South Valley
WATER RECLAMATION FACILITY

CLARIFIER REHABILITATION PROJECT

CONTRACT DOCUMENTS

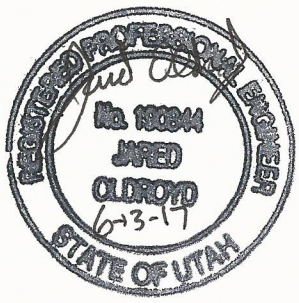
BIDDING REQUIREMENTS, CONTRACT FORMS,

CONDITIONS OF THE CONTRACT,

TECHNICAL SPECIFICATIONS AND DRAWINGS

PREPARED BY

JWO Engineering



Bids will be received at the office of South Valley Water Reclamation Facility located at

7495 South 1300 West, West Jordan, Utah 84084

until 2:00 PM Tuesday June 27, 2017.

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SECTION 00030 - NOTICE INVITING BIDS

RECEIPT OF BIDS: Sealed Bids will be received at the office of the South Valley Water Reclamation Facility; OWNER of the WORK located at 7495 South 1300 West, West Jordan, Utah 84084, until 2:00 PM on Tuesday, June 27, 2017, for construction of South Valley Water Reclamation Facility's "Clarifier Rehabilitation Project". Any Bids received after the specified time and date will not be considered.

OPENING OF BIDS: The Bids will be publicly opened and read at 2:00 PM, Tuesday, June 27, 2017, at the above-mentioned office of the OWNER. Anticipated Notice to Proceed date is Thursday, July 27, 2017.

COMPLETION OF WORK: The WORK shall be completed as described below:

a) Contractor shall procure new equipment, demolish and remove existing equipment to be replaced, and install the new equipment. Contractor shall provide all materials required for the Work described. The Work shall be completed by October 18, 2017.

DESCRIPTION OF WORK: The project consists of the following Items:

a) The Work consists of the rehabilitation of clarifier structures and hardware. The Work includes the cleaning of clarifier structures and hardware. The Work includes rehabilitating hardware for attachments. The Work includes the blasting and recoating of clarifier structures and hardware. The Work includes the adjusting and recommissioning of clarifier mechanisms.

SITE OF WORK: The site of the WORK is located at the OWNER's water reclamation facility at 7495 South 1300 West, West Jordan, Utah.

OBTAINING CONTRACT DOCUMENTS: The Contract Documents are entitled "South Valley Water Reclamation Facility – Clarifier Rehabilitation Project".

The Contract Documents will be available on the OWNER'S website (www.svwater.com > Engineering > Clarifier Rehab Project) beginning Tuesday, June 13, 2017. There will be no charge for bid documents.

BID SECURITY: Each Bid shall be accompanied by a certified check or cashier's check or Bid Bond in the amount of 5 percent of the Total Bid Price payable to the OWNER as a guarantee that the Bidder, if its Bid is accepted, will promptly execute the Agreement. A bid shall not be considered unless one of the forms of Bidder's security is enclosed with it.

BIDS TO REMAIN OPEN: The Bidder shall guarantee the Total Bid Price for a period of 45 calendar days from the date of bid opening.

MANDATORY PRE-BID VISIT TO WORK SITE: For a bid to be considered complete, prospective bidders are **required** to attend a pre-bid walk through of the proposed work site which will be conducted by the OWNER at 10:00 AM on Tuesday, June 20, 2017. The object of the walk through is to acquaint bidders with the site conditions. The pre-bid visit will start at the office of the OWNER located at 7495 South 1300 West, West Jordan City, Utah. Follow-up visits by prospective bidders and subcontractors are available by appointment only. Contact Taigon Worthen, P.E. of the SVWRF for appointments.

PROJECT ADMINISTRATION: Technical communications relative to this WORK shall be directed to the ENGINEER prior to opening of the Bids. Communications relative to the purchase of Bid Documents shall be directed to the OWNER.

JWO ENGINEERING, PLLC
1307 N Locust Lane
Provo, Utah 84604
Telephone: 801-828-7805
e-mail: jared@jwoengineering.com
Attention: Jared Oldroyd, P.E.

SOUTH VALLEY WATER RECLAMATION FACILITY
7495 South 1300 West
West Jordan, Utah 84084
Telephone: 801-495-5469
e-mail: tworthen@svwater.com
Attention: Taigon Worthen, P.E.

OWNER'S RIGHTS RESERVED: The OWNER reserves the right to reject any or all bids, to waive any informality in a bid, and to make awards to the lowest responsive, responsible bidder as the OWNER in its sole discretion shall determine may best serve the interest of the OWNER.

- END OF NOTICE INVITING BIDS -

SECTION 00100 - INSTRUCTIONS TO BIDDERS

1. DEFINED TERMS. Terms used in these Instructions to Bidders and the Notice Inviting Bids which are defined in the General Conditions have the meanings assigned to them in the General Conditions. The term "Bidder" means one who submits a Bid directly to OWNER, as distinct from a sub-bidder, who submits a price or quote to a Bidder.

2. INTERPRETATIONS AND ADDENDA.

2.1 All questions about the meaning or intent of the Contract Documents are to be directed to the ENGINEER. Additions, deletions, or revisions to the Contract Documents considered necessary by the ENGINEER in response to such questions will be issued by Addenda, mailed, emailed, or delivered to all parties recorded by the OWNER as having received the Contract Documents. Questions received less than 5 days prior to the date of Bids may not be answered. Only answers to such questions issued by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

2.2 Addenda may also be issued to make other additions, deletions, or revisions to the Contract Documents.

2.3 Bidders shall make no special interpretation or inference of intent from differing formats in the Technical Specifications.

3. BIDDER'S EXAMINATION OF CONTRACT DOCUMENTS AND SITE.

3.1 It is the responsibility of each Bidder before submitting a Bid:

A. To examine thoroughly the Contract Documents and other related data identified in the Bidding Documents (including "technical" data referred to below);

B. To visit the site to become familiar with local conditions that may affect cost, progress, or performance, of the WORK;

C. To consider federal, state, and local Laws and Regulations that may affect cost, progress, or performance of the WORK;

D. To study and carefully correlate the Bidder's observations with the Contract Documents; and

E. To notify the OWNER of all conflicts, errors, ambiguities, or discrepancies in or between the Contract Documents and such other related data.

3.2 (Not Used)

3.3 It is also the responsibility of each Bidder before submitting a Bid to examine thoroughly those reports of physical conditions in or relating to existing surface and subsurface conditions (except underground utilities as defined in Article 1 of the General Conditions) which are at or adjacent to the site and which were utilized by the OWNER in the preparation of the Contract Documents. Copies of such report and drawings are available for information at the office of the OWNER.

3.4 Information and data reflected in the Contract Documents with respect to Underground Utilities at or contiguous to the site are based upon information and data furnished to the OWNER by the owners of such Underground Utilities or others, and the OWNER does not assume responsibility for the accuracy or completeness thereof unless it is expressly

provided otherwise in the Supplementary General Conditions.

3.5 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders on subsurface conditions, Underground Utilities, and other physical conditions, and possible changes in the Contract Documents due to differing conditions appear in Paragraphs 4.02, 4.03, and 4.04 of the General Conditions.

3.6 Before submitting a Bid, each Bidder will, at Bidder's own expense, make or obtain any additional examinations, investigations, explorations, tests, and studies and obtain any additional information and data which pertain to the physical conditions (surface, subsurface, and Underground Utilities) at or contiguous to the site or otherwise which may affect cost, progress, or performance of the WORK and which the Bidder deems necessary to determine its Bid for performing the WORK in accordance with the time, price, and other terms and conditions of the Contract Documents.

3.7 On reasonable request in advance, the OWNER will provide each Bidder access to the site to conduct such examinations, investigations, explorations, tests, and studies as each Bidder deems necessary for submission of a Bid. Location of any excavation or boring shall be subject to prior approval of OWNER and applicable agencies. Bidder shall fill all holes, restore all pavement to match existing structural section, and shall clean up and restore the site to its former condition upon completion of such explorations. OWNER reserves the right to require Bidder to execute an Access Agreement with the OWNER prior to accessing the site.

3.8 The lands upon which the WORK is to be performed, rights-of-way, and easements for access thereto and other lands designated for use by the CONTRACTOR in performing the WORK are identified in the Contract Documents. All additional lands and access thereto required for temporary construction facilities or storage of materials and equipment are to be provided by the CONTRACTOR. Easements for permanent structures or permanent changes in existing structures are to be obtained and paid for by the OWNER unless otherwise provided in the Contract Documents.

3.9 The submission of a Bid will constitute an absolute representation by the Bidder that the Bidder has complied with every requirement of this Paragraph 3 and the following:

A. That the Bid is premised upon performing the WORK required by the Contract Documents without exception and such means, methods, techniques, sequences, or procedures of construction (if any) as may be required by the Contract Documents;

B. That Bidder has given the OWNER written notice of all conflicts, errors, ambiguities, and discrepancies in the Contract Documents and the written resolution thereof by the OWNER is acceptable to the Bidder; and

C. That the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance of the WORK.

4. BID FORMS. The Bid shall be submitted on the Bid Forms bound herein. All blanks on the Bid Forms shall be completed in ink. All names must be printed below the signatures. The Bid shall be submitted in a sealed envelope which shall be plainly marked in the upper left hand corner with the name and address of the Bidder and shall bear the words "BID FORM" followed by the title of the Contract Documents for the WORK, the name of the OWNER, the address where Bids are to be delivered or mailed to, and the date and hour of opening of Bids.

5. CERTIFICATES.

5.1 Bids by corporations must be executed in the corporate name by the president, a vice-president, or other corporate officer. Such Bid shall be accompanied by the enclosed Certificate of Authority to sign, attested by the secretary or assistant secretary, and with the corporate seal affixed. The corporate address and state of incorporation must appear below the signature.

5.2 Bids by partnerships must be executed in the partnership name and be signed by a managing partner, accompanied by the enclosed Certificate of Authority to sign, and his/her title must appear under the signature and the official address of the partnership must appear below the signature.

5.3 Bids by joint ventures must be executed in the joint venture name and be signed by a joint venture managing partner, accompanied by the enclosed Certificate of Authority to sign, and his/her title must appear under the signature and the official address of the joint venture must appear below the signature.

6. DISQUALIFICATION OF BIDDERS. More than one Bid from an individual, firm, partnership, corporation, or association under the same or different names will not be considered. If the OWNER believes that any Bidder has financial interest in more than one Bid for the WORK contemplated, all Bids in which such Bidder is interested will be rejected. If the OWNER reasonably believes that collusion exists among the Bidders, all Bids will be rejected. A party who has quoted prices to a Bidder is not hereby disqualified from quoting prices to other Bidders, but is disqualified from submitting a Bid directly for the WORK.

7. QUANTITIES OF WORK. The quantities of work or material stated in unit price items of the Bid are supplied only to give an indication of the general scope of the WORK; the OWNER does not expressly or by implication agree that the actual amount of work or material will correspond therewith, and reserves the right after award to increase or decrease the quantity of any unit price item of the WORK by an amount up to and including 25 percent of any Bid item, without a change in the unit price, and shall include the right to delete any Bid item in its entirety, or to add additional Bid items up to and including an aggregate total amount not to exceed 25 percent of the Bid price.

8. COMPETENCY OF BIDDERS. Only qualified and E100 licensed CONTRACTORS specializing in mechanical construction may submit a bid for the performance of the WORK.

9. SUBMISSION OF BIDS. The Bid shall be delivered by the time and to the place stipulated in the Notice Inviting Bids. It is the Bidder's sole responsibility to see that its Bid is received in proper time and at the proper place.

10. BID SECURITY, BONDS, AND INSURANCE. Each Bid shall be accompanied by a certified or cashier's check or approved Bid Bond in the amount stated in the Notice Inviting Bids. Said check or bond shall be made payable to the OWNER and shall be given as a guarantee that the Bidder, if awarded the WORK, will enter into an Agreement with the OWNER, and will furnish the necessary insurance certificates, Payment Bond, and Performance Bond; each of said bonds to be in the amount stated in the Supplementary General Conditions. In case of refusal or failure to enter into said Agreement, the check or Bid Bond, as the case may be, shall be forfeited to the OWNER. If the Bidder elects to furnish a Bid Bond as its Bid security, the Bidder shall use the Bid Bond form bound herein, or one conforming substantially to it in form. Bid Bonds shall comply with the requirements applicable to payment and performance bonds in the General Conditions.

