



**Dietrich Elevated Storage Tank  
Solicitation Number: CO-00274  
Job No.: 16-6003**

**ADDENDUM 1  
July 30, 2021**

To Bidder of Record:

This addendum, applicable to work referenced above, is an amendment to the bid proposal, plans and specifications and as such will be a part of and included in the Contract Documents. Acknowledge receipt of this addendum by entering the Addendum number and issue date on the space provided in submitted copies of the bid proposal.

**RESPONSES TO QUESTIONS**

- 1. Would SAWS consider changing qualification requirements to allow for GC to bid project, who is not primarily a Tank Builder?**  
*No changes. Bid as specified.*
- 2. I have reviewed the plans and specifications for this project and found that Alterman was not listed as an approved controls contractor (PCSI). Please consider adding Alterman to the approved control contractors list. Alterman has programmers & control technicians on staff, as well as a UL508A panel shop located at our main office in Schertz, Texas.**  
*No changes. Bid as specified.*

**CHANGES TO THE SPECIFICATIONS**

- 1. Building Wage Decision document - Remove and replace in its entirety with the revised version (rev. 07/09/2021, General Decision Number: TX20210231) attached to this addendum. This version should be utilized by the awarded contractor for the project.**
- 2. Replace Section 09950 "Coatings for Water Storage Tanks" in its entirety.**

**CHANGES TO THE PLANS**

- 1. Replace plan sheet G-3 "General Notes II" in its entirety.**

CLARIFICATIONS

1. None

END OF ADDENDUM

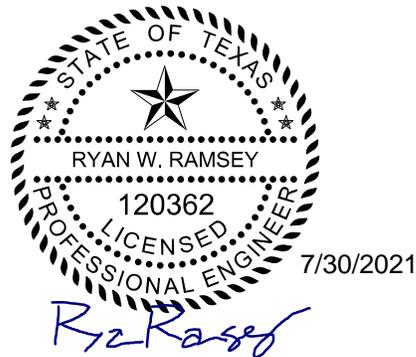
This Addendum is fifty (50) page(s) in its entirety with its attachments.

Attachments:

1. Specification Section "Wage Decisions" (8 Pages)
2. Specification Section 09950 "Coatings for Water Storage Tanks" (39 Pages)
3. Drawing Sheet G-3 "General Notes II" (1 Page)

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Ryan Ramsey, P.E.  
Freese and Nichols, Inc.



FREESE AND NICHOLS, INC.  
TEXAS REGISTERED  
ENGINEERING FIRM  
F-2144

"General Decision Number: TX20210231 07/09/2021

Superseded General Decision Number: TX20200231

State: Texas

Construction Type: Building

County: Bexar County in Texas.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.95 for calendar year 2021 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.95 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2021. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at [www.dol.gov/whd/govcontracts](http://www.dol.gov/whd/govcontracts).

Modification Number	Publication Date
0	01/01/2021
1	03/12/2021
2	05/07/2021
3	07/09/2021

ASBE0087-014 03/02/2020

Rates Fringes

ASBESTOS WORKER/HEAT & FROST  
 INSULATOR (Duct, Pipe and  
 Mechanical System Insulation)....\$ 23.97                    10.79

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 BOIL0074-003 01/01/2017

                                 Rates                    Fringes

BOILERMAKER.....\$ 28.00                    22.35

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 ELEC0060-003 07/27/2020

                                 Rates                    Fringes

ELECTRICIAN (Communication  
 Technician Only).....\$ 29.60                    15%+5.45

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 ELEC0060-004 07/27/2020

                                 Rates                    Fringes

ELECTRICIAN (Excludes Low  
 Voltage Wiring).....\$ 29.60                    18%+5.45

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 ELEV0081-001 01/01/2021

                                 Rates                    Fringes

ELEVATOR MECHANIC.....\$ 43.31                    36.365

FOOTNOTES:

A. 6% under 5 years based on regular hourly rate for all  
 hours worked. 8% over 5 years based on regular hourly rate  
 for all hours worked.

B. Holidays: New Year's Day; Memorial Day; Independence Day;  
 Labor Day; Thanksgiving Day; Friday after Thanksgiving Day;  
 Christmas Day; and Veterans Day.

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 ENGI0450-002 04/01/2014

                                 Rates                    Fringes

POWER EQUIPMENT OPERATOR  
 Cranes.....\$ 34.85                    9.85

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 IRON0066-013 06/01/2020

	Rates	Fringes
IRONWORKER, STRUCTURAL.....	\$ 23.45	6.83

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 IRON0084-011 06/01/2020

	Rates	Fringes
IRONWORKER, ORNAMENTAL.....	\$ 25.26	7.13

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 PLUM0142-009 07/01/2020

	Rates	Fringes
HVAC MECHANIC (HVAC Electrical Temperature Control Installation Only).....	\$ 30.25	13.36
HVAC MECHANIC (HVAC Unit Installation Only).....	\$ 30.25	13.36
PIPEFITTER (Including HVAC Pipe Installation).....	\$ 31.90	13.76
Including HVAC Pipe Installation		
PLUMBER (Excludes HVAC Pipe Installation).....	\$ 31.90	13.76
Excludes HVAC Pipe Installation		

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 SFTX0669-002 04/01/2021

	Rates	Fringes
SPRINKLER FITTER (Fire Sprinklers).....	\$ 31.68	22.50

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 SHEE0067-004 04/01/2021

	Rates	Fringes
Sheet metal worker Excludes HVAC Duct Installation.....	\$ 27.58	15.76
HVAC Duct Installation Only.	\$ 27.58	15.76

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 SUTX2014-006 07/21/2014

	Rates	Fringes
BRICKLAYER.....	\$ 22.15	0.00

CARPENTER (Acoustical Ceiling Installation Only).....	\$ 17.83	0.00
CARPENTER (Form Work Only).....	\$ 13.63	0.00
CARPENTER, Excludes Acoustical Ceiling Installation, Drywall Hanging, Form Work, and Metal Stud Installation.....	\$ 16.86	4.17
CAULKER.....	\$ 15.00	0.00
CEMENT MASON/CONCRETE FINISHER...	\$ 22.27	5.30
DRYWALL FINISHER/TAPER.....	\$ 13.81	0.00
DRYWALL HANGER AND METAL STUD INSTALLER.....	\$ 15.18	0.00
ELECTRICIAN (Low Voltage Wiring Only).....	\$ 20.39	3.04
IRONWORKER, REINFORCING.....	\$ 12.27	0.00
LABORER: Common or General.....	\$ 10.75	0.00
LABORER: Mason Tender - Brick...	\$ 11.88	0.00
LABORER: Mason Tender - Cement/Concrete.....	\$ 12.00	0.00
LABORER: Pipelayer.....	\$ 11.00	0.00
LABORER: Roof Tearoff.....	\$ 11.28	0.00
LABORER: Landscape and Irrigation.....	\$ 8.00	0.00
OPERATOR: Backhoe/Excavator/Trackhoe.....	\$ 15.98	0.00
OPERATOR: Bobcat/Skid Steer/Skid Loader.....	\$ 14.00	0.00
OPERATOR: Bulldozer.....	\$ 14.00	0.00
OPERATOR: Drill.....	\$ 14.50	0.00

OPERATOR: Forklift.....	\$ 12.50	0.00
OPERATOR: Grader/Blade.....	\$ 23.00	5.07
OPERATOR: Loader.....	\$ 12.79	0.00
OPERATOR: Mechanic.....	\$ 18.75	5.12
OPERATOR: Paver (Asphalt, Aggregate, and Concrete).....	\$ 16.03	0.00
OPERATOR: Roller.....	\$ 12.00	0.00
PAINTER (Brush, Roller and Spray), Excludes Drywall Finishing/Taping.....	\$ 13.07	0.00
ROOFER.....	\$ 12.00	0.00
TILE FINISHER.....	\$ 11.32	0.00
TILE SETTER.....	\$ 14.94	0.00
TRUCK DRIVER: Dump Truck.....	\$ 12.39	1.18
TRUCK DRIVER: Flatbed Truck.....	\$ 19.65	8.57
TRUCK DRIVER: Semi-Trailer Truck.....	\$ 12.50	0.00
TRUCK DRIVER: Water Truck.....	\$ 12.00	4.11

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

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave  
for Federal Contractors applies to all contracts subject to the  
Davis-Bacon Act for which the contract is awarded (and any  
solicitation was issued) on or after January 1, 2017. If this  
contract is covered by the EO, the contractor must provide  
employees with 1 hour of paid sick leave for every 30 hours  
they work, up to 56 hours of paid sick leave each year.  
Employees must be permitted to use paid sick leave for their  
own illness, injury or other health-related needs, including  
preventive care; to assist a family member (or person who is  
like family to the employee) who is ill, injured, or has other

health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at [www.dol.gov/whd/govcontracts](http://www.dol.gov/whd/govcontracts).

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)).

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The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

#### Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

#### Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and

the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

#### Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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#### 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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END OF GENERAL DECISION"

## SECTION 09950

### COATINGS FOR WATER STORAGE TANKS

#### 1.00 GENERAL

#### 1.01 WORK INCLUDED

- A. Furnish labor, materials, equipment and incidentals necessary to apply protective coatings to material and equipment as specified herein, including the preparation of surfaces prior to application of coatings.
- B. Protective coatings must be applied to the following surfaces:
  - 1. Tank interior and exterior surfaces.
  - 2. Above grade ductile iron and steel piping and valves inside the pedestal, including overflow flap valve.
  - 3. Exterior electrical as determined by the Engineer during construction.
  - 4. Stainless steel piping, ladders, etc. on the interior of the tank.
- C. The following may not be coated and must be protected from drips, overspray, etc. unless indicated otherwise.
  - 1. Stainless steel piping, materials and equipment, except those on the interior of the tank.
  - 2. Galvanized steel piping, materials and equipment.
  - 3. Aluminum materials and equipment.
  - 4. Ladder Safety devices.
  - 5. Interior electrical items.
- D. Special applications for painting include the following:

Buried pipe and valves must be coated as described in the appropriate Section of the Specifications.
- E. Contain, treat, and dispose of any dust, spray, drainage, or spillage resulting from coating operations. It will be the Contractor's responsibility to determine if the materials to be disposed of are classified as Hazardous Waste. Disposal of waste, hazardous or otherwise, must be in accordance with applicable regulations. The Contractor must be aware of and understand the regulations concerning disposal of waste generated by coating operations.

#### 1.02 EXISTING CONDITIONS

- A. The Contractor must acquaint himself with the hazards of the work including, but not limited to: corroded components, high wind velocity, fire potentials caused by sparks from Contractor's torches, spark damage to property, and the proximity to overhead electrical lines, to residences, businesses, streets, etc. Failure to do so will not relieve the Contractor from all obligations described in the Contract Documents.
- B. Contractor must evaluate the tank for loads that will be added to the tank during surface preparation and coating operations, including loads for hanging scaffolding, abrasive blasting equipment on shell and roof, containment supports, rigging and all other loads. Contractor is responsible for all damages to the tank for improperly loading or overloading the tank.

## 1.03 QUALITY ASSURANCE

- A. Acceptable Manufacturers: Products which comply with the Contract Documents and are manufactured by the following companies will be acceptable. Products from other coating manufacturers may not be submitted and will not be considered.
1. **Sherwin-Williams**
  2. Tnemec Company, Inc.
  3. Carboline
  4. PPG
- B. Contractor's Qualifications: Contractors must be qualified in this line of work and have a minimum of 5 years of experience coating potable water storage tanks and in the application of the protective coatings of the types specified herein. Submit a list of recent projects and names of references for those projects.
- ~~C. Contractor must hold current:~~
- ~~1. SSPC QP 1 Certification for Field Application to Complex Industrial and Marine Structures or NACE International Institute Contractor Accredited Program Certification AS-1 F (NHCAP AS-1 F).~~
  - ~~2. Contractor must submit certification documents as record data.~~
- D. Contractor's Superintendent/Foreman must have a minimum of 5 years of experience with coating storage tanks. Superintendent/Foreman must be on-site while the work indicated within this Section is underway. Submit a list of recent projects and names of references for those projects.
- E. The Contractor must provide workers who perform professional and quality work and who are experienced and knowledgeable in surface preparation, mixing and application of high performance coating systems.
- F. Coatings mock panels must be prepared and approved prior to surface preparation and coating work initiates. Mock-up must remain on-site for the duration of the Project. Mock panel must be stored in the same environment as the represented coating system. Panels are to be prepared with same methodologies, equipment and materials that will be applied to the tank. Panels will be used to perform chemical and adhesion testing on each coat to verify conformance with the specifications. Two panels are required:
1. Exterior Panel: Provide 2 feet by 2 feet steel panel with SSPC-SP6 surface preparation on one side, protected with a clear spray varnish. On opposite side, provide same surface preparation with approved exterior coating system showing each coat with mil thickness as specified.
  2. Interior Panel: Provide 2 feet by 2 feet steel panel with SSPC-SP10 surface preparation on one side, protected with a clear spray varnish. On opposite side, provide same surface preparation with approved interior coating system showing each coat with mil thickness as specified.
- G. The Contractor's painters that will be applying any high solids coatings for this Project must be trained and certified by the Coatings Manufacturer for the application of the high solids coatings. Certification must occur at the Site, at the location where the coatings will be used and in the presence of the Owner's representative. Applicators must be certified using a

mock structure constructed on the Site by the Contractor. Any new applicators added to the crew will need to be certified separately per this procedure.

1. Mock structure will be constructed out of wood and incorporate:
  - a. Flat vertical wall made of plywood to simulate the shell.
  - b. Roof made of plywood to simulate coating the underside of the roof and roof to shell connection.
  - c. Rafters made of wood (4 minimum) attached to underside of the roof to simulate coating roof and rafter connections.

H. Product Quality:

1. Use only the coatings specified in this Section. Use only those thinners and solvents recommended by the Manufacturer, only in the amounts necessary to produce the Manufacturer's recommended spreading rate, and in amounts not exceeding the maximum quantities stated in the Manufacturer's literature.
2. The coating material may not show excessive settling in a freshly opened full can and must be easily re-dispersed with a paddle to a smooth, homogeneous state. It may not show curdling, livering, caking, or color separation and must be free of lumps or skim surfaces.

I. Testing: Protective coatings must be applied under quality control procedures, which include inspection of surface preparation and for each coat applied. Do not proceed with the next step until the Owner's representative has approved the previous step. The Contractor will be solely responsible for testing for this specification, at no further cost to the Owner. The Owner's representative may also make such tests, if it is considered necessary. Cooperate with the Owner, providing equipment, scaffolds, and other equipment as requested by the Owner's representative.

J. Testing Equipment: Furnish the testing apparatus necessary for testing surface preparation, environmental conditions and coatings as specified.

K. Testing Equipment: Contractor must furnish and have the following testing apparatuses on-site during construction for the Owner's use:

1. One set of U.S. Department of Commerce thickness calibration plates, certified by the National Bureau of Standards, to test dry film thickness.
2. Wet-film thickness gauges. Provide two to Owner's representative. Each painter must keep one to test paint as it is applied.
3. One electronic dry-film thickness gauge capable of measuring 0-200 mils with calibration standards approved by the Bureau of Standards.
4. One Elcometer 319 Dewpoint Meter.
5. One Tinker and Razor Model M 1 Holiday Detector and recommended wetting agent and/or High Voltage Holiday Detector if required for interior coating thickness specified.
6. One set of SSPC VIS 1, 3 and 4 - Visual Standards as applicable.

