ADDENDUM No. 1

Date January 16, 2013

City of Austin

Project Name Walnut Creek WWTP WRI Tank Assessment & Repairs

C.I.P. No. 5267.027

This Addendum forms a part of Contract and clarifies, corrects or modifies original Bid Documents, dated January 7, 2013. Acknowledge receipt of this addendum in space provided on bid form. Failure to do so may subject bidder to disqualification.

A. Project Manual Revisions:

1. **Table of Contents:**
   a. Change dates of Table of Contents and Section 00830HH from 12/21/12 to 01/11/13.
   b. Change date of Section 00830BC from 12/21/12 to 01/04/13.
2. **Section 00020:** On page 2, delete Pre-Bid Meeting location "Walnut Creek WWTP Conference Room" and replace with "Walnut Creek WWTP Civic Meeting Room".
3. **Section 00810:**
   a. Paragraph 1.20: Insert "Engineer of Record: Jesse W. Penn PE No. 88340" after "CP&Y, Inc.".
   b. Paragraph 2.4.2.6: Insert "h) Mobilization will be paid in accordance with the standard Payment provisions included in Standard Specification 700s."
4. **Section 00830BC:** Delete section 00830BC in its entirety and replace with attached section 00830BC.

   Includes new General Decision number.
5. **Section 00830HH:** Delete section 00830HH in its entirety and replace with attached section 00830HH.

   Includes new General Decision number.
6. **Section SP001:**
   a. Paragraph Series 700 – Incidental Construction: Delete "700s 08/18/2000 Mobilization".
   b. Following paragraph "Series 800 – Urban Transportation" insert the following: "For Standard Specification 700s, Mobilization, delete, 'Payment will be made under: Pay Item No. 700S-TM: Total Mobilization Payment LS'. Payment for Mobilization will be made within the Lump Sum value of the contract and be accounted for within the Schedule of Values by way of the Measurement and Payment sections of this Standard Specification."

7. **Section 02675;** Paragraph 3.01: Delete the following paragraph:

   "3.01 TECHNICAL SUPPORTOn the first installed unit the manufacturer is to provide the User with free technical support and upgrades via remote control software and email as well as up to 2 field support and training visits."

   and replace with:

   "3.01 TECHNICAL SUPPORT

   A. On the first installed unit the manufacturer is to provide the User with free technical support and upgrades via remote control software and email as well as up to 2 field support and training visits."

8. **Section SS 09800:** Delete section SS 09800 in its entirety and replace with attached section SS 09800.
9. **Section SS 11312;** Paragraph 1.03.H: Insert "Provide bearing and seal numbers in the O&M." before the last sentence.
10. **Section SS 11730:**
    a. Paragraph 1.05.C: Delete "San Rafael" and replace with "Richmond".
    b. Paragraph 1.07.A: Insert "and one complete spare mixing unit" at the end of the last sentence.
    c. Paragraph 2.01.A.1.d: Delete "6 inches" and replace with "8 inches".
    d. Paragraph 2.01.A.3.f: Delete "4 ft" and replace with "4.5 ft".
11. **Section SS 13100:**
    a. Paragraph 1.06.B.8: Delete "52.57" and replace with "19.22".
    b. Paragraph 1.06.B.9: Delete "177.45" and replace with "147.40".
    c. Paragraph 1.06.B.10: Delete "14.1" and replace with "11.8".
12. **Section SS 13220:**
    a. Paragraph 1.03.A.2: Delete this subparagraph in its entirety.
    b. Paragraph 1.03.A.3: Delete this subparagraph in its entirety.
13. **Section SS 15107:**
    a. Paragraph 1.08: Insert the following at the end of the list "D. Provide spare pilot valve."
    b. Paragraph 2.01.K.1: Insert "(WC-WR-PRV-002-A)" after the word "Valves".
14. **Section SS 15175;** Paragraph 2.02.F: Delete "Section 09902 'Painting and protective coatings'" and replace with "Section 09800 Protective Coatings".

B. Drawing Revisions:

1. **Drawing G-1:** Remove sheet G-1 and replace with the attached sheet G-1, which includes all signatures.
2. **Drawing G-4:** Delete Note bottom right corner of sheet regarding conflicts.
3. **Drawing G-5:** Insert "SLG Slide Gate" under abbreviations list.

4. **Drawing C-2:**

   a. On the existing gate note, right side of sheet, delete reference "C-13" and replace with "C-16".

   b. Add Survey Control Points and the following table:

Survey Control Points (NAD83/HARN)(Grid-Feet)				
PNT No.	Northing	Easting	Elev.	Description
11	10075551.48	3143250.77	454.06	Mag Nail
12	10075376.47	3143657.83	453.15	Mag Nail
13	10075801.02	3143769.97	454.05	Mag Nail

   c. Add Benchmarks and the following table:

Benchmarks
BM1 – A square cut on sidewalk along the north side of Sludge Complex No. 3 at the westerly end, +/- 29' south of the back of curb and +/- 59' west of control point 11. Elevation = 461.06'
BM2 – A square cut on sidewalk along the north side of Sludge Complex No. 3 at the easterly end, +/- 30' south of the back of curb and +/- 40' southwest of an electric manhole. Elevation = 460.95'
BM3 – A square cut on concrete tank ring beam on west side of tank. Elevation = 460.11'
BM4 – A square cut on concrete tank ring beam on north side of tank. Elevation = 460.08'
BM5 – A square cut on concrete tank ring beam on east side of tank. Elevation = 459.88'
BM6 – A square cut on concrete tank ring beam on south side of tank. Elevation = 460.04'

5. **Drawing C-9:**

   a. At the end of the callout for the 36" gate valve on existing tank suction line insert "FL = 442.5 +/-".

   b. At Water B Sta. 10+43.61 callout delete "1-6' Dia Water Manhole 1-PRV 1-Flow Meter", replace with "1-7' Dia Water Manhole 1-PR/PSV with Flow Meter".

   c. Add Note: "6. Pipe trenches in paved areas shall be backfilled and pavement repaired per COA Std. Detail 1100S-3. Trenches in unpaved areas shall be backfilled per COA Std. Detail 510S-5."

   d. At Drain C Sta. 10+00.00 callout insert "See Sheet C-15".

6. **Drawing C-9A:**

a. At the end of the callout for the 36" gate valve on existing tank suction line insert "FL = 442.5 +/-".

b. At Water B Sta. 10+43.61 callout delete "1-6' Dia Water Manhole 1-PRV 1-Flow Meter", replace with "1-7' Dia Water Manhole 1-PR/PSV with Flow Meter".

c. Add Note: "6. Pipe trenches in paved areas shall be backfilled and pavement repaired per COA Std. Detail 1100S-3. Trenches in unpaved areas shall be backfilled per COA Std. Detail 510S-5."

7. **Drawing C-10:**

   a. Water Line A Profile: Show 6" fire hydrant lead and add callout "Sta. 10+33.05 FH Lead FL = 446.20".

   b. Water Line B Profile: At Sta. 10+43.61 delete "6' Dia Water Manhole 1-PRV 1-Flow Meter", replace with "7' Dia Water Manhole 1-PR/PSV with Flow Meter".

   c. Water Line B Profile: At Sta. 10+43.61 show manhole 6" above existing grade.

8. **Drawing C-11;** Drain Line C Profile: Show slide gate on the inside face of wall within Junction Box.

9. **Drawing C-11A;** Water Line F Profile: On callout at Sta. 10+65.36 delete reference "C-14" and replace with "C-17".

10. **Drawing C-13;** Precast Manhole on Precast Base for Equipment, Valves, Instruments, Etc. Detail: Delete pipe support detail reference "AA/M-4" and replace with "B/M-6".

11. **Drawing C-14:** Remove sheet in its entirety and replace it with the attached sheet C-14.

12. **Drawing C-15:**

    a. Junction Box Plan: On callout for "Proposed 24" overflow connection" delete "Overflow" and replace with "Drain C".

    b. Section 2: On callout for "Proposed 24" overflow connection in foreground" delete "Overflow" and replace with "Drain C".

13. **Drawing T-11;** Detail C: Remove blind flanges shown on the 24" fittings.

14. **Drawing M-1:**

    a. Valve Schedule: Insert "WC-WR-PRV-002-A, Tank 2 Recirculation Line, C-9, Reclaimed Water, Pressure Relief/Pressure Sustaining Valve, 16, 250, Manual, Flg, Prop."

    b. Valve Schedule: Delete "C-9A" nine places and replace with "C-9".

15. **Drawing M-2:**

    a. At 16" PR/PSV callout delete "6' Dia. MH" and replace with "7' Dia. MH".

    b. Above 16" PR/PSV callout insert equipment tag number "WC-WR-PRV-002-A".

16. **Add** Pump Station Plan Sheet M-3.

This addendum consists of 36 pages and 3 plan sheets.

Approved by OWNER

Approved by ENGINEER/ARCHITECT

1-16-13

END

PREVAILING WAGE RATE DETERMINATION

BUILDING CONSTRUCTION TYPE

COUNTY NAME : TRAVIS

Wages based on DOL General Decision: TX130017 01/04/2013 TX17

CLASSIFICATION	RATE	FRINGES	TOTAL WAGE
Bricklayer (Excluding Caulking & Waterproofing)	$ 13.25	$ -	$ 13.25
Caulkers	$ 13.05	$ -	$ 13.05
Carpenter *	$ 20.25	$ 7.15	$ 27.40
Carpenter (Formbuilding Only)	$ 13.20	$ -	$ 13.20
Cement Mason/Concrete Finisher	$ 10.22	$ -	$ 10.22
Electrician **	$ 26.18	$ 6.66	$ 32.84
Elevator Mechanic*** (< 5 yrs experience)	$ 38.22	$ 23.535	$ 61.76
Elevator Mechanic*** (> 5 years experience)	$ 38.94	$ 23.535	$ 62.48
Floor Layer: Carpet (Soft) Floor	$ 10.00	$ -	$ 10.00
Glaziers	$ 18.37	$ 6.43	$ 24.80
HVAC Mechanic (Excluding Duct or Pipe Work)	$ 11.83	$ 1.14	$ 12.97
Iron Workers - Structural (Excluding Metal Bldg. Erection)	$ 20.55	$ 4.40	$ 24.95
Iron Worker - Reinforcing	$ 10.00	$ -	$ 10.00
Laborer (Common)	$ 7.57	$ -	$ 7.57
Laborer (Brick Tender)	$ 8.00	$ -	$ 8.00
*Lead Paint & Asbestos Abatement	$ 12.17	$ -	$ 12.17
Millwright	$ 20.56	$ 7.15	$ 27.71
Painter - Brush	$ 10.06	$ 0.31	$ 10.37
Painter - Drywall Finishing	$ 9.00	$ -	$ 9.00
Painter - Spray	$ 9.70	$ 0.19	$ 9.89
Pipefitter (Including HVAC Work)	$ 26.25	$ 10.18	$ 36.43
Plumber (Excluding HVAC Work)	$ 26.25	$ 10.18	$ 36.43
Power Equipment Operator - Backhoe	$ 11.11	$ 1.92	$ 13.03
Power Equipment Operator - Crane	$ 12.50	$ 2.03	$ 14.53
Power Equipment Operator - Front End Loader	$ 11.33	$ -	$ 11.33
*Roofer	$ 13.80	$ -	$ 13.80
*Roofer - Metal	$ 14.05	$ -	$ 14.05
Sheet Metal Worker (Including HVAC Duct Work)	$ 24.30	$ 10.18	$ 34.48
Sprinkler Fitter	$ 14.00	$ -	$ 14.00
Tile Setter	$ 13.00	$ 1.55	$ 14.55
Tile Setter - Finisher	$ 10.00	$ -	$ 10.00
Truck Driver (Lowboy)	$ 8.00	$ -	$ 8.00
Waterproofer	$ 12.13	$ -	$ 12.13

http://www.wdol.gov/wdol/scafiles/davisbacon/tx.html

*** See Page 2 for Additional Wage Information**

Note: *Lead Paint & Asbestos Abatement and Roofer Classifications have been added to this Prevailing Wage

Rate Determination pursuant to a City of Austin Prevailing Wage Survey (trades absent from DOL).

The Wage Compliance information detailed below was excerpted from General Decision TX070018 or other DOL sources.

1. Additional Trade information:

Carpenters* (including acoustical installation and drywall framing/hanging, including metal studs).
Electricians** - Including low voltage wiring for computers, fire/smoke alarms and telephones.
Elevator Mechanics*** - also must be paid for 7 holidays - New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, and Christmas Day.
Welders - Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added upon the advance approval of City of Austin Contract Administration. CONTRACTOR shall submit to City of Austin Contract Administration for review the classification, a bona fide definition of work to be performed and a proposed wage with sample payrolls conforming to area practice **prior** to the start of the job for that type of work.

2. Wages

The Total Wage may be met by any combination of cash wages and credible "bona fide" fringe benefits by the employer. For overtime, the basic hourly rate listed in the contract wage determination must be used in computing pay obligations.

