



Rhode Island Airport Corporation

September 28, 2016

**INVITATION FOR BID NO. 26527
TERMINAL EXTERIOR ENTRANCE CANOPY, DECK AND FENCE PAINTING
T. F. GREEN AIRPORT**

The Rhode Island Airport Corporation (RIAC) is seeking bids for the preparation and re-painting of the Entrance Canopy Structure, Entrance Main Terminal Roof Support Beams, Entrance Seamless Deck Coating, and, Lower Level Fence Coating at T. F. Green Airport, Terminal Building located at 2000 Post Road Warwick, RI.

A Mandatory pre-bid meeting and site visit will be held at 10:00AM EDT, October 6, 2016 at T. F. Green Airport, 3rd floor, 2000 Post Road, Warwick R.I. All bidders must attend the pre-bid conference to familiarize themselves with the Scope of Work and site restrictions. RIAC will not be obligated to schedule site visits after the pre-bid conference. No claims for extra costs shall be allowed because of lack of full knowledge of verifiable conditions.

Due date for bids is no later than **2:00PM EDT, October 20, 2016**, at which time they will be publicly opened. Bids must be in a sealed envelope clearly marked **"IFB No. 26527 CANOPY, DECK AND FENCE PAINTING"**. RIAC will not accept late bids under any circumstances. All costs incurred in connection with responding to this Invitation for Bids (IFB) shall be borne by the bidder.

Questions related to this solicitation may be submitted to procurement@pvdairport.com no later than 4:00PM EDT, October 11, 2016. Direct contact with RIAC staff is strictly prohibited unless submitted in writing to procurement@pvdairport.com. RIAC may issue an addendum by 4:00PM EDT, October 13, 2016 to respond to any relevant questions raised by potential bidders. This addendum will be posted to <https://www.pvdairport.com/corporate/procurement> and <https://www.purchasing.ri.gov>.

All prices quoted are to be FOB delivery location. RIAC is tax exempt and a certificate will be supplied as required.

Carla M. Ottaviano

Carla M. Ottaviano
Financial Analyst and Administrator

SPECIFICATIONS

The following are general specifications, surface preparation and coating schedules for the preparation and re-painting of the Terminal Entrance Canopy Structure, Entrance Main Terminal Roof Support Beams, Entrance Seamless Deck Coating, and Lower Level Fence Coating, located at T. F. Green Airport, Terminal Building, 2000 Post Road Warwick, RI. All items in this Part relate to the Base Bid and all Additive Bids, except where noted.

PART 1 – GENERAL

1. REFERENCES

American Society for Testing and Materials (ASTM)
The Society for Protective Coatings (SSPC) **(Exhibit A-1)**
National Association of Corrosion Engineers (NACE)

- A. ASTM D 16 - Terminology Relating to Paint, Varnish, Lacquer, and Related Products.
- B. ASTM D 4214 – Standard Test Methods and Specs.
- C. SSPC-SP 11 - Power Tool Cleaning to Bare Metal.
- D. SSPC-SP 12/NACE 5 – Surface Preparation and Cleaning of Metals by Waterjetting Prior to Recoating. **(Exhibit A-2)**
- E. SSPC-SP 15 – Commercial Grade Power Tool Cleaning with Profile Standard.
- F. Terminal Entrance Lower Level Metal Railing Location Plan **(Exhibit D)**
- G. Terminal Entrance Lower Level Detail Sheet **(Exhibit D-1)**
- H. Airport canopies Painting Plan **(be used for tack off measurements or quantities purposes only – Exhibit E)**

2. DEFINITIONS

- A. Definitions of Painting Terms: ASTM D 16, unless otherwise specified.
- B. Dry Film Thickness (DFT): Thickness of a coat of paint in fully cured state measured in mils (1/1000 inch).

3. SUBMITTALS

Include the following Submittals with Bid Response:

- A. Product Data/Material Safety Data Sheets (MSDS): submit manufacturer's MSDS product data for each coating, including generic description, complete technical data including ASTM Performance Test Results for comparison to specified materials should substitution products be requested, surface preparation, and application instructions.
- B. Manufacturer's Quality Assurance: submit manufacturer's certification that coatings comply with specified requirements and are suitable for intended application.
- D. Proposed painting system and the Manufacturer cut sheets for product your firm is offering.
- E. Provide all Permits and Licenses required to meet any federal, state or local requirements, to include the standard Federal Aviation Administration Form 7460.
- F. Applicator's and Manufacturer's Quality Assurance: Submit list of a minimum of 10 completed projects of similar size and complexity to this Work within the last 5 years. Include for each project:
 - 1. Project name and location.

2. Name of owner.
3. Name of contractor.
4. Name of coating manufacturer.
5. Approximate area of coatings applied.
6. Date of completion.

Include the following Submittals within 5 days of Contract Execution:

G. Color Samples: Submit manufacturer's color samples for RIAC approval.

Include the following Submittals within 5 days of prep work completion:

H. Submit from the coating manufacturer a written certificate stating that the prep work is complete and is satisfactory for coating. No finish work will be tolerated prior to RIAC's receipt of that letter.

Include the following Submittals within 5 days of project completion:

I. Warranty: The warranty periods will begin on the date of final project completion, accepted by RIAC.

Manufacturer's Warranty - 15-year color/gloss material warranty.

Contractors Warranty - 2-year labor and equipment warranty for all work performed.

Material Warranty requirements include:

1. No change in color in excess of 5 DE Hunter units per ASTM D 2244.
2. Will not exhibit gloss loss in excess of 24 units as measured by gloss meter per ASTM D 523-89 with 60-degree geometry,
3. No chalking, in excess of a rating of 8 as measured per ASTM D 4214, Method A.

4. QUALITY ASSURANCE

A. Manufacturer's Qualifications: (Include in Part 1, Section 3 Item F)

1. Specialize in manufacture of coatings with a minimum of 8 years' successful experience in the High Performance Coating Industry.
2. Able to demonstrate successful performance on comparable projects in the New England Region.
3. Single Source Responsibility: Coatings and coating application accessories shall be products of a single manufacturer.

B. Applicator's Qualifications: (Include in Part 1, Section 3 Item F)

1. Experience in application of specified coatings for a minimum of 8 years on projects of similar size and complexity to this Work.
2. Applicator's Personnel: Employ persons trained for application of specified coatings.

C. Mock-Ups:

Contractor will prepare a 10-foot x 10-foot mock-up for each coating system specified using same materials, tools, equipment, and procedures intended for actual surface preparation and application. Obtain RIAC's approval of mock-ups prior to proceeding with any coating system. Retain mock-ups to establish intended standards by which coating systems will be judged.

D. Pre-Construction Meeting:

Convene a pre-construction meeting two (2) weeks before start of application of coating systems. Require attendance of parties directly affecting work of this section, including Contractor, RIAC, applicator, and manufacturer's representative. Review the following:

1. Environmental requirements.
2. Protection of surfaces not scheduled to be coated.
3. Surface preparation.
4. Application.
5. Disinfection.
6. Repair.
7. Field quality control.
8. Cleaning.
9. Protection of coating systems.
10. One-year inspection.
11. Coordination with other work.

5. DELIVERY, STORAGE, AND HANDLING

A. Delivery:

Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying:

1. Coating or material name.
2. Manufacturer.
3. Color name and number.
4. Batch or lot number.
5. Date of manufacture.
6. Mixing and thinning instructions.

B. Storage:

1. Store materials in a clean dry area and within temperature range in accordance with manufacturer's instructions.
2. Keep containers sealed until ready for use.
3. Do not use materials beyond manufacturer's shelf life limits.

C. Handling:

Protect materials during handling and application to prevent damage or contamination.

6. ENVIRONMENTAL REQUIREMENTS

A. Weather:

1. Air and Surface Temperatures: Prepare surfaces and apply and cure coatings within air and surface temperature range in accordance with manufacturer's instructions.
2. Surface Temperature: Minimum of 5 degrees F (3 degrees C) above dew point.
3. Relative Humidity: Prepare surfaces and apply and cure coatings within relative humidity range in accordance with manufacturer's instructions.
4. Precipitation: Do not prepare surfaces or apply coatings in rain, snow, fog, or mist.
5. Wind: Do not spray coatings if wind velocity is above manufacturer's limit.

B. Dust and Contaminants:

1. Schedule coating work to avoid dust and airborne contaminants.

2. Protect work areas from dust and airborne contaminants during coating application and curing.
7. **OTHER**
- A. All work must be coordinated with RIAC's designated point of contact prior to commencing;
 - B. The bid specifications as written does not provide allowances for unforeseen conditions;
 - C. Provide all materials tools, lifts, scaffolding, and labor necessary to provide for the exterior paint coating restoration;
 - D. All surfaces not to be coated will be masked and protected at all times.

PART 2 - PRODUCTS

1. MANUFACTURER

Tnemec Company, Kansas City, MO is listed as the "basis of design" for the coating system to be used on the Existing Canopy Structures, Main Terminal Roof Support Beams and Existing Wire Mesh Fence. Equal materials from the Dupont Corp. or Jotun Corporation will be considered, should it meet the minimum generic and performance characteristics of the coating system listed herein.

RD Coatings USA, Stratford, CT is listed as the coating system to be used on the Entrance Way Resinous Concrete Deck. Equal materials from Tnemec Company or Jotun Corporation will be considered, should it meet the minimum generic and performance characteristics of the coating system listed herein.

All bidders/offerors proposing equal materials must include with Bid Response, evidence of quality, including MSDS/product data sheets and the same ASTM Performance Test Results to that of the specified material, comparing submitted product to the specified materials.

2. COATING SYSTEMS

Protect Surfaces during curing times.

A. For Existing Canopy Structures and Main Terminal Roof Support Beams:

- 1st Coat: One Spot-Coat of Tnemec Series 1 Omnithane MCU zinc/miox pigmented primer applied to prepared to bare metal surfaces at 2.5-3.0 mils dft. Overlap onto adjacent painted surfaces a minimum 2 inches. (Brush apply a stripe-coat into crevices at steel plate connections and around any nut & bolt assemblies).
- 2nd Coat: One Full-Coat of Tnemec Series 135 Chem-Build polyamidoamine epoxy coating applied to all surfaces scheduled for coating at 3.0-4.0 mils dft.
- 3rd Coat: One Full-Finish Coat of Tnemec Series 1071V Fluoronar, a low VOC (less than 100 grams/litre) fluoropolymer resin finish (custom color by owner) capable of being brush and roller applied to all surfaces scheduled for coating at 2.0-2.5 mils dft.

B. For Existing Wire Mesh Fence Re-Coating:

- 1st Coat: One spot-coat of Tnemec Series 1 Omnithane MCU zinc/miox pigmented primer applied to prepared to bare metal surfaces at 2.5-3.0 mils dft. Overlap onto adjacent painted surfaces a minimum 2 inches. (Brush apply a stripe-coat into crevices at connections and around any nut & bolt assemblies).

- 2nd Coat: One Full-coat of Tnemec Series 135 Chem-Build polyamidoamine epoxy coating applied to all surfaces scheduled for coating at 3.0-4.0 mils dft.
- 3rd Coat: One Full-Finish Coat of Tnemec Series 290 CRU Urethane, a polyester polyurethane resin finish (color by owner) applied to all surfaces scheduled for coating at 2.0-2.5 mils dft.

C. For Entrance Way Resinous Concrete Deck Re-Coating:

- 1st Coat: One Detail Coat of RD Coatings Elastometal applied to any imbedded steel drains and/or other ferrous metal at 6.0-7.0 mils dft.
- 2nd Coat: One Full-Coat diluted RD Coatings E-Deck to prepared surfaces at 10 wet mils.
- 3rd Coat: After primer has cured, detail all drains and control joints in concrete apply RD Mesh Woven reinforcing mesh around drains and over control joints Embed mesh with one coat of RD E-Deck resin. Then apply one full coat of E-Deck Slurry applied to all surfaces scheduled for coating at 25 mils wet. Allow to dry.
- 4th Coat: One full coat of RD Coatings Monograff (color by RIAC) to all surfaces scheduled for coating at 2.0-2.5 mils dry.

3. ACCESSORIES

A. Coating Application Accessories:

- 1. Accessories required for application of specified coatings in accordance with manufacturer's instructions, including thinners.
- 2. Products of coating manufacturer.

PART 3 - EXECUTION

1. EXAMINATION

- A. Examine areas and conditions under which coating systems are to be applied. Notify RIAC of areas or conditions not acceptable. Do not begin surface preparation or application until unacceptable areas or conditions have been corrected.

2. PROTECTION OF SURFACES NOT SCHEDULED TO BE COATED

- A. Protect surrounding areas and surfaces not scheduled to be coated from damage during surface preparation and application of coatings.
- B. Immediately remove coatings that fall on surrounding areas and surfaces not scheduled to be coated.

3. SURFACE PREPARATION OF STEEL

- A. Prepare steel surfaces in accordance with manufacturer's instructions.
- B. Fabrication Defects:
 - 1. Correct steel and fabrication defects revealed by surface preparation.
 - 2. Remove any rust scale build up.
- C. Ensure surfaces are dry.
- D. Exterior: Remove soluble oil, grease, dirt, dust, loose rust bloom, loose and non-adhering paint, oxides, corrosion products, and other foreign matter in accordance with SSPC-SP 12 (LP WC) Low Pressure, Water Cleaning Standard (5,000 psi), followed by a SSPC SP 15 Power Tool Cleaning with Profile Standard of any rust and/or rust scale, loose and non-adhering existing paint and under film corrosion. Remaining

intact existing coating to be uniformly mechanically sanded with #60 grit paper to “de-gloss” existing coating. Remove all sanding debris. (hand sanding will not be acceptable).

