

ADDENDUM NO. 1
WATER TREATMENT PLANT IMPROVEMENTS – PHASE 1
CITY OF SOUTH LYON
OAKLAND COUNTY, MICHIGAN

May 07, 2020

HRC Job No. 20180233

ONLINE ONLY

MITN – www.bidnetdirect.com/mitn

HRC - www.hrcengr.com/bid-info

This Addendum No. 1 is issued prior to receipt of bids to provide for certain changes and clarifications to the specifications and/or the plans, as herein specified, and is hereby made a part of the Contract Documents and shall be taken into consideration in preparing the Proposal. The General Conditions and Specifications for the original work and the Contract Drawings are to govern this work unless otherwise revised herein. All other conditions remain the same.

CONTRACT DOCUMENTS

1. SPECIFICATION SECTION 00010 – TABLE OF CONTENTS (Revised and not Reissued). This section will be updated to reflect any changes in this addendum.
2. SPECIFICATION SECTION 00300 – PROPOSAL (Revised and Reissued).
 - **Alternate 1 has been added to provide unit prices for the Type 2 A & B Exterior Surface Repairs for Tank 1.**
 - **Changes to Incorrect Substantial completion date in the Liquidated Damages Section on page 4 for the water line from well No. 7. To August 31, 2020.**
 - **Clarification – Permit Allowance includes all permits that are necessary for this job as listed in Section 02990 Permits.**
3. SPECIFICATION SECTION 02030 – SEQUENCE OF CONSTRUCTION AND SPECIAL PROJECT REQUIREMENTS (Revised and Reissued).
 - **Changed Section 1.3 E Project Phases Item 1 to reflect the August 31, 2020 in service substantial completion date for the new line from Well 7.**
4. SPECIFICATION SECTION 02335 – HORIZONTAL DIRECTIONAL DRILLING (Revised and not Reissued).
 - **Changed the requirement of ALL HDD submittals needing to be provided with the bid submittal, to ALL HDD submittals must be provided within 7 days after the contract award date (anticipated June 8, 2020).**

5. SPECIFICATION SECTION 02949 – TREES.
 - **Clarification** – This Specification is included in case additional trees, beyond those marked for removal in the drawings are removed. Any trees removed that are not shown on the drawings must be replaced in accordance with this specification at no cost to the Owner.
6. SPECIFICATION SECTION 03316 – WIRE-AND STRAND-WOUND CIRCULAR, PRESTRESSED CONCRETE WATER TANK
 - **Clarification** – Article 1.5.A.5 does not include all paint and coating work for the tank. This article does include floor and wall pipe penetrations.
7. SPECIFICATION SECTION 09900 – PAINTING (Revised and Reissued).
 - **Changed Acceptable Manufacturers:
Added Sherwin-Williams**
 - **Updated prep requirements for Galvanized Surface Repair and Ductile Iron components.**
 - **Combined Sections 3.3 and 3.4.**
 - **Updated Schedule and Painting Systems, added Systems for Exterior Concrete and Interior Components (Potable).**
8. SPECIFICATION SECTION 15100 – VALVES AND ACTUATORS (Revised and not Reissued).
 - **Changed Acceptable Manufactures:
Added Crispin Ludlow-Rensselaer as an approved alternate gate valve manufacturer.**

CONTRACT DRAWINGS

- **Revised and Reissued:**

All Drawings – Reissued fixing a print issue causing some additions to be greyed out incorrectly.

C-2 and S-1 – Clarification: Temporary Sheeting shown should be included in the bid. Additional sheeting to add a ramp into the pit may be considered by the bidder and may be installed provided that no underground interferences exist. Alternate TERs systems shall not be permitted.

C-4 – Added a note clarifying that a sample port will be installed on gate valve near the plant.

P-1 – Added a note to valves VV1 and VV4 that they will be live tapped as there is no existing isolation valve on the end of the existing above ground storage tank (Tank 1).

P-1 – Clarification: the wall penetrations are to include a wall sleeve.

P-2 – Clarification: the 6-inch tank underdrain and tank overflow share a manhole.

- **Additional Drawings:**

Equipment cut sheets for the horizontal pressure filters have been added to the file share server and have been attached to this Addendum.

VIRTUAL SITE TOUR

- **Vid 2 has been rerecorded and published on the file exchange server. (Basecamp)**
- **Vid 8 was added showing the greenbelt North of the plant and parking lot. Prior to the earth excavation starting for the new tank foundation this area may be used to store some items. To do this written permission must be received from the City as the greenfield is not suitable for some construction equipment.**
- **Additional photos showing external damage on Tank 1 where added.**

A copy of the amended pages of the Contract Documents noted in this Addendum No. 1 have been posted online and should be utilized during the preparation of the bids and incorporated into the Bid Documents.

The Bidder shall acknowledge receipt of this Addendum No. 1 by signing in the location provided below and incorporating this Addendum No. 1 with the submission of his bid. Failure to include Addendum No. 1 and its attachments may result in rejection of the bid.

Very truly yours,

HUBBELL, ROTH & CLARK, INC.

Noah Bednar

NB/mpd

Attachment

pc: All Prospective Bidders
South Lyon; P. Zelenak, D. Varney
HRC; R. Alix, M. Darga, File

Accepted by:

Company Name: _____

Signature: _____

Written Name: _____

Pre-Bid Meeting Minutes

SOUTH LYON WTP PHASE 1 IMPROVEMENTS

City of South Lyon, MI

Date: 5/1/2020

HRC Job No. 20180233

Time: 1:00 PM

Meeting Location: MS Teams

Meeting was completed online due to precautions related to Covid-19, in addition a recording of this meeting has been shared on the file exchange server with details on how to access included in the Virtual Tour Instructions.

A list of attendees was created based on the record on MS Teams of users that joined the meeting and of people that introduced themselves during the meeting. If you attended and are not listed or your contact information is not correct, please contact Noah Bednar with HRC.