3. Crediting fringe benefit contributions to meet DBA/DBRA and City of Austin requirements:

The Davis-Bacon Act (and 29 CFR 5.23), list fringe benefits to be considered. Examples are:

> Life Insurance
> Health Insurance
> Pension
> Vacation
> Holidays
> Sick Leave

Note: The use of a truck is not a fringe benefit; a Thanksgiving turkey or Christmas bonus is not a fringe benefit. No credit may be taken for any benefit required by federal, state, or local law such as: workers compensation, unemployment compensation; or social security contributions.

Contributions to fringe benefit plans must be made regularly, e.g. daily, weekly, etc. They must be more frequent than quarterly. (see 29 CFR 5.5 (a)(1)(I)) A periodic bonus may not be counted as a fringe benefit.

4. Annualization of Benefit Costs

If a firm provides an electrician with $200 per month medical insurance, to calculate allowable fringe benefit credit contributions per hour, the formula ([$200 x 12 months] divided by 2080 hours = $1.15 per hour) should be used.

5. Proper Designation of Trade

A work classification on the wage decision for each worker must be made based on the actual type of work he/she performed and each worker must be paid no less than the wage rate on the wage decision for that classification **regardless** of his or her level of skill.

6. Split Classification

If a firm has employees that perform work in more than one classification, it can pay the wage rates specified for each classification ONLY if it maintains accurate time records showing the amount of time spent in each classification. If accurate time records are not maintained, these employees must be paid the highest wage rate of all the classifications of work performed by each worker. Accurate time records tracking how many hours a worker performed the work of one trade and then switched to another trade must be accounted for on a daily basis and reflected on Employer Certified Payroll accordingly.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after

award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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PREVAILING WAGE RATE DETERMINATION

HEAVY AND HIGHWAY CONSTRUCTION

COUNTY NAME: TRAVIS

Wages based on DOL General Decision:TX130016 01/04/2013 TX16

Classification	Wage Rate	Classification	Wage Rate
Agricultural Tractor Operator	$ 12.69	Laborer, Utility	$ 12.27
Asphalt Distributor Operator	$ 15.55	Loader/Backhoe Operator	$ 14.12
Asphalt Paving Machine Operator	$ 14.36	Mechanic	$ 17.10
Asphalt Raker	$ 12.12	Milling Machine	$ 14.18
Boom Truck Operator	$ 18.36	Motor Grader Operator - Fine Grade	$ 18.51
Broom or Sweeper Operator	$ 11.04	Motor Grader Operator - Rough	$ 14.63
Cement Mason/Concrete Finisher	$ 12.56	Painter - Structures	$ 18.34
Concrete Pavement Finishing Machine Operator	$ 15.48	Pavement Marking Machine Operator	$ 19.17
		Pipelayer	$ 12.79
Crane, Hydraulic 80 tons or less	$ 18.36	Reclaimer/Pulverizer	$ 12.88
Crane, Lattice Boom, 80 tons or less	$ 15.87	Reinforcing Steel Setter	$ 14.00
Crane, Lattice Boom, over 80 tons	$ 19.38	Roller Operator, Asphalt	$ 12.78
Crawler Tractor	$ 15.67	Roller Operator, Other	$ 10.50
Directional Drilling Locator	$ 11.67	Scraper Operator	$ 12.27
Directional Drilling Operator	$ 17.24	Servicer	$ 14.51
Electrician	$ 26.35	Spreader Box Operator	$ 14.04
Excavator, 50,000 lbs. or less	$ 12.88	Structural Steel Worker	$ 19.29
Excavator, over 50,000 lbs.	$ 17.71	Traffic Signal Installer/Light Pole Worker	$ 16.00
Flagger	$ 9.45	Trenching Machine Operator, Heavy	$ 18.48
Form Builder/ Setter, Structures	$ 12.87	Truck Driver Tandem Axle Semi-Trailer	$ 12.81
Form Setter - Paving & Curb	$ 12.94	Truck Driver, Lowboy-Float	$ 15.66
Foundation Drill Operator, Truck Mounted	$ 16.93	Truck Driver, Single Axle	$ 11.79
		Truck Driver, Off Road Hauler	$ 11.88
Front End Loader Operator, 3CY or less	$ 13.04	Truck Driver, Single or Tandem Axle Dump Truck	$ 11.68
Front End Loader Operator, over 3 CY	$ 13.21	Welder	$ 15.97
Laborer, Common	$ 10.50	Work Zone Barricade Servicer	$ 11.85

http://www.wdol.gov/wdol/scafiles/davisbacon/tx.html

The Wage Compliance information detailed below was excerpted from General Decision TX20070043 or other DOL sources.

1. **Additional Trade information:**
   Unlisted classifications needed for work not listed within the scope of the classifications listed may be added upon the advance approval of Contract Procurement. CONTRACTOR shall submit to City of Austin Contract Procurement the following: classification, a bona fide definition of work to be performed and a proposed wage with sample payrolls conforming to area practice **prior** to the start of the job for that type of work. Proposed trade may not be performed by any trade already listed.

2. **Wages**
   For overtime, the basic hourly rate listed in the contract wage determination must be used in computing pay obligations.

3. Proper Designation of Trade

A work classification from the Prevailing Wage Poster for each worker must be made based on the actual type of work he/she performed on the job. In summary the work performed, not the "title" determines the correct worker classification and wage. Each worker must be paid no less than the wage rate on the wage decision for that classification **regardless** of his/her level of skill (exclusive of a bona fide apprentice currently registered in a DOL approved apprentice program - proof of individual registration must be supplied in advance to the City of Austin).

4. Split Classification

If a firm has employees that perform work in more than one classification, it can pay the wage rates specified for each classification ONLY if it maintains accurate time records showing the amount of time spent in each classification. If accurate time records are not maintained, these employees must be paid the highest wage rate of all the classifications of work performed by each worker. Accurate time records tracking how many hours a worker performed the work of one trade and then switched to another trade must be accounted for on a daily basis and reflected on Employer Certified Payroll accordingly.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

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2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

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The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

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SECTION SS 09800

PROTECTIVE COATINGS

PART 1 GENERAL

1.01 THE REQUIREMENT

A. The WORK of this Section applies to the protective coating of all interior and exterior metal surfaces, except the aluminum roof, contained within the new 1.2 million gallon reclaimed water ground storage tank at the City of Austin (OWNER) Walnut Creek Wastewater Treatment Plant Water Reclamation Facility. The tank has a nominal diameter of 114 feet and a height of approximately 20 feet. The tank shall have a self-supporting aluminum dome roof that will not be lined or coated.

B. The WORK of this Section applies to five main pipes located at the 51st Street Water Reuse Composite Elevated Tank to be coated. The five 304 stainless steel pipes include the 24-inch diameter inlet/outlet, 24-inch diameter overflow, 6-inch diameter drain, 2-inch diameter washout, and 20-inch diameter connector pipe, which are all 170 feet tall. The scope of WORK includes scaffolding installation, protection of surfaces not to be coated, surface preparation, inspection, coating application, cleanup and all appurtenant work.

C. The scope of WORK includes scaffolding installation, surface preparation, waste disposal, pretreatment, coating application, touch-up, protection of uncoated surfaces, inspection, cleanup and all appurtenant WORK. The specified coating systems shall be applied to the following interior and exterior surfaces and miscellaneous pipes: the tank walls, floor, pipe supports, pipe brackets, structural beams, manways, ladders, vents, overflow pipe, and inlet/outlet piping. The CONTRACTOR shall also repair all existing coatings at the project site that are damaged as a result of the WORK performed within the Contract Documents. The CONTRACTOR shall apply the coating system after installation of the anode string wall anchors and steel mounting brackets for the junction box and rectifier as shown in the Drawings and in Section 13110 – Cathodic Protection.

D. The WORK shall be as follows:

1. Submit a Health and Safety Plan.
2. Attend pre-coating job meeting.
3. Install scaffolding and containment system.
4. Install dust collection system, dehumidification, and temperature control equipment, as necessary to control the working environment within and around the reclaimed water storage tank.
5. Hand tool clean per SSPC SP2 and power tool clean per SSPC SP3 surfaces to remove all weld splatter, burrs, and excess weld material. Degrease per SP1.
6. Brush off blast per SSPC SP 7 all exterior steel surfaces of tank if a shop-coated primer is present. SP6 abrasive blast all exterior bare steel at weld seam holdbacks, weld-damaged coatings, and all other exterior metallic surfaces.
7. Abrasive blast per SSPC SP5 interior surfaces of tank to provide an anchor pattern

suitable for coating on all interior bare steel at weld seam holdbacks, weld-damaged coatings, and other metallic surfaces including immersed piping equipment.

8. Apply an independent stripe coat to all edges, angles, weld seams, beams, nuts and bolts, girders, and other places where insufficient film thicknesses are likely to be present. The independent stripe coat will be of contrasting color and shall be easily identified by the coating INSPECTOR and shall be applied prior to the final top coat.
9. Apply finish coat to all interior surfaces of tank in the field as required per these Specifications.
10. Apply field intermediate and finish coats to all exterior surfaces as required per these Specifications.
11. Conduct final inspection for dry film thickness, coating adhesion, and holiday testing. CONTRACTOR shall have its own inspection equipment.
12. Install cathodic protection system.
13. Restore the site to its original condition.

E. The following surfaces shall not be coated hereunder unless indicated elsewhere in the bid documents.

1. Cathodic protection wiring and anodes
2. Spigots for sampling or nipples used for level indicators that would restrict flow
3. Rubber
4. Machined surfaces
5. Grease fittings
6. Glass
7. Equipment nameplates
8. Nonferrous metals

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. The WORK of all following Sections applies to the WORK of this Section. Other Sections of the Specifications, not referenced below, shall also apply to the extent required for proper performance of this WORK.

1. Section 01300 Submittals
2. Section 13110 Cathodic Protection
3. Section 13210 Welded Steel GST
4. Section 13220 Aluminum Dome

1.03 REFERENCED STANDARDS, CODES, AND REGULATIONS

A. Except as otherwise indicated, the current editions of the following codes, specifications, regulations, and standards apply to the WORK of this Section:

1. 29 CFR Code of Federal Regulations Title 29, Occupational Safety and Health Administration (OSHA), U.S. Department of Labor
   a. 1926.502 Fall Protection Systems Criteria and Practices
   b. 1910 Occupational Safety and Health Standards

c. 1910.146 Permit Required Confined Spaces
d. 1910.95 Occupational Noise Exposure

2. ANSI/AWWA American National Standards Institute/American Water Works Association
   a. C210 Liquid Applied Coating Systems for the Interior and Exterior of Steel Water Pipelines
   b. D100 Welded Steel Tanks for Water Storage
   c. D102 Painting Steel Water Storage Tanks
3. ASTM American Society for Testing and Materials International
   a. D4414 Standard Practice for Measurement of Wet Film Thickness of Organic Coatings by Notched Gauges
   b. D4417 Standard Test Methods for Field Measurement of Surface Profile of Blast Cleaned Steel
   c. D4541 Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers
4. NACE National Association of Corrosion Engineers, the Corrosion Society
   a. No. 2 Near-White Metal Blast Cleaning
   b. No. 3 Commercial Blast Cleaning
   c. RP0188 Discontinuity (Holiday) Testing of New Protective Coatings on Conductive Substrates
   d. RP0287 Field Measurements of Surface Profile of Abrasive Blast Cleaned Steel Surfaces Using Replica Tape
5. SSPC Steel Structures Painting Council, the Society for Protective Coatings
   a. SP1 Solvent Cleaning
   b. SP2 Hand Tool Cleaning
   c. SP3 Power Tool Cleaning
   d. SP5 White Metal Blast Cleaning
   e. SP6 Commercial Blast Cleaning
   f. SP10 Near-White Blast Cleaning
   g. SP11 Power Tool Cleaning to Bare Metal
   h. PA 2 Measurement of Dry Film Thickness with Magnetic Gauges
   i. VIS 1 Guide and Reference Photographs for Steel Surfaces Prepared by Dry Abrasive Blast Cleaning
   j. VIS 3 Guide and Reference Photographs for Steel Surfaces Prepared by Hand and Power Tool Cleaning
   k. Vol. 1 Good Painting Practice
6. Texas Commission on Environmental Quality
   a. Chapter 115.453 VOC Content Limits for Industrial Coatings

B. Whenever the Drawings or these Specifications require a higher degree of workmanship or better quality of material indicated by the above standards, then these Specifications shall prevail.