4. CONTAINMENT OF PAINT CHIPS DURING EXTERIOR SURFACE PREPARATION

Provide and install a Containment system that prevents paint chips and debris generated during the surface preparation from escaping the perimeter of the project site from entering the environment and to facilitate the controlled collection of the paint chips and washing water for disposal

All waste water, dust, debris, and material removed or generated in the cleaning and painting operations shall be collected and disposed of in accordance with the regulations, standards, and the contract documents and specifications.

SSPC-SP 12 Pressure Water Cleaning; Remove salt, dirt, dust, chalky paint, insects, animal’s nests, bird droppings, and other foreign matter. Remediate chlorides in accordance with Nonvisible Contamination Section 3. Use 5000 psi or higher pressure with a zero-degree rotary nozzle. The nozzle shall be operated from a distance not to exceed 8 inches and shall be held perpendicular to the surface being cleaned. The maximum wand extension will be six inches. Wash area starting from top and work toward bottom, rinse down all removed sediment from top to bottom. Each pressure-washing unit shall have a cleaning compound supply tank with the ability to control the amount of solution being supplied to the feed water. Cleaning solutions shall be used in strict accordance with the manufacturer’s written recommendations. Use a water-based, phosphate free, biodegradable cleaner, which has a pH of 9 to 11. The cleaner shall also be, non-flammable and non-reactive. RIAC shall approve all cleaning solutions before use.

All water used for pressure washing operations shall be potable and supplied by the Contractor or non-contaminated tap water provided by RIAC. All wash water shall be collected, filtered, tested and disposed of in accordance with all Local, State and Federal Regulations.

All water, dust, debris, rust, paint chips, overspray and other material generated during cleaning, power tool cleaning and painting operations shall be cleaned and collected from the surrounding surfaces within the work area on a daily basis or more frequently if conditions require.

The Contractor shall take all measures necessary to prevent the release of waste material, debris or other material generated by the cleaning and painting operations during working periods, non-working periods and during assembly, disassembly and moving of work platforms and containment materials or the handling of wastes.

All residual water from pressure water cleaning will be collected screened and disposed of at a non-hazardous waste water treatment plant or as hazardous waste. Documentation indicating acceptance at a receiving wastewater treatment facility must be provided to RIAC prior to any shipment for disposal. If the wastewater is defined as a hazardous waste based upon testing, the procedures for disposing of hazardous waste will be followed.

5. SURFACE PREPARATION OF CONCRETE DECKING SCHEDULED FOR RESINOUS FLOORING

General: Surfaces to be coated shall be cleaned as required by the coating manufacturer to properly receive prime and finish coats. No surface preparation method shall be used unless acceptable to the coating manufacturer and RIAC.

- A. Pressure Washing, existing concrete: Pressure wash per SSPC SP 12 (LP WC) Low Pressure, Water Cleaning Standard at 4,000-5,000 psi to remove all accumulated dirt, chalk, contamination, and loosely adhered existing coating. All coating that remains after pressure washing can be overcoated. The pressure washer shall be fitted with a 0° spinner tip and the metal surfaces cleaned at a distance of 6" to 8" from the surface of the steel and the pressure washer held at a perpendicular angle to the surface being washed.
- B. Power Sanding: Following power washing, all surfaces scheduled for coating shall be power sanded with floor sander equipped with #60 Grit abrasive pad to remove any lifted paint left from the pressure washing so the edges of all existing paint are tight and to roughen bare concrete. Remove all sanding debris via shop-vacuum. The results of cleaning by this method shall be a clean, roughened surface of tightly adhering coating and bare concrete. If any steel or other metal is discovered, it shall be power tool cleaned per SSPC SP #3 Standard, dry and be primed with RD Elastometal, at 6.0-7.0 mils dft.
- C. Detail all terminations and surrounding drains by saw-cutting to ¼" depth and width.

6. APPLICATION

- A. Apply coatings in accordance with manufacturer's instructions.
- B. Mix and thin coatings in accordance with manufacturer's instructions.
- C. Keep containers closed when not in use to avoid contamination.
- D. Do not use mixed coatings beyond pot life limits.
- E. Use application equipment, tools, pressure settings, and techniques in accordance with manufacturer's instructions.
- F. Uniformly apply coatings at spreading rate required to achieve specified DFT.
- G. Apply coatings to be free of film characteristics or defects that would adversely affect performance or appearance of coating systems.
- H. Stripe paint with brush critical locations on steel such as welds, corners, nuts and bolts and edges using specified primer.
- I. Use contrasting colors between Intermediate and Finish coat to assure complete coverage of finish coating.

7. REPAIR

- A. Damaged Materials: Repair or replace damaged materials and surfaces not scheduled to be coated.
- B. Damaged Coatings: Touch-up or repair damaged coatings. Touch-up of minor damage shall be acceptable where result is not visibly different from adjacent surfaces. Recoat entire surface where touch-up result is visibly different, either in sheen, texture, or color.
- C. Coating Defects: Repair in accordance with manufacturer's instructions coatings that exhibit film characteristics or defects that would adversely affect performance or appearance of coating systems.

8. FIELD QUALITY CONTROL

- A. Inspector's Services:
 - 1. Verify coatings and other materials are as specified.
 - 2. Verify surface preparation and application are as specified.
 - 3. Verify DFT of each coat and total DFT of each coating system are as specified using wet film and dry film gauges.
 - 4. Coating Defects: Check coatings for film characteristics or defects that would adversely affect performance or appearance of coating systems.
 - a. Check for holidays on interior steel immersion surfaces using holiday detector.
 - 5. Report:
 - a. Submit written reports describing inspections made and actions taken to correct nonconforming work.
 - b. Report nonconforming work not corrected.
 - c. Submit copies of report to RIAC and Contractor.
- B. Manufacturer's Field Services: Manufacturer's representative shall provide technical assistance and guidance for surface preparation and application of coating systems.

9. CLEANING

Remove temporary coverings and protection of surrounding areas and surfaces.

10. PROTECTION OF COATING SYSTEMS

Protect surfaces of coating systems from damage during construction.

11. YEARLY INSPECTION

- A. RIAC will set dates for year one and two inspections of coating systems.
- B. Inspections shall be attended by RIAC, Contractor, and manufacturer's representative.
- C. Repair deficiencies in coating systems as determined by RIAC in accordance with manufacturer's instructions.

TIME OF COMPLETION

Upon execution of the contract, RIAC will issue a written "Notice-to-Proceed" and work associated with this project shall be completed within **180 calendar days** from the notice to proceed, and fully complete prior to June 30, 2017, unless otherwise agreed upon by RIAC.

Contractor to provide a written schedule to RIAC within 2 weeks of the notice to proceed to indicate how work will be completed in the 180 calendar days.

Most of the work will be performed during the hours of 7AM-5PM Monday through Friday. The entrance concrete decking work will be performed after hours or from 9PM-4AM and the surface capable of withstanding passenger foot traffic by 4 AM each day.

PROTECTIONS OF PERSONS AND PROPERTY

SAFETY PRECAUTIONS AND PROGRAMS

The Contractor expressly agrees both directly and through his Subcontractors to take every precaution at all times for the protection of person, including employees and property. The Contractor shall be solely responsible and accountable for initiating, maintaining and supervising all safety precautions and programs in connection with the Work.

The Contractor shall adhere to the Federal Occupational Safety Act, State and Local safety regulations and any safety requirements imposed by RIAC so as to avoid injury and damage to persons and property, and to be directly responsible for damage to persons and property resulting from failure to do so.

The Contractor shall comply with any safety requirements imposed by the RIAC.

SAFETY OF PERSONS AND PROPERTY

The Contractor shall take all reasonable precautions for the safety of and shall provide all reasonable protection to prevent damage, injury or loss to:

- 1) All employees performing the Work and all other persons who may be affected thereby;
- 2) All the Work and all materials and equipment to be incorporated therein, whether in storage on or off the site, under the care, custody or control of the Contractor or any of his Subcontractors;
- 3) Other property at the site or adjacent thereto, including but not necessarily limited to airline property, existing tenants' property, trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

The Contractor shall not permit any construction technique or activity which decreases building security or safety. The Contractor shall cooperate fully with RIAC's requirements regarding security and safety of the facilities and property.

The Contractor shall give all notices and comply with all applicable laws, ordinances, rules, regulations and lawful orders of any public authority bearing on the safety of persons or property or their protection from damage, injury or loss.

The Contractor shall provide, erect, maintain, dismantle and remove, as required by existing conditions and progress of the Work, all reasonable safeguards for safety and protection including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying the Owners and users of adjacent utilities/facilities to the Work.

The Contractor shall protect the Owner's tenants'/agents' property from injury or loss and shall adequately protect adjacent property/utilities/facilities as provided by law and the Contract Documents.

The Contractor shall provide and maintain all passageways, guard fences, light and other facilities for protection required by public authority, local conditions or any of the Contract Documents and at no time remove, alter or render ineffective any barricades, railings or cover on the project without written permission from RIAC. Where these safety devices are to be turned over to others upon completion of the Work, the devices shall be repaired or replaced so that they meet the required standards prior to turnover.

Weather protection shall be supplied by the Contractor and shall include any enclosure, supplemental heating and furnishing and other features (insulation, etc.) for meeting conditions required by RIAC or the Contract Documents.

INSURANCE REQUIREMENTS

Evidence of the following minimum insurance coverage must be provided prior to award:

- a. General Liability limits of \$1,000,000 per occurrence.
- b. Motor Vehicle Liability Insurance with limits of \$1,000,000.
- c. Worker's Compensation coverage to Rhode Island statutory limits or documentation evidencing an approved self-insurance program.
- d. Umbrella Liability limits of \$5 million excess of \$1,000,000 primary layer.
- e. Errors and Omissions Coverage with minimum limits of \$1,000,000. (waived for this project)

RIAC and the State of Rhode Island shall be named as additional insured on all policies of insurance with the exception of Worker's Compensation insurance.

BOND REQUIREMENTS

Payment and Performance Bonds shall be as specified below; only on the Payment and Performance Bond forms, as shown in **Exhibit B** within this IFB is acceptable.

1. Performance Bond: A good and sufficient Performance Bond in an amount equal to one hundred percent (100%) of the total amount of the Contract, as evidenced by the Bid tabulation or otherwise, guaranteeing the full and faithful execution of the Work and performance of the Contract in accordance with the Contract Documents. This Bond shall guarantee the repair and maintenance of all defects due to faulty materials and workmanship that appear within a period of one (2) year, or as otherwise specified in the Specifications (whichever is greatest), from the date of final completion and written acceptance of the Work by the Owner.
2. Labor and Material Payment Bond: A good and sufficient bond in an amount equal to one hundred percent (100%) of the total amount of the Contract, as evidenced by the Bid tabulation or otherwise, guaranteeing the full and proper protection of all claimants supplying labor and materials in the prosecution of the Work provided for in said Contract and for the use of each such claimant.
 - A. No Sureties will be accepted by RIAC who are now in default or delinquent on any bonds or who are involved in any litigation against RIAC, and/or the State of Rhode Island (State).
 - B. Should any Surety on the Construction Contract be determined unsatisfactory at any time by RIAC, notice will be given the Contractor, and the Contractor shall immediately provide a new Surety, satisfactory to RIAC and at no additional cost to RIAC. The Contract shall not be operative nor will any payments be due or paid until approval of the bonds has been made by RIAC.

- C. The Bidder shall require the Attorney-in-Fact who executes the required bonds, on behalf of the Surety, to affix thereto a certified and current copy of his Power of Attorney, indicating the monetary limit of such power.
- D. The cost of the bonds shall be included in the bid.

CONTRACT AGREEMENT

RIAC's standard Contract Agreement is attached hereto and incorporated herein by this reference as **Exhibit C**. RIAC expects the bidder to execute this Agreement

OTHER REQUIREMENTS:

1. Prevailing Wages apply to this project. All wages must be paid in accordance with the Davis Bacon Act. Certified Payrolls must be submitted monthly with each pay application.
2. Bidders shall be licensed as a General Contractor in the State of Rhode Island and will hold all Trade Contracts on the Project.
3. Trade Contractors (sub-contractors to the General Contractor) shall be qualified to perform the work contracted for and shall be licensed as such in the State of Rhode Island.
4. RIAC is a Tax Exempt organization and a certificate will be provided upon request. All taxes are to be excluded in pricing.

IFB No. 26527
TERMINAL EXTERIOR ENTRANCE CANOPY, DECK AND FENCE PAINTING
T. F. GREEN AIRPORT
RESPONSE FORM

Responses are **due no later than 2:00PM EDT, October 20, 2016** at Rhode Island Airport Corporation, T. F. Green Airport, Office of Procurement, 2000 Post Road, 3rd floor, Warwick RI 02886-1533. Vendors may copy/scan these pages to facilitate completing the information, but must return response in this format/order.