- Introductions
 - Sign-in Sheet is attached with these Minutes.
- Important Dates for Bidding
 - 5/1/2020 Pre-Bid Meeting
 - Virtual Site Tour videos are available online. Additional Site Tours are not allowed for this project due to the Covid-19 outbreak. Upon request additional videos of specific areas can be added to the BaseCamp Server.
 - 5/14/2020 Last Day for Formal Questions
 - 3 pm
 - 5/21/2020 Bids Due to City Hall
 - If the Stay at Home Order is lifted prior to this date, then City Hall will be open and bids can be delivered by hand to City Hall.
 - 5/22/2020 Sealed Bids Opening
 - Contract Award Date and Notice to Proceed will be published with information regarding how to view the opening of sealed bids in a future addendum.
 - Tentative Award Date, June 8, 2020 with a notice to proceed in late June in the week fo June 22, 2020 after a preconstruction meeting.
- Project Overview
 - Construction Phasing
 - The Substantial completion date for installing the new water line from Well 7 is August 31, 2020
 - Well 7 Line
 - New Tank (Tank 2) Construction

Delhi Township
2101 Aurelius Rd.
Suite 2A
Holt, MI 48842
517-694-7760

Detroit
535 Griswold St.
Buhl Building, Ste 1650
Detroit, MI 48226
313-965-3330

Grand Rapids
1925 Breton Road SE
Suite 100
Grand Rapids, MI 49506
616-454-4286

Howell
105 W. Grand River
Howell, MI 48843
517-552-9199

Jackson
401 S. Mechanic St.
Suite B
Jackson, MI 49201
517-292-1295

Kalamazoo
834 King Highway
Suite 107
Kalamazoo, MI 49001
269-665-2005

Lansing
215 S. Washington SQ
Suite D
Lansing, MI 48933
517-292-1488

- Existing Tank (Tank 1) Repairs
 - This is necessary as there are microfractures throughout the inside of the tank.
- Horizontal Pressure Filters
 - There are no hazardous materials in the filter media.

- Questions

Q: Is there any dive videos showing the inside of Tank 2?

A: Yes there is dive video inside the existing tank, but it is difficult to see anything in it. Due to that fact the video is not being shared.

Q: Are the gate valves actuators from the valve vault shown on E-4 ?

A: Yes the gate valve controls are shown. In the original drawings they are not clearly shown. This was corrected as a part of the drawings issued for this addendum.

Q: Can the spot repair on the existing tank be quantified?

A: There was some confusion regarding this during the meeting. After reviewing sheet S-3 the following notes should be considered. The Type 1 repair is meant to cover the whole tank exterior. The Type 2 repair is meant for patching holes the drawing indicates to plan for 3 sf. Worth of repairs for estimation purposes assume that 1.5 sft. of that is for each type of repair. The bid form has been modified to allow for this price to be listed per square foot. The Type 3 repair is meant to cover the inside surfaces of the tank.

Q: Do you need the full HDD submittal listed in the spec?

A: The submittal requirements were changed in response to this question. At the time of the bid submittal the requirements listed are no longer needed, but it is required to meet the requirements of the original spec within 7 days of the bid being awarded.

Q: Can a ramp be installed to enter the pit to the south (towards were the proposed gravel parking lot is shown on C-2)?

A: Yes, a ramp can be installed. The Sheet piling shown on C-2 is the minimum required. Additional sheet piling will be needed if a ramp is constructed to enter the pit.

Q: Will the Engineers Cost Estimate be made publicly available?

A: At this time the City has chosen to not make the Engineers Estimate of cost publicly available.

Q: Are there Buy American Requirements for this project?

A: While the City would prefer American Steel on this project, it is not required.

Meeting Sign-In Sheet

Project Name: South Lyon WTP Phase 1 Improvements **Date of Meeting:** 5/1/2020

Purpose of Meeting: Pre-Bid Meeting

For the City of: South Lyon

Location of Meeting: MS Teams

No.	Name	Agency / Company	Email
1	Noah Bednar	HRC	nbednar@hrcengr.com
2	Roland Alix	HRC	ralix@hrcengr.com
3	Mike Darga	HRC	mdarga@hrcengr.com
4	Douglas Varney	City of South Lyon DPW	dvarney@southlyonmi.org
5	Joe Mulville	Weis Construction	jmulville@weis-construction.com
6	Lynn Harmala	Lawrence M. Clarke, Inc.	
7	Sherri McKenzie	Lawrence M. Clarke, Inc.	smckenzie@lmclarke.com
8	Sabrina Byers	LASALLE Construction Services	sbyers@lasalleinc.com
9	Rusty Spangler	PRELOAD	rspangler@preload.com
10	Steve Dudle	PRELOAD	sdudle@preload.com
11	Dan McCarthy	PRELOAD	dmccarthy@preload.com
12	Jason Klingensmith	Commercial Contracting	Jason.klingensmith@cccnetwork.com
13	Ryan Theisen	Site Development Inc. (SDI)	Ryan.theisen@sdevelop.com
14	Steve Applegate	DN Tanks	Steve.applegate@dentanks.com
15	Jeffery Pfarr	DN Tanks	Jeff.pfarr@dentanks.com
16	Joe Pappo	DN Tanks	Joe.pappo@dentanks.com
17	David Bruce	Spence Brothers	davidb@spencebrothers.com
18	Joe Moore	DuBois-Cooper	jmoore@duboiscooper.com
19	T.J. Stroebel	Tonka Water	
20	Terry McNeil		

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834 King Highway
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269-665-2005

Lansing
215 S. Washington SQ
Suite D
Lansing, MI 48933
517-292-1488

21	Jason Start	AZ SHMINA Building Contractors	jasons@azshmina.com
22	Neamat Alshamyani	DCI Engineering, Inc.	nalshamayani@dceng.com

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PROPOSAL
FOR
WATER TREATMENT PLANT
PHASE 1 IMPROVEMENTS
CITY OF SOUTH LYON
OAKLAND COUNTY, MICHIGAN

City of South Lyon
335 S. Warren Street
South Lyon, MI 48178

Bids Due: May, 21st, 2020
On or Before 4 pm, Local Time
HRC Job No. 20180233

To Prospective Bidders:

Name of Bidder: _____

Address: _____

Date: _____ Telephone: _____

Email: _____

The above, as Bidder, hereby declares this bid is made in good faith without fraud or collusion with any persons bidding, and that the Drawings, Specifications, and all other information referenced in the Instructions to Bidders have been examined. Further, the Bidder is familiar with the location of the work described herein and is fully informed as to the nature of the work and the conditions relating to the performance of the Contract.

