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NOTICE TO CONTRACTORS
BID #1011-051
Prison Hill Water Tank #2 Construction Plans
PWP # CC-2010-378

July 14, 2010

Addendum No. 1

Please make the following additions/changes to the above referenced project.

Make the following changes to the Technical Specifications:

1. A. Remove Technical Specification 7005 "Chain Link Fencing" dated 12/31/00 and replace with revised Technical Specification 7005 dated 7/12/10. (***See attached***)

B. Remove Technical Specification 5005 "Steel Water Tank Interior Coating and Exterior Painting" dated 6/16/10 and replace with revised Technical Specification 5005 dated 7/13/10. (***See attached***)

C. Technical specification page TS-19, Section 3.7, change first sentence to say; "Fittings shall be PVC, or short body gray iron, or ductile iron conforming to ANSI A21.10 (AWWA C153 or C110)."

D. Technical specification page TS-19, Section 3.8.1.3 shall be changed to say; "Gaskets shall conform to ASTM D1330, Grade I, red rubber, full faced, 1/8" thick".

Make the following changes to the Plans;

2. Sheet C2/17. Horizontal Control Plan, Construction Notes #1 and #2:

A. The razor wire for the new fencing shall NOT be painted, or powder coated.

3. Sheet C11/17. "Altitude Valve Vault Details & Vault Equipment Material List":

A. See revised sheet C11/17 included with this addendum for minor changes to drawings and Vault Equipment Material List.

Clarifications;

4. A. The seismic Importance Factor shall be category IV.

B. There are no other tanks besides the new one being painted under this contract.

C. The solar panels are not part of this contract.

D. No “Glass fused to steel water tanks” are allowed.

E. The new Altitude Valve shall have a spring range of 5-40 feet of water.

F. The new pre-cast concrete altitude valve vault does not require inspection by an independent laboratory. All strength, curing dates and re-bar placement shall be certified by in-house Engineers employed by the pre-casting company.

End of Addendum No. 1

CARSON CITY PURCHASING & CONTRACTS
TECHNICAL SPECIFICATIONS

Document No. 7005 CHAIN LINK FENCES (7/12/10)

1. General:

The work to be performed under this section shall be the construction and installation of a 6-foot chain link fence with 3 strands of barbed wire on top. Fence to stand 6 feet above grade. The fence shall be constructed and installed per this specification and as shown on the Plans.

The fence may be erected at any time after the earthwork, pipe work, and structures, to which the fence is related, have been completed. The fence shall be protected against damage and, if damaged, it shall be repaired to the satisfaction of Engineer prior to final acceptance.

2. Materials:

The chain link fence and gates shall be a USS Cyclone-Type I, Anchor Post Products, Inc., or equal. The components shall be as listed and specified below:

Fabric	
Height	6'0"
Mesh	2-inch
Size wire	9-gauge
Coating	Zinc coating
Coating specifications	ASTM A 392 - Class 1
Tensile strength	80,000 psi minimum

Barbed Wire	
Total number strands	3
Wires per strand	2
Size wires	12 gauge
Barbs	14-gauge, 4-point @ 4 inches o.c.

Coating	
Coating	Galvanized
Coating specifications	ASTM A 121 - Class 3
Style	Angled Outward

Top Rail (when required): 1-5/8-inch O.D. Sch. 40 pipe weighing 2.27 pounds per lineal foot galvanized

Tension Wire: 7-gauge galvanized coil spring wire

Line Post: 1 7/8” O.D. Sch. 40 pipe weighing 2.72 pounds per lineal foot, galvanized. Line posts shall be set 10’ on center maximum spacing. Concrete footing: 10” diameter, 30” depth.

Terminal, Corner etc: Terminal, Corner, Angle, and Pull Posts Size – 2 3/8” O.D. Sch. 40 weighing 3.65 pounds per lineal foot, galvanized. Concrete footing: 12” diameter, 36” depth.

Bracing: Terminal posts braced and trussed to the nearest line post with full 1 5/8" O.D. Sch 40 pipe weighing 2.27 pounds per lineal foot galvanized, and truss rod & indurtrial truss rod tightener.

Fittings: regular 12 guage X 3/4" – 5/16 X 1 1/4 bolt with nut brace band & galvanized carriage bolt, pressed steel rail-end cup, pressed steel 45 degree barbwire arm, pressed steel barbwire arm corner, 3/16" X 5/8" tension bar galvanized, regular 14 guage X 3/4" – 5/16 X 1 1/4 bolt with nut tension band and galvanized carriage bolt.