The undersigned, on behalf of the bidder, certifies that: This offer is made without previous understanding, agreement or connection with any person, firm, or corporation entering a bid on the same project; is in all respects fair and without collusion or fraud. The person whose signature appears below is legally empowered to bind the company in whose name the bid is entered. They have read the entire document and understand all provisions. If accepted by RIAC this bid is guaranteed as written and amended and will be implemented as stated.

ALL vendors interested in responding **MUST** provide the following requested information in this format. Additional information may be included on accompanying sheets, if necessary.

Firm Name _____

Contact Name _____ Title _____

Signature _____ Date _____

Address _____ City/State _____ Zip _____

Phone _____ Fax _____ Hours _____

Company Web Site Address _____ E-Mail _____

General Nature of Business _____

Remittance Address (for Payments):

Name: _____

Address _____ City/State _____ Zip _____

1. Are you Rhode Island Certified as DBE/WBE/MBE? If yes, please attach certification letter

Yes___ No___

2. Are you listed on a Master Price Agreement (MPA)with the State of Rhode Island?

Yes___ No___ MPA Number(s)_____

3. Are you a GSA, MiCTA, or U.S. Communities Contractor?

Yes___ No___ Number(s)_____

4. Type of Organization (check one):

Manufacturer _____ Distributor _____ Retail _____ Dealer _____ Service _____

5. We Acknowledge Receipt of Addenda: No.____, Dated _____; No. ____, Dated _____

6. Has any person, firm, or corporation entering a proposal on the project been disbarred or suspended by the State of Rhode Island? _____ If so, indicate dates and explanation for such.

7. Provide references as specified in Part 1, Section 3, Item D.

8. Attach a W9 Form.

9. On a separate sheet, list any deviations from the SPECIFICATIONS and MANDATORY REQUIREMENTS section in this document. **Below is an example of the format**

ITEM NO.	REASON FOR DEVIATION, DESCRIPTION OF REPLACEMENT COMPONENT, AND/OR EXPLANATION

10. Pricing Information (please print clearly)

The basis of award of Contract will be the lowest responsive Base Bid or the lowest of the combination of the Base Bid and any, some or all Additive Bid Item Numbers, to be determined at the sole discretion of RIAC.

1. **BASE BID** - Canopy Structures Painting: \$ _____
(Amount in Numbers)

(Amount in Words)

2. **Additive Bid Item No. 1** - Cement Deck Painting: \$ _____
(Amount in Numbers)

(Amount in Words)

3. **Additive Bid Item No. 2** - Wire Mesh Fence Painting: \$ _____
(Amount in Numbers)

(Amount in Words)

4. **Additive Bid Item No. 3** - Main Terminal Roof Support Beams \$ _____
(Amount in Numbers)

(Amount in Words)

Note: In the case of a discrepancy between the prices quoted in words and in figures, the prices quoted in words shall take precedence and govern in determining final costs or award of contract.

Terms and Conditions

In submitting a response to this Invitation for Bids, vendors hereby understand the following:

1. All project participants, consultants, engineers, and contractors, must comply with all applicable federal, state laws and RIAC rules and regulations pertaining to contracts entered into by governmental agencies, including non-discriminating employment. Contracts entered into on the basis of submitted bids are revocable if contrary to law.
2. Alternate bids (two or more bids submitted) will be considered for award. RIAC reserves the right to make the final determination of actual equivalency or suitability of such bids with respect to requirements outlined herein.
3. The bids submitted, and any further information acquired through interviews, will become, and are to be considered, a part of the final completed contract. If there is any variance or conflict, the bid specifications, conditions, and requirements shall control.
4. Bidders must hold the bid price for one-hundred fifty (150) days from bid opening date, and may not withdraw their bid for at least thirty (30) days after the time and date set for the receipt of bids. Prices MUST also be free of federal, state and local taxes unless otherwise imposed by a governmental body, and applicable to the material on the bid. RIAC is Tax Exempt and a certificate will be supplied as required.
5. Bidder MUST return the original attached Response Form as noted previously on the bid due date.
6. Envelopes containing responses must be sealed and marked on the lower left-hand corner with the firm name and address bid number, date, and time.
7. RIAC interprets the term "lowest responsible bidder" as requiring RIAC to: (a) choose between the kinds of materials, goods, wares, or services subject to the bid, and (b) determine which bid is most suitable for its intended use or purpose. RIAC can consider, among other factors, such things as labor cost, service and parts availability, availability of materials and supplies, and maintenance costs of items upon which bids are received. RIAC can determine any differences or variations in the quality or character of the material, goods, wares, or services performed or provided by the respective bidders.
8. RIAC reserves the right to waive any irregularities and to reject any and all bids on any basis without disclosing the reason. RIAC will be the sole judge in determining as equivalent products (if applicable). The successful bidder will be the lowest responsible and responsive bidder. For purposes of this solicitation, the lowest responsible bidder is the firm that RIAC determines meets the specifications at the lowest price.
9. All requested information must be supplied. If you cannot respond to any part of this request, state the reason you cannot respond. You may provide supplemental information, if necessary, to assist RIAC in analyzing your bid.
10. A purchase order and/or contractual agreement constitutes RIAC's offer to the service provider upon the terms and conditions stated herein, and shall become binding meeting the terms set forth herein when it is accepted by acknowledgment or performance.
11. After award, if the successful bidder/supplier refuses or fails to make deliveries of the

materials and or services within the times specified in the Invitation for Bids, purchase order, or contractual agreement, RIAC may, by written notice, terminate the contract OR purchase order.

12. The supplier shall hold and save RIAC, The State of Rhode Island, and its officers, agents, servants/employees harmless from liability of any patented or unpatented invention, process, article, or appliance manufactured, or used in the performance of the contract, including its use by RIAC.
13. Payment of the seller's invoices is subject to adjustment and payment terms are net 30 days following approval by RIAC staff.
14. Procedures respecting bids and the selection of Contractors shall be in conformity with Title 37, Chapter 2 of the General Laws of the State of Rhode Island and RIAC procurement rules.
15. The Bidder agrees that:
 - a. He/she shall not discriminate against any person in the performance of work under the present contract because of race, religion, color, sex, national origin, ancestry, or physical handicap;
 - b. In all solicitations or advertisements for employees, he/she shall include the phrase, 'Equal Opportunity Employer,' or a similar phrase;
 - c. If he/she fails to comply, he shall be deemed to have breached the present contract, and it may be canceled, terminated, or suspended, in whole or in part, by RIAC;
 - d. If he/she is found guilty of discrimination under a decision, he/she shall be deemed to have breached the present contract, and it may be canceled, terminated, or suspended, in whole or in part, by RIAC; and,
 - e. He/she shall include the provisions of subsections (a) through (d) inclusively of this paragraph in every subcontract or purchase order so that such provision will be binding upon such subcontractor or vendor.
16. The firm responding to this bid proposes to furnish all materials, labor, supplies, equipment and incidentals necessary to provide the equipment/materials/services described herein in accordance with the, Addenda, Contract, Bonds, Insurance, Plans, Specifications, Mandatory Requirements and Conditions.
17. If a response to this Invitation for Bids is accepted, the Bidder agrees to execute and deliver to RIAC a contract in accordance with the Contract Documents (if applicable) within ten days of notice of the award to the Bidder. The Bidder agrees that the surety/deposit given concurrently herewith shall become the property of RIAC in the event the Bidder fails to execute and deliver such contract within the specified time. In the further event of such failure, the Bidder shall be liable for RIAC's actual damages that exceed the amount of the surety.
18. It shall be understood that time is of the essence in the bidder performance. The bidder agrees that RIAC's damages would be difficult or impossible to predict in the event of a default in the performance hereof; and it is therefore agreed that if the bidder defaults in the performance of the Contract Documents, the bidder shall be liable for payment of the sums stipulated in the Contract Documents as liquidated damages, and not as a penalty.

19. The bidder hereby certifies that he/she has carefully examined all of the documents for the project, has carefully and thoroughly reviewed this Invitation for Bids, that he/she has inspected the location of the project (if applicable), and understands the nature and scope of the work to be done; and that this bid is based upon the terms, specifications, requirements, and conditions of the Invitation for Bids and documents. The Bidder further agrees that the performance time specified is a reasonable time, having carefully considered the nature and scope of the project as aforesaid.
20. All products/services and related equipment proposed and/or affected by acquisitions or purchases made as a result of the response to this document shall be compliant with existing RIAC hardware, software, and applications where applicable. Verification must be provided in the response to this document.
21. The Bidder certifies that this proposal is submitted without collusion, fraud or misrepresentation as to other Bidders, so that all bids for the project will result from free, open and competitive bidding among all vendors.
22. It shall be understood that any bid and any/all referencing information submitted in response to this Invitation for Bids shall become the property of RIAC, and will not be returned. RIAC will use discretion with regards to disclosure of proprietary information contained in any response, but cannot guarantee that information will not be made public. As a governmental entity, RIAC is subject to making records available for disclosure after Board approval of the recommendation.
23. RIAC will not be responsible for any expenses incurred by any vendor in the development of a response to this Invitation for Bids. Further, RIAC shall reserve the right to cancel the work described herein prior to issuance and acceptance of any contractual agreement/purchase order by the recommended vendor even if RIAC has formally accepted a recommendation.
24. Bids must be received prior to the time and dates listed to be considered responsive. RIAC will not "accept" late responses and will return them to the sender. Further, RIAC will NOT: (1) guarantee security of the document received; (2) be held responsible for bids which are NOT legible (and may choose to reject such responses).
25. By submission of a response, the Bidder agrees that at the time of submittal, he/she: (1) has no interest (including financial benefit, commission, finder's fee, or any other remuneration) and shall not acquire any interest, either direct or indirect, that would conflict in any manner or degree with the performance of Bidder's services, or (2) benefit from an award resulting in a "Conflict of Interest." A "Conflict of Interest" shall include holding or retaining membership, or employment, on a board, elected office, department or bureau, or committee sanctioned by and/or governed by RIAC. Bidders shall identify any interests, and the individuals involved, on separate paper with the response and shall understand that RIAC, at the discretion of the Purchasing Director in consultation with RIAC Counselor, may reject their bid.
26. Campaign Finance Compliance - Every person or business entity providing goods or services at a cost of \$5,000 cumulated value is required to file an affidavit regarding political campaign contributions with the RI State Board of Elections even if no reportable contributions have been made. (RI General Law 17-27) Forms obtained at Board of Elections, Campaign Finance Division, 50 Branch Avenue, Providence, RI 02904 (401-222-2056).

27. Major State Decision-Maker - Does any Rhode Island "Major State Decision-Maker", as defined below, or the spouse or dependent child of such person, hold (i) a ten percent or greater equity interest, or (ii) a Five Thousand Dollar or greater cash interest in this business?

For purposes of this question, "Major State Decision-Maker" means:

- (i) All general officers; and all executive or administrative head or heads of any state executive agency enumerated in R.I.G.L § 42-6-1 as well as the executive or administrative head or heads of state quasi-public corporations, whether appointed or serving as an employee. The phrase "executive or administrative head or heads" shall include anyone serving in the positions of president, senior vice president, general counsel, director, executive director, deputy director, assistant director, executive counsel or chief of staff;
- (ii) All members of the general assembly and the executive or administrative head or heads of a state legislative agency, whether appointed or serving as an employee. The phrase "executive or administrative head or heads" shall include anyone serving in the positions of director, executive director, deputy director, assistant director, executive counsel or chief of staff;
- (iii) All members of the state judiciary and all state magistrates and the executive or administrative head or heads of a state judicial agency, whether appointed or serving as an employee. The phrase "executive or administrative head or heads" shall include anyone serving in the positions of director, executive director, deputy director, assistant director, executive counsel, chief of staff or state court administrator,

If your answer is "Yes", please identify the Major State Decision-Maker, specify the nature of their ownership interest, and provide a copy of the annual financial disclosure required to be filed with the Rhode Island Ethics Commission pursuant to R.I.G.L. §36-14-16, 17 and 18.

Society for Protective Coatings – Cleaning Standards Abbreviated Version

For full standards, go to

http://www.sspc.org/standards/purchase-standards/standards_techcommittee_updateyear/

SSPC-SP 1, Solvent Cleaning

Solvent cleaning is a method for removing all visible oil, grease, soil, drawing and cutting compounds, and other soluble contaminants from steel surfaces.

It is intended that solvent cleaning be used prior to the application of paint, and in conjunction with surface preparation methods specified for the removal of rust, mill scale, or paint.

SSPC-SP 2, Hand Tool Cleaning

Hand tool cleaning is a method of preparing steel surfaces by the use of non-power hand tools.

Hand tool cleaning removes all loose mill scale, loose rust, loose paint, and other loose detrimental foreign matter. It is not intended that adherent mill scale, rust, and paint be removed by this process. Mill scale, rust, and paint are considered adherent if they cannot be removed by lifting with a dull putty knife.

SSPC-SP 3, Power Tool Cleaning

Power tool cleaning removes all loose mill scale, loose rust, loose paint, and other loose detrimental foreign matter. It is not intended that adherent mill scale, rust, and paint be removed by this process. Mill scale, rust, and paint are considered adherent if they cannot be removed by lifting with a dull putty knife.

SSPC-SP 5/NACE No. 1, White Metal Blast Cleaning

A white metal blast cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dust, dirt, mill scale, rust, coating, oxides, corrosion products, and other foreign matter.

