



SAN ANTONIO WATER SYSTEM
DSP Clayton Tank Replacement Project
SAWS Job No. 14-6101
Solicitation No. CO-00028

ADDENDUM NO. 6
November 6, 2015

TO BIDDER OF RECORD:

The following changes, additions, and/or deletions are hereby made a part of the Contract Documents for the SAWS DSP Clayton Tank Replacement Project, for the San Antonio Water System, San Antonio, Texas, Dated October 2015, as fully and completely as if the same were set forth therein.

BIDDING AND CONTRACT DOCUMENTS

Specifications

1. SPECIFICATION – SECTION 09900

REMOVE AND REPLACE Section 09900 – Paint and Coatings in its entirety with the attached version.

Drawings

2. SHEET C-CPS-5

REMOVE AND REPLACE Sheet C-CPS-5 Overall Demolition Plan & Existing Yard Piping (Sheet 94 of 99) in its entirety with the attached sheet.

ACKNOWLEDGEMENT BY BIDDER

THE UNDERSIGNED ACKNOWLEDGES RECEIPT OF THIS ADDENDUM NO. 6 AND THE BID SUBMITTED HERewith IS IN ACCORDANCE WITH THE INFORMATION AND STIPULATION SET FORTH.

Date

Signature of bidder

Appended hereto and part of Addendum No. 6 is:

- SECTION 09900
- SHEET C-CPS-5



W.C. Causey, Jr.
11/4/2015

END OF ADDENDUM NO. 6

**SECTION 09900
PAINT AND COATINGS**

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. Provide for the furnishing of all materials, supplies, labor and equipment necessary for surface preparation and application of paints and/or protective coating materials in a safe manner with proper handling and removal and disposal of all waste materials. The work in this section includes preparing surfaces and applying protective coatings to new equipment, pumps, piping and valves, structural steel, masonry and concrete, and miscellaneous items. Refer to Section 13000 - Concrete Ground Storage Tank Painting for coating information on Ground Storage Tank.
- B. The term "paint" as used in this section means the protective coatings specified. Other paintings may be required in other sections of the specifications. All paint for concrete, masonry, or metal surfaces shall be especially adapted for use around a moist and humid environment and shall be applied in conformance with the MANUFACTURER's published specifications.
- C. Lead and chromate-base coatings containing lead, chromates and/or hazardous waste chemicals shall not be used.
 - 1. Miscellaneous requirements associated with the scope of this work include:
 - 2. Furnish all materials, equipment, supplies and accessories required in connection with the work specified herein.
 - 3. Obtain all permits necessary to complete the surface preparation and coatings work designed for this project, including removal, handling and disposal of used abrasive, hazardous and/or toxic waste materials.
 - 4. Use non-lead containing coatings that comply with all laws, regulations and ordinances of the Federal, State, and Local government including V.O.C. regulations.
 - 5. Specification covers the surface preparation and painting of all surfaces, both interior and exterior, except as otherwise or specifically excluded.
 - 6. Protect all adjacent work, vehicular traffic, property and persons from damage, i.e., over spray, overblast and spillage. Should damage occur, make provisions for repair of damage in a timely manner.
 - 7. Properly store and handle materials according to manufacturer's requirements and in compliance with applicable government regulations.
 - 8. Provide scaffolding, ladders, lighting and equipment as necessary to accomplish work. All operations, equipment and their installations shall comply with all applicable laws, regulations and ordinances. Compliance with OSHA Standards per 29 CFR 1926 and 29 CFR 1910 is to be enforced by the Contractor.
 - 9. Provide for the safety of all personnel, including but not limited to the use of explosion proof lighting and proper electrical grounding of equipment. Handling and application of all coating materials shall be in accordance with the manufacturer's latest material safety data sheets (MSDS) and/or product data sheets.
 - 10. The Contractor shall provide daily site cleanup.

1.02 RELATED WORK

- A. Division 1 – General Provisions.
- B. Section 02510 – Buried Steel Pipe and Fittings
- C. Section
- C. Division 3 – Concrete.
- D. Division 4 – Masonry.
- E. Division 5 – Metals.
- F. Division 8 – Doors and Windows
- G. Division 11 – Equipment
- H. Division 13 – Special Construction
- I. Division 14 – Conveying Systems
- J. Division 15 – Mechanical
- K. Division 16 – Electrical

1.03 REFERENCE STANDARDS

- A. ASTM D16 - Definitions of Terms Relating to Paint, Varnish, Lacquer, and Related Products.
- B. NACE (National Association of Corrosion ENGINEERS) - Industrial Maintenance Painting.
- C. NPCA (National Paint and Coatings Association) - Guide to U.S. Government Paint Specifications.
- D. PDCA (Painting and Decorating CONTRACTORS of America) - Painting - Architectural Specifications Manual.
- E. SSPC (Society for Protective Coatings) - Society for Protective Coatings Standards.
- F. Materials to be used in contact with the raw water or potable water process stream shall meet the current requirements of the Food and Drug Administration Document, Title 21, Section 175.300 or have been approved by the EPA for potable water use and have been certified by the National Sanitation Foundation for Standard 61 listing. Submit certification that the material meets these requirements.

1.04 MEASUREMENT AND PAYMENT

- A. No separate measurement and payment for work performed under this Specification Section. The Contractor shall include the cost for this work in the contract price for work of which this is a component part.

1.05 EXCLUSIONS

- A. Unless otherwise specified, painting will not be required on the following items:
 - 1. Exposed surfaces of aluminum
 - 2. Polished or finished stainless steel
 - 3. Nickel, Monel, Copper, Bronze, Lead or Brass
 - 4. Rubber and plastic including fiberglass reinforced plastics
 - 5. Chromium plated surfaces
- B. If contractor applies paint to or causes damage to surfaces to be protected, or unspecified surfaces, removal of coating, repair or replacement of item is required.

1.06 SCHEDULING

- A. Perform painting work according to the contract construction schedule as required in Section 01300 - Submittals.
- B. Scheduling shall not negate any requirements of temperature and/or humidity specified by the manufacturer of the coatings to be used.
- C. Coordinate work of other trades and provide conditions for neat, clean, dust-free work.

