SECTION 01010

SUMMARY OF WORK

## PART 1 – GENERAL

1.01 DESCRIPTION

A. The scope of this section defines the work and materials included in each bid item in the specifications for the rehabilitation and painting of Sulfuric Acid Storage Tanks “1”, “2”, and “3” for the City of Pompano Beach, Florida (hereinafter "CITY").

B. Each tank is a 13,700-gallon, welded, steel tank. Tank "3" will need to be taken out of service, cleaned and inspected following remediation of first tank. The following information was observed:

| | |
|---|---|
| Diameter: | 11’-4” |
| Length: | 15’-8” |
| Mfr: | Key Houston, Inc. |
| Year Built: | 2001 |
| Material: | Carbon Steel |
| Shell: | 3/8" Butt-welded |
| Heads: | 3/8" Butt-welded |

C. The overall project consists of providing all labor, materials, supervision, power, equipment and supplies for (all three tanks):

1. Repair interior pitting by puddle welding.
2. Abrasive blast entire interior and apply new lining to all interior surfaces.
3. Pressure wash entire exterior, spot power tool rusted and abraded areas, spot prime bare metal spots, and finish coat the entire exterior.

1.02 RELATED DRAWINGS

A. None

1.03 INSPECTION REPORT

A. Tanks 1 and 2 were inspected in December 2014 by *Tank Engineering And Management Consultants, Inc*. A copy of the reports are available for review. Bidders should familiarize themselves with the reports and the condition of the structures at the time of the inspection. The inspection was performed to determine the condition of the structures. The report describes conditions existing at the time of the inspection. The inspection report is for information purposes only and is not considered as part of these specifications.

1.04 SUBMITTALS

A. Pre-Job Submittals

1. Before mobilizing to the jobsite, the CONTRACTOR shall submit to the ENGINEER for the ENGINEER’S approval, a schedule of values allocated to various portions of the Work, prepared in such form and supported by such data to substantiate its accuracy as the ENGINEER may require. This schedule, unless objected to by the ENGINEER, shall be used as a basis for

reviewing the CONTRACTOR'S application for Payment. However, the CONTRACTOR shall provide a realistic schedule of values and CONTRACTOR shall be prohibited from assigning a disproportionately high allocation to early phases of the work (also commonly called "front-end loading"). It shall be a material breach of this Agreement if Contractor front-end loads the Agreement. Mobilization and demobilization will NOT be paid as a separate line item. The CITY will not pay for materials on site until they are applied or installed on the tank.

2. Prior to the commencement of any work hereunder the CONTRACTOR shall submit the following plans, or proof that such plans are in effect:
   a) Materials Disposal Plan: The CONTRACTOR shall submit a planned course of action to dispose of all waste, spent abrasives, unused coating materials, paint thinner, etc., including hazardous and non-hazardous waste. All disposal shall be in accordance with federal, state, and local government requirements, laws, and ordinances. All waste, including spent abrasives, shall be contained within the work area and disposed of according to the submitted plan.
   b) Hazardous Communication Plan: CONTRACTOR agrees to communicate to his employees all information regarding chemicals, substances and other hazards to which CONTRACTOR'S employees forseeably could be exposed while performing work on the premises, and to properly inform, educate and train all employees performing work hereunder as to all applicable Safety and Health laws and Regulations including, but not limited to, the Hazard Communication Standard, 29 CFR, Part 1910.1200 issued by Occupational Safety and Health Administration, U.S. Department of Labor.
   c) Lock-Out/Tag-Out Plan: CONTRACTOR shall provide a plan, locks and tags for locking out and tagging of equipment as may be necessary.
   d) Health & Safety Policy: CONTRACTOR shall submit a copy of the Health & Safety Policy, and take the necessary steps to ensure that subcontractors, if any, comply with all safety policies, all Federal and State job safety and health regulations including, but not limited to, the Hazard Communication Standard, 29 CFR, Part 1910.1200.
   e) Confined Space Entry: CONTRACTOR shall submit a plan for Confined Space Entry in accordance with 29 CFR 1910.146. CONTRACTOR shall also provide confined space entry attendant(s), and LEL/$O_2$ monitor as required by the Confined Space Entry plan.
   f) Hurricane Preparedness Plan:
      i) Within thirty (30) days of the date of Notice to Proceed, the CONTRACTOR shall submit to the ENGINEER/CITY a Hurricane Preparedness Plan. The plan should outline the necessary measures that the CONTRACTOR proposes to perform at no additional cost to the CITY in case of a hurricane warning.
      ii) In the event of inclement weather, or whenever the ENGINEER/CITY shall direct, the CONTRACTOR will, and will cause the Subcontractors to, protect carefully the work and materials against damage or injury from the weather. If, in the opinion of the ENGINEER/CITY, any portion of work or materials have been

damaged or injured by reason of failure on the part of the CONTRACTOR or any Subcontractors to so protect the work, such work and materials shall be removed and replaced at the expense of the CONTRACTOR.

3. Prior to mobilizing on site, the CONTRACTOR shall submit a plan to the CITY for satisfying damage claims on surrounding property such as buildings, automobiles, landscaping, sidewalks, etc., as a result of paint spatter, abrasive blast materials, mechanical damage, etc.
4. Reference each section of these specifications for additional submittal requirements.

B. Post-Job Submittals

1. Drawings shall be supplied to the ENGINEER/CITY upon submittal of final invoice. CONTRACTOR-supplied as-built drawings shall include four (4) copies, one (1) reproducible for each drawing, and a disk copy using ACAD or other format as approved by the ENGINEER/CITY.
2. Reference each section of these specifications for additional submittal requirements.

1.05 SITE CONDITIONS

A. The CITY will provide a staging area within the confines of the site.

B. Equipment and material required for daily work may be stored at the tank but cannot unreasonably encumber the job site with material or equipment. Storage will be at the risk of the CONTRACTOR. No responsibility will be assumed by the CITY or the ENGINEER for the security of stored material and equipment. All hazardous material must be stored in locked containers.

C. Coordination of access to the tank must be arranged with the CITY prior to accessing the construction area.

D. All waste material, including spent abrasives, shall be contained within the designated work area, and disposed of according to the submitted plan.

**E. The CONTRACTOR shall take a video of the tank site prior to beginning work to document the condition and placement of equipment and structures.**

F. At the completion of this project, the areas surrounding the tank shall be restored to a condition equal to or better than conditions prior to this project. Any grass, shrubbery, trees, painted floors, windows, walls, doorways, etc., damaged by CONTRACTOR personnel or equipment, or as a result of work performed shall be repaired or replaced to the Owner’s satisfaction at the CONTRACTOR's expense.