L. The Contractor must schedule a construction conference prior to any field work being completed. The meeting will be on-site and will include the Owner, Contractor, painting superintendent, Engineer, Owner's representative and Coating Manufacturer's representative. At this meeting the coating plan and schedule will be reviewed in detail.

## 1.04 FIELD QUALITY CONTROL

### A. Surface Profile Testing:

1. Provide a minimum of 3 sets of profile readings for the first 1000 square feet.
2. Provide a minimum of 2 sets of profile readings for each additional 1000 square feet.

### B. Wet Film and Dry Film Thickness Testing:

1. Provide wet film tests during painting operations to ensure proper thicknesses of coating are being applied.
2. The dry-film thickness for each coat must be tested and be in conformance with SSPC-PA-2 with a Type 2 Electronic Gauge.

### C. Holiday Testing:

1. Contractor must conduct holiday testing in the presence of the Owner's representative.
2. Holiday Testing must be conducted using a wet sponge low voltage holiday detector for interior coatings with total DFT of 20 mils or less and high voltage holiday detector for coatings with a total DFT greater than 20 mils in accordance with ASTM D5162.
3. A holiday test must be performed on the entire interior wet area of the tank, including all appurtenances, following the application of the final coat and after all work is completed inside of the reservoir.
4. During the wet sponge testing, defective areas must be marked for repair and re-tested after repair work has been completed.
5. All touched up pinholes and re-coated areas must be completely cured prior to re-testing for holidays.
6. Holiday testing and re-testing must continue until the interior surfaces are found to be holiday free.

### D. Contractor must monitor and record ambient climatic conditions and interior reservoir conditions during surface preparation and coating as follows:

1. Temperature of both the sunny side and shady side of the reservoir must be recorded periodically each day. The reservoir surface temperatures, relative humidity, dry bulb, wet bulb and dew point temperatures, both interior and exterior (as appropriate), are to be recorded at least every 3 hours.
2. The dew point must be measured by use of a sling psychrometer in conjunction with U.S. Department of Commerce Weather Bureau Psychrometric Tables or with an electronic climate monitoring system approved by the Engineer.
3. The Contractor must use a form approved by the Owner for recording this data. The completed forms must be kept on the Site at all times from the time coating is first applied until the coating system is complete. Cloud based reporting systems may be utilized with the Engineer's approval.

### E. All work, including observations, must be recorded daily by the Contractor. A copy of each daily report/log must be placed in a file kept on the Site and submitted to the Owner at the end of each day. The reports must include the following:

1. Date.
2. Project Manager's Name.

3. Contractor and Subcontractor name (where applicable).
  4. Contractor's and or Owner's representatives name (where applicable).
  5. Project Name.
  6. Work Identification including:
    - a. Type of work performed.
    - b. Location of work performed, indicated on generalized drawings of the reservoir, drawings must include estimated ft<sup>2</sup> area blasted and/or painted and approximate percentage of total ft<sup>2</sup> area of surface being prepared and painted. Generalized drawings must include:
      - 1). Plan view of reservoir.
      - 2). Profile view of reservoir.
      - 3). Plate location.
      - 4). North arrow.
      - 5). Any other drawings that will help to indicate location of work performed.
  7. Time of day each portion of the work was started and finished.
  8. Weather conditions, including corresponding time of day, before during and after work begins including:
    - a. Temperature (air and surface).
    - b. Humidity/dew point.
    - c. Wind velocity/direction.
    - d. Remarks and results of work.
  9. QC results for completed work, including:
    - a. Compressed air blotter test performed at the start of each day and every 4 hours per ASTM D4285.
    - b. Surface preparation visual checks.
    - c. Profile checks utilizing replica tape.
    - d. Documentation of DFT's and areas tested per SSPC PA-2, Type 2 Gauge.
    - e. Locations of holidays, repairs and touchups required, including documentation of the repair completion.
  10. Contractor signature.
- F. Owner's Representative Field Quality Assurance Coordination:
1. Contractor must provide a schedule for anticipated hold-points and must notify the Owner's representative at least 7 days prior to any required inspections and confirmed 24 hours prior to inspection. Prior to scheduling an inspection, Contractor is responsible for reviewing work and verifying it is ready for a threshold inspection. Once scheduled, if the Owner's representative finds the Project not ready for inspection any additional trips for re-inspection or inspection for retesting of failed tests will be borne by the Contractor and deducted from the Contract Value by Change Order.

G. Field Quality Assurance:

1. Observations must be conducted by the Owner's representative and a third-party inspection company retained by the Engineer. Final observations must be performed in the presence of the Owner or its representative and the Contractor's superintendent. All materials and equipment used in the accomplishment of testing are subject to observation at any time by the Owner's representative. Periodic observation times will be agreed upon by the Owner's representative and Contractor, and approved by the Owner.
2. The Owner may conduct the tests and observations to verify the Coating Manufacturer's data. If the coating testing results fall below the test requirements or visual observation, the Owner reserves the right to have the Contractor change coating materials and/or Coating Manufacturers to a coating that will meet all the stated requirements in this Specification.
3. All steps of the coating system will be subject to observation prior to progression to succeeding steps. Phases of observation must include, but not limited to:
  - a. All welding repairs completed prior to painting.
  - b. Containment erection completed (as required).
  - c. Pre-cleaning (before surface preparation) survey of facilities to be primed.
  - d. Prior to and during surface preparation.
  - e. Prime coating application.
  - f. Stripe coating application.
  - g. During and immediately after each coating application.
  - h. Final coating observation.
  - i. Holiday detection on interior of tank.
  - j. Cure test of interior coating completed.
  - k. Substantial Completion / Pre-disinfection.
4. The Contractor must not move or remove scaffolding, ladders or other fixtures necessary to provide proper observation until such work has been observed and approved by the Owner's representative.
5. Any work found to be deficient, damaged, or otherwise unacceptable must be repaired in accordance with the Coating Manufacturer's latest written repair recommendations at no additional cost to the Owner.
6. Owner's representative will make every attempt to minimize damage to newly coated areas during observation activities, but any damage caused, regardless of by whom, must be repaired by the Contractor at no additional cost to the Owner.
7. Observation and/or acceptance of Contractor's work by Owner's representative(s) in no way releases Contractor from any of the terms and conditions of the Contract Agreement.
8. The following test and observations will be performed during coating operations:
  - a. Surfaces of all steel must first be cleaned and observed by the Contractor's Superintendent to ensure that all grease, oil, and other foreign materials have been removed before coating. Any area found to be improperly cleaned, must be redone to the Owner's representative's satisfaction. Final surface preparation must be as

outlined in SSPC-SP1 through SP13 and WJ-1 through WJ-4, as specified. Prior to observation of all interior and exterior surfaces by Owner's representative, Contractor's Superintendent must observe and confirm readiness for inspection.

- b. Surfaces of all ductile pipe and fittings must first be cleaned and observed by the Contractor's Superintendent to ensure that all grease, oil, and other foreign materials have been removed before coating. Any area found to be improperly cleaned, must be redone to the Owner's representative's satisfaction. Final surface preparation must be as outlined in NAPF 500, as specified. Prior to observation of all interior and exterior surfaces by Owner's representative, Contractor's Superintendent must observe and confirm readiness for inspection.
- c. The pattern depth of the abrasive blasted surface must be as specified by the Coating Manufacturer's written surface profile recommendations. The profile must be measured by a Testex Replica Tape. SSPC-VIS 1 and/or SSPC-VIS 3 must serve as guides and in arbitration to determine the degree of surface preparation. All prepared areas of the reservoir surface, interior and exterior, must be prepared as per SSPC visual standards.
- d. Prior to undertaking full-scale abrasive blasting operations, the Contractor must perform a test blast on both the exterior and the interior of the tank in the presence of the Engineer or Owner's representative and the Coating Manufacturer's representative. The test section must be a minimum of 5 feet high by 5 feet wide. The Engineer or Owner's representative and the Manufacturer's representative must verify that the surface cleanliness and profile meet the requirements of this specification before work can proceed. In the event the test section fails to comply with the requirements of this specification, the Contractor will be required to make suitable changes to the equipment and/or abrasive material and perform an additional test sections until compliance with the specification is demonstrated.
- e. Before and/or during blasting and coating operations, a field test of ventilation flow-rates must be performed by the Contractor to verify that the ventilation requirements are being provided as specified. Contractor must submit documentation of flow test results to the Engineer.
- f. Measurement of the dry film thickness must be made in accordance with SSPC-PA2 with a Type 2 Electronic Gauge. Measurements of the actual dry film thickness of the various coating layers applied must be made by the Owner's representative with assistance from the Contractor. Final film thickness measurements must be made at such locations as designated by the Owner and/or Owner's representative.
- g. Holiday testing must be conducted by the Contractor and observed by the Owner's representative.
- h. All coatings submitted must pass a 7-day chemical spot test to the following chemicals with no cracking, blistering or delamination.
  - 1). 1,1,1 Trichloroethane.
  - 2). Methyl Ethyl Keytone (MK).
  - 3). Ethanol.

9. On days when blasting and/or coating is being performed, the Owner's representative must monitor and record ambient climatic conditions, and interior reservoir conditions as follows:
  - a. Air temperature, steel surface temperature, humidity and dew point must be measured and recorded by the Contractor prior to beginning of blasting and prior to application of coating, daily.
  - b. Surface temperature must be measured using a surface thermometer.
  - c. Temperature of both the sunny side and shady side of the reservoir must be recorded periodically each day. The reservoir surface temperatures, relative humidity, dry bulb, wet bulb and dew point temperatures, both interior and exterior (as appropriate), are to be recorded at least every 3 hours.
  - d. The dew point must be measured by use of a sling psychrometer in conjunction with U.S. Department of Commerce Weather Bureau Psychrometric Tables or by utilizing an electronic measuring device approved by the Engineer.
10. The Owner's representative must use a form approved by the Owner for recording this data. The completed forms must be kept on the Site at all times from the time surface preparation is initiated until the coating system is complete. The forms must be submitted as record data on a weekly basis until coating is complete.

#### 1.05 SUBMITTALS

- A. Submittals must be in accordance with Section 01300 "Submittal Procedures."
- B. The following Record Data is due prior to ordering coating and surface preparation materials:
  1. Products and Manufacturer's Information:
    - a. Coating Manufacturer's color selection literature for coating materials and caulk.
    - b. Sample warranty document for products.
    - c. Provide certification from the manufacturer that all coatings will not contain more than 0.06 percent by weight of lead in the cured coating for each coat applied.
    - d. Coating Manufacturer's Product Information and Safety Data Sheets (SDS) for each coating and caulk material. Product Information must include the following:
      - 1). The Manufacturer's published instructions for use in specifying and applying all proposed coatings.
      - 2). Application instructions written and published by the Coating Manufacturer.
      - 3). All limitations, precautions and requirements that may adversely affect the coating, that may cause unsatisfactory results after the application or that may cause the coating not to serve the purpose for which it was intended, must be clearly and completely stated in the instructions. Limitations and requirements must include, but are not necessarily limited to the following:
        - a). Surface preparation.
        - b). Method(s) of application.
        - c). Thickness of each coat (maximum and minimum DFT).
        - d). Drying and curing time of each coat.

- e). Time (minimum and maximum) allowed between coats.
  - f). Thinner and use of thinner.
  - g). Proper mixing of coating before application.
  - h). Weather limitations during and after application (temperature and humidity, time weighted).
  - i). Physical properties of coating, including percent solids content by volume.
  - j). Equipment settings (air cap, fluid tip, equipment pressure settings, etc.).
  - k). Pot life at various temperature and humidity conditions.
  - l). Provide documentation that interior coating system is compatible with the cathodic protection system.
- C. The following Samples are required prior to ordering the materials:
- Three samples of selected exterior finish colors for approval on 6-inch by 6-inch swatches. Label each swatch with the manufacturer's name, coating name/type, color name and number.
- D. The following Record Data is required prior to coating work:
1. Coating Plan:
    - a. Anticipated coating process schedule by date, including dates when hold-point inspections are anticipated. Schedule must indicate detailed activities on a daily basis.
    - b. Detailed procedures and schedule for all pre-cleaning, surface preparation and application of coating, including touch-up and repair procedures for all coating systems.
    - c. Recoat schedule on the submitted coating materials.
    - d. Data sheets complete with a graduated scale or curve, produced by the Coating Manufacturer, with curing characteristics and recommendations regarding complete coating curing. The data sheets and scales or curves must include specific cure times over a wide range of temperatures and humidity.
    - e. Provide a written plan documenting how spent cleaning debris and/or paint over spray or droplets will be contained/confined to the Site and tank site during the surface preparation and coating application operations. Reasonable care must be exercised by the Contractor to prevent damage, nuisance, or hazardous conditions to adjacent or nearby property Owners. Include all materials and methods to be used for protection of exterior surfaces and allow for recovery and disposal of paint scraps and blast media.
    - f. Provide written plan documenting how paint and/or abrasive damage to automobiles and property will be addressed, including a process for quick removal of the paint or abrasive, and how the work will be accomplished. This plan does not relieve the Contractor from the responsibility of settling claims for damage, but is intended to expedite and minimize said claims.
  2. Provide documentation on proposed containment system methods for blasting and coating operations.

3. Provide documentation on heating or dehumidification system (as required):
  - a. Calculations for dehumidification and ventilation requirements.
  - b. Fans and their locations.
  - c. Dimensions of equipment.
  - d. Maximum capacities of equipment.
  - e. Emission control devices.
  - f. Method of filtration of exhausted tank air.
  - g. EMD- continuous electronic monitoring device.
4. Provide documentation on ventilation and filtration system:
  - a. Calculations for ventilation requirements.
  - b. Fans and their locations.
  - c. Dimensions of equipment.
  - d. Maximum capacities of equipment.
  - e. Emission control devices.
  - f. Method of filtration of exhausted tank air.
5. The Contractor must submit evidence of notification of the appropriate office of the Texas Commission on Environmental Quality (TCEQ) prior to abrasive blasting as required. Submit copies of any obtained permits.
6. Coating Manifest - Within 48 hours of coating delivery to the Site, the Contractor must record the batch number stamped on each coating container and submit a typed list to the Owner's representative. Minimum information required is listed below.
  - a. Date of delivery to the Site.
  - b. Name and signature of Superintendent recording the data.
  - c. List of batch number including corresponding coating identification, color, date of manufacture and volume of each container.
- E. The following Certified Test Report(s) are required prior to coating work:
  1. SDS sheets for all abrasive to be used on the Project.
  2. Certification and laboratory test results indicating recycled metallic abrasive per SSPC-AB 2 or 4 and atomic absorption test results.
- F. Provide the following Record Data during the construction of the Project:
  1. Letter from Coating Manufacturer confirming the surface preparation for both the interior and exterior surfaces prepared by the Contractor in the field are acceptable for the product(s) being applied.
  2. On a weekly basis, submit:
    - a. Contractor's Daily Reports.
    - b. Output from automatic real-time monitoring equipment from the previous week.

1.06 STANDARDS

A. The applicable provisions of the following standards will apply as if written here in their entirety. Adhere to the latest standards and codes published by the following organizations.