11. DISCREPANCIES IN BIDS. In the event there is more than one Bid item in a Bid Schedule, the Bidder shall furnish a price for all Bid items in the Schedule, and failure to do so will render the Bid non-responsive and shall cause its rejection. In the event there are unit price Bid items in a Bidding schedule and the amount indicated for a unit price Bid item does not equal the product of the unit price and quantity, the unit price shall govern and the amount will be corrected accordingly, and the BIDDER shall be bound by said correction. In the event there is more than one Bid item in a Bid Schedule and the total indicated for the Schedule does not agree with the sum of the prices Bid on the individual items, the prices Bid on the individual items shall govern and the total for the Schedule will be corrected accordingly, and the BIDDER shall be bound by said correction.

12. MODIFICATIONS AND UNAUTHORIZED ALTERNATIVE BIDS. Unauthorized conditions, limitations, or provisos attached to the Bid shall render it informal and may cause its rejection as being non-responsive. The Bid forms shall be completed without interlineations, alterations, or erasures in the printed text. Alternative Bids will not be considered unless called for. Oral, telegraphic, telephonic or electronic Bids or modifications will not be considered.

13. WITHDRAWAL OF BID. The Bid may be withdrawn by the Bidder by means of a written request, signed by the Bidder or its properly authorized representative. Such written request must be delivered to the place stipulated in the Notice Inviting Bids for receipt of Bids prior to the scheduled closing time for receipt of Bids.

14. AWARD OF CONTRACT. Award of the contract, if awarded, will be made to the lowest responsive, responsible Bidder whose Bid complies with the requirements of the Contract Documents. Unless otherwise specified, any such award will be made within the period stated in the Notice Inviting Bids that the bids are to remain open. Unless otherwise indicated, a single award will be made for all the Bid items in an individual Bid Schedule.

15. RETURN OF BID SECURITY. Within 14 days after award of the contract, the OWNER will, if requested, return the Bid securities accompanying such Bids that are not being considered in making the award. All other Bid securities will be held until the Agreement has been finally executed. They will then be returned, if requested, to the respective Bidders whose Bids they accompany.

16. EXECUTION OF AGREEMENT. The Bidder to whom award is made shall execute a written Agreement with the OWNER on the form of agreement provided, shall secure all insurance, and shall furnish all certificates and bonds required by the Contract Documents within 14 calendar days after receipt of the agreement forms from the OWNER. Failure or refusal to enter into an Agreement as herein provided or to conform to any of the stipulated requirements in connection therewith shall be just cause for annulment of the award and forfeiture of the Bid security. If the lowest responsive, responsible Bidder refuses or fails to execute the Agreement, the OWNER may award the Contract to the second lowest responsive, responsible Bidder. If the second lowest responsive, responsible Bidder refuses or fails to execute the Agreement, the OWNER may award the contract to the third lowest responsive, responsible Bidder. On the failure or refusal of such second or third lowest Bidder to execute the Agreement, each such Bidder's Bid securities shall be likewise forfeited to the OWNER.

17. LIQUIDATED DAMAGES. Provisions for liquidated damages, if any, are set forth in the Agreement.

18. PREFERENCE FOR RESIDENT CONTRACTORS. The OWNER will apply the provisions of Utah Procurement Code 63G-6-405. titled Preference for Resident Contractors (Utah Code -- Title 63G -- Chapter 6) wherein it is stated “(2) (a) When

awarding contracts for construction, a public procurement unit shall grant a resident contractor a reciprocal preference as against a nonresident contractor from any state that gives or requires a preference to contractors from that state. (b) The amount of the reciprocal preference shall be equal to the amount of the preference applied by the state of the nonresident contractor."

- END OF INSTRUCTIONS TO BIDDERS -

SECTION 00300 – BID FORMS

BID

BID TO: South Valley Water Reclamation Facility

1. The undersigned Bidder proposes and agrees, if this Bid is accepted to enter into an Agreement with the OWNER in the form included in the Contract Documents to perform the WORK as specified or indicated in said Contract Documents entitled "South Valley Water Reclamation Facility – Clarifier Rehabilitation Project".
2. Bidder accepts all of the terms and conditions of the Contract Documents, including without limitation those in the Notice Inviting Bids and Instructions to Bidders, dealing with the dispositions of the Bid security.
3. This Bid will remain open for the period stated in the "Notice Inviting Bids" unless otherwise required by law. Bidder will enter into an Agreement within the time and in the manner required in the "Notice Inviting Bids" and the "Instructions to Bidders", required by the Contract Documents.
4. Bidder has examined copies of all the Contract Documents including the following Addenda (receipt of all of which is hereby acknowledged):

Number_____ Date _____

_____ _____

_____ _____

_____ _____

Failure to acknowledge addenda shall render the bid non-responsive and shall be cause for its rejection.

5. Bidder has familiarized itself with the nature and extent of the Contract Documents, WORK, site, locality where the WORK is to be performed, the legal requirements (federal, state, and local laws, ordinances, rules, and regulations), and the conditions affecting cost, progress or performance of the WORK and has made such independent investigations as Bidder deems necessary.

To all the foregoing, and including all Bid Forms contained in the Bid, said Bidder further agrees to complete the WORK required under the Contract Documents within the Contract Time stipulated in said Contract Documents, and to accept in full payment therefore the Contract Price based on the Total Bid Price(s) named in the aforementioned Bid forms.

Dated: _____ Bidder: _____

By: _____

Title: _____

BID CERTIFICATE

(if Corporation)

STATE OF)

) SS:

COUNTY OF)

I HEREBY CERTIFY that a meeting of the Board of Directors of the _____

_____

_____
a corporation existing under the laws of the State of _____, held on _____, 20 _____, the following resolution was duly passed and adopted:

"RESOLVED, that _____, as _____ of this Corporation, be and is hereby authorized to execute the Bid dated _____, 20___, to the South Valley Water Reclamation Facility by this Corporation and that his/her execution thereof, attested by the Secretary of this Corporation, and with the Corporate Seal affixed, shall be the official act and deed of this Corporation."

I further certify that said resolution is now in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the corporation this _____, day of _____, 20___.

_____
Secretary

(SEAL)

BID CERTIFICATE

(if Partnership)

STATE OF)

) SS:

COUNTY OF)

I HEREBY CERTIFY that a meeting of the Partners of the _____

_____

_____
a partnership existing under the laws of the State of _____, held on _____, 20 _____, the following resolution was duly passed and adopted:

"RESOLVED, that _____, as _____ of the Partnership, be and is hereby authorized to execute the Bid dated_____, 20___, to the South Valley Water Reclamation Facility by this Partnership and that his/her execution thereof, attested by the _____ shall be the official act and deed of this Partnership."

I further certify that said resolution is now in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand this _____, day of _____, 20___.

_____

BID CERTIFICATE

(if Joint Venture)

STATE OF)

) SS:

COUNTY OF)

I HEREBY CERTIFY that a meeting of the Principals of the _____

_____

_____
a joint venture existing under the laws of the State of _____, held on _____, 20 _____, the following resolution was duly passed and adopted:

"RESOLVED, that _____, as _____of the Joint Venture, be and is hereby authorized to execute the Bid dated_____, 20___, to the "South Valley Water Reclamation Facility by this Joint Venture and that his/her execution thereof, attested by the _____ shall be the official act and deed of this Joint Venture."

I further certify that said resolution is now in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the corporation this _____, day of _____, 20___.

_____

LIST OF SUBCONTRACTORS

The Bidder shall list below the name and the location of the place of business of each Subcontractor who will perform work or labor or render service to the prime contractor in or about the construction of the work or improvement, or a Subcontractor who, under subcontract to the prime contractor, specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of one-half of 1 percent of the prime contractor's total bid or ten thousand dollars ($10,000), whichever is greater. The Bidder shall also list below the portion of the WORK which will be performed by each Subcontractor under its contract. The prime contractor shall list only one Subcontractor for each portion as is defined by the prime contractor in its bid. The prime contractor shall submit information (see next page) required of specialty subcontractors which are proposed to do Coatings, Mechanical Work or Electrical Work, if any.

The Bidder's attention is directed to the provisions of Paragraph entitled "Subcontract Limitations," of the Supplementary General Conditions which stipulates the percent of the WORK to be performed with the Bidder's own forces. Failure to comply with this requirement will render the Bid non-responsive and may cause its rejection.

Work to be Performed	Subcontr. License Number	Percent of Total Bid	Subcontractor's Name and Address
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____

Note: Attach additional sheets if required.

INFORMATION REQUIRED OF SPECIALTY SUBCONTRACTORS

The Bidder shall furnish the following information for each specialty subcontractor. Additional sheets shall be attached as required. Failure to complete Item Nos. 1, 2, and 3, will cause the Bid to be non-responsive and may cause its rejection.

(1) SPECIALTY SUBCONTRACTOR's name and address:

_____

_____

_____

(2) SPECIALTY SUBCONTRACTOR's license:

Primary Classification _____

State License No. and Expiration Date _____

Specialty classifications held, if any: _____

Name of Licensee, if different from (1) above:

_____

_____

_____

.

(3) ATTACH TO THIS BID a list of the 5 most recent construction contracts or subcontracts completed by the SPECIALTY SUBCONTRACTOR involving Coatings, Mechanical or Electrical Work of similar type and comparable value at Municipal Water Treatment Plants or Municipal Wastewater Treatment Plants. The list shall include the following information as a minimum:

- Names, address, and telephone number of owner.
- Name of Project.
- Location of Project.
- Brief description of the work involved.
- Contract amount.
- Date of completion of the contract.
- Name, address, and telephone number of architect or engineer.
- Name of owner's project engineer.

INFORMATION REQUIRED OF BIDDER

The Bidder shall furnish the following information. Additional sheets shall be attached as required. Failure to complete Items will cause the Bid to be non-responsive and may cause its rejection.

(1) CONTRACTOR's name and address:

_____

_____

_____

(2) CONTRACTOR'S telephone number: _____

(3) CONTRACTOR's fax number: _____

(4) CONTRACTOR's license: Primary Classification _____

State License No. and Expiration Date _____

Specialty classifications held, if any: _____

Name of Licensee, if different from (1) above: _____

_____

_____

(5) Name, address, and telephone number of surety company and agent who will provide the required bonds on this contract:

_____

_____

_____

(6) ATTACH TO THIS BID a financial statement, references, and other information, sufficiently comprehensive to permit an appraisal of CONTRACTOR's current financial condition.

(7) ATTACH TO THIS BID a list of the 5 most recent construction contracts completed by the CONTRACTOR involving coatings of similar type and comparable value at Municipal Water Treatment Plants or Municipal Wastewater Treatment Plants. The list shall include the following information as a minimum:

- Names, address, and telephone number of owner.
- Name of Project.
- Location of Project.
- Brief description of the work involved.
- Contract amount.
- Date of completion of the contract.
- Name, address, and telephone number of architect or engineer.
- Name of owner's project engineer.

NONCOLLUSION AFFIDAVIT TO BE EXECUTED BY BIDDER

AND SUBMITTED WITH BID

STATE OF)

) SS:

COUNTY OF)

_____, being first duly sworn, deposes and says that he or she is _____ of_____ the party making the foregoing bid that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit or cost element of awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

Signed: _____

Subscribed and sworn to before me

this _____day of _____, 20____

_____
Notary Public in and for the
County of _____
State of _____

(SEAL)

BID BOND

KNOW ALL MEN BY THESE PRESENTS,

That _____as Principal, and _____as Surety, are held and firmly bound unto the South Valley Water Reclamation Facility hereinafter called "OWNER," in the sum of _____dollars, for the payment of which sum, well and truly to be made, we jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns firmly by these presents.

WHEREAS, said Principal has submitted a Bid to said OWNER to perform the WORK required under the bidding schedule(s) of the OWNER's Contract Documents entitled "South Valley Water Reclamation Facility – Clarifier Rehabilitation Project".

NOW THEREFORE, if said Principal is awarded a contract by said OWNER and, within the time and in the manner required in the "Notice Inviting Bids" and the "Instruction to Bidder" enters into a written Agreement on the form of agreement bound with said Contract documents, furnishes the required certificates of insurance, and furnishes the required Performance Bond and Payment Bond, and performs in all other respects the agreement created by this bid, then this obligation shall be null and void, otherwise it shall remain in full force and effect. The Surety stipulates and agrees that the obligation of said Surety shall in no way be impaired or affected by an extension of the time within which the OWNER may accept such bid and Surety further waives notice of any such extension. In the event suit is brought upon this bond by said OWNER and OWNER prevails, said Principal and Surety shall pay all costs incurred by said OWNER in such suit, including reasonable attorney's fees and costs to be fixed by the court.