1.04 SUBMITTALS

A. Submittals shall be in accordance with Section 01300 Submittals, and shall include the following:

1. Coating Product Data: For each coating system to be used, the CONTRACTOR shall submit the coating manufacturer's catalog containing the following data:
   a. Technical data sheet for each product used, including statements on the suitability of the material for the intended use.
   b. Instructions and recommendations for surface preparation, thinning, mixing, handling, application and proper storage. This shall include minimum and maximum time requirements for coating, recoating, and surface patches.
   c. Material safety data sheet for each product used.
   d. Standard color options.
2. Abrasive Blast Material Data: For each abrasive blast material to be used, the CONTRACTOR shall submit the manufacturer's catalog containing the following data:
   a. Technical data sheet for each product used, including statements on the suitability of the material to produce the required surface profile and the recommended blasting equipment.
   b. Material safety data sheet for each product used.
   c. Country and state of origin for each product used.
3. Shop Drawings: Forced heating, dehumidification, shading, and ventilation equipment specifications, as required.
4. Samples:
   a. During the field application, samples of each coating system shall be submitted on three 3-inch by 3-inch steel plate samples. Each sample shall be completely coated at the specified thickness over one 3-inch by 3-inch surface with the applicable coating system. Samples shall be labeled with the surface preparation method, coating type, and dry film thickness.
   b. The manufacturer's standard details for coating over pipe penetrations, edge terminations, radial beam/roof plate overlaps, and brackets shall be provided.
5. Experience Requirements of the Field Applicator:
   a. Three references which verify that the coating CONTRACTOR has demonstrated successful application of a 100% solids polyurethane and exterior coating system in the past 3 years. Provide the size (area of coating), time of completion, name, the owner's address and telephone number for each installation referenced.
   b. A written statement from the CONTRACTOR stating that they are qualified and experienced in the application of the specified coating systems. The letter shall state the manufacturer and model number of mixing, heating, and pumping equipment to be used to apply the specified coating systems.
   c. A written statement from the manufacturer certifying that the coating CONTRACTOR's onsite foreman and each applicator performing WORK on the project has been trained and approved to apply the selected coating system.
   d. CONTRACTOR shall provide SSPC QP 1 Certification or the manufacturer's certification for the specified coating system.

6. Experience Requirements of the Shop Applicator
    a. NACE Coating Inspector Program certification documents for the person responsible for Quality Assurance/Quality Control at the facility. This person will be responsible for submitting inspection reports to the OWNER.
    b. A copy of a typical Quality Assurance/Quality Control inspection report containing items listed in Paragraph 3.13 of this Specification.
    c. Three references which verify that the shop painting facility has demonstrated successful application of the specified coating systems in the past 3 years. Provide the structure name and size (area of coating), time of completion, the owner's name, address, and telephone number for each installation referenced.
    d. The manufacturer shall provide written certification that the shop painting facility's supervisor and each applicator performing Work on the project have been trained and approved by the manufacturer to apply the selected coating system.
    e. The manufacturer shall state whether or not it has verified that the CONTRACTOR is going to use the proper mixing, coating application, heating, and environmental control equipment for the specified coating products. Only heated plural component equipment shall be used for the 100% solids coating application. Equipment shall be capable of performing a ratio test.
    f. The Shop Coating Applicator shall provide SSPC QP 3 Certification or the coating manufacturer's certification for selected coating system.

1.05 QUALITY ASSURANCE

A. Protective Coating Materials
    1. Products shall be standard products produced by recognized manufacturers who are regularly engaged in production of such materials for essentially identical service conditions and have proven reliability of at least 5 years. If requested, the CONTRACTOR shall provide the INSPECTOR with the names of no fewer than 5 successful applications of the proposed manufacturer's products demonstrating compliance with this requirement.

B. Substitute Submittals
    1. Materials have been specified from catalogues of manufacturers in most of the cases, to show the type and quality coatings required. Materials by other manufacturers are acceptable provided they are established as being compatible with and of equivalent quality to the coatings of the companies referenced. The CONTRACTOR shall provide satisfactory documentation from the manufacturer of the proposed substitute material that said material meets the requirements and is equivalent to or better than the listed materials in the following properties:
        a. Minimum and maximum recoat times with itself and with topcoats
        b. Minimum and maximum cure times for immersion
        c. Abrasion resistance per ASTM D4060 using a CS17 Wheel
        d. Maximum and minimum dry film thickness per coat
        e. Compatibility with other coatings
        f. Suitability for steel and reclaimed water

g. Resistance to chemical attack
h. Temperature limitations in service and during application
i. Ease of application
j. Ease of repairing damaged areas
k. Minimum adhesion of 100% solids polyurethane shall be 1,000 psi per ASTM D4541 using a Type II or Type V instrument.

2. Three references which verify that the submitted coating system has been used in similar environments and on similar surfaces in the past 5 years. Provide the name, the owner's address and telephone number for each installation referenced.
3. The cost of all third party testing and analysis of the proposed substitute materials that may be required by the INSPECTOR, shall be paid by the CONTRACTOR. If the proposed substitution requires changes in the contract WORK, the CONTRACTOR shall bear all costs involved and the costs of allied trades affected by the substitution.

C. Pre-Coating job meeting: Convene a pre-coating job meeting 3 weeks before the start of field application of the coating systems. Require attendance of parties directly affecting WORK of this Section, including OWNER, CONTRACTOR, INSPECTOR, and manufacturer's representative. Review the following:
1. Safety and security
2. Staging of equipment
3. Protection of surfaces not scheduled to be coated
4. Field quality control
5. Surface preparation
6. Application
7. Repair
8. Inspection
9. Coordination with other work
10. Contractor Field Quality Control Reports
11. CONTRACTOR/INSPECTOR/OWNER Relationship

D. CONTRACTOR shall submit over-spray prevention procedures to the INSPECTOR for review and approval. Approval by the INSPECTOR does not relieve the CONTRACTOR of responsibility for over-spray or fallout.

1.06 HEALTH AND SAFETY

A. In confined space environments, as defined in 29CFR 1910.146, WORK shall comply with the requirements set forth by Federal OSHA applicable to the construction industry. The CONTRACTOR shall provide and require use of safety and personnel life-saving equipment for persons working in Confined Space areas, including but not limited to, adequate forced ventilation, body harnesses, and gas detection meters that continually monitor for levels of oxygen, hydrogen sulfide, carbon monoxide, and Lower Explosion Limit (LEL).

B. The CONTRACTOR shall install scaffolding to access the pipes inside the 51st Street

Water Reuse Composite Elevated Tank. Fall Protection shall be in accordance with 29CFR 1926.502. All temporary ladders and scaffolding shall conform to applicable safety requirements.

C. The CONTRACTOR shall provide all head and face protection equipment and respiratory devices required to safely perform this WORK. Equipment shall include any applicable masks recommended by the manufacturer while performing blasting or application of the coating materials.

D. Use of ear protection devices shall be provided and required by the CONTRACTOR whenever the occupational noise exposure exceeds 29CFR 1910.95 limits.

E. Failure to comply with health and safety laws, regulations, codes, permits, and Standard Operation Procedures will be grounds for shutting down the WORK. All costs resulting from a shutdown of the WORK that are due to the CONTRACTOR's negligence or failure to comply with applicable safety requirements shall be borne by the CONTRACTOR. After a shutdown of the WORK, the WORK will not be permitted to begin again until the INSPECTOR is satisfied that all necessary health and safety precautions are being taken.

F. Flammable or volatile solvents in coating system components constitute a hazard with regard to fire and explosions wherever flame or spark exposure is possible. All flames, smoking, and welding, etc., are strictly prohibited in WORK or storage areas. Fire abatement devices shall be readily available and in operating condition. Necessary precautions shall be taken to keep fire hazard to a minimum; all oily rags, waste, and other combustibles not in covered containers shall be removed from the area daily. All flammable products shall be stored in conformance with applicable State, County and Local Fire Codes pertaining to flammable materials.

G. The coating project shall never exceed the current VOC limits set by TCEQ Chapter 115.453. The CONTRACTOR shall be responsible for all fines or legal costs resulting from any VOC limit violations.

1.07 INSPECTION AND TESTING

A. General: The CONTRACTOR shall give the OWNER and INSPECTOR 3 days' advance notice of the start of any field surface preparation work or coating application work.

B. The CONTRACTOR shall provide a full time Supervisor at the WORK site during working hours for the duration of the project. The supervisor shall have the authority to sign change orders, coordinate WORK, and make decisions pertaining to the fulfillment of the contract. The Supervisor shall have a minimum of 5 years of experience in the application of the specified coatings.

C. All WORK relative to preparation for and application of coatings shall be conducted under the supervision of a full time INSPECTOR. The INSPECTOR's services shall be provided by the OWNER. The INSPECTOR shall have the authority to act on behalf of the OWNER to reject any coating WORK that does not comply with these specifications or the manufacturer's written specifications.

1. The INSPECTOR will be a NACE Level 2 or Level 3 Peer Review Coating Inspector

with at least 5 years of coating inspection experience in similar coating environments.

D. Prior to the start of any WORK, the CONTRACTOR shall establish with the INSPECTOR schedules and notification procedures to ensure all surface preparation WORK has been inspected prior to the application of any coating. These procedures shall remain in effect for the duration of the coating project. Under no circumstances shall any surfaces be coated without prior approval of the INSPECTOR. Coatings applied without the INSPECTOR's authorization shall be removed and reapplied at the sole expense of the CONTRACTOR.

E. The CONTRACTOR shall make the following equipment available to the INSPECTOR upon request:
1. Holiday testers
2. Film thickness testers
3. Surface preparation comparators
4. Adhesion testers

1.08 RECORDS

A. The CONTRACTOR shall maintain an accurate, written record of the quantity of coating material applied and the corresponding surface area covered, a description of the area coated, the batch number, surface temperature, ambient temperature, relative humidity, dewpoint, and names of applicators on a daily basis. The CONTRACTOR shall furnish a signed copy of said record to the INSPECTOR at the beginning of the next working day. These quantities shall be independently verified by the INSPECTOR and reported on the INSPECTOR's log. The INSPECTOR shall immediately investigate and resolve any discrepancies between these reported quantities.

1.09 SERVICES OF MANUFACTURER

A. The CONTRACTOR shall require the coating manufacturers to furnish the following services:
1. The manufacturer's representative shall personally observe the start of surface preparation, mixing, and application of coating systems.
2. The manufacturer's representative shall provide technical support to resolve field problems associated with the manufacturer's products furnished under this Contract or the application thereof throughout the duration of the WORK.
3. The coating manufacturer shall provide written certification that the coating CONTRACTOR's Supervisor and each applicator performing WORK on the project has been trained and approved to apply the selected coating system.
4. The coating manufacturer's representative shall be present during the final inspection of the finished coating by the INSPECTOR.

1.10 WARRANTY

A. The CONTRACTOR and coating manufacturers shall warrant the coating system applications for a period of 1 year after final acceptance of the WORK. The

CONTRACTOR, at no cost to the OWNER, shall perform all WORK and supply all labor, equipment, and materials associated with the repair of failures identified in the warranty inspection. Deficient or defective areas in the coatings include blisters, sticky surfaces, peeling, disbondment, rust staining, or cracking.

B. Material manufacturer shall warrant for a period of 1 year that its products meet published physical properties and that they are free of manufacturing defects. The CONTRACTOR shall warrant all work against defects and workmanship for a period of 1 year from the date of final acceptance of the WORK.

C. The manufacturer shall replace any defective product and the CONTRACTOR shall, within a reasonable time after receipt of written notice thereof, repair defects in materials or workmanship which may develop during the warranty period, and any damage to other work caused by such defects or the repairing of same, at his own expense and without cost to the OWNER.

D. In the event of fault disagreement, warranty issues will be resolved through mediation involving the services of a NACE Certified Coating Inspector. Mediation and Inspection costs shall be borne by the party found to be responsible for the coating failure.

PART 2 PRODUCTS

2.01 GENERAL

A. Definitions
1. The terms "paint," "coatings," and "finishes" as used herein, shall mean surface treatments, emulsions, enamels, paints, epoxy resins, and all other protective coatings, except galvanizing or anodizing, whether used as a pretreatment, primer, intermediate coat, or finish coat.
2. The term "DFT" means minimum dry film thickness.
3. The term "interior" means an enclosed area inside a tank or structure that supports an elevated tank.

B. Compatibility
1. In any coating system only compatible materials from a single manufacturer shall be used in the WORK. Particular attention shall be directed to compatibility of primers and finish coats. If necessary, subject to the approval of the INSPECTOR, a barrier coat shall be applied between existing prime coat and subsequent top coats to ensure compatibility.

C. Colors
1. Finish colors shall be selected by the OWNER from the manufacturer's standard color samples.

2.02 ABRASIVES

A. The type and size of abrasive shall be selected to produce a surface profile that meets the coating manufacturer's recommendations. All abrasives shall be new, clean, and delivered to the project in unopened, weather resistant containers. Abrasive materials

shall not be recycled for further use on this project unless approved by the INSPECTOR.

1. All abrasives shall meet the requirements of local, state, and federal regulations for abrasive blasting materials. At no time will silica sand be allowed or used on the job site.
2. All abrasives shall be disposed of in accordance with all federal, state, and local laws at the CONTRACTOR's expense with no cost to the OWNER. Abrasives shall not be disposed of on-site.

2.3 COATING SYSTEMS

A. Material Sources: Each of the following manufacturers is capable of supplying many of the industrial coating materials indicated herein. Where manufacturers and paint numbers are listed, it is to show the type and quality of coatings that are required. All industrial coating materials shall be materials that have a record of satisfactory performance in industrial plants, manufacturing facilities, and water and wastewater plants.