Tie Wire: 8 1/2" - 12 guage steel straight tie spaced 15" on center for line posts and 12" on center for rails.

Except where shown differently on the Plans, gate posts shall be as determined by the following schedule:

Gate Leaf Width (Feet)	Size OD (Inches)	Weight (lb/LF)
0 to 6	3	5.79
Over 6 to 13	4	9.11
Over 13 to 18	6 ⅝	18.75
Over 18	8 ⅝	24.70

Gate posts shall have vertical extension arms with 3 strands of barbed wire.

All posts, rails, and appurtenances shall be hot-dipped zinc coated steel per ASTM A 120, A 121, A 123, or A 153, whichever is applicable. Pipe posts shall have tops which exclude moisture. End, corner, and gate posts shall be braced with the same material as top rail and trussed to line posts with 3/8-inch rods and tighteners.

The fabric shall be connected to the line posts with 6-gauge hot-dip galvanized wire clips every 14 inches, to end, corner, and gate posts by using 1/4" x 3/4" stretcher bars tied to posts every 14 inches with 11-gauge, 1-inch wide, hot-dip galvanized steel bands and 3/8 inch diameter bolts and nuts, and to tension wires and top rail with 11-gauge hog rings every 24 inches.

Post top fittings shall have galvanized, 45 degree angle extension arms. Three barbed wire stands shall be carried on each extension arm with the top most wire 12" above the fabric. The top rail shall pass through the extension arm fitting.

A 7-gauge, galvanized coiled, spring tension wire shall be installed along the bottom of the fence fabric and at the top when the top rail is not shown on the Plans. Tension wire shall be attached with 9 guage steel hog ring spaced 12" on center.

Swing chain link gates shall be provided where indicated on the Plans. Gate frames shall be made of 2.00-inch O.D. galvanized pipe weighing 2.72 pounds per linear foot. Corner fittings shall be heavy pressed steel or malleable castings.

3. Construction:

3.1 Fence:

Chain link fence shall be located as indicated on the Plans. Finished fence shall be plumb, taut, true to line and grade and complete in all details. End, corner, slope, and gate posts shall be braces used as compression members and the said line posts trussed from the brace back to the bottom of the end, corner, slope, or gate post with 3/8 inch steel truss rods with turnbuckles or other suitable tightening devices used as tension members.

Unless otherwise specified, all fence shall be installed with a top rail and a bottom tension wire. When top rail is omitted, a top and bottom tension wire shall be used.

The fabric shall be placed on the outward facing side of the posts and shall be installed so that the top edge projects over the top rail of the fence. The fabric shall be stretched taut and securely fastened to the posts, the top rail and the bottom tension wire. The tension wire shall be installed parallel to the line of the fabric.

The fence shall follow the general finished grade of the ground and shall have pull posts at all points where required to conform to a change in grade. Space between the bottom of the fence and the finished groundline shall not exceed 3 inches. The ground shall be graded before fence posts are located to permit the grade of the fence to remain constant over any local elevations or depressions in the groundline. The surplus dirt, concrete, etc., shall be cleaned up and the grade dressed up after completion of the work.

Fence posts shall be set in concrete foundations at least 3 feet into the ground and shall be spaced not over 10 feet apart. Concrete shall be a minimum of 10 inches in diameter for line posts and 12 inches in diameter for corners and gates or 3 times the diameter of the post, whichever is greater. Solid rock is to be cored and grouted 2" annulus to 2' depth. Exposed concrete fence post caps shall be finished off in a workmanlike manner. A minimum of 1-inch of concrete shall be above the finished grade and shall be sloped to drain away from the post.

4. Swing Gates:

Except as otherwise shown or specified, all chain link fence gates shall be swing gates.

The corners of gate frames shall be fastened together and reinforced with a fitting designed for the purpose or by welding. All welds shall be ground smooth.

Chain link fence fabric shall be attached to the gate frame by the use of tension bars and tie wires as specified for fence construction, and suitable tension connectors spaced at approximately 16-inch intervals.

Gates shall be provided with a combination steel or malleable iron catch and locking attachment of approved design. Stops to hold gates open and a center rest with catch shall be provided where required.

END OF DOCUMENT 7005

CARSON CITY PURCHASING & CONTRACTS
TECHNICAL SPECIFICATIONS

Document No. 5005 STEEL WATER TANK INTERIOR COATING AND EXTERIOR PAINTING (7/13/10)

1. General:

1.1 Purpose:

The purpose of this specification is to establish methods and procedures for coating, painting and disinfecting new steel water storage tanks, and the repainting of existing steel water storage tanks.

