



Addendum 2  
Twin 24-inch Raw Water Transmission Mains Replacement  
September 8, 2022

**BID DATE:** Bid opening has changed to Thursday, September 29, 2021 at 1:00 PM. A revised advertisement is attached.

**TO ALL BIDDERS:**

Below are changes and or clarifications to the bid documents for this project. This Addendum forms a part of the Contract Documents and modifies the original bidding documents as noted below. Acknowledge receipt of this Addendum as required in the bid documents. Failure to do so may subject Bidder to disqualification.

**DEADLINE FOR QUESTIONS:**

Deadline for questions has changed to Wednesday, September 14, 2022 at 2:00 PM.

**SCOPE:**

This Addendum No. 2 consists of pages AD2-1 thru AD2-3 and covers the following revisions to the Specifications for this Project:

**TECHNICAL SPECIFICATION REVISION:**

1. Add Section 09 96 11 – Protective Coatings, attached to this addendum.
2. Section 40 05 19 – Ductile Iron Pipe
  - a. Replace Paragraph 2.7 – Shop Coating and Lining with the following paragraph:

2.7 SHOP COATING AND LINING

- A. The interior of all pipe and fittings, unless noted otherwise, shall be cement mortar lined.

- B. The exterior surfaces of all buried pipe shall conform with AWWA C-151 and shall be coated with an arc-sprayed zinc. The mass of the zinc applied shall be 200 g/m<sup>2</sup> of pipe surface area. The zinc primer shall have a topcoat with a mean dry film thickness of not less than 3 mils with a local minimum not less than 2 mils. The coating system shall conform to ISO 8179-1 "Ductile iron pipes - External zinc-based coating - Part 1: Metallic zinc with finishing layer (Second edition 2004-06-01)." Exterior surfaces of all buried fittings shall be coated with a zinc-rich primer conforming to ISO 8179-2 "Ductile iron pipes – External zinc coatings – Part 2 Zinc rich paint with finishing layer".
- C. The exterior surfaces of all above-grade pipe are specified in Section 09 96 11 – Protective Coatings.
- D. The exterior surfaces of all pipe and fittings which will be exposed in both interior and exterior locations shall be shop primed. Field painting of exposed exterior surfaces is covered in the Protective Coatings section. Flange faces shall be coated with a suitable rust-preventive compound.

**QUESTIONS RECEIVED:**

- Q1. The cost of the marine support to facilitate a HDD in the direction from 0+00 to 43+50 along with the durational risk of drill rigs staging from 0+00 for months at a time in wet weather conditions could require an alternate approach. Would the owner consider a direct pipe installation means and methods for the base bid where the contractor establishes his entry point at station +/-43+50 and pushes a 36-inch steel pipe back to 0+00? The 36-inch steel pipe would be polyurethane coated inside and out and designed for a thickness as required.
- A1. Direct pipe installation with steel pipe is not acceptable as a substitution.
- Q2. Can the contractor consider “no bidding” Alternate 01 and only bid the Base Bid, Alternate 2, Alternate 3 and Alternate 4? Or, will a “no bid” response to Alternate 01 be considered non-responsive?
- A2. A “no bid” response for Alternate #1 is acceptable and will be considered responsive. However, a bid must be completed for the Base Bid, Alternate #2, Alternate #3, and Alternate #4 to be considered responsive.
- Q3. We’ve studied the options and for above ground piping on timbers we have an issue with applying and transporting ARC SPRAYED ZINC coating in a bare state and then a painting contractor applying a suitable top coat at the jobsite. There could possibly be some negative reaction of the bare zinc with salt prior to top coat application. Our recommendation would be to apply a zinc rich primer at our plant and then have the painting sub apply a desired top coat.
- A3. The specifications have been amended for above-grade and buried piping coatings.
- Q4. I’m trying to make sure we are quoting the correct coatings and linings for the Ductile Iron Pipe. In spec section 40 05 19 page 13, there is a spec for “BURIED” pipe 2.7 B.. It looks like

almost all of this pipe will be exposed and not buried. Based on that, then referring to section 2.7 C. for pipe that will be exposed both interior and exterior shall be primed. But, two sentences later it says all other pipe shall be asphaltic coated. Can you clarify the coating you are looking for on the pipe installed on these timber braces?