1. Carboline Coatings Company
2. Global Eco Technologies, Inc.
3. PPG Amercoat
4. Sherwin Williams
5. Tnemec Company

B. Epoxy

1. Amine or polyamide epoxy coating shall have a minimum of 70 percent solids by volume and shall be capable of being applied with a brush or roller.
2. Approved Products:
   a. Amerlock 400 as manufactured by PPG Amercoat
   b. Bar Rust 231 as manufactured by International Paint
   c. Carboguard 890 as manufactured by Carboline Company
   d. Series N69 Hi-Build Epoxoline II as manufactured by Tnemec Company
   e. Macropoxy 646 as manufactured by Sherwin Williams

C. Aliphatic Polyurethane

1. Aliphatic gloss or semi-gloss polyurethane topcoat for UV protection that shall be capable of being applied with a brush or roller.
2. Approved Products:
   a. Amershield as manufactured by PPG Amercoat
   b. Devthane 379H manufactured by International Paint
   c. Carbothane 133 manufactured by Carboline Company
   d. Series 1074 Endura Shield II as manufactured by Tnemec Company
   e. Hi Solids Polyurethane as manufactured by Sherwin Williams

D. Elastomeric Urethane

1. 100% solids elastomeric urethane shall have a moisture vapor transmission rate less than 6 grams per square meter per 24 hours (g/m2/24 hr) as measured per

ASTM 1653 Method B at a thickness of 60 mils.

2. Approved Products:
   a. Endura Flex 1988 as manufactured by Global Eco Technologies
   b. Polibrid 705 as manufactured by International Paint
   c. Rectamine 760 as manufactured by Carboline Company

E. Passivator
1. Water-based cleaner for steel, aluminum, and other non-ferrous metals used to remove dirt, grease, and other surface contaminants.
2. Approved Products:
   a. Carboline Galoseal WB as manufactured by Carboline Company
   b. Devprep 88 as manufactured by International Paint
   c. Prep 88 as manufactured by PPG Amercoat

PART 3 EXECUTION

3.01 WORKMANSHIP

A. Skilled craftsmen and experienced supervision shall be used on all WORK.

B. All coatings shall be applied under dry and dust-free conditions. Coating shall be done in a workmanlike manner so as to produce an even film of uniform thickness. Edges, corners, crevices, and joints shall receive special attention to ensure that they have been thoroughly cleaned and that they receive an adequate thickness of coating material. The finished surfaces shall be free from runs, drops, ridges, waves, laps, brush marks, and variations in color, texture, and finish. The hiding shall be so complete that the addition of another coat would not increase the hiding.

3.02 PROTECTION OF SURFACES NOT TO BE COATED

A. Remove, mask, or otherwise protect all surfaces not intended to be coated. Provide drop cloths to prevent coating materials from falling on, marring, or overspraying adjacent surfaces.

B. Surfaces not to receive protective coatings shall be protected during surface preparation, cleaning, and coating operations.

3.03 ENVIRONMENTAL CONDITIONS AND DUST CONTROL

A. No coating work shall be performed under the following conditions:
1. Temperatures exceeding the manufacturer's recommended ambient and surface maximum or minimum allowable.
2. Dust or smoke laden atmosphere.
3. Damp or humid conditions, where the relative humidity is above the manufacturer's maximum allowable.
4. Substrate or ambient temperatures less than 5°F above the dewpoint. Dewpoint shall be measured by use of an instrument such as a Sling Psychrometer in conjunction with U.S. Department of Commerce, Weather Bureau psychrometric

tables.

5. Ambient temperature that is expected to drop below 50°F or less than 5°F above the dewpoint within 8 hours after application of coating.

B. The CONTRACTOR shall provide and use dehumidification and temperature control equipment to maintain the established production schedule by providing all labor, equipment and materials necessary to maintain a controlled environment in the area where WORK is to be performed. The substrate and atmospheric conditions within the controlled environment, with respect to ambient temperature, surface temperature, dewpoint, and relative humidity, shall be maintained within the limits established by the manufacturer of the selected coating system to ensure proper application and cure of the coating.

C. Humidity Control – Desiccant or Direct Expansion Refrigeration dehumidification will be used to control the environment in the space 24 hours a day during blast cleaning, coating application and coating cure. Equipment will conform to the following requirements:

1. Equipment – Desiccant dehumidifiers will be a solid desiccant design having a single rotary desiccant wheel capable of fully automatic continuous operation. No liquid, granular, or loose lithium chloride drying systems will be accepted. The use of direct expansion (DX) refrigeration type dehumidifiers with reheat may be considered if the expected ambient temperature will remain above 60˚F. Heating the space changes relative humidity only and does not change the dew point temperature. Heat alone, therefore, is not a substitute for dehumidification, unless substrate temperature is high enough to meet the dew point differential. The dehumidification system may consist of a combination of desiccant and refrigerant equipment.
2. Air Changes – The air change rate for maintaining the required spread of 17˚F between inside surface temperature and inside space dew point temperature with a maximum relative humidity of 45% in the space will depend upon the type of equipment to be used and the time of year during the application. There shall be 2 air changes per hour to hold the desired degree of cleanliness of the blast.

D. Temperature Control – Auxiliary cooling or insulation may be necessary to maintain the surface temperature at an acceptable level for the coating manufacturer's application parameters. This auxiliary equipment must be approved for use by the supplier of the dehumidification equipment and will meet the following requirements.

1. Refrigerant type systems must be installed in the process air supply duct between, and/or blended with, the dehumidifier as close to the work space as possible.
2. Only electric, indirect fired combustion, or steam coil auxiliary heaters will be used. No direct-fired space heaters will be allowed during the blasting, coating, or curing phases.
3. The space to be controlled will be sealed off as well as possible, allowing air to escape the work space away from the point where the dehumidified air is being introduced. If it is necessary to filter the air escaping the space, the filtration system must be designed so that it does not interfere with the dehumidification equipment's ability to control the dew point and relative humidity of the work

space.

E. At a minimum, the CONTRACTOR shall implement an SSPC Guide 6 Class 1A containment plan for abrasive blasting. The CONTRACTOR shall prevent dust or water from contaminating surfaces that are fully prepared and ready for the coating application.

F. The CONTRACTOR shall provide and use a dust containment system that shall consist of a 12,000 cfm, or higher, mobile industrial dust collector. Approved dust collector products include DC 12,000 Model ET as manufactured by Industrial Vacuum Equipment Corporation, or OWNER approved equal.

3.04 PRODUCT DELIVERY AND STORAGE

A. Coating materials shall be delivered to the job site in sealed containers with weather resistant labels that clearly show the designated name, formula or specification number, batch number, color, date of manufacture, manufacturer's directions, and name of manufacturer, all of which shall be plainly legible at the time of use. Any products exceeding the manufacturer's recommended shelf life shall not be used.

B. The CONTRACTOR shall be responsible for providing temporary storage facilities to protect materials and equipment stored on-site from the elements and unauthorized personnel. The storage facility shall be capable of 24 hour climate control to maintain products within the storage temperature limits recommended by the manufacturer. The location of the storage container shall be approved in advance by the OWNER. If materials delivered to the site are not stored for more than 24 hours, the CONTRACTOR does not need to provide a storage facility as stated above.

C. The storage facility shall be capable of containing the coating systems within the storage facility in the event of a spill or rupture.

3.05 INTERIOR SURFACE PREPARATION

A. The minimum surface preparation shall be as specified in the coating system schedules included at the end of this Section.

B. All interior surface preparation shall be done onsite after the tank has been welded and erected. Surface preparation shall be performed as follows:

1. The Shop Applicator shall remove all snow, water, grease, dust, and other contaminants from the surfaces prior to centrifugal or manual abrasive blast cleaning. All oil, grease, welding fluxes and other surface contaminants shall be removed by solvent cleaning per SSPC SP1 prior to blast cleaning.
2. All sharp edges and welds shall be rounded or chamfered and all burrs, surface defects, and weld spatter shall be ground smooth prior to abrasive blast cleaning. The power tool cleaning shall conform to SSPC SP3 and NACE RP0178.
3. Abrasive Blast Cleaning – The type and size of abrasive shall be selected to produce a surface profile that meets the coating manufacturer’s recommendation for the particular coating and service conditions.
   a. The Field Applicator shall not reuse abrasive blasting media unless otherwise

approved by the INSPECTOR.

b. Compressed air for air blast cleaning shall be supplied at adequate pressure from well maintained compressors equipped with oil/moisture separators which remove at least 95 percent of the contaminants.

c. For every 200 square feet of steel plate that is blasted, the surface profile shall be tested with the use of Press-o-Film as manufactured by Testex, or other RP0287 approved equal, at locations to be determined by the INSPECTOR. For every 100 square feet of steel pipe blasted, the surface profile shall be tested at locations determined by the inspector. The replica tape thickness shall be measured using a dial micrometer manufactured by Testex, or other ASTM D4417 Type C approved equal. For each test area, one replica tape tests shall be performed within a single test area 12 inches in diameter. For each test area, the replica tape thickness values shall be recorded and must be within 10% of the coating manufacturer's recommended profile.

d. Abrasive blasted surfaces shall match the standard samples shown in SSPC VIS 1 for each product's recommended profile.

C. The Field Coating Applicator shall not apply a coating on a bare steel surface that has not been prepared to an SSPC SP5 surface profile. Special attention shall be given to uncoated steel weld joints, coating holdbacks, and bare metal.

D. Surfaces shall be cleaned of all dust and residual particles by dry air blast cleaning, vacuuming, or other approved methods, prior to coating.

E. Enclosed areas and other areas where dust settling is a problem shall be vacuum cleaned and wiped with a tack cloth to prevent contamination of previously cleaned surfaces.

3.06 EXTERIOR SURFACE PREPRATION

A. The Shop Painting Facility shall remove all snow, water, grease, dust, and other contaminants from the surfaces prior to centrifugal or manual abrasive blast cleaning. All oil, grease, welding fluxes and other surface contaminants shall be removed by solvent cleaning per SSPC SP1 prior to blast cleaning.

B. All sharp edges and welds shall be rounded or chamfered (power tool grinding may be required) and all burrs, surface defects, and weld splatter shall be ground smooth prior to blast cleaning surface preparation profiling. The power tool cleaning shall conform to SP11 to meet the manufacturer's recommended profile.

C. Abrasive Blast Cleaning – The type and size of abrasive shall be selected to produce a surface profile that meets the coating manufacturer's recommendation for the particular coating and service conditions.

1. The Shop and Field Applicator shall use abrasive blast material mixture that contains a minimum of 75% grit and 25% shot material, or similar mixture, to create a sharp, angular surface profile.
2. The Field Applicator shall not reuse abrasive blasting media unless otherwise approved by the INSPECTOR.

3. Compressed air for air blast cleaning shall be supplied at adequate pressure from well maintained compressors equipped with oil/moisture separators which remove at least 95 percent of the contaminants.
4. For every 200 square feet, or less, of surface blasted, the surface profile shall be tested with the use of Press-o-Film as manufactured by Testex, or other RP0287 approved equal, at locations to be determined by the INSPECTOR. The replica tape thickness shall be measured using a dial micrometer manufactured by Testex, or other ASTM D4417 Type C approved equal. For each test area, three replica tape tests shall be performed within a single test area 12 inches in diameter. For each test area, the three replica tape thickness values shall be recorded and must be within 10% of the coating manufacturer's recommended profile.
5. Abrasive blasted surfaces shall match the standard samples shown in SSPC VIS 1 for each product's recommended profile.

D. The Field Applicator shall abrasive blast the shop coated surfaces per SSPC SP7 prior to the application of the intermediate coat.

E. The Field Applicator shall not apply a coating on a bare steel surface for non-immersion service that has not been prepared to per SSPC SP6. Special attention shall be given to uncoated steel weld joints, coating holdbacks, and bare metal.

3.07 SURFACE PREPARATION – STAINLESS STEEL SURFACES

A. Stainless steel metal shall be cleaned with an alkaline solution per SSPC-SP1 to remove oil, grease, and other contaminants detrimental to adhesion of the protective coating system to be used.

B. All new and existing sharp edges and welds shall be rounded or chamfered and all new and existing burrs, surface defects, and weld spatter shall be ground smooth prior to abrasive blast cleaning. The power tool cleaning shall conform to SSPC SP3 and NACE RP0178.

C. Pretreatment of surfaces shall be in accordance with the printed recommendations of the coating manufacturer.

D. The surfaces of the five pipes, pipe brackets, and pipe supports shall be abrasive blasted per SP7 prior to coating. A minimum 1 mil profile shall be produced and cleaned prior to the application of a protective coating.

E. Surfaces shall be cleaned of all dust and residual particles by dry air blast cleaning, vacuuming, or other approved methods, prior to coating.