G. The CONTRACTOR shall be responsible for any damage to any surrounding structures such as buildings, cars, landscaping, sidewalks, etc., as a result of paint spatter, blast abrasive, mechanical damage, etc. All damage shall be repaired to the satisfaction of the property owner making the claim at no additional cost to the CITY or ENGINEER.

1.06 GENERAL DESCRIPTION OF WORK TO BE PERFORMED

A. All fabrication, installation, abrasive blasting, and coating or lining application shall be done by experienced personnel. The awarded contractor shall be able to provide proof of five successful projects as prime contractor on projects of similar size, completed in the last five years. Similar projects shall be a minimum of 5,000-gallon tank size in sulfuric acid service.

A. The CONTRACTOR shall furnish all labor, materials, equipment, tools, services and incidentals to complete all work required by these specifications and as shown on the drawings.

B. The CONTRACTOR shall perform the work complete, in place, and ready for continuous service, and shall include, repairs, testing, permits, cleanup, replacements, and restoration required as a result of damages caused during this construction.

C. All materials, equipment, skills, tools and labor which are reasonably and properly inferable and necessary for the proper completion of the work in a substantial manner and in compliance with the requirements stated or implied by these Specifications or Drawings shall be furnished and installed by the CONTRACTOR without additional compensation, whether specifically indicated in the Contract Documents or not.

D. The CONTRACTOR shall comply with all Municipal, County, State, Federal, and other codes which are applicable to the proposed construction work.

E. The work included in this contract consists of:

1. The rehabilitation and repainting of three (3) 13,700 Gallon Sulfuric Acid Storage Tanks.

a) All structural and mechanical repairs shall be made <u>before</u> the cleaning or painting of the tank.

1.07 SUBSTANTIAL COMPLETION

A. The work, or any separable parts thereof, identified herein shall be deemed Substantially Completed at such time that all incidental requirements necessary to enable the CITY to continuously and successfully fill the tank with product for the purposes of which it is intended are completed.

B. The Contract Times of Substantial Completion for the work shall be as indicated.

1.08 FINAL COMPLETION

A. Project shall be deemed fully completed when the designated Coating Inspector, CITY Inspectors, and the Engineer agree that all work required by this specification has been completed satisfactorily to the intent of these documents.

B. The parties mentioned above shall make a final inspection walk-through and submit a written acceptance to the contractor before final payment is made.

1.09 WORK SEQUENCE

A. Construction sequence shall consist of Final Completion of Tank 1 first. After Tank 1 is returned to service, Tank 3 will be emptied and cleaned by others under a separate contract. The specified work on Tanks 2 and 3 can then be completed.

B. All work to be done under these specifications shall be done with minimum interference to the existing utility service and water systems operation and adjacent land uses. The CONTRACTOR shall coordinate his work with the CITY such that the facilities are maintained to the maximum extent possible.

C. Construct work in stages to accommodate the CITY use of the premises during the construction period; coordinate the construction schedule and operations with the CITY representative.

1.10 CONSTRUCTION AREAS

A. CONTRACTOR shall limit his use of the construction areas for work and storage, to allow for:
   1. Work by other Contractors
   2. CITY use

B. Contractor shall coordinate use of work site under direction of ENGINEER.

C. CONTRACTOR shall assume full responsibility for the protection and safekeeping of all materials and equipment under this contract, stored on site.

D. CONTRACTOR shall move and store products under CONTRACTOR'S control, which interfere with operations of the CITY or separate CONTRACTORS.

E. CONTRACTOR shall obtain and pay for the use of additional storage or work areas needed for operations.

1.11 CITY OCCUPANCY

A. The CITY will have full access to and use of all existing utilities during the entire period of construction for the conduct of its normal operations. CONTRACTOR shall cooperate with the CITY representative in all construction operations to minimize conflict, and facilitate CITY usage.

B. CONTRACTOR shall at all times conduct his operations as to insure the least inconvenience to the facility.

1.12 PLANS AND SPECIFICATIONS

A. SPECIFICATIONS
   1. Each section consists of three (3) parts: PART 1, GENERAL; PART 2, PRODUCTS; and PART 3, EXECUTION. The General part contains general requirements, which govern the work. Products and Execution modify and supplement these by detailed requirements of the work and shall always govern whenever there appears to be a conflict.

1.13 INTENT

A. All work called for in the specifications applicable to this Contract, but not shown on the Plans in their present form, or vice versa, shall be of like affect as if shown or mentioned in both. Work not specified in either the plans or in the Specifications, but involved in carrying out their intent or in the complete and proper execution of the work, is required and shall be performed by the CONTRACTOR as though it were specifically delineated or described.

B. The apparent silence of the specifications as to any detail, or the apparent omission from them of a detailed description concerning any work to be done and materials to be furnished, shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of the best quality is to be used, and interpretation of these specifications shall be made upon that basis.

C. The inclusion of the General Requirements (or work specified elsewhere), in the General part of the specifications is only for the convenience of the CONTRACTOR, and shall not be interpreted as a complete list of related specification sections.

1.14 DISCREPANCY BETWEEN DRAWINGS AND SPECIFICATIONS

A. In case of any discrepancy between the drawings and specifications, the more stringent requirement shall apply. The CONTRACTOR will not be held responsible for the discovery of such discrepancy, but any work done on the item involved after such discovery, and prior to authorization by the ENGINEER, will be done at the CONTRACTOR'S risk and expense.

1.15 PRE-CONSTRUCTION CONFERENCE

A. A joint meeting shall be held with representatives of the CONTRACTOR and major subcontractors, the ENGINEER, the CITY, and other invited parties or government agencies which may be affected by or have jurisdiction over the Project.

B. This meeting is intended to introduce the various key personnel from each organization and discuss the Contract Documents, the start of the construction, order of work, labor and legal requirements, insurance requirements, names of major subcontractors, method of payment, shop drawing requirements, protection of existing facilities and other pertinent items associated with the project. The CONTRACTOR shall bring to this conference six (6) copies of a proposed work schedule.