- A4. The specifications have been amended for above-grade and buried piping coatings.
- Q5. PDF pg. 48 – NC Dept of Environmental Quality and Coastal Resources Permit - Item 4 under Additional Conditions – no excavation or filling between 4/1 and 9/30 – This would seem to imply that no road access (clearing & grubbing would require excavation), etc can be done during this period which would seem to limit us to no work during this time period if we cannot do piles, HDD, etc already imposed by the PNA Moratorium – Please clarify
- A5. The moratorium between 4/1 and 9/30 applies to the area west of Station 55+50. This area is mainly wetland grasses and would only require matting. It is our understanding with CAMA that the laydown of wetland matting can occur during this period. It is important that sedimentation in this area is limited during this period in order to comply with the permit.
- Q6. PDF pg. 58 – Work is authorized under NWP 58 – it appears construction of Access Roads (2nd paragraph, 1st sentence) is specifically limited to non-tidal waters of the US – I don't see any exceptions in the remainder of the Permit documents, so it would seem the access road for this project is not permitted since this area appears to be tidal – Please clarify
- A6. NWP 58 authorizes the use of temporary mats. The access road referenced in NWP 58 is permanent for maintenance of the utility. USACE has reviewed and authorized the scope of this project subject to the moratoriums provided.
- Q7. Will owner consider bid date extension? We are having trouble tracking down enough mats for 1 ½ mile access road and need more time to reach out to different vendors outside our normal contacts.
- A7. The bid date has been extended to Thursday, September 29, 2022 at 1:00 PM.

**ACKNOWLEDGEMENT BY BIDDER.** Bidder shall acknowledge receipt of this Addendum No. 2 in the space provided in the Bid Form.

All other terms & conditions remain unchanged.

Julia Faircloth  
Cape Fear Public Utility Authority  
Procurement Manager  
End of Addendum 2

Kurt Evers  
Cape Fear Public Utility Authority  
Project Manager



## RE-ADVERTISEMENT FOR BIDS

Sealed bids will be received by the CAPE FEAR PUBLIC UTILITY AUTHORITY addressed to the Procurement Manager, 235 Government Center Drive, Wilmington, NC 28403 and marked **Twin 24-inch Raw Water Transmission Mains Replacement**. Bids will be received until Thursday, September 29, 2022 at 1:00 PM in the IT Conference Room, 2<sup>nd</sup> Floor of 235 Government Center Drive at which time they will be publicly opened and read.

This is a single prime contract.

**Pre-Bid Conference:** A pre-bid conference was held and was mandatory. The Conference was located in the IT Conference Room of 235 Government Center Drive on the 31st day of August 2022 at 3:00 PM.

**Bid Opening:** Bids must be in by Thursday, September 29, 2022 at 1:00 PM in the IT Conference Room, 2<sup>nd</sup> Floor of 235 Government Center Drive. Bids must be received by Julia Faircloth, Procurement Manager or designee in the IT Conference Room. The official time will be by the clock in the IT Conference Room, 2<sup>nd</sup> Floor at 235 Government Center Drive and no late bids will be accepted. The Bidders are responsible for allowing time for traffic and parking prior to delivering the bids to the IT Conference Room. It is the bidder's responsibility to ensure that the bids are received on time.

**Contract Documents:** Plans and specifications relevant to the bid may be viewed at the following locations listed below. Cape Fear Public Utility Authority cannot guarantee the accuracy of documents and information at the plan rooms. Official sets only available from Cape Fear Public Utility Authority.