The Bidder acknowledges that no representations or warranties of any nature whatsoever have been received, or are relied upon from the City, its agents or employees, as to any conditions to be encountered in accomplishing the work and that the bid is based solely upon the Bidder's own independent judgment.

The above, as Bidder, hereby certifies that the Drawings, Specifications, and other data provided by the Owner for bidding purposes have been examined. Further, the undersigned certifies that the proposed construction methods have been reviewed and found acceptable for the conditions which can be anticipated from the information provided for bidding.

The Bidder hereby affirms that the site of work has been inspected and further declares that no charges in addition to the Individual Unit Prices shall be made on account of any job circumstances or field conditions which were present and/or ascertainable prior to the bidding. In addition, The Contractor, as such and as Bidder, shall make the determination as to existing soil conditions and shall also complete the work under whatever conditions created by the Contractor/Bidder's sequence of construction, construction methods, or other conditions the Contractor/Bidder may create, at no additional cost to the Owner.

The above, as Bidder, confirms knowledge of the location of the proposed Water Treatment Plant (WTP) Phase 1 Improvements Project and appurtenant construction in the City of South Lyon, Oakland County, Michigan, and the conditions under which it must be constructed; and also declares to have carefully

examined the Drawings, Specifications, and Contract Documents which the Bidder understands and accepts as sufficient for the purpose of constructing said WTP Phase 1 Improvements Project, and appurtenant work, and agrees to contract with the City of South Lyon to furnish all labor, materials, tools, equipment, facilities and supervision necessary to do all the work specified and prescribed for the City of South Lyon, in strict accordance with the Owner's General Conditions, and with the full intent of the Drawings and Specifications, prepared by Hubbell, Roth & Clark, Consulting Engineers, and will accept in full payment therefore the sum of:

BASE BID

<u>Item</u>	<u>Quantity</u>	<u>Total Cost</u>
1. New Well 7 Water Line	1 LS	\$ _____
2. Construction of Tank 2	1 LS	\$ _____
3. Restoration of Tank 1	1 LS	\$ _____
4. Horizontal Pressure Filter Maintenance	1 LS	\$ _____
5. UIS Allowance		\$ <u>20,000.00</u>
6. Permit Allowance		\$ <u>5,000.00</u>
Total Amount of Bid		\$ _____

ALTERNATES

Voluntary Alternates proposed by the Bidder will not be considered. The Bidder shall submit a bid based on the information shown on the Drawings and Specifications.

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ALTERNATE 1 – TANK 1 EXTERIOR SURFACE REPAIRS

The Specifications and Drawings (S-3) indicate that exterior surface repairs are needed for the restoration of Tank 1. The Lump Sum cost in Item 3. *Restoration of Tank 1* includes 1.5 sft of exterior surface patch repairs less than 1.0 inch depth and 1.5 sft of patch repairs greater than 1.0 inch depth (Type 2 repairs). If additional repairs are needed beyond the 1.5 sft anticipated the unit prices provided below will be used. Type 2A repair is for exterior concrete repairs less than 1.0 inch depth and Type 2B is for exterior concrete repairs greater than 1.0 inch depth.

Exterior Surface Repair - Type 2A \$ _____ per sft.

Exterior Surface Repair – Type 2B \$ _____ per sft

The Owner reserves the right to award the Base Bid or the Base Bid plus any or individual Alternate or combination of Alternates, depending upon the availability of funds.

The Owner, at its sole discretion, reserves the right to award to the Bidder who, in the sole determination of the Owner, will best serve the interest of the Owner. The Owner reserves the right to accept any bid, to reject any or all bids, to waive any and all informalities involving price, time, or changes in the work, and to negotiate contract terms with the successful Bidder, and the right to disregard all nonconforming, nonresponsive, unbalanced or conditional bids. However, it is the intention of the Owner to award to the low total bid to one bidder. Also, the Owner reserves the right to reject the bid of any Bidder if the Owner believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the bid is not responsive or the Bidder is unqualified, of doubtful financial ability, or fails to meet any other pertinent standard or criteria established by the Owner.

Each bidder agrees to waive any claim it has or may have against the Owner, the Architect/Engineer, and their respective employees, arising out of or in connection with the administration, evaluation, or recommendation of any bid.

Each Proposal must be accompanied by a bid deposit in the form of a certified check, cashier's check or bid bond, executed by the bidder and Surety Company, payable to the City of South Lyon in the amount of Five Percent (5%) of the amount of the Proposal. See Instructions to Bidders – Bid Deposit for more information.

TAXES

The Bidder affirms that all applicable Federal, State and Local taxes of whatever character and description are included in all prices stated in this Form of Proposal.

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ADDENDA

The Bidder acknowledges the following Addenda, covering revisions to the drawings or specifications and the cost, if any, of such revision has been included in the quoted proposal:

Addendum No.1 Dated: May 7, 2018

Addendum No. _____ Dated _____

FEES

The Bidder shall refer to the General Conditions for allowable Fees for additional work performed, upon Owner's written authorization, by Bidder's own forces and/or for additional work, upon Owner's written authorization, by Bidder's subcontractors.