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION (NOT USED)**

- END OF SECTION 01010 –

# SECTION 01330

# SUBMITTAL PROCEDURES

## PART 1 - GENERAL

1.01 DESCRIPTION

A. This section specifies the procedures for submittals for the work to be performed in accordance with these specifications. Submittals covered by this section include manufacturers' information, shop drawings, test results, samples, requests for substitutions, and miscellaneous work-related submittals. Submittals shall also include, but not be limited to, all mechanical, electrical and electronic equipment and systems, materials, reinforcing steel, fabricated items, and piping and conduit details. The CONTRACTOR shall furnish all drawings, specifications, descriptive data, certificates, samples, test methods, schedules, and manufacturer's installation and other instructions as specifically required in the contract documents to demonstrate fully that the materials and equipment to be furnished and the methods of work comply with the provisions and intent of the contract documents.

1.02 RELATED SECTIONS

A. 01010 Summary of Work

## PART 2 - PRODUCTS (NOT USED)

## PART 3 - EXECUTION

3.01 CONTRACTOR'S RESPONSIBILITIES

A. The CONTRACTOR shall be responsible for the accuracy and completeness of the information contained in each submittal and shall assure that the material, equipment, or method of work shall be as described in the submittal. The CONTRACTOR shall verify that all features of all products conform to the specified requirements. Submittal documents shall be clearly edited to indicate only those items, models, or series of equipment, which are being submitted for review. All extraneous materials shall be crossed out or otherwise obliterated. The CONTRACTOR shall ensure that there is no conflict with other submittals and notify the ENGINEER/CITY in each case where his submittal may affect the work of another CONTRACTOR or the CITY. The CONTRACTOR shall coordinate submittals between his SUB-CONTRACTOR'S and suppliers.

B. The CONTRACTOR shall coordinate submittals with the work so that work will not be delayed. He shall coordinate and schedule different categories of submittals, so that one will not be delayed for lack of coordination with another. No extension of time will be allowed because of failure to properly scheduled submittals. The CONTRACTOR shall not proceed with work related to a submittal until the submittal process is complete. This requires that submittals for review and comment shall be returned to the CONTRACTOR stamped "No Exceptions Taken" or "Make Corrections Noted."

C. The CONTRACTOR shall certify on each submittal document that he has reviewed the submittal, verified field conditions, and complied with the contract documents.

D. The CONTRACTOR may authorize in writing a material or equipment supplier to deal directly with the ENGINEER/CITY with regard to a submittal. These dealings shall be limited to contract interpretations to clarify and expedite the work.

3.02 CATEGORIES OF SUBMITTALS

A. GENERAL

1. Submittals fall into two general categories: submittals for review and comment, and submittals that are primarily for information only. Submittals, which are for information only, are generally specified as PRODUCT DATA in **PART 2** of the applicable specification sections.
2. At the beginning of work, the CONTRACTOR shall furnish the ENGINEER/ CITY lists of those submittals specified in the project manual. Two separate lists shall be provided: submittals for review and comment and product data (submittals) for information only.

B. SUBMITTALS FOR REVIEW AND COMMENT

1. All submittals except where specified to be submitted as product data for information only shall be submitted by the CONTRACTOR to the ENGINEER/CITY for review and comment.

C. SUBMITTALS (PRODUCT DATA) FOR INFORMATION ONLY

1. Where specified, the CONTRACTOR shall furnish submittals (product data) to the ENGINEER/CITY for information only.

3.03 SUBMITTAL PROCEDURES

A. Within 15 days after award of Contract, the CONTRACTOR shall submit a list of shop drawings by Specification Section, and include a list of dates submittals are expected to be made. The CONTRACTOR shall:

1. Deliver submittals at least five business days prior to the scheduled start date. No contract time extensions will be granted for correction of submittals.
2. Submit shop drawings electronically in PDF format, or as an alternate, one reproducible and three prints, as directed by the ENGINEER/ CITY.
3. In addition to the usual, or normal, shop drawings, submit the following for approval when requested:
   a) Sequence of operations.
4. Submit three samples of materials, unless otherwise specified.

3.04 RESUBMISSION REQUIREMENTS

A. Shop Drawings:

1. The CONTRACTOR shall review drawings and indicate revision date as required, and resubmit as specified for initial submittal.
2. I The CONTRACTOR shall indicate on drawings any changes that have been made other than those requested by the ENGINEER/CITY.

B. Product data and samples: The CONTRACTOR shall submit new data and samples as required for first submittal.

3.05 CONTRACTOR'S RESPONSIBILITIES - The CONTRACTOR shall:

A. Review shop drawings, product data, and samples prior to submission to the ENGINEER/CITY.

B. Verify field measurements, field construction criteria, catalog numbers, and similar data.
C. Coordinate each submittal with work of the Project and Contract Documents.
D. Be held responsible for errors and omissions in submittals or deviations from Contract Documents. Such responsibility is not relieved by the ENGINEER/CITY'S review of submittals.
E. Be held responsible for deviations in submittals from requirements of Contract Documents. Such responsibility is not relieved by the ENGINEER/CITY'S review of submittals, unless the ENGINEER/CITY gives written acceptance of specific deviations.
F. Notify the ENGINEER/CITY in writing of deviations from requirements of Contract Documents at time submittals are made.
    1. A "deviation" shall be construed to mean a minor change to the sequence indicated by the drawings or specification.
    2. A "deviation" is not intended to allow substitutions or product options.
    3. In addition to notifying the ENGINEER/CITY in writing of deviations, circle deviations on shop drawings.
G. Not begin work that requires submittals until submittals have been returned with the ENGINEER/CITY'S stamp and initials or signature indicating review and approval.

3.06 CITY'S RESPONSIBILITIES - The CITY will:
A. Review submittals within 5 business days, unless noted prior to submittal.
    1. Attention is directed to the fact that the ENGINEER/CITY'S review is only to check for general conformance with the design concept of the project and general compliance with Contract Documents. The ENGINEER/CITY assumes no responsibility for correctness of dimensions, details, quantities, or procedures shown on shop drawings or submittals.
    2. Omission in shop drawings of any materials indicated in Contract Drawings, mentioned in Specifications, or required for proper execution and completion of work, does not relieve the CONTRACTOR from responsibility for providing such materials as indicated in Contract Documents.
    3. Approval of a separate or specified item does not necessarily constitute approval of an assembly in which this item functions.
B. Affix stamp and initials or signature acknowledging review of submittal as follows:
    1. No exceptions taken.
    2. Make corrections noted. Do not resubmit.
    3. Make corrections noted. Resubmit.
    4. Rejected. Resubmit in accord with Contract Documents.
C. Return submittals to CONTRACTOR for distribution.