1.2 Scope of Work:

Work to be performed includes application of protective coatings to interior surfaces, paints to the exterior surfaces and disinfection of interior surfaces. Work also includes surface preparation and other work necessary to accomplish the approved end result of a totally protected and usable structure. The surfaces referred to include the tank interior, the tank exterior including the entire above-grade tank plumbing, ladder, cage, hatch, safety fence, vents and guardrail and all tank appurtenances of the new or existing tank.

Prior to erection of steel water storage tanks, all surfaces made inaccessible after erection (except underside of bottom plates and tops of roof rafters and underside of the roof plates that will be in contact with roof rafters) shall be cleaned as specified herein and shall receive the coating/paint system for the specific area. This includes, but is not limited to, metal to metal contact areas, e.g. bolted joints, the underside of column bases and base plates and inaccessible areas such as interior and exterior of the overflow pipe, inlet/outlet pipe and vents.

2. Reference Specifications and Standards:

Without limiting the general aspects or other requirements of this specification, all work and equipment shall conform to applicable requirements of the Steel Structures Painting Council and manufacturer's printed instructions.

Engineer's decision shall be final as to interpretation and/or conflict between any of the referenced specifications and standards contained herein.

3. Contractor:

Contractor performing this work shall be a Nevada licensed Contractor, classification C-28(b). He shall have a minimum of five (5) years practical experience and successful history in the application of the specified products to surfaces of steel water storage tanks. He shall substantiate this requirement by furnishing a written list of references.

4. Pre-Construction Conference:

A Pre-Construction Conference shall be scheduled after the notice to proceed has been issued and prior to the start of blasting and coating operations. The purpose of this conference shall be to establish a working understanding between the parties and to discuss schedule, methods, inspection, access keys, security, etc.

5. Quality Assurance:

Quality assurance procedures and practices shall be utilized to monitor all phases of surface preparation, application and inspection throughout the duration of the project. Procedures or practices not specifically defined herein may be utilized, provided they meet recognized and acceptable professional standards and are approved by Construction Manager or his appointed Inspector.

6. Testing:

Construction Manager will make, or have made, such tests as he deems necessary to assure the work is being accomplished in accordance with the requirements of the Contract. In the event such tests reveal non-compliance with the requirements of the Contract, Contractor shall bear the cost of such corrective measures deemed necessary by Construction Manager, as well as the cost of subsequent retesting. It is understood and agreed the making of tests shall not constitute an acceptance of any portion of the work, nor relieve Contractor from compliance with the terms of the Contract.

7. Surface Preparation:

Surface preparation will be based upon comparison with: "Pictorial Surface Preparation Standards for Painting Steel Surfaces: SSPC-Vis 1 ASTM Designation D220, NACE Standard TM-01-70"; and as described below. Anchor profile for prepared surfaces shall be measured by using a non-destructive instrument such as a Keane-Tater Surface Profile Comparator or Testex press-O-Film System. Contractor shall provide said instrument for measuring anchor profile.

8. Application:

No coating shall be applied:

when the surrounding air temperature or the temperature of the surface to be coated is below 50 degrees F.

to wet or damp surfaces or in rain, snow, fog or mist.

when the temperature is less than 5 degrees F. above the dew point.

when it is expected the air temperature will drop below 50 degrees F. or less than 5 degrees F. above the dew point within eight (8) hours after application of coating.

when the wind speed is great enough to cause dust, dirt and plant debris to become air-born so they become attached to the new paint system.

Dew point shall be measured by use of an instrument such as a Sling psychrometer in conjunction with U.S. Department of Commerce Weather Bureau Psychrometric Tables or equivalent.

If above conditions are prevalent, coating application shall be delayed or postponed until conditions are favorable. The day's coating application shall be completed in time to permit the film sufficient drying time prior to damage by atmospheric conditions.

9. Thickness and Holiday Checking:

Thickness of coatings and paint shall be checked with a non-destructive, magnetic type thickness gauge. An instrument such as a Tooke Gage should be used if a destructive tester is deemed necessary. Coating integrity of all interior coated surfaces shall be tested with an approved inspection device. Holiday detectors shall not exceed the voltage recommended by the manufacturer of the coating system. For thicknesses between 10 and 20 mils a non-sudsing type wetting agent shall be added to the water prior to wetting the detector sponge. No pinholes or other irregularities will be permitted in the final coating.