1. iSqft + bidclerk Plan Rooms: View online at: [www.isqft.com](http://www.isqft.com) or [www.bidclerk.com](http://www.bidclerk.com)
2. Dodge Data & Analytics/Dodge Plan Room: View online at: [www.dodgeprojects.construction.com](http://www.dodgeprojects.construction.com)
3. Construction Journal: View online at: [www.ConstructionJournal.com](http://www.ConstructionJournal.com)
4. Carolina AGC and Hispanic Contractors Association of the Carolinas: View online at: [www.isqft.com](http://www.isqft.com)
5. North American Procurement Council, Inc.: View online at [www.NorthCarolinabids.com](http://www.NorthCarolinabids.com)
6. The Blue Book Building & Construction Network: View online at [www.thebluebook.com](http://www.thebluebook.com)

**Prospective bidders must register** and obtain an official set of the relevant contract documents from Teresa McPherson (Bid Manager). To register and obtain bid documents, prospective bidders will be required to email the Bid Manager at [bids@cfpua.org](mailto:bids@cfpua.org) and provide contact information. A OneDrive file share link containing an official set of relevant bid documents for download will then be provided to prospective bidder via email. If you send an email to [bids@cfpua.org](mailto:bids@cfpua.org) and do not receive a response within two (2) business days, please call 910-332-6472 or 910-332-6589. Bids received from bidders who cannot prove registration at time bids are due will not be opened or considered.

**Bid Bond:** A deposit is required with the submission of the bid. When a deposit is required, the bidder must submit with the bid cash or a certified check, drawn on a bank or trust company authorized to do business in the State of North Carolina, payable to Cape Fear Public Utility Authority, in an amount at least equal to five percent (5%) of the total amount of the bid, as a guarantee that a contract will be entered into and that satisfactory performance and payment bonds will be executed. In lieu of making the cash deposit above described, a satisfactory bid bond in the amount of five percent (5%) of the total bid, executed by a corporate surety licensed under the laws of the State of North Carolina to execute such bonds, shall be submitted with each bid, conditioned that the surety will upon demand forthwith make payment to the obligee upon said bond if the bidder fails to execute the contract in accordance with the bid bond. This deposit shall be retained if the successful bidder fails to execute the contract within ten (10) days after the award of the bid or fails to give satisfactory surety as required in North Carolina General Statutes Section 143-129.

**Affidavit and Certification of Non-Collusion, Non-Suspension and Non-Conviction:** The Affidavit and Certificate of Non-Collusion, Non-Suspension and Non-Conviction provided with bid documents must be completely executed and submitted with bid.

Each bidder must show evidence that it is licensed as a contractor under Chapter 87 of the North Carolina General Statutes. The bidder must have the following NC General Contractor's license to be qualified to perform the work associated with this bid:

Limitation: Unlimited

Classification(s): Public Utility

No bid may be withdrawn after bids have been opened, except as provided in the North Carolina General Statutes.

This project is receiving SRF funding and the EPA MBE/WBE Participation goals are MBE 10.9 % and WBE 10.4%, State of NC MBE/WBE participation goal 10%. See SRF Special Conditions Section for details. Bidders shall make a good faith effort to solicit minority and women owned businesses to participate on the project.

The successful bidder will be required to furnish a construction performance bond and a construction payment bond as security in the amount of one hundred percent (100%) of the contract amount for the faithful performance and the payment of all bills and obligations arising from the performance of the Contract.

If the bidder fails to complete and submit all requirements stated in this Advertisement for Bids and those further requirements stated in the Instruction to Bidders included with the relevant contract documents, the Cape Fear Public Utility Authority may deem such failure nonresponsive and therefore a forfeiture of the bid.

Cape Fear Public Utility Authority reserves the right to reject any and all bids. This is a SRF funded project. Project award is contingent upon approval from the state agency.

All inquiries concerning this bid shall be directed to CFPUA Purchasing Division by e-mail to [bids@cfpua.org](mailto:bids@cfpua.org).