- END OF SECTION 01330 –

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SECTION 01740

WARRANTIES AND BONDS

## PART 1 - GENERAL

1.01 GUARANTEE

A. All work covered under these specifications shall be guaranteed for a period of one (1) year after Final Completion and acceptance of the work. A first anniversary inspection will be scheduled by the CONTRACTOR, during the twelfth month following acceptance of the work. A report shall be furnished to the CITY describing the condition of the paint system and other work covered under this Contract. Tank draining shall be coordinated with the CITY representative. Any latent defects found during this inspection shall be promptly repaired by the CONTRACTOR. Any location where coats of paint have peeled off, bubbled or cracked, and any location where rusting is evident, shall be considered a failure of the paint system. The CONTRACTOR shall make repairs at all points where failures are observed as per the Technical Specifications, Section 09900 PART-3. The CONTRACTOR shall submit a schedule and plan outlining the repair procedures.

B. Failure on the part of the CONTRACTOR to schedule this warranty inspection will not relieve him of warranty responsibility. Any defects found by the CITY, after the normal warranty period, will be assumed to have occurred during the time the warranty was in effect.

1.02 COATING & LINING

A. The CONTRACTOR shall comply with the above section and also shall provide Manufacturer's standard warranty for all materials and labor for a period of one (1) year after the date of final acceptance by the CITY.

1.03 SUBMITTALS

A. Assemble warranties, bonds and service and maintenance contracts, executed by each of the respective manufacturers, suppliers, and subcontractors.

B. Number of original signed copies required: six (6) each.

C. Table of Contents. Neatly typed in orderly sequence.

D. Provide complete information for each item:
   1. Product or work item.
   2. Firm, with name of principal, address and telephone number.
   3. Scope.
   4. Date of beginning of warranty, bond, or service and maintenance contract.
   5. Duration or warranty, bond, or service and maintenance contract.

E. Provide the following information for CITY personnel:
   1. Proper procedure in case of failure.
   2. Instances which might affect the validity of warranty or bond.
   3. Contractor, name of responsible principal, address and telephone number.

1.04 FORM OF SUBMITTALS

A. Prepared in duplicate packets.

B. Format:

1. Size 8-1/2-inches x 11-inches, punch sheets for standard 3-post binder.
2. Fold larger sheets to fit into binders.

C. Cover: Identify each packet with typed or printed title "WARRANTIES AND BONDS." List:

1. Title of Project
2. Name of Contractor
3. Tank Name
4. Tank Address

D. Binders: Commercial quality, three-post binder, with durable and cleanable plastic covers and maximum post width of 2-inches. If more than one volume, identify volume number on spine and cover.

1.05 WARRANTY SUBMITTAL REQUIREMENTS

A. For all major pieces of equipment, submit a warranty from the equipment manufacturer. The manufacturer's warranty period shall be concurrent with the CONTRACTOR'S for one (1) year, unless otherwise specified, commencing at the time of final acceptance by the CITY.

B. The CONTRACTOR shall be responsible for obtaining certificates for equipment warranty for all major equipment which has a 1 HP motor or which lists for more than $1,000. The ENGINEER reserves the right to request warranties for equipment not considered to be "major" in the CONTRACTOR'S one-year warranty period even though certificates of warranty may not be required.

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION (NOT USED)**

- END OF SECTION 01740 -

SECTION - 09900

PAINTING

## PART 1 - GENERAL

1.01 DESCRIPTION

A. This section pertains to the interior and exterior painting of three Sulfuric Acid Tanks, located at the City of Pompano Beach Water Treatment Plant.

B. All surfaces encompassed by this specification shall be cleaned, prepared and coated with the designated paint system as specified herein. All coating shall be applied in strict accordance with the manufacturer's instructions.

1.02 RELATED SECTIONS

A. 01010 Summary of Work
B. 01330 Submittal Procedures
C. 01740 Warranties And Bonds

1.03 REFERENCED STANDARDS

A. SSPC Society for Protective Coatings
B. NACE National Association of Corrosion Engineers

1.04 QUALITY ASSURANCE

A. INSPECTION PROGRAM

1. Throughout the duration of the work, a formalized inspection program will be developed and maintained by the CITY/ENGINEER. The CONTRACTOR will be familiarized with the inspection program and the Project line of authority at the Pre-Construction Conference.
2. It shall be the CONTRACTOR'S responsibility to provide the CITY, through the ENGINEER, with clear, accurate information necessary for the required inspection reports.
3. The CONTRACTOR shall fill out a daily inspection report form. This form will be furnished by the ENGINEER. No request for payment will be processed unless accompanied by completed inspection report forms. Inspections will be performed by the ENGINEER or his designee. It is expected that information furnished on the CONTRACTOR'S inspection reports shall coincide with the information recorded during the ENGINEER'S inspections.
4. The CONTRACTOR shall notify the INSPECTOR when an area is ready for inspection. No work will be approved until the INSPECTOR has performed all required tests and inspections.
5. The CONTRACTOR shall provide for the INSPECTOR all necessary rigging required to complete the inspection and testing operations. The CONTRACTOR shall assist the INSPECTOR in making all required tests and inspections. Deficient areas such as pinholes, holidays, embedded contamination, sags, dry spray, mechanical damage, high / low mils, shall be repaired to meet the requirements of this specification.

6. The CITY will provide part-time coating inspection for the duration of the project. The INSPECTOR shall be on site at critical points in the operation including holiday tests and touch-up work.

B. INSPECTION AUTHORITY

1. The CITY has ultimate responsibility for Contract administration and inspection for this project. Field inspection responsibilities will be assigned to the INSPECTOR.
2. The INSPECTOR can stop the job if the CONTRACTOR is deviating from the specifications. The CONTRACTOR'S field supervisor shall be advised verbally to stop work. Work can resume after the deviation is corrected to the satisfaction of the CITY and INSPECTOR.
3. Each step of the construction is subject to approval by the INSPECTOR prior to proceeding with a subsequent step.
4. During the progress of the work and up to the date of final acceptance, the CONTRACTOR shall at all times afford representatives of the CITY, County, State, and Federal agencies having jurisdiction, every reasonable, safe, and proper access for observation of the work done or being done at the site and also at the place of manufacture or preparation.