1.07 SUBMITTALS

- A. Submittals for materials and/or systems proposed for use on this project must conform to requirements included in Section 01300 and shall include, but not be limited to those items listed for each product/system below.
- B. Product Data and Shop Drawings: Submit product data, shop drawings, certificates and instructions on all protective coatings items as specified herein and in accordance with Division 1, General Provisions. Submittals shall be provided to the Engineer for review.
 - 1. Manufacturer Technical Data Sheets for all paints, coatings, solvents, detergents and degreasers proposed.
 - 2. Manufacturer Material Safety Data Sheets (MSDS) for all paints, coatings, and thinners proposed.
 - 3. Color name and/or number with color chart for each specific coating product. Exterior topcoat color shall be selected by the Owner.
- C. Product Data: Complete data on each type and kind of paint and primer shall be submitted for review. Submittal data shall show where and for what uses each paint product is to be used, with cross reference made to paragraphs of the specifications or the coating schedule. Data submitted on each type and kind of paint product shall include information to show that the product meets the detailed requirements of these specifications.
- D. MANUFACTURER's Instructions: The MANUFACTURER's published instructions, for use as a guide in specifying and applying the MANUFACTURER's proposed paint, shall be submitted. Paint shall not be delivered to the job site before review of the MANUFACTURER's instructions by the OWNER's Representative. A MANUFACTURER's paint will not be considered for use unless that MANUFACTURER's published instructions meet the following requirements:

- E. The instructions must have been written and published by the MANUFACTURER for the purpose and with the intent of giving complete instruction for the use and application of the proposed paint in the locality and for the conditions for which the paint is specified or shown to be applied under this contract.
- F. All limitations, precautions and requirements that may adversely affect the paint; that may cause unsatisfactory results after the painting application; or that may cause the paint not to serve the purpose for which it was intended, that is, to protect the covered material from corrosion, shall be clearly and completely stated in the instructions. These limitations and requirements shall include, but not be limited to, the following:
1. Surface preparation.
 2. Methods of application.
 3. Number of coats.
 4. Thickness of each coat.
 5. Total thickness.
 6. Drying time of each coat, including primer.
 7. Drying time of final coat before placing in service.
 8. Time allowed between coats.
 9. Primer required to be used.
 10. Primers not permitted.
 11. Use of a primer.
 12. Compatible topcoats.
 13. Thinner and use of thinner.
 14. Weather limitations during and after application (temperature, humidity, wind velocity).
 15. Protection from sun.
 16. Physical properties of paint, including percent solids content by volume, ingredient analysis, and weight per unit surface per dry mil thickness.
 17. Cathodic disbonding limitations, if any.
 18. Equipment settings (air cap, fluid tip, equipment pressure settings, etc.).
 19. Manufacturer's specific ventilation requirements for products used on interior surfaces.
Ventilation requirements shall be provided to ensure adequate evacuation of solvents to prevent solvent entrapment, worker exposure to solvents above the OSHA PEL and to provide for timely coating system cure.
 20. Manufacturer's statement of conformance with ANSI/NSF 61 (NSF International) requirements for use on potable water mains.
 21. Cleanup Procedures: Prior to the field cleaning or painting of any surface, the Contractor shall present a written plan to the OWNER and Engineer for review concerning how paint and/or abrasive damage to automobiles and property will be handled, including a process for quick removal of the paint or abrasive, and who will do the work. This approval in no way shall relieve the contractor from the responsibility of settling claims for damage, but is intended as an avenue to expedite and minimize said claims.
 22. Containment Procedures: Prior to the field cleaning or painting of any surface, the CONTRACTOR shall present a written plan to the OWNER and ENGINEER for review concerning how spent cleaning debris and/or paint over spray or droplets will be contained/confined to the jobsite and tank site during the surface preparation and coating application operations. Reasonable care shall be exercised by the Contractor to prevent damage, nuisance, or hazardous conditions to adjacent or nearby property owners.

1.08 QUALITY ASSURANCE

A. Materials:

1. All coating materials required by this section shall be provided by a single manufacturer, unless otherwise required or approved.
2. For each individual system: Provide primer and other undercoat paint produced by the same manufacturer as finish coat.

B. Applicator: Firm with not less than 3 years of successful experience in painting work similar in scope to work of this project.

1. Maintain throughout duration of the work a crew of painters who are fully qualified to satisfy requirements of the specifications.

C. Containing Cleaning Debris and Overspray: The CONTRACTOR shall ensure that no spent cleaning/blasting debris, dust, overspray, coating droplets, or emissions of any kind, escape to the atmosphere, or adjacent buildings, private property, work sites and parking lots.

1. The ground and floor shall be protected from any material scrapped, sanded or removed in any fashion and the material shall be collected and properly disposed of by the contractor.
2. The Contractor shall be responsible for all materials that are used and for any apparatus used to contain dust, emissions, debris, overspray, and coating droplets.
3. If tarps are used as part of the containment system, the tarps shall be an impervious, solid, flame-resistant material, reinforced with a fiber mesh and shall allow as much light as possible to pass through the material.
4. The OWNER reserves the right to stop work or to require additional or different containment methods if the CONTRACTOR'S operations create a nuisance beyond the site property line in the sole opinion of the OWNER, the ENGINEER, the OWNER'S designated representative, any regulatory agency, or neighbor. All costs of providing an adequate containment system shall be included by the Contractor in the Base Price Proposal.
5. Review of the containment system for containing the spent cleaning dust, debris, emissions, overspray, and coating droplets shall not warrant the structural integrity of the containment system and shall not warrant the structural integrity of the facility to support the containment system. Nor shall review of the containment system warrant the ability of the system to contain spent cleaning dust, debris, emissions, and overspray.

1.09 DELIVERY, STORAGE AND HANDLING

A. All paints, coatings, and related materials shall be delivered to the job site or Fabrication shop in original unopened containers with the product name, type and batch number, color, and manufacturer date clearly marked on each container.

B. All materials used on the job by the Contractor shall be stored in a single place provided by the Contractor or designated by the Engineer at the job site. On site and fabrication shop storage shall comply with OSHA requirements, recommendations of the National Fire Protection Association, City Fire Codes, and manufacturer recommendations.