10. Inspection Devices:

Contractor shall furnish, until final acceptance of coating and painting, inspection devices in good working condition for detection of holidays and measurement of dry-film thickness of coating and paints. Contractor shall also furnish U.S. Department of Commerce, National Bureau of Standards certified thickness calibration plates to test accuracy of thickness gauges. Dry film thickness gauges and holiday detectors shall be available at all times until final acceptance of application. Inspection devices shall be operated by, or in the presence of Construction Manager with location and frequency basis determined by Construction Manager.

Acceptable devices for ferrous metal surfaces include, but are not limited to k-D "Bird-Dog" and Tinker-Rasor —1 Holiday detectors for coatings to 20 mils dry film thickness; Tinker Rasor Models AP and AP-W holiday detectors for coatings in excess of 20 mils dry-film thickness, and "Inspector" or "Positest" units for dry film thickness gauging. Inspection devices shall be operated in accordance with the manufacturer's instructions.

11. Warranty Inspection:

Warranty inspection shall be conducted upon completion of all coating and painting work and after one (1) full year of service. All defective work shall be repaired and inspected in strict accordance with this Specification and to the satisfaction of Construction Manager.

11.1 Notification:

Construction Manager shall establish the date for the one (1) year inspection and reserves the right to coordinate the inspection with Carson City's normal water tank inspection program. This will allow Carson City up to ninety (90) calendar days past the one (1) year warranty to make all arrangements in order to perform the inspection and/or to drain the tank to allow Contractor to make the necessary interior repairs, if required.

11.2 Inspection:

The entire interior/exterior coating system shall be visually inspected as specified in subsection 5 Quality Assurance. Carson City shall make all arrangements to have the tank inspected by an independent certified professional water tank diving company. This company shall provide Carson City with two copies of it's report, one for Carson City and one for Contractor, which shall include photographs of key areas including ladder, rafters, roof support components, floor plates, etc. mapped out and described in sufficient detail. The report shall also include a recommendation of the repair work to be preformed. All defective, damaged or rusting areas shall be satisfactorily repaired and inspected at the sole expense of Contractor. All repaired areas shall then be electrically tested as specified in the above mentioned section. The entire exterior paint system shall be inspected as specified in subsection 5 Quality Assurance. All defective, damaged or rusting areas shall be satisfactorily repaired by and at the sole expense of Contractor.

11.3 Inspection Report:

After the inspection report covering the first anniversary inspection has been received by Carson City and Contractor, Contractor shall make arrangements to meet with Carson City to set forth the number and type of failures observed, the percentage of the surface area where failure has occurred and the names of the persons making the inspection.

11.4 Schedule:

Upon completion of the inspection and receipt of Inspection Report as noted herein, Carson City shall establish a date for Contractor to proceed with the remedial work. If the water tank requires internal repair work, the date will include a sufficient amount of time to allow Carson City to drain the tank of all water, open all access hatches and remove excess water from the tank floor. Any delay on the part of Contractor to meet the schedule established by Carson City shall constitute breach of this Contract and Carson City may proceed to have defects remedied as specified under the subsection 8.9 Warranty of the General Conditions.

11.5 Remedial Work:

Any location where coating or paint has peeled, bubbled, or cracked and any location where rusting is evident shall be considered to be a failure of the system. Contractor shall make repairs at all points where failures are observed by removing the deteriorated coating or paint,

cleaning the surface and re-coating or repainting with the same system. If the area of failure exceeds 25 percent of the total coated or painted surface, the entire coating or paint system may be required to be removed and re-coated or repainted in accordance with the original Specification.

11.6 Costs:

All noted costs for Contractor's inspection of all repair work shall be borne by Contractor. Contractor, in figuring his bid, shall include an appropriate amount for the inspection of any repair work; including re-testing and disinfection after all repairs have been completed, as no additional allowances will be paid by Carson City for said inspection and repair.

12. Safety and Health Requirements:

12.1 General

Ventilation, electrical grounding, and care in handling coatings, paints, solvents and equipment are important safety precautions during coating and painting projects. Contractor shall conform with safety requirements set forth by regulatory agencies applicable to the construction industry and manufacturer's printed instructions and appropriate technical bulletins and manuals. Contractor shall provide and require use of personal protective life saving equipment for persons working in or about the project site.

12.2 Access Facilities and Ventilation:

All ladders, scaffolding and rigging shall be designed for their intended uses. Ladders and scaffolding shall be erected where requested by Construction Manager to facilitate inspection and be moved by Contractor to locations requested by Construction Manager.