C. TEST EQUIPMENT FURNISHED BY CONTRACTOR

1. The CONTRACTOR shall have the following test equipment available for use by the INSPECTOR at the job site at all times during the progress of the work:
   a) Sling Psychrometer
   b) Surface Temperature Gauge
   c) Wet Film Thickness Gauge
   d) Dry Film Thickness Gauge (Properly Calibrated)
   e) National Bureau of Standards thickness plates.
   f) SSPC VIS-1- Pictorial Surface Preparation Standard
   g) Holiday Detector. Low voltage type such as Tinker & Rasor Model M-1, Series 9533
   h) Keane-Tator Surface Comparator Number 372 or equal

D. CONTRACTOR FURNISHED INFORMATION

1. The following information will be part of the information required for the inspection reports:
   a) Compressor: Size, Manufacturer, Moisture and Water separators, Air Drier, Cleanliness of Air, Number of Blast Nozzles.
   b) Safety Equipment: Protective Cloths, Respirators, and Breathing Equipment.
   c) Paint Equipment: Paint Pump, Spray Gun, and other essential items deemed necessary.
   d) Materials: Abrasive: (Size, Type, Source, Cleanliness)
   e) Paints: Type, Manufacturer, Batch No., other information deemed necessary.
   f) Thinners: Type, Manufacturer, Batch No., and other information deemed necessary.
   g) Inhibitors: Type, Manufacturer, Batch No., and other information deemed necessary.
   h) Grouts: Type, Manufacturer, and other information deemed necessary.

i) Contractor Personnel: Name, Address, and Phone Number of Supervisor. Name, Address, and Phone Number of Foreman. Name of each Crewmember or Laborer.

j) Caulking: Type, Manufacturer, and other information deemed necessary.

E. CONTRACTOR REQUEST FOR INSPECTION

1. The CONTRACTOR shall notify the INSPECTOR (7) days in advance that portions of the work are ready for inspection and will assist the INSPECTOR in making all necessary tests and inspections.
2. No rigging and/or staging shall be removed before required inspection and approval is made. The CONTRACTOR shall assist the INSPECTOR in the use and operation of all equipment for access to the surfaces to be tested.
3. The CONTRACTOR shall make all necessary rigging available to the INSPECTOR, and assist in the operation of rigging during any and all testing operations.
4. Approval by the INSPECTOR of an area does not release the CONTRACTOR from providing the quality and workmanship provided by this Specification.

F. COATING THICKNESS AND CONTINUITY:

1. The specified coverage rates of the coatings are minimums. The first coat on metal surfaces refers to the first paint coat and not to conditioning or other pretreatment applications. Coating shall be applied to the thickness specified, and in accordance with these specifications. The minimum dry film thickness at any spot measurement shall not be less than 80% of the specified thickness. Unless otherwise specified, not less than two (2) coats shall be applied. The CONTRACTOR shall furnish a wet film thickness gauge, a dry film thickness gauge, and certified thickness calibration standards for the INSPECTOR use. Dry film thickness gauges shall be Mikrotest III, Elcometer Inspector III, Positest, or Positector.
2. After each coat has been allowed to dry, the dry film thickness will be measured by the INSPECTOR. The CONTRACTOR shall not apply a successive coat until the dry film thickness of the preceding coat or coats has been approved by the INSPECTOR.
3. Coating system thickness is the total thickness of all the required coats of paint, and does not include passivators or sealers.
4. Measurement of dry paint thickness over steel surfaces will be done in accordance with SSPC-PA 2.

G. HOLIDAY TESTING:

1. All interior tank immersion surfaces shall be holiday tested for discontinuities such as pinholes, missed and skipped areas, using a low voltage holiday tester. The CONTRACTOR shall furnish to the INSPECTOR a Tinker and Rasor Model M-1 Holiday Detector or equivalent for the testing. Testing shall be done in accordance with NACE RP0188, Discontinuity (Holiday) Testing of Protective Coatings.
2. Holiday tests shall not be performed until the finish coat has cured sufficiently that it can be walked on without damage (after approximately 2-3 days). Holidays shall be repaired by manufacturer's repair procedures, and then retested.

3. The CONTRACTOR shall provide the INSPECTOR all rigging and support personnel needed in performing the holiday test.

1.05 PRODUCT HANDLING

A. STORAGE

1. All coating materials shall be protected from direct sunlight and stored in a separate structure provided by the CONTRACTOR. The structure shall be constructed of non-combustible materials. It shall have sufficient ventilation to prevent the concentration of fumes and vapors.
2. Coating storage environmental conditions shall conform to the coating manufacturer's recommendations. The CONTRACTOR shall be solely responsible for the protection of all the material stored by him at the job site.
3. Coating materials shall be delivered to the job site in the original and unopened containers, with legible labels, marked with the proper designation of the product, as well as the manufacturer.
4. All coating materials at the job site shall be subject to inspection.
5. An approved environmental paint spill kit and container shall be located near the paint storage area.
6. All coating components will be delivered in unopened containers. They will be protected from freezing and over heating during shipment.
7. All coating components must be stored at temperatures above freezing and out of the weather. The containers must remain unopened until they are ready to be used.

B. MIXING

1. Mechanical mixers or shakers shall be used to mix the coating after properly measuring the required components. Catalysts, thinners, and other components shall only be added in exact quantities and at the times specified by the coating manufacturer. Containers used for mixing shall be clean and dry. Mixed materials that are not used prior to expiration of the pot life shall be discarded.
2. All coatings materials shall be mixed and thinned in the presence of the INSPECTOR. Plural component materials will not be approved for application unless the INSPECTOR can verify the proper proportions were mixed, and they had proper Induction time after mixing.
3. An approved environmental paint spill kit and container shall be located near the paint mixing area.
4. An appropriate type of fire extinguisher shall be kept nearby.

1.06 SUBMITTALS

A. The following information shall be provided in accordance with these specifications. Information on each coating system shall be delivered to the ENGINEER two (2) weeks before applying that coating system. A list of materials proposed to be used under this section shall be provided within ten (10) days of the Notice to Proceed.

B. For each primer, intermediate, and finish coating the CONTRACTOR shall provide the Manufacturer's Application Instructions and the data listed below:

1. Surface preparation recommendations.
2. Primer, intermediate, and finish coating, pot life and specific mixing instructions.
3. Induction time after mixing.