C. Oily or solvent-soaked rags and all waste shall be removed from the job site every night, and all necessary precautions shall be taken to reduce fire hazards to a minimum.

- D. Deliver products to site in original, unopened, and labeled containers; inspect to verify acceptability.
- E. 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.
- F. Store materials in an accepted location which meets the MANUFACTURER's storage requirements. Recommended storage temperatures and ventilation shall be maintained. Keep the storage area clean and repair any damage done. Remove oily rags, waste, or other fire hazards from buildings each night; take adequate precautions to avoid damage by fire. Place cloths and cotton waste which might constitute a fire hazard in metal containers or destroy at the end of each workday.
- G. Upon completion of the work, if the storage space was a fixed part of the project, it shall be left clean. Any damages to such storage space or its surroundings shall be repaired by the Contractor.

1.10 SAFETY AND HEALTH REQUIREMENTS

- A. General: In accordance with requirements set forth by regulatory agencies applicable to the construction industry and MANUFACTURER's printed instructions and appropriate technical bulletins and manuals, the CONTRACTOR shall provide and require use of personal protective lifesaving equipment for persons working on or about the project site.
- B. Where applicable, CONTRACTOR shall provide head and face protection and/or respiratory devices for all persons in the vicinity of work in accordance with the requirements established in OSHA Standards and SAWS Specification 902 Safety and Health Program. Prior to work, CONTRACTOR shall provide a Safety and Health Plan in accordance with SAWS Specification 902.
- C. Ventilation: Where ventilation is used to control hazardous exposure, all equipment shall be explosion-proof. Ventilation shall reduce the concentration of air contaminants to the degree a hazard does not exist. Forced air circulation and exhausting of solvent vapors shall be continued until coatings have fully cured.
- D. Whenever the occupational sound levels exceed the OSHA Standard 29 CFR 1926.52, the CONTRACTOR shall implement exposure control measures that protect employee hearing against the affects from these sound levels. One such control measure can be the use of hearing protective devices.
- E. Illumination: Adequate illumination shall be provided while work is in progress, including explosion-proof lights and electrical equipment. Whenever required by the ENGINEER or OWNER's Representative, the CONTRACTOR shall provide additional illumination and necessary supports to cover all areas to be inspected. The level of illumination purposes shall be determined by the ENGINEER or OWNER's Representative.

1.11 REGULATORY REQUIREMENTS

- A. Conform to applicable code for flame and smoke rating requirements for finishes. B. Conform to code 29 CFR 1910.1200 for Hazard Communication.

1.12 WARRANTY

The Contractor and coating manufacturer shall jointly and severally warrant to the Owner and guarantee the work under this section against defective workmanship and materials for a period of 2 years commencing on the date of final acceptance of the work.

PART 2 – PRODUCTS

2.01 COLOR SCHEDULE

- A. Final color selection will be made by the ENGINEER from color chips submitted by the CONTRACTOR; colors selected may or may not be a MANUFACTURER's standard color. Submit color charts to OWNER at least 60 days prior to paint application to allow time for color selection.
- B. Shop Painted Equipment: Motors, equipment, pumps, valve bodies and metal pump bases shall be shop painted, unless specified otherwise.
 - 1. Motors, equipment, pumps, pump bases and valve bodies shall be painted color as selected by the OWNER.
 - 2. All bronze or stainless steel valve bodies shall not be painted.
- C. Moving Parts and Guards.
 - 1. Do not paint moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sensing devices, motor, fan shafts, etc.
 - 2. CONTRACTOR shall coordinate with OWNER on color selection prior to painting guards or shields.

2.02 TEST EQUIPMENT

- A. The OWNER's Representative will use, but is not limited to, the following pieces of equipment to determine film thickness and presence of flaws. The CONTRACTOR shall provide, maintain and calibrate the following equipment for the OWNER's Representative use for testing the coating system. All costs related to the testing equipment shall be borne by the CONTRACTOR.
- B. Electronic Digital Readout Gage: 0.40 mils film thickness gage including a set of 0.5 Department of Commerce, Bureau of Standards Film Thickness Calibration Standards from 0-8 mils and 10-25 mils or equivalent.
- C. Wet Sponge Holiday Detector: Low voltage (67-1/2 volts) flow detector (holiday detector).
- D. Clemtex Comparator: Surface anchor profile standard.
- E. Wet Film Thickness Gage.
- F. Sling Psychrometer.

2.03 MATERIALS AND MANUFACTURERS

- A. Paint shall arrive on the job ready-mixed, except for the tinting of undercoats, field catalyzed coatings, and possible thinning.

- B. All coating shall meet all Federal, State, United States Corps of ENGINEERS, Environmental Quality Board, and any other local governmental ordinances and regulations for allowable Volatile Organic Compounds and other hazardous contents.
- C. When thinning coating, the amount of thinner used shall not exceed the limit recommended by the MANUFACTURER, nor shall it cause the paint to exceed the allowable limits for VOCs. Only thinners recommended by the MANUFACTURERS, or approved equal, shall be used.

2.04 MATERIALS AND MANUFACTURERS

- A. Pipe Linings: All steel piping including, but not limited to, fittings, specials, couplings, flanges, etc. shall be lined with a fusion bonded epoxy in accordance with Section 02510 Buried Steel Pipe and Fittings, Section 15072 - Steel Pipe and Fittings and AWWA C213. Acceptable manufacturer and specifications are as follows:
 - 1. Fusion Bonded Epoxy pipe lining shall be NSF 61 certified.
 - 2. Fusion Bonded Epoxy pipe lining must be compatible for fluoride and chlorine chemical application for potable water pipe.
 - 3. Surface preparation shall be in accordance with manufacturer’s recommendation.
 - 4. The dry film thickness (DFT) for each coat shall be in accordance with Manufacturer’s recommendation.

