mill scale, welding slag, dirt, oil, grease and other foreign substances in accordance with following recommendations in MPI Manual and Section 05 70 10.02 – Decorative Metal Restoration.

.3 Compressed air to be free of water and oil before reaching nozzle.

.4 Remove traces of blast products from surfaces, pockets and corners to be painted by brushing with clean brushes, by blowing with clean dry compressed air, or by vacuum cleaning.

.5 Apply paint after prepared surfaces have been accepted by Departmental Representative.

.6 Prior to starting paint application ensure degree of cleanliness of surfaces is to SSPC-Vis 1.
- .1 Apply primer, paint, or pretreatment after surface has been cleaned and before deterioration of surface occurs.
- .2 Clean surfaces again if rusting occurs after completion of surface preparation.

.7 Mixing paint:
- .1 Do not dilute or thin paint for brush application.
- .2 Mix ingredients in container before and during use and ensure breaking up of lumps, complete dispersion of settled pigment, and uniform composition.
- .3 Do not mix or keep paint in suspension by means of air bubbling through paint.
- .4 Thin paint for spraying according to manufacturer's written instructions. If directions are not on container, obtain instructions in writing from manufacturer and provide copy of instructions to Departmental Representative.

3.3 APPLICATION

.1 Manufacturer's Instructions: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

.2 Apply paint by spraying. Use sheepskins or daubers when no other method is practical in places of difficult access.

.4 Caulk open seams at contact surfaces of built up members with material approved by Departmental Representative, before second undercoat of primer is applied.

.5 Where surface to be painted is not under cover, do not apply paint when:
- .1 Air temperature is below 5 degrees C or when temperature is expected to drop to 0 degrees C before paint has dried.
- .2 Temperature of surface is over 50 degrees C unless paint is specifically formulated for application at high temperatures.
- .3 Fog or mist occur at site; it is raining or snowing; there is danger of rain or snow; relative humidity is above 85%.
- .4 Surface to be painted is wet, damp or frosted.
- .5 Previous coat is not dry.

.6 Supply cover when paint must be applied in damp or cold weather. Supply, shelter, or heat surface and surrounding air to comply with temperature and humidity conditions specified. Protect until paint is dry or until weather conditions are suitable.

.7 Remove paint from areas which have been exposed to freezing, excess humidity, rain, snow or condensation. Prepare surface again and repaint.

.8 Apply each coat of paint as continuous film of uniform thickness. Repaint thin spots or bare areas before next coat of paint is applied.

.10 Spray application:

- .1 Provide and maintain equipment that is suitable for intended purpose, capable of properly atomizing paint to be applied, and equipped with suitable pressure regulators and gauges.
- .2 Provide traps or separators to remove oil and water from compressed air and drain periodically during operations.
- .3 Keep paint ingredients properly mixed in spray pots or containers during paint application either by continuous mechanical agitation or by intermittent agitation as frequently as necessary.
- .4 Apply paint in uniform layer, with overlapping at edges of spray pattern.
- .5 Brush out immediately runs and sags.
- .6 Use brushes to work paint into cracks, crevices and places which are not adequately painted by spray. In areas not accessible to spray gun, use brushes, daubers or sheepskins.
- .7 Remove runs, sags and brush marks from finished work and repaint.

.11 Shop painting:

- .1 Do shop painting after fabrication and before damage to surface occurs from weather or other exposure.
- .2 Spray paint contact surfaces of field assembled, bolted, friction type joints with primer coat only. Do not brush primer after spraying.
- .3 Do not paint metal surfaces which are to be embedded in concrete.
- .4 Paint metal surfaces to be in contact with wood with either full paint coats specified or three shop coats of specified primer.
- .5 Do not paint metal within 50 mm of edge to be welded. Give unprotected steel one coat of approved protective coating after shop fabrication is completed.
- .6 Remove weld spatter before painting. Remove weld slag and flux by methods as specified in paragraph 3.2.3 Metal Surfaces to be Repainted.
- .7 Protect machine finished or similar surfaces that are not to be painted but that do require protection, with coating of rust inhibitive petroleum, molybdenum disulphide, or other coating approved by Departmental Representative.
- .8 Copy previous erection marks and weight marks on areas that have been shop painted.

.12 Field painting:

- .1 Paint steel structures as soon as practical after erection.
- .2 Touch up metal which has been shop coated with same type of paint and to same thickness as shop coat. This touch-up to include cleaning and painting of field connections, welds, rivets, nuts, washers, bolts, and damaged or defective paint and rusted areas.
- .3 Field paint surfaces (other than joint contact surfaces) which are accessible before erection but which are not to be accessible after erection.
- .4 Apply final coat of paint after concrete work is completed or as directed by Departmental Representative. If concreting or other operations damage paint, clean

and repaint damaged area. Remove concrete spatter and droppings before paint is applied.

.5 Where painting does not meet with requirements of specifications, and when so directed by Departmental Representative remove defective paint, thoroughly clean affected surfaces and repaint in accordance with these specifications.

.13 Handling painted metal:

.1 Handle painted metal after paint has dried, or when necessary for handling for painting or stacking for drying.

.2 Scrape off and touch up paint which is damaged in handling, with same number of coats and kinds of paint as were previously applied to metal.

3.4 FIELD QUALITY CONTROL

.1 Site Tests, Inspections:

.1 Upon completion of the painting procedures test for dry film reading and evaluate the results per SSPC-PA 2.

3.5 CLEANING

.1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

.3 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.6 PROTECTION

.1 Protect painted surfaces from damage during construction.

.2 Protection of surfaces:

.1 Protect surfaces not to receive paint.

.2 Prevent contamination of cleaned surfaces by salts, acids, alkalis, corrosive chemicals, grease, oil and solvents before prime coat is applied and between applications of remaining coats of paint. Remove contaminants from surface and apply paint immediately.

.3 Protect cleaned and freshly painted surfaces from dust to approval of Departmental Representative.

.3 Repair damage to adjacent materials caused by painting exterior metal surface application installation.

END OF SECTION