## Protective Coatings

### SECTION 09 96 11 - PROTECTIVE COATINGS

#### PART 1 - GENERAL

##### 1.1 SCOPE

- A. This section covers field applied protective coatings, including surface preparation, protection of surfaces, inspection, and other appurtenant work for equipment and surfaces designated to be coated with heavy-duty maintenance coatings. Regardless of the number of coats previously applied, at least two field coats in addition to any shop coats or field prime coats shall be applied to all surfaces unless otherwise specified.

##### 1.2 GENERAL

- A. Cleaning, surface preparation, coating application, and thickness shall be as specified herein and shall meet or exceed the coating manufacturer's recommendations. When the manufacturer's minimum recommendations exceed the specified requirements, Contractor shall comply with the manufacturer's minimum recommendations. When equivalent products are acceptable to Engineer, Contractor shall comply with this Specification and the coating manufacturer's recommendations.
- B. Governing Standards
  - 1. All cleaning, surface preparation, coating application, thickness, testing, and coating materials (where available) shall be in accordance with the referenced standards of the following AWWA, ANSI, NACE, SSPC, NSF, and ASTM.
- C. Delivery and Storage
  - 1. All coating products shall be received and stored in accordance with the coating manufacturer's recommendations.

##### 1.3 SUBMITTALS

- A. General Submittals and Data
  - 1. Contractor shall submit color cards for all coatings proposed for use, together with complete descriptive specifications, manufacturer's product data sheet and the completed Coating System Data Sheets, to Engineer for review and color selection. Each product data sheet shall include application temperature limits including recoat time requirements for the ambient conditions at the site, including temperatures up to 130° F. Requests for review submitted directly to Engineer by coating suppliers will not be considered.
- B. NSF 61 Compliance

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1. When the proposed products will be in contact with treated or raw water in potable water treatment facilities, Contractor shall submit certifications that the proposed systems are in compliance with ANSI/NSF 61.

### C. Data Sheets

1. Contractor shall submit a Coating System Data Sheet for each separately identified surface in the Metal Surfaces Coating Schedule using the appropriate Coating System Data Sheet forms (Figures 1- 09 96 11 and 2- 09 96 11) at the end of this section. Each field coating system shall be acceptable to the coating material manufacturer.
  - a. Coating System Data Sheets shall be assigned a unique number with a prefix letter based on the following:

Prefix	Surfaces	Fig. 09 96 11
A	Iron and steel (shop primed)	2

- b. Each coating system that will be applied entirely in the field shall be assigned only a prefix letter and no suffix letter. Fig 1- 09 96 11 shall be submitted for each surface coated entirely in the field.
- c. Each shop-applied coating system that includes one or more field applied coats shall be assigned both a prefix letter and suffix letter "F." Fig 2- 09 96 11 shall be submitted for each surface having a shop applied coating and one or more field applied finish coats.
- d. A separate Coating System Data Sheet shall be developed and submitted for each surface scheduled to be coated or variation or change in a coating system. The number identifying the surface and coating system shall be of the form A<sub>1</sub> or A<sub>1</sub>-F. The subscript number shall be assigned by the Contractor so that each surface and coating system combination is uniquely identified. For example:
  - 1) A<sub>1</sub>-F may be assigned to "Epoxy – one coat to metal curbs for skylights and power roof ventilators that have been shop primed."
  - 2) A<sub>2</sub> may be assigned to "Epoxy – two coats to non-galvanized structural and miscellaneous steel exposed to view inside buildings."
  - 3) C<sub>2</sub> may be assigned to "Epoxy – two coats to all concrete and concrete block in corrosive area (Except floors and surfaces scheduled to receive other coatings) which are exposed to view."
  - 4) C<sub>2</sub> may be assigned to "Epoxy – two coats to walls, floors, and curbed areas, adjacent to corrosive chemical storage and feed equipment as indicated on the Drawings."