4. Minimum and maximum dry and wet film thickness per coat.
5. Minimum and maximum curing time between coats including atmospheric conditions for each.
6. Curing time before submergence in liquid.
7. Thinner and thinning ratios to be used with each paint.
8. Ventilation requirements.
9. Allowable atmospheric conditions during which the paint may be applied, including ambient temperature, relative humidity and surface temperature.
10. Allowable applications methods.
11. Maximum allowable moisture content of surface to be painted.
12. Maximum storage life.
13. Manufacturer's certification that painting materials are in accordance with the appropriate reference standards.
14. Material Safety Data Sheets and cautions concerning health hazards.

1.07 COLOR SELECTION

A. All colors are as specified by the CITY's color schedule after submittal of the manufacturers color charts.

B. The CONTRACTOR shall submit a color chart, from the specified coating manufacturer, to the CITY to select a color for the exterior tank and logo. The CITY shall submit their choice to the CONTRACTOR in writing before application of coatings.

1.08 DAMAGE CLAIMS

A. The CONTRACTOR shall be responsible for all damages that may be caused by this painting operation to surrounding property.

## PART 2 - PRODUCTS

2.01 MATERIALS

A. The products referenced in this section are presented as a standard of comparison. Products manufactured by other manufacturers may be substituted upon request. Requests for substitution shall be in accordance with PART 1.06 above. Only products of one manufacturer shall be used in a particular coating system.

B. Materials, supplies and articles provided shall be the standard products of manufacturers. Paints in a particular coating system shall be the products of a single manufacturer unless otherwise specified.

C. No lead containing coatings shall be used.

2.02 COATING MATERIALS

A. Each of the following manufacturers is capable of supplying the industrial coating materials specified in this specification. Where manufacturers and paint numbers are listed, it is to show the type and quality of coatings that are required. Proposed substitute materials for the paint numbers shown must be proven to satisfy the material descriptions and to equal or exceed the properties of the listed materials.

1. Sherwin Williams Co., Inc.
2. Tnemec Co., Inc.

3. Carboline Co., Inc.

B. Standard products of manufacturers other than those specified will be accepted when it is demonstrated to the Engineer that they are equal in composition, durability, usefulness and convenience for the purpose intended. The written acceptance by the CITY shall be obtained before any such alternate products are ordered by the CONTRACTOR. Request for substitution will be considered provided the following minimum conditions are met:

1. The proposed coating system shall use an equal or greater number of separate coats to achieve the required dry film thickness.
2. The proposed coating system shall use coatings of the same generic type.
3. Request for substitution shall have the directions for application and description literature, which includes generic type, nonvolatile content by volume, and information confirming that the substitution is equal to the specified coating system.
4. The contractor shall provide certified laboratory data sheets showing the results of complete spectrographic and durability tests performed on the proposed substitute. A laboratory which conforms to the provisions of ASTM E329 and which is a member of the American council of Independent Laboratories shall perform tests. Costs incurred in the testing program shall be borne by the contractor.

C. No extra contract time for tank out of service will be granted for evaluation of substitute materials.

2.03 INTERIOR COATINGS

A. **Interior Service:**

1. **Lining:** One coat ultra-high solids epoxy novolac amine primer and two coats of flake filled novolac epoxy. See Section 3.07 for more detail.

2.04 EXTERIOR COATINGS:

A. **Exterior Service:**

1. **Coating:** One spot coat of high solids epoxy coating and one full coat of polyesteraliphatic urethane coating. See Section 3.07 for more detail.

2.05 ABRASIVE BLAST MATERIALS

A. All abrasive blast material shall be "Black Beauty" or approved equal.

## PART 3 - EXECUTION

3.01 GENERAL

A. All work shall be accomplished by skilled workmen in a professional manner.

B. All abrasive blasting, coating or lining application shall be done by experienced personnel. The awarded CONTRACTOR shall be able to provide proof of five successful projects as prime contractor on projects of similar size, completed in the last five years.

C. All work shall comply with Local, County, State, and Federal regulations concerning abrasive blasting and pollution control.

D. All rigging shall meet OSHA requirements, and shall be operated in a safe manner, and will conform to industry standards. All rods and other tank appurtenances that are used for rigging purposes shall be carefully checked for structural integrity before use in climbing or rigging. Deficiencies shall be reported and corrected before use.

E. The CONTRACTOR shall test all coating to be removed to assure that the coating will meet environmental requirements for removal and disposal.

F. Prior to abrasive blasting, the CONTRACTOR shall demonstrate that the vent, fill and drain piping is plugged sufficiently as to not fill or clog the piping with abrasives.

G. **The close proximity of CITY property and equipment shall require containment of blast abrasives, paint over-spray, and spatter.**

H. **All waste material, including spent abrasives and chemicals, shall be disposed of in accordance with the CONTRACTOR submitted Waste Disposal Plan.**

I. Surfaces to be coated shall be cleaned in accordance with SSPC-SP1 (Solvent Cleaning). Before applying coating or surface treatments, oil, grease, dirt, rust, loose mill scale, old weathering coatings, and other foreign substances shall be removed, except as specified. Oil and grease shall be removed before mechanical cleaning is started. Where mechanical cleaning is accomplished by blast cleaning, the abrasive used shall be washed, graded and free of contaminants, which might interfere with the adhesion and performance of the coatings. Blast abrasive shall be "Black Beauty" or approved equal, capable of achieving a surface profile of 1 to 3 mils (unless otherwise recommended by the paint manufacturer). The CONTRACTOR shall furnish for the INSPECTOR's use, a Keane-Tator Surface Comparator Number 372 or equal.

J. Clean cloths and clean fluids shall be used in solvent cleaning. Cleaning and painting shall be scheduled so that dust and spray from the cleaning process does not fall on wet, newly painted surfaces.

K. Preparation of metallic surfaces shall be based upon comparison with SSPC-VIS 1 (ASTM D2200), and as described herein. The CONTRACTOR shall furnish the photographic standards. To facilitate inspection, the CONTRACTOR shall, on the first day of abrasive blasting operations, abrasive blast metal panels to the standards specified. Plates shall measure a minimum of 8.5 inches by 11 inches. Panels meeting the requirements of the Specifications shall be initialed by the CONTRACTOR and CITY’s Representative and coated with a clear non-yellowing finish. One of these panels shall be prepared for each type of abrasive blasting and shall be used as a comparison standard throughout the project.

L. Compressed air for blast cleaning shall be clean, dry, and oil free as confirmed by a blotter test each day prior to beginning blasting. Test air quality by directing the air stream from the blast nozzle without abrasive onto a clean piece of blotter paper for 1 minute. Inspect the blotter for contamination.