TIME OF COMPLETION

If awarded the Contract for the Water Treatment Plant Phase 1 Improvements Project, we agree to have all work substantially completed by April 8th, 2022. Substantial Completion is defined that the facility is ready to use for its intended purpose with all utility systems fully functional. **Substantial completion on the new line from Well 7 will be completed by August 31st, 2020.**

The Bidder hereby agrees to furnish the required Bonds, Insurance Certificates, and Policies within ten (10) days after acceptance of this Proposal.

Final Completion with all clean-up and punch-list items shall be complete by June, 4th, 2022.

The execution of all work and specific constraints as described in the contract drawings and specifications, with particular reference to Section 02030 Sequence of Construction and Special Project Requirements, must be strictly adhered to.

LIQUIDATED DAMAGES

Time is of the essence for completion of this project in order to have the Project ready for the City of South Lyon. The Bidder guarantees that the work will be completed within the time limit stated herein before or within the time as extended as provided elsewhere in the Specifications. Inasmuch as the damage and loss to the Owner which will result from the failure of the Bidder to complete the work within the stipulated time, will be most difficult or impossible to accurately determine, it is mutually agreed that the damages to the Owner for such delay and failure on the part of the Bidder shall be liquidated in the amount of One Thousand Two Hundred Dollars (\$1,200.00), for each and every calendar day by which the Bidder shall fail to complete the work or any part thereof within the provisions hereof, and such liquidated damages shall not be considered as a penalty.

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The Owner will deduct and retain out of any money due or to become due hereunder the amount of the liquidated damages, and in case those amounts are less than the amount of actual liquidated damages, the Bidder shall pay the difference upon demand of the Owner.

We understand that liquidated damages may be assessed should we fail to meet the stipulated completion dates. Specifically, liquidated damages will be assessed daily beginning August 31, 2020 for the new line from Well 7 and April 8th, 2022 for the remainder of the work until such a time that Substantial Completion is achieved and further if all work is not completed by the Final Completion Date.

BIDS TO REMAIN FIRM

The price stated in this Proposal shall be guaranteed for a period of not less than 60 days from the bid due date and if authorized to proceed within that period, the bidder agrees to complete the work covered by the Proposal at said price.

If this Proposal is accepted by the Owner and the undersigned shall fail to contract as aforesaid and to furnish the required surety bonds within fifteen (15) days after being notified of the acceptance of their bid, then the undersigned shall be considered to have abandoned the contract, and the Certified Check, Cashier's Check or Bid Bond accompanying this Proposal shall be forfeited to the City of South Lyon.

If the undersigned enters into the contract in accordance with their proposal, or if their proposal is not accepted, then the accompanying bid guarantee shall be returned to the undersigned.

Company Name: _____

Signature: _____ Title: _____

Address: _____

County: _____ State: _____

Telephone No.: _____ Fax No.: _____

Email Address: _____

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LEGAL STATUS OF BIDDER

This Bid is submittal in the name of:

(Print) _____

The undersigned hereby designates below the business address to which all notices, directions or other communications may be served or mailed:

Street _____

City _____

State _____ Zip Code _____

The undersigned hereby declares the legal status checked below:

- INDIVIDUAL
- INDIVIDUAL DOING BUSINESS UNDER AN ASSUMED NAME
- CO-PARTNERSHIP
The Assumed Name of the Co-Partnership is registered in the County of _____, Michigan
- CORPORATION INCORPORATED UNDER THE LAWS OF THE STATE OF _____
_____. The Corporation is
- LICENSED TO DO BUSINESS IN MICHIGAN
- NOT NOW LICENSED TO DO BUSINESS IN MICHIGAN

The name, titles, and home addresses of all persons who are officers or partners in the organization are as follows:

A corporation duly organized and doing business under the laws of the State of _____

NAME AND TITLE	HOME ADDRESS
_____	_____
_____	_____
_____	_____

Signed and Sealed this _____ day of _____, 20__.

By (Signature)

Printed Name of Signer

Title

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BID BOND

We, the undersigned, _____

As Principal, hereinafter called the Principal, and _____

A corporation duly organized under the laws of the State of _____

As surety, hereinafter called the SURETY, are held and firmly bound unto:

The Owner: _____

in the sum of _____ Dollars (\$ _____),

For the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for _____

NOW, THEREFORE, if the OWNER shall accept the bid of the Principal and the Principal shall enter into a contract with the OWNER in accordance with the terms of such bid, and give such bond or bonds as may be specified in the CONTRACT DOCUMENTS with good and sufficient surety for the faithful performance of such contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter such contract and give such bond or bonds, if the Principal shall pay to the OWNER the difference not to exceed the penalty hereof between the amount specified in said bid and such larger amount for which the OWNER may in good faith contract with another party to perform the work covered by said bid, then the obligation of the Principal shall be null and void, otherwise to remain in full force and effect.

Signed and sealed this _____ day of _____, 20____

(Witness) (Principal) (Seal)

(Title)

(Witness) (Surety)

(Title)

END OF SECTION

SECTION 02030

SEQUENCE OF CONSTRUCTION AND SPECIAL PROJECT REQUIREMENTS

PART 1 GENERAL

1.1 GENERAL

- A. The Contractor shall schedule and arrange his work so that the existing utilities including the Wells, Filters and Tanks in plant will remain in service, without interruption.
- B. In general, work on the new facilities may proceed on a schedule established by the Contractor to meet the completion date, agreed to in the Proposal. However, all scheduling shall be subject to the approval of the Owner.
- C. The Contractor shall be totally responsible for the construction of the project under scheduling conditions outlined herein and any other scheduling which may be necessary. All work shall be completed for the lump sum price submitted in the Contractor's proposal. No additional compensation will be allowed for delays in the work necessary to prevent interruption of service whether specifically spelled out in this section or not.
- D. The Contractor shall note the General Landscaping requirements for site restoration called for in these specifications and shown on the drawings. This work is to be coordinated and directed by a specialist in the field, and all plans for this work shall be approved by the Owner prior to implementation. Refer to Section 02930 - General Landscape Material and Final Grading requirements for additional scheduling requirements.
- E. The Contractor shall note the construction site area limitations as they impact on storage of excavated and construction materials. The Contractor shall make all necessary provisions for off-site storage as required for his operations. All costs for this work including permits, shall be included in his lump sum price bid. Prior to commencement of site excavation, the contractor shall provide the names and locations of the off site disposal and storage area to be used for excess excavated materials.