### D. Color Submittals

1. The manufacturer's standard colors will be acceptable for all coatings.

## 1.4 QUALITY ASSURANCE

### A. Coating System Data Sheet Certifications



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1. The coating applicator and coating manufacturer shall review and approve in writing the coating manufacturer's written recommendations for the coating system and the intended service. Any variations from the Specifications or the coating manufacturers published recommendations shall be submitted in writing and approved by the coating manufacturer.
2. The coating manufacturer shall observe the surface preparation, mixing, and application of the coating systems and submit a written report of his observations and any additional recommendations.

## PART 2 - PRODUCTS

### 2.1 ACCEPTABLE MANUFACTURERS

#### A. Alternative Manufacturers

1. In addition to the coatings listed herein, equivalent products of other manufacturers that distribute globally will also be acceptable.

#### B. Equivalent Coatings

1. Whenever a coating is specified by the name of a proprietary product or of a particular manufacturer or vendor, it shall be understood as establishing the desired type and quality of coating. Other manufacturers' coatings will be accepted, provided that sufficient information is submitted to enable Engineer to determine that the proposed coatings are equivalent to those named. Information on proposed coatings shall be submitted for review in accordance with the Submittals Procedures section. Requests for review of equivalency will be accepted only from Contractor and will be considered only after the contract has been awarded.

### 2.2 MATERIALS

- A. All coatings shall be delivered to the job in original, unopened containers, with labels intact. Coatings shall be stored indoors and shall be protected against freezing. No adulterant, unauthorized thinner, or other material not included in the coating formulation shall be added to the coating for any purpose.
- B. All coatings shall conform to the air quality regulations applicable at the location of use. Coating materials that cannot be guaranteed by the manufacturer to conform, whether or not specified by product designation, shall not be used.
- C. With the exception of heat resistant coatings, the coatings specified have been selected on the basis of the manufacturer's statement that the VOC content of the product is 2.8 lbs per gallon or less; however, it shall be the Contractor's responsibility to use only coating materials that are in compliance with the requirements of all regulatory agencies. Local regulations may require some coatings to have a lower VOC content than specified herein. The coatings specified may meet the VOC limits in the unthinned (as shipped) condition but may exceed the limits if thinned according to the manufacturer's recommendations. In such case, the coatings shall not be thinned beyond the 2.8 lbs per gallon limit, and if the product cannot be thinned to suit the

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application method or temperature limits, another manufacturer's coating shall be used, subject to acceptance by Engineer's coating shall be used, subject to acceptance by Engineer.

- D. Contractor shall be responsible for ensuring the compatibility of field coatings with each other or with any previously applied coatings. Coatings used in successive field coats shall be produced by the same manufacturer. The first field coat over shop coated or previously coated surfaces shall cause no wrinkling, lifting, or other damage to underlying coats.
- E. All coatings used on surfaces that will be in contact with potable or treated water shall be certified as being in compliance with ANSI/NSF 61. Coatings that cannot be so certified, whether or not specified by manufacturer and by product designation, shall not be used.
- F. Primer  
Zinc Primer PPG "Dimetate 9 Series," Carboline "Carbo Zinc II Series," International Devoe "Catha-Coat 302H," Tnemec «Series 90-97 Zinc Primer », or Sherwin-Williams "Zinc Clad II Series."
- G. Intermediate and Finish Coatings  
Epoxy  
Ferrous Metal Surfaces PPG "Amercoat 385 Epoxy," Carboline "Carboguard 890," International Devoe Devran "224V," Tnemec "Series N69 Hi-Build Epoxoline II," or Sherwin-Williams "Dura Plate 235."  
Aliphatic Polyurethane PPG "Pitthane Ultra," Carboline "Carbothane 134HG," International "Intervane 990V" Tnemec "Series 1074 Endura-Shield II," or Sherwin-Williams "Acrolon 218HS."