F. After abrasive blasting the CONTRACTOR, in the presence of the INSPECTOR, shall test the surfaces for soluble salts with the use of Chlor*Test as manufactured by Chlor*Rid International or approved equivalent. The surfaces shall have a maximum concentration of 5 micrograms per square centimeter ($\mu g/cm^2$) or less. A test shall be conducted for every 250 square feet (ft^2) of surface area of the 24-inch diameter pipes to be coated at locations determined by the INSPECTOR.

G. If the soluble salt test indicates chloride concentrations greater than those outlined in these Specifications, the Field Applicator shall apply Chlor*Rid, as manufactured by Chlor*Rid International using a 1,500 psi pressure washer, on the affected areas to remove the salts from the substrate and shall be allowed to dry for a minimum of 8 hours. The CONTRACTOR shall sweep blast the area to remove the contaminants. A substrate's surface preparation will be accepted once the soluble salt concentration is below the amounts outlined in these Specifications.

3.08 MIXING, THINNING, AND STORAGE OF MATERIALS

A. Unless otherwise specified herein, the coating manufacturer's printed recommendations and instructions for thinning, mixing, and handling coating materials shall be strictly observed. Prepare multiple component coatings using all of the contents of the container for each component packaged by the manufacturer. Do not use partial batches. Do not use multiple component products that have exceeded their shelf life. Provide 4 touch-up kits for small area work. Mix only the components specified and furnished by the manufacturer. Do not add additional components for color.

B. Coating materials shall be protected from exposure to temperatures greater than or less than the manufacturer's recommendations and shall be thoroughly stirred, strained, and kept at a uniform consistency during application. Flammable materials shall be stored in accordance with state and local codes.

C. All protective coating materials shall be used within the manufacturer's recommended shelf life. Materials exceeding the storage life recommended by the manufacturer shall be removed from the jobsite.

3.09 INTERIOR COATING APPLICATION

A. The application of protective coatings to steel substrates shall be in accordance with "Paint Application Specification No. 1, (SSPC-PA1)," Steel Structures Painting Council.

B. The CONTRACTOR may choose to apply a shop-applied prime coat to hold a blast however it shall be completely removed prior to the application of the System A coating and the steel surfaces shall meet the specified surface profile in this Specification.

C. The interior lining shall be applied after the tank has been erected and all welding on the interior and exterior surfaces has been completed.

D. Only heated plural component equipment shall be used for the 100% solids coating application. Equipment shall be capable of performing a ratio test. All gauges on plural component pump shall be in working order. If defective, they shall be replaced prior to the start of any application.

E. After each component of the plural component coating system has been thoroughly heated, the CONTRACTOR shall perform a paint pump ratio test on the first day of spraying and at least once a day thereafter in the presence of the Inspector. The CONTRACTOR shall place two see-through containers with preprinted volumetric

marks on a flat surface. The hose valve for each component shall be opened simultaneously and each component flow rate shall be allowed to stabilize by pouring the discharging materials into separate disposable containers. After the flow is stabilized, the hoses shall be transferred to the pre-printed volumetric containers and the valves shall be shut off after one of the containers has been filled to 32 or 48 fluid ounces, depending on the mixing ratio recommended by the manufacturer. If the volumetric quantity of coating in the containers does not match the manufacturer's recommendation, the CONTRACTOR shall reduce or increase the pressure and temperature until it meets the specified mixing ratio. No spraying shall be performed until the ratio test result has been accepted by the INSPECTOR.

F. The top flanges of the structural steel radial beams for the roof shall be prime-coated prior to the installation or welding the roof plates.

G. The CONTRACTOR shall apply the coating system after installation of the anode string wall anchor, steel mounting bracket for the cathodic protection junction box, and all other welding has been completed.

H. Cleaned surfaces and all coats shall be inspected prior to each succeeding coat. The CONTRACTOR shall schedule such inspection with the INSPECTOR 24 hours in advance.

I. An independent stripe coat shall be applied to structural steel flange edges, angles, crevices, weld seams, nuts and bolts, and other places where insufficient film thicknesses are likely to be present. Particular care shall be used to ensure that the specified coverage is applied on the edges and corners of all surfaces.

J. During application, all coating applications shall be inspected prior to each succeeding application.

K. Ferrous metal surfaces shall be painted before any rusting or other deterioration of the surface occurs. Surface preparation shall be limited to only those surfaces that can be coated in the same work day.

L. Any interior fall protection safety climb pole on ladders shall be left uncoated.

M. Coatings shall be applied in accordance with the manufacturer's instructions and recommendations, and this Section. Whichever has the most stringent requirements will prevail.

N. Hardness testing on the 100% solids polyurethane shall be performed 8 hours after each application.

O. Finish coats, including touch-up and damage repair coats, shall be applied in a manner to present a uniform texture and matched color appearance.

P. The coating shall be smooth and free of sharp protrusions. It shall not exhibit any cracking, delaminations, orange peeling, blisters, off-ratio discoloring, sticky areas, bubbles, craters, or pinholes. Sags and curtaining shall be less than 1% of total coated surface area for the tank. If any of the above defects exceed 1% of the total coated

surface area, the defective areas shall be rejected, removed, and reapplied by the CONTRACTOR at no additional cost to the OWNER.

3.10 EXTERIOR APPLICATION

A. The application of protective coatings to steel substrates shall be in accordance with "Paint Application Specification No. 1, (SSPC-PA1)," Steel Structures Painting Council.

B. Cleaned surfaces and all coats shall be inspected prior to each succeeding coat. The CONTRACTOR shall schedule such inspection with the INSPECTOR 24 hours in advance.

C. Any exterior fall protection safety climb pole on ladders shall be left uncoated.

D. The CONTRACTOR shall apply an independent stripe coat for angle steel edges, pipe flanges, nuts and bolts, and other places where insufficient film thicknesses are likely to be present.

E. Apply intermediate coat on all exterior surfaces including, but not limited to, piping fasteners, manways, roof hatches, electrical conduit, railing, and all associated piping attached to the tank.

F. Areas of the intermediate coat with visual contaminants such as insects, dirt, hose marks, or similar blemishes shall be sanded and cleaned prior to the final coat.

G. Finish coats, including touch-up and damage repair coats, shall be applied in a manner to produce a uniform texture/thickness, color, and appearance. Blisters, bubbling, holidays, brush marks, runs, sags, and other surface imperfections are not acceptable. There shall be no evidence of overspray.

H. On windy days, the CONTRACTOR shall use lint-free rollers to apply the coating on the exterior in order to prevent overspray on adjacent private property. The finished surface shall have a uniform texture and shall have no evidence of overspray. All repairs will be masked off.

I. Each coat will be inspected by the INSPECTOR prior to application of the next coat. Areas found to contain runs, overspray, roughness, or other signs of improper application shall be required to be recoated in accordance with the INSPECTOR's instructions.

3.11 APPLICATION ON STAINLESS STEEL

A. All coating and painting application work shall conform to the applicable requirements of the Steel Structures Painting Council Paint Application Specifications, SSPC-PA1, latest revision, for "Shop, Field and Maintenance Painting."

B. The CONTRACTOR shall test the wet film thickness of the exterior coatings per ASTM D4414 using a notched gauge.

C. Surfaces shall be inspected and approved by the INSPECTOR prior to each application of coating and/or painting materials.

D. An independent stripe coat shall be applied prior to the prime coat. Special attention shall be given to pipe brackets, pipe supports, edges, angles, weld seams, flanges, nuts and bolts, and other places where insufficient film thicknesses are likely to be present.

E. Materials applied prior to approval by the INSPECTOR shall be removed and reapplied to the satisfaction of the INSPECTOR at the sole expense of the CONTRACTOR.

F. Any coating material applied upon improperly prepared surfaces shall be removed and redone to the satisfaction of the INSPECTOR at the sole expense of the CONTRACTOR.

G. Follow the recommendations of the coating and painting material manufacturer including the selection of spray equipment, brushes, rollers, cleaners, thinners, mixing, drying time, temperature and humidity of application, and safety precautions.

H. All coatings and paints shall provide a satisfactory film with a smooth and even surface. Provide uniform finish, color, and coverage of coating. Blisters, bubbling, holidays, brush marks, runs, sags, and other surface imperfections are not acceptable.

3.12 CURING OF COATINGS

A. The coating shall not exhibit discoloration, bubbling, tackiness, or softness after the coating has exceeded the manufacturer's recommended cure time.

B. The CONTRACTOR shall provide curing conditions in accordance with the conditions recommended by the coating material manufacturer or by this Section, whichever has the most stringent requirement, prior to placing the completed coating system into service.

C. Forced air ventilation is required for the application and curing of coatings on the interior surfaces of enclosed hydraulic structures. Continuously exhaust air during curing periods from the lowest level of the structure using portable ducting. After all interior coating operations are complete, provide a final curing period as required by the manufacturer and continuously operate the forced ventilation system.

D. If necessary the CONTRACTOR shall, in the presence of the INSPECTOR, conduct a Solvent Rub Test in accordance with ASTM D5402 after 7 days of curing. The test area shall be evaluated for appearance, hardness, or any color transfer to the cloth. If there is no change to the coating after the test, it will be considered cured.

E. If necessary, the INSPECTOR shall conduct Shore D Hardness Testing per ASTM D2240. In order to consider the coating cured and properly mixed, it must meet the manufacturer's recommended Shore D Durometer requirement for the specified product.

3.13 TESTING AND INSPECTION DURING AND AFTER APPLICATION

A. The INSPECTOR shall provide anchor profile measurements, blast hose pressures, type/percent mixture of the abrasive, and shall check the compressor air cleanliness.

B. Surfaces prepared as described in this Specification and per the manufacturer's recommendations shall be observed by the INSPECTOR prior to application of coatings to verify compliance.

C. The INSPECTOR shall provide a written record of the quantity of coating material applied and the corresponding surface area covered, a description of the area coated, each coating product batch number, dew point temperature, surface temperature, ambient temperature, relative humidity, and names of applicators on a daily basis.

D. The INSPECTOR shall provide wet film and dry film thickness readings, results of the holiday testing, and shall note any discrepancies with the coating Specifications.

E. Scaffolding or ladders to facilitate inspection shall be erected and moved to locations where requested by the INSPECTOR.

F. Whenever required by the INSPECTOR, the CONTRACTOR shall provide additional illumination and ventilation for inspections. Adequate illumination shall consist of explosion-proof lights and electrical equipment required to meet safety standards. The INSPECTOR shall determine the level of illumination for inspection purposes.

G. The inspection devices listed below, or approved equivalents, shall be provided by the CONTRACTOR to the INSPECTOR as required in good working condition and with calibration data prior to beginning any WORK. These items shall remain available until final acceptance of the coating applications per the parameters listed below:

1. Film Thickness Testing – On ferrous metals, the dry film coating thickness shall be measured in accordance with the SSPC "Paint Application Specification No. 2" using a magnetic-type dry film thickness gauge.
    a. Metallic Surfaces:
        (i) Wet film gauge: approved by ASTM D4414
        (ii) Dry film gauge: Elcometer 456, PosiTest DFT, Quanix 7500, or equivalent.
2. Holiday Testing – After the specified coating has set hard to the touch, the CONTRACTOR shall test the interior coating application for pinholes and holidays using a high voltage spark tester according to RP0188. Testing shall be witnessed by the INSPECTOR. The required test voltage shall be established by the manufacturer's recommendations and testing of induced holidays. The electrode movement over the coating surface shall be continuous and shall proceed in a systematic manner, which ensures 100 percent coverage of the coating surface. All defects shall be clearly marked by the INSPECTOR followed by repair and retesting by the CONTRACTOR. Holiday detectors shall be of the following type:
    a. For surfaces having a total dry film coating thickness exceeding 20 mils, a high voltage holiday detector shall be used. The unit shall be adjusted to operate at the voltage required to cause a spark jump across an air gap equal to twice the specified coating thickness. The following products are approved:
        (i) Tinker-Rasor Model AP-W
        (ii) D.E. Stearns Model 14/20
    b. For surfaces having a total dry film coating thickness of 20 mils or less, a low voltage holiday detector as specified above shall be used. The unit shall

operate at less than 75 volts. For thicknesses between 10 and 20 mils, a non-sudsing type wetting agent, such as Kodak Photo-Flo, or equivalent, shall be added to the water prior to wetting the detector sponge. The following products are approved:

(i) Tinker & Rasor Model M1

(ii) K-D Bird Dog

(iii) or equivalent

3. Psychrometer - Sling, mechanized or digital.
4. Surface Temperature: Magnetic surface temperature gauge.

H. Coating Adhesion Testing – One adhesion test each shall be performed on the interior lining of the tank wall and floor at locations determined by the INSPECTOR. The CONTRACTOR shall also provide three 6-inch by 6-inch steel plate samples to be coated in the field at the time of the coating application. Each sample surface shall receive the same preparation as the surface to be coated and shall receive the same coating system as the steel surfaces. For each sample, one pull-off test shall be performed within a single 6-inch diameter test area. The coating adhesion on the steel substrates shall be tested using a Type II or Type V instrument per ASTM D4541 and shall be witnessed by the OWNER's Coatings Inspector. An Elcometer 106, Defelsko Positector AT, or equal, shall be used to perform the test. All steel coupons shall be submitted to the OWNER at the completion of the testing. The procedure is as follows:

1. The new lining material on the coupon and tank shall be abraded with sand paper and wiped with solvent per SSPC SP1 prior to applying the adhesive on the dolly.
2. A minimum of one new 20 mm-diameter dolly shall be affixed to the coated surface of each sample. Each sample plate shall be identified and recorded by the INSPECTOR.
3. After the dolly is affixed to the new lining but prior to conducting the pull-off test, the INSPECTOR shall score around the dolly without disturbing the dolly or bond within the test area. The scoring shall penetrate through the newly applied coating, and abrade the substrate.
4. The adhesive used to attach the dollies to the liner shall be rapid setting with a tensile strength in excess of the coating material and permitted to cure in accordance with the manufacturer's recommendations. Failure of the dolly adhesive below 700 psi for the tank or sample shall require re-testing.
5. The steel plate adhesion pulls shall exceed 700 psi with more than 50% of the coating attached to the dolly. Adhesion pulls between 550 psi and 700 psi on steel shall be acceptable if the dolly contains 50% of coating. An additional pull test will be required for results less than 550 psi for steel as stated below.
6. The INSPECTOR will record the type of adhesive used, the length of time the adhesive was allowed to cure and the type of failure observed on the dolly.
7. If more than 50% of the adhesion tests on the tank interior lining do not meet the minimum adhesion criteria, an additional test shall be conducted within 12 inches of the lowest measurement. If the additional dolly does not meet the adhesion requirements, an additional location shall be tested on a different surface. If two of the first three additional tests do not meet the adhesion requirements, the liner shall be removed and replaced at the CONTRACTOR's expense.