Manufacturer	Product	DFT (mils)	Color
3M	Scotchkote FBE 134	12 - 15	Forest Green

- B. Pipe Coatings: Exterior surfaces of the pumps, valves, steel pipes, steel plates, steel fittings, steel spool pieces, couplings, flanges, etc. shall be coated with a fluoropolymer coating system in accordance with this section and AWWA C222. Acceptable coating manufacturer and specifications are as follows:

System	Manufacturer	Product	DFT (mils)	Color
Primer	3M	Scotchkote FBE 134	12 - 15	Forest Green
Intermediate	Tnemec	N140 Pota-Pox Plus	3 - 4	White
	Carboline	Carboguard 60		
	Sherwin-Williams	Macropoxy 646		
Finish	Tnemec	Series 700 Hydroflon	1 - 2	Tan/Blue
	Carboline	Carboxane 950		
	Sherwin-Williams	Fluorokem		

- 1. Finish color for above grade well piping before the chlorine and fluoride injection point shall be similar to Pantone 467C (Tan) or as selected by the Owner. Contractor must submit drawdown charts for approval of color. Refer to drawings for location of the above grade injection point(s).
- 2. Finish color for above grade well piping after the chlorine and fluoride injection shall be similar to Pantone 284C (Blue) or as selected by the Owner. Contractor shall submit color charts for approval of color. Refer to drawings for location of the above grade injection point(s).
- 3. Finish color for steel drain shall be similar to Pantone 467C (Tan) or as selected by the Owner. Contractor must submit color charts for approval of color.
- 4. All outdoor exposed, above grade coatings shall be rated for ultraviolet (UV)

protection. Where applicable, touch-up coating/painting shall be applied in the field. UV coating shall be field applied within the Manufacturer recoat time.

5. Surface preparation shall be in accordance with Manufacturer's recommendation.
6. The dry film thickness (DFT) for each coat shall be in accordance with Manufacturer's recommendation.
7. All handwheels shall be painted red or as selected by the Owner.
8. Substitute manufacturers may be allowed subject to approval of the Owner.
9. Refer to Section – 02510 Buried Steel Pipe and Fittings and Section 15072 – Steel Pipe and Fittings for coating information regarding below grade pipe and fittings.

C. Steel Canopy: Unless specified otherwise, all structural steel associated with the canopy including, but not limited to, steel plates, shapes, bars, columns, tube sections, etc. shall be coated in accordance with this section. Acceptable manufacturer and specifications are as follows:

System	Manufacturer	Product	DFT (mils)	Color
Primer	Tnemec	Series 135 Chembuild	4 - 6	Aluminum
	Carboline	Carbomastic 15		
	Sherwin-Williams	Epoxy Mastic II		
Intermediate	Tnemec	N140 Pota-Pox Plus	3 - 4	White
	Carboline	Carboguard 60		
	Sherwin-Williams	Macropoxy 646		
Finish	Tnemec	Series 1074 Endura II	3 - 4	Tan
	Carboline	Carbothane 134 HG		
	Sherwin-Williams	Hi Solids Polyurethane		

1. Finish color shall be as selected by the Owner. Contractor must submit color charts for approval of color.
2. All outdoor exposed above grade coatings shall be rated for ultraviolet (UV) protection.
3. Surface preparation and application shall be in accordance with Manufacturer's recommendation. For shop applied paint, surface preparation shall be SSPC Brush Blast Clean. For field applied paint, surface preparation shall be SSPC 3, Power Tool Clean.

D. Concrete Surfaces: Acceptable coating manufacturer and specifications for concrete and masonry walls.

System	Manufacturer	Product	DFT (mils)	Color
Primer	Tnemec	Envirofill	2 - 3	White
	Carboline	Sanitile 120		
	Sherwin-Williams	Loxon Concrete Primer		
Finish	Tnemec	Series 6 Tneme-Cryl	2 - 3	Tan/TBD
	Carboline	Sanitile 155		
	Sherwin-Williams	Pro Industrial Acrylic		

1. Finish color for interior and exterior shall be similar to Pantone 467C (Tan) or as selected by the Owner. Contractor must submit color charts for approval of color.
2. Contractor shall prepare surface and apply primer and finish coat in accordance with the manufacturer's recommendations.

E. Ferrous Metal, Interior, Non-Immersed, Subject to Non-Abrasive Conditions:

1. General. All interior above ground ferrous surfaces subject to dry non-abrasive conditions shall be painted in accordance to the following provisions. This includes, but is not limited to: exposed pumps, exterior of valves, pipes, motors, machinery, and miscellaneous metals such as structural steel.
2. Surface Preparation. SSPC SP-6 Commercial Blast Cleaning, Reference Part 3.02 Surface Preparation, item D for description.
3. Coating (Epoxy-Polyamide)

Minimum Coverage

Mfg

Primer 5.0 mils *DFT

Tnemec, N69 High Build Epoxoline II
Carboline, 893 Polymid Epoxy Primer
Devco, Devran 224 HS

Finish Coat 5.0 mils DFT

Tnemec, N69 Hi-Build Epoxoline II
Carboline, 134 HS Polyurethane Devco,
Devran 224 HS

* DFT - Dry Film Thickness

F. Ferrous Metal, Exterior, Non-Immersed, Subject to Non-Abrasive Conditions:

1. General. All exterior ferrous surfaces not submerged, and subject to non-abrasive conditions shall be painted in accordance to the following provisions. This includes but is not limited to: Exterior of non-submerged equipment, valves, pipes, pipe sleeves, brackets, grates, structural steel, light poles, exterior face of overhead doors, etc. Surfaces intermittently or partially submerged will be treated as submerged.
2. Surface Preparation. SSPC SP-6 Commercial Blast Cleaning. Reference Part 3.02 Surface Preparation D for description.
3. Coating (Aliphatic-Polyurethane System)

Minimum Coverage

Mfg

Primer 5.0 mils DFT

Tnemec, N69 Hi-Build Epoxoline II
Carboline, 890 Epoxy
Devco, Devran 224 HS

Finish Coat 4.0 mils DFT

Tnemec, 750-Color Endura-Shield
Carboline, 134 HS Polyurethane
Devco, Devthane 359 DTM

G. Ferrous Metals, Immersed or Subject to Abrasive Conditions

1. General. All ferrous surfaces below ground level, submerged, or subject to abrasive conditions shall be painted in accordance with the following provisions. This includes but is not limited to: Ladders, grates, checkered plates, handrails, access covers, exterior of submerged valves, piping, brackets, structural steel, sluice gates, roller gates, drains, etc. (Surfaces that are questionable as to if they are subject to

submerged or abrasive conditions will be considered as subject to those conditions).