Where ventilation is used to control hazardous exposure, all equipment shall be explosion-proof. Ventilation shall reduce the concentration of air contaminant to the degree a hazard does not exist. Air circulation and exhausting of solvent vapors shall be continued until coatings have fully cured. Forced air ventilation during blast cleaning and coating application operations is mandatory.

12.3 Head and Face Protection and Respiratory Devices:

Equipment shall include protective helmets which shall be worn by all persons while in the vicinity of the work.

During abrasive blasting operations, nozzlemen shall wear air-supplied helmets and all other persons who are exposed to blasting dust shall wear filter-type respirators and safety goggles. Contractor shall provide two sets of filter-type respirators, air-supplied masks and safety goggles to be used by Inspection personnel.

All of the above mentioned devices shall be kept in good working order.

12.4 Grounding:

Blasting, spray and air hoses shall be grounded to prevent accumulation of charges of static electricity.

12.5 Illumination:

Spark-proof artificial lighting shall be provided for all work in confined spaces. Light bulbs shall be guarded to prevent breakage. Lighting fixtures and flexible cords shall comply with the requirements of NFPA 70 "National Electric Code" for the atmosphere in which they will be used.

Whenever required by Construction Manager, Contractor shall provide additional illumination and necessary supports to cover all areas to be inspected. The level of illumination for inspection purposes shall be determined by Construction Manager.

12.6 Toxicity:

The solvents used with specified protective coatings are explosive at low concentrations and are highly toxic. Because of toxicity, the maximum allowable concentration of vapor shall be kept below the maximum safe concentration for eight-hour exposure.

12.7 Protective Clothing:

Coating and paint materials may be irritating to the skin and eyes. When handling and mixing coating and paints, workmen shall wear gloves and eye shields.

12.8 Fire:

During mixing and application of coatings and paints, all flames, welding and smoking shall be prohibited in the vicinity. Appropriate type fire extinguishers shall be kept nearby.

12.9 Sound Levels:

Whenever the occupational noise exposure exceeds the maximum allowable sound levels, Contractor shall provide and require the use of approved ear protective devices for all persons exposed to the noise including Carson City and Construction Manager's personnel.

13. Coating and Paint Materials:

13.1 General:

Materials specified in subsection 14 Interior Coating Materials for New Water Tank Construction are those which have been evaluated for the specific service. Products of Engard Coating Corporation, Tnemec Company, Inc., and Koppers Company, Inc., are listed to establish a standard of quality. Standard products of manufacturers other than those specified will be accepted when it is proved to the satisfaction of Construction Manager they are equal in composition, durability, usefulness and convenience for the purpose intended. Substitutions will be considered provided the following minimum conditions are met:

The proposed coating or paint system shall have a dry film thickness equal to or greater than that of the specified system.

The proposed coating or paint system shall employ an equal or greater number of separate coats.

The proposed coating or paint system shall employ coatings or paints of the same generic type.

All requests for substitution shall carry full descriptive literature and directions for application, along with complete information on generic type, non-volatile content by volume and a list of 10 similar projects, all at least three (3) years old, where the coatings or paints have been applied to similar exposure.

If the above mentioned data appears to be in order, Construction Manager may require that Contractor provide certified laboratory data sheets showing the results of complete spectrographic and durability tests performed on the proposed substitute. Tests shall be performed by an independent testing laboratory satisfactory to Construction Manager and all costs incurred in the testing program shall be borne by Contractor.

In any case, Construction Manager shall be sole and final judge of the acceptability of any proposed substitution.

All materials shall be brought to the jobsite in the original sealed containers. They shall not be opened or used until Construction Manager has physically inspected the contents and obtained necessary data from information printed on containers or labels. Materials exceeding storage life recommended by the manufacturer shall be rejected.

Flammability, toxicity, allergenic properties, and any other characteristic requiring field precautions shall be identified and specific safety practices shall be stipulated.

All coatings, paint and disinfection materials shall be stored in enclosed structures to protect them from weather and excessive heat or cold. Flammable coatings and paints must be stored to conform with City, County, State and Federal safety codes for flammable coating and paint materials. At all times coatings and paints shall be protected from freezing.

Contractor shall use products of same manufacturer for all coats.