8. The CONTRACTOR shall repair the coating or lining at the locations of the adhesion tests per the manufacturer's recommendations. The testing dollies shall be retained by the OWNERS's Coating Inspector at the conclusion of the testing.

I. The procedure for collecting representative thickness data shall be as follows:
   1. No measurements shall be made until at least 8 hours after application of the coating or as otherwise approved by the INSPECTOR.
   2. INSPECTOR shall determine where and how often to test for film thicknesses, and as a minimum, the requirements of SSPC PA 2 will be followed.
   3. Discard any unusually high or low gauge reading that cannot be repeated consistently. Take the average (mean) of the three gauge readings as the spot measurement. The average spot measurement shall meet or exceed the specified dry film thickness for each application.

J. At the completion of all coating WORK, a final inspection shall be conducted. The CONTRACTOR, a coating manufacturer representative, the INSPECTOR, and a OWNER's representative shall jointly conduct a final inspection to establish that all WORK is complete per the Contract Documents. Any deficiencies found shall be documented and corrected before granting final WORK acceptance. The CONTRACTOR shall use digital still photography and digital video to thoroughly document each WORK area condition during the final inspection. A copy of all photographs and video shall be provided to the OWNER, and the CONTRACTOR shall keep the originals on file. The photographs and video shall be the basis for condition evaluation of the coating systems at the warranty inspection. Inspection costs in excess of one reinspection or cancellation of the warranty coating work shall be borne by the CONTRACTOR.

3.14 WARRANTY INSPECTION

A. The warranty inspection shall be conducted in accordance with AWWA D102, in the last warranty year following WORK acceptance. All coating applications found deficient or defective during the warranty period shall be repaired or replaced by the CONTRACTOR, to the satisfaction of the OWNER. These repairs or replacements shall be in accordance with this specification and the material manufacturer's recommendations at no cost to the OWNER. Deficient or defective areas in the coatings include blisters, sticky surfaces, peeling, disbondment, rust staining through the coating, or cracking. The final inspection shall be used to assist in determining deficient or defective areas in the coating systems.

B. The OWNER shall establish a date for the inspection and provide 30 days' advance notification to the CONTRACTOR, so the CONTRACTOR and a coating manufacturer representative can be present during the inspection. The OWNER will arrange for and cover the cost of setting up the warranty inspection. The CONTRACTOR shall arrange for the presence of the coating manufacturer and bear all associated costs. Inspection costs in excess of one reinspection or cancellation not attributed to the OWNER shall be borne by the CONTRACTOR. The CONTRACTOR shall arrange for and cover all costs for repair WORK under the warranty.

C. If the warranty inspection is not held during, or before, 1 month prior to the end of

the warranty period, the CONTRACTOR is not relieved of its warranty responsibilities under the contract documents. If the CONTRACTOR fails to conduct the last-warranty-year inspection for reasons not attributed to the OWNER, the warranty period shall be extended until the inspection is conducted and defective work is repaired.

3.15 REPAIRS

A. If an area is found to have an improper finish, insufficient film thickness or other deficiencies, then the CONTRACTOR shall clean, prepare, and topcoat the coating surface per the manufacturer's recommendations to obtain the specified finish and coverage. Work shall be free of runs, bridges, shiners, laps, or other imperfections.

B. Damaged or defective coating shall be removed by the CONTRACTOR and the surface prepared in accordance with these Specifications before recoating.

3.16 CLEANUP

A. Upon completion of the WORK, all staging, scaffolding, containers and WORK related material or debris shall be removed from the site to the satisfaction of the INSPECTOR and OWNER. Coating overspray and oil spots or stains on all surrounding surfaces shall be removed and the job site cleaned. All damage to surfaces resulting from the CONTRACTOR's WORK shall be cleaned, repaired or refinished, to the satisfaction of the INSPECTOR, at no cost to the OWNER.

B. Disposal of spent solvents, thinners, coating components and other related materials shall be the CONTRACTOR's responsibility and shall meet all federal, state, and regional regulations for safe disposal.

3.17 COATING SCHEDULE

A. Steel Tank Interior for Immersion Service

1. System A – One of the following 100% solids polyurethanes, or approved equal, shall be used to coat the interior shell, floor, and attached appurtenances of the tank:

Product	Polibrid 705	Enduraflex 1988	Rectamine 760
Surface Preparation	SSPC SP5	SSPC SP5	SSPC SP5
Minimum Surface Profile after Abrasive Blast	3 mils	3 mils	3 mils
Application	Heated Plural Component	Heated Plural Component	Heated Plural Component
Finish Coat DFT	40 mils	40 mils	40 mils
Total System DFT	40 mils	40 mils	40 mils

B. Steel Exterior and Pumps/Piping with UV Exposure

1. System B – One of the following epoxy/aliphatic polyurethane coating systems, or approved equal, shall be used to coat the existing High Service Pump 4 and the exterior surfaces of the tank, attached piping, fire hydrant, bulk water fill station piping and piping in vaults:

Product	Amerlock 400 and Amershield	Bar Rust 231 and Devthane 379H	Carboguard 890 and Carbothane 133
Surface Preparation	SSPC SP6	SSPC SP6	SSPC SP6
Minimum Surface Profile after Abrasive Blast	2 to 3 mils	2 to 3 mils	2 to 3 mils
Application	Manufacturer's Recommendations	Manufacturer's Recommendations	Manufacturer's Recommendations
Prime Coat DFT	3 to 4 mils of Amerlock 400	3 to 4 mils of Bar Rust 231	3 to 4 mils of Carboguard 890
Intermediate Coat DFT	3 to 4 mils of Amerlock 400	3 to 4 mils of Bar Rust 231	3 to 4 mils of Carboguard 890
Top Coat DFT	2 to 3 mils of Amershield	2 to 3 mils of Devthane 379H	2 to 3 mils of Carbothane 133
Total System DFT	8 to 11 mils	8 to 11 mils	8 to 11 mils

C. Stainless Steel Pipe Exterior Inside Tower of 51st Street Elevated Tank

1. System C – One of the following epoxy coating systems, or approved equal, shall be used to coat the exterior surfaces of five stainless steel pipes at the 51st Street Water Reuse Composite Elevated Tank:

Product	Amerlock 400	Bar Rust 231	Carboguard 890
Surface Preparation	SSPC SP7	SSPC SP7	SSPC SP7
Minimum Surface Profile after Abrasive Blast	1 mils	1 mils	1 mils
Application	Manufacturer's Recommendations	Manufacturer's Recommendations	Manufacturer's Recommendations
Prime Coat DFT	3 to 4 mils of Amerlock 400	3 to 4 mils of Bar Rust 231	3 to 4 mils of Carboguard 890
Top Coat DFT	3 to 4 mils of Amerlock 400	3 to 4 mils of Bar Rust 231	3 to 4 mils of Carboguard 890
Total System DFT	6 to 8 mils	6to 8 mils	6 to 8 mils

PART 4 MEASUREMENT AND PAYMENT

A. No separate measurement and payment will be made for work under this section. The cost for the item is included in the Lump Sum Bid submitted for the project.

END OF SECTION

CITY OF AUSTIN, TEXAS
AUSTIN WATER UTILITY

WALNUT CREEK WWTP
WRI TANK ASSESSMENT & REPAIRS

NOVEMBER 2012

IFB 6100 CLMC411

WATER ID NO. W-2012-XXXX
C.I.P. ID NO. 5267.027

NOTES:

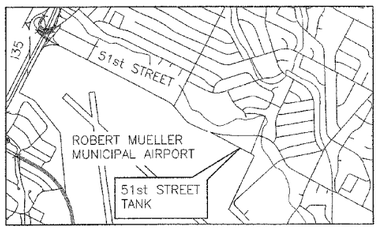
1. CONTRACTOR SHALL NOTIFY THE CITY OF AUSTIN PUBLIC WORKS DEPARTMENT 24 HOURS PRIOR TO STARTING CONSTRUCTION OR CLEARING OPERATIONS.
2. CONTRACTOR SHALL CALL "ONE CALL" AT 1-800-344-8377 FOR UTILITY LOCATIONS AT LEAST 48 HOURS PRIOR TO ANY WORK IN CITY EASEMENTS OR STREET RIGHTS-OF-WAY.
3. THIS PROJECT IS LOCATED WITHIN THE WALNUT CREEK WATERSHED. WALNUT CREEK IS CLASSIFIED AS SUBURBAN. THE PROJECT SHALL BE DEVELOPED, CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH CHAPTER 25 OF THE CODE OF THE CITY OF AUSTIN.
4. NO PORTION OF THIS SITE IS LOCATED WITHIN PARKLAND OR LAND USE FOR PARK PURPOSES.
5. NO PORTION OF THIS SITE IS INCLUDED WITHIN THE 100-YEAR FLOODPLAIN PER FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE MAPS.
6. THIS PROJECT IS NOT WITHIN THE EDWARDS AQUIFER RECHARGE ZONE AS DEFINED BY THE CITY OF AUSTIN. THIS PROJECT IS NOT WITHIN THE EDWARDS AQUIFER RECHARGE ZONE AS REGULATED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ).
7. THERE ARE NO CRITICAL ENVIRONMENTAL FEATURES WITHIN 150 FEET OF ANY PORTION OF THIS PROJECT. A FIELD INVESTIGATION HAS NOT BEEN PERFORMED AS A PART OF THE PROJECT AND IS NOT REQUIRED.
8. THE STANDARD SHEETS INCLUDED IN THIS PLAN SET WERE PROVIDED BY THE GENERAL PERMIT PROGRAM OFFICE FOR USE ON GENERAL PERMIT PROJECTS ONLY. MODIFICATIONS TO THE SHEETS ARE CLEARLY INDICATED ON THE SHEET ITSELF AND IN THE SHEET INDEX.
9. ADDITIONAL TRENCH E/S CONTROL: TRIANGULAR SEDIMENT FILTER DIKE WILL BE INSTALLED ACROSS FULL WIDTH OF TRAFFIC CLOSURE AND DOWNSTREAM OF CONSTRUCTION AREA, PERPENDICULAR TO CURB. FILTER DIKE TO FOLLOW ACTIVE CONSTRUCTION. REMOVING AND RE-SETTING FILTER DIKE IS CONSIDERED SUBSIDIARY TO BARRICADES AND TRAFFIC HANDLING.
10. PROJECT SCHEDULE MUST BE APPROVED BY THE GENERAL PERMIT PROGRAM (GPP) COORDINATOR. INSTALLATION AND REMOVAL OF TEMPORARY AND PERMANENT EROSION/SEDIMENTATION CONTROLS MUST BE REFLECTED IN THE SCHEDULE, BY STATION NUMBER. GPP REPRESENTATIVE MUST BE NOTIFIED A MINIMUM OF 48 HOURS IN ADVANCE OF TRANSITION BETWEEN PHASES.
11. APPROPRIATE EASEMENTS/APPROVALS MUST BE SECURED AND DOCUMENTED FOR PROJECT AREAS LOCATED OUTSIDE OF RIGHTS-OF-WAY. NO WORK SHALL BE PERFORMED WITHIN THESE AREAS UNTIL ASSOCIATED RIGHT OF ENTRY HAS BEEN SECURED. ADDITIONALLY, PROJECT PORTIONS IMPACTED BY LACK OF RECORDED DOCUMENT NUMBERS WILL NOT BE CONSIDERED FOR FORMAL GPP REVIEW.
12. CONTRACTOR SHALL STAKE ALL PROPOSED SERVICE CONNECTIONS LOCATED WITHIN THE CRITICAL ROOT ZONE OF TREES 8" IN CALIPER AND LARGER AT LEAST 21 CALENDAR DAYS PRIOR TO CONSTRUCTION OF SUCH SERVICES. STAKING SHALL CONSIST OF A LATH WITH NAIL AND PAINT MARKINGS. IN CASES WHERE A STAKE CANNOT BE PLACED WITHOUT DAMAGING PROPERTY, CONTRACTOR MAY USE PAINT ONLY. ONCE STAKING IS COMPLETED, IT IS THE CONTRACTOR'S RESPONSIBILITY TO INFORM THE CITY OF AUSTIN'S CONSTRUCTION INSPECTOR WITHIN TWENTY-FOUR HOURS. THE CITY OF AUSTIN'S CONSTRUCTION INSPECTOR WILL THEN COORDINATE A FIELD REVIEW OF THE SERVICE LOCATIONS WITH THE GENERAL PERMIT PROGRAM COORDINATOR AND PROPERTY OWNERS. SERVICE LINE LOCATIONS MAY BE ADJUSTED BASED ON THE REVIEW AND WILL BE RESTAKED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT. ALL SERVICE LINE STAKING SHALL BE MAINTAINED UNTIL THE SERVICE IS INSTALLED.