SIGNED AND SEALED, this _____day of _____, 20_____

_____ (SEAL) _____ (SEAL)

(Principal) (Surety)

By: _____ By: _____

(Signature) (Signature)

(SEAL AND NOTARIAL ACKNOWLEDGEMENT OF SURETY)

- END OF BID FORMS -

SECTION 00310 – BID SCHEDULES

PART 1 – GENERAL

1.01 CONSTRUCTION CONTRACT

A. Name of Project: South Valley Water Reclamation Facility – Clarifier Rehabilitation Project

1.02 SCHEDULES TO BE ADDED TO THE AGREEMENT

A. This Bid Schedule contains the schedules of prices which will be incorporated into the Agreement by reference.

1.03 TAXES

A. The Bidder agrees that all sales, consumer, use, and other similar taxes are included in the stated bid prices for the WORK, unless provision is made herein for the Bidder to separately itemize the estimated amount of tax.

1.04 SCHEDULES OF PRICES

A. Schedule A: Base Lump Sum Bid. This item includes all of the WORK for the project as specified and shown on the Contract Documents. Bidder shall complete Schedule A in its entirety (see next page).

SCHEDULE A
SVWRF Clarifier Rehabilitation Project

Item No.	Description	Quantity Unit	Equipment Cost[1]	Unit Cost[2]	Total Cost[3]
1	Blasting and Painting of Specified Surfaces	1 Lump Sum	$	$	$
2	Westech Services including: Drive Rehabilitation Supply of Neoprene Squeegees Supply Replacement Baffles Mechanism Alignment Torque Meter Rehabilitation Startup & Inspection Services	1 Lump Sum	$	$	$
3	Structural Reinforcement of Loose and Damaged Connections	1 Lump Sum	$	$	$
4	Replace Piping, Heat Tracing & Insulation of Sprayer Pipes to Scum Beach	1 Lump Sum	$	$	$
5	Install of Neoprene Squeegees	1	$	$	$

		Lump Sum			
6	Replacement of Existing Hardware (Bolts, Washers, Bungees, Locking Arms)	1 Lump Sum	$	$	$
7	Removal of Miscellaneous Hardware	1 Lump Sum	$	$	$
$					

Continued…

Bid Schedule Total In Words: _____

[1]Costs for selected sole-sourced equipment have been predetermined, and pricing is provided where applicable and is for all the units shown and includes submittals, O&M manuals, commissioning and shipping costs. Copies of the respective proposals are provided in the appendix. Where given, use that pricing to determine the total cost. Otherwise obtain and provide pricing from vendors of the Bidder's choosing which conform to the specified requirements. Add sales taxes and other appropriate fees as required. See the following table for a listing of sole-sourced equipment and vendor information. Contractor shall purchase the designated equipment from the vendors listed below at the prices given above.

[2]Where equipment pricing is provided, show the Unit Cost for installation only of each item. Where equipment pricing is not provided, show Unit Cost to furnish and install the items.

[3]The Total Cost is the sum of the equipment costs, if provided, plus the Quantity multiplied by the Unit Cost.
All Unit Costs and Total Costs shall include all labor, equipment, tools, supplies, insurance, taxes, overhead, markups, applicable fees and all other costs associated with performing the Work. These costs shall be distributed fairly among the Bid Items according to their relative amounts and not weighted or unbalanced. The Owner may elect to perform or not perform any of the Bid Item Work according to its best interest, financial limitations or other considerations. The Unit Costs and Total Costs will be used to adjust the Contractor's compensation accordingly. No other compensation will be made for loss of revenue or profit or other expenses associated with these items.

Sole-Sourced Equipment and Vendor Information

Item No.	Description	Vendor
2	Drive Rehabilitation Supply of Neoprene Squeegees Supply Replacement Baffles Mechanism Alignment Torque Meter Rehabilitation Startup & Inspection Services	Jasen La Rue WesTech 3625 S West Temple Salt Lake City, Utah 84115 (801) 265-1000

- END OF BID SCHEDULES -

SECTION 00500 – AGREEMENT

THIS AGREEMENT is dated as of the _____day of _____ in the year 2017 by and between South Valley Water Reclamation Facility (hereinafter called OWNER) and _____ _____(Hereinafter called CONTRACTOR).

OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1. WORK.

CONTRACTOR shall complete the WORK as specified or indicated in the OWNER's Contract Documents entitled "South Valley Water Reclamation Facility – Clarifier Rehabilitation Project". The WORK is generally described as follows and as listed in Schedule A:

a) The WORK includes the cleaning of clarifier structures and hardware. The WORK includes rehabilitating hardware for attachments. The WORK includes the blasting and recoating of clarifier structures and hardware. The WORK includes the adjusting and recommissioning of clarifier mechanisms.

ARTICLE 2. CONTRACT TIMES

COMPLETION OF WORK: The WORK shall be completed as follows:

1. Contractor shall begin WORK as soon as the Notice to Proceed is issued following award of WORK. Notice to Proceed is planned for 7/25/2017. Work shall be completed by October 18, 2017.

ARTICLE 3. LIQUIDATED DAMAGES

OWNER and the CONTRACTOR recognize that time is of the essence of this Agreement and that the OWNER will suffer financial loss if the WORK is not completed within the time specified in Article 2 herein, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. They also recognize the delays, expense, and difficulties involved in proving in a legal proceeding the actual loss suffered by the OWNER if the WORK is not completed on time. Accordingly, instead of requiring any such proof, the OWNER and the CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) the CONTRACTOR shall pay the OWNER $500.00 for each day that expires after the deadlines specified in Article 2 herein.

ARTICLE 4. CONTRACT PRICE

OWNER shall pay CONTRACTOR for completion of the WORK in accordance with the Contract Documents in current funds the amount set forth in the Bid Schedule(s).

ARTICLE 5. PAYMENT PROCEDURES

CONTRACTOR shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by OWNER as provided in the General Conditions.

ARTICLE 6. CONTRACT DOCUMENTS

The Contract Documents which comprise the entire agreement between OWNER and CONTRACTOR concerning the WORK consist of this Agreement (pages 00500-1 to 00500-6, inclusive) and the following attachments to this Agreement:

- Notice Inviting Bids (pages 00030-1 to 00030-2, inclusive).
- Instructions to Bidders (pages 00100-1 to 00100-5, inclusive).
- Bid Forms including the Bid, Bid Schedule(s), information required of Bidder, Bid Bond, and all required certificates and affidavits (pages 00300-1 to 00300-9 and 00310-1 to 00310-2, inclusive).
- Performance Bond (pages 00610-1 to 00610-1, inclusive).
- Payment Bond (pages 00620-1 to 00620-1, inclusive).
- General Conditions (pages 00700-1 to 00700-38, inclusive).
- Supplementary General Conditions (pages 00800-1 to 00800-7, inclusive).
- Supplementary General Conditions (Utah) (pages 00810-1 to 00810-4, inclusive).
- Technical Specifications consisting of Divisions and pages, as listed in the Table of Contents.
- Drawings consisting of 7 sheets, as listed in the Table of Contents/List of Drawings.
- Addenda numbers _ to _, inclusive.
- Notice to Proceed.
- Change Orders which may be delivered or issued after Effective Date of this Agreement and are not attached hereto.

There are no Contract Documents other than those listed in this Article 6. The Contract Documents may only be amended by Change Order as provided in Paragraph 3.03 of the General Conditions.

ARTICLE 7. ASSIGNMENTS

No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation monies that may become due and monies that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

OWNER and CONTRACTOR each binds itself, its partners, successors, assigns and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect of all covenants, agreements and obligations contained in the Contract Documents.

IN WITNESS WHEREOF, OWNER and CONTRACTOR have caused this Agreement to be executed the day and year first above written.

OWNER:
South Valley Water Reclamation Facility
By _____
(Jerry Knight, Board Chairman)

Attest _____

Address for giving notices:
South Valley Water Reclamation Facility
7495 South 1300 West
West Jordan, Utah 84084

Approved as to Form:

_____
(Signature)

_____
(Facility Attorney)

CONTRACTOR:
_____
By_____

[CORPORATE SEAL]

Attest_____

Address for giving notices:
_____
_____
_____

Agent for service of process: _____
_____

Telephone No. for Agent
_____

AGREEMENT CERTIFICATE

(if Corporation)

STATE OF)

) SS:

COUNTY OF)

I HEREBY CERTIFY that a meeting of the Board of Directors of the _____

_____

_____

a corporation existing under the laws of the State of _____, held on _____, 20 _____, the following resolution was duly passed and adopted:

"RESOLVED, that _____, as _____ of this Corporation, be and is hereby authorized to execute the Agreement dated _____, 20___, to the South Valley Water Reclamation Facility by this Corporation and that his/her execution thereof, attested by the Secretary of this Corporation, and with the Corporate Seal affixed, shall be the official act and deed of this Corporation."

I further certify that said resolution is now in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the corporation this _____, day of _____, 20___.

_____

Secretary

(SEAL)

AGREEMENT CERTIFICATE

(if Partnership)

STATE OF)

) SS:

COUNTY OF)

I HEREBY CERTIFY that a meeting of the Partners of the _____

_____

_____

a partnership existing under the laws of the State of _____, held on _____, 20 _____, the following resolution was duly passed and adopted:

"RESOLVED, that _____, as _____ of the Partnership, be and is hereby authorized to execute the Agreement dated_____, 20___, by and between this Partnership and South Valley Water Reclamation Facility by this Partnership and that his/her execution thereof, attested by the _____ shall be the official act and deed of this Partnership."

I further certify that said resolution is now in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand this _____, day of _____, 20___.

_____

AGREEMENT CERTIFICATE

(if Joint Venture)

STATE OF)

) SS:

COUNTY OF)

I HEREBY CERTIFY that a meeting of the Principals of the _____

_____

_____

a joint venture existing under the laws of the State of _____, held on _____, 20 _____, the following resolution was duly passed and adopted:

"RESOLVED, that _____, as _____of the Joint Venture, be and is hereby authorized to execute the Agreement dated_____, 20___, by and between this Joint Venture and South Valley Water Reclamation Facility and that his/her execution thereof, attested by the _____ shall be the official act and deed of this Joint Venture."

I further certify that said resolution is now in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand this _____, day of _____, 20___.

_____

SECTION 00500 – AGREEMENT

THIS AGREEMENT is dated as of the _____day of _____ in the year 2017 by and between South Valley Water Reclamation Facility (hereinafter called OWNER) and _____ _____(Hereinafter called CONTRACTOR).

OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1. WORK.

CONTRACTOR shall complete the WORK as specified or indicated in the OWNER's Contract Documents entitled "South Valley Water Reclamation Facility – Clarifier Rehabilitation Project". The WORK is generally described as follows and as listed in Schedule A:

a) The WORK includes the cleaning of clarifier structures and hardware. The WORK includes rehabilitating hardware for attachments. The WORK includes the blasting and recoating of clarifier structures and hardware. The WORK includes the adjusting and recommissioning of clarifier mechanisms.

ARTICLE 2. CONTRACT TIMES

COMPLETION OF WORK: The WORK shall be completed as follows:

1. Contractor shall begin WORK as soon as the Notice to Proceed is issued following award of WORK. Notice to Proceed is planned for 7/25/2017. Work shall be completed by October 18, 2017.

ARTICLE 3. LIQUIDATED DAMAGES

OWNER and the CONTRACTOR recognize that time is of the essence of this Agreement and that the OWNER will suffer financial loss if the WORK is not completed within the time specified in Article 2 herein, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. They also recognize the delays, expense, and difficulties involved in proving in a legal proceeding the actual loss suffered by the OWNER if the WORK is not completed on time. Accordingly, instead of requiring any such proof, the OWNER and the CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) the CONTRACTOR shall pay the OWNER $500.00 for each day that expires after the deadlines specified in Article 2 herein.

ARTICLE 4. CONTRACT PRICE

OWNER shall pay CONTRACTOR for completion of the WORK in accordance with the Contract Documents in current funds the amount set forth in the Bid Schedule(s).

ARTICLE 5. PAYMENT PROCEDURES

CONTRACTOR shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by OWNER as provided in the General Conditions.

ARTICLE 6. CONTRACT DOCUMENTS

The Contract Documents which comprise the entire agreement between OWNER and CONTRACTOR concerning the WORK consist of this Agreement (pages 00500-1 to 00500-6, inclusive) and the following attachments to this Agreement:

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- Bid Forms including the Bid, Bid Schedule(s), information required of Bidder, Bid Bond, and all required certificates and affidavits (pages 00300-1 to 00300-9 and 00310-1 to 00310-2, inclusive).
- Performance Bond (pages 00610-1 to 00610-1, inclusive).
- Payment Bond (pages 00620-1 to 00620-1, inclusive).
- General Conditions (pages 00700-1 to 00700-38, inclusive).
- Supplementary General Conditions (pages 00800-1 to 00800-7, inclusive).
- Supplementary General Conditions (Utah) (pages 00810-1 to 00810-4, inclusive).
- Technical Specifications consisting of Divisions and pages, as listed in the Table of Contents.
- Drawings consisting of 7 sheets, as listed in the Table of Contents/List of Drawings.
- Addenda numbers _ to _, inclusive.
- Notice to Proceed.
- Change Orders which may be delivered or issued after Effective Date of this Agreement and are not attached hereto.