14. Interior Coating Materials for New Water Tank Construction:

Interior coating materials must be listed by the National Sanitation Foundation (NSF) for testing and certification for compliance with NSF Standard 60 & NSF Standard 61. They shall conform to the requirements of local and state air pollution regulatory agencies. Products containing perchloroethylene or trichloroethylene will not be permitted. Interior coating materials shall have a letter of acceptability from the State Health Department. NSF standards will supersede AWWA allowable material, if there is a conflict. Selected coatings must be NSF cleared for use inside the tank.

The interior of the tank shall be coated with epoxy coating. Epoxy coatings shall comply with AWWA Standard D102 (Latest Edition), Inside Coating System No. 2.

15. Exterior Paint Materials for New Water Tank Construction:

The exterior paint system shall comply with AWWA Standard D102 (Latest Edition), Outside Coating System No. 5.

Upon completion of the new paint system, the first eight feet of the tank exterior shall receive one clear coat of an approved, sacrificial anti-graffiti coating system such as “Graffiti-Melt”, or approved equal.

16. Exterior Paint Materials for Re-Painting of Existing Water Tanks:

The exterior paint system of the existing Tank may contain lead. Carson City will verify this with the necessary tests and will provide this information to Contractor. If lead is found to be present, the project will be considered an “encapsulation” and the existing exterior paint system shall be power washed only. Power washing operations will utilize only potable water and the equipment will be operated using just enough pressure to clean, but not remove, any of the existing paint system. All vents and hatches shall be hand washed to prevent any of the wash water from entering the interior of the tank. Over-spray from power washing shall also not be allowed to drift over or around any of the vents or hatches.

The exterior paint system of the existing tank may contain paint that was used to cover graffiti and may not be compatible with the new paint system. It is the responsibility of Contractor to visit the site and include in his bid any additional work required to remove such paint.

The new exterior paint system shall consist of one coat, 3 mils minimum, of a two-part epoxy and one coat of a urethane color coat which shall conform to the requirements of California Air

Resources Board Rule 1113. Contractor is responsible for assuring that the new paint system is compatible with these specifications and also with the existing paint system.

Areas of the steel tank that have experienced any of the following shall receive one coat of a rust inhibitive exterior primer coat, as specified in subsection 16 Exterior Paint Materials for New Water Tank Construction, with a dry film thickness of not less than 2 mils.; rusting due to the deterioration or failure of the existing paint system, rusting due to dents and/or scratches, or areas of bare metal that were exposed due to the surface washing operations.

The finish coat shall be a urethane paint of the final color. The color of the tank exterior shall be at the discretion of Carson City. After award of the project, Carson City will provide a current color chart to Contractor for color matching. Application rate shall be sufficient enough to cover the primer coat. All painting work near vents or hatches shall be applied by hand using rollers or brushes. Solar Panels, if so equipped, shall not be painted and shall only be covered with an opaque material for no more that four (4) hours per day, or a maximum of two (2) calendar days if covered with a transparent material. Antennas shall not be painted.

Upon completion of the new paint system, the first eight feet of the tank exterior shall receive one clear coat of an approved, sacrificial anti-graffiti coating system such as “Graffiti-Melt”, “Seal Krete” or approved equal.

17. Execution:

17.1 General:

All surface preparation, coating and paint application shall conform to applicable standards of the Steel Structures Painting Council and the manufacturer's printed instructions. Material applied prior to approval of the prepared surface by Construction Manager shall be removed and reapplied to the satisfaction of Construction Manager at the expense of Contractor.

All work shall be performed by skilled craftsmen qualified to perform the required work in a manner comparable with the best standards of practice. Continuity of personnel shall be maintained and transfers of key personnel shall be coordinated with Construction Manager.

Dust, dirt, oil, grease, existing graffiti repair paint or any foreign matter which will affect the adhesion or durability of the finish must be removed by either washing with clean rags dipped in an approved cleaning solvent and wiped dry with clean rags, or by light sanding with the necessary tools.

Contractor's coating and painting equipment shall be designed for application of materials specified and shall be maintained in first class working condition. Compressors shall have suitable traps and filters to remove water and oils from the air. Contractor's equipment shall be subject to approval of Construction Manager or his appointed Inspector.

Application of the first coat shall follow immediately after surface preparation and cleaning within an eight hour working day. Any cleaned areas not receiving first coat within an eight-hour period shall be re-cleaned prior to application of first coat.

17.2 Surface Preparation, General:

The latest revision of the following surface preparation specifications of the Steel Structures Painting Council (SSPC) shall form a part of this specification. (Note: An element of surface area is defined as any given square inch of surface.)