1.2 COORDINATION

- A. Prior to commencing any work on the west end of the site at the water plant, temporary construction fencing shall be installed to protect this area. The temporary fence shall be 6'-0" high chain link fence as specified in General Conditions No. 14 of these specifications. All fencing shall be removed when final grading and site restoration begins.
- B. A dewatering procedure plan shall be submitted for review. Once this plan is approved, it shall be implemented around the excavation for Tank 2 and shall be completed to control ground water infiltration. Discharge shall be to existing catch basins or drainage structures provided appropriate erosion control is implemented by the Contractor. Contractor shall make arrangements for temporary electrical service connections to all dewatering pumps. No use of portable generators shall be allowed.

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- C. Prepare the site for construction, as described in Sections 02110 - Site Clearing, 02200 - Earthwork, 02211 - Rough Grading, 02220 - Soil Erosion Control, and 02930 - General Landscape Materials and Final Grading.
- D. Install temporary sheet piling as required for construction of the facilities.
- E. Perform excavation work as described in Sections 02110 – Site Clearing.
- F. Restoration of the site shall be done strictly according to the requirements of these plans and specifications, under the coordination and direction of a specialist in this field. The Contractor is responsible for watering, fertilizing or other care required by the plantings for one year from the date of their acceptance by the Owner.
- G. All equipment and the facilities shall be tested with clean water prior to being accepted by the Owner. Testing shall be conducted in the presence of the Owner's representative. All equipment and the facilities shall then be cleaned and turned over to the Owner in good working order.

1.3 SPECIAL PROJECT REQUIREMENTS

- A. Soil and Concrete Testing
 - 1. The Owner will arrange to have all soil compaction tests and concrete quality control including concrete compression tests, performed by an Independent Testing laboratory at no cost to the Contractor.
 - 2. Copies of test reports shall be furnished to the Owner and distributed to parties designated by the Owner, including the Contractor.
- B. Dust Control
 - 1. The site, haul roads, detour roads, and other public and private roads, driveways and parking lots used by the Contractor must be maintained in a dust free condition during the life of this contract. The control of the dust shall be accomplished by the application of dust control materials and methods of application as approved and as directed by the Owner. Such dust control materials shall be applied as often as is necessary to control the dust.
 - 2. Should the Contractor be negligent of his duties in providing dust control, the Owner may, with or without notice, cause the same to be done and deduct the cost of such work from any monies due or to become due the Contractor under this contract, but the performance of such work by the Owner, or at his insistence, shall serve in no way to release the contractor from his liability for dust control.
 - 3. Dust Palliative may be any of the following:
 - a. Type 1 calcium chloride applied at the rate of 6 lbs. per ton of aggregate.
 - b. Water, as required.
 - c. Other methods as approved by the Owner.
- C. Progress Payments
 - 1. This contract is based on a lump sum price bid, therefore all work completed in a particular area will be paid for on the basis of "percentage complete" of the total monetary value for that item listed in the Contractor's itemized cost breakdown. All

references to the contrary in these specifications are superseded by these requirements.

D. Vibration Levels

1. The maximum vibration acceleration levels shall be 56 to 60 dB for any type of impulsive or non-impulsive continuous or intermittent source of ground vibration.
2. The Contractor will install sensors to monitor vibration.

E. Project Phases

To maintain plant operation during the project the deliverables must be completed in the order described below:

1. The new line from Well 7 must be completed first. This phase will involve directional drilling underneath the Yerkes drain and tapping the existing yard piping to directly link well 7 to the rest of the plant. This work needs to be completed with the line in service by August 31, 2020.
2. After well 7 has been linked directly to the plant the second phase can begin this involves sheet piling the area around the proposed tank (tank 2). During periods of active construction Well 1 will be turned off. For this section of the project vibration monitoring is required (Sec. 02201) Once the initial excavation is completed for the tank and valve vault the structures will be constructed. In the valve vaults the new lines will be attached by inserting a valve separating the location for the "T" from the existing above grounds storage tank (tank 1). Valves V-1 and V-3 need to be installed on the same day as the line will need to be operational using the Tank 1 by the end of the day. The same needs to be done for Valves V-2 and V-4.
3. Once the new tank is completed it will be brought online during Fall and the old tank will be taken offline for repairs. Once repairs are complete both tanks will operate together as described in Section 16950.
4. In addition to these phased items. The Contractor will be responsible to replace media, sandblast and reseal the six horizontal pressure filters onsite. Only two tanks may be offline at any given time and they should only be taken offline in Spring and Fall for repairs.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

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END OF SECTION

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SECTION 09900 - PAINTING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Surface preparation and field application of paints and coatings.
- B. New surfaces and construction shall be painted, including exterior surfaces at new concrete water storage tank.
- C. Existing exterior surfaces at concrete water storage tank are to be painted after repairs have been completed. Allow sufficient cure time for repair products per Mfr. recommendations prior to coating.

1.2 RELATED SECTIONS

- A. Section 15100 – Valves

1.3 REFERENCES

- A. ASTM D16 - Definitions of Terms Relating to Paint, Varnish, Lacquer, and Related Products.
- B. AWWA (American Water Works Association) - D102-17 - Painting Steel Water Storage Tanks.
- C. International Concrete Repair Institute (ICRI) Guideline No. 310.2-R2013 - Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays.
- D. NACE (NACE International) -Industrial Maintenance Painting.
- E. SSPC (SSPC: The Society for Protective Coatings) SSPC Painting Manual Volumes 1 and 2.
- F. NAPF (National Association of Pipe Fabricators) Section 500 Surface Preparation Standards.