There are no Contract Documents other than those listed in this Article 6. The Contract Documents may only be amended by Change Order as provided in Paragraph 3.03 of the General Conditions.

ARTICLE 7. ASSIGNMENTS

No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation monies that may become due and monies that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

OWNER and CONTRACTOR each binds itself, its partners, successors, assigns and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect of all covenants, agreements and obligations contained in the Contract Documents.

IN WITNESS WHEREOF, OWNER and CONTRACTOR have caused this Agreement to be executed the day and year first above written.

OWNER:
South Valley Water Reclamation Facility
By _____
(Jerry Knight, Board Chairman)

Attest _____

Address for giving notices:
South Valley Water Reclamation Facility
7495 South 1300 West
West Jordan, Utah 84084

Approved as to Form:

_____
(Signature)

_____
(Facility Attorney)

CONTRACTOR:
_____
By_____

[CORPORATE SEAL]

Attest_____

Address for giving notices:
_____
_____
_____

Agent for service of process: _____
_____

Telephone No. for Agent
_____

AGREEMENT CERTIFICATE

(if Corporation)

STATE OF)

) SS:

COUNTY OF)

I HEREBY CERTIFY that a meeting of the Board of Directors of the _____

_____

_____

a corporation existing under the laws of the State of _____, held on _____, 20 _____, the following resolution was duly passed and adopted:

"RESOLVED, that _____, as _____ of this Corporation, be and is hereby authorized to execute the Agreement dated _____, 20___, to the South Valley Water Reclamation Facility by this Corporation and that his/her execution thereof, attested by the Secretary of this Corporation, and with the Corporate Seal affixed, shall be the official act and deed of this Corporation."

I further certify that said resolution is now in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the corporation this _____, day of _____, 20___.

_____

Secretary

(SEAL)

AGREEMENT CERTIFICATE

(if Partnership)

STATE OF)

) SS:

COUNTY OF)

I HEREBY CERTIFY that a meeting of the Partners of the _____

_____

_____

a partnership existing under the laws of the State of _____, held on _____, 20 _____, the following resolution was duly passed and adopted:

"RESOLVED, that _____, as _____ of the Partnership, be and is hereby authorized to execute the Agreement dated_____, 20___, by and between this Partnership and South Valley Water Reclamation Facility by this Partnership and that his/her execution thereof, attested by the _____ shall be the official act and deed of this Partnership."

I further certify that said resolution is now in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand this _____, day of _____, 20___.

_____

AGREEMENT CERTIFICATE

(if Joint Venture)

STATE OF)

) SS:

COUNTY OF)

I HEREBY CERTIFY that a meeting of the Principals of the _____

_____

_____
a joint venture existing under the laws of the State of _____, held on _____, 20 _____, the following resolution was duly passed and adopted:

"RESOLVED, that _____, as _____of the Joint Venture, be and is hereby authorized to execute the Agreement dated_____, 20___, by and between this Joint Venture and South Valley Water Reclamation Facility and that his/her execution thereof, attested by the _____ shall be the official act and deed of this Joint Venture."

I further certify that said resolution is now in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand this _____, day of _____, 20___.

_____

SECTION 00610 - PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS,

That _____ as CONTRACTOR,

and _____ as Surety,

are held and firmly bound unto South Valley Water Reclamation Facility hereinafter called "OWNER," in the sum of _____ dollars,

for the payment of which sum, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION ARE SUCH that said CONTRACTOR has been awarded and is about to enter into the annexed Agreement with said OWNER to perform the WORK as specified or indicated in the Contract Documents entitled “South Valley Water Reclamation Facility – Clarifier Rehabilitation Project”.

NOW THEREFORE, if said CONTRACTOR shall perform all the requirements of said Contract Documents required to be performed on its part, at the times and in the manner specified therein, then this obligation shall be null and void, otherwise it shall remain in full force and effect.

PROVIDED, that any alterations in the WORK to be done or the materials to be furnished, or changes in the time of completion, which may be made pursuant to the terms of said Contract Documents, shall not in any way release said CONTRACTOR or said Surety hereunder, nor shall any extensions of time granted under the provisions of said Contract Documents, release either said CONTRACTOR or said Surety, and notice of such alterations or extensions of the Agreement is hereby waived by said Surety.

IN WITNESS WHEREOF, we have hereunder set our hands this_____day of_____, 20___.

(SEAL)	(SEAL)
_____	_____
(CONTRACTOR)	(Surety)
By: _____	By:_____
(Signature and SEAL)	(Signature and SEAL)

(SEAL AND NOTARIAL ACKNOWLEDGEMENT OF SURETY)

SECTON 00620 – PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS,

That _____ as CONTRACTOR,

and _____ as Surety,

are held and firmly bound unto South Valley Water Reclamation Facility hereinafter called "OWNER," in the sum of _____ dollars, for the payment of which sum, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION ARE SUCH that said CONTRACTOR has been awarded and is about to enter into the annexed Agreement with said OWNER to perform the WORK as specified or indicated in the Contract Documents entitled “South Valley Water Reclamation Facility – Clarifier Rehabilitation Project”.

NOW THEREFORE, if said CONTRACTOR, or subcontractor, fails to pay for any materials, equipment, or other supplies, or for rental of same, used in connection with the performance of work contracted to be done, or for amounts due under applicable State law for any work or labor thereon, said Surety will pay for the same in an amount not exceeding the sum specified above, and, in the event suit is brought upon this bond, reasonable attorney’s fees to be fixed by the court. This bond shall inure to the benefit of any persons, companies, or corporations entitled to file claims under applicable State law so as to give a right of action to them or their assigns in any suit brought upon this bond.

PROVIDED, that any alterations in the WORK to be done or the materials to be furnished, or changes in the time of completion, which may be made pursuant to the terms of said Contract Documents, shall not in any way release said CONTRACTOR or said Surety thereunder, nor shall any extensions of time granted under the provisions of said Contract Documents release either said CONTRACTOR or said Surety, and notice of such alterations or extensions of the Agreement is hereby waived by said Surety.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this_____ day of _____, 20____.

_____(SEAL) _____(SEAL)
(CONTRACTOR) (Surety)

By: _____ By: _____
(Signature) (Signature and SEAL)

(SEAL AND NOTARIAL ACKNOWLEDGEMENT OF SURETY)

- END OF BID FORMS -

SECTION 00700
GENERAL CONDITIONS

ARTICLE 1 – DEFINITIONS

Wherever used in these General Conditions or in the other Contract Documents and printed with initial or all capital letters, the following terms have the meanings indicated:

Addenda – Written or graphic instruments issued prior to the opening of Bids which make additions, deletions, or revisions to the Contract Documents.

Agreement – The written contract between the OWNER and the CONTRACTOR for the performance of the WORK pursuant to the Contract Documents. Documents incorporated into the contract by reference become part of the contract and of the Agreement.

Application for Payment – The form furnished by the ENGINEER and completed by the CONTRACTOR to request progress or final payment including supporting documentation to substantiate the amounts for which payment is requested.

Bid – The offer or proposal of a Bidder, submitted on the prescribed form, setting forth the price or prices for the WORK to be performed.

Bidder – Any person, firm or corporation submitting a Bid for the WORK.

Bonds – Bid, Performance and Payment Bonds and other instruments which protect the OWNER against loss due to inability or refusal of the CONTRACTOR to perform pursuant to the Contract Documents.

Change Order – A document recommended by the OWNER'S REPRESENTATIVE, which is signed by the CONTRACTOR and the OWNER and authorizes an addition, deletion, or revision in the WORK, or an adjustment in the Contract Price or the Contract Time, issued on or after the Effective Date of the Agreement.

Contract Documents – The documents which comprise the entire agreement between OWNER and CONTRACTOR concerning the WORK, consisting of the Drawings, Technical Specifications, General Conditions, Supplementary General Conditions, Notice Inviting Bids, Instructions to Bidders, Addenda, CONTRACTOR's Bid, Information Required of Bidder, Agreement, Performance Bond, Payment Bond, Notice To Proceed and Change Orders. Only printed or hard copies of the documents listed above are Contract Documents.

Contract Price – The total monies payable by the OWNER to the CONTRACTOR for completion of the WORK under the terms and conditions of the Contract Documents.

Contract Time – The number of successive Days or the date stated in the Contract Documents for Substantial Completion of the WORK. The Contract Time begins to run on the date specified in the Notice to Proceed.

CONTRACTOR – The person, firm, or corporation with whom the OWNER has executed the Agreement.

Day – A calendar day of 24 hours measured from midnight to the next midnight.

Defective Work – Work that: is unsatisfactory, faulty, or deficient; does not conform to the Contract Documents; does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract Documents; has been damaged prior to the ENGINEER's recommendation of final payment.

Drawings – The drawings, plans, maps, profiles, diagrams, and other graphic representations which show the character, location, nature, extent, and scope of the WORK.

Effective Date of the Agreement – The date indicated in the Agreement on which it was executed.

ENGINEER – The person, firm or corporation named as such in the Contract Documents.

Field Order – A written order issued by the OWNER which requires minor changes in the WORK, but which does not involve a change in the Contract Price or Contract Time.

General Requirements – Division 1 of the Technical Specifications.

Laws and Regulations; Laws or Regulations – Includes any and all applicable state, federal and local statutes, common law, rules, regulations, ordinances, codes, and/or orders.

Notice of Award – The OWNER's written notice to the apparent successful Bidder stating that upon compliance with the conditions precedent enumerated therein by the apparent successful Bidder within the time specified, the OWNER will enter into the Agreement.

Notice to Proceed – The OWNER's written notice to the CONTRACTOR authorizing the CONTRACTOR to proceed with the work and establishing the date of commencement of the Contract Time.

OWNER – SOUTH VALLEY WATER RECLAMATION FACILITY.

OWNER'S REPRESENTATIVE – The authorized representative of the OWNER who is assigned to the site or any part thereof.

Partial Utilization – Placing a portion of the WORK in service for the purpose for which it is intended (or a related purpose) before reaching Substantial Completion of the WORK.

Project – A unit of total construction of which the WORK to be provided under the Contract Documents, may be the whole, or a part thereof.

Shop Drawings – All drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for the CONTRACTOR to illustrate some portion of WORK and all illustrations, brochures, standard schedules, performance charts, instruction, and diagrams to illustrate material or equipment for some portion of the WORK.

Specifications – (Same definition as for Technical Specifications hereinafter).

Subcontractor – An individual, firm, or corporation having a direct contract with the CONTRACTOR or with any other Subcontractor for the performance of a part of the WORK.

Substantial Completion – That state of construction when the WORK has progressed to the point where, in the opinion of the OWNER as evidenced by the Notice of Substantial

Completion, it is sufficiently complete, in accordance with the Contract Documents, so that the WORK can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to any work refer to substantial completion thereof.

Supplementary General Conditions – The part of the Contract Documents which makes additions, deletions, or revisions to these General Conditions.

Supplier – A manufacturer, fabricator, supplier, distributor, materialman, or vendor.

Technical Data – The factual information contained in reports describing physical conditions, including: exploration method, plans, logs, laboratory test methods and factual data. Technical Data does not include conclusions, interpretations, interpolations, extrapolations or opinions contained in reports or reached by the CONTRACTOR.

Technical Specifications – Those portions of the Contact Documents consisting of the General Requirements and written technical descriptions of products and execution of the WORK.

Underground Utilities – All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments and any encasements containing such facilities which have been installed under ground to furnish any of the following services or materials: water, sewage and drainage removal, electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, traffic, or other control systems.

WORK – The entire construction required to be furnished under the Contract Documents. WORK is the result of performing services, furnishing labor and supervision, and furnishing and incorporating materials and equipment into the construction, all as required by the Contract Documents.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 DELIVERY OF BONDS/INSURANCE CERTIFICATES

A. The CONTRACTOR shall deliver to the OWNER the Bonds and insurance certificates required by the Contract Documents within ten (10) days after receiving the Notice of Award from the OWNER.

2.02 COPIES OF DOCUMENTS

A. The OWNER shall furnish the CONTRACTOR five copies of the Contract Documents (Specifications and reduced Drawings), together with two sets of full-scale Drawings. Additional quantities of the Contract Documents will be furnished at reproduction cost.

2.03 STARTING THE PROJECT

A. The CONTRACTOR shall begin construction of the WORK within 10 days after the commencement date stated in the Notice to Proceed, but shall not commence construction prior to the commencement date.

2.04 BEFORE STARTING CONSTRUCTION

A. Before undertaking each part of the WORK, the CONTRACTOR shall carefully study and compare the Contract Documents to check and verify pertinent figures and dimensions shown thereon with all applicable field measurements. The CONTRACTOR shall promptly report in writing to the OWNER any conflict, error, or discrepancy which the CONTRACTOR may discover and shall obtain a written interpretation or clarification from the OWNER before proceeding with any work affected thereby.