<u>Solvent Cleaning (SSPC-SP1):</u> Removal of oil, grease, soil and other contaminants by use of solvents, emulsions, cleaning compounds, steam cleaning or similar materials and methods, which involve a solvent or cleaning action.

Hand Tool Cleaning (SSPC -SP2): Removal of loose rust, loose mill scale and other detrimental foreign matter present to degree specified by hand chipping, scraping, sanding and wire brushing.

Power Tool Cleaning (SSPC SP3): Removal of loose rust, loose mill scale and other detrimental foreign matter present to degree specified by power wire brushing, power impact tools or power sanders.

Commercial Blast Cleaning (SSPC-SP6): Blast cleaning until at least two-thirds of each element of surface area is free of all visible residue.

Brush-off Blast Cleaning (SSPC-SP7): Blast cleaning to remove loose rust, loose mill scale, and other detrimental foreign matter present to the degree specified.

Near-White Blast Cleaning (SSPC-SP10): Blast cleaning to near-white metal cleanliness, until at least ninety-five percent of each element of surface area is free of all visible residues.

Slag and weld metal accumulation and spatters not previously removed by the Fabricator, Erector or Installer shall be removed by chipping and grinding. All sharp edges shall be preened, ground or otherwise blunted as required by Construction Manager.

Field blast cleaning for all purposes shall be dry method unless otherwise directed. Particle size of abrasives used in blast cleaning shall be that which will produce a 2.0 mil (.002) surface profile or in accordance with recommendations of the manufacturer of the specified coating or paint system to be applied, subject to approval of Construction Manager.

Abrasive used in blast cleaning operations shall be new, washed, graded and free of contaminants which would interfere with adhesion of coatings and paints and shall not be reused unless specifically approved by Construction Manager.

During blast cleaning operations, caution shall be exercised to insure existing coatings and paints are not exposed to abrasion from blast cleaning.

Contractor shall keep the area of his work in a clean condition and shall not permit blasting materials to accumulate as to constitute a nuisance or hazard to the prosecution of the work or the operation of the existing facilities. Spent abrasives and other debris shall be totally removed from the site once the project is completed.

Blast cleaned surfaces shall be cleaned prior to application of specified coatings or paints via a combination of blowing with clean dry air, brushing/brooming and/or vacuuming as directed by Construction Manager. Air hose for blowing shall be at least ½" in diameter and shall be equipped with a shut-off device.

All welds, when required, shall be neutralized with a suitable chemical compatible with the specified coating or paint materials.

Water blast cleaning (hydro blasting) shall be used as directed by Construction Manager. Pressures shall be those necessary to effectively perform removal of loose, peeling/flaking paint or coating unless directed otherwise as specified in subsection 8 Application, General.

18. Surface Preparation of New Water Storage, Specific:

18.1 Interior Surfaces of Water Tank:

Surfaces shall be abrasively blast cleaned to "Near-White Blast Cleaning" in conformance to Steel Structures Painting Council Surface Preparation Specifications SSPC-SP10.

18.2 All Exterior Surfaces of Water Tank, Including Appurtenances:

Surfaces shall be abrasively blast cleaned to "Commercial Blast Cleaning" in conformance to Steel Structures Painting Council Surface Preparation Specification SSPC-SP6.

18.2.1 Application, General:

Coating and paint application shall conform to the requirements of the Steel Structures Painting Council Paint Application Specification SSPC-PA1, latest revision, for "Shop, Field and Maintenance Painting" and the manufacturer of the coating and paint materials printed literature and as specified herein.

Thinning shall only be permitted as recommended by the manufacturer and approved by Construction Manager.

Each application of coating and paint shall be applied evenly, free of brush marks, sage, runs and no evidence of poor workmanship. Care shall be exercised to avoid lapping on glass or hardware. Coating and paint shall be sharply cut to lines. Finished surfaces shall be free from defects or blemishes.

Protective coverings or drop cloths shall be used to protect floors, fixtures, equipment, prepared surface and applied coatings or paints. Personnel entering reservoir or walking on exterior roof of reservoir shall take precautions to prevent damage or contamination of coated or painted surfaces. Contractor shall prevent coating or paint from being spattered onto or into surfaces which are not to be coated or painted. Surfaces from which such material cannot be removed satisfactorily shall be repainted or re-coated as required to produce a finish satisfactory to Construction Manager.

All material shall be applied as specified herein and as per manufacturers instructions.

All welds and irregular surfaces shall receive a brush coat of the specified product sufficient to fill or seal the irregular surfaces prior to application of each complete coat.