M. All abrasive and dust from the blasting operation shall be removed from the surfaces before the painting application has begun.

N. Abrasive blasted surfaces shall be coated the same day that blasting was done, and before any rust bloom occurs.

O. All painting equipment shall be maintained in good working order and shall be comparable to that described in the coating manufacturer's most recent application instructions. It shall be thoroughly cleaned and inspected daily.

P. Worn nozzles, tips, etc., shall be replaced regularly. Effective oil and water separators shall be used and serviced on all air lines.

3.02 SAFETY

A. The CONTRACTOR shall be responsible for fall protection and confined space entry on this project.

B. All applicable OSHA requirements shall be followed.

C. All personnel entering the tank shall be certified for confined space entry.

3.03 PROTECTION OF AREAS NOT TO BE COATED

A. All areas that are not specified to be coated or repaired shall be adequately protected to avoid any damage or overspray during all repairs, washing, blasting, and painting operations. The CONTRACTOR shall confer with the CITY before conducting any work, to clarify these areas.

B. The areas NOT to be coated include:

1. All conduit and instrumentation.
2. All stainless steel and any unpainted piping.
3. Concrete foundation and containment area.

C. Tank surfaces under items that are not to be coated shall be coated. Items not to be coated shall be temporarily relocated while the area is coated. After coating has cured, the relocated equipment shall be returned to its original location.

D. Any damage shall be repaired at the CONTRACTOR's expense.

3.04 APPLICATION

A. Unless otherwise specified, the application of paint shall be in accordance with SSPC-PA-1 latest edition and the paint manufacturer's printed instructions for surface preparation, mixing, thinning, and paint application unless otherwise specified herein. The CONTRACTOR shall fully comply with all recommendations and instructions set forth by the paint manufacturer. All coatings shall be applied before the shelf life of the coating expires.

B. Paint shall only be applied over thoroughly dry surfaces, with a surface temperature that conforms to the manufactures minimum - maximum limits, and the relative humidity shall not exceed 85%. The surface temperature must be at least 5 degrees above the dew point. Paint shall not be applied to a condensing surface. Paint shall not be applied when freshly painted surfaces may be damaged by rain, fog, dust or condensation and/or when it can be anticipated that these conditions will prevail during the drying period.

C. Except where otherwise specified, thinning shall only be done when necessary for the workability of the coating material and then only in accordance with the coating manufacturer’s most recent printed application instructions. Use only approved manufacturer's thinner. Thinner shall only be added in the exact quantities as recommended by the manufacturer.

D. Paint shall be applied in a uniform layer, with a 50% over-lap pattern. All runs and sags shall be brushed out immediately or the paint will be removed and surface recoated.

E. All fasteners, welded seams, edges, holes, etc. shall have special care taken in applying the prime and topcoat. These areas shall be brush coated before applying

the coating to remaining surfaces. This is to insure proper dry film thickness on these areas.

F. Areas inaccessible to spray shall be brushed. If inaccessible by brush, daubs or sheepskins may be used if approved by the manufacturer. Top quality, properly styled brushes and rollers shall be used. The brushing or rolling shall be done so that a smooth coat as nearly uniform in thickness as possible is obtained. Brush or roller strokes shall be made to smooth the film without leaving deep or detrimental marks.

G. Drying time between coats shall adhere to the coating manufacturer's recommendation with conditions of temperature and humidity taken into account. All paint and coating materials shall be stored prior to application under cover and at temperature within 10 degrees F. of the anticipated application temperature.

H. The dry film thickness of each coat and the entire system shall follow the coating manufacturer's recommendations and this specification. The number of coats specified shall be a minimum to achieve the specified film thickness.

I. All paint damaged areas, which shall be touch-up painted, shall be feathered after surface preparation to provide a smooth, even surface before priming. Touch-up systems will be the same as the original specification. Manufacturer's complete touch-up recommendations shall be followed.

3.05 VENTILATION

A. The CONTRACTOR shall provide forced air ventilation while work is being done inside the tank, after each coat is applied,and continue after completion of painting for a minimum period of seven days to insure proper cure of the coating. Air shall be exhausted from the lowest portions of the tank with the top openings kept open and clear. Ventilation requirements will be in strict accordance with the manufacturer's recommendations, this Specification and all OSHA requirements as applicable.

3.06 SURFACE PREPARATION

A. INTERIOR

1. Cover all piping to keep debris from entering the piping.
2. The CONTRACTOR shall remove all chalk, loose paint, deposits, or other surface contamination by High Pressure Water Wash (min. 4000 psi) of the entire interior prior to abrasive blast cleaning.
3. The CONTRACTOR shall abrasive blast clean <u>all</u> interior surfaces to SSPC-SP10 (Near White Metal).
4. Solvent wipe all areas to be coated in accordance with SSPC-SP1 prior to application of the specified primer.

B. EXTERIOR

1. The CONTRACTOR shall remove all chalk, loose paint, deposits, or other surface contamination by High Pressure Water Wash (min. 4000 psi) of the entire exterior prior to surface preparation.
2. The CONTRACTOR shall prepare all exterior rusted and abraded spots in accordance with SSPC-SP11 (Power Tool Clean to Bare Metal).

3. **The CONTRACTOR shall take every precaution necessary to contain dust from the surface preparation operation blowing towards the surrounding equipment and surfaces.**

3.07 COATING SYSTEMS

A. INTERIOR

1. The CONTRACTOR shall clean all interior surfaces as applicable in Section 3.06.A 'SURFACE PREPARATION, INTERIOR'.
2. Each coat shall be of a contrasting color to facilitate application and inspection.
3. The CONTRACTOR shall apply the following Interior Coating System:
   a) PRIME COAT: Apply by spray to all interior surfaces, Sherwin-Williams Nova Plate UHS Primer, an ultra-high solids epoxy novolac amine primer, at a dry film thickness of 4 mils to 8 mils.
   b) INTERMEDIATE COAT: Apply by spray to all interior surfaces, Sherwin-Williams Cor-Cote HCR FF, a flake filled novolac epoxy, at a dry film thickness of 15 mils to 20 mils.
   c) TOP COAT: Apply by spray to all interior surfaces, Sherwin-Williams Cor-Cote HCR FF, a flake filled novolac epoxy, at a dry film thickness of 15 mils to 20 mils.
   d) COVERAGE RATES: Maximum coverage rates shall not exceed manufacturer's recommendations per coat. The total dry film thickness of the interior system shall be no less than 30.0 mils.