1. ANSI (American National Standards Institute):

ANSI/NSF Standard 61	Drinking Water Components
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2. ASTM (American Society for Testing and Materials):

ASTM D523	Standard Test Method for Specular Gloss
ASTM D610	Standard Test Method for Evaluating Degree of Rusted on Painted Surfaces
ASTM D2244	Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates
ASTM D3359	Standard Test Methods for Rating Adhesion by Tape Test
ASTM D4214	Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films
ASTM D4285	Standard Test Method of Indicating Oil and Water in Compressed Air
ASTM E337	Standard Practice Test Method for Measuring Humidity with a Psychrometer
ASTM E84-03	Standard Test Method for Surface Burning Characteristics of Building Materials
ASTM D4541	Standard Method for Pull-Off Strength of Coatings Testing Adhesion of Applied Coating Using Portable Adhesion Tester

3. AWWA (American Water Works Association):

AWWA D100	Welded Steel Tanks for Water Storage
AWWA D102	Coating Steel Water Storage Tanks
AWWA D107	Composite Elevated Tanks for Water Storage
AWWA C210	Liquid-Epoxy Coating Systems for Interior and Exterior of Steel Water Pipelines
AWWA C222	Polyurethane Coatings for the Interior and Exterior of Steel Water Pipe and Fittings
AWWA C652	Disinfection of Water Storage Facilities

4. Consumer Product Safety Act, Part 1303.

5. NACE International (National Association of Corrosion Engineers):

NACE TPC2	Coating and Lining for Immersion Service: Chapter Safety, Chapter 2 Surface Preparation, Chapter 3 Curing, and Chapter 4 Inspection
NACE SP0178	Fabrication Details, Surface Finish Requirements, and Proper Design Considerations for Tanks and Vessels to be Lined for Immersion Service
NACE SP0188	Discontinuity (Holiday) Testing of Protective Coatings on Conductive Substrates
NACE SP0388	Impressed Current Cathodic Protection of Internal Submerged Surfaces of Carbon Steel Water Storage Tanks

NACE RP0178	Plastic Weld Comparator
NACE RP0287	Field Measurement of Surface Profile of Abrasive Blast Cleaned Steel Surfaces Using a Replica Tape

6. National Association of Pipe Fabricators (NAPF):

NAPF 500-03	Surface Preparation Standard for Ductile Iron Pipe and Fittings in Exposed Locations Receiving Special External Coatings and/or Special Internal Linings
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7. OSHA (Occupational Safety & Health Administration):

1915.35 Standards - 29CFR	Painting
1926.62 Standards – 29 CFR	Lead

8. SSPC (Society for Protective Coatings):

SSPC-VIS 1	Guide and Reference Photographs for Steel Surfaces Prepared by Dry Abrasive Blast Cleaning
SSPC-VIS 3	Guide and Reference Photographs for Steel Surfaces Prepared by Power and Hand Tool Cleaning
SSPC-VIS 4	Guide and Reference Photographs for Steel Surfaces Prepared by Waterjetting
SSPC Vol. 1	Good Painting Practices
SSPC-AB1	Mineral and Slag Abrasives
SSPC-AB2	Cleanliness of Recycled Ferrous Metallic Abrasives
SSPC-AB3	Ferrous Metallic Abrasives
SSPC-AB4	Recyclable Encapsulated Abrasive Media in a Compressible Matrix
SSPC-SP1	Solvent Cleaning
SSPC-SP2	Hand Tool Cleaning
SSPC-SP3	Power Tool Cleaning
SSPC-SP11	Power Tool Cleaning to Bare Metal
SSPC-SP WJ-1	Low-Pressure Water Cleaning (LP WC) water performed at pressures less than 34-MPa (5,000 psig)
SSPC-SP WJ-2	High-Pressure Water Cleaning (HP WC) performed at pressures from 34 to 70-MPa (5,000 to 10,000 psig)
SSPC-SP WJ-3	High-Pressure Waterjetting (HP WJ) performed at pressures from 70 to 210-MPa (10,000 to 30,000 psig)
SSPC-SP WJ-4	Ultra High-Pressure Waterjetting (UHP WJ) performed at pressures greater than 210-MPa (30,000 psig)
SSPC-PA-1	Shop, Field and Maintenance Painting
SSPC-PA-2	Measurement of Dry Film Thickness with Magnetic Gages
SSPC-PA-3	Guide to Safety in Paint Application
SSPC-Guide 6 (CON)	Guide for Containing Surface Preparation Debris Generated During Paint Removal Operations
SSPC-Guide 12	Guide for Illumination of Industrial Painting

SSPC-Guide 15	Field Methods for Retrieval and Analysis of Soluble Salts on Steel and Other Nonporous Substrates
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9. SSPC/NACE International Joint Standards:

SSPC-SP5/NACE 1	White Metal Blast Cleaning
SSPC-SP6/NACE 3	Commercial Blast Cleaning
SSPC-SP7/NACE 4	Brush - Off Blast Cleaning
SSPC-SP10/NACE 2	Near - White Metal Blast Cleaning
SSPC-SP13/NACE 6	Surface Preparation of Concrete

10. Texas Commission on Environmental Quality (TCEQ):

30 TAC Chapter 111, Subchapter A, Division 3	Abrasive Blasting of Water Storage Tanks Performed by Portable Operations
30 TAC Chapter 290 Subchapter D	Rules and Regulations for Public Water Systems

- B. In the event of a conflict between the published standards, codes, and this Section, the more stringent requirement will govern.

1.07 DELIVERY AND STORAGE

- A. Deliver coating products to the Site in original unopened containers, with the Manufacturer's label and batch number attached. Do not apply products until the Owner's field representative has approved the product for use.
- B. Use one location at each site for the storage of coating products. Protect the floor from spills and other damage. Protect the products from extreme heat or cold. Keep containers covered. Keep the storage rooms clean of trash and debris. Dispose of oily or used rags daily. Take precautions to prevent fires. The storage of flammable liquids must comply with the City, State, or other fire codes.
- C. Storage of coatings and other products must be in accordance with the Manufacturer's requirements. Coatings that have been damaged or not stored properly must not be applied and must be removed from the site.
- D. All products and coatings that are not approved for the Project must be removed from the Site and must not be stored at the Site.

1.08 ENVIRONMENTAL CONTROL CONDITIONS

- A. Do not apply coatings under conditions that are unsuitable for the production of satisfactory results. Remove trash and debris from enclosed buildings and thoroughly clean prior to application of coatings. Do not begin application of coatings in areas where other trades are working, or where construction activities result in airborne dust or other debris. Do not apply coatings in conditions which do not conform to the recommendations of the Coatings Manufacturer.

- B. Coatings may only be applied when conditions fall within the parameters listed in the Manufacturer's printed data.
- C. Do not apply any coatings when weather conditions are unfavorable. In the event that climatic conditions are not conducive for best results, postpone application of coatings until conditions conform to the Manufacturer's recommendations and the provisions of this Section.
- D. Do not apply coatings to a wet or damp surface in wet or damp weather conditions, or when there is dust in the air. Surfaces exposed to direct sunlight must be shaded by awnings or other protective devices while coatings are being applied, if recommended by Coating Manufacturer. When necessary, provide temporary heating devices of a type that produces no fumes which will discolor the paint system.
- E. Heating and Dehumidification:
  - 1. Dehumidification equipment must be used to control the environment in the reservoir wet area during surface preparation, rehabilitation, coating application and coating curing at no additional cost to the Owner, if acceptable environmental conditions cannot be met. If the Contractor cannot meet the required environmental conditions to apply the interior coating system per this Section and the Coating Manufacturer's written recommendations, Contractor will cease operations until approved dehumidification equipment has been provided and acceptable environmental conditions are achieved. If coating system is applied without dehumidification or in conditions not acceptable by this Section and by the Coating Manufacturer's written requirements, Contractor must fully remove coating system applied and replace per the Engineer's direction.
  - 2. Automatic real-time monitoring equipment must be provided. This equipment must be used when no Contractor personnel are on-site. Monitoring equipment may be removed during abrasive blasting and coating operations, but environmental conditions must be checked and logged manually.
  - 3. The Contractor must furnish all labor, materials, equipment, fabrication and quality control inspections, and all other incidentals required to control and maintain the environment of the reservoir within the parameters stated in this Section and must incorporate these and any other expenses into its Bid.
  - 4. The Owner reserves the rights, in the event the dehumidification equipment is not performing to the minimum requirements stated in this Section, to require the Contractor to modify and or add additional equipment to satisfy the conditions of this Section, at the sole cost to the Contractor.
  - 5. It is the Contractor's responsibility to provide adequate dehumidification equipment to meet this Section and Coating Manufacturer's requirements. The Coating Manufacturer's limits of surface temperature, tank inside air temperature and relative humidity requirements will govern, if more stringent than the requirements stated within this Section.
  - 6. During abrasive cleaning and coating operations inside of the tank, the relative humidity of the air inside of the tank must not exceed 55 percent. During curing of the coating on the interior of the tank, the relative humidity of the air inside of the tank must not exceed 75 percent.
- F. Force Ventilation:
  - 1. Continuous forced fresh air ventilation must be provided from beginning of the reservoir interior wet area surface preparation through final coating operations and coating curing.

2. Forced ventilation must be supplied to the interior of the tank per the recoat time required by the Coating Manufacturer and at least 48 hours after the final coat has been applied.
3. Unless dehumidification equipment is used to provide ventilation of the reservoir interior, the roof vents and hatches must be kept open and clear.
4. All reservoir, pedestal, dry riser and dry well openings susceptible to emissions during blasting, cleaning, and coating operations must be properly fitted and secured with suitable dust collection devices to reduce the release of emissions.
5. From the beginning of interior wet and/or dry coating application and until this coating is cured, the Contractor must monitor the air for the lower explosion limit (LEL) as published in the Coating Manufacturer's product MSDS.
6. During coating curing and when no coatings are being applied inside the reservoir, the equipment must be sized so that it is capable of changing the volume of air inside the entire reservoir a minimum of 1.5 to 2.0 times per hour.
7. Throughout the duration of ventilation, containment of blasting abrasives, removed coating, and applied coatings must be maintained by use of proper filtration.
8. The ventilation system must be in accordance with AWWA D102 and submitted to the Owner.
9. Contractor is responsible for supplying, installing and maintaining the forced ventilation system.
10. Ventilation during interior abrasive blasting can be reduced to one air exchange per hour.
11. The above ventilation requirements are minimum requirements. It is the responsibility of the Contractor to verify that the flow rate provided throughout the tank meets the curing requirements of the Coating Manufacturer for the coating applied. Should additional ventilation be required by the Coating Manufacturer, the Contractor must furnish additional ventilation at its own expense.

G. Containment System:

1. Contractor must provide containment methods, either full or partial, which allows for the containment of the environmentally sensitive waste, dust and paint over spray that will be generated during the abrasive blasting and painting operation.
2. Provide a minimum SSPC Guide 6 (CON) Class 3A containment system when dry abrasive blasting at the tank site.
3. Private residences and public areas exist within 500 feet of the water storage tank site. Emissions from abrasive blasting operations must be controlled as required by TAC 30, Chapter 111, Subchapter A, Division 3.
4. The ground surrounding the tank must be protected from all debris, emissions, dust, and other materials generated in the cleaning operations with a minimum of two layers of polyethylene covered with plywood or the same material used for the perimeter containment system. Provide documentation that these requirements have been adhered to.
5. Containment is not required when blasting on the interior of a completely enclosed tank (i.e. roof is in place) as long as no visible emissions are created.

6. The Contractor must ensure that no spent cleaning/blasting debris, dust, overspray, coating droplets, or emissions of any kind, escape to the atmosphere, the base of the tank, or adjacent buildings, private property, work sites, parking lots, etc.
7. The Owner reserves the right to stop work or require containment, additional containment or different containment methods if the Contractor's operations create a nuisance beyond the tank site property line in the sole opinion of the Owner, the Engineer, the Owner's representative, any regulatory agency, or neighbor. All costs of providing an adequate containment system must be included by the Contractor in the Base Bid.
8. The Contractor must be responsible for all materials that are used and for any apparatus used to contain dust emissions, debris, overspray, and coating droplets. The containment system attachments to the tank must be designed by a professional engineer, licensed in the state where the Project is located, not to impose excessive loading on the tank. The Contractor must submit the designed, stamped, and signed details of the containment system on the tank. The containment system will place additional loads on the tank that the tank was not originally designed for. The Contractor must reinforce the tank as necessary to prevent permanent deformation and to ensure that no damage occurs to the tank. Any damage to the tank as a direct or indirect result of the containment system must be repaired or sections replaced by the Contractor at no additional cost to the Owner. Neither the Owner nor the Owner's Engineer assumes any responsibility for the structural ability of the tank to support the containment system.
9. If complete containment of the tank is utilized to contain all cleaning dust, debris, emissions, paint droplets, and paint overspray, the complete containment must include a full bonnet.
10. If tarps are used as part of the containment system, the tarps must be an impervious, solid, flame-resistant material, reinforced with a fiber mesh and must allow as much light as possible to pass through the material.
11. If robotic or creeper-type cleaning devices are used, the robotic or creeper-type device must meet the same containment criteria as that of the types of containment (lack of emissions). All overspray and paint droplets must be contained on the tank site.
12. Review of the containment system for containing the spent cleaning dust, debris, emissions, overspray, and coating droplets does not warrant the structural integrity of the containment system or the structural integrity of the tank to support the containment system. Nor does review of the containment system warrant the ability of the system to contain spent cleaning dust, debris, emissions, and overspray.
13. Damage Contingency Plan: Prior to construction, the Contractor must present a written plan for review by the Owner and Engineer concerning how dust and debris damage to automobiles will be removed. Approval of this plan will not relieve the Contractor from responsibility of settling claims, but is intended as an avenue to expedite and minimize such claims.

H. Visible Emissions:

1. Contractor must control visible emissions and releases while dust producing activities are underway.
2. Visible emissions more than SSPC Guide 6, Level 1 (1 percent of the workday or 5 minutes in an 8-hour shift) are unacceptable. Sustained emissions of more than 1 minute, regardless of the total time of emissions for the day is unacceptable. If unacceptable emissions are observed, Contractor must shut down immediately and correct the situation

and clean up any debris generated from the release to the satisfaction of the Engineer before continuing work.

I. Dust Collection:

1. Contractor must provide dust collection as required to prevent any visible emissions from entering the atmosphere as a result of the abrasive blasting operation.
2. For interior tank abrasive blasting, high volume fans and dust socks at manholes and vents must be provided as a minimum requirement.
3. The dust collection must be operated on the interior of the tank during all abrasive blast cleaning and until the area is clean enough for coating application. The Contractor will be responsible for all sizing, design of ductwork, etc., based upon the Contractor's operations, number of blasters, duration of blasting, etc.
4. The Contractor must take precautions to avoid a vacuum from developing inside of the tank.

J. Working Conditions:

1. Provide adequate lighting at any location that coatings are being applied or testing is performed. Illumination must be of sufficient intensity to achieve acceptable results. Provide explosion-proof lighting when required.
2. Temporary ladders and scaffolds must conform to applicable safety requirements. Erect temporary scaffolds where needed to cover large areas. Provide ladders or scaffolding during testing procedures.