SSPC-SP 6/NACE No. 3, Commercial Blast Cleaning

A commercial blast cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dust, dirt, mill scale, rust, coating, oxides, corrosion products, and other foreign matter, except for staining as noted.

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Random staining shall be limited to no more than 33 percent of each unit area of surface as defined, and may consist of light shadows, slight streaks, or minor discolorations caused by stains of rust, stains of mill scale, or stains of previously applied coating.

SSPC-SP 7/NACE No. 4, Brush-Off Blast Cleaning

A brush-off blast cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, loose mill scale, loose rust, and loose coating.

Tightly adherent mill scale, rust, and coating may remain on the surface. Mill scale, rust, and coating are considered tightly adherent if they cannot be removed by lifting with a dull putty knife after abrasive blast cleaning has been performed.

SSPC-SP 8, Pickling

Pickling is a method of preparing steel surfaces by chemical reaction, electrolysis, or both. The surfaces when viewed without magnification shall be free of all visible mill scale and rust.

SSPC-SP 10/NACE No. 2, Near-White Blast Cleaning

A near-white metal blast cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dust, dirt, mill scale, rust, coating, oxides, corrosion products, and other foreign matter, except for staining as noted.

Random staining shall be limited to no more than 5 percent of each unit area of surface as defined, and may consist of light shadows, slight streaks, or minor discolorations caused by stains of rust, stains of mill scale, or stains of previously applied coating.

SSPC-SP 11, Power Tool Cleaning to Bare Metal

This standard is suitable where a roughened, clean, bare metal surface is required, but where abrasive blasting is not feasible or permissible.

This standard differs from [SSPC-SP 3](#), Power Tool Cleaning, in that SSPC-SP 3 requires only the removal of loosely adherent materials, and does not require producing or retaining a surface profile.

This standard differs from [SSPC-SP 15](#), Commercial Grade Power Tool Cleaning, in that SSPC-SP 15 allows stains of rust, paint, or mill scale to remain on the surface. SSPC-SP 11 only allows materials to remain at the bottom of pits.

SSPC-SP 12/NACE No. 5, Surface Preparation and Cleaning of Metals by Waterjetting Prior to Recoating

This standard is written primarily for applications in which the substrate is carbon steel. However, waterjetting can be used on

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nonferrous substrates such as bronze, aluminum, and other metals such as stainless steel. This standard does not address the cleaning of concrete. Cleaning of concrete is discussed in [SSPC SP-13/NACE No. 6](#).

SSPC-SP 13/NACE No. 6, Surface Preparation of Concrete

An acceptable prepared concrete surface should be free of contaminants, laitance, loosely adhering concrete, and dust, and should provide a sound, uniform substrate suitable for the application of protective coating or lining systems.

When required, a minimum concrete surface strength, maximum surface moisture content, and surface profile range should be specified in the procurement documents (project specifications).

SSPC-SP 14/NACE No. 8, Industrial Blast Cleaning

An industrial blast cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dust, and dirt. Traces of tightly adherent mill scale, rust, and coating residues are permitted to remain on 10% of each unit area of the surface if they are evenly distributed.

The traces of mill scale, rust, and coating shall be considered tightly adherent if they cannot be lifted with a dull putty knife. Shadows, streaks, and discolorations caused by stains of rust, stains of mill scale, and stains of previously applied coating may be present on the remainder of the surface.

SSPC-SP 15, Commercial Grade Power Tool Cleaning

A commercial grade power tool cleaned steel surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, rust, coating, oxides, mill scale, corrosion products, and other foreign matter, except as noted.

Random staining shall be limited to no more than 33 percent of each unit area of surface as defined. Staining may consist of light shadows, slight streaks, or minor discolorations caused by stains of rust, stains of mill scale, or stains of previously applied coating. Slight residues of rust and paint may also be left in the bottoms of pits if the original surface is pitted.

This standard differs from [SSPC-SP 3](#), Power Tool Cleaning, in that a higher degree of surface cleanliness is required, and a minimum surface profile of 25 micrometers (1.0 mil) will be retained or produced.

This standard differs from [SSPC-SP 11](#), Power Tool Cleaning to Bare Metal, in that stains of rust, paint, or mill scale may remain on the surface.

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Joint Surface Preparation Standard SSPC-SP 12/NACE No. 5 Surface Preparation and Cleaning of Metals by Waterjetting Prior to Recoating

This SSPC: The Society for Protective Coatings/NACE International (NACE) standard represents a consensus of those individual members who have reviewed this document, its scope, and provisions. It is intended to aid the manufacturer, the consumer, and the general public. Its acceptance does not in any respect preclude anyone, whether he has adopted the standard or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not addressed in this standard. Nothing contained in this SSPC/NACE standard is to be construed as granting any right, by implication or otherwise, to manufacture, sell, or use in connection with any method, apparatus, or product covered by Letters Patent, or as indemnifying or protecting anyone against liability for infringement of Letters Patent. This standard represents current technology and should in no way be interpreted as a restriction on the use of better procedures or materials. Neither is this standard intended to apply in all cases relating to the subject. Unpredictable circumstances may negate the usefulness of this standard in specific instances. SSPC and NACE assume no responsibility for the interpretation or use of this standard by other parties and accept responsibility for only those official interpretations issued by SSPC or NACE in accordance with their governing procedures and policies which preclude the issuance of interpretations by individual volunteers.

Users of this SSPC/NACE standard are responsible for reviewing appropriate health, safety, environmental, and regulatory documents and for determining their applicability in relation to this standard prior to its use. This SSPC/NACE standard may not necessarily address all potential health and safety problems or environmental hazards associated with the use of materials, equipment, and/or operations detailed or referred to within this standard. Users of this SSPC/NACE standard are also responsible for establishing appropriate health, safety, and environmental protection practices, in consultation with appropriate regulatory authorities if necessary, to achieve compliance with any existing applicable regulatory requirements prior to the use of this standard.

CAUTIONARY NOTICE: SSPC/NACE standards are subject to periodic review, and may be revised or withdrawn at any time without prior notice. The user is cautioned to obtain the latest edition. SSPC and NACE require that action be taken to reaffirm, revise, or withdraw this standard no later than five years from the date of initial publication.

Revised July 2002

Approved 1995

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Foreword

This joint standard describes the surface preparation technique known as waterjetting. This technique provides an alternative method of removing coating systems or other materials from metal surfaces, including lead-based paint systems, prior to the application of a protective coating or lining system. This standard is intended for use by coating or lining specifiers, applicators, inspectors, or others whose responsibility it may be to define a standard degree of surface cleanliness. Since publication of NACE Standard RP0172,¹ surface preparation using waterjetting equipment has found acceptance as a viable method.

Waterjetting can be effective in removing water-soluble surface contaminants that may not be removed by dry abrasive blasting alone, specifically, those contaminants found

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at the bottom of pits of severely corroded metallic substrates. Waterjetting also helps to remove surface grease and oil, rust, shot-creting spatter, and existing coatings and linings. Waterjetting is also used in areas where abrasive blasting is not a feasible method of surface preparation.

The use of a high-pressure water stream to strip existing coatings and clean the surface has advantages over open dry abrasive blasting with respect to worker respiratory exposure and work area air quality. Respiratory requirements for waterjetting may be less stringent than for other methods of surface preparation.

Waterjetting does not provide the primary anchor pattern on steel known to the coatings industry as “profile.” The coatings industry uses waterjetting primarily for recoating or relining projects in which there is an adequate preexisting profile. Waterjetting has application in a broad spectrum of industries. It is used when high-performance coatings require extensive surface preparation and/or surface decontamination.

This standard was originally prepared by SSPC/NACE Joint Task Group TGD. It was technically revised in 2002 by Task Group 001 on Surface Preparation by High-Pressure Waterjetting. This

Task Group is administered by Specific Technology Group (STG) 04 on Protective Coatings and

Linings—Surface Preparation, and is sponsored by STG 02 on Protective Coatings and Linings—

Atmospheric, and STG 03 on Protective Coatings and Linings—Immersion/Buried. This standard is

issued by SSPC Group Committee C.2 on Surface Preparation, and by NACE International under

the auspices of STG 04.

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Joint Surface Preparation Standard

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Surface Preparation and Cleaning of Metals by Waterjetting

Prior to Recoating

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Section 1: General

1.1 This standard describes the use of waterjetting to achieve a defined degree of cleaning of surfaces prior to the application of a protective coating or lining system. These requirements include the end condition of the surface plus materials and procedures necessary to verify the end condition. This standard is limited in scope to the use of water only.

1.2 This standard is written primarily for applications in which the substrate is carbon steel. However, waterjetting can be used on nonferrous substrates such as bronze, aluminum, and other metals such as stainless steel. This standard does not address the cleaning of concrete. Cleaning of concrete is discussed in SSPC SP-13/NACE No. 6.2

1.3 Appendices A, B, and C give additional information on waterjetting equipment, production rates, procedures, and principles.

1.4 Visual Reference Photographs: SSPC-VIS 4/NACE VIS 7, "Guide and Reference Photographs for Steel Surfaces Prepared by Waterjetting,"³ provides color photographs for the various grades of surface preparation as a function of the initial condition of the steel. The latest issue of the reference photographs should be used.

Section 2: Definitions

2.1 This section provides basic waterjetting definitions. Additional definitions relevant to waterjetting are contained in the WaterJet Technology Association's(1) "Recommended Practices for the Use of Manually Operated High-Pressure Waterjetting Equipment."⁴

2.1.1 **Waterjetting (WJ):** Use of standard jetting water discharged from a nozzle at pressures of 70 MPa (10,000 psig) or greater to prepare a surface for coating or inspection. Waterjetting uses a pressurized stream

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of water with a velocity that is greater than 340 m/s (1,100 ft/s) when exiting the orifice. Waterjetting does not produce an etch or profile of the magnitude currently recognized by the coatings industry. Rather, it exposes the original abrasive-blasted surface profile if one exists.

2.1.2 Water Cleaning (WC): Use of pressurized water discharged from a nozzle to remove unwanted matter from a surface.

2.1.3 Standard Jetting Water: Water of sufficient purity and quality that it does not impose additional contaminants on the surface being cleaned and does not contain sediments or other impurities that are destructive to the proper functioning of waterjetting equipment.

2.1.4 Low-Pressure Water Cleaning (LP WC): Water cleaning performed at pressures less than 34 MPa (5,000 psig). This is also called “power washing” or “pressure washing.”

2.1.5 High-Pressure Water Cleaning (HP WC): Water cleaning performed at pressures from 34 to 70 MPa (5,000 to 10,000 psig).

2.1.6 High-Pressure Waterjetting (HP WJ): Waterjetting performed at pressures from 70 to 210 MPa (10,000 to 30,000 psig).

2.1.7 Ultrahigh-Pressure Waterjetting (UHP WJ): Waterjetting performed at pressures above 210 MPa (30,000 psig).

2.1.8 Nonvisible Contamination (NV): Nonvisible contamination is the presence of organic matter, such as very thin films of oil and grease, and/or soluble ionic materials such as chlorides, ferrous salts, and sulfates that remain on the substrate after cleaning.

2.1.9 Visible Surface Cleanliness (VC): Visible surface cleanliness is the visible condition of the substrate, when viewed without magnification, after cleaning.

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Section 3: Surface Cleanliness Requirements

3.1 Table 1 lists four definitions of surface cleanliness in terms of visible contaminants. A surface shall be prepared to one of these four visual conditions prior to recoating.

3.1.1 As part of the surface preparation, deposits of oil, grease, and foreign matter must be removed by waterjetting, by water cleaning, by steam cleaning, by methods in accordance with SSPC-SP 1,5 or by

(1) WaterJet Technology Association, 917 Locust Street, Suite 1100, St. Louis, MO 63101-1419.

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another method agreed upon by the contracting parties.

3.1.2 NOTE: Direct correlation to existing dry media blasting standards is inaccurate or inappropriate when describing the capabilities of water cleaning and the visible results achieved by water cleaning.

3.1.3 The entire surface to be prepared for coating shall be subjected to the cleaning method.

3.1.4 For WJ-4 (see Table 1) any remaining mill scale, rust, coating, or foreign materials shall be tightly adherent. All of the underlying metal need not be exposed.

3.1.5 Photographs may be specified to supplement the written definition. In any dispute, the written standards shall take precedence over visual reference photographs or visual standards such as SSPC-VIS 4/NACE VIS 7.3

3.2 Table 2 lists definitions of flash rusted surfaces (See Section 4). When deemed necessary, a surface should be prepared to one of these flash rusted surface conditions prior to recoating.

3.3 The specifier shall use one of the visual surface preparation definitions (WJ-1 to WJ-4 in Table 1) and, when

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deemed necessary, one of the flash rust definitions.

3.3.1 The following is an example of a specification statement:

“All surfaces to be recoated shall be cleaned to SSPCSP 12/NACE No. 5, WJ-2/L, Very Thorough or Substantial Cleaning, Light Flash Rusting.”

3.4 Appendix A contains information on nonvisible surface contaminants. In addition to the requirements given in Paragraph 3.1, the specifier should consider whether a surface should be prepared not to exceed the maximum level of nonvisible surface contamination prior to recoating. A suggested specification statement for nonvisible contaminants is given in Appendix A.