1.4 DEFINITIONS

- A. Conform to ASTM D16 for interpretation of terms used in this Section.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Provide data on all products and special coatings.
- C. Samples: Submit two samples, 1 x 3 inch (25 x 76 mm) in size illustrating range of colors and textures available for each surface finishing product scheduled.
- D. Manufacturer's Instructions: Indicate special surface preparation procedures, substrate conditions requiring special attention, environmental considerations and any restrictions regarding time recoat.

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- E. A letter certifying the installer as a Manufacturer's Approved Installer shall accompany the submittal package.
- F. Daily Coating Inspection Reports (blank version included at the end of this Section) are to be submitted weekly to Architect/Engineer. One report is to be completed for each day of painting activity performed on the job site. Reports must be fully filled out. Payment may be withheld if reports are not submitted in a timely fashion or are not fully completed.

1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the Products specified in this section and one of the companies listed.
- B. Applicator: Company specializing in performing the work of this section with minimum ten years, approved by manufacturer.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect and handle products to site under provisions of Section 01600.
- B. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- C. Container label to include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- D. Only materials approved for use on this project shall be delivered to the site.
- E. Store paint materials at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.
 - 1. Any material found on the project that is stored in areas that are outside of the above temperature requirements shall not be used on the project and shall immediately be removed from the site.

1.8 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Do not apply exterior coatings during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.
- C. Minimum Application Temperatures for Latex Paints:
 - 1. Minimum application temperatures shall be as required by the coating manufacturer's instructions.
 - 2. If there are no explicit printed recommendations by the manufacturer, minimum temperature of the air and surface to be painted shall be 50° Fahrenheit.
- D. Provide lighting level of 80 ft candles (860 lx) measured mid-height at substrate surface during painting operations in the area being painted.

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- E. Provide adequate ventilation at all enclosed spaces. Additional ventilation may be required to prevent fumes from affecting adjacent Owner-occupied spaces.

1.9 SURFACES NOT REQUIRING PAINTING

- A. Aluminum (except for backcoating as specified in Section 3.2F).
- B. Stainless Steel.

1.10 EXTRA MATERIALS

- A. Furnish under provisions of Section 01700.
- B. Provide 1 gallon (4 L) of each color/type, to Owner.
- C. Label each container with color, type, texture, room locations in addition to the manufacturer's label.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers - Paint and Special Coatings
 - 1. Tnemec Company
 - 2. Carboline Company
 - 3. Sherwin-Williams Company
- B. Substitutions: No substitutions are allowed.
- C. All products used on this project shall be from the same manufacturer unless written approval is received from the Engineer.

2.2 MATERIALS

- A. Coatings:
 - 1. Ready mixed, except field catalyzed coatings.
 - 2. Process pigments to a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating; good flow and brushing properties; capable of drying or curing free of streaks or sags.
- B. Accessory Materials:
 - 1. Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified, of commercial quality.

2.3 FINISHES

- A. Refer to schedule at end of section for surface finish schedule.
- B. Colors will be selected by the Owner from color samples submitted.

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PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify site conditions under provisions of the General Conditions.
- B. Verify that surfaces and/or substrate conditions are ready to receive work as instructed by the product manufacturer.
- C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- D. Commencement of the coating operations will signify acceptance of the substrate(s) as being suitable for the coating and ability to achieve the final results specified.
- E. Test shop applied primer for compatibility with subsequent cover materials.
- F. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
 - 1. Masonry, Concrete, and Concrete Unit Masonry: 12 percent.
 - 2. Concrete Floors: 8 percent. Test concrete for moisture in accordance with ASTM F 2170.

3.2 PREPARATION

- A. Remove electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.
- B. Correct defects and clean surfaces which affect work of this section.
 - 1. Remove existing coatings that exhibit loose surface defects.
- C. Marks:
 - 1. Seal with a stain-blocking primer marks which may bleed through surface finishes.
- D. Mildewed Surfaces:
 - 1. Remove mildew by scrubbing with solution of tri-sodium phosphate and bleach.
 - 2. Rinse with clean water and allow surface to dry.
- E. Aluminum Surfaces shall be backcoated with an Owner approved epoxy/sealer (Tnemec Series N69 or Carboline Rustbond penetrating sealer; or Sherwin-Williams Macropoxy 646) prior to installation to provide separation of dissimilar materials.
 - 1. Contractor shall note that all dissimilar materials shall be kept from direct contact by the use of approved insulating and isolating materials.
 - 2. All surfaces shall be clean and if necessary treated with Clean'n Etch, Great Lakes Laboratories – Livonia, Michigan.
- F. Galvanized Surfaces Priming:
 - 1. Galvanized surfaces scheduled for painting shall not be water quenched at the end of the galvanizing process.

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2. Remove gloss from the new spangled galvanizing by sweep blasting in accordance with the SSPC SP-16 – Brush Off Blast Cleaning of Coated or Uncoated Galvanized Steel, Stainless Steel and Non-Ferrous Metals.
 - a. Non-abrasive organic blasting media shall be utilized.
 - b. Environmental conditions shall be maximum 50% relative humidity and minimum piece and room temperature of 70 degrees F.
3. Alternatively, galvanized surfaces may be prepared with Great Lakes Laboratories “Clean ‘n Etch” in accordance with Manufacturer’s requirements.
4. Cleaned surfaces shall not remain overnight without a prime coat.

G. Galvanized Surface Repair:

1. Damaged or welded galvanized areas shall have the galvanizing repaired in accordance with the current edition of ASTM A780.
 - a. Areas shall be repaired utilizing zinc-rich paints containing <80% zinc dust by weight of cured film.
 - b. Paint shall be stirred periodically in accordance with the manufacturer’s recommendations to maintain the zinc in suspension.
 - c. The repair areas shall be painted with a brush, spray painting will not be allowed.
2. Abraded galvanized areas shall be spot primed with a cold galvanizing compound, Tnemec 90G-1K97 Tneme-Zinc, Carbozinc 11 HSN Carboline, Sherwin-Williams Zinc Clad 5 (aerosol), or ZRC product with 95% pure zinc dust.
3. Spot prime all abraded galvanized areas not primed by other trades, to present a complete, protected area, to receive finish coats.