1.09 GUARANTEES

A. Coating Manufacturer's Warranty:

1. Manufacturer's written warranty must be submitted and accepted by the Engineer prior to approval of the coatings submittal. If the warranty does not substantially meet the requirements of this Section, Contractor must provide an alternate coating manufacturer that will meet the requirements at no additional cost to the Owner.
2. Tank Coating Warranty:
  - a. General Requirements for Interior and Exterior Coatings  
No blistering, cracking, checking, surface delamination or other identified coating failures are acceptable for the duration of the warranty period.
  - b. Interior Coating Warranty
    - 1) Coating manufacturer must issue a 15-year warranty to the Owner for the lining applied on the interior of the tank.
    - 2) Substrate corrosion must not exceed 1% of the coated surface for five years from the date of substantial completion and must not exceed an additional 0.5% per

year for the balance of the warranty period. Degree of rusting will be evaluated in accordance with ASTM D610.

c. Exterior Coating Warranty

- 1) Coating manufacturer must issue a 10-year warranty to the Owner for the coating applied on the exterior of the tank.
  - 2) Substrate corrosion must not exceed 1% of the coated surface for five years from the date of substantial completion and must not exceed an additional 0.5% per year for the balance of the warranty period. Degree of rusting will be evaluated in accordance with ASTM D610.
  - 3) The exterior finish must not exhibit loss of gloss in excess of 24 units as measured by a gloss meter in accordance with ASTM D523 w/60-degree geometry for the duration of the warranty period.
  - 4) The exterior finish must not change color more than 5 Delta E Hunter as measured in accordance with ASTM D2244 for the duration of the warranty period.
  - 5) The exterior finish must not chalk in excess of a rating of 8 as measured in accordance with ASTM D4214, Method A for the duration of the warranty period.
3. Warranty of All Other Coatings: Contractor must issue to the Owner a 1-year warranty for coating application workmanship for other coatings installed on the Project unless specifically addressed by other specifications. The Contractor's maintenance bond may be used to assure this Work, but will require the Surety's acknowledgement in writing prior to commencement of coating application on the Project.
  4. Warranty Work: Contractor and Coating Manufacturer must coordinate warranty work requested by the Owner at any time during warranty period. Owner is only required to contact Contractor to initiate warranty work.

## 2.00 PRODUCTS

### 2.01 GENERAL COATING REQUIREMENTS

- A. All coatings must be free of heavy metals such as arsenic, barium, chromium, selenium, silver, lead, mercury and cadmium.
- B. All interior coatings and products used on interior wet surfaces (all surfaces within the tank bowl) must be certified by the National Sanitation Foundation (NSF), standard 61, for direct contact with potable water for the application and size of tank on the Project.
- C. All coatings must be applied in strict conformance with the Coating Manufacturer's published specifications and with this Section.
- D. To insure coating compatibility, Contractor must use products of a single Coating Manufacturer for all coatings applied to the reservoir and/or its components, unless prior approvals are obtained in writing from the Owner and the Coating Manufacturer.
- E. All materials must be delivered to the Site in original sealed containers with the date of manufacture and batch number stamped thereon by the Coating Manufacturer. Materials will be subject to random observations by the Owner's representative at the Site.

- F. No coating submitted or used on this Project must have a VOC (volatile organic content) in excess of 360 grams/liter or 3.0 lb./gal.
- G. Primers factory-applied must be those specified. Notify manufacturers which shop prime coats will be required in order to be compatible with field-applied finish coats. Where equipment is purchased which has the manufacturer’s standard primer or a factory finish which is other than as specified in this Section, remove the factory-applied paint system or apply passivators or other special coatings as required to make the surface compatible with the finish coat specified.
- H. No inorganic **or organic** zinc-rich primers will be permitted on the tank, **including preconstruction primers interior surfaces.**

2.02 COATING SCHEDULES

A. IW-02 Tank Interior Wet Coating System - 100 Percent Solids Polyurethane System:

1. Interior wet surfaces include the tank roof, shell, bottom, accessories, piping and appurtenances that are exposed to the stored water or its vapor. These include items constructed of stainless steel, such as ladders and piping.
2. Coating must be considered a “100 percent solids” (98 percent +/- 2 percent solids) and must cover all edges, bridge all gaps and be monolithic and holiday free. Material must be in accordance with ANSI/AWWA C222.
3. Surface Preparation:
  - a. Solvent Cleaning: SSPC-SP1.
  - b. Abrasive Cleaning: NACE No. 2/SSPC-SP 10 – Near-White Metal Blast Cleaning.
4. Application Method(s): Spray. All weld seams, gaps, edges, bolts and difficult areas to coat must receive an initial stripe coat.
5. Full removal of preconstruction primer is required in accordance with NACE 2/SSPC-SP 10.
6. Refer to Paragraph 1.03 “Quality Assurance” for training and certification required for applicators.
7. Unsealed joints must be sealed with 100 percent solids lining system. Appropriately sized foam backer rod must be used as needed to fill spaces in unwelded joints. A 30-mil thick high solids lining system must be sprayed behind backer rod and over backer rod once it is in place. Sharp edges must receive a single coat, then wrapped in geotextile fabric and then receive another coat.
8. The coating system shall have a minimum adhesion of no less than 1500 psi, (average of ten tests) as tested per ASTM D 4541 when applied to SSPC - SP10 Near - White Metal Blast Cleaned steel after 17 days cure at 40°F.
9. NSF 61 certified system (including all thinners and additives) to be one of the following and of the same manufacturer of all other coating products used on this Project:
  - a. **Sherwin-Williams:**

Coat	Product	DFT	Color
Spray Stripe Coat	Sherflex S		Beige
Single Coat	Sherflex S	30 mils min.	Beige

b. Carboline:

Coat	Product	DFT (mils)	Color
Spray Stripe Coat	Reactamine 760 HB		Light Tan
Single Coat	Reactamine 760 HB	30 mils min.	Light Tan

c. PPG:

Coat	Product	DFT (mils)	Color
Spray Stripe Coat	Amerthane 490		Off White
Single Coat	Amerthane 490	30 mils min.	Off White

d. Tnemec:

Coat	Product	DFT (mils)	Color
Spray Stripe Coat	Elasto-Shield Series 406		Off White
Single Coat	Elasto-Shield Series 406	30 mils min.	Off White

B. ID-01 Tank Interior Dry System - Epoxy/Epoxy/Epoxy:

1. System applies to all interior dry surfaces of the finished structure that are not exposed to the elemental atmosphere, the stored water, or its vapor. These areas include, but are not limited, to the interior of the access tube, interior of the steel pedestal, and the underside of a suspended bottom within the pedestal.
2. Finish coat must be satin.
3. Surface Preparation:
  - a. Solvent Cleaning: SSPC-SP 1.
  - b. Abrasive Cleaning: NACE No. 3/SSPC-SP 6 – Commercial Blast Cleaning.
4. Application Method(s): Spray or Roller. Brush must only be used for touch up and stripe coating.
5. Preconstruction Priming:
  - a. Preconstruction priming must be in accordance with AWWA D102. Full removal of construction primer is not required if the primer is fully compatible with the specified paint system primer. A letter from the Paint Manufacturer certifying compatibility must be submitted with coating submittal.
  - b. Weld seams and bare steel must be cleaned to NACE No. 3/SSPC-SP 6 – Commercial Blast Cleaning.
  - c. Areas with in adherent preconstruction primer or rusting must be cleaned to NACE No. 4/SSPC SP-7 – Brush-Off Blast Cleaning.
  - d. A full field coat of the specified prime coat must be applied over the spot-cleaned bare steel and remaining preconstruction primer.

6. Three-coat system to be one of the following and of the same manufacturer of all other coating products used on this Project:

- a. Sherwin-Williams:

Coat	Product	DFT (mils)	Color
Prime Coat	Macropoxy 646*	3 - 4 mils	Light Blue
Stripe Coat	Macropoxy 646*	2 - 3 mils	Contrasting Color
Intermediate Coat	Macropoxy 646*	4 - 6 mils	Beige
Finish Coat	Macropoxy 646*	4 - 6 mils	Off-White
Minimum and Maximum DFT for System		11 - 16 mils	

\*Macropoxy 5500LT is an approved equal to the Macropoxy 646 PW. A single finish coat of 8-12 mils is acceptable in lieu of providing an Intermediate Coat.

- b. Carboline:

Coat	Product	DFT (mils)	Color
Prime Coat	Carboguard 60	3 - 4 mils	Light Blue
Stripe Coat	Carboguard 60	2 - 3 mils	Contrasting Color
Intermediate Coat	Carboguard 60	4 - 6 mils	Beige
Finish Coat	Carboguard 60	4 - 6 mils	Off-White
Minimum and Maximum DFT for System		11 - 16 mils	

- c. PPG:

Coat	Product	DFT (mils)	Color
Prime Coat	Amerlock 2/400	3 - 4 mils	Blue
Stripe Coat	Amerlock 2/400	2 - 3 mils	Contrasting Color
Intermediate Coat	Amerlock 2/400	4 - 6 mils	Beige
Finish Coat	Amerlock 2/400	4 - 6 mils	Off-White
Minimum and Maximum DFT for System		11 - 16 mils	

- d. Tnemec:

Coat	Product	DFT (mils)	Color
Prime Coat	Pota-Pox Plus Series N140	4 - 5 mils	Light Blue
Stripe Coat	Epoxoline Series 141	2 - 3 mils	Contrasting Color
Finish Coat	Epoxoline Series 141	7 - 11 mils	Off-White
Minimum and Maximum DFT for System		11 - 16 mils	

C. EN-02 Tank Exterior System – Epoxy/Epoxy/Polysiloxane System

- System applies to all exterior surfaces of the tank roof, shell, steel pedestal, legs, accessories, piping connecting to the tank and appurtenances that are exposed to the elemental atmosphere.
- Finish coat must be high gloss.

3. Surface Preparation:
  - a. Solvent Cleaning: SSPC SP-1.
  - b. Abrasive Cleaning: NACE No. 3/SSPC-SP 6 – Commercial Blast Cleaning.
4. Application Method(s): Spray or Roller as recommended by the Paint Manufacturer. Brush must only be used for touch-up and stripe coating.
5. Preconstruction Priming:
  - a. Preconstruction priming must be in accordance with AWWA D102. Full removal of construction primer is not required if the primer is fully compatible with the specified paint system primer. A letter from the Paint Manufacturer certifying compatibility must be submitted with coating submittal.
  - b. Weld seams and bare steel must be cleaned to NACE No. 3/SSPC-SP 6 – Commercial Blast Cleaning.
  - c. Areas with adherent preconstruction primer or rusting must be cleaned to NACE No. 4/SSPC SP-7 – Brush-Off Blast Cleaning.
  - d. A full field coat of the specified prime coat must be applied over the spot-cleaned bare steel and remaining preconstruction primer.
6. The coating system shall have a minimum adhesion of no less than 1,000 psi, (average of five tests) as tested per ASTM D 4541 when applied to SSPC – SP6 Commercial Blast Cleaned steel after 17 days cure at 40°F.
7. Three-coat system to be one of the following and of the same manufacturer of all other coating products used on this Project:
  - a. Sherwin-Williams:

Coat	Product	DFT (mils)	Color
Prime Coat	Macropoxy 646	4 - 6 mils	White
Stripe Coat	Macropoxy 646	2 - 3 mils	Contrasting Color
Intermediate Coat	Sher-Loxane 800	3 - 4 mils	Beige
Finish Coat	Sher-Loxane 800	3 - 4 mils	Pantone #545C (Light Blue)
Minimum and Maximum DFT for System		10 - 14 mils	

- b. Carboline:

Coat	Product	DFT (mils)	Color
Prime Coat	Carboguard 60	4 - 6 mils	White
Stripe Coat	Carboguard 60	2 - 3 mils	Contrasting Color
Intermediate Coat	Carboxane 2000 or 2100	3 - 4 mils	Beige
Finish Coat:	Carboxane 2000 or 2100	3 - 4 mils	Pantone #545C (Light Blue) Carboline Color T124
Minimum and Maximum DFT for System		10 - 14 mils	

c. PPG:

Coat	Product	DFT (mils)	Color
Prime Coat	Amerlock 2/400	4 - 6 mils	White
Stripe Coat	Amerlock 2/400	2 - 3 mils	Contrasting Color
Intermediate Coat	PSX 800/805 Polysiloxane	3 - 4 mils	Beige
Finish Coat	PSX 800/805 Polysiloxane	3 - 4 mils	Pantone #545C (Light Blue)
Minimum and Maximum DFT for System		10 - 14 mils	

D. SS-01 Interior/Exterior Equipment, Pumps, Motors, Valves and Piping:

1. System applies to Interior/Exterior Equipment, Pumps, Motors, Valves and Piping that are bare or shop primed with epoxy, alkyd, acrylic, or unknown primer type. System is not to be used for submerged piping, piping in vaults or piping with insulation. Above grade exterior piping attached to tank is to be prepared and coated per the tank's specified exterior coating system.
2. Finish Coat Colors:
  - a. Potable water piping and valves: Pantone #284C
  - b. Valve hand wheels: Red.
  - c. Overflow drain flap valve: Gray.
3. Finish coat must be satin.
4. Surface Preparation:
  - a. Steel Pipe and Fittings – Clean per SSPC-SP 1, Solvent Cleaning and then clean per NACE No. 3/SSPC-SP 6 – Commercial Blast Cleaning.
  - b. Ductile Iron Pipe and Fittings – Clean per NAPF 500-03-01, NAPF 500-03-04 and NAPF-03-05, with degree of cleanliness, Blast Clean No. 2.
  - c. Field preparation of Shop Primed Surfaces:
    - 1). Consult Engineer for surface preparation requirements for removal of asphaltic coatings.
    - 2). Slag and weld metal accumulations and splatters not removed by the fabricator must be removed in the field by chipping or grinding. Sharp edges must be peened, ground or otherwise blunted.
    - 3). Clean per SSPC-SP 1, Solvent Cleaning for steel applications. Clean per NAPF 500-03-01, Solvent Cleaning, for ductile iron applications.
    - 4). Areas adjacent to welds or any area where shop primer has been damaged must be thoroughly cleaned in accordance with SSPC SP2 - Hand Tool Cleaning and SSPC SP3 - Power Tool Cleaning preparation and re-primed for steel applications. Clean in accordance with NAPF 500-03-02, Hand Tool Cleaning and NAPF 500-03-04, Power Tool Cleaning preparation and re-primed for ductile iron applications. All edges adjacent to damaged primer must be feathered.
    - 5). If damage is too extensive or uneconomical to touch up or if the existing primer shows signs of wear or weathering, the entire item must be re-cleaned and coated

in accordance with SSPC-SP7/NACE 4 - Brush Off Blasting using fine (30 to 100 mesh) abrasive for steel applications. Re-clean per NAPF 500-03-04, Abrasive Blast Cleaning for Ductile Iron Pipe and NAPF 500-03-05, Abrasive Blast Cleaning for Cast Ductile Iron Fittings, Cleanliness Level No. 2 for ductile iron applications. Welds and irregular surfaces must receive a stripe coat of the specified primer prior to the application of the first field coat.