Table 1: Visual Surface Preparation Definitions

Term Description of Surface

WJ-1 Clean to Bare Substrate: A WJ-1 surface shall be cleaned to a finish which, when viewed without magnification, is free of all visible rust, dirt, previous coatings, mill scale, and foreign matter. Discoloration of the surface may be present.(A, B, C)

WJ-2 Very Thorough or Substantial Cleaning: A WJ-2 surface shall be cleaned to a matte (dull, mottled) finish which, when viewed without magnification, is free of all visible oil, grease, dirt, and rust except for randomly dispersed stains of rust, tightly adherent thin coatings, and other tightly adherent foreign matter. The staining or tightly adherent matter is limited to a maximum of 5% of the surface.(A, B, C)

WJ-3 Thorough Cleaning: A WJ-3 surface shall be cleaned to a matte (dull, mottled) finish which, when viewed without magnification, is free of all visible oil, grease, dirt, and rust except for randomly dispersed stains of rust, tightly adherent thin coatings, and other tightly adherent foreign matter. The staining or tightly adherent matter is limited to a maximum of 33% of the surface.(A, B, C)

WJ-4 Light Cleaning: A WJ-4 surface shall be cleaned to a finish which, when viewed without magnification, is free of all

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visible oil, grease, dirt, dust, loose mill scale, loose rust, and loose coating. Any residual material shall be tightly adherent.(C)

(A) Surfaces cleaned by LP WC, HP WC, HP WJ, or UHP WJ do not exhibit the hue of a dry abrasive blasted steel surface. After waterjetting, the matte finish color of clean steel surface immediately turns to a golden hue unless an inhibitor is used or environmental controls are employed.⁶ On older steel surfaces that have areas of coating and areas that are coating-free, the matte finish color varies even though all visible surface material has been removed. Color variations in steel can range from light gray to dark brown/black.

Steel surfaces show variations in texture, shade, color, tone, pitting, flaking, and mill scale that should be considered during the cleaning process. Acceptable variations in appearance that do not affect surface cleanliness include variations caused by type of steel or other metals, original surface condition, thickness of the steel, weld metal, mill fabrication marks, heat treating, heat-affected zones, and differences in the initial abrasive blast cleaning or in the waterjet cleaning pattern.

The gray or brown-to-black discoloration seen on corroded and pitted steel after waterjetting cannot be removed by further waterjetting. A brown-black discoloration of ferric oxide may remain as a tightly adherent thin film on corroded and pitted steel and is not considered part of the percentage staining.

(B) Waterjetting at pressures in excess of 240 MPa (35,000 psig) is capable of removing tightly adherent mill scale, but production rates are not always cost effective.

(C) Mill scale, rust, and coating are considered tightly adherent if they cannot be removed by lifting with a dull putty knife. (See SSPC-SP 7/NACE No. 4,7).

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Section 4: Flash Rusted Surface Requirements

4.1 Table 2 lists four definitions of flash rusted surface

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requirements. *Flash rust* or *water bloom* is a light oxidation of the steel that occurs as waterjetted carbon steel dries. With the exception of stainless steel surfaces, any steel surface may show flash rust within 0.5 to 2 hours, or longer depending on environmental conditions, after cleaning by water. Flash rust quickly changes the appearance. Flash rust may be reduced or eliminated by physical or chemical methods. The color of the flash rust may vary depending on the age and composition of the steel and the time-of-wetness of the substrate prior to drying. With time, the flash rust changes from a yellow-brown, well adherent, light rust to a red-brown, loosely adherent, heavy rust.

4.2 It is a common practice to remove heavy flash rust by low-pressure water cleaning. The visual appearance of steel that has heavily flash rusted after initial cleaning and is then recleaned by low-pressure water cleaning (up to 34 MPa [5,000 psig]) has a different appearance than the original light flash rusted steel depicted in SSPC-VIS 4/NACE VIS 7.

4.3 The coating manufacturer should be consulted to ascertain the tolerance of the candidate coatings to visual cleanliness, nonvisible contaminants, and the amount of flash rust commensurate with the in-service application. These conditions should be present at the time of recoating.

4.4 The following is an example of a specification statement concerning flash rust:

“At the time of the recoating, the amount of flash rust shall be no greater than moderate (M) as defined in SSPC-SP 12/NACE No. 5.”

Table 2: Flash Rusted Surface Definitions

Term Description of Surface

No Flash Rust A steel surface which, when viewed without magnification, exhibits no visible flash rust.

Light (L) A surface which, when viewed without magnification, exhibits small quantities of a yellow-brown rust layer through which the steel substrate may be observed. The rust or discoloration may be evenly distributed or

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present in patches, but it is tightly adherent and not easily removed by lightly wiping with a cloth.

Moderate (M) A surface which, when viewed without magnification, exhibits a layer of yellow-brown rust that obscures the original steel surface. The rust layer may be evenly distributed or present in patches, but it is reasonably well adherent and leaves light marks on a cloth that is lightly wiped over the surface.

Heavy (H) A surface which, when viewed without magnification, exhibits a layer of heavy red-brown rust that hides the initial surface condition completely. The rust may be evenly distributed or present in patches, but the rust is loosely adherent, easily comes off, and leaves significant marks on a cloth that is lightly wiped over the surface.

Section 5: Occupational and Environmental Requirements

5.1 Because waterjet cleaning is a hazardous operation, all work shall be conducted in compliance with all applicable occupational health and safety rules and environmental regulations.

Section 6: Cautionary Notes

6.1 Waterjetting can be destructive to nonmetallic surfaces. Soft wood, insulation, electric installations, and instrumentation must be protected from direct and indirect water streams.

6.2 Water used in waterjetting units must be clean and free of erosive silts or other contaminants that damage pump valves and/or leave deposits on the surface being cleaned. The cleaner the water, the longer the service life of the waterjetting equipment.

6.3 Any detergents or other types of cleaners used in conjunction with waterjetting shall be removed from surfaces prior to applying a coating.

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6.4 Compatibility of the detergents with the special seals and high-alloy metals of the waterjetting equipment must be carefully investigated to ensure that WJ machines are not damaged.

6.5 If inhibitors are to be used with the standard jetting water, the manufacturer of the waterjetting equipment shall be consulted to ensure compatibility of inhibitors with the equipment.

6.6 The coatings manufacturer shall be consulted to ensure the compatibility of inhibitors with the coatings.

6.7 If effluent jetting water is captured for reuse in the jetting method, caution should be used to avoid introducing any removed contaminants back to the cleaned substrate.

The effluent water should be treated to remove suspended particulate, hydrocarbons, chlorides, hazardous materials, or other by-products of the surface preparation procedures.

The water should be placed in a clean water holding tank and tested to determine the content of possible contamination prior to reintroduction into the jetting stream. If detergents or degreasers are used prior to surface preparation, these waste streams should be segregated from the effluent jetting water to avoid contamination and possible equipment damage.

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16. L.M. Frenzel, R. DeAngelis, J. Bates, Evaluation of 20,000-psi Waterjetting for Surface Preparation of Steel Prior to Coating or Recoating (Houston, TX: Butterworth Jetting, 1983). Also available in L.M. Frenzel, The Cleaner, February (1992) (Three Lakes, WI: Cole Publishing, Inc.).

(2) International Organization for Standardization (ISO), 1, rue de Varembe, Case postale 56, CH-1211 Geneva 20, Switzerland.

(3) Federal Highway Administration (FHWA), 400 7th St. SW, Washington, DC 20590.

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NOTE: Appendices A, B, and C provide explanatory notes. They provide additional information on waterjetting.

Appendix A: Surface Cleanliness Conditions of Nonvisible Contaminants and Procedures for Extracting and Analyzing Soluble Salts

A1.1 For the purpose of this appendix, the list of non-visible contaminants is limited to water-soluble chlorides, ironsoluble

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salts, and sulfates. The contracting parties should be aware that other nonvisible contaminants may have an effect on the coating performance.⁸ The specifier should determine whether, and to what condition, nonvisible chemical contaminants should be specified. Section 3 contains additional information on surface cleanliness conditions.

A1.2 The level of nonvisible contaminants that may remain on the surface is usually expressed as mass per unit area, for example, $\mu\text{g}/\text{cm}^2$ (grains/in.²) or mg/m^2 (grains/yd²) ($1 \mu\text{g}/\text{cm}^2 = 10 \text{ mg}/\text{m}^2 = 0.0001 \text{ grains}/\text{in.}^2 = 0.13 \text{ grains}/\text{yd}^2$).

A1.3 Coatings manufacturers should be consulted for recommendations of maximum surface contamination allowed. The specification should read as follows:

“Immediately prior to the application of the coating, the surface shall not contain more than xx $\mu\text{g}/\text{cm}^2$ (grains/in.²) of the specific contaminant (e.g., chloride) when tested with a specified method as agreed upon by contracting parties.”

A1.4 The contracting parties shall agree on the test method or procedure to be used for determining the level of nonvisible contaminants.

Note: NACE and ISO committees are currently (2002) developing recommendations for the level of nonvisible contaminants that may be tolerated by different types of coatings in various services.

Table A1: Description of Nonvisible Surface Cleanliness Definitions(A) (NV)

Term Description of Surface

NV-1 An NV-1 surface shall be free of detectable levels of soluble contaminants, as verified by field or laboratory analysis using reliable, reproducible test methods.

NV-2 An NV-2 surface shall have less than $7 \mu\text{g}/\text{cm}^2$ (0.0007 grains/in.²) of chloride contaminants, less than $10 \mu\text{g}/\text{cm}^2$ (0.001 grains/in.²) of soluble ferrous ion levels, or less than $17 \mu\text{g}/\text{cm}^2$ (0.0017 grains/in.²) of sulfate contaminants as verified by field or laboratory analysis using reliable, reproducible test methods.

NV-3 An NV-3 surface shall have less than $50 \mu\text{g}/\text{cm}^2$ (0.005 grains/in.²) of chloride or sulfate contaminants as verified by

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field or laboratory analysis using reliable, reproducible test methods.

(A) Additional information on suitable procedures for extracting and analyzing soluble salts is available in NACE Publication 6G186,8 and SSPC-TU 4.9

A2.1 Procedure for Extracting Soluble Salts by Swabbing

The following procedures may be used to extract the soluble salts from the surface:

- (a) SSPC Swabbing Method⁹
- (b) Procedure described in ISO 8502-5, Section 5.1, "Washing of the Test Area"¹⁰
- (c) Any suitable controlled washing procedures available and agreed to by the contracting parties. During the washing procedure, clean plastic or rubber gloves should be worn to ensure that the wash water is not accidentally contaminated.

A2.2 Procedure for Extracting Soluble Salts by Surface Cells

- (a) Limpet Cell Method¹¹
- (b) Surface Conductivity Cell Method^{9,11}
- (c) Nonrigid Extraction Cell Method^{9,11, 12}

A2.3 Procedure for Field Analysis of Chloride Ions

The extract retrieved using the procedures in Paragraphs A2.1 and A2.2 may be analyzed using one of the following methods:

- (a) Chloride Chemical Test Strips⁹
- (b) Chloride Chemical Titration Kit⁹
- (c) Ion Detection Tube Method^{9,10}

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The following laboratory method is available as a referee method:

- (a) Specific Chloride Ion Electrode^{9,11,13}

A2.4 Procedure for Field Analysis of Sulfate Ions

The extract retrieved using the procedures in Paragraphs A2.1 and A2.2 may be analyzed using one of the following

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methods:

- (a) Turbidity Field Comparator Methods^{9, 11}
- (b) Turbidity Method^{9,11}
- (c) Standard Test Method for Sulfate Ion in Water¹⁴

A2.5 Procedure for Field Analysis of Soluble Iron Salts

The extract retrieved using the procedures in Paragraph A2.1 or A2.2 may be analyzed using one of the following methods:

- (a) Ferrous Chemical Test Strips^{9,11}
- (b) Semiquantitative Test for Ferrous Ions⁸
- (c) Field Colorimetric Comparator Methods

A2.5.1 Papers treated with potassium ferricyanide

may be used for the qualitative field detection of ferrous ions.^{8,9}

Appendix B: Waterjetting Equipment

B1.1 The commercial waterjet unit can be mounted on a skid, trailer, or truck; can be equipped with various prime movers (diesel, electric motor, etc.); and usually consists of a pump, hoses, and various tools. The tools can be handheld or mounted on a robot (or traversing mechanism).

Water is propelled through a single jet, a fan jet, or multiple rotating jets. Rotation is provided by small electric, air, or hydraulic motors, or by slightly inclined orifices in a multiple orifice nozzle.

B1.2 The units operate at pressures up to 240 to 290 MPa (35,000 to 42,000 psig), using a hydraulic hose with a minimum bursting strength of 2.5 times the capability of its maximum-rated operating strength.

B1.3 A water flow rate of 4 to 53 L/min (1 to 14 gal/min) is typical.

B1.4 Pressure loss is a function of the flow rate of the water through the hose and the inside diameter of the hose. The manufacturer should be consulted for specific information on potential pressure loss for each type of equipment.

B1.5 Waterjets are produced by orifices, or tips, that can

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have different forms. The higher the pressure, the more limited is the choice of forms. Round jets are most commonly used, but orifices of other shapes are available. Tips can be designed to produce multiple jets of water that are normally rotated to achieve higher material removal rates. Interchangeable nozzle tips should be used to produce the desired streams. The manufacturer shall be consulted for specific recommendations.