2. Surface Preparation. SSPC SP-10 Near White Metal Blast Cleaning. Reference Part 3.02 Surface Preparation Ferrous Metal D for description.
3. Coating (Epoxy-Polyamide System)

Minimum Coverage

Mfg

Primer 5.0 mils DFT

Tnemec, N140-1255 Pota-Pox Plus Primer
 Devoe, Bar-Rust 233H
 Carboline Carboguard 61

Finish Coat 5.0 mils DFT

Tnemec, N140-11WH Pota-Pox Plus Finish
 Devoe, Bar-Rust 233H
 Carboline Carboguard 61

H. Non Ferrous Metal Interior:

1. General. All non-ferrous surfaces where painting is required shall be painted in accordance with the following provisions. This includes but is not limited to: pipe supports, underside of roof decks and service doors.
2. Surface Preparation. SSPC-SP6 Commercial Blast Cleaning. Reference Part 3.02 Surface Preparation D for description.
3. Coating (Epoxy-Polyamide System)

Minimum Coverage

Mfg

Primer Coat 4.0 mils DFT

Tnemec, N69 Hi-Build Epoxoline II
 Devoe, Devran 205
 Carboline Carboguard 60

Finish Coat 5.0 mils DFT

Tnemec, N69 Hi-Build Epoxoline II
 Devoe, Devran 224HS
 Carboline Carboguard 60

Finish Coat (For Exterior Installation) 3.0 mils DFT in addition of Primer and Finish described above

Tnemec Series 73 Endura-Shield
 Devoe, Devthane 359
 Carboline Carbothane 134HG Coat

- I. Aluminum, Stainless Steel, Galvanized Steel, Copper, or Brass: Unless specifically called out, only clean these surfaces. Do not paint.

- J. All Aluminum in Contact with Dissimilar Materials:
1. Surface Preparation. Remove all foreign matter and apply sealer as required by coating MANUFACTURER.
 2. Coating (Epoxy-Polyamide)

Minimum Coverage

Mfg

Primer (not required)

Finish Coats - 2 coats at
4.0 mils each

Tnemec, 66 Hi-Build Epoxoline
Carboline, 890 Epoxy
Devoe, Devran 224 HS

- K. Interior Concrete: Unless specifically called out, only clean these surfaces. Do not paint.

- L. Exterior Concrete - Exposed.

1. Surface Preparation: Remove all grease, oils and grime by washing with an emulsifying alkaline waterbase cleaner. All surface contaminants including existing coatings shall be removed prior to application of new coating. Brush blast or acid-etch concrete prior to coating. Surface preparation shall be as per MANUFACTURER's recommendations.
2. First coat: Tnemec none required, or Devoe Decraflex 300 Elastomeric System at 12 dry mils or Carboline Flexxide @ 12 mils DFT.
3. Second coat: Tnemec Series 156 Enviro-Crete applied at 8 dry mils, or Devoe Decraflex 300 Elastomeric System at 12 dry mils or Carboline Flexxide @ 12 mils DFT.
4. Third Coat: Tnemec Series 157 Enviro-Crete applied at 9 dry mils, or Devoe Decraflex 300 Elastomeric System at 12 dry mils or Carboline Flexxide @ 12 mils DFT.

- M. Interior Concrete Block Masonry - Exposed.

1. Surface Preparation: Remove all oil, grease, and other contaminants. Allow mortar to cure for 14 days. Surface preparation shall be as per Manufacturer's recommendations.
2. First coat: Tnemec Series 130 Enviro-fill cementitious block filler applied at 65-75 square feet per gallon, or Devoe Bloxfill 4000 applied at 50-75 SF per gallon or Carboline Sanitile 100 applied @ 50-75 sq per gallon.
3. Second coat: Tnemec Series 287 Enviro-Pox applied at 2-3 mils DFT, or Devoe Tru-Glaze 4406 applied at 3-5 mils DFT or Carboline Sanitile 555 applied @ 3-5 mils DFT.
4. Third coat: Tnemec Series 297 Enviro-Glaze applied at 2-3 mils DFT, or Devoe Tru-Glaze 4406 applied at 3-5 mils DFT or Carboline Carbothane134WB Applied 2.0-2.5 mils DFT.

- N. Exterior Concrete Block Masonry - Exposed.

1. Surface Preparation: Remove all oil, grease, and other contaminants. Allow mortar to cure for 14 days. Surface preparation shall be as per Manufacturer's recommendations.
2. First coat: Tnemec Series 130 Enviro-fill applied at 85-115 SF per gallon, or Carboline Sanitile 100 applied @ 50-75 sq per gallon.
3. Second coat: Tnemec Series 6 Tneme-Cryl applied at 4-6 dry mils, or Carboline Sanitile 155 applied @ 10-12 mils DFT.
4. Third coat: Tnemec Series 6 Tneme-Cryl applied at 4-6 dry mils, or Carboline

Sanitile 155 applied @ 10-12 mils DFT.

- O. PVC Pipe Interior
 - 1. Surface Preparation. As recommended by MANUFACTURER.
 - 2. Coating (Epoxy-Polyamide)

<u>Minimum Coverage</u>	<u>Mfg</u>
Primer (not required)	
Finish Coat 4.0-6.0 mils DFT	Tnemec, N69 Hi-Build Epoxoline II Devoe, Devran 224 HS Carboline Carboguard 60

- P. PVC Pipe Exterior
 - 1. Surface Preparation: As recommended by MANUFACTURER.
 - 2. Coating (Hybrid-Polyurethane System).