- 6). Provide final solvent cleaning as specified prior to coating.
  - 7). 100 to 200 grit sandpaper must be used to roughen the surface and feather edges of the existing coating system.
  - 8). Motors, electrical, equipment name plates, labels, tags, site glasses, gauges, etc. must be protected from damage during abrasive blasting.
  - 9). In lieu of field applied epoxy mastic prime coat, steel pipe and fittings may be shop primed with epoxy coating matching the approved intermediate coats indicated below. Touch up of shop applied coatings are to be made with epoxy mastic coating as specified.
5. Application Method(s): Spray or brush. Brush must be used for touch up and stripe coating.
  6. The coating system shall have a minimum adhesion of no less than 600 psi (average of five tests) as tested per ASTM D 4541 when applied to SSPC-SP6 Commercial Blast Cleaned steel after 17 days cure at 40°F.
  7. Three-coat system to be one of the following and of the same manufacturer of all other coating products used on this Project:
    - a. Sherwin-Williams:

Coat	Product	DFT (mils)	Color
Prime Coat	Epoxy Mastic II	4 -6 mils	Aluminum
Stripe Coat	Macropoxy 646		Beige
Intermediate Coat	Macropoxy 646	5 - 10 mils	Beige
Finish Coat	Hi-Solids Polyurethane	3 - 5 mils	Per 2.02.E.2
Minimum and Maximum DFT for System		13 - 25 mils	

b. Carboline:

Coat	Product	DFT (mils)	Color
Prime Coat	Carbomastic 15	4 - 6 mils	Aluminum
Stripe Coat	Carboguard 60		Beige
Intermediate Coat	Carboguard 60	4 - 6 mils	Beige
Finish Coat	Carbothane 134HG	2 - 4 mils	Per 2.02.E.2
Minimum and Maximum DFT for System		10 - 16 mils	

c. PPG:

Coat	Product	DFT (mils)	Color
Prime Coat	Amerlock 2/400 AL	5 - 6 mils	Aluminum
Stripe Coat	Amerlock 2/400		Beige
Intermediate Coat	Amerlock 2/400	5 - 6 mils	Beige
Finish Coat	Amercoat 450HS	2 - 3 mils	Per 2.02.E.2
Minimum and Maximum DFT for System		12 - 15 mils	

d. Tnemec:

Coat	Product	DFT (mils)	Color
Prime Coat	Chembuild Series 135	4 - 6 mils	Aluminum
Stripe Coat	66HS Hi-Build Epoxoline		Contrasting Color
Intermediate Coat	N69 Hi-Build Epoxoline II	4 - 6 mils	Beige
Finish Coat	73 Endura-Shield II	3 - 5 mils	Per 2.02.E.2
Minimum and Maximum DFT for System		11 - 17 mils	

E. SS-02 Piping and Valves in Vaults and Under Insulation:

1. System applies to Equipment, Valves and Piping that are bare or shop primed with epoxy, alkyd, acrylic, or unknown primer type. System is to be used for submerged piping, piping in vaults or piping with insulation at ambient temperatures.
2. Finish Coat Colors:
  - a. Potable water piping and valves: Light blue.
  - b. Valve hand wheels: Red.
  - c. Overflow drain flap valve: Gray.
3. Finish coat must be satin.
4. Surface Preparation:
  - a. Steel Pipe and Fittings: Clean per SSPC-SP 1, Solvent Cleaning and then clean per NACE No. 3/SSPC-SP 6 – Commercial Blast Cleaning.
  - b. Ductile Iron Pipe and Fittings: Clean per NAPF 500-03-01, NAPF 500-03-04 and NAPF-03-05, with degree of cleanliness, Blast Clean No. 2.
  - c. Field Preparation of Shop Primed Surfaces:
    - 1). Consult Engineer for surface preparation requirements for removal of asphaltic coatings.

- 2). Slag and weld metal accumulations and splatters not removed by the fabricator must be removed in the field by chipping or grinding. Sharp edges must be peened, ground or otherwise blunted.
  - 3). Clean per SSPC-SP 1, Solvent Cleaning for steel applications. Clean per NAPF 500-03-01, Solvent Cleaning, for ductile iron applications.
  - 4). Areas adjacent to welds or any area where shop primer has been damaged must be thoroughly cleaned in accordance with SSPC SP2 - Hand Tool Cleaning and SSPC SP3 - Power Tool Cleaning preparation and re-primed for steel applications. Clean in accordance with NAPF 500-03-02, Hand Tool Cleaning and NAPF 500-03-04, Power Tool Cleaning preparation and re-primed for ductile iron applications. All edges adjacent to damaged primer must be feathered.
  - 5). If damage is too extensive or uneconomical to touch up or if the existing primer shows signs of wear or weathering, the entire item must be re-cleaned and coated in accordance with SSPC-SP7/NACE 4 - Brush Off Blasting using fine (30 to 100 mesh) abrasive for steel applications. Re-clean per NAPF 500-03-04, Abrasive Blast Cleaning for Ductile Iron Pipe and NAPF 500-03-05, Abrasive Blast Cleaning for Cast Ductile Iron Fittings, Cleanliness Level No. 2 for ductile iron applications. Welds and irregular surfaces must receive a stripe coat of the specified primer prior to the application of the first field coat.
  - 6). Provide final solvent cleaning as specified prior to coating.
  - 7). 100 to 200 grit sandpaper must be used to roughen the surface and feather edges of the existing coating system.
  - 8). After application of the prime coat, apply caulking to fill flanged joints to be level.
- d. In lieu of field applied epoxy mastic prime coat, steel pipe and fittings may be shop primed with epoxy coating matching the approved intermediate coats indicated below. Touch up of shop applied coatings are to be made with epoxy mastic coating as specified.
5. Application Method(s): Spray or brush. Brush must be used for touch-up and stripe coating.
  6. The coating system shall have a minimum adhesion of no less than 600 psi (average of five tests) as tested per ASTM D 4541 when applied to SSPC-SP6 Commercial Blast Cleaned steel after 17 days cure at 40°F.
  7. Three-coat system to be one of the following and of the same manufacturer of all other coating products used on this Project:
    - a. Sherwin-Williams:

Coat	Product	DFT (mils)	Color
Prime Coat	Epoxy Mastic II	4 - 6 mils	Aluminum
Stripe Coat	Macropoxy 646		Beige
Intermediate Coat	Macropoxy 646	4 - 6 mils	Beige
Finish Coat	Macropoxy 646	4 - 6 mils	Per 2.02.E.2
Minimum and Maximum DFT for System		12 - 18 mils	

b. Carboline:

Coat	Product	DFT (mils)	Color
Prime Coat	Carbomastic 15	4 - 6 mils	Aluminum
Stripe Coat	Carboguard 60		Beige
Intermediate Coat	Carboguard 60	4 - 6 mils	Beige
Finish Coat	Carboguard 60	4 - 6 mils	Per 2.02.E.2
Minimum and Maximum DFT for System		12 - 18 mils	

c. PPG:

Coat	Product	DFT (mils)	Color
Prime Coat	Amerlock 2/400 AL	5 - 6 mils	Aluminum
Stripe Coat	Amerlock 2/400		Beige
Intermediate Coat	Amerlock 2/400	5 - 6 mils	Beige
Finish Coat	Amerlock 2/400	5 - 6 mils	Per 2.02.E.2
Minimum and Maximum DFT for System		15 - 18 mils	

d. Tnemec:

Coat	Product	DFT (mils)	Color
Prime Coat	Chembuild Series 135	4 - 6 mils	Aluminum
Stripe Coat	66HS Hi-Build Epoxoline		Contrasting Color
Intermediate Coat	N69 Hi-Build Epoxoline II	4 - 6 mils	Beige
Finish Coat	N69 Hi-Build Epoxoline II	4 - 6 mils	Per 2.02.E.2
Minimum and Maximum DFT for System		12 - 18 mils	

F. SS-03 Exterior Concrete Coatings:

1. System applies to concrete to be coated for safety purposes, including, but not limited to bollards, light pole bases, etc.
2. Finish Coat Colors:
  - a. Light Pole Bases: Safety Yellow.
  - b. Other Locations: To be determined during construction.
3. Finish coat must be gloss.
4. Surface Preparation:
 

Concrete: Prepare per NACE No. 6/SSPC-SP 13 – Surface Preparation of Concrete.
5. Application Method(s): Spray or brush. Brush must be used for touch-up and stripe coating.

6. Three-coat system to be one of the following and of the same manufacturer of all other coating products used on this Project:

- a. Sherwin-Williams:

Coat	Product	DFT (mils)	Color
Prime Coat	Macropoxy 646	4 - 6 mils	T.B.D.
Stripe Coat	Macropoxy 646		Contrasting
Intermediate Coat	Macropoxy 646	4 - 6 mils	Contrasting
Finish Coat	Hi-Solids Polyurethane	3 - 5 mils	Per 2.02.G.2
Minimum and Maximum DFT for System		11 - 17 mils	

- b. Carboline:

Coat	Product	DFT (mils)	Color
Prime Coat	Carboguard 890	5 - 6 mils	T.B.D.
Stripe Coat	Carboguard 890		Contrasting
Intermediate Coat	Carboguard 890	5 - 6 mils	Contrasting
Finish Coat	Carbothane 134 HG	2 - 3 mils	Per 2.02.G.2
Minimum and Maximum DFT for System		12 - 15 mils	

- c. PPG:

Coat	Product	DFT (mils)	Color
Prime Coat	Amerlock 2/400	5 - 6 mils	T.B.D.
Stripe Coat	Amerlock 2/400		Contrasting
Intermediate Coat	Amerlock 2/400	5 - 6 mils	Contrasting
Finish Coat	Amercoat 450HS	2 - 3 mils	Per 2.02.G.2
Minimum and Maximum DFT for System		12 - 15 mils	

- d. Tnemec:

Coat	Product	DFT (mils)	Color
Prime Coat	N69 Hi-Build Epoxoline II	4 - 6 mils	T.B.D.
Stripe Coat	N69 Hi-Build Epoxoline II		Contrasting
Intermediate Coat	N69 Hi-Build Epoxoline II	4 - 6 mils	Contrasting
Finish Coat	1074U Endura-Shield II	3 - 5 mils	Per 2.02.G.2
Minimum and Maximum DFT for System		11 - 17 mils	

### 2.03 COATING REPAIR

- A. Coating repair materials will be as recommended by the Coating Manufacturer and as approved by the Engineer.
- B. All repair materials in contact with potable water must be NSF 61 certified.

### 2.04 ANTI-GRAFFITI COATINGS

- A. Anti-graffiti coatings are to be non-sacrificial and provided specifically for the substrate to which it is being applied.

B. Coating Manufacturer must confirm the product(s) are compatible with shop coating systems, if specified.

1. Sherwin-Williams:

Coat	Product	DFT (mils)	Color
Prime Coat	Anti-Graffiti Coating - Reduced	N/A	Clear
Finish Coat	Anti-Graffiti Coating	6 - 9 mils	Clear
Minimum and Maximum DFT for System		6 - 9 mils	

2. Approved Equal

2.05 SLIP-RESISTANT ADDITIVE

A. Slip resistant additive is to be added to finish coating and be compatible with the existing coating to provide a slip resistant surface without compromising the longevity of the finish coating.

B. Coating Manufacturer must confirm the product(s) are compatible with shop coating systems, if specified.

C. Approved Manufacturers:

- a. H&C SharkGrip Slip-Resistant Additive
- b. Approved Equal

2.06 EPOXY FILLER AND SURFACER

A. Product must be a high solids epoxy filler and surface for steel. Product does not need to be NSF/ANSI Standard 61 certified if coated with NSF certified coating system.

B. Coating Manufacturer must confirm that products are compatible with coating system.

C. Approved Manufacturers/Products:

- 1. Tnemec: Series 215 Surfacing Epoxy.
- 2. Sherwin-Williams: Steel-Seam FT910.
- 3. AkzoNobel/International Paint, LLC: Ceilcote 610.
- 4. As approved by the Coatings Manufacturer and the Engineer.

2.07 GEOTEXTILE FABRIC

Fabric Material must be a non-woven, 100 percent polypropylene fabric, with a “heat-set” on one side. Material to weigh 8 to 10 oz./yd<sup>2</sup> and be approved by the Coating Supplier.

2.08 CAULK SCHEDULE

IC-01 Tank Interior/Exterior System:

- A. Sika Flex 1A or Approved Equal.
- B. Product must be NSF 61 approved for contact with potable water.
- C. Color:
  - 1. Caulking within the interior of the tank must be a contrasting color to the finish coat as approved by the Owner.

2. Exterior and exposed caulking color must be approved by the Owner.

#### 2.09 SALT AND CHLORIDE REMOVAL

The following products may be used to remove salts from surfaces. Product must not interfere with the adhesion of the protective coatings and linings. Coating Manufacturer must provide a letter indicating no adverse effects prior to use.

Approved Products:

- A. Chlor\*Rid Salt Remover.
- B. Holdtight 102.
- C. Approved Equal.

#### 2.10 COLOR SELECTION

- A. Contractor must submit drawdowns for Owner's review and approval of final color selection for all exterior coating systems.
- B. Use a multi-color system coating for any surface receiving more than one coat. Each coat must be tinted differently from the preceding coat in a manner that will allow the various coats to be easily distinguished. Colors must generally be from light to dark shades, but the Contractor may have the option to select tint shades to insure coats will receive adequate coverage without bleeding or otherwise showing through the preceding coat.
- C. Piping and equipment must be color coded in accordance with the requirements of the Texas Commission on Environmental Quality (TCEQ) or as indicated above.

#### 2.11 ABRASIVE MATERIALS

- A. Abrasive materials used must be non-carcinogenic when properly used, properly graded, be sharp, have proper angularity, and be clean and free of contaminants that would interfere with adhesion of coating, including lead, chromium, cadmium, arsenic, chlorides, dirt, oil, etc., such as steel grit or approved equal.
- B. All expendable abrasives must meet SSPC-AB 1 and all abrasives must meet the requirements of SSPC-AB 1, Class A for silica content with less than 1 percent silica by weight before blasting.
- C. New ferrous recyclable abrasive must meet SSPC AB 3 and AB 2.
- D. Ferrous and Non-Ferrous recycled abrasive must meet the requirements of SSPC-AB 2/4, for new and re-manufactured abrasives. Recycled abrasive used on this Project must be sampled before use by the Owner's representative and the Contractor. Contractor must take samples in the presence of the Owner's representative. Every barrel or container of recycled abrasive must be tested. Contractor must have the samples sent to a laboratory for testing per SSPC AB 2/4 and for atomic absorption testing for total lead, cadmium, chromium, barium and arsenic. The recycled abrasive must not be used until the results of the atomic absorption testing, testing required by SSPC-AB 3/4 and chain of custody forms are submitted and accepted by the Engineer. Test results must indicate that the total lead levels are less than 1000 ppm (<0.1 percent) to be allowed to be used on this Project. Test must be used for abrasives used in both shop and field abrasive blasting.
- E. The grade must be of such size as to achieve an acceptable anchor pattern or surface profile as required by the Coating Manufacturer.

- F. Silica sand may not be used as a blast abrasive.