B1.6 The distance from the nozzle to the work piece substrate (standoff distance) is critical for effective cleaning with any of the water methods. Excessive standoff does not produce the desired cleaning.

Appendix C: Principles of Waterjetting

SSPC-SP 12/NACE No. 5 is a performance specification, not a process specification. Appendix C is not intended to be used as an equipment specification.

C1 Commentary on Production Rates

C1.1 Operator skill and the condition of the steel surface affect waterjetting production rates.^{15,16,17} Regardless of the surface conditions, production rates usually improve when:

- (a) The operator gains additional experience with high- and ultrahigh-pressure waterjetting; or
- (b) Mechanized, automated waterjetting equipment is used.

C1.1.1 New metal with tightly adhering mill scale requires the highest level of operator skill and concentration to produce a clean surface by waterjetting.

Older, more corroded, or previously coated surfaces require an average level of skill and concentration to achieve desired results. This is the opposite of abrasive blasting, when poor surface conditions require the highest levels of operator skill and concentration.

C1.2 As a general rule, production and ease of removal

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increase as the waterjetting pressure increases.

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C1.3 Cleanup time to remove waste material should be considered when determining the overall production rate.

C2 Commentary on Waterjetting Parameters

C2.1 The specifier should describe the final condition of the substrate. Depending on the initial condition of the area and materials to be cleaned, the method to achieve Visible Conditions WJ-1, WJ-2, WJ-3, or WJ-4 may be LP WC, HP WC, HP WJ, or UHP WJ. The method of water cleaning or waterjetting ultimately is based on the capabilities of the equipment and its components.

Dwell time, transverse rate, pressure, flow, stand-off distances, the number of nozzles, and rotation speed all interact in determining what material will remain and what will be removed.

C2.2 There are two thoughts on increasing production rates during the removal of materials by pressurized water. First, determine the threshold pressure at which the material will just be removed. The user can then either increase the flow to achieve adequate production rates or increase the pressure by a factor no greater than three over the threshold pressure. These two methods do not necessarily yield the same result.¹⁸

C2.3 Details of the calculations in Table C1 are standard to the waterjetting industry and are beyond the scope of this standard.¹⁹

C2.4 Removal of degraded coating is coupled to thorough stressing of the remaining coating. The jet energy is the work done when the jet stream vertically impacts the coating surface. Energy is normally measured in kilojoules. The shear stress is developed against the vertical pit walls and larger fractures created on the eroded coating surface. This can, in gross terms, be

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thought of as a hydraulic load.

C2.5 Flexure stressing is induced by repetitive loading and unloading of the coatings systems by the jet streams as they pass over the surface. The rapid loading and unloading is vital to finding areas of low adherence and nonvisible adherence defects in the coating system.19

C2.6 Characteristics of typical pressurized water systems are included in Table C1.

Table C1: Typical Pressurized Water Systems

Pressure at Nozzle 70 MPa (10,000 psig) 140 MPa (20,000 psig) 280 MPa (40,000 psig)

Number of Tips 2 2 5

Diameter 1.0 mm (0.040 in.) 0.69 mm (0.027 in.) 0.28 mm (0.011 in.)

Flow 12.9 L/min (3.42 gpm) 8.3 L/min (2.2 gpm) 2.0 L/min (0.52 gpm)

Cross-Sectional Area 0.81 mm² (0.0013 in.²) 0.37 mm² (0.00060 in.²) 0.065 mm² (0.00010 in.²)

Jet Velocity 360 m/s (1,180 ft/s) 520 m/s (1,700 ft/s) 730 m/s (2,400 ft/s)

Impact Force (per tip) 8.1 kg (18 lb) 7.7 kg (17 lb) 2.4 kg (5.3 lb)

Jet Energy 141 kJ (134 BTU) 189 kJ (179 BTU) 89 kJ (81 BTU)

Energy Intensity (energy/
cross-sectional area)

175 kJ/mm²

(107,000 BTU/in.²)

513 kJ/mm²

(314,000 BTU/in.²)

1,401 kJ/mm²

(857,000 BTU/in.²)

C2.7 In field terms, the 70-MPa (10,000-psig) jets may not significantly erode the coatings. Therefore, they are typically used for partial removal or for cleaning loose detrital material. The 140-MPa (20,000-psig) jets erode the coatings fairly rapidly and are typically used for partial removal. The 280-MPa (40,000-psig) jets erode and destroy coatings very fast and are typically used when most or all of the coating is to be removed (WJ-1 or WJ-2).

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C2.8 Application judgment is employed by operators or users who make the decisions concerning which type of jetting water to use:

- (a) HP WC (the water's flow rate is the predominant energy characteristic);
- (b) HP WJ (pressure [i.e., the velocity of the water] and flow rate are equally important); or
- (c) UHP WJ (the pressure [i.e., the velocity of the water] is the dominant energy characteristic).

C2.9 As water passes through the orifice, potential energy (pressure) is converted to kinetic energy. The energy increases linearly with the mass flow, but increases with the square of the velocity, as shown in Equation (C1).

2

2

$$\text{Kinetic Energy} = 1mv \text{ (C1)}$$

where

m = mass (derived from water volume)

v = velocity (derived from pressure)

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In order to calculate the kinetic energy from flow rates and velocity, a time period must be selected. A time period of 10 milliseconds is used for Equation (C1).

C2.10 The threshold pressure(5) of a coating must also be determined. In general, the tougher or harder the coating (i.e., the more resistant to testing by a pocket knife), the higher the threshold pressure; the softer and more jelly-like the coating, the lower the threshold pressure.

C2.10.1 Once the threshold pressure is achieved or exceeded, the production rate increases dramatically. Therefore, waterjetting production rates are affected by two conditions:

- (a) Erosion at pressures lower than the threshold pressure, and

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(b) Waterjet cutting and erosion at pressures greater than the threshold pressure.

(5) *Threshold pressure* is defined as the minimum pressure required to penetrate the material.²⁰

EXHIBIT 'B'

**PERFORMANCE BOND
CONTRACT DOCUMENTS**

BOND NO. _____

KNOW ALL MEN BY THESE PRESENTS that we, _____
as Principal, and _____ as Surety, are held
and firmly bound unto the **RHODE ISLAND AIRPORT CORPORATION** hereinafter called
the Obligee, in the Penal sum of _____ Dollars
(\$ _____) for the payment of which sum well and truly to be
made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and
severally firmly by these presents.

WHEREAS, the Principal, on the _____ day of _____, 20__ entered into a certain
Contract with the Owner, hereto attached, for Contract entitled *Terminal Exterior Entrance
Canopy, Deck and Fence painting - T. F. Green Airport - Contract No. 26527.*

NOW THEREFORE, the condition of this obligation is such that if the Principal shall well and
truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of
said Contract, and all duly authorized modifications of said Contract that may hereafter be made,
notice of which modifications to the Surety being hereby waived, then this obligation shall be
void; otherwise to remain in full force and effect.

Whenever the Principal shall be and is declared by the Owner to be in default under the Contract,
or wherever the contract has been terminated by default of the Contractor, the Owner having
performed the Owner's obligations thereunder, the Surety shall:

Complete the Contract in accordance with its terms and conditions, or at the Owner's sole option.

Obtain a Bid or Bids for submission to the Owner for completing the Contract in accordance with
its terms and conditions, and upon determination by the Owner and Surety of the lowest
responsible Bidder, arrange for a Contract between such Bidder and the Owner, and made
available as work progresses (even though there should be a default or a succession of defaults
under the Contract or Contracts of completion arranged under this paragraph) sufficient funds to
pay the cost completion less the balance of the Contract price but not exceeding, including other
costs and damages for which the Surety may be liable hereunder, the amount set forth in the first
paragraph hereof. The term "balance of the Contract price", as used in this paragraph, shall mean
the total amount payable by the Owner to the Contractor under the Contract and any amendments
thereto, less the amount properly paid by the Owner to the Contractor.

No right of action shall accrue on this Bond to or for the use of any person or corporation other
than the Owner named herein or the successors or assignees thereof.

In the case of termination of the Contract, as provided in the Contract Documents, there shall be
assessed against the Principal and Surety herein, all expenses, including design/engineering,
Program Management, and legal services, incident to collecting losses to the Owner under this
Bond.

This Bond shall remain in full force and effect for such period or periods of time after the date of
acceptance of the project by the Owner as are provided for in the Contract Documents, and the
Principal hereby guarantees to repair or replace for the said periods all work performed and
materials and equipment furnished, which were not performed or furnished according to the terms

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of the Contract Documents. If no specific periods of warranty are stated in the Contract Documents for any particular item of work, material, or equipment, the Principal hereby guarantees the same for a minimum period of one (1) year from the date of final acceptance by the Owner.

The Surety shall permit arbitration and be ultimately responsible for the payment of any award.

IN WITNESS WHEREOF, the above bounden parties have caused this Bond to be signed and sealed by their appropriate officials as of the _____ day of _____, **20**__.

PRINCIPAL

(Firm Name)

By: _____

WITNESS

(Title)

SURETY

(Firm Name)

By: _____

WITNESS

(Title)

EXHIBIT 'C'

CONTRACT AGREEMENT
For
TERMINAL EXTERIOR ENTRANCE CANOPY, DECK AND FENCE PAINTING
T. F. Green Airport
CIP No. PVD.276; Contract No. 26527

This Contract Agreement, executed in the City of Warwick, in the State of Rhode Island this ___ day of _____, 20__ between the Rhode Island Airport Corporation (RIAC), hereinafter called "OWNER" and CONTRACTOR NAME hereinafter called "CONTRACTOR".

WITNESSETH:

That for and in consideration of payments, hereinafter mentioned, to be made to the CONTRACTOR by the OWNER, the CONTRACTOR agrees to furnish all equipment, machinery, tools and labor; to furnish and deliver all material required to be furnished and delivered in and about the improvements and to do and perform all work in the performance of Terminal Exterior Entrance Canopy, Deck and Fence Painting; Contract No. 26527 (the "PROJECT") in strict conformity with the provisions of this AGREEMENT, as defined in the Contract Documents for Terminal Exterior Entrance Canopy, Deck and Fence Painting, RIAC Contract No. 26527 at T. F. Green Airport, Warwick, Rhode Island, General Instructions to Bidders, the Drawings and Specifications and **Addendum No. ___ dated Month, Day, Year and Addendum No. ___ dated Month, Day, Year** approved by the Owner for this project. These said documents are hereby made a part of this AGREEMENT as fully and to the same effect as if the same had been set forth at length in the body hereof.

As security for the full and faithful performance of this AGREEMENT and all the incidents thereto, the CONTRACTOR has made and furnished contract bonds with BOND AGENCY NAME AND ADDRESS as surety, which is accepted by the OWNER and made a part of this AGREEMENT.

In consideration of the foregoing premises, the OWNER agrees to pay the Contractor such unit prices for the work actually done as set out in the CONTRACTOR's Schedule of Prices for the bid amount of DOLLAR VALUE IN WORDS (\$DOLLAR VALUE IN NUMBERS), in the manner provided in the Contract Documents cited above.

The CONTRACTOR shall be prepared to begin the work to be performed under this AGREEMENT within ten (10) days of a written "Notice to Proceed" as provided by the OWNER and to complete the project within **one hundred eighty (180) calendar days and fully completed before June 30, 2017** as

EXHIBIT 'C'

detailed in the General Specifications of the Contract Documents. The work shall be prosecuted from as many different points, in such part or parts and at such times as may be directed by the OWNER, and shall be conducted in such a manner and with such materials, equipment, and labor as are considered necessary by the OWNER to insure its completion within the time set forth in the proposal. Should the prosecution of the work for any reason be discontinued by the CONTRACTOR, with the consent of the OWNER to such work stoppage, the CONTRACTOR shall not recommence work unless CONTRACTOR has given the OWNER at least forty-eight (48) hours prior to written notice.

IN WITNESS WHEREOF, the parties to these presents have caused this AGREEMENT to be executed in their names and on their behalf as of the date first written above.