MAYOR
LEE LEFFINGWELL

CITY COUNCIL

CHRIS RILEY, PLACE 1 — LAURA MORRISON, PLACE 4
MIKE MARTINEZ, PLACE 2 — BILL SPELMAN, PLACE 5
KATHIE TOVO, PLACE 3 — SHERYL COLE, MAYOR PRO TEM, PLACE 6

CITY MANAGER
MARC A. OTT



VICINITY MAP
COA GRID #N-23
SCALE: NTS

GENERAL PERMIT PROGRAM CORRECTIONS RECORD
FOR USE BY GENERAL PERMIT OFFICE ONLY

NO.	DESCRIPTION	BY	CORRECT (C) ADD (A) VOID (V) SHEET Nos.	TOTAL No. SHEETS IN CORRECTION PLAN SET	GENERAL PERMIT PROGRAM APPROVAL	APPROVAL DATE

AUSTIN WATER UTILITY
EXPIRATION DATE
DEC 21 2015

NOTE:
GENERAL PERMIT PROGRAM APPROVAL DOES NOT CONSTITUTE UTILITY ALIGNMENT/ASSIGNMENT APPROVAL.

RELEASE OF THIS APPLICATION DOES NOT CONSTITUTE A VERIFICATION OF ALL DATA, INFORMATION AND CALCULATIONS SUPPLIED BY THE APPLICANT. THE ENGINEER OF RECORD IS SOLELY RESPONSIBLE FOR COMPLETENESS, ACCURACY AND ADEQUACY OF HIS/HER SUBMITTAL, WHETHER OR NOT THE APPLICATION IS REVIEWED FOR CODE COMPLIANCE BY CITY ENGINEERS.

Inspection Notice:
Please contact **Public Works, Construction Inspection Division at** 974-1584 for arrangements for payment of inspection fees and job assignment for inspection of the public utilities related to this site. Inspection fees must be paid before any pre-construction meeting can be held

SUBMITTED FOR APPROVAL BY:

STATE OF TEXAS — JESSE W. PENN — 88340 — LICENSED PROFESSIONAL ENGINEER

Jesse W. Penn — 11-14-12
JESSE W. PENN, P.E., ENGINEER OF RECORD — DATE

1 APPROVED BY GENERAL PERMIT HOLDER:

W.A. Robinson, P.E. — 1/10/13
FOR GENERAL PERMIT HOLDER — DATE

GP-2012-0000.AWU
ANNUAL GENERAL PERMIT NUMBER

APPROVALS:

George Saucedo — 12/21/12
FOR AUSTIN WATER UTILITY PIPELINE ENGINEERING — DATE

Dan W Peterson — 1/10/13
FOR AUSTIN WATER UTILITY FACILITIES ENGINEERING — DATE

APPROVAL FOR SITE DEVELOPMENT PERMIT:

[signature] — 1/9/13
GENERAL PERMIT PROGRAM COORDINATOR, PLANNING AND DEVELOPMENT REVIEW DEPARTMENT — DATE

GP-2013-0003.AWU
DEVELOPMENT PERMIT NUMBER

1/7/13
COA SUBMITTAL DATE

PROJECT INFORMATION:

STREET ADDRESS:
WALNUT CREEK WASTEWATER TREATMENT PLANT
7113 MARTIN LUTHER KING BLVD.
AUSTIN, TEXAS 78724

OWNER:
AUSTIN WATER UTILITY
CITY OF AUSTIN
P.O. BOX 1088
AUSTIN, TEXAS 78767

CONTACT:
DAN PEDERSEN, P.E.
AUSTIN WATER UTILITY
WALLER CREEK CENTER
625 EAST 10TH STREET, SUITE 615
AUSTIN, TEXAS 78701
(512) 972-0074

PREPARED BY:

CP&Y, INC.
THE AVALLON, BUILDING I
10415 MORADO CIRCLE, SUITE 200
AUSTIN, TEXAS 78759
(512) 349-0700
TBPE REGISTRATION NO. F-1741

IN ASSOCIATION WITH:
ACCURATE CAD & TECHNICAL SERVICES, INC.
CAS CONSULTING & SERVICES, INC.
TBPE REGISTRATION NO. F-003572
HARUTUNIAN ENGINEERING, INC.
TBPE REGISTRATION NO. F-2408
HVJ ASSOCIATES, INC.
TBPE REGISTRATION NO. F-646
MACIAS & ASSOCIATES, L.P.
TANK INDUSTRY CONSULTANTS, INC.
TBPE REGISTRATION NO. F-2891
V&A CONSULTING ENGINEERS
TBPE REGISTRATION NO. F-9154

CP&Y — TBPE REGISTRATION #F-1741

CITY OF AUSTIN — FOUNDED 1839

NO.	REVISION	BY	DATE
1	REVISED PER ADDENDUM NO. 1	JMP	01-16-13

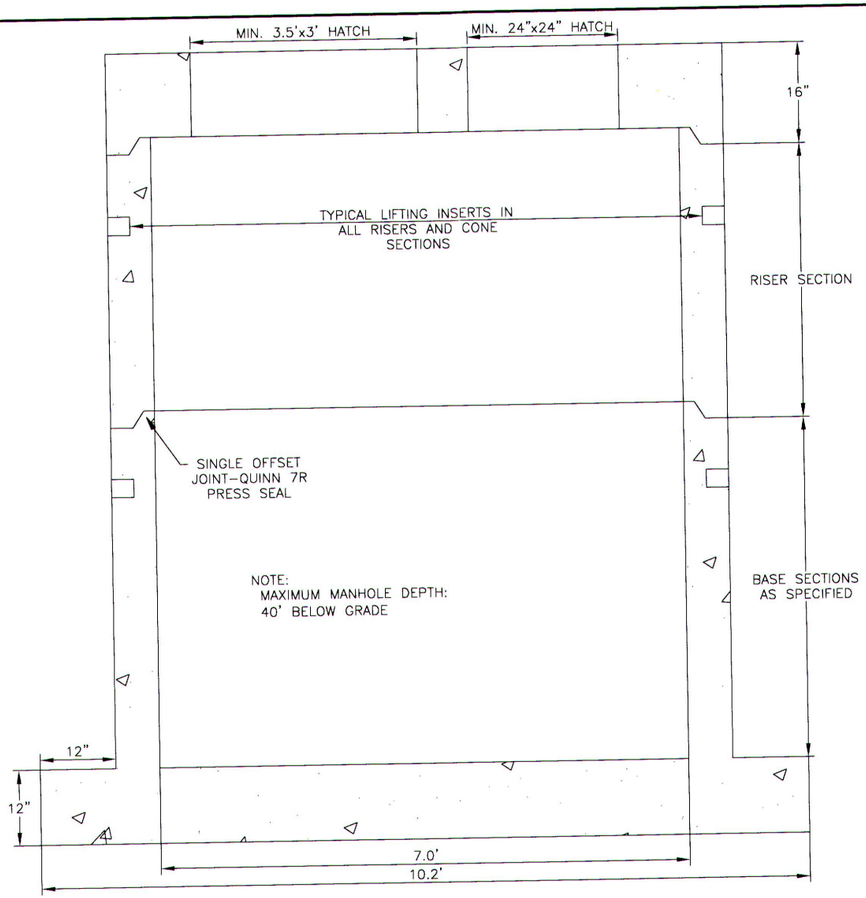
VERIFY SCALE - BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE

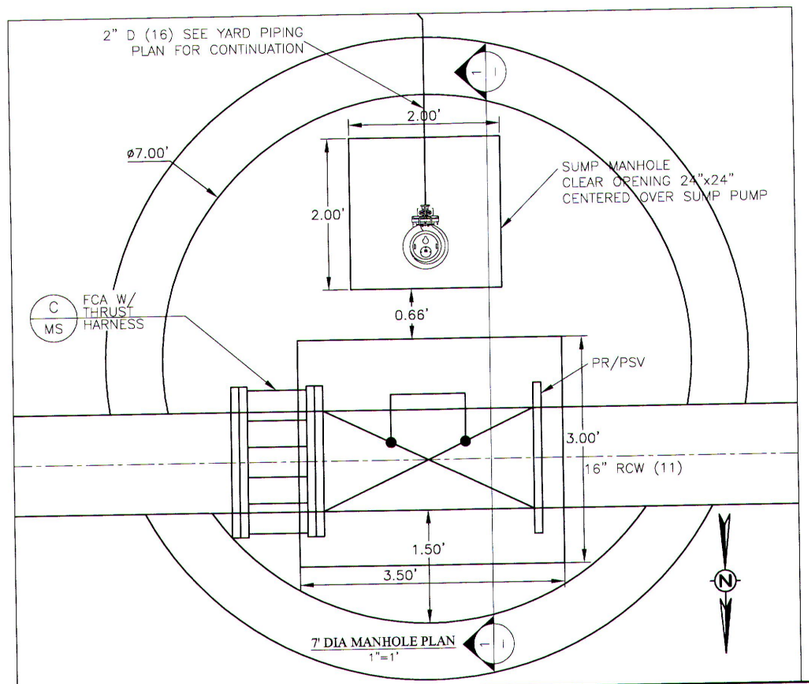
CITY OF AUSTIN-AUSTIN WATER UTILITY
WALNUT CREEK WWTP WRI TANK ASSESSMENT & REPAIRS
COVER SHEET

Date: NOVEMBER 2012
Designed: LCW, PE
Drawn: CJC
Reviewed: JMP, PE
CP&Y Proj. No. C0A10060

SHEET
G-1
SHEET 1 OF 134

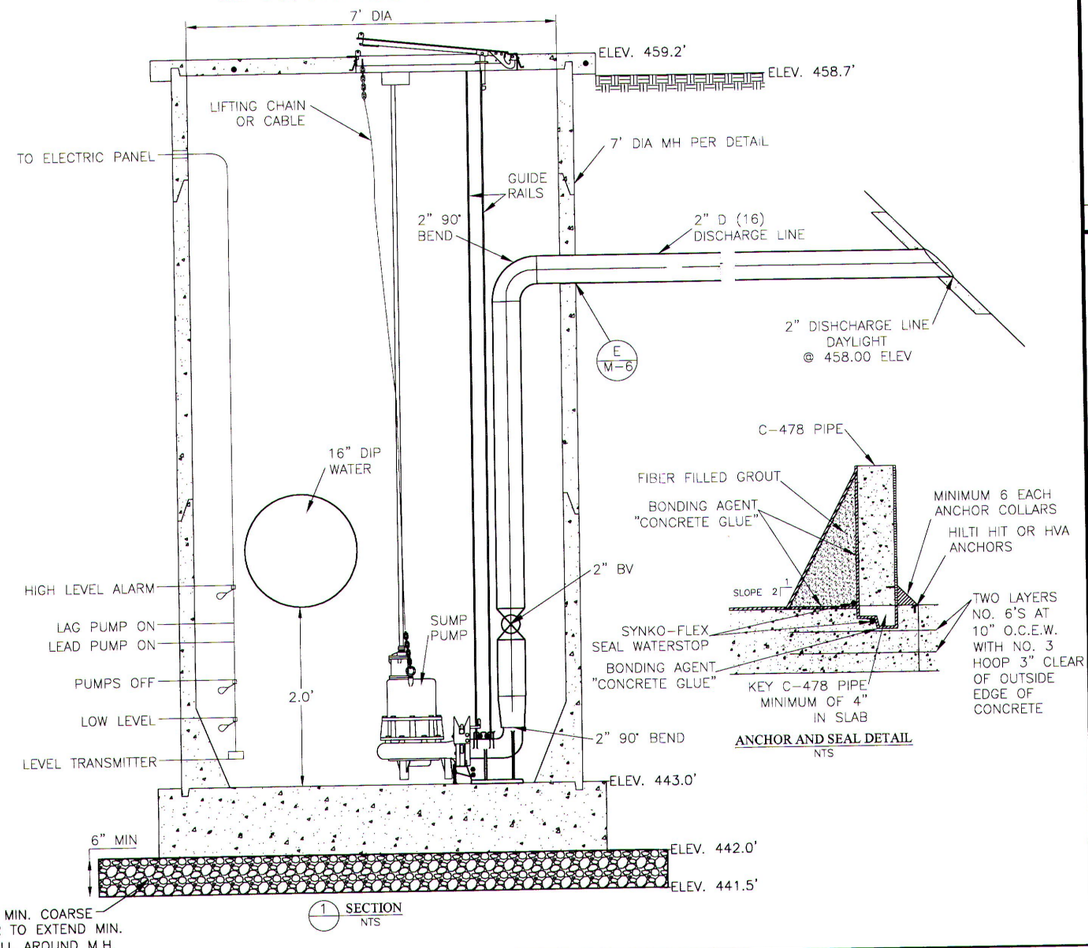
GENERAL PERMIT PROGRAM





NOTES:

1. SEE CIVIL, MECHANICAL AND ELECTRICAL PLANS FOR LOCATION, DEPTH, NUMBER AND SIZE OF ALL MANHOLE PENETRATIONS.
2. PUMP HATCH SHALL BE A MINIMUM OF 24"x24". PUMP SUPPLIER SHALL PROVIDE DIMENSIONS OF ACCESS COVER TO THE MANHOLE TO ENSURE COMPATIBILITY WITH SUPPLIED EQUIPMENT.
3. PUMP SUPPLIER SHALL PROVIDE DIMENSIONS OF THE GUIDE RAILS TO ENSURE COMPATIBILITY WITH SUPPLIED EQUIPMENT. THE PUMP SHALL BE EASILY REMOVED FOR INSPECTION OR SERVICE. GUARD RAILS SHALL BE SUPPORTED EVERY 10 FEET WITH STAINLESS STEEL SUPPORTS.
4. THE GUIDE BRACKETS SHALL BE CONSTRUCTED OF 316 STAINLESS STEEL. GUIDE BRACKETS FOR THE PUMP MUST BE SUPPLIED BY THE PUMP MANUFACTURER TO ENSURE COMPATIBILITY WITH SUPPLIED EQUIPMENT.
5. THE PUMPING UNITS SHALL BE EQUIPPED WITH A STAINLESS STEEL LIFTING CHAIN OR CABLE. LIFTING CHAIN SHALL EXTEND AT LEAST 3-4 FEET ABOVE MANHOLE.
6. A 316 STAINLESS STEEL FLOAT MOUNTING ASSEMBLY SHALL BE PROVIDED. THE FLOATS SHALL BE MOUNTED AWAY FROM INLETS, ANY CONTROL WIRING AND PUMPS TO MINIMIZE DISTURBANCE BECAUSE OF TURBULENCE. OWNER SHALL PROVIDE LEVEL SETTINGS FOR PUMP.
7. ALL HARDWARE IN THE SUMP MANHOLE SHALL BE 316 STAINLESS STEEL.
8. ALL DISCHARGE LINES SHALL HAVE ADEQUATE THRUST SUPPORT MEMBERS AT EACH FITTING. WHERE POSSIBLE, LONG RADIUS 90 DEGREE BENDS SHALL BE USED.
9. CONTRACTOR TO FIELD VERIFY FLOOR ELEVATION OF MANHOLE BEFORE ORDERING.
10. CONTRACTOR SHALL COORDINATE ACCESS HATCH SIZES WITH PRECAST CONCRETE MANUFACTURER PRIOR TO FABRICATION OF MANHOLE. PRECAST CONCRETE SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF TEXAS.
11. HATCHES SHALL BE EQUIPPED WITH AN ALUMINUM SAFETY CRATE FOR FALL THROUGH PROTECTION AND CONTROLLED CONFINED SPACE ENTRY PER CURRENT OSHA STANDARDS. THE HATCH FRAME AND COVER SHALL BE CONSTRUCTED OF ALUMINUM TREAD PLATE. THE DOORS SHALL OPEN 90° AND AUTOMATICALLY LOCK. THE LIFTING HANDLES, HINGES AND ALL FASTENING HARDWARE SHALL BE STAINLESS STEEL, TYPE 316. THE COVERS SHALL BE ABLE TO BE SECURED BY A PADLOCK USING A HEAVY DUTY LOCKING STAPLE. OWNER WILL PROVIDE PADLOCK AT THE TIME OF ACCEPTANCE OF THE TANK. ACCEPTABLE MANUFACTURES ARE FLYGT, OR APPROVED EQUAL.



ANCHOR AND SEAL DETAIL
NTS

CAS CONSULTING & SERVICES, INC.
7908 CAMERON RD
AUSTIN, TEXAS 78754
REG. No. F-005572

CP&Y
TBPE REGISTRATION #F-1741

CITY OF AUSTIN
STATE OF TEXAS
CHELSEA R. SOLOMON
97246
LICENSED
PROFESSIONAL ENGINEER

NO.	REVISION	BY	DATE
1	RESSUED PER ADDENDUM NO. 1	CRS	01-14-2013

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE

CITY OF AUSTIN-AUSTIN WATER UTILITY
WALNUT CREEK WWTP WRI TANK ASSESSMENT & REPAIRS

CIVIL DETAILS III

Date: NOVEMBER 2012
Designed: JR, CS
Drawn: BF
Reviewed: GS
CP&Y Proj. No. C0A10060

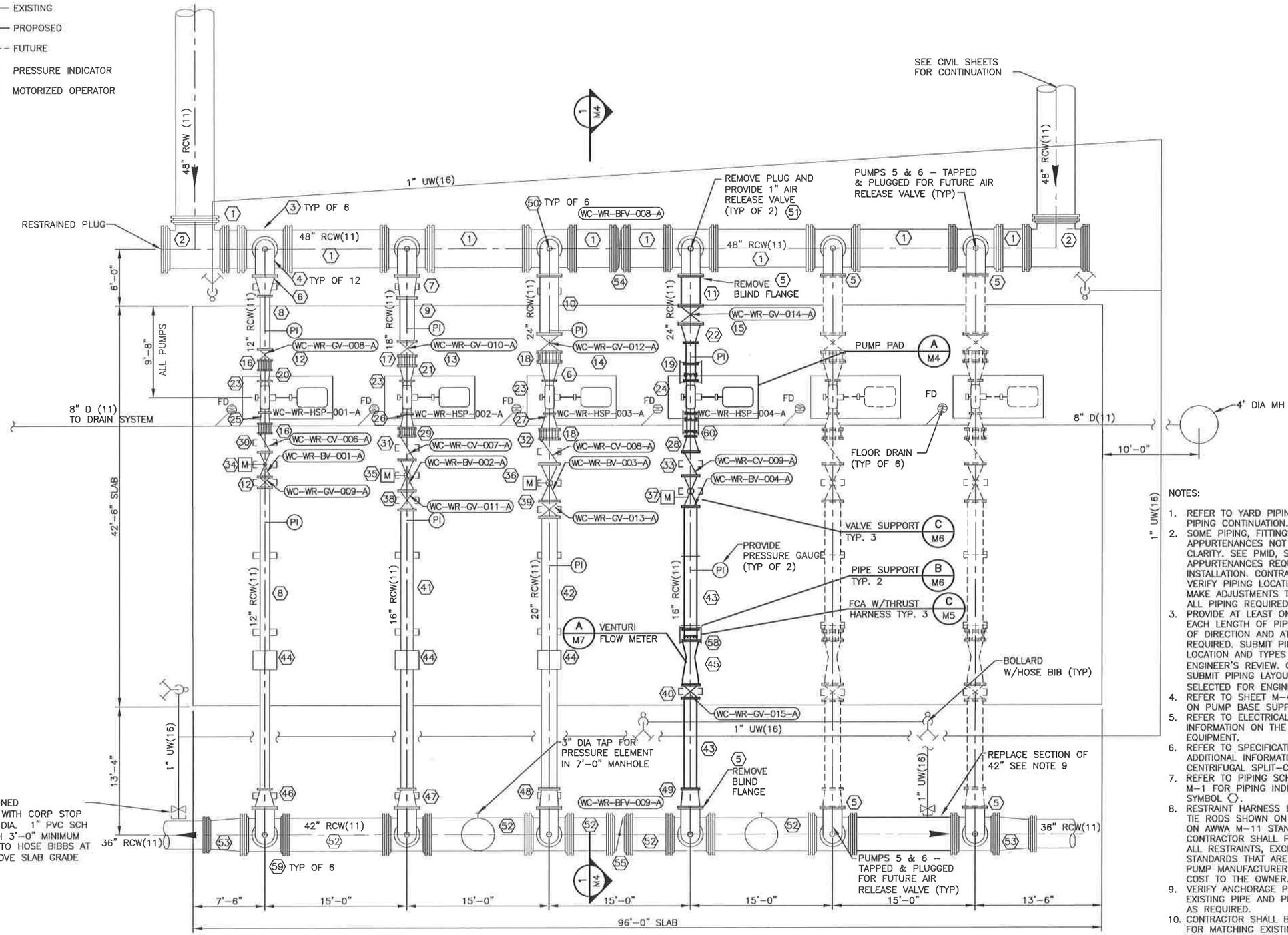
SHEET
C-14
SHEET 21 OF 134

GENERAL PERMIT PROGRAM

L:\ACTIVE PROJECTS\CPY-WALNUT CREEK TANK ASSESSMENT\3.0 WORKS PRODUCTS\3.6 CAD\CAS-C-14.DWG 2013-01-14

LEGEND

EXISTING
PROPOSED
FUTURE
(PI) PRESSURE INDICATOR
[M] MOTORIZED OPERATOR



PUMP STATION PLAN

4 2 0 4 8
SCALE IN FEET

NOTES:

1. REFER TO YARD PIPING SHEETS FOR PIPING CONTINUATION.
2. SOME PIPING, FITTINGS, VALVES, AND APPURTENANCES NOT SHOWN FOR CLARITY. SEE PMID, SHEET M-2 FOR APPURTENANCES REQUIRED FOR INSTALLATION. CONTRACTOR SHALL FIELD VERIFY PIPING LOCATIONS AND SHALL MAKE ADJUSTMENTS TO ACCOMMODATE ALL PIPING REQUIRED.
3. PROVIDE AT LEAST ONE SUPPORT FOR EACH LENGTH OF PIPE, AT EACH CHANGE OF DIRECTION AND AT EACH VALVE AS REQUIRED. SUBMIT PIPING PLAN SHOWING LOCATION AND TYPES OF SUPPORTS FOR ENGINEER'S REVIEW. CONTRACTOR SHALL SUBMIT PIPING LAYOUT WITH EQUIPMENT SELECTED FOR ENGINEER'S REVIEW.
4. REFER TO SHEET M-4 FOR INFORMATION ON PUMP BASE SUPPORT.
5. REFER TO ELECTRICAL DRAWINGS FOR INFORMATION ON THE ELECTRICAL EQUIPMENT.
6. REFER TO SPECIFICATION 11312 FOR ADDITIONAL INFORMATION ON HORIZONTAL CENTRIFUGAL SPLIT-CASE PUMP.
7. REFER TO PIPING SCHEDULE ON SHEET M-1 FOR PIPING INDICATED BY THIS SYMBOL ⬡.
8. RESTRAINT HARNESS BOLTS, LUGS AND TIE RODS SHOWN ON M-5 ARE BASED ON AWWA M-11 STANDARDS. CONTRACTOR SHALL PROVIDE ANY AND ALL RESTRAINTS, EXCEEDING M-11 STANDARDS THAT ARE REQUIRED BY THE PUMP MANUFACTURER AT NO ADDITIONAL COST TO THE OWNER.
9. VERIFY ANCHORAGE PROVIDED ON EXISTING PIPE AND PROVIDE RESTRAINTS AS REQUIRED.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR MATCHING EXISTING SUCTION AND DISCHARGE PIPE ELEVATION AND ALIGNMENT AT NO ADDITIONAL COST TO THE OWNER. ADJUSTMENTS MAY BE REQUIRED FOR THE EXISTING PIPING TO MATCH THE NEW PUMP.

CP&Y TBPE REGISTRATION #F-1741

CITY OF AUSTIN

STATE OF TEXAS
LINDSAY C. WEBB
110398
LICENSED PROFESSIONAL ENGINEER

NO.	REVISION	BY	DATE
1	ISSUED PER ADDENDUM NO. 1	LCW	01-14-13

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE
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CITY OF AUSTIN-AUSTIN WATER UTILITY
WALNUT CREEK WWTP WRI TANK ASSESSMENT & REPAIRS

PUMP STATION PLAN

Date: NOVEMBER 2012
Designed: LCW, PE
Drawn: CJC
Reviewed: JWP, PE
CP&Y Proj. No. COA10060

SHEET
M-3
SHEET 44 OF 134

GENERAL PERMIT PROGRAM