H. Concrete and Unit Masonry Surfaces:

1. Prepare all cementitious substrates referencing SSPC-SP13.
2. Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter.
3. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry.
4. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water.
5. Allow to dry.
6. Application of block filler will be by roller or brush.
7. Spraying will not be allowed.

I. Ductile Iron:

1. Remove grease, dirt, and other visible contaminants by washing with solvent (NAPF 500-03-01).
2. Where mill scale, weld spatter, and rust are evident, remove by power tool wire brushing (NAPF 500-03-03) or where required, abrasive blast cleaning (NAPF 500-03-04 and 500-03-05).
3. Spot prime paint after repairs.
4. Actual surface preparation procedure shall be based on approved coating manufacturer's published recommendations.

J. Shop Primed Steel Surfaces:

1. Prepare surfaces per SSPC 2/3 hand or power tool cleaning. Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous.
2. Clean surfaces with solvent.

- 3. Prime bare steel surfaces.
 - 4. Prime metal items including shop primed items.
- K. Mechanical Equipment components to be field painted are to be pre-coated on site prior to assembly.
- L. Horizontal Pressure Filters:
- 1. Detergent clean surface per SSPC-PA-1
 - 2. Water blast per SSPC/NACE WJ-4

3.3 APPLICATION

- A. Apply products in accordance with manufacturer's instructions.
- B. Apply each coat to uniform finish.
- C. Do not apply signs or pipe/equipment labels, etc. prior to installing coatings.
- D. Insulated pipe, fittings and equipment without an approved surface material or color shall be painted with 2 coats of Tnemec Series 115 Uni-Bond DF, Carboline Carbocrylic 3359, Sherwin-Williams Shercryl HPA which complies with the Color Code prescribed herein.
- E. Material labels and accompanying direction of flow arrows shall be applied to all distribution mains on maximum spacing of 50'.
- 1. They shall be placed at those points on all main lines where branch mains are extended therefrom, and on the distribution mains at both sides of all solid building partitions.
 - 2. Material labels and flow arrows shall be custom made for all piping systems governed by this contract, signifying the kind of material to be conducted and its direction of flow.
 - 3. All labels shall be self-adhesive and suitably coated to make them waterproof, and impervious to dirt.
 - 4. These labels shall have the identifying names superimposed on an Owner's approved background color in full or abbreviated, to meet the Owner's requirements and print the width of the label.
- F. Where letters and arrows cannot be applied to pipe lines, they shall be applied to metal panels, and in a manner to agree with identification listed in the Color Code.
- 1. Panels shall be 18 gage painted steel and hung on pipes every 50', near branch line connections and on either side of solid building partitions that pipes pass thru.
 - 2. On lines where there is flow in both directions, double arrows shall be used.
 - 3. On pipes where there is flow in one direction, single arrows shall be used.
- G. Substation equipment, control panels, panel boards, and other equipment specified to receive factory finish shall not be painted.
- 1. However, factory painted equipment which is chipped or defaced due to handling, installation or construction activities shall be refinished in a manner satisfactory to the Owner.
 - 2. This shall include glazing, sanding, and refinishing entire surface to a suitable boundary to avoid a patched effect.

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- 3. Suitable boundaries shall be changes in planes of surfaces such as corners, frames, mouldings, recesses, etc.
- H. Hazardous areas, moving machinery, handrails, and all other similar areas shall be finished to agree with the Owner's Standard Safety Code and all MIOSHA requirements, as approved by the Owner.
- I. Refer to Section 16195 for information on Electrical Identification requirements.
 - 1. Refer to the end of this Section for color coding and identification banding of equipment, duct work, and piping.
- J. Paint shop primed equipment.
- K. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
- L. Prime and paint exposed pipes, conduit, boxes, ducts, hangers, brackets, collars and supports.
- M. Paint dampers exposed behind louvers, grilles, to match face panels.
- N. Paint exposed conduit and electrical equipment occurring in painted areas.
- O. Paint both sides and edges of plywood backboards before installing equipment.
- P. Color code equipment, piping, conduit, and exposed duct work in accordance with requirements indicated.
 - 1. Color band and identify with flow arrows and names, to match the existing installation.
- Q. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.4 FIELD QUALITY CONTROL

- A. Contractor shall refer to the SSPC Paint Inspection: Daily Coating Inspection Report that is a part of this section of the Specifications
 - 1. This report shall be filled out daily for every day that the painter is on site and working.
 - 2. The reports shall be filled out in their entirety as applicable for the work being performed.
 - 3. Provide multiple reports if necessary because the work for the day will include several coatings so each paint/coating type is properly documented.
 - 4. All reports shall be available to the Owner and the Owner's representative upon request at the site.
 - 5. Copies of these daily reports shall be submitted within (7) seven days from date of work for all painting and coating work performed on this project.
 - 6. Failure to submit reports in a timely fashion or deficient reports shall be reason to not approve the requested payment for the work.
- B. Field inspection and testing will be performed under provisions of Section 01400.

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- C. Areas will be tested at random with dry film thickness gage.
 - 1. Any areas not meeting the minimum dry film thickness shown in the schedule or on approved Shop Drawing submittals shall have additional coats applied so the minimum dry film thickness is achieved.
 - 2. Each coat shall achieve the minimum dry film thickness specified, without regards to the overall system thickness.

- D. If an existing surface or area is not called out for painting but is defaced or damaged due to new Work under this Contract, then this surface or area shall be repainted to match adjacent areas, at no additional cost to the Owner.
 - 1. Repair areas shall be to a suitable area boundary as determined by the Engineer in the field.
 - 2. A repaired area may include an entire wall or the entire floor in a room or gallery.
 - 3. Patched effect repairs shall not be acceptable.