### **3.00 EXECUTION**

#### **3.01 GENERAL**

- A. All materials must be handled and applied in accordance with the Coating Manufacturer's recommendations.
- B. No coatings may be applied while water is in the reservoir.
- C. All coating material for the exterior topcoat must be mixed from one batch number. Batching should occur so that the shelf life extends beyond the end of the Project.
- D. All blasting and coating equipment must be in first class condition and comply with all recommendations of the Coating Manufacturer and these specifications. The Owner reserves the right to have the Contractor immediately repair, modify or remove equipment functioning poorly or creating a nuisance as determined by the Owner.
- E. Do not apply any coating to machinery, piping, or other surfaces before testing has been completed and systems approved. Any damage to coatings resulting from subsequent corrective procedures must be stripped back to bare metal and repainted with the appropriate paint system as directed by the Engineer.
- F. Surfaces which will be inaccessible after installation must be coated prior to installation or must be coated and approved in stages as the work is installed.
- G. At least 7 days must be allowed for drying of finished surfaces before any machinery can be placed into service.
- H. Do not apply coating over nameplates or other identification plaques. Mask such plates and keep protected. Remove tape and polish nameplates after painting is complete.
- I. Coating application procedures must conform to the standards of craftsmanship as discussed in the Steel Structures Painting Manual, Volume 1 "Good Painting Practice".
- J. All thinning must be as per the Coating Manufacturer's recommendations. Use only those thinners expressly approved by the Manufacturer for the coatings used on this Project. All thinners used with interior surface coatings must be those tested and approved by NSF in conjunction with the NSF approved coating materials. Do not allow thinners to be stored in unmarked containers at any time.
- K. Proper illumination equipment must be provided by the Contractor in accordance with SSPC Guide 12. Explosion-proof lights and electrical equipment must be provided. Whenever required by the Owner's representative and/or Owner, the Contractor must provide additional illumination and necessary supports to cover all areas to be inspected. The level of illumination for inspection purposes will be determined by the Owner's representative or Owner. Project lighting must not interfere with existing residences or schools. Complaints from adjacent residential neighbors will require Contractor to modify lighting plan to address complaint. Project lighting is considered subsidiary work relating to various bid items of the Contract.
- L. The Contractor must provide covers and plugs for the intake, discharge and drain piping at the point where the pipe enters the water compartment to prevent debris, or any other foreign matter from entering the water mains. The covers and plugs must remain in place from beginning of the job until just prior to filling the reservoir for disinfection.

- M. Grating or grills must be securely attached to all openings not otherwise secured at the end of work each day until work commences again. Gratings or grills must be used on all openings until the reservoir is secured for service. Grates or grills must be of at least 1/4-inch wire mesh, with a minimum of two (2) square inch mesh openings and a maximum of six square inch openings, to allow adequate free air passage and reservoir protection.
- N. The Engineer must approve surfaces for application of coatings at each stage. Any material that is coated prior to the Engineer's approval must be stripped back to bare metal and repainted.
- O. Cleaning and coating must be scheduled such that dust and other materials from adjoining work will not contaminate wet or newly coated surfaces.
- P. Roof plates must be jacked off rafters as required to abrasive blast and coat between the rafters and roof plates. Contractor is responsible for any damages to the tank and structural members resulting from point loading or over jacking the roof. Contractor must use swivel or angle tips to allow abrasive blasting and coating between rafter and roof plates and other tight areas not accessible with straight tips.
- Q. Where inspection shows that the specified thickness is not developed, apply additional coats to produce the required dry film thickness.
- R. Stainless steel may be welded to the tank. Exterior coating system must be applied 6 inches onto any stainless steel materials welded to the tank. The stopping point on the stainless steel surfaces that are to be coated must be masked with painter's tape. The tape must be removed after the coating has dried to a soft consistency, but before it is cured.
- S. The Contractor may install painter's nipples in the roof of the tank for supporting staging on the interior of the tank. The nipples must remain a part of the tank after construction is complete. Nipples are to be constructed of 316 stainless steel and coated with the specified coating system. Contractor must submit Shop Drawings for the nipples, the location of the nipples and a narrative on how the nipples will be prepared for interior coatings.
- T. All applicable equipment must be electrically grounded as required and must have clean operating gauges, moisture traps, etc.
- U. Effective oil and water separators combined with after coolers or deliquescent dryers must be used in compressed air lines serving abrasive blasting operations to remove detrimental oil and moisture from the air. Compressors may be tested periodically by the Owner's representative for oil and water contamination of compressed air per ASTM D4285. All compressor units found to produce unacceptable amounts of oil and or water must be replaced with a compressor that is acceptable.

### 3.02 SURFACE PREPARATION

- A. Shop Surface Preparation: Clean and degrease surfaces prior to abrasive blasting to SSPC-SP 1 Solvent Cleaning. Methods described in SSPC SP-1 include solvents, detergent/water, emulsions, and steam. Proposed method must be documented in the coating plan. Contractor must contain and properly dispose of all runoff and debris from cleaning. Prepare surfaces by abrasive blasting as specified and apply shop prime coat. Shop primed steel plates must not have primer extended within 4 inches along all edges to be welded. All primer within 4 inches of an area to be welded must be removed prior to welding. Welding of painted services will not be allowed.

B. Field Surface Solvent Cleaning:

1. Clean and degrease surfaces prior to abrasive blasting to SSPC-SP 1 Solvent Cleaning. Methods described in SSPC SP-1 include solvents, detergent/water, emulsions, and steam. Proposed method must be documented in the coating plan. Contractor must contain and properly dispose of all runoff and debris from cleaning. Remove heavy deposits of grease or oil from the surface prior to any other surface preparation. Neutralize and flush chemical contamination prior to any surface preparation.
2. All weld slag, spatter, rough welds and other sharp or rough areas must be removed. All rusted, abraded and unpainted areas must be abrasive blast cleaned as specified. Touch up prime coat with primer as specified. Contractor must contain and properly dispose of all runoff and debris from cleaning.

C. If the following conditions exist or are prevalent, surface preparation and coating must be delayed or postponed until conditions are favorable. Each day's coating must be completed in time to permit the film sufficient drying time prior to damage by atmospheric conditions or changes. No surface preparation may begin or coating applied:

1. When the surface, air or material is below or above the Manufacturer's printed instructions.
2. When surfaces are wet or damp.
3. During weather conditions of rain, snow, fog or mist.
4. When the air and steel temperature is less-than or equal to 5° F above the dew point temperature.
5. If the relative humidity is above 85 percent.
6. When it is expected that the air and/or surface temperature will be below or above the Coating Manufacturer's recommended temperatures within 4 hours after applications of coating, minimum. Coating Manufacturer may require additional time between application and temperature and weather changes.

D. All pre-assembled shop primed items must be prepared in accordance with these specifications and inspected by the Owner's representative before and after priming.

E. For both immersion and non-immersion service, all sharp edges and welds must be ground smooth to a rounded contour and all weld splatter must be removed prior to abrasive blasting. Edges of metal to be coated must be rounded to a minimum of 1/16-inch radius of chamfered a minimum of 1/16 inch at an angle of 45 degrees.

F. Weld profiles must conform to NACE RP0178, Profile 'D'.

G. Abrasive Blasting:

1. Prior to extensive abrasive blasting operations, the Contractor must perform a test blast on both the exterior and interior of the tank in the presence of the Engineer or Owner's representative. Test section must be a minimum of 5 feet by 5 feet. The Engineer or Owner's representative must verify that the surface cleanliness and profile meet the requirements of the specification and meet the Coating Manufacturer's requirements for the coating to be applied. If the test section does not meet the requirements, the Contract must make changes to the abrasive materials and methods to provide suitable blast.
2. Abrasive blast only the amount of surface area which can be primed the same day or before any rust starts to form, whichever occurs first. Areas which are not painted the same day must be re-blasted on the day the prime coat is applied.

3. Blasting abrasive may be left on the tank floor while painting the interior roof and walls provided no paint is applied to the walls within 10 feet of the floor.
  4. Shrouding or recovery of all blast material will be mandatory during all exterior blasting.
    - a. The TCEQ has established, under Regulation I, Control of Air Pollution and Visible Emissions from Particulate Matter, Standard 30 TCEQ 111.131, 111.133, 111.135, 111.137, and 111.139 titled "Abrasive Blasting of Water Storage Tanks Performed by Portable Operations". All work must be performed in accordance with these regulations and are hereby made part of this Section by reference.
    - b. Contractor must provide written notification of activities to the Air Section Manager at the applicable TCEQ Regional Office and any local authorities having jurisdiction over abrasive blasting activities. Refer to 30 TAC 111.135(b).
  5. The Contractor must contain all waste and process discharge in accordance with the accepted methods for the process and materials that are in abatement.
  6. Air filtration/dust collectors must be used in conjunction with the dehumidification and/or ventilation equipment during blasting operations.
  7. Where abrasive blast cleaning will not remove or properly prepare metal surfaces, hand and/or power tool cleaning must be used to remove such conditions as weld splatter, laminations and radius-sharp edges. Hand tool or power tool must be used on areas less than 2 feet in diameter or smaller or on corners and edges of the reservoir and its internal support members.
  8. All abrasive blast equipment must be equipped with, including but not limited to the following:
    - a. Noise reducing devices.
    - b. Hose coupling safety devices.
    - c. Electrical grounding devices.
    - d. Moisture traps and filters.
    - e. Fresh air hoods for all blasters.
    - f. "Dead Man" switches on all blast hoses.
    - g. Air Dryers.
  9. Alternate Methods: Alternate removal methods must have prior written approval by the TCEQ Air Program prior to submittal to the Owner for consideration.
- H. Surface profile must be in accordance with the Manufacturer's printed requirements.
- I. The adequacy of the preparation of surfaces must be determined by comparing the surface with SSPC VIS 1, SSPC VIS 3, SSPC VIS 4 and NACE RP0178.
- J. The requirements for preparing carbon steel for painting apply to stainless steel, with the exception that the Contractor must not use metallic abrasives on stainless steel.

### 3.03 APPLICATION

- A. After abrasive blast cleaning, dust and spent abrasive must be removed from the surfaces by air blasting and brush sweeping. The prime coat must be applied as soon as possible after the blasting and surface cleaning is completed, inspected and approved by the Inspector.

- B. Blasted surfaces must be coated before rust forms on the surface. No prepared surface will be allowed to receive a coating if “rust bloom” or surface discoloration has occurred. All blasted surfaces must be coated to within 6 inches of the edge of a blasted area. No visible rust must be coated under any circumstances, including rust bloom or if discoloration has occurred, regardless of elapsed time between blasting and coating.
- C. Provide mist coat if recommended by the Coating Manufacturer.
- D. The Contractor must apply each coat at the rate and in the manner specified by the Coating Manufacturer, except as may be modified herein. If material has thickened or must be diluted for application, coating must be built up to the same dry film thickness as specified for each coat of the complete system.
- E. Maximum and minimum DFT must be per the supplied Coating Manufacturer’s printed requirements and as required by this Section. DFT will be measured per SSPC-PA 2, Level 2 with an allowable measurement of spot DFT of:
  - 1. Minimum DFT as specified, no less than the minimum specified will be accepted.
  - 2. 120 percent of maximum DFT specified.
- F. The Contractor and painting technicians will be responsible for application of coating system and must have current applicator certifications from the Coating Manufacturer. Submit certifications with coating submittal. Manufacturer must certify that coating system is compatible with the tank’s cathodic protection system.
- G. No coating may be used which has an expired shelf or pot life.
- H. Coating must be applied by skilled workmen and must be brushed out or sprayed evenly, without runs, crazing, sags, or other blemishes.
- I. Sand between coats to remove over spray and dry fall.
- J. Apply the first coat to the surface, including cutting in around edges, before the second coat is applied. The second coat and any successive coats must not be applied before notifying the Owner’s field representative and obtaining approval. Each coat must be tested before the successive coat is applied.
- K. The coating curing period must be adjusted to compensate for less than adequate weather conditions, as recommended by the Coating Manufacturer, for complete curing of the entire coating system. The full curing time recommended by the Manufacturer must be provided.
- L. Coating must be continuous and must be accomplished in an orderly manner to facilitate proper inspection control.
- M. Where a roller or brush is used to apply the coating, additional coats may be necessary to achieve the recommended dry film thickness and/or to achieve total coverage of the underlying surface. Coated surfaces must be totally free of all roller nap, roller marks, brush bristles and brush marks.
- N. When using conventional coating spray equipment for coating operations, effective oil and water separators combined with after coolers or deliquescent dryers must be used in compressed air lines to remove detrimental oil and moisture from the air. Separators must be placed as far as practical from the compressor. Compressors may be tested periodically by the Owner’s representative for oil and water contamination of compressed air. Testing must follow ASTM D4285 “Standard Test Method of Indicating Oil and Water in Compressed Air”. All compressor units found to produce unacceptable amounts of oil and or water, as

determined by results of ASTM D4285 test data and interpretation of data by the Owner's representative must be replaced with a compressor that is acceptable.

- O. To the extent possible, the interior and exterior of all piping entering through the walls of the reservoir tank must be blasted and recoated the same as their respective reservoir walls. The interior of piping entering through the reservoir floor must be blasted and recoated the same as the interior of the reservoir. Methods of recovering blast material from the inside of the pipes must be submitted and approved by the Owner.
- P. Check for compatibility when applying coatings over existing coatings. Apply a test patch of the recommended coating system, covering at least 2 to 3 square feet or as directed by the Engineer. Allow to cure 1 week before testing adhesion per ASTM D3359 in the presence of the Engineer. If adhesion does not meet the Manufacturer's published data, consult with the Engineer.

### 3.04 100 PERCENT SOLIDS INTERIOR LINING SPECIAL SURFACE PREPARATION

- A. Coatings must not be applied to flash rusted surfaces or to existing coatings.
- B. All weld seams, gaps, edges, bolts and difficult areas difficult to coat must receive an initial spray applied stripe coat of the high solids coating just before application of the liner over the entire surface.
- C. Geo-Textile Fabric:
  - 1. Contractor must apply geo-textile fabric over sharp edges, areas of pitting as determined by the Engineer, over bolted and gasketed seams and other locations determined by the Engineer.
  - 2. Contractor is to stripe coat the area to be treated. Place pre-cut length of fabric and press evenly into coating. "Heat-set" side of fabric is to be facing out, i.e. "fuzzy" side towards the steel. Fabric is to be embedded in the stripe coat and then encapsulated as the same time as the rest of the structure. Exposed fabric fibers, edges or other discontinuities are not acceptable.
- D. Backer-Rod: In unsealed joints, corners and gaps, fill gaps with backer rod. Backer rod is to be packed into gaps after stripe coat of the area and then coated with final coat.
- E. Contractor must provide primer over pitted or corroded areas per the Coating Manufacturer's recommendation and as approved by the Engineer. No separate pay.

### 3.05 STRIPE COAT

- A. Stripe coat must be applied by brush and thinned according to written Coating Manufacturer's recommendations and applied to all welds, weld seams, tack welds (new and old), edges, bolts, rivets, ladder rails and rungs, seamed corners, joints of any kind and locations where brackets, lugs and other difficult to coat surfaces exist. Stripe coat on all welds and weld seams must extend 2 inches minimum above, below and beyond all welded sections.
- B. Stripe coat must occur in coating system layering as stated in Coating Schedule.
- C. Stripe coat is accomplished by moving the brush back and forth in a scrubbing motion working primer into all crevices. Stripe coat must be performed with a high-quality bristle brush using primer that has been thinned according to the Manufacturer's instructions. Bristles left on the surface must be removed before the coating dries. If bristles are

discovered after the coating has dried, the bristle must be removed, the coating removed, and the area correctly re-coated at no additional cost to the Owner.

D. Stripe coating must be tinted such that it can be easily distinguished from the other coats.

### 3.06 FINISH

A. All primer, intermediate and finish coats must be inspected visually and must be free of all sags, runs, bubbles, drips, waves, laps, unnecessary brush marks, over spray, environmental contaminants or other physical defects, including shadows, and be uniform in color, texture and gloss. All coatings must be applied in a professional manner to achieve the specified dry film thickness (DFT) leaving a smooth and uniform coating.