<u>Minimum Coverage</u>	<u>Mfg</u>
Primer 4.0 - 6.0 mils DFT	Tnemec, N69 Hi-Build Epoxoline II Devoe, Devran 224 HS Carboline Carboguard 60
Finish Coat 3.0-4.0mils SFT	Tnemec, 73-Endura-Shield Devoe, Devthane 379 UVA Carboline Carboline 133HB

PART 3 - EXECUTION

3.01 WORK CONDITIONS

- A. Coating or painting shall be applied per manufacturer's recommendations.
- B. Surface: If surfaces to be painted cannot be put in proper condition for painting by customary cleaning and sanding operations, notify the Engineer's Representative in writing or assume the responsibility for and rectify any unsatisfactory finish resulting from application to an unsatisfactory surface. Do not proceed with surface preparation or coating application until adverse conditions are corrected to provide an acceptable surface. The paint supplier shall inspect and certify all surfaces prior to coating application. Do not apply paint to a wet or damp surface.
- C. Equipment: The CONTRACTOR'S coating and painting equipment shall be designed for application of the materials specified and shall be maintained in good working order comparable to that described in printed instructions of the coating manufacturer. Clean equipment thoroughly before and after use with the appropriate cleaning solution indicated by the coating manufacturer. All gages and controls on spray equipment shall be in proper working order at all times and the gages must be operational and readable.
- D. Warnings: Display caution signs in necessary areas advising of spray painting and warning against open flames.
- E. Barriers: Provide barriers or shelters on windy days to protect equipment and treatment facilities.

1.02 SURFACE PREPARATION

- A. Surface preparation standards are as described in this specification. The Steel Structures Painting Council, Surface Preparation Specification is used for steel and as a guide for concrete.
- B. Solvent Cleaning: Remove oil, grease, soil and other contaminants by use of solvents, emulsions, cleaning compounds, steam cleaning, or similar materials and methods which involve a solvent or cleaning action, in accordance with Steel Structures Painting Council Surface Protection Specifications (SSPC) SP-1. Care must be taken to not allow solvent chemicals to enter treatment processes.
- C. Hand Tool Cleaning: Remove all loose mill scale, loose rust, loose paint, and other loose detrimental foreign matter by hand chipping, scraping, sanding, and wire brushing.
- D. Grinding: Remove weld splatter and rough edges and grind rough welds so that all surfaces are in proper condition, in the opinion of the Construction Manager, to receive the specified coating.
- E. Abrasive Grit Cleaning: All abrasive blasting shall be done at the shop in accordance with SSPC-SP 10 near white metal blast. No abrasive blasting shall be allowed at the job site.
- F. Alternative surface preparation methods and materials shall be approved by the ENGINEER before use. CONTRACTOR shall protect all electrical components from entrance of paint, solvents, or blast mediums into the cabinets. CONTRACTOR shall be responsible for any damage to switches, contacts, and other electrical controls if contaminated by blast media during painting operations.

3.03 PROTECTION

- A. Protect surfaces and installations requiring no painting or finishing by use of drop cloths, masking or other approved precautionary measures. Repair or replace property and work of other trades damaged, marred or stained by painting and finishing operations.
- B. Prior to surface preparation and painting operations, remove, mask or otherwise protect hardware, hardware accessories, machined surfaces, plates, light fixtures and similar items not to be painted but which are in contact with painted surfaces.
- C. Mask openings in motors to prevent paint and other materials from entering the motors.
- D. Protect spaces used for mixing or storage of paint materials from damage or staining. Leave space in clean, neat condition.

3.04 MIXING AND THINNING

- A. Mix and thin paints in strict accordance with manufacturer's directions.
- B. At the time of application, paint must show no signs of hard settling, excessive skinning, livering, or other deterioration.

3.05 COATING APPLICATION

- A. Manufacturer's Representative: The coating manufacturer will be responsible, through an authorized representative, to provide technical assistance to the paint CONTRACTOR as

needed.

- B. Workmen: Employ workmen skilled in structural steel, piping, and mechanical equipment painting.
- C. Materials:
 - 1. Coating materials, abrasive grit, and equipment used in painting and blasting are subject to inspection at any time by the Engineer and Construction Manager.
 - 2. Remove blasting grit and dust from the surface to be painted before paint application is begun.
 - 3. Dust, dirt, oil, grease, or any foreign matter that will affect the adhesion or durability of the finish must be removed by washing with clean rags dipped in an approved cleaning solvent and wiped dry with clean rags.
- D. Application:
 - 1. Priming. Not later than during the same day and before the formation of rust, the cleaned exterior surfaces shall be primed with the specified primer.
 - 2. Intermediate Coat. All primed exterior surfaces shall be given a full intermediate coat of the specified paint.
 - 3. Finish Coat. After adequate curing of the intermediate coat, the entire exterior surfaces shall then be given a final coat of the selected paint in the selected color.
- E. Paint Coating Methods:
 - 1. Finished surfaces must be free from runs, drips, ridges, waves, laps, brush marks and variations in color, texture and finish.
 - 2. Double-lap all welds. Apply prime coat by brush to all weld areas; then apply prime coat to entire surface, including weld areas, by spray, roller or method selected.
 - 3. Coat areas with a uniform film, free of sags, runs, or brush marks.
 - 4. Except where otherwise specified, thin paint only as necessary for workability of coating material in accordance with manufacturer's printed instructions. Use only an appropriate thinner as recommended by the paint manufacturer.
 - 5. When paint is being applied to any other closed areas, provide adequate ventilation.
 - 6. Comply with recommendations of the paint manufacturer in regard to drying time for each coat, technique of spray application, ventilation, paint thinning, and safety precautions. The CONTRACTOR must fully inform all members of his field crew of these recommendations.
 - 7. Where inspection shows that the specified thickness is not developed, apply additional coats in accordance with the manufacturer's surface preparation and cure schedule requirements to produce the required film thickness.
 - 8. Repair and recoat improper applications as recommended by the manufacturer or as required by the Construction Manager.
 - 9. Factory finished items shall be protected against damage during transit, storage and erection. Damaged areas must be refinished as the original. The following items shall receive final finish at the factory, colors to be reviewed by the Owner and Owner's Representative.
 - a. Electrical panels (to be factory painted ANSI No. 61 gray).
 - b. Light fixtures.
 - c. Pressure gages.
 - d. Instrumentation.
 - e. Valves and accessories
 - f. Mechanical equipment with standard factory finish, subject to Engineer's review.
 - 10. The following items shall not be painted unless otherwise specified:
 - a. Aluminum, brass, bronze, chrome, copper or stainless steel.