B. The CONTRACTOR shall submit to the OWNER for review those documents called for under the Section entitled “Contractor Submittals” in the General Requirements.

2.05 PRECONSTRUCTION CONFERENCE

A. The CONTRACTOR shall attend a preconstruction conference with the OWNER, the ENGINEER and others as appropriate to discuss the construction of the WORK in accordance with the Contract Documents.

2.06 FINALIZING SCHEDULES

A. At least 7 days before the CONTRACTOR's submittal of its first Application for Payment, the CONTRACTOR, the OWNER, and others as appropriate will meet to finalize the schedules submitted in accordance with the General Requirements.

ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 INTENT

A. The Contract Documents comprise the entire agreement between OWNER and CONTRACTOR concerning the WORK. The Contract Documents are complementary, what is called for by one is as binding as if called for by all. The Contract Documents will be construed in accordance with the law of the place of the Project.

B. It is the intent of the Contract Documents to describe the WORK, as completely as possible and in a functional manner. The WORK is intended to be constructed in accordance with the Contract Documents. All work, materials, or equipment that may be reasonably inferred from the Contract Documents as being required to produce the completed work shall be supplied whether or not specifically called for. When words which have a well-known technical or trade meaning are used to describe work, materials, or equipment such words shall be interpreted in accordance with that meaning. Reference to standard specifications, manuals, or codes or any technical society, organization, or association, or to the Laws or Regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids, except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual, or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of the OWNER, the CONTRACTOR, or the ENGINEER or any of their consultants, agents, or employees from those set forth in the Contract Documents.

C. If, during the performance of the WORK, the CONTRACTOR finds a conflict, error or discrepancy in the Contract Documents, the CONTRACTOR shall immediately report it to the OWNER in writing and before proceeding with the work affected thereby. The OWNER shall then make a written interpretation, clarification, or correction.

3.02 ORDER OF PRECEDENCE OF CONTRACT DOCUMENTS

A. In resolving issues resulting from conflicts, errors, or discrepancies in any of the Contract Documents, or the order of precedence shall be as follows:

1. Change Orders
2. Agreement
3. Addenda
4. Supplementary General Conditions
5. General Conditions
6. Technical Specifications
7. Referenced Standard Specifications
8. Drawings
9. Contractor's Bid (Bid Form).

B. With reference to the Drawings the order of precedence is as follows:

1. Figures govern over scaled dimensions
2. Detail drawings govern over general drawings

3. Addenda/change order drawings govern over general drawings

4. Contract Drawings govern over standard drawings.

3.03 AMENDING AND SUPPLEMENTING CONTRACT DOCUMENTS

A. The Contract Documents may be amended by a Change Order (pursuant to Article 10) to provide for additions, deletions or revisions in the WORK or to modify terms and conditions.

3.04 REUSE OF DOCUMENTS

A. Neither the CONTRACTOR, Subcontractor, Supplier, nor any other person or organization performing any of the WORK under a contract with the OWNER shall have or acquire any title to or ownership rights in any of the Drawings, Technical Specifications, or other documents used on the WORK, and they shall not reuse any of them on the extensions of the Project or any other project without the written consent of the OWNER and the ENGINEER.

ARTICLE 4 – AVAILABILITY OF LANDS: PHYSICAL CONDITIONS, REFERENCE POINTS

4.01 AVAILABILITY OF LANDS

A. The OWNER shall furnish the lands, rights-of-way and easements upon which the WORK is to be performed and for access thereto, together with other lands designated for the use of the CONTRACTOR in the Contract Documents. Easements for permanent structures or permanent changes in existing major facilities will be obtained and paid for by the OWNER, unless otherwise provided in the Contract Documents. Nothing contained in the Contract Documents shall be interpreted as giving the CONTRACTOR exclusive occupancy of the lands or rights-of-way provided. The CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment. The CONTRACTOR shall not enter upon nor use any property not under the control of the OWNER until a written temporary construction easement agreement has been executed by the CONTRACTOR and the property owner, and a copy of the easement furnished to the ENGINEER prior to its use. Neither the OWNER nor the ENGINEER shall be liable for any claims or damages resulting from the CONTRACTOR's unauthorized trespass or use of any properties.

4.02 PHYSICAL CONDITIONS – SUBSURFACE AND EXISTING STRUCTURES

A. Explorations and Reports: The Supplementary General Conditions may identify exploration reports and subsurface conditions tests at the site that have been utilized by the OWNER in the preparation of the Contract Documents. The CONTRACTOR may rely upon the accuracy of the Technical Data contained in these reports. The CONTRACTOR is responsible for the interpretation, extrapolation or interpolation of all technical as well as nontechnical data and its reliance on the completeness, opinions and interpretation of the reports.

B. Existing Structures: The Supplementary General Conditions identify the drawings of physical conditions in or relating to existing surface and subsurface structures (except

Underground Utilities referred to in Paragraph 4.04 herein) which are at or contiguous to the site that have been utilized by the OWNER in the preparation of the Contract Documents. The CONTRACTOR is responsible for the interpretation, extrapolation or interpolation of all technical as well as nontechnical data and its reliance on the completeness, opinions and interpretation of the reports.

4.03 DIFFERING SITE CONDITIONS

A. The CONTRACTOR shall notify the OWNER upon encountering any of the following unforeseen conditions, hereinafter called "differing site conditions," during the prosecution of the WORK. The CONTRACTOR's notice to the OWNER shall be in writing and delivered before the differing site conditions are disturbed, but in no event later than 14 days after their discovery.

1. Subsurface or latent physical conditions at the site of the WORK which could not reasonably have been discovered through diligent inspection by CONTRACTOR before his Bid was submitted which differs materially from those indicated, described, or delineated in the Contract Documents including those reports and documents discussed in Paragraph 4.02; and

2. Physical conditions at the site of the WORK of an unusual nature which could not reasonably have been discovered through diligent inspection by CONTRACTOR before his Bid was submitted and which differ materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents including those reports and documents discussed in Paragraph 4.02.

B. The OWNER will review the alleged differing site conditions; determine the necessity of obtaining additional explorations or tests with respect to verifying their existence and extent.

C. If the OWNER concludes that because of newly discovered conditions a change in the Contract Documents is required, a Change Order will be issued as provided in Article 10 to reflect and document the consequences of the differing site conditions.

D. In each such case, an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, or any combination thereof, will be allowable to the extent that they are attributable to the differing site conditions. If the OWNER and the CONTRACTOR are unable to agree as to the amount or length of the Change Order, a claim may be made as provided in Articles 11 and 12.

E. The CONTRACTOR's failure to give written notice of differing site conditions within 14 days of their discovery and before they are disturbed shall constitute a waiver of all claims in connection therewith, whether direct or consequential in nature.

4.04 PHYSICAL CONDITIONS – UNDERGROUND UTILITIES

A. Shown or Indicated: The information and data shown or indicated in the Contract Documents with respect to existing Underground Utilities at or contiguous to the site are based on information and data furnished to the OWNER by the owners of Underground Utilities or by others. Unless it is expressly provided in the Supplementary General

Conditions, the OWNER and the ENGINEER shall not be responsible for the accuracy or completeness of any Underground Utilities information or data. The CONTRACTOR's responsibility relating to underground utilities are: review and check all information and data, locate all Underground Utilities shown or indicated in the Contract Documents, coordinate the WORK with the owners of Underground Utilities during construction, safeguard and protect the Underground Utilities, and repair any damage to Underground Utilities resulting from the WORK. The cost of all these activities will be considered as having been included in the Contract Price.

B. Not Shown or Indicated: If an Underground Utility not shown or indicated in the Contract Documents is uncovered or revealed at or contiguous to the site and which the CONTRACTOR could not reasonably have been expected to be aware of, the CONTRACTOR shall identify the owner of the Underground Utility, give written notice of the location to that owner and notify the OWNER.

4.05 REFERENCE POINTS

A. The OWNER will provide one bench mark, near or on the site of the WORK, and will provide two points near or on the site to establish a base line for use by the CONTRACTOR in laying out the WORK. Unless otherwise specified in the General Requirements, the CONTRACTOR shall furnish all other lines, grades, and bench marks required for proper execution of the WORK.

B. The CONTRACTOR shall preserve all bench marks, stakes, and other survey marks. In case of their removal or destruction by its own employees or by its subcontractor's employees, the CONTRACTOR shall be responsible for the accurate replacement of reference points by professionally qualified personnel at no additional cost to the OWNER.

ARTICLE 5 – BONDS AND INSURANCE

5.01 PERFORMANCE, PAYMENT AND OTHER BONDS

A. The CONTRACTOR shall furnish Performance and Payment Bonds, each in the amount of 100% of the Contract Price as security for the faithful performance and payment of all the CONTRACTOR's obligations under the Contract Documents. The Performance Bond shall remain in effect at least until one year after the date of Notice of Completion, except as otherwise provided by Law or Regulation or by the Contract Documents. After the OWNER issues the Notice of Completion, the amount of the Performance Bond may be reduced to 10 percent of the Contract Price, or $1,000, whichever is greater. The CONTRACTOR shall also furnish such other Bonds as are required by the Supplementary General Conditions.

B. If the surety on any Bond furnished by the CONTRACTOR is declared a bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the WORK is located, the CONTRACTOR shall within 7 days after written approval by the OWNER of a substitute Bond and Surety substitute the approved Bond and Surety.

5.02 INSURANCE

A. The CONTRACTOR shall purchase and maintain the insurance required under this paragraph. This insurance shall include the specific coverages set out herein and be written for not less than the limits of liability and coverages provided in the Supplementary General Conditions, or required by law, whichever is greater. The CONTRACTOR's liabilities under the Agreement shall not be deemed limited in any way to the insurance coverage required.

B. The CONTRACTOR shall furnish the OWNER with certificates indicating the type, amount, class of operations covered, effective dates and expiration dates of all policies. All insurance policies purchased and maintained (or the certificates or other evidence thereof) shall contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 30 days' prior written notice has been given to the OWNER by certified mail. Contract or certificate terms which state that reasonable efforts will be made to notify the OWNER prior to cancellation, change or renewal of the policy are not acceptable. All insurance shall remain in effect until the OWNER issues the Notice of Final Completion and at all times thereafter when the CONTRACTOR may be correcting, removing, or replacing defective work in accordance with Paragraph 13.01B or completing punch list items required by the Notice of Substantial Completion. In addition, the insurance required herein (except for Worker's Compensation and Employer's Liability) shall name the OWNER, the ENGINEER, and their officers, agents, and employees as "additional insured" under the policies. All liability insurance policies shall be occurrence and not claims made policies.

1. Workers' Compensation and Employer's Liability: This insurance shall protect the CONTRACTOR against all claims under applicable state workers' compensation laws. The CONTRACTOR shall also be protected against claims for injury, disease, or death of employees which, for any reason, may not fall within the provisions of a workers' compensation law. This policy shall include an "all states" endorsement. The CONTRACTOR shall require each subcontractor similarly to provide Workers' Compensation Insurance for all of the latter's employees to be engaged in the WORK unless its employees are covered by the protection afforded by the CONTRACTOR's Workers' Compensation Insurance. In the event a class of employees is not protected under the Workers' Compensation Statute, the CONTRACTOR or Subcontractor, as the case may be, shall provide adequate employer's liability insurance for the protection of its employees not protected under the statute.

2. Comprehensive General Liability: This insurance shall be written in comprehensive form and shall protect the CONTRACTOR against all claims arising from injuries to persons other than its employees and damage to property of the OWNER or others arising out of any act or omission of the CONTRACTOR or its agents, employees or subcontractors. The policy shall include the following endorsements: (1) Protective Liability endorsement to insure the contractual liability assumed by the CONTRACTOR under the indemnification provisions in these General Conditions; (2) Broad Form Property Damage endorsement; (3) Personal Injury endorsement to cover personal injury liability for intangible harm. The Comprehensive General Liability coverage shall contain no exclusion relative to blasting, explosion, collapse of building, or damage to underground structures.

3. Comprehensive Automobile Liability: This insurance shall be written in comprehensive form. The policy shall protect the CONTRACTOR against all claims for injuries to employees, members of the public and damage to property of others arising from the use of CONTRACTOR's motor vehicles, whether they are owned, non-owned, or hired, and whether used or operated on or off the site. The motor vehicle insurance required under this paragraph shall include: (a) motor vehicle liability coverage; (b) personal injury protection coverage and benefits; (c) uninsured motor vehicle coverage; and (d) underinsured motor vehicle coverage.