RHODE ISLAND AIRPORT CORPORATION

Witnessed:

By: _____

Name: _____

Title: _____

CONTRACTOR NAME

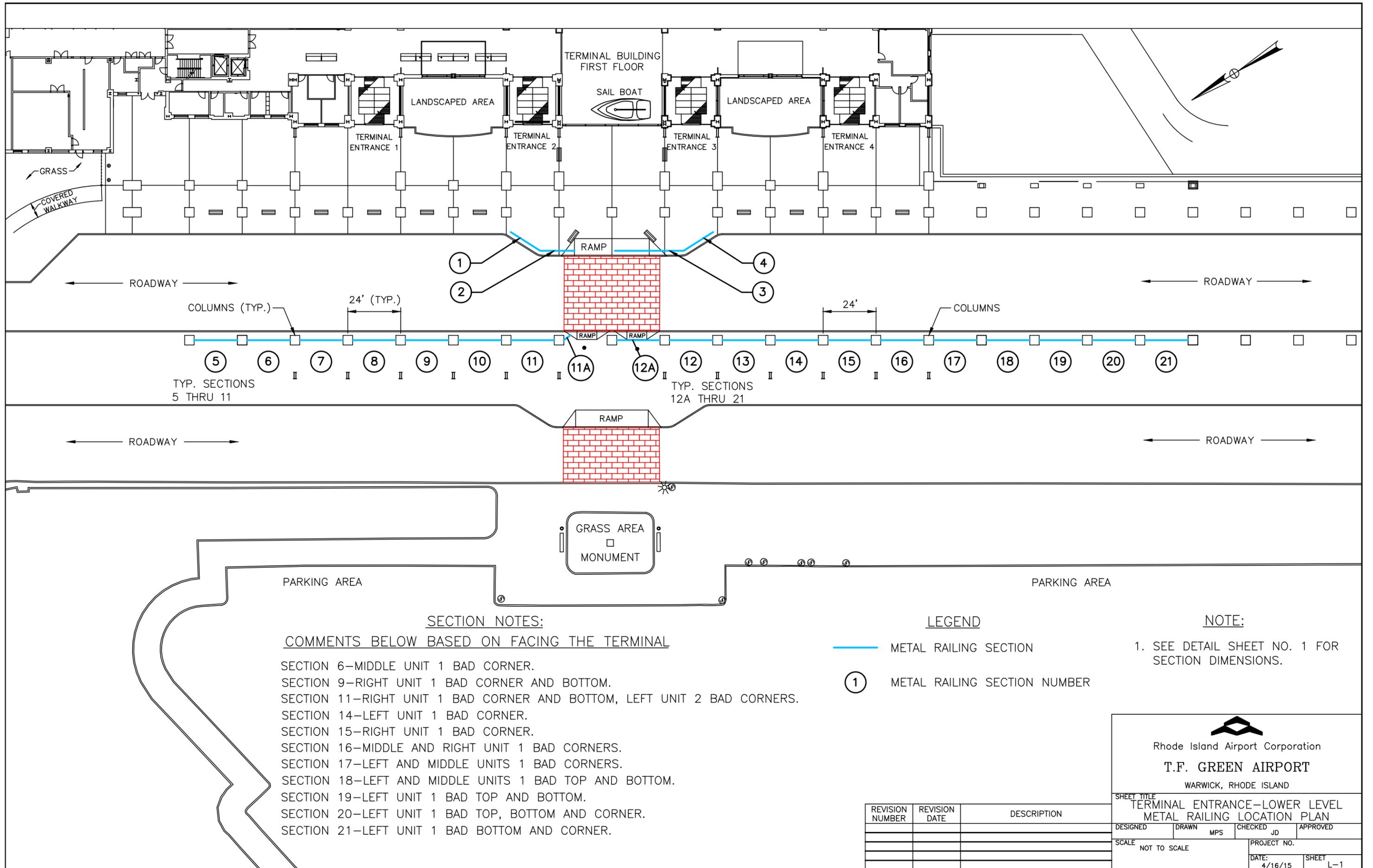
Witnessed:

By: _____

Name: _____

Title: _____

EXHIBIT D



S:\CADD Drawings\TF-GREEN\Engineering\PVD-LOWER LEVEL RAILING LOCATION\PVD-TERM-LOWER-LEVEL-RAILING-LAYOUT.dwg, 5/19/2015 1:45:22 PM

SECTION NOTES:

COMMENTS BELOW BASED ON FACING THE TERMINAL

- SECTION 6-MIDDLE UNIT 1 BAD CORNER.
- SECTION 9-RIGHT UNIT 1 BAD CORNER AND BOTTOM.
- SECTION 11-RIGHT UNIT 1 BAD CORNER AND BOTTOM, LEFT UNIT 2 BAD CORNERS.
- SECTION 14-LEFT UNIT 1 BAD CORNER.
- SECTION 15-RIGHT UNIT 1 BAD CORNER.
- SECTION 16-MIDDLE AND RIGHT UNIT 1 BAD CORNERS.
- SECTION 17-LEFT AND MIDDLE UNITS 1 BAD CORNERS.
- SECTION 18-LEFT AND MIDDLE UNITS 1 BAD TOP AND BOTTOM.
- SECTION 19-LEFT UNIT 1 BAD TOP AND BOTTOM.
- SECTION 20-LEFT UNIT 1 BAD TOP, BOTTOM AND CORNER.
- SECTION 21-LEFT UNIT 1 BAD BOTTOM AND CORNER.

LEGEND

- METAL RAILING SECTION
- ① METAL RAILING SECTION NUMBER

NOTE:

- 1. SEE DETAIL SHEET NO. 1 FOR SECTION DIMENSIONS.

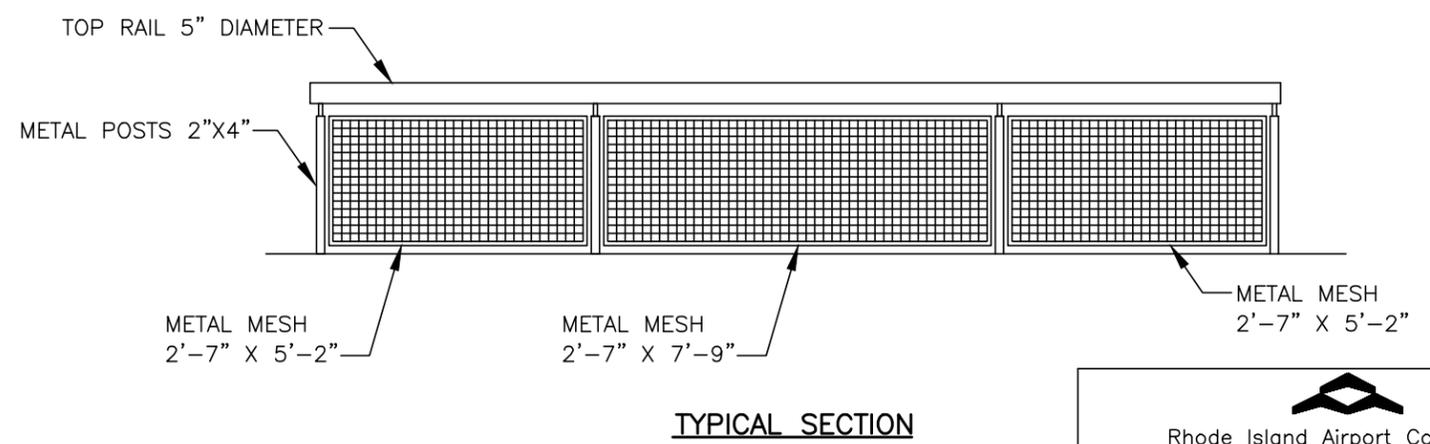
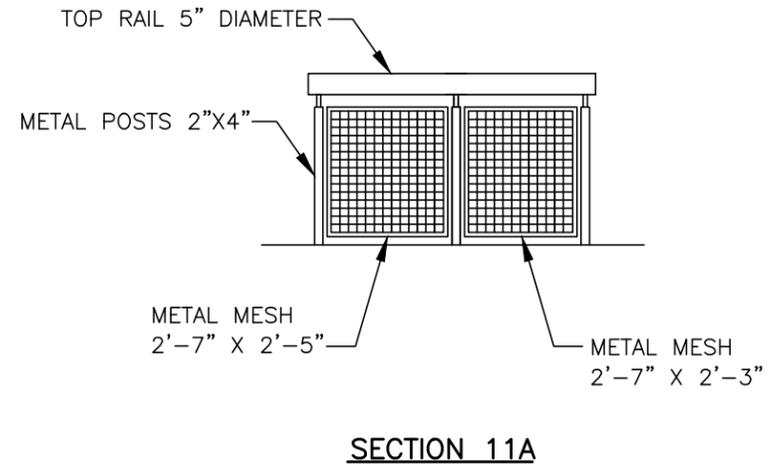
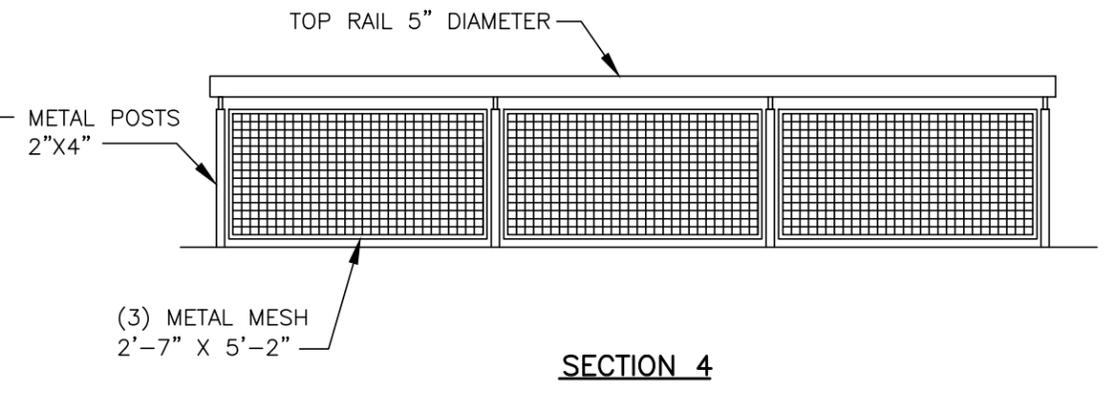
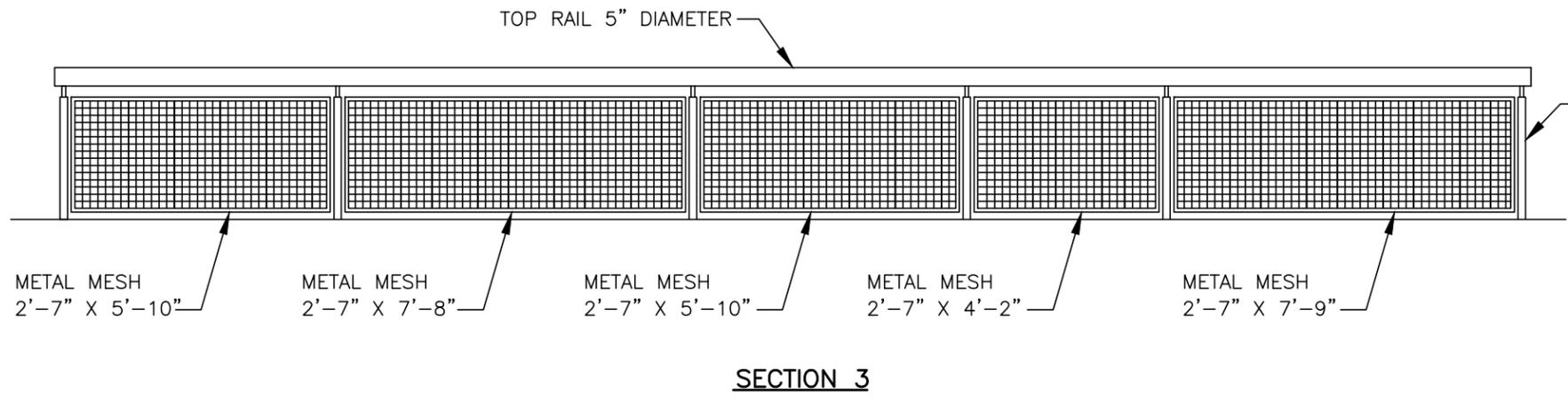
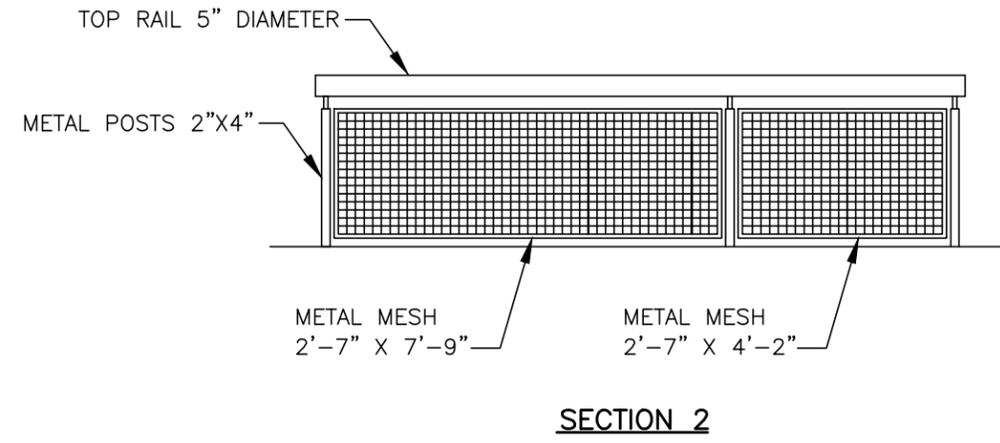
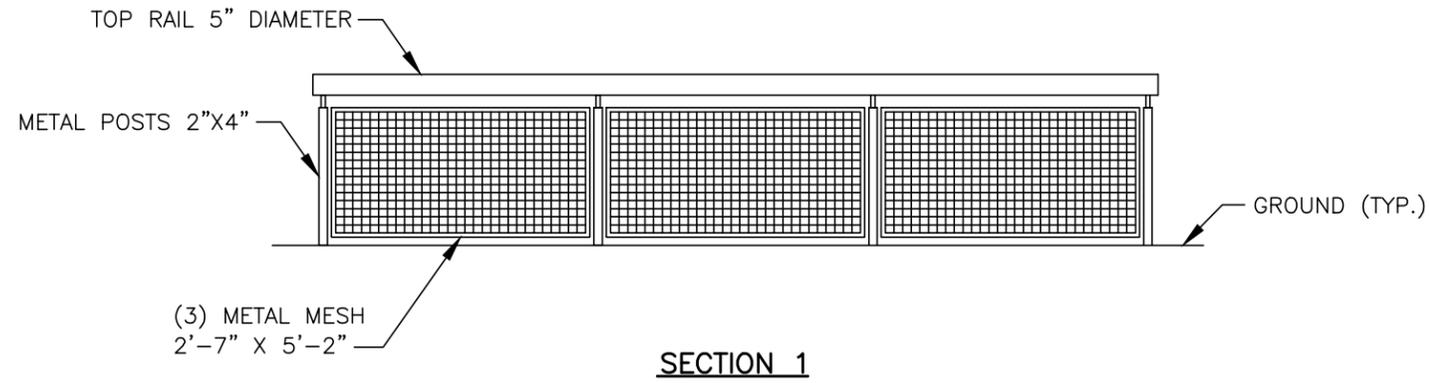
REVISION NUMBER	REVISION DATE	DESCRIPTION