## PART 3 - EXECUTION

### 3.1 SURFACE PREPARATION

- A. All surfaces to be coated shall be clean and dry and shall meet the recommendations of the coating manufacturer for surface preparation. Freshly coated surfaces shall be protected from dust and other contaminants. Oil and grease shall be completely removed by use of solvents or detergents before mechanical cleaning is started. The gloss on previously coated surfaces shall be dulled if necessary for proper adhesion of topcoats.
- B. Surfaces shall be free of cracks, pits, projections, or other imperfections that would interfere with the formation of a smooth, unbroken coating film, except for concrete block construction where a rough surface is an inherent characteristic.
- C. When applying touchup coating or repairing previously coated surfaces, the surfaces to be coated shall be cleaned as recommended by the coating manufacturer, and the edges of the repaired area shall be feathered by sanding or wire brushing to produce a smooth transition that

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will not be noticeable after the coating is applied. All coatings made brittle or otherwise damaged by heat of welding shall be completely removed.

### D. Ferrous Metal Surfaces

1. Ungalvanized ferrous metal surfaces shall be prepared for coating by using one or more of the following cleaning procedures specified here-in: solvents (SSPCSP1); abrasive blasting (SSPC-SP5, -SP10, -SP6, or -SP7) power tools (SSPCSP3 or -SP11); or hand tools (SSPCSP2). Oil and grease shall be completely removed in accordance with SSPCSP1 before beginning any other cleaning method. Surfaces of welds shall be scraped and ground as necessary to remove all slag and weld spatter. Tools which produce excessive roughness shall not be used.
2. All cut or sheared edges shall be ground smooth to a 1/8 inch minimum radius for all material 1/4 inch thickness and larger. For material thickness less than 1/4 inch all cut or sheared edges shall be ground smooth to a radius equal to 1/2 the material thickness. Grinding of rolled edges on standard shapes with a minimum radius of the 1/16 inch will not be required.
3. All ferrous metal surfaces shall have all welds ground smooth and free of all defects in accordance with NACE Standard SP0178, Appendix C, Designation C and sharp edges ground smooth, if not previously prepared in the shop. Instead of blending of the weld with the base metal as required by the NACE standard, it will be acceptable to furnish a welded joint that has a smooth transition of the weld to the base metal. All welds shall be ground smooth to ensure satisfactory adhesion of paint.
4. The cleaning methods and surface profiles specified herein are minimums, and if the requirements printed in the coating manufacturer's data sheets exceed the limits specified, the value printed on the data sheets shall become the minimum requirement.
5. Ferrous Metal Surfaces – Non-immersion Service
  - a. Ferrous metal surfaces, including fabricated equipment, in non-immersion service shall be cleaned to the degree recommended by the coating manufacturer for surfaces to be coated with coal tar epoxy, epoxy, and heat-resistant coatings, except galvanized surfaces. Surface preparation of ferrous metal surfaces in non-immersion service shall consist of abrasive blast cleaning to SSPC-SP6, and the first application of coating shall be performed on the same day. If more surface area is prepared than can be coated in one day, the uncoated area shall be blast cleaned again to the satisfaction of Engineer. Surface profile shall be as recommended by coating manufacturer, but not less than 2.0 mils .

### E. Hardware

1. Hardware items such as bolts, screws, washers, springs, and grease fittings need not be cleaned prior to coating if there is no evidence of dirt, corrosion, or foreign material.

3.2 APPLICATION

A. Coating shall be applied in a neat manner that will produce an even film of uniform and proper thickness, with finished surfaces free of runs, sags, ridges, laps, and brush marks. Each coat shall be thoroughly dry and hard before the next coat is applied. Each coat shall be a different color, if available. In no case shall coating be applied at a rate of coverage greater than the maximum rate recommended by the coating manufacturer.

B. Coating failures will not be accepted and shall be entirely removed down to the substrate and the surface recoated. Failures include but are not limited to sags, checking, cracking, teardrops, fat edges, fisheyes, or delamination.