- b. Nameplates or serial numbers.
 - c. Grease fittings.
 - d. Valve operator stems.
 - e. Buried or encased piping or conduit.
 - f. Concrete floors, interior walls and slabs.
 - g. Glass.
 - h. Fiberglass doors, grating and handrail.
 - i. Existing and new corrugated metal wall panels.
 - j. Exterior split faces concrete masonry units.
11. Finish exterior doors on tops, bottoms, and side edges the same as the exterior face.
 12. Sand lightly between each succeeding enamel or varnish coating.
 13. Allow sufficient time between successive coatings to permit proper drying.

- F. Cleaning: Upon completion of the work, remove all staging and scaffolding. Dispose of all used grit, containers and rubbish in a suitable manner. Remove overspray, paint spots, oil or stains on adjacent surfaces. Leave the entire job clean and acceptable.

3.06 INSPECTION AND TESTING

A. Inspection:

1. The CONTRACTOR shall provide OSHA-approved staging, scaffolding and lighting as required to permit proper inspection as outlined in these specifications.
2. Surface preparation, coating application and repairs are subject to inspection by the Owner and Owner's Representative. The standards published by the Steel Structures Painting Council, especially SSPC-VISL-635, Pictorial Surface, will be used as guides for acceptance or rejection of the cleaning, painting or coating application. Particular attention will be given hard-to-reach areas, bolted connections, supports, anchor bolts and threaded joints.
3. A magnetic-type dry film thickness gage, and an electrical holiday detector will be used to determine the acceptability of the paint application. Calibration of the magnetic thickness gage will be done on the site using the U.S. Department of Commerce, Bureau of Standard Film Thickness Calibration Standards.
4. Give sufficient notice in advance of coating applications so that the Owner and Owner's Representative can perform the following inspections:
 - a. Examination and approval of surface preparation prior to any coating.
 - b. Examination and approval of each coat prior to application of the next coat.
 - c. Inspection of the completed coating for runs, overspray, roughness, and any evidence of improper application.
 - d. Direction or observation of testing.

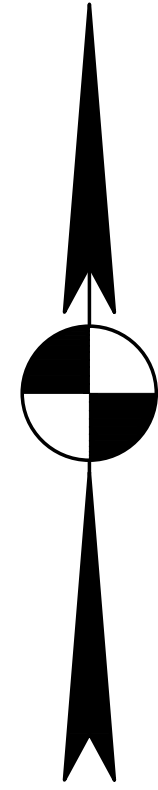
B. Testing:

1. CONTRACTOR shall be responsible for and shall bear all the costs to perform the quality control tests for the coating.
2. Should any paint system fail to pass a test, the CONTRACTOR shall make necessary changes approved by the Construction Manager for the corrective measures. The paint system will then be retested.
3. The following tests will be conducted:
 - a. Dry film thickness will be tested after each coat of paint has been applied, and after final coat of the exterior system has been applied to the pump,

motor, piping, equipment, metal and appurtenances. A test will be made for every 25 square feet of surface and at locations designated by the inspector.

- b. All submerged paint systems will be tested for holidays after the final coat has been applied.
- c. Warranty Inspection: Warranty inspection shall be conducted during the eleventh month following completion of all coating and painting work. All defective work shall be repaired in accordance with this specification and to the satisfaction of the Owner and Owner's Representative.

END OF SECTION



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NOTES:

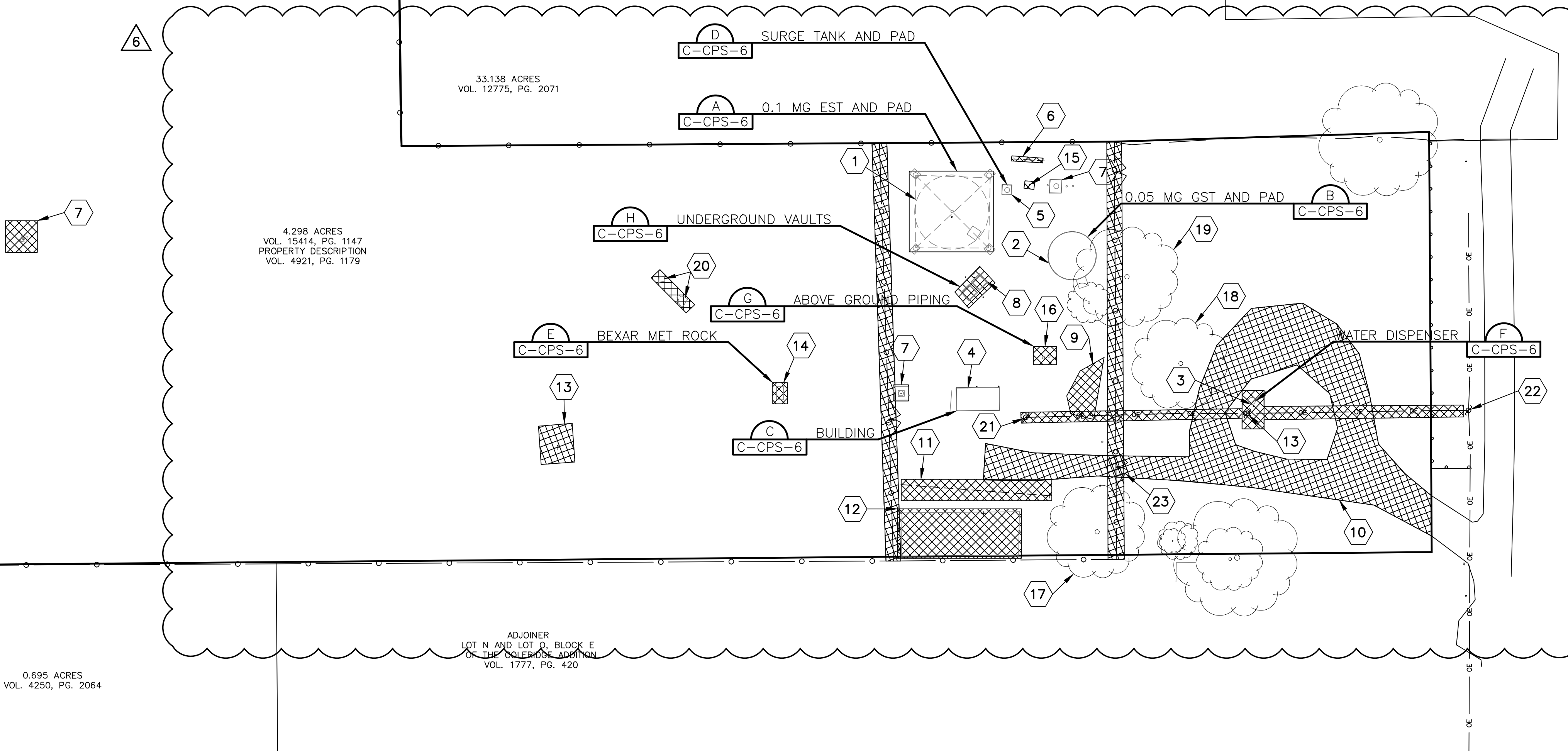
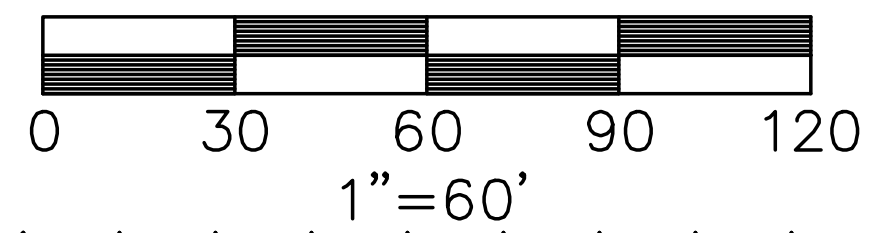
- REFER TO SHEET G-3 FOR GENERAL NOTES #7, #21, #24, #25, AND OTHERS AS APPLICABLE.
- CONTRACTOR SHALL PLUG ABANDONED WELLS IN ACCORDANCE WITH SPECIFICATION SECTION 02050 AND TCEQ REQUIREMENTS.
- CONTRACTOR SHALL COORDINATE WITH OWNER FOR THE DEMOLITION OF EXISTING ELECTRICAL AND COMMUNICATION WIRING.
- CONTRACTOR SHALL DEMOLISH ALL BELOW-GRADE PIPING AND UTILITIES INSIDE THE PROPERTY BOUNDARY. CONTRACTOR SHALL INSTALL A CAP ON THE 8" DUCTILE IRON POTABLE WATER PIPE AT THE PROPERTY BOUNDARY. COORDINATE WITH THE OWNER FOR THE EXACT LOCATION OF THE CAP.
- REFER TO CIVIL DRAWINGS AND SPECIFICATIONS FOR BACKFILL REQUIREMENTS, FINISH GRADE AND NEW CONSTRUCTION.
- UNLESS DIRECTED OTHERWISE BY OWNER, ALL DEMOLITION MATERIAL SHALL BE TRANSPORTED TO OFF SITE LOCATION AND DISPOSED OF BY THE CONTRACTOR PER APPLICABLE CODES AND REQUIREMENTS AT NO ADDITIONAL COST TO THE OWNER.
- THE OWNER HAS FIRST RIGHT OF SALVAGE FOR THE DEMOLISHED MATERIAL / EQUIPMENT.
- CONTRACTOR SHALL USE EXTREME CAUTION FOR WORK NEXT TO OVERHEAD ELECTRIC (OE) UTILITY LINES. SEE SHEET G-3 NOTE #21.
- THE EXISTING ELEVATED TANK AND PUMP HOUSE BUILDING HAVE LEAD BASE PAINT. CONTRACTOR SHALL CONDUCT DEMOLITION AND REMOVAL OF LEAD BASED PAINT MATERIAL IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL RULES AND REGULATIONS. REFER TO SECTIONS 02050 AND 02065 OF THE CONTRACT DOCUMENTS.

NOTES BY SYMBOL (X)

- 0.1 MG EST AND PAD (TBD)
- 0.05 MG GST AND PAD (TBD)
- WATER DISPENSER (TBD)
- BUILDING (TBD)
- SURGE TANK (TBD)
- 6" PVC DRAIN PIPE (TBD)
- WATER WELL (TO BE PLUGGED & CAPPED)
SEE NOTE 2
- UNDERGROUND VAULTS (TBD)
- PLANTER / LANDSCAPING (TBD)
- ASPHALT PAVEMENT (TBD)
- 16" STEEL PIPE (TBD)
- CONCRETE SLAB (TBD)
- POWER POLE (TBD)
- "BEXAR MET" ROCK (TBD)
- LIGHT POLE (TBD)
- ABOVEGROUND PIPING (TBD)
- 19" ASH (TO REMAIN)
- 18" CHINABERRY (TO REMAIN)
- 20" PINE (TO REMAIN)
- MISC STRUCTURE (TBD)
- POWER POLE, OVERHEAD ELECTRICAL AND TRANSFORMERS (TBD)
- POWER POLE (TO REMAIN)
- SALVAGE AND RELOCATE GATE TO NEW SITE ENTRANCE

LEGEND

TO BE DEMOLISHED (TBD)



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0.695 ACRES
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ADJOINER
LOT N AND LOT O, BLOCK E
OF THE CALLETON ADDITION
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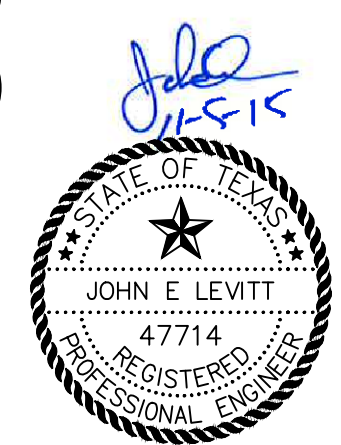
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SAN ANTONIO
WATER SYSTEM

No.	Revision	Approved	Date
1		JEL	11/5/15
2		JEL	10/30/15
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SAN ANTONIO WATER SYSTEM
DSP CLAYTON TANK REPLACEMENT PROJECT
OVERALL DEMOLITION PLAN & EXISTING YARD PIPING

DATE:	OCTOBER 2015
DESIGNED BY:	JAM
DRAWN BY:	GWM
REVIEWED BY:	JEL
CB PROJ #:	103817-00001



SHEET
C-CPS-5
SHEET 940F 99