B. Prior to application of the intermediate and finish coats, exterior surfaces must be thoroughly waterjet cleaned to remove any surface contamination in accordance with the Coating Manufacturer's recommendations.

C. Sand between coats to remove over spray and dry fall.

D. Finish coat must have a uniform color and texture. Any "bleed through" will not be accepted and Contractor must provide additional coatings as required to provide a uniform color at no additional cost to the Owner.

E. Apply caulk in accordance with the Manufacturer's recommendation. After application of the finish coat on the interior of the reservoir, apply caulking to seal roof laps, skip welded roof rafters, around bolts and on bolt threads and other areas not seal welded.

### 3.07 ANTI-GRAFFITI COATING

A. Provide anti-graffiti coating on tank concrete pedestal as indicated on the plans. If not indicated on the plans, coating is to extend a minimum of 1-foot below to 16-feet above finished grade.

B. Coating is to be applied per the manufacturer's written directions.

### 3.08 SLIP-RESISTANT ADDITIVE

A. Provide slip-resistant additive to finish coating for areas indicated on the plans. If not indicated on the plans, provide additive for all areas within roof guardrails, 3-feet around the center vent and provide 3-foot paths connecting appurtenances on the roof.

B. Contractor must provide mock panels on cardboard or other material to demonstrate the pattern and roughness to be provided for Engineer review prior to application.

C. Coating is to be applied per the manufacturer's written directions.

### 3.09 PROTECTION OF EXISTING STRUCTURES

A. The Contractor must take every precaution available while cleaning and coating the reservoir and pedestal to avoid dusting or spraying the reservoir property, nearby residences and vehicles with either blast debris or over-spray coating. Shrouding is mandatory for exterior abrasive blasting and for spray application of coatings. All shrouding, containment and disposal of waste will be in conformance with TCEQ Requirements. The Contractor will be responsible for properly loading, securing, transporting and disposing of all waste.

B. If, in the opinion of the Owner's representative, modifications or repairs are necessary to the shroud or ground cover apparatus to provide improved containment of blasting or coating

operations, blasting and coating operations must stop until the Owner's representative indicates to the Contractor that adequate repairs are complete.

- C. Prior to any surface preparation, the ground surrounding the reservoir and pedestal must be covered with tarps or a similar ground cover that will allow for recovery of paint scraps and blast media. Adequate protection of all areas surrounding the tank must be provided during coating application.
- D. The Contractor is responsible for complete cleanup of any and all areas contaminated by blast debris.
- E. The Contractor is responsible for any and all damages to on-site facilities, residences, vehicles and/or public health, including any fines or penalties resulting from improper containment during blasting or coating of the reservoir and pedestal.
- F. If present at the Site, all security equipment (light poles, camera poles, microwave beam poles, etc.) must be protected by construction of temporary fences or barricades around above ground devices. Four feet must remain clear of construction materials and activities around all security equipment devices.
- G. Protect adjacent materials from damage, including over spray or spillage. Provide drop cloths or other protective tarps to cover floors, equipment or other adjacent materials.

### 3.10 CLEAN AND ADJUST

- A. Promptly remove trash and debris resulting from painting operation from the Site. Remove drop cloths, masking tapes and other protective coverings. Remove paint spills, splatters, overlap of paint from adjacent material and other defects. Spot paint nicks and other defects.
- B. Remove paint containers and waste products. Thoroughly clean paint storage rooms, removing spilled paint from walls and floors.

### 3.11 ANNIVERSARY INSPECTION

- A. The Owner and Contractor must observe all surfaces of the reservoir within 11 to 23 months after the reservoir work has been accepted for Substantial Completion and placed in service to establish if remedial work is required. If the water utility is not able to remove the tank from service for the inspection or for any repair work, due to adverse weather conditions, drought or system limitations, the inspection or repair work may be delayed by the Owner for up to 16 months at no additional cost. All repair work must be conducted within a schedule approved by the Owner.
- B. If failures in any portion of the reservoir surface, exceeds 5 percent of that portion, as determined by the Owner, then for that portion, the entire coating system must be completely removed, re-coated and re-tested in accordance with the specifications herein. In the event any portion of the reservoir surface requires repair, partial or complete, a second anniversary observation must be made unless the Owner otherwise deems it not to be necessary. If subsequent anniversary observations are made, time stipulations, coating removal, repair; re-testing requirements must be the same as provided for in this Specification. Each subsequent repair will have a warranty observation to occur within 24 months after the repair is completed.
- C. The Owner will isolate the reservoir from the distribution system and drain the reservoir. The Contractor must open, clean out, high-pressure water wash and rinse the tank prior to the anniversary observation. After observation of the tank is complete and repair work accepted by Owner, the Contractor must follow disinfection procedures specified.

- D. The Contractor must provide suitable and adequate equipment including, lighting, ventilation, rigging, cable climbers, mirrors, inspection equipment, and sufficient man-power to clean, disinfect and move equipment and tools around the reservoir, etc., as may be necessary to facilitate complete observation of all interior surfaces. The Contractor must bear all costs of the anniversary observation and must incorporate such costs into its Bid.
- E. Any location, including but not limited to locations where a coating has peeled off, bubbled, blistered, chipped, or cracked, etc., or where pinholes and/or holidays are present and locations where rusting or corrosion is evident, will be considered a failure or defect of the coating system and must be repaired as required. Repairs will be made at areas or locations where coating failures are found, even though metal surfaces may be protected by a cathodic protection system.
- F. Methods of testing for coating failure which, may or may not be evident, must include, but not be limited to, adhesion tests, film thickness measurement, holiday testing, etc. Testing may be non-destructive or destructive. The Contractor, at its own expense, must repair all areas where destructive tests are performed.
- G. The anniversary repair work must be completed within an agreed time as determined by the Owner and Contractor. All repairs must be made as per the Coating Manufacturer's written repair work instructions or that which is approved and acceptable to the Owner and completed within 90 calendar days of the anniversary observation.

**CITY OF SAN ANTONIO GENERAL NOTES (CONTINUED)**

- IF SUSPECTED CONTAMINATION IS ENCOUNTERED DURING CONSTRUCTION OPERATIONS, C.O.S.A. SHALL BE NOTIFIED IMMEDIATELY WHEN CONTAMINATED SOILS AND/OR GROUNDWATER ARE ENCOUNTERED AT LOCATIONS NOT IDENTIFIED IN THE PLANS. THE NOTIFICATION SHOULD INCLUDE THE STATION NUMBER, TYPE OF CONTAMINATED MEDIA, EVIDENCE OF CONTAMINATION AND MEASURES TAKEN TO CONTAIN THE CONTAMINATED MEDIA AND PREVENT PUBLIC ACCESS. THE CONTAMINATED SOIL AND/OR GROUNDWATER SHALL NOT BE REMOVED FROM THE LOCATION WITHOUT PRIOR C.O.S.A. APPROVAL. THE CONTRACTOR MUST STOP THE EXCAVATION IMMEDIATELY AND CONTACT THE C.O.S.A. INSPECTOR. THE CONTRACTOR CANNOT BEGIN EXCAVATION ACTIVITIES WITHOUT WRITTEN PERMISSION FROM THE CITY.
- CONTRACTOR IS TO INCLUDE A MAILBOX POST BLOCKOUT FOR VACANT LOTS AND ALL RESIDENCES WHICH DO NOT HAVE MAILBOXES AT THE CURB. BLOCKOUTS ARE PROVIDED FOR FUTURE USE BY THE POST OFFICE.
- CONTRACTOR SHALL NOT REMOVE OR ADJUST ANY VIA FACILITIES. THE CONTRACTOR MUST CONTACT VIA FOURTEEN DAYS PRIOR, FOR THE REMOVAL OF BENCHES, STOP POLES OR ANY OTHER VIA FACILITIES THAT MAY BE PRESENT. PLEASE PROVIDE THIRTY DAYS PRIOR NOTICE FOR SHELTER REMOVAL (TELEPHONE NOS: (210) 362-2155 OR (210) 362-2096). THE CONTRACTOR WILL BE LIABLE FOR ANY DAMAGES TO VIA FACILITIES NOT REMOVED BY VIA. THE CONTRACTOR IS REQUIRED TO REPLACE ALL FLATWORK REMOVED OR DAMAGED IN THE COURSE OF EXECUTING THE CONTRACT UNLESS OTHERWISE NOTED BY VIA. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING VIA FACILITIES IF ADJACENT TO WORK AREA.
- CONTRACTOR SHALL NOTIFY THE CITY OF SAN ANTONIO DEPARTMENT OF TRANSPORTATION & CAPITAL IMPROVEMENTS RIGHT-OF-WAY MANAGEMENT OFFICE AT (210-207-6949) 48 HOURS BEFORE STARTING WORK ON THIS PROJECT.

**TREE PROTECTION AND PRESERVATION GENERAL NOTES**

- NO UTILITY OR STREET EXCAVATION WORK SHALL BEGIN IN AREAS WHERE TREE PRESERVATION AND TREATMENT MEASURES HAVE NOT BEEN COMPLETED AND APPROVED.
- TREE PROTECTION FENCING SHALL BE REQUIRED. TREE PROTECTION FENCING SHALL BE INSTALLED, MAINTAINED AND REPAIRED BY THE CONTRACTOR DURING SITE CONSTRUCTION. DURING CONSTRUCTION ACTIVITY, AT LEAST A SIX-INCH LAYER OF COARSE MULCH SHALL BE PLACED AND MAINTAINED OVER THE ROOT PROTECTION ZONE (NO SEPARATE PAY ITEM).
- THE CONTRACTOR SHALL AVOID CUTTING ROOTS LARGER THAN ONE INCH IN DIAMETER WHEN EXCAVATING NEAR EXISTING TREES. EXCAVATION IN THE VICINITY OF TREES SHALL PROCEED WITH CAUTION. THE CONTRACTOR SHALL CONTACT THE CITY INSPECTOR FOR GUIDANCE.
- ROOTS WILL BE CUT WITH A ROCK SAW OR BY HAND, NOT BY AN EXCAVATOR OR OTHER ROAD CONSTRUCTION EQUIPMENT.
- ALL CURB AND SIDEWALK WORK SHALL USE ALTERNATIVE CONSTRUCTION METHODS TO MINIMIZE EXTENSIVE ROOT DAMAGE TO TREES (REFER TO DETAILS).
- EXPOSED ROOTS SHALL BE COVERED AT THE END OF THE DAY USING TECHNIQUES SUCH AS COVERING WITH SOIL, MULCH, OR WET BURLAP.
- NO EQUIPMENT, VEHICLES OR MATERIALS SHALL OPERATE OR BE STORED WITHIN THE ROOT PROTECTION ZONE OF ANY TREE NEAR THE PROJECT. ROOT PROTECTION ZONE IS 1 FOOT OF RADIUS PER INCH OF TREE'S DIAMETER. A 10-INCH DIAMETER TREE WOULD HAVE A 10 FOOT RADIUS ROOT PROTECTION ZONE AROUND THE TREE. ROOTS OR BRANCHES IN CONFLICT WITH THE CONSTRUCTION SHALL BE CUT CLEANLY ACCORDING TO PROPER PRUNING METHODS. OAK WOUNDS SHALL BE PAINTED OVER WITHIN 30 MINUTES TO PREVENT OAK WILT.
- SAPLINGS, SHRUBS OR BUSHES TO BE CLEARED FROM THE PROTECTED ROOT ZONE AREA OF A LARGE TREE SHALL BE REMOVED BY HAND AS DESIGNATED BY THE INSPECTOR.
- NO WIRES, NAILS OR OTHER MATERIAL MAY BE ATTACHED TO PROTECTED TREES.
- TREES, TREE LIMBS, BUSHES AND SHRUBS LOCATED IN THE CITY STREET OR ALLEY RIGHT-OF-WAY OR PERMANENT EASEMENTS WHICH INTERFERE WITH PROPOSED CONSTRUCTION ACTIVITIES SHALL BE PROPERLY PRUNED FOLLOWING THE ANSI A-300 STANDARDS FOR PRUNING. ALL TREE PRUNING SHALL BE COMPLETED BY A CITY OF SAN ANTONIO TREE MAINTENANCE LICENSED CONTRACTOR (ARTICLE 21-171, CITY CODE) ONLY AFTER APPROVAL FROM THE CAPITAL PROJECTS MANAGEMENT THROUGH THE INSPECTOR.
- NO EXCESSIVE TREE TRIMMING WILL BE PERMITTED.
- ALL DEBRIS GENERATED BY THE PRUNING AND TRIMMING OF THE TREES AND/OR BUSHES SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF PROPERLY (NO SEPARATE PAY ITEM).
- TREES MUST BE MAINTAINED IN GOOD HEALTH THROUGHOUT THE CONSTRUCTION PROCESS. MAINTENANCE MAY INCLUDE, BUT NOT LIMITED TO: WATERING THE ROOT PROTECTION ZONE, WASHING FOLIAGE, FERTILIZATION, PRUNING, ADDITIONAL MULCH APPLICATIONS AND OTHER MAINTENANCE AS NEEDED ON THE PROJECT.
- ANY TREE REMOVAL SHALL BE APPROVED BY THE CITY ARBORIST. (207-0278)
- TREES WHICH ARE DAMAGED OR LOST DUE TO THE CONTRACTOR'S NEGLIGENCE DURING CONSTRUCTION SHALL BE MITIGATED TO THE CITY'S SATISFACTION.
- TREE PLANTING FOR MITIGATION OR ENHANCEMENT: ALL PLANTED TREES SHALL BE MAINTAINED IN A HEALTHY CONDITION AT ALL TIMES. THIS INCLUDES IRRIGATION, FERTILIZING, PRUNING AND OTHER MAINTENANCE AS NEEDED ON THE PROJECT. TREES THAT DIE WITHIN TWELVE (12) MONTHS SHALL BE REPLACED WITH A TREE OF EQUAL SIZE AND SPECIES.

**ACCESSIBILITY REQUIREMENTS**

- THE CONTRACTOR SHALL PROVIDE AND MAINTAIN VEHICULAR AND PEDESTRIAN ACCESS AT ALL TIMES TO LOCAL RESIDENCES AND BUSINESSES.
- WHEN THE WORK REQUIRES THE EXCAVATION OF THE STREET AND THE REMOVAL OF THE EXISTING DRIVEWAY APPROACHES AND SIDEWALKS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY ALL-WEATHER ACCESS TO THE BUSINESSES AND RESIDENCES. THE TEMPORARY DRIVEWAY APPROACHES SHALL BE CONSTRUCTED WITH FLEXIBLE BASE OR

GRAVEL MATERIAL AT NO SEPARATE COST TO THE CITY.

- PRIOR TO INITIATING THE CONSTRUCTION OF NEW DRIVEWAY APPROACHES, THE CONTRACTOR SHALL GIVE ADVANCE WARNING IN PERSON, OR IN WRITING, OF AT LEAST 48 HOURS TO EACH RESIDENCE THAT WILL BE IMMEDIATELY AFFECTED, SO THAT ALTERNATE PLANS MAY BE MADE BY THE RESIDENTS.
- FOR BUSINESSES WITH MORE THAN ONE DRIVEWAY, AT LEAST ONE DRIVEWAY SHALL REMAIN OPEN WHILE THE OTHER NEW DRIVEWAY APPROACHES ARE CONSTRUCTED. FOR BUSINESSES WITH ONLY ONE DRIVEWAY, THE NEW DRIVEWAY APPROACH SHALL BE CONSTRUCTED IN HALF WIDTHS, UNLESS A TEMPORARY ASPHALT DRIVEWAY IS FIRST INSTALLED AT NO SEPARATE COST TO THE CITY.