C. Priming

1. Edges, corners, crevices, welds, and bolts shall be given a brush coat (stripe coat) of primer before application of the primer coat. The stripe coat shall be applied by a brush and worked in both directions. Special attention shall be given to filling all crevices with coating. When using zinc primers the stripe coat shall follow the initial prime coat.

2. Abraded and otherwise damaged portions of shop-applied coating shall be cleaned and recoated as recommended by the manufacturer of the finish coating. Welded seams and other uncoated surfaces, heads and nuts of field-installed bolts, and surfaces where coating has been damaged by heat shall be given a brush coat of the specified primer. Before the specified spot or touchup coating of metal surfaces, edges, corners, crevices, welds, and bolts in the area of the spot or touchup coating shall be given a brush coat of primer. This patch, spot, or touchup coating shall be completed, and the paint film shall be dry and hard, before additional coating is applied.

D. Epoxy

1. When used, epoxy shall be applied in accordance with the coating manufacturer's recommendations, including temperature limitations and protection from sunlight until top-coated.

2. When concrete is to be coated, coatings shall not be applied to concrete surfaces in direct sunlight or when the temperature of the concrete is rising. Preferably the coating shall be applied when the temperature of the concrete is dropping.

3. When applying high build epoxy coatings with a roller or brush and where a dry film thickness of at least 4-6 mils per coat is required, two or more coats shall be applied to achieve the recommended dry film thickness equal to a spray applied coating.

E. Film Thickness

1. The total coating film thickness including intermediate coats and finish coat, shall be not less than the following:

Type of Coating	Minimum Dry Film Thickness
Zinc, epoxy, polyurethane	

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Type of Coating	Minimum Dry Film Thickness
Surfaces with first coat of zinc, intermediate coat of epoxy, and final coat of aliphatic polyurethane	10 mils , 3 mils zinc, 5 mils epoxy, plus 2 mils for aliphatic polyurethane.

### F. Weather Conditions

1. Coatings shall not be applied, except under shelter, during wet, damp, or foggy weather, or when windblown dust, dirt, debris, or insects will collect on freshly applied coating.
2. Coatings shall not be applied at temperatures lower than the minimum temperature recommended by the coating manufacturer, or to metal surfaces such as tanks or pipe containing cold water, regardless of the air temperature, when metal conditions are likely to cause condensation. When necessary for proper application, a temporary enclosure shall be erected and kept heated until the coating has fully cured.
3. Coatings shall not be applied at temperatures higher than the maximum temperature recommended by the coating manufacturer. Where coatings are applied during periods of elevated ambient temperatures, Contractor and the coatings manufacturer shall be jointly responsible to ensure that proper application is performed including adherence to all re-coat window requirements. Precautions shall be taken to reduce the temperature of the surface application, especially for metal, at elevated temperatures above 100° F including shading application area from direct sunlight, applying coating in the evening or at night, and ventilating the area to reduce the humidity and temperature,

### 3.3 REPAIRING FACTORY FINISHED SURFACES

- A. Factory finished surfaces damaged prior to acceptance by Owner shall be spot primed and recoated with materials equivalent to the original coatings. If, in the opinion of Engineer, spot repair of the damaged area is not satisfactory, the entire surface or item shall be recoated.

### 3.4 PROTECTION OF SURFACES

- A. Throughout the work Contractor shall use drop cloths, masking tape, and other suitable measures to protect adjacent surfaces. Contractor shall be responsible for correcting and repairing any damage resulting from its or its subcontractors' operations. Coatings spilled or splattered on adjacent surfaces which are not being coated at the time shall be immediately removed. Exposed concrete or masonry not specified to be coated which is damaged by coatings shall be either removed and rebuilt or, where authorized by Owner, coated with two coats of masonry coating.

### 3.5 FIELD QUALITY CONTROL

- A. The following inspection and testing shall be performed: surface profile, visual inspection, and wet and dry film thickness testing. All inspection and testing shall be witnessed by Engineer.