3.5 CLEANING

- A. Clean work under provisions of 01700.

- B. Collect waste material, place in closed metal containers and remove daily from site.

- C. Make good all damage done to floors and other work through neglect or carelessness or from failure to properly protect work from damage resulting from the execution of this work.

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3.6 SCHEDULE - ALL INTERIOR AND EXTERIOR SURFACES

Paint

System Surfaces

- 1 Ferrous Metals (Piping, valves, fittings, brackets, and equipment, unless specified elsewhere).
- 2 Exterior Concrete Surfaces.
- 3 Interior Piping, valves, fittings, brackets and equipment at Water Storage Tank (Potable)
- 4 Horizontal Pressure Filters

3.7 PAINTING - SYSTEMS

(Contractor shall refer to Products Section herein with regard to acceptable material manufacturers.)

A. PAINTING SYSTEM NO. 1 – Interior and Exterior Ferrous Metals, Piping and Equipment

- 1. Surface Preparation, Ductile Iron Pipe – NAPF 500-03-04
- 2. Surface Preparation, Ductile Iron Valves and Fittings – NAPF 500-03-05
- 3. Surface Preparation, Galvanized Steel – SSPC-SP 16 or Clean ‘n Etch
- 4. Surface Preparation, Concrete - SSPC-SP 13/NACE 6.

	Min. No. of Coats per Coating Layer	Product Name	Min. Total Thickness of Coating Layer Dry	Type
Primer	1	Tnemec Series N69	4.0	Polyamide Epoxy
Intermediate	1	Tnemec Series N69	4.0	Polyamide Epoxy
Finish	1	Tnemec 1075 Endura Shield	3.0	Aliphatic/ Acrylic Polyurethane
Primer	1	Carboline 890	4.0	Cycloaliphatic Amine Epoxy
Intermediate	1	Carboline 890	4.0	Cycloaliphatic Amine Epoxy
Finish	1	Carboline 134 HG	3.0	Aliphatic Polyurethane
Primer	1	Sherwin-Williams Macropoxy 646	4.0	Polyamide Epoxy
Intermediate	1	Sherwin-Williams Macropoxy 646	4.0	Polyamide Epoxy
Finish	1	Sherwin-Williams Acrolon 218	3.0	Aliphatic Polyurethane

CONTRACTOR shall choose one of Primer-Intermediate-Finish systems listed above.
Total Thickness of System – 11.0 Dry Mils Min.
CONTRACTOR shall note curing times required between coats, per actual product used.

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- B. PAINTING SYSTEM NO. 2 – Exterior Concrete Surfaces
1. Surface Preparation, Concrete - SSPC-SP 13/NACE 6.

	Min. No. of Coats per Coating Layer	Product Name	Min. Total Thickness of Coating Layer Dry	Type
Primer	1	Tnemec Series 151-1051 Elasto-Grip FC	1.0	Polyamide Epoxy
Intermediate	1	Tnemec Series 156 Envirocrete	6.0	Waterbourne Acrylate
Finish	1	Tnemec Series 156 Envirocrete	6.0	Waterbourne Acrylate
Primer	1	Carboline Sanitile 120	1.0	Waterbourne Acrylic
Intermediate	1	Carboline Flexxide Elastomer	6.0	Acrylic Elastomer
Finish	1	Carboline Flexxide Elastomer	6.0	Acrylic Elastomer
Primer	1	Sherwin-Williams Loxon Block Surfacer	1.0	Acrylic
Intermediate	1	Sherwin-Williams Loxon XP	6.0	Acrylic Elastomer
Finish	1	Sherwin-Williams Loxon XP	6.0	Acrylic Elastomer

CONTRACTOR shall choose one of Primer-Intermediate-Finish systems listed above.
Total Thickness of System – 13.0 Dry MILS Min.
CONTRACTOR shall note curing times required between coats, per actual product used.

- C. PAINTING SYSTEM NO. 3 – New Interior Piping, valves, fittings, brackets and equipment at Water Storage Tank (Potable)
1. Surface Preparation, Ductile Iron Pipe – NAPF 500-03-04
2. Surface Preparation, Ductile Iron Valves and Fittings – NAPF 500-03-05
3. Surface Preparation, Steel - SSPC-SP 10/NACE 2.

	Min. No. of Coats per Coating Layer	Product Name	Min. Total Thickness of Coating Layer Dry	Type
Finish	3	Tnemec Series N140	5.0	Polyamidoamine Epoxy
Finish	3	Carboline 891 VOC	6.0	High Solids Polyamine Epoxy
Finish	3	Sherwin-Williams Macropoxy 646 PW	6.0	Polyamide Epoxy

CONTRACTOR shall choose one of Finish systems listed above.
Total Thickness of System – 15.0-18.0 Dry MILS Min.
CONTRACTOR shall note curing times required between coats, per actual product used.

D. PAINTING SYSTEM NO. 4: HORIZONTAL PRESSURE FILTERS

The basis of the following specification is TNEMEC products. Equivalent products by Carboline and Sherwin Williams may be submitted for review. Painting shall include filter vessels and frame supports.

Surface Preparation:

Detergent clean surface per SSPC-PA-1

Water blast per SSPC/NACE WJ-4

	Min. No. of Coats per Coating Layer	Product Name	Min. Total Thickness of Coating Layer Dry	Type
Primer	1	Tnemec Series 1 Omnithane Zinc Rich Urethane	--	Polyamide Epoxy
Intermediate	1	Tnemec Series 66	--	Polyamide Epoxy
Finish	1	Tnemec Series 1070	--	Thermoset Fluoropolymer
Total Thickness of System – In accordance with manufacturer’s printed recommendations for “suggested” dry mil thickness per coat. CONTRACTOR shall note curing times required between coats, per actual product used.				

END OF SECTION

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