**STORM WATER NOTES**

- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN ALL REQUIRED STORM WATER PERMITS, FEES, AND APPROVALS. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PERMITS REQUIRED FOR CONSTRUCTION IN DRAINAGE EASEMENTS, RIGHT-OF-WAYS, AND FLOODPLAINS.
- THE CONTRACTOR SHALL NOTIFY STORM WATER ENGINEERING AT LEAST 24 HOURS PRIOR TO THE INSTALLATION OF ANY DRAINAGE FACILITY WITHIN A DRAINAGE EASEMENT OR STREET RIGHT-OF-WAY NOT INDICATED ON THE CONSTRUCTION PLANS.
- THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING EXISTING DRAINAGE FACILITIES FROM DAMAGE. ANY DAMAGE TO EXISTING DRAINAGE SYSTEMS, WHETHER OR NOT SHOWN ON THE PLANS, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR AT HIS EXPENSE. THE CONTRACTOR SHALL NOTIFY STORM WATER ENGINEERING AT 210-207-8052 AS SOON AS CONFLICTS WITH UTILITIES ARE ENCOUNTERED OR ANY DRAINAGE SYSTEM IS DAMAGED DURING CONSTRUCTION.
- CONSTRUCTION SPOILS WILL NOT BE ALLOWED TO BE DEPOSITED ANYWHERE WITHIN A DRAINAGE EASEMENT, RIGHT-OF-WAY, OR FLOODPLAIN WITHIN THE LIMITS OF THE PROJECT AND SHALL BE DISPOSED OFFSITE IN COMPLIANCE WITH CURRENT APPLICABLE REGULATIONS.
- NO STRUCTURE, FENCES, WALLS, LANDSCAPING, OR OTHER OBSTRUCTIONS THAT IMPEDE DRAINAGE SHALL BE PLACED WITHIN THE LIMITS OF THE DRAINAGE EASEMENTS SHOWN ON THE CONSTRUCTION DOCUMENTS.
- UPON COMPLETION OF TRENCHING, THE AREA WILL BE BACKFILLED AND COMPACTED TO ITS ORIGINAL CONDITION. TRENCHES / BORE PITS TO BE OPEN AND UNATTENDED LONGER THAN 24 HOURS SHALL BE PROTECTED TO WITHSTAND ALL HYDRODYNAMIC AND HYDROSTATIC FORCES AND PREVENT DOWNSTREAM IMPACTS. TRENCHES / BORE PITS TO BE OPEN LONGER THAN 30 DAYS AFTER STARTING EXCAVATION SHALL BE BACKFILLED WITH A SEMI-PERMANENT REPAIR BACKFILL.
- IMPROVED SECTIONS OF STORMWATER PONDS WILL BE VEGETATED BY SEEDING OR SODDING. EIGHTY-FIVE PERCENT OF THE POND SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE OWNER WILL ACCEPT THE POND FOR MAINTENANCE.

**GENERAL NOTES**

- WITHIN THE LIMITS OF CONSTRUCTION AND/OR ACCESS TO THE PROJECT, THE CONTRACTOR WILL ENCOUNTER TRASH, DEBRIS, DUMPED OBJECTS, AND OTHER WASTE MATERIAL. THE CONTRACTOR WILL BE REQUIRED TO PROPERLY DISPOSE OF THESE MATERIALS AT AN APPROVED LOCATION. THIS WORK SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT COST.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING ANY DAMAGES DONE TO EXISTING LANDSCAPING AND DRAINAGE INLETS TO THE ORIGINAL CONDITION OR BETTER AT NO ADDITIONAL COST TO SAWS.
- CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD SAWS AND THE CONSULTANT HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF THE WORK ON THIS PROJECT, EXCEPTING FROM LIABILITY ARISING FROM SOLE NEGLIGENCE OF SAWS OR CONSULTANT.
- CONTRACTOR IS REQUIRED TO VERIFY PROJECT ELEVATIONS. "MATCH EXISTING" SHALL BE UNDERSTOOD TO SIGNIFY VERTICAL AND HORIZONTAL ALIGNMENT.
- THE CONTRACTOR SHALL FURNISH ALL ASSISTANCE REQUIRED OF HIM BY ALL INSPECTORS IN OBTAINING SAMPLES AT THE EXPENSE OF THE CONTRACTOR.
- ELECTRICAL LINES ARE LOCATED IN THE PROJECT AREA. THE ATTENTION OF THE CONTRACTOR IS DIRECTED TO STATE LAW (HEALTH AND SAFETY CODE, TITLE 9, SUBTITLE A, CHAPTER 752) CONCERNING CONSTRUCTION OPERATIONS IN THE VICINITY OF ELECTRICAL LINES AND THE NEED FOR EFFECTIVE PRECAUTIONARY MEASURES.
- CONTRACTOR SHALL MAINTAIN ACCESS TO PUBLIC AND PRIVATE FACILITIES DURING CONSTRUCTION. CONSTRUCTION ACTIVITIES SHALL BE COORDINATED WITH OWNER'S REPRESENTATIVE AND SAWS.
- CONTRACTOR TO ASSURE HIMSELF THAT ALL CONSTRUCTION PERMITS HAVE BEEN OBTAINED PRIOR TO COMMENCEMENT OF WORK. REQUIRED PERMITS THAT CAN ONLY BE ISSUED TO CONTRACTOR ARE TO BE OBTAINED AT THE CONTRACTORS EXPENSE.
- CONTRACTOR SHALL COORDINATE INTERRUPTIONS OF ALL UTILITIES AND SERVICES WITH APPLICABLE UTILITY COMPANY OF COMPANIES. ALL WORK TO BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY COMPANY OR AGENCY INVOLVED.
- CONTRACTOR SHALL LOCATE, PROTECT, AND MAINTAIN BENCHMARKS, MONUMENTS, AND CONTROL POINTS. RE-ESTABLISH DISTURBED OR DESTROYED ITEMS BY REGISTERED PUBLIC SURVEYOR IN THE STATE OF TEXAS AT NO ADDITIONAL COST TO SAWS.
- EXISTING PAVING, BUILDINGS, AND OTHER ITEMS SHOWN ON PLANS NOT SPECIFICALLY RELATED TO THE WORK OF THE CONTRACT ARE FOR INFORMATIONAL PURPOSE ONLY.
- ANY CHANGES OR REVISIONS TO THESE PLANS MUST FIRST BE SUBMITTED TO SAWS FOR REVIEW AND WRITTEN APPROVAL.
- NO SEPARATE PAY FOR ITEMS REQUIRED BY NOTES ON THIS SHEET, UNLESS INCLUDED ON PROPOSAL FORM.
- THE SAWS INSPECTOR WILL ADDRESS ALL LIMITS FOR CURB, SIDEWALK, AND TREE PROTECTION

BEYOND WHAT IS CONSIDERED INCIDENTAL TO NORMAL UTILITY CONSTRUCTION. ALL COMMUNICATION FROM THE CITY WILL BE COORDINATED THROUGH THE SAWS INSPECTOR. SAWS INSPECTOR WILL DETERMINE IF ADDITIONAL COMPENSATION IS WARRANTED IF LIMITS EXCEED INCIDENTALS.

- IN ALL AREAS WHERE AN EXISTING PAVED SURFACE (SUCH AS A ROADWAY, DRIVEWAY, OR SIDEWALK) ARE TO BE IMPACTED BY CONSTRUCTION THE CONTRACTOR SHALL SAW-CUT THE PAVED SURFACE, ASSURING CLEAN & STRAIGHT CUT TO FILL DEPTH OF THE PAVED SURFACE.
- IN ALL AREAS WHERE SIDEWALK, CURB, OR DRIVEWAY IS TO BE REPLACED, THE CONTRACTOR SHALL REMOVE AT NEAREST JOINT.
- CONTRACTOR WILL RESTORE ALL CONSTRUCTION AREAS TO THE EXTENT THEY ARE DISTURBED DURING CONSTRUCTION, TO THEIR PRIOR CONDITION AT NO ADDITIONAL COST TO SAWS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES AND STRUCTURES, WHETHER PRIVATE OR PUBLIC, PRIOR TO EXCAVATION. THE INFORMATION AND DATA SHOWN WITH RESPECT TO EXISTING UNDERGROUND FACILITIES AT OR CONTIGUOUS TO THE SITE IS APPROXIMATE AND BASED ON INFORMATION FURNISHED BY THE OWNERS OF SUCH UNDERGROUND FACILITIES OR ON PHYSICAL APPURTENANCES OBSERVED IN THE FIELD. THE OWNER AND ENGINEER SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OF COMPLETENESS OF ANY SUCH INFORMATION OR DATA; AND, THE CONTRACTOR, SHALL HAVE FULL RESPONSIBILITY FOR REVIEWING AND CHECKING ALL SUCH INFORMATION AND DATA, FOR LOCATING ALL UNDERGROUND FACILITIES, FOR COORDINATION OF THE WORK WITH THE OWNERS OF SUCH UNDERGROUND FACILITIES DURING CONSTRUCTION, FOR THE SAFETY AND PROTECTION THEREOF, AND REPAIRING ANY DAMAGE THERETO RESULTING FROM THE WORK, THE COST OF ALL WILL BE CONSIDERED AS HAVING BEEN INCLUDED IN THE CONTRACT PRICE. THE CONTRACTOR SHALL NOTIFY ANY AFFECTED UTILITY COMPANIES OR AGENCIES IN WRITING AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.

19. THIS PROJECT IS SUBJECT TO THE AMERICAN IRON AND STEEL (AIS) REQUIREMENTS OF FEDERAL LAW, INCLUDING FEDERAL APPROPRIATION ACTS AND SECTION 1452(A)(4) OF THE SAFE DRINKING WATER ACT (42 U.S.C. §300j-12(A)(4)), AS APPLICABLE. ALL IRON AND STEEL PRODUCTS FOR CONSTRUCTION, ALTERATION, MAINTENANCE, OR REPAIRS INCORPORATED IN THESE PLANS MUST BE PRODUCED IN THE UNITED STATES.

**NON-STANDARD WORKING HOURS**

- NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR WORK OUTSIDE OF STANDARD WORKING HOURS. WORK OUTSIDE OF STANDARD WORKING HOURS SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT.
- CONTRACTOR MAY OPT TO WORK DURING TIME PERIODS THAT ARE OUTSIDE OF NORMAL WORKING HOURS (NIGHTS, WEEKENDS). IF WORK OUTSIDE OF NORMAL WORK HOURS IS DESIRED, CONTRACTOR MUST NOTIFY SAWS INSPECTIONS AND THE PROJECT DESIGN MANAGER AT LEAST 72 HOURS IN ADVANCE OF NORMAL WORK HOURS.

**RECORDS**

- THE CONTRACTOR SHALL MAINTAIN A NEAT AND ACCURATE RECORD OF CONSTRUCTION FOR THE ENGINEER'S RECORDS EACH MONTH THAT ARE UP TO DATE AND AVAILABLE FOR REVIEW AT ALL TIMES BY SAWS OR DESIGN ENGINEER. THE CONTRACTOR SHALL PROVIDE ENGINEER WITH FULL SIZE REPRODUCIBLE MARKUPS THAT RECORD ALL CONSTRUCTION DEVIATING FROM THE PLANS.

**AT&T**

- THE CONTRACTOR SHOULD CALL FOR LOCATES THROUGH THE "ONE CALL" UTILITY LOCATE SERVICE (1-800-344-8377) 48 HOURS PRIOR TO CONSTRUCTION / EXCAVATION WORK. CONTRACTORS HAVE THE RESPONSIBILITY TO PROTECT AND SUPPORT TELEPHONE COMPANY POLES DURING CONSTRUCTION.

**CPS ENERGY NOTES**

- ELECTRICAL LINES ARE LOCATED IN THE PROJECT AREA. THE ATTENTION OF THE CONTRACTOR IS DIRECTED TO STATE LAW (HEALTH AND SAFETY CODE, TITLE 9, SUBTITLE A, CHAPTER 752) CONCERNING CONSTRUCTION OPERATIONS IN THE VICINITY OF ELECTRICAL LINES AND THE NEED FOR EFFECTIVE PRECAUTIONARY MEASURES.
- CALL CPS LOCATOR 48 HOURS BEFORE BEGINNING ANY EXCAVATION.
- THE FOLLOWING CPS CONTACT INFORMATION IS PROVIDED FOR THE CONTRACTOR'S USE: CPS LOCATOR - 210-353-4897 CUSTOMER ENGINEERING (OUTAGES & POLE BRACING) - 210-353-4050 RIGHT-OF-WAY (EASEMENT ACCESS) - 210-353-3686
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING CPS ENERGY OVERHEAD AND UNDERGROUND ELECTRIC FACILITIES ADJACENT TO WORK AREAS.
- DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.181, CPS ENERGY MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND CPS VALVES THAT ARE IN THE PROJECT AREA.
- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH CPS TO BRACE DISTRIBUTION POWER POLES IF GUY WIRES, ANCHORS, OR POLE SUPPORTS ARE IMPACTED.
- CONTRACTOR SHALL COORDINATE ALL BRACING AND RELOCATIONS WITH CPS ENERGY IMMEDIATELY AFTER THE NOTICE OF PROCEED HAS BEEN RECEIVED, BY NO MORE THAN 2 WEEKS. CONTRACTOR SHOULD NOTE THAT CPS ENERGY WILL NOT BEGIN WORK ON BRACING OR RELOCATIONS UNTIL PAYMENT HAS BEEN MADE TO CPS ENERGY.
- COORDINATION FOR POTENTIAL OUTAGE REQUESTS MUST BE MADE NO LESS THAN THREE (3) MONTHS IN ADVANCE WITH CPS ENERGY SYSTEM OPERATIONS. NO OUTAGES WILL BE CONSIDERED DURING PEAK SUMMER MONTHS (JUNE-SEPTEMBER).

**TRENCHLESS**

- THE CONTRACTOR SHALL SECURE ALL TUNNEL SHAFTS WITH SECURITY FENCING AND ALL PROPER SAFETY MEASURES.
- CONTRACTOR SHALL SUBMIT BORING/TUNNELING PLAN TO INSPECTOR AND ENGINEER FOR REVIEW AND APPROVAL. BORE/RECEIVING SHAFT LOCATIONS AND DIMENSIONS ARE FOR INFORMATIONAL PURPOSES ONLY.

**SUPPLEMENTARY**

- NO MORE THAN 200 LINEAR FEET OF TRENCH EXCAVATION IN ADVANCE OF THE UTILITY WILL BE ALLOWED AT A TIME.
- CONTRACTOR MUST CALL FOR BACKFILL INSPECTIONS.
- DENSITY REPORTS MUST BE SUBMITTED TO THE INSPECTOR WITHIN 24 HOURS OF TESTING.

RR	RR	App.	Freese And Nichols, Inc. Job No.
ADDENDUM #1	Revisions		SWB18277
7/30/21	Date	Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144	
No.			

Date: 7/29/2021  
Designed by: RR  
Drawn by: GHC  
Checked by: CAK  
Scale: N.T.S.



SAWS JOB NO. 16-6003  
DIETRICH ELEVATED STORAGE TANK  
GENERAL  
GENERAL NOTES II