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B. Surface Profile Testing

- The surface profile for ferrous metal surfaces shall be measured for compliance with the specified minimum profile. The surface profile for concrete shall comply with SSPC 13/NACE 6 Table 1 for severe service.

C. Visual Inspection

- The surface of the protective coatings shall be visually inspected.

D. Film Thickness

- Coating film thickness shall be verified by measuring the film thickness of each coat as it is applied and the dry film thickness of the entire system. Wet film thickness shall be measured with a gauge that will measure the wet film thickness within an accuracy of  $\pm 0.5$  mil . Dry film thickness shall be measured in accordance with SSPC-PA 2.

3.6 FINISH COATING SYSTEMS

- A. The following schedule lists coatings systems and coating surface designations. See Article 1-3 for a definition of the surface designations.

No.	Finish Coating Systems	Coating Surface Designation						
		A	C	E	F	G	H	P
1.	Epoxy – One coat	x			x	x		
2.	Epoxy – Two coats	x	x	x	x	x		x
3.	Epoxy / NSF – Two coats		x	x				
4.	Epoxy – Three coats	x	x	x				
5.	Epoxy / NSF – Three coats	x	x	x				
6.	Epoxy – First coat Aliphatic polyurethane – Finish coat	x	x	x	x	x		x
7.	Epoxy – First and second coat Aliphatic polyurethane – Finish coat	x	x	x	x	x		
8.	Universal primer – First coat Aliphatic polyurethane – Finish coat	x		x				
9.	Medium consistency coal tar – Two coats	x	x	x				
10.	Coal tar epoxy – Two coats	x	x	x				
11.	Vinyl ester – Two coats	x	x	x				
12.	Heat resistant – Two coats						x	
13.	High heat resistant – Two coats						x	

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No.	Finish Coating Systems	Coating Surface Designation						
		A	C	E	F	G	H	P
14.	Zinc primer – First coat Epoxy – Intermediate coat Aliphatic polyurethane – Final coat	x		x				
15.	Flake-filled epoxy	x		x				
16.	Acrylic Latex Emulsion		x					x

B. Surfaces Not To Be Coated

1. Unless otherwise specified, the following surfaces shall be left uncoated:
  - a. Polished or finished stainless steel. Unfinished stainless steel, except flashings and counter flashings, shall be coated.
  - b. Nickel or chromium.
  - c. Galvanized surfaces, except piping, conduit, ductwork, and other items specifically noted. Hot dipped galvanized fabrications, including fabricated pipe supports, except where specifically noted. Rubber and plastics, except as specified.
  - d. Surfaces specified to be factory finished.

3.7 METAL SURFACES COATING SCHEDULE

Surfaces to be coated shall include new work, including Owner furnished equipment and surfaces disturbed by the Work. Surfaces that are not disturbed will not require recoating unless noted otherwise on the Drawings.

Surface To Be Coated

Ductile Iron piping above grade exposed to the elements and to view outdoors, including piping to be insulated, valves, fittings, flanges, bolts, and accessories

Finish Coating System

A14

End of Section

<b>SHOP PRIMED SURFACE DESCRIPTION    SYSTEM NO. -    -F</b>

<b>SURFACE PREPARATION DESCRIPTION</b>
<input type="checkbox"/> Solvent SSPC-SP1 <input type="checkbox"/> Other

COATING	DFT mils [µm]	MANUFACTURER AND PRODUCT
Shop Primer		(Identify Product/Type)
Touchup		
Intermediate Coat		
Finish Coat		
<b>Total System</b>		Not less than minimum thickness specified.

Notes: (Attached if needed.)

Project:	
Coatings Manufacturer:	Initials _____
Painting Applicator:	Initials _____

<b>BLACK &amp; VEATCH</b>	COATING SYSTEM DATA SHEET	Fig 2- 09 96 11
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