Rhode Island Airport Corporation
T.F. GREEN AIRPORT
 WARWICK, RHODE ISLAND

SHEET TITLE			
TERMINAL ENTRANCE-LOWER LEVEL METAL RAILING LOCATION PLAN			
DESIGNED	DRAWN	CHECKED	APPROVED
	MPS	JD	
SCALE		PROJECT NO.	
NOT TO SCALE			
DATE:		SHEET	
4/16/15		L-1	

EXHIBIT D-1




 Rhode Island Airport Corporation
T.F. GREEN AIRPORT
 WARWICK, RHODE ISLAND

SHEET TITLE
**TERMINAL ENTRANCE-LOWER LEVEL
 DETAIL SHEET NO. 1**

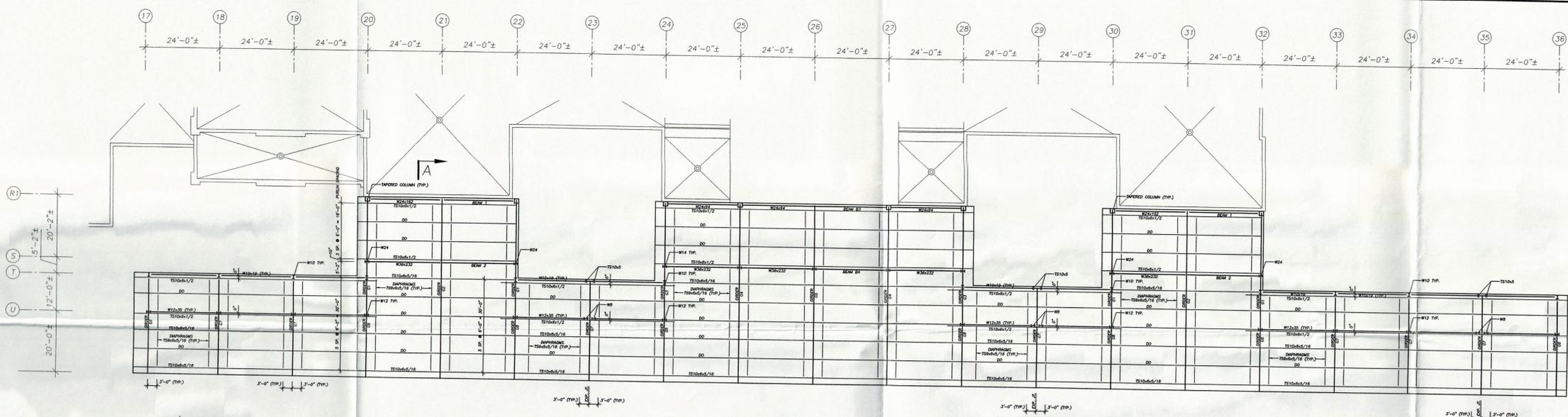
DESIGNED	DRAWN MPS	CHECKED JD	APPROVED
SCALE NOT TO SCALE		PROJECT NO.	
DATE: 4/16/15		SHEET D-1	

REVISION NUMBER	REVISION DATE	DESCRIPTION

S:\CADD Drawings\TF-GREEN\Engineering\PVD-LOWER LEVEL RAILING-LEVEL-RAILING-LAYOUT.dwg, 5/19/2015 1:48:27 PM



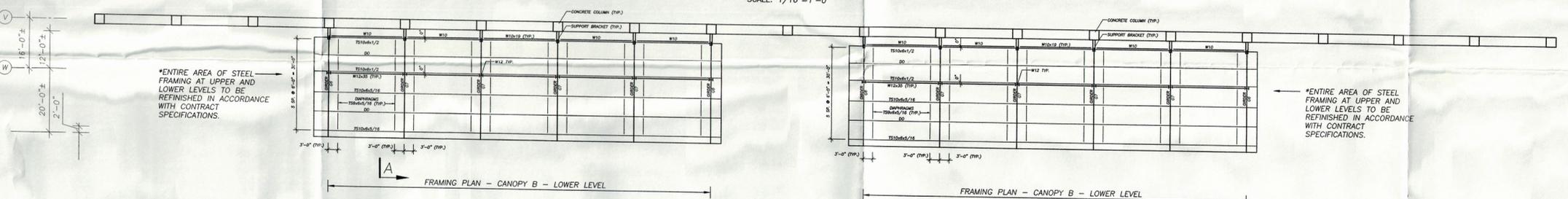
Gale Associates, Inc.
 Boston • Baltimore • Orlando • San Francisco
 33 Riverside Drive • Pembroke MA 02359-1938
 Phone: (781) 829-2000 • Fax: (781) 829-2007



*ENTIRE AREA OF STEEL FRAMING AT UPPER AND LOWER LEVELS TO BE REFINISHED IN ACCORDANCE WITH CONTRACT SPECIFICATIONS.

QUANTITIES OF RUST PER BAY **	CANOPY PLAN - PAINTING SCOPE (UPPER AND LOWER LEVELS)																		
	BAY 1	BAY 2	BAY 3	BAY 4	BAY 5	BAY 6	BAY 7	BAY 8	BAY 9	BAY 10	BAY 11	BAY 12	BAY 13	BAY 14	BAY 15	BAY 16	BAY 17		
LOWER CANOPY COLUMN	9 SF	3 SF	2 SF	-	1 SF	1.5 SF	2.5 SF	-	1.5 SF	.5 SF	-	2.5 SF	2.5 SF	-	-	2.5 SF	2 SF	1.5 SF	-
LOWER CANOPY GIRDER	2.5 SF	1 SF	-	-	2 SF	1 SF	1 SF	-	-	.5 SF	-	-	-	-	-	-	-	-	-
LOWER CANOPY BEAM	-	-	1 SF	1 SF	1 SF	2 SF	1 SF	-	-	.5 SF	-	-	-	-	-	-	-	-	-
LOWER CANOPY PURLIN	2 SF	1.5 SF	1 SF	-	-	1 SF	1 SF	2.5 SF	1 SF	-	-	-	-	-	-	2 SF	-	-	-
UPPER CANOPY COLUMN	-	-	1 SF	-	1 SF	-	-	1.5 SF	-	.5 SF	-	-	-	-	-	1 SF	1 SF	1 SF	-
UPPER CANOPY GIRDER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 SF	2 SF	-	-
UPPER CANOPY BEAM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 SF	-	-	-
UPPER CANOPY PURLIN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CANOPY PLAN - PAINTING SCOPE (UPPER AND LOWER LEVELS)
 SCALE: 1/16"=1'-0"



*ENTIRE AREA OF STEEL FRAMING AT UPPER AND LOWER LEVELS TO BE REFINISHED IN ACCORDANCE WITH CONTRACT SPECIFICATIONS.

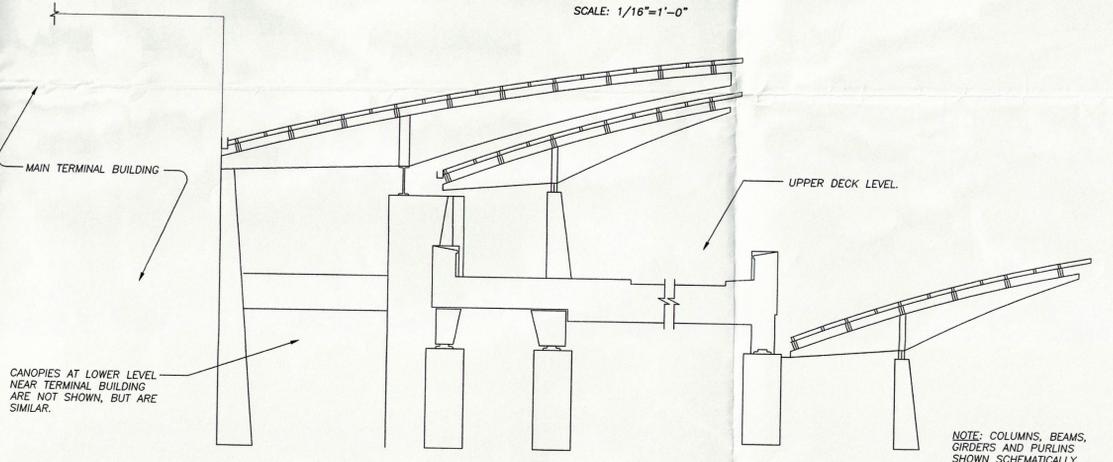
*ENTIRE AREA OF STEEL FRAMING AT UPPER AND LOWER LEVELS TO BE REFINISHED IN ACCORDANCE WITH CONTRACT SPECIFICATIONS.

QUANTITIES OF RUST PER BAY **	BAY 1	BAY 2	BAY 3	BAY 4	BAY 5
COLUMN	3 SF	3 SF	2 SF	2 SF	3 SF
GIRDER	1 SF	.5 SF	1 SF	1 SF	1 SF
BEAM	2 SF	2 SF	1 SF	2 SF	2 SF
PURLIN	1 SF	1 SF	2 SF	-	-

QUANTITIES OF RUST PER BAY **	BAY 1	BAY 2	BAY 3	BAY 4	BAY 5
COLUMN	2 SF	1 SF	1 SF	2 SF	2 SF
GIRDER	6 SF	2 SF	2 SF	1.5 SF	3 SF
BEAM	.5 SF	.5 SF	.5 SF	.5 SF	.5 SF
PURLIN	-	-	-	-	-

CANOPY PLAN - PAINTING SCOPE (LOWER LEVEL ONLY)
 SCALE: 1/16"=1'-0"

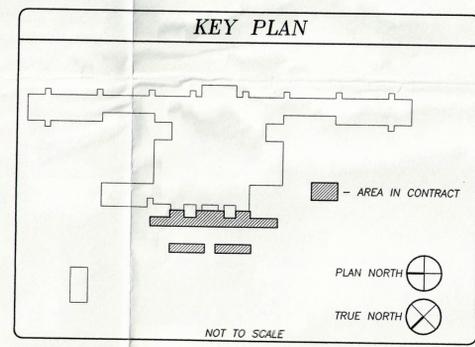
* ALL STRUCTURAL STEEL CANOPY FRAMING SHALL BE REFINISHED WITH NEW COATINGS, INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING: COLUMNS, BASE AND CAP PLATES; GIRDERS, BEAMS, PURLINS, BRACKETS, PLATES, BRACING, DIAPHRAGMS, STIFFENERS, FASTENERS, CONNECTIONS, ETC. ALL COMPONENTS SHALL BE REFINISHED ON EACH FACE IN ACCORDANCE WITH CONTRACT SPECIFICATIONS.



SECTION A-A TYPICAL CANOPY FRAME SECTION
 SCALE: NOT TO SCALE

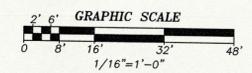
NOTE: COLUMNS, BEAMS, GIRDERS AND PURLINS SHOWN SCHEMATICALLY ONLY. NOT ALL COMPONENTS ARE DEPICTED ON THIS SECTION.

**NOTE: QUANTITIES OF RUST ARE GIVEN TO HELP INDICATE AREAS REQUIRING SPECIFIED SURFACE PREPARATION AND SPOT-PRIMING PROCEDURES. QUANTITIES SHOWN INDICATE AREAS OF RUST AS OF MID-SEPTEMBER 2001. CONTRACTOR MUST VIEW ENTIRE SITE FOR SCOPE OF WORK AND UPDATE OF QUANTITIES OF RUST PRIOR TO SUBMITTING BID.



KEY PLAN

PLAN NORTH
 TRUE NORTH



NO.	DATE	DESCRIPTION

PROJECT NAME AND LOCATION
 RHODE ISLAND AIRPORT CORP.
 T.F. GREEN STATE AIRPORT
 MAIN TERMINAL BUILDING

CLIENT NAME AND ADDRESS
 RHODE ISLAND AIRPORT CORP.
 2000 POST ROAD
 WARWICK, RI

DRAWING TITLE
 AIRPORT CANOPIES
 PAINTING PLAN

ISSUE SET	ISSUE DATE	PROJECT NO.	DESIGNED BY:	DRAWN BY:	REVIEWED BY:	CADD FILE:	DRAWING SCALE:
	JAN. 10, 2002	810188	DAM	SJM	WES	810188-P1	AS SHOWN

DRAWING NUMBER:
 P-1

SHEET NO: P1 **OF** P1