4. Subcontractor's Insurance: The CONTRACTOR shall require each of its subcontractors to procure and to maintain Comprehensive General Liability Insurance and Comprehensive Automobile Liability Insurance of the type and in the amounts specified in the Supplementary General Conditions or insure the activities of its subcontractors in the CONTRACTOR's own policy, in like amount.

5. Builder's Risk: This insurance shall be of the "all risk" type, shall be written in completed value form, and shall protect the CONTRACTOR, the OWNER, and the ENGINEER against damage to buildings, structures, materials and equipment. The amount of this insurance shall not be less than the insurable value of the WORK at completion. Builder's risk insurance shall provide for losses to be payable to the CONTRACTOR, the OWNER, and the ENGINEER as their interests may appear. The policy shall contain a provision that in the event of payment for any loss under the coverage provided, the insurance company shall have no rights of recovery against the CONTRACTOR, the OWNER, or the ENGINEER. The Builder's Risk policy shall insure against all risks of direct physical loss or damage to property from any external cause including flood and earthquake. Allowable exclusions, if any, shall be as specified in the Supplementary General Conditions.

ARTICLE 6 – CONTRACTOR RESPONSIBILITIES

6.01 SUPERVISION AND SUPERINTENDENCE

A. The CONTRACTOR shall supervise and direct the WORK competently and efficiently, devoting the attention and applying the skills and expertise necessary to perform the WORK in accordance with the Contract Documents. The CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction and safety precautions and programs incidental thereto. The CONTRACTOR shall be responsible to see that the finished WORK complies accurately with the Contract Documents.

B. The CONTRACTOR shall employ the superintendent named in "Information Required of Bidder" on the work site at all times during the progress of the WORK. The superintendent shall not be replaced without the OWNER's written consent. The superintendent will be the CONTRACTOR's representative at the site and shall have authority to act on behalf of the CONTRACTOR. All communications given to the superintendent shall be as binding as if given to the CONTRACTOR. The CONTRACTOR shall issue all its communications to the OWNER.

C. The CONTRACTOR's superintendent, or OWNER approved representative shall be present at the site of the WORK at all times while work is in progress. Failure to observe this requirement shall be considered suspension of the WORK by the CONTRACTOR until the superintendent is again present at the site.

6.02 LABOR, MATERIALS, AND EQUIPMENT

A. The CONTRACTOR shall provide skilled, competent and suitably qualified personnel to survey and lay out the WORK and perform construction as required by the Contract Documents. The CONTRACTOR shall at all times maintain good discipline and order at the site.

B. Except in connection with the safety or protection of persons at the WORK, or property at the site or adjacent thereto, all work at the site shall be performed during regular working hours (7:00 a.m. – 6:00 p.m., Monday through Friday), and the CONTRACTOR will not permit overtime work or the performance of work on Saturday, Sunday or any legal holiday observed by the OWNER without the OWNER's written consent given after prior written notice to the OWNER. Except as otherwise provided in this Paragraph, the CONTRACTOR shall receive no additional compensation for overtime work, i.e., work in excess of 8 hours in any one calendar day or 40 hours in any one calendar week, even though such overtime work may be required under emergency conditions and may be ordered by the OWNER in writing. Additional compensation will be paid the CONTRACTOR for overtime work in the event extra work is ordered by the OWNER and the Change Order specifically authorizes the use of overtime work, but only to the extent that the CONTRACTOR pays overtime wages on a regular basis being paid (>40 hours per week) for overtime work of a similar nature in the same locality.

C. All costs of inspection and testing performed during overtime work approved solely for the convenience of the CONTRACTOR shall be borne by the CONTRACTOR. The OWNER shall have the authority to deduct the costs of all inspection and testing from any partial payments otherwise due to the CONTRACTOR.

D. Unless otherwise specified in the Contract Documents, the CONTRACTOR shall furnish, erect, maintain and remove the construction plant, and temporary works and assume full responsibility for all materials, equipment, labor, transportation, construction equipment, machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities and all other facilities and incidentals necessary for the furnishing, performance testing, start-up and completion of the WORK.

E. All materials and equipment incorporated into the WORK shall be of new and good quality, except as otherwise provided in the Contract Documents. If required by the OWNER, the CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. The CONTRACTOR shall apply, install, connect, erect, use, clean, and condition all material and equipment in accordance with the instructions of the manufacturer and Supplier except as otherwise provided in the Contract Documents.

6.03 ADJUSTING PROGRESS SCHEDULE

A. The CONTRACTOR shall submit any adjustments in the progress schedule to the OWNER for acceptance in accordance with the provisions for "Contractor Submittals" in the General Requirements.

6.04 SUBSTITUTES AND "OR-EQUAL" ITEMS

A. The CONTRACTOR shall submit proposed substitutes and "or-equal" items in accordance with the provisions for "Contractor Submittals" in the General Requirements.

6.05 SUBCONTRACTORS, SUPPLIERS, AND OTHERS

A. The CONTRACTOR shall be responsible to the OWNER and the ENGINEER for the acts and omissions of its subcontractors and their employees to the same extent as the CONTRACTOR is responsible for the acts and omissions of its own employees. Nothing contained in this paragraph shall create any contractual relationship between any subcontractor and the OWNER or the ENGINEER nor relieve the CONTRACTOR of any liability or obligation under the Agreement.

6.06 PERMITS

A. Unless otherwise provided in the Supplementary General Conditions, the CONTRACTOR shall obtain and pay for all construction permits and licenses from the agencies having jurisdiction, including furnishing the insurance and bonds required by such agencies. The costs incurred by the CONTRACTOR in compliance with this paragraph shall not be made the basis for claims for additional compensation. The OWNER shall assist the CONTRACTOR, when necessary, in obtaining such permits and licenses. The CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the WORK, which are applicable at the time of opening of Bids, including all utility connection charges for utilities required by the WORK.

B. The CONTRACTOR shall pay all license fees and royalties and assume all costs when any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others when issued in the construction of the WORK or incorporated into the WORK. If a particular invention, design, process, product, or device is specified in the Contract Documents for incorporation into or use in the construction of the WORK and if to the actual knowledge of the OWNER or the ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of these rights shall be disclosed by the OWNER in the Contract Documents. The CONTRACTOR shall indemnify, defend and hold harmless the OWNER and the ENGINEER and anyone directly or indirectly employed by either of them from and against all claims, damages, losses, and expenses (including attorneys' fees and court costs) arising out of any infringement of patent rights or copyrights incident to the use in the performance of the WORK or resulting from the incorporation in the WORK of any invention, design, process, product, or device not specified in the Contract Documents.

6.07 LAWS AND REGULATIONS

A. The CONTRACTOR shall observe and comply with all Laws and Regulations which in any manner affect those engaged or employed on the WORK, the materials used in the WORK, or the conduct of the WORK. If any discrepancy or inconsistency should be discovered in the Contract Documents in relation to any Laws or Regulations, the CONTRACTOR shall report the same in writing to the OWNER. Notwithstanding any immunity otherwise provided by applicable workers' compensation statutes, the CONTRACTOR shall indemnify, defend and hold harmless the OWNER, the ENGINEER and their officers, agents, and employees against all claims arising from violation of any Laws or Regulations, by CONTRACTOR or by its employees or subcontractors. This indemnity provision is intended to provide the greatest protection of the OWNER and ENGINEER allowed by law. Any particular law or regulation specified or referred to elsewhere in the Contract Documents shall not in any way limit the obligation of the CONTRACTOR to comply with all other provisions of federal, state, and local laws and regulations.

6.08 EQUAL OPPORTUNITY

A. The CONTRACTOR agrees not to discriminate against anyone because of race, national origin, ancestry, color, religion, sex, age, or disability. The CONTRACTOR agrees to abide by all applicable civil rights Laws and Regulations.

6.09 TAXES

A. The CONTRACTOR shall pay all sales, consumer, use, and other similar taxes required to be paid by the CONTRACTOR in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the WORK.

6.10 USE OF PREMISES

A. The CONTRACTOR shall confine construction equipment, stored materials and equipment, and other operations of workers to (1) the Project site, (2) the land and areas identified for the CONTRACTOR's use in the Contract Documents, and (3) other lands whose use is acquired by Laws and Regulations, rights-of-way, permits, and easements. The CONTRACTOR shall be fully responsible to the owner and occupant of such lands for any damage to the lands or areas contiguous thereto, resulting from the performance of the WORK or otherwise. Should any claim be made against the OWNER or the ENGINEER by owner or occupant of lands because of the performance of the WORK, the CONTRACTOR shall promptly settle the claim by agreement, or resolve the claim through litigation. The CONTRACTOR shall, to the fullest extent permitted by Laws and Regulations, indemnify, defend, and hold the OWNER and the ENGINEER harmless from and against all claims, damages, losses, and expenses (including, but not limited to, fees of engineers, architects, attorneys, and other professionals and court costs) arising directly, indirectly, or consequentially out of any action, legal or equitable, brought by any owner or occupant of land against the OWNER or the ENGINEER to the extent the claim is based or arises out of the CONTRACTOR's performance of the WORK.

6.11 SAFETY AND PROTECTION

A. The CONTRACTOR shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the WORK. The CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. All persons on or near the work site and other persons and organizations who may be affected by activities on or near the work site.

2. All the WORK and materials and equipment to be incorporated therein, whether in storage on or off the site; and

3. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

B. The CONTRACTOR shall comply with all applicable Laws and Regulations (whether referred to herein or not) of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury, or loss and shall erect and maintain all necessary safeguards for such safety and protection. The CONTRACTOR shall notify owners of adjacent property and utilities when prosecution of the WORK may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

C. Unless the CONTRACTOR otherwise designates in writing a different individual as the responsible individual, the CONTRACTOR's superintendent shall be CONTRACTOR's representative at the site whose duties shall include providing all persons on the work site with a reasonably safe environment and the prevention of accidents.

6.12 SHOP DRAWINGS AND SAMPLES

A. After checking and verifying all field measurements and after complying with the applicable procedures specified in the General Requirements, the CONTRACTOR shall submit all shop drawings to the OWNER for review and approval in accordance with the approved schedule for shop drawing submittals specified in the General Requirements.

B. The CONTRACTOR shall also submit to the OWNER for review and approval all samples in accordance with the approved schedule of sample submittals specified in the General Requirements.

C. Before submitting shop drawings or samples, the CONTRACTOR shall determine and verify all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar data with respect thereto and review or coordinate each shop drawing or sample with other shop drawings and samples and with the requirements of the WORK and the Contract Documents. The CONTRACTOR shall stamp each shop drawing, certifying his review. If the same shop drawings require re-submittal more than two times, the CONTRACTOR shall pay for the costs of ENGINEER’s and OWNER’s subsequent review(s).

6.13 CONTINUING THE WORK

A. The CONTRACTOR shall carry on the WORK and adhere to the progress schedule during all disputes or disagreements with the OWNER. No work shall be delayed or postponed pending resolution of any dispute or disagreement, except as the CONTRACTOR and the OWNER may otherwise mutually agree in writing.

6.14 INDEMNIFICATION

A. To the fullest extent permitted by Laws and Regulations, and notwithstanding any immunity the CONTRACTOR might otherwise have under applicable workers' compensation statutes, the CONTRACTOR shall indemnify, defend, and hold harmless the OWNER, the ENGINEER, and their officers, agents, and employees, against and from all claims and liability arising under or by reason of, or claimed by others to arise under or by reason of, the Agreement or any performance of the WORK, but not from the sole negligence or willful misconduct of the OWNER and/or the ENGINEER. Such indemnification by the CONTRACTOR shall include but not be limited to the following:

1. Liability or claims resulting in whole or in part, directly or indirectly from, or claimed by others to result in whole or in part, directly or indirectly from, the negligence, carelessness or other fault of the CONTRACTOR or its employees, Subcontractors, Suppliers or agents in the performance of the WORK, or in guarding or maintaining the same, or from any improper materials, implements, or appliances used in its construction;

2. Liability or claims arising in whole or in part, directly or indirectly, from or based on, or claimed by others to arise in whole or in part, directly or indirectly, from or based on, the violation of any Laws or Regulations by the CONTRACTOR or its employees, Subcontractors, Suppliers or agents;

3. Liability or claims arising in whole or in part, directly or indirectly, from, or claimed by others to arise in whole or in part, directly or indirectly from, the use or manufacture by the CONTRACTOR, or its Subcontractors, Suppliers or agents in the performance of this Agreement of any copyrighted or uncopyrighted composition, secret process, patented or unpatented invention, article, or appliance, unless otherwise specifically stipulated in this Agreement.