B. EXTERIOR

1. The CONTRACTOR shall submit coating manufacturer's color charts to the ENGINEER within ten (10) days after Contract Award. Finish colors will be selected by the CITY.
2. Each coat shall be of a contrasting color to facilitate application and inspection.
3. A one-gallon kit of the finish coat of paint shall be supplied to the CITY as touch-up paint. This kit shall be "fresh" at the time of final acceptance of the tank. The touch-up kit shall have a minimum shelf life of one (1) year.
4. The CONTRACTOR shall be responsible for all damages that may be caused by this painting operation to surrounding property and to vehicles traveling on and parked on adjacent properties and roadways.
5. The CONTRACTOR shall clean all exterior surfaces as applicable in Section 3.06.C 'SURFACE PREPARATION, EXTERIOR'.
6. The CONTRACTOR shall apply the following Exterior Coating System:
   a) SPOT PRIME COAT: Apply by brush, roller, or spray, to all bare metal exterior surfaces Sherwin-Williams Macropoxy HS at a dry film thickness of 3.0 mils to 5.0 mils.
   b) INTERMEDIATE COAT: Apply by brush, roller, or spray, to all previously primed surfaces Sherwin-Williams Macropoxy HS at a dry film thickness of 3.0 mils to 5.0 mils.
   c) TOP COAT: Apply by brush, roller, or spray, to all exterior surfaces, one coat of Sherwin-Williams Poly-Lon HP, at a dry film thickness of 2.0 mils to 3.0 mils.

7. COVERAGE RATES: Maximum coverage rates shall not exceed manufacturer's recommendations per coat. The total dry film thickness of the exterior system shall be no less than 8.0 mils.
8. **The CONTRACTOR shall take every precaution necessary to avoid paint splatter landing on any surrounding equipment, and structures, including the building.**

- END OF SECTION 09900 –

SECTION 13010

REPAIRS & RENOVATIONS

## PART 1 - GENERAL

1.01 DESCRIPTION

A. All repairs and renovations to be performed are as listed herein.

1.02 RELATED SECTIONS

| | | |
|---|---|---|
| A. | 01010 | Scope of Work |
| B. | 01740 | Warranties and Bonds |
| C. | 09900 | Painting |

1.03 REFERENCED STANDARDS

| | | |
|---|---|---|
| A. | AWS D1.1 | American Welding Society |
| B. | SSPC | Steel Structure Painting Council |
| C. | NACE | National Association of Corrosion Engineers |
| D. | MSS SP-69 | Manufacturers Standard Society Standard Practice |

1.04 SUBMITTALS – The CONTRACTOR shall include in the submittals the following:

A. Structural: Submit detailed fabrication and erection drawings. Indicate all dimensions, method of assembly, connections and bill of materials.

B. Should more than one submittal be required, later submittals should clearly identify all changes.

C. Indicate all shop and erection dimensions and details, including cuts, copes, connections, holes, threaded fasteners and welds.

D. Indicate all shop and field welds by AWS A2.0 "Welding Symbols".

E. Revise original approved shop and erection drawings to correspond with changes made in the field.

F. Submit Product data, (manufacturer's literature), Specifications and installation instructions for manufactured items.

G. Upon completion of all work, “as built” drawings shall be submitted. These drawings shall be marked up to show all changes or modifications made that deviate from the approved submittal drawings. Final payment will not be processed until the “as built” drawings are submitted.

1.05 TANK REPAIR REQUIREMENTS

A. <u>Interior Pitting:</u> After interior brasive blast cleaning per Section 09900, areas of pitting, shall be filled with metal by puddle welding. Welding shall be performed using arc welding methods with an E7018 welding rod. Fill the pit using multiple passes. Allow time for metal to partially cool between passes to avoid deformation of the shell plate. Once the pit is filled, grind the area smooth. Once complete, no visible evidence of the pit or repair shall be present.

1.06 QUALITY ASSURANCE – The CONTRACTOR shall use the following standards for construction and personnel:

A. Design Criteria: UL-142(current edition)

B. Qualifications of Suppliers and Personnel:

1. Steel Fabricator: Not less than 5 years continuous experience in the fabrication of structural steel.
2. Steel Erector: Not less than 5 years continuous experience in the erection of tanks or similar structures.
3. Welding: All welding shall be performed by welders who are currently qualified by tests as prescribed in AWS D1.1 "Qualification Procedure".
4. Use experienced riggers to erect steel. Carefully plan and lay out work so that a minimum of cutting and removal of undamaged material will be necessary.

1.07 WARRANTY

A. All material and workmanship covered under this section shall be guaranteed as outlined in Section 01740.

1.08 EXTRA WORK

A. Any potential work items that are found after the work has begun shall be brought to the attention of the ENGINEER in writing via formal RFI. Submittal by e-mail is acceptable. These out of scope items shall be processed by Directive only.

## PART 2 - PRODUCTS

2.01 MATERIALS

A. All materials shall be new and shall be in conformance with UL-142 Standards.

B. Structural steel shapes, plates and bars: ASTM A36.

C. Machine bolts: Use ASTM A307 machine bolts at all connections not indicated on Drawings as high-strength or stainless steel.

D. Pipe Flanges: ANSI B16.5 standard flanges.

E. Welding electrodes:

1. Mild steel-covered arc welding electrodes for A36 steels: AWS A5.1, E70XX Series, low hydrogen, having a minimum yield point of 60,000 psi.

2.02 MATERIAL HANDLING

A. Storage of Materials

1. Store steel to be incorporated into this project above ground on platforms, skids or other approved supports.
2. Protect steel from corrosion.
3. Store welding electrodes in accordance with AWS D12.1.

## PART 3 - EXECUTION

3.01 FABRICATION

A. All fabrication shall be done by manufacturers who are regularly engaged in the manufacture of the type of work herein specified.

3.02 SCHEDULE

A. All repair and renovation work shall be accomplished prior to start of any painting operations. After first tank is completed it will be placed in service so that tank currently in service can be taken out of service, cleaned, inspected and coated.

3.03 ERECTION

A. All work shall be accomplished by skilled workmen in a workmanlike manner. All welders shall hold current AWS certification and shall submit all credentials to the Engineer prior to starting work. All welding will be subject to testing in accordance with ASME Section V.

- END OF SECTION 13010 -