19. Application and Quality Control, Cold-Applied Coating System:

19.1 Interior Surfaces of New Water Tank:

Surfaces shall receive the epoxy coating system listed below:

Epoxy - after completion of surface preparation as specified, all surfaces shall receive three coats of coating specified in subsection 14 Interior Coating Materials for New Water Tank Construction. Total dry film of the completed system shall be a minimum of 12 mils (.012).

19.2 Quality Control:

All coating components shall be mixed in exact proportions specified by the manufacturer. Care shall be exercised to insure all materials are removed from containers during mixing and metering operations.

All coatings shall be thoroughly mixed, utilizing an approved slow-speed power mixer until all components are thoroughly combined and are of a smooth consistency. Coatings shall not be applied beyond pot-life limits specified by manufacturer.

Thinners shall be added to coating materials only as required in accordance with manufacturer's printed literature and in the presence of Construction Manager or his appointed Inspector.

Application shall be by airless spray method except as otherwise specified. Drying time between coats shall be strictly observed as stated in manufacturer's printed instruction.

When two or more coats are specified, each coat shall contain sufficient approved color additive to act as an indicator of coverage or the coats must be of contrasting color.

Care shall be exercised during spray operations to hold the spray nozzle perpendicular and sufficiently close to surfaces being coated to avoid excessive evaporation of volatile constituents and loss of material into the air or the bridging of cracks and crevices. All over spray shall be removed as directed by Construction Manager or his appointed Inspector.

Upon completion of coating operations, holiday detection shall be performed, using the specified low voltage instrument. Repair and retesting shall be performed as specified in subsection 5 Quality Assurance.

All mixing, thinning, application and holiday detection of coatings shall be performed in the presence of Construction Manager or his appointed Inspector.

20. Painting of Exterior Surfaces of New Water Tank:

After completion of surface preparation as previously specified herein subsections 17.2 Surface Prepaeration, General and 18 Surface Preparation of new Water Storage,Specific) all bare metal shall receive an exterior rust inhibitive prime coat, specified under subsection 15 Exterior Paint Materials for New Water Tank Construction. Dry film thickness shall be not less than 6 mils.

The primer shall be clean, dry and show no evidence of oxidation, after which all exterior surfaces shall receive 2 coats of Epoxy and one coat of polyurethane as specified in subsection 15 Exterior Paint Materials for New Water Tank Construction. Total dry film thickness of the entire three coat exterior paint system shall be not less than 6 mils at any point in the painted surface. A minimum of twenty-four (24) hours time is required before additional coats may be applied to the prime or finish coats or until the previous coat has dried firm.

20.1 Quality Control:

All provisions of subsection 5 Quality Assurance shall apply to work performed under this section.

20.2 Color Scheme:

The color and gloss of the new tank exterior shall be at the discretion of Carson City. After award of the project, Carson City will provide a current color chart to Contractor for color matching.

Upon completion of painting operations, inspection shall be performed as specified herein.

21. Disinfection:

Disinfection shall be performed after the protective coating has been applied and cured as per the manufactuers instructions. If workers have re-entered the previously disinfected tank to make any necessary repairs or to complete warranty work, disinfection shall be repeated as per these specifications.

Prior to disinfecting, the complete interior shall be cleaned by hosing with clean water and thoroughly flushed out. This operation shall be performed after completion of interior coating

work as directed by Construction Manager, and shall be performed in the presence of his appointed Inspector.

Upon completion of cleaning/washing operations, Contractor shall furnish an approved exhaust fan or blower of sufficient capacity to insure removal of solvent vapors during the curing process. The fan or blower shall be installed and shall remain in continuous operation until coating is completely cured as determined by the manufacturer of the coating system. Operation and maintenance of blower during curing operations shall be the responsibility of Contractor.

After completion of curing cycle as noted above, the interior surfaces shall be jet washed with a chlorine solution having a content of 200 P.P.M. Contractor shall request that the chlorine solution be tested and approved by the inspector prior to beginning the disinfection process. All Chlorine solution which accumulates on the bottom of the tank shall be drained to waste by Contractor. Rinsing with clean water is not required. Contractor shall re-seal all hatches then notify Construction Manager so that the tank can then be filled and tested. (Reference AWWA C652-92)

All aspects of the new tank construction shall comply with “Public Water System Design, Construction, Operation and Maintenance” manual, LCB File No. R057-96, effective February 12, 1997.

END OF DOCUMENT 5005