4. Liability or claims arising in whole or in part, directly or indirectly, from, or claimed by others to arise in whole or in part, directly or indirectly from, the breach of any warranties, whether express or implied, made by the CONTRACTOR or its Subcontractors, Suppliers or agents;

5. Liabilities or claims arising in whole or in part, directly or indirectly, from, or claimed by others to arise in whole or in part, directly or indirectly from, the willful misconduct of the CONTRACTOR or its Subcontractors, Suppliers or agents; and,

6. Liabilities or claims arising in whole or in part, directly or indirectly, from, or claimed by others to arise in whole or in part, directly or indirectly from, any breach of the obligations assumed herein by the CONTRACTOR or its Subcontractors, Suppliers or agents.

7. If for any reason the OWNER is required to pay damages in proportion to the fault of the OWNER notwithstanding the above indemnity provisions, CONTRACTOR shall, notwithstanding any workers' compensation immunity, indemnify and hold OWNER harmless from the payment of any increased damages OWNER is required to pay which result from a reapportionment of the fault of the CONTRACTOR, or any of its employees, Subcontractors or Suppliers pursuant to Utah Code Annotated section 78b-5-818, Comparative negligence.

B. The CONTRACTOR shall reimburse the OWNER, and the ENGINEER for all costs and expense, (including but not limited to fees and charges of engineers, architects, attorneys, and other professional and court costs) incurred by the OWNER, and the ENGINEER in enforcing the provisions of this Paragraph.

C. The indemnification obligation under this Paragraph shall not be limited in any way by any limitation of the amount or type of damages, compensation, or benefits payable by or for the CONTRACTOR or any such subcontractor or other person or organization under workers' compensation acts, disability benefit acts, or other employee benefit acts.

6.15 CONTRACTOR'S DAILY REPORTS

A. The CONTRACTOR shall complete a daily report indicating manpower, major equipment, subcontractors, weather conditions, etc., involved in the performance of the WORK. The daily report shall be completed on forms prepared by the CONTRACTOR and acceptable to the OWNER, and shall be submitted to the OWNER at the conclusion of each workday.

6.16 ASSIGNMENT OF CONTRACT

A. The CONTRACTOR shall not assign, sublet, sell, transfer, or otherwise dispose of the Agreement or any portion thereof, or its right, title, or interested therein, or obligations thereunder, without the written consent of the OWNER except as imposed by law. If the CONTRACTOR violates this provision, the Agreement may be terminated at the option of the OWNER. In such event, the OWNER shall be relieved of all liability and obligations to the CONTRACTOR and to its assignee or transferee, growing out of such termination.

ARTICLE 7 – OTHER WORK

7.01 RELATED WORK

A. The OWNER may perform other work related to the Project at the site by the OWNER's own forces, have other work performed by utility owners, or let other direct contracts for the performance of the other work which may contain General Conditions similar to these. If the fact that such other work is to be performed was not noted in the Contract Documents written notice thereof will be given to the CONTRACTOR prior to commencing any other work.

B. The CONTRACTOR shall afford each utility owner and other contractor who is a party to a direct contract (or the OWNER, if the OWNER is performing the additional work with the OWNER's employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the

execution of the other work. The CONTRACTOR shall properly connect and coordinate the WORK with the other work. The CONTRACTOR shall do all cutting, fitting, and patching of the WORK that may be required to make its several parts come together properly and integrate with the other work. The CONTRACTOR shall not endanger any work of others by cutting, excavating, or otherwise altering their work and shall only cut or alter their work with the written consent of the OWNER and the others whose work will be affected.

C. If the proper execution or results of any part of the CONTRACTOR's work depends upon the integration of work with the completion of other work by any other contractor or utility owner (or the OWNER), the CONTRACTOR shall inspect and report to the OWNER in writing all delays, defects, or deficiencies in the other work that renders it unavailable or unsuitable for proper integration with the CONTRACTOR's work. Except for the results or effects of material latent defects and deficiencies in the other work which could not reasonably have been discovered by the CONTRACTOR, the CONTRACTOR's failure to report will constitute an acceptance of the other work as fit and proper for integration with the CONTRACTOR's work and as a waiver of any claim for additional time or compensation associated with the integration of the CONTRACTOR's work with the other work.

7.02 COORDINATION

A. If the OWNER contracts with others for the performance of other work on the Project at the site, a coordinator will be identified to the extent that the coordinator can be identified at this time, in the Supplementary General Conditions and delegated the authority and responsibility for coordination of the activities among the various contractors. The specific matters over which the coordinator has authority and the extent of the coordinator's authority and responsibility will be itemized in the Supplementary General Conditions or in a notice to the CONTRACTOR at such time as the identity of the coordinator is determined.

ARTICLE 8 – OWNER'S RESPONSIBILITIES

8.01 COMMUNICATIONS

A. The OWNER shall issue all its communications directly to the CONTRACTOR.

8.02 PAYMENTS

A. The OWNER shall make payments to the CONTRACTOR as provided in Article 14.

8.03 LANDS, EASEMENTS, AND SURVEYS

A. The OWNER's duties with respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. The OWNER shall identify and make available to the CONTRACTOR copies of exploration reports and subsurface conditions tests at the site and in existing structures which have been utilized in preparing the Drawings and Technical Specifications as set forth in Paragraph 4.02

8.04 CHANGE ORDERS

A. The OWNER shall execute approved Change Orders for the conditions described in Paragraph 10.01D.

B. When funds are not budgeted to support continuation of performance in a subsequent fiscal period, the contract shall be canceled and the contractor shall be reimbursed for the reasonable value of any non-recurring costs incurred but not amortized in the price of the supplies or services delivered under the contract.

8.05 INSPECTIONS AND TESTS

A. The OWNER's responsibility with respect to inspection, tests, and approvals is set forth in Paragraph 13.03B.

8.06 SUSPENSION OF WORK

A. In connection with the OWNER's right to stop work or suspend work, see Paragraphs 13.04 and 15.01, Paragraphs 15.02 and 15.03 deal with the OWNER's right to terminate services of the CONTRACTOR under certain circumstances.

ARTICLE 9 – ENGINEER'S STATUS DURING CONSTRUCTION

9.01 OWNER'S REPRESENTATIVE

A. The OWNER will designate a representative during the construction period. The duties, responsibilities and the limitations of authority of the OWNER's representative during construction are summarized hereafter.

9.02 VISITS TO SITE

A. The ENGINEER will make visits to the site during construction to observe and inspect the progress and quality of the WORK and to determine, in general if the WORK is proceeding in accordance with the Contract Documents.

9.03 PROJECT REPRESENTATIVE

A. The OWNER'S Representative will observe and inspect the performance of the WORK. The Owner's Representative and/or other authorized agents of the OWNER shall serve as the primary contact(s) with the Contractor during the construction phase. All submittals shall be delivered to, and communications between the OWNER and the CONTRACTOR shall be handled by, the Owner's Representative and/or other authorized agents. The Owner's Representative shall be the primary authorized representative of the OWNER in all on-site relations with the CONTRACTOR.

9.04 CLARIFICATIONS AND INTERPRETATIONS

A. The OWNER will issue, with reasonable promptness written clarifications or interpretations of the requirements of the Contract Documents (in the form of Drawings or otherwise) as the OWNER may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents.

9.05 AUTHORIZED VARIATIONS IN WORK

A. The OWNER may authorize minor variations in the WORK as described in the Contract Documents when such variations do not involve an adjustment in the Contract Price or the Contract Time and are consistent with the overall intent of the Contract Documents. These variations shall be accomplished by issuing a Field Order. The issuance of a Field Order requires the CONTRACTOR to perform the work described in the order promptly. If the CONTRACTOR believes that a Field Order justifies an increase in the Contract Price or an extension of the Contract Time and the parties are unable to agree as to the amount or extent thereof, the CONTRACTOR may make a claim therefor as provided in Article 11 and 12.

9.06 REJECTION OF DEFECTIVE WORK

A. The OWNER is authorized to reject work which the OWNER believes to be defective and require special inspection or testing of the WORK as provided in Paragraph 13.03G, whether or not the WORK is fabricated, installed, or completed.

9.07 CONTRACTOR SUBMITTALS, CHANGE ORDERS, AND PAYMENTS

A. The OWNER will review for approval all CONTRACTOR submittals, including shop drawings, samples, substitutes, and "or equal" items, etc., in accordance with the procedures set forth in the General Requirements.

B. In connection with the OWNER's REPRESENTATIVE responsibilities as to Change Orders, see Articles 10, 11, and 12.

C. In connection with the OWNER responsibilities as to Applications for Payment, see Article 14.

9.08 DISPUTES, CLAIMS AND OTHER MATTERS

A. All claims, disputes, and other matters concerning the acceptability of the WORK, the interpretation of the requirements of the Contract Documents pertaining to the performance of the WORK, and claims for changes in the Contract Price or Contract Time under Articles 11 and 12 will be referred to the OWNER in writing with a request for formal decision in accordance with this paragraph. The OWNER will render a decision in writing within 30 days of receipt of the request. Written notice of each claim, dispute, or other matter will be delivered by the CONTRACTOR to the OWNER promptly (but in no event later than 30 days) after the occurrence of the event. Written supporting data will be submitted to the OWNER with the written claim unless the OWNER allows an additional period of time to ascertain more accurate data in support of the claim.

B. When reviewing the claim or dispute, the OWNER'S REPRESENTATIVE will not show partiality to the OWNER or the CONTRACTOR and will incur no liability in connection with any interpretation or decision rendered in good faith. The OWNER'S REPRESENTATIVE rendering of a decision with respect to any claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment as provided in Paragraph 14.12) shall be a condition precedent to the OWNER's or the CONTRACTOR's exercise of their rights or remedies under the

Contract Documents or by Law or Regulations with respect to the claim, dispute, or other matter.

9.09 LIMITATION ON ENGINEER'S RESPONSIBILITIES

A. Whenever in the Contract Documents the terms "as ordered," "as directed," "as required," as allowed," "as reviewed," "as approved," or terms of like effect or import are used, or the adjectives "reasonable," "suitable," "acceptable," "proper," or "satisfactory" or adjectives of like effect or import are used to describe a requirement, direction, review, or judgment of the OWNER as to the WORK, it is intended that such requirement, direction, review, or judgment will be solely to evaluate the WORK for compliance with the Contract Documents, unless there is a specific statement indicating otherwise. The use of any such term or adjective shall not be effective to assign to the OWNER any duty or authority to supervise or direct the performance of the WORK.

B. Neither the OWNER nor the ENGINEER will be responsible for the CONTRACTOR's means, methods, techniques, sequences, or procedures of construction not specified in the Contract Documents. Neither the OWNER nor the ENGINEER shall have any responsibility for safety precautions or programs on site or for the safety of CONTRACTOR'S employees, Subcontractors, employees of Subcontractors, Suppliers, employees of Suppliers or others on site.

C. Neither the OWNER nor the ENGINEER will be responsible for the acts or omissions of the CONTRACTOR nor of any Subcontractor, Supplier, or any other person or organization performing any of the WORK to the extent that such acts or omissions are not reasonably discoverable considering the level of observation and inspection required by the ENGINEER's agreement with the OWNER.

ARTICLE 10 – CHANGES IN THE WORK

10.01 GENERAL

A. Without invalidating the Agreement and without notice to any surety, the OWNER may at any time or from time to time, order additions, deletions, or revisions in the WORK; these will be authorized by a written Field Order and/or a Change Order issued by the OWNER. Upon receipt of any of these documents, the CONTRACTOR shall promptly proceed with the work involved pursuant to the applicable conditions of the Contract Documents.

B. If the OWNER and the CONTRACTOR are unable to agree upon the increase or decrease in the Contract Price or an extension or shortening of the Contract Time, if any, that should be allowed as a result of a Field Order, a claim may be made therefor as provided in Articles 11 and 12.

C. The CONTRACTOR shall not be entitled to an increase in the Contract Price nor an extension of the Contract Time with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented by Change Order, except in the case of an emergency and except in the case of uncovering work provided in the Paragraph 13.03G.

D. The OWNER and the CONTRACTOR shall execute appropriate Change Orders covering:

1. Changes in the WORK which are ordered by the OWNER pursuant to Paragraph 10.01A;

2. Changes required because of acceptance of defective work under Paragraph 13.06;

3. Changes in the Contract Price or Contract Time which are agreed to by the parties; or

4. Any other changes agreed to by the parties.

5. Any construction contract change order which increases the contract amount shall have the prior written certification of the District's controller that the expenditure of the change order amount is properly authorized by the Districts board of trustees consistent with the District's budget and financial management policies and the instructions of the board of trustees.

E. If the provisions of any Bond require notice of any change to be given to a surety, the giving of these notices will be the CONTRACTOR's responsibility. The CONTRACTOR shall provide for the amount of each applicable Bond to be adjusted accordingly.

10.02 ALLOWABLE QUANTITY VARIATIONS

A. Whenever a unit price and quantity have been established for a bid item in the Contract Documents, the quantity stated may be increased or decreased to a maximum of 25 percent with no change in the unit price. An adjustment in the quantity in excess of 25 percent will be sufficient to justify a change in the unit price. All changes in the quantities of bid items shall be documented by Change Order.

B. In the event a part of the WORK is to be entirely eliminated and no lump sum or unit price is named in the Contract Documents to cover the eliminated work, the price of the eliminated work shall be agreed upon in writing by the OWNER and the CONTRACTOR. If the OWNER and the CONTRACTOR fail to agree upon the price of the eliminated work, the price shall be determined in accordance with the provisions of Article 11.

ARTICLE 11 – CHANGE OF CONTRACT PRICE

11.01 GENERAL

A. The Contract Price constitutes the total compensation payable to the CONTRACTOR for performing the WORK. Except as directed by Change Orders, all duties, responsibilities, and obligations assigned to or undertaken by the CONTRACTOR shall be at its expense without change in the Contract Price.

B. The Contract Price may only be changed by a Change Order. Any claim for an increase in the Contract Price shall be based on written notice delivered by the CONTRACTOR to the OWNER promptly (but in no event later than 30 days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the

amount of the claim with supporting data shall be delivered with the claim, unless the OWNER allows an additional period of time to ascertain more accurate data in support of the claim, and shall be accompanied by the CONTRACTOR's written statement that the amount claimed covers all known amounts (direct, indirect, and consequential) to which the CONTRACTOR is entitled as a result of the occurrence of the event. If the OWNER and the CONTRACTOR cannot otherwise agree on the amount involved, all claims for adjustment in the Contract Price shall be determined by the OWNER in accordance with Paragraph 9.08A. No claim for an adjustment in the Contract Price will be valid if not submitted in accordance with this paragraph.

C. The value of any work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:

1. Where the work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of the items involved.

2. Mutual acceptance of a lump sum, which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.

3. On the basis of the cost of work (determined as provided in Paragraphs 11.02 and 11.03) plus a CONTRACTOR's fee for overhead and profit (determined as provided in Paragraph 11.04).

11.02 COST OF WORK (BASED ON TIME AND MATERIALS)

A. General: The term "cost of work" means the sum of all costs necessarily incurred and paid by the CONTRACTOR for labor, materials, and equipment in the proper performance of work. Except as otherwise may be agreed to in writing by the OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project.

B. Labor: The cost of labor used in performing work by the CONTRACTOR, a Subcontractor, or other forces will be the sum of the following:

1. The actual wages paid plus any employer payments to, or on behalf of workers for fringe benefits including health and welfare, pension, vacation, and similar purposes. The cost of labor may include the rates paid to foremen when determined by the OWNER that the services of foremen do not constitute a part of the overhead allowance.

2. All payments imposed by state and federal laws including, but not limited to, compensation insurance, and social security payments.

3. The amount paid for subsistence and travel required by collective bargaining agreements, or in accordance with the regular practice of the employer.

4. At the beginning of the extra work and as later requested by the OWNER, the CONTRACTOR shall furnish the OWNER proof of labor compensation rates being paid.

C. Materials: The cost of materials used in performing work will be the cost to the purchaser, whether CONTRACTOR or Subcontractor, from the Supplier thereof, except as the following are applicable:

1. Trade discounts available to the purchase shall be credited to the OWNER notwithstanding the fact that such discounts may not have been taken by the CONTRACTOR.

2. For materials secured by other than a direct purchase and direct billing to the purchaser, the cost shall be deemed to be the price paid to the actual Supplier as determined by the OWNER. Markup except for actual costs incurred in the handling of such materials will not be allowed.

3. Payment for materials from sources owned wholly or in part by the purchaser shall not exceed the price paid by the purchaser for similar materials from these sources on extra work items or current wholesale price for the materials delivered to the work site, whichever is lower.

4. If, in the opinion of the OWNER, the cost of material is excessive, or the CONTRACTOR does not furnish satisfactory evidence of the cost of the material, then the cost shall be deemed to be the lowest current wholesale price for the quantity concerned, delivered to the work site less trade discount. The OWNER reserves the right to furnish materials for the extra work and no claim shall be made by the CONTRACTOR for costs and profit on such materials.

D. Equipment: The CONTRACTOR will be paid for the use of equipment at the rental rate listed for the equipment specified in the Rental Rate Blue Book published by Dataquest, Inc. The rental rate will be used to compute payments for equipment whether the equipment is under the CONTRACTOR's control through direct ownership, leasing, renting, or another method of acquisition. The rental rate to be applied for use of each item of equipment shall be the rate resulting in the least total cost to the Owner for the total period of use.

1. All equipment shall, in the opinion of the OWNER, be in good working condition and suitable for the purpose for which the equipment is to be used.

2. Before construction equipment is used on the extra work, the CONTRACTOR shall plainly stencil or stamp an identifying number thereon at a conspicuous location, and shall furnish to the OWNER, in duplicate, a description of the equipment and its identifying number.

3. Unless otherwise specified, manufacturers' ratings and manufacturer-approved modifications shall be used to classify equipment for the determination of applicable rental rates. Equipment which has no direct power unit shall be powered by a unit of at least the minimum rating recommended by the manufacturer.

4. Individual pieces of equipment or tools having a replacement value of $100 or less, whether or not consumed by use, shall be considered to be small tools and no payment will be made therefore.

5. Rental time will not be allowed while equipment is inoperative due to breakdowns.

E. Equipment on the Work: The rental time to be paid for equipment used on the WORK shall be the time the equipment is in productive operation on the extra work being performed and, in addition, shall include the time required to move the equipment to the location of the extra work and return it to the original location or to another location that requires no more moving time than that required to return it to its original location. Moving time will not be paid if the equipment is used on other than the extra work, even though located at the site of the extra work. Loading and transporting costs will be allowed, in lieu of moving time, when the equipment is moved by means other than its own power. However, no payment will be made for loading and transporting costs when the equipment is used on other than the extra work even though located at the site of the extra work. The following shall be used in computing the rental time of equipment on the WORK.

1. When hourly rates are listed, any part of an hour less than 30 minutes of operation shall be considered to be 1/2-hour of operation, and any part of an hour in excess of 30 minutes will be considered one hour of operation.

2. When daily rates are listed, any part of a day less than 4 hours operation shall be considered to be 1/2-day of operation. When owner-operated equipment is used to perform extra work to be paid for on a time and materials basis, the CONTRACTOR will be paid for the equipment and operator, as set forth in Paragraph (3), (4), and (5), following.

3. Payment for the equipment will be made in accordance with the provisions in Paragraph 11.02D, herein.

4. Payment for the cost of labor and subsistence or travel allowance will be made at the rates paid by the CONTRACTOR to other workers operating similar equipment already on the WORK, or in the absence of such labor, established by collective bargaining agreements for the type of workmen and location of the extra work, whether or not the operator is actually covered by such an agreement. A labor surcharge will be added to the cost of labor described herein in accordance with the provisions of Paragraph 11.02B, herein, which surcharge shall constitute full compensation for payments imposed by state and federal laws and all payments made to on behalf of workers other than actual wages.

5. To the direct cost of equipment rental and labor, computed as provided herein, will be added the allowances for equipment rental and labor as provided in Paragraph 11.04, herein.

11.03 SPECIAL SERVICES

A. Special work or services are defined as that work characterized by extraordinary complexity, sophistication, or innovation or a combination of the foregoing attributes which are unique to the construction industry. The following may be considered by the OWNER in making estimates for payment for special services:

1. When the OWNER and the CONTRACTOR, by agreement, determine that a special service or work is required which cannot be performed by the forces of the CONTRACTOR or those of any of its Subcontractors, the special service or work may be performed by an entity especially skilled in the work to be performed. After validation of invoices and determination of market values by the OWNER, invoices for special services or work based upon the current fair market value thereof may be accepted without complete itemization of labor, material, and equipment rental cost.

2. When the CONTRACTOR is required to perform work necessitating special fabrication or machining process in a fabrication or a machine shop facility away from the job site, the charges for that portion of the work performed at the off-site facility may by agreement, be accepted as a special service and accordingly, the invoices from the work may be accepted without detailed itemization.

3. All invoices for special services will be adjusted by deducting all trade discounts offered or available, whether the discounts were taken or not. In lieu of the allowances for overhead and profit specified in Paragraph 11.04, herein, an allowance of 5 percent will be added to invoices for special services.

B. All work performed hereunder shall be subject to all of the provisions of the Contract Documents and the CONTRACTOR's sureties shall be bound with reference hereto as under the original Agreement. Copies of all amendments to surety bonds or supplemental surety bonds shall be submitted to the OWNER for review prior to the performance of any work hereunder.

11.04 CONTRACTOR'S FEE

A. Work ordered on the basis of time and materials will be paid for at the actual necessary cost as determined by the OWNER, plus allowances for overhead and profit. For extra work involving a combination of increases and decreases in the WORK, the actual necessary cost will be the arithmetic sum of the additive and deductive costs. The allowance for overhead and profit shall include full compensation for superintendence, bond and insurance premiums, taxes, office expenses, and all other items of expense or cost not included in the cost of labor, materials, or equipment provided for under Paragraphs 11.02B, C, and D herein, including extended overhead and home office overhead. The allowance for overhead and profit will be made in accordance with the following schedule:

OVERHEAD AND PROFIT ALLOWANCE

Labor …….	10 percent
Materials ……..	10 percent
Equipment ……...	10 percent

B. It is understood that labor, materials, and equipment may be furnished by the CONTRACTOR or by a Subcontractor, and that the allowance specified herein shall be applied to the labor, materials, and equipment costs of the Subcontractor, to which the CONTRACTOR may add five percent of the Subcontractor's total cost of work. Regardless of the number of hierarchical tiers of Subcontractors, the five-percent markup may be applied one time only for each separate work transaction.

ARTICLE 12 – CHANGE OF CONTRACT TIME

12.01 GENERAL

A. The Contract Time may only be changed by a Change Order. Any claim for an extension of the Contract time shall be based on written notice delivered by the CONTRACTOR to the OWNER promptly (but in no event later than 30 days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the extent of the claim with supporting data shall be delivered within 30 days after such occurrence (unless the OWNER allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by the CONTRACTOR's written statement that the adjustment claimed is the entire adjustment to which the CONTRACTOR has reason to believe it is entitled as a result of the occurrence of said event. Claims for adjustment in the Contract Time shall be determined by the OWNER in accordance with Paragraph 9.08 if the OWNER's representative and the CONTRACTOR cannot otherwise agree. No claim for an adjustment in the Contract Time will be valid if not submitted in accordance with the requirements of this paragraph.

B. The Contract Time will be extended in an amount equal to time lost if the CONTRACTOR makes a claim as provided in Paragraph 12.01A and the OWNER determines that the delay was caused by events beyond the control of the CONTRACTOR. Examples of events beyond the control of the CONTRACTOR include acts or neglect by the OWNER or others performing additional work as contemplated by Article 7, or by acts of God or of the public enemy, fire, floods, epidemics, quarantine restrictions, strikes, labor disputes, sabotage, or freight embargoes.

C. All time limits stated in the Contract Documents are of the essence.

D. None of the aforesaid time extensions shall entitle the CONTRACTOR to any adjustment in the Contract Price or any damages for delay. Furthermore, the CONTRACTOR hereby indemnifies and holds harmless the OWNER and ENGINEER, their officers, agents and employees from and against all claims, damages, losses and expenses (including lost property and attorney's fees) arising out of or resulting from the temporary suspension of work whether for the OWNER's convenience as defined in Article 15.01A or for whatever other reasons including the stoppage of work by the OWNER for the CONTRACTOR's failure to comply with any order issued by the OWNER.

12.02 EXTENSIONS OF THE TIME FOR DELAY DUE TO INCLEMENT WEATHER

A. "Inclement weather" is any weather condition or conditions resulting immediately therefrom, causing the CONTRACTOR to suspend construction operations or preventing the CONTRACTOR from proceeding with at least 75 percent of the normal labor and equipment force engaged on the WORK.

B. Should the CONTRACTOR prepare to begin work at the regular starting time at the beginning of any regular work shift on any day on which inclement weather, or its effects on the condition of the WORK prevents work from beginning at the usual starting time and the crew is dismissed as a result thereof, the CONTRACTOR will not be charged for a working day whether or not conditions change thereafter during the day and the major portion of the day could be considered to be suitable for construction operations.

C. The CONTRACTOR shall base its construction schedule upon the inclusion of the number of days of inclement weather specified in the Supplementary General Conditions. No extension of the Contract Time due to inclement weather will be considered until after the stated number of days of inclement weather has been reached. However, no reduction in Contract Time will be made if the number of inclement weather days is not reached.

12.03 EXTENSIONS OF TIME FOR OTHER DELAYS

A. If the CONTRACTOR is delayed in completion of the WORK beyond the Contract Time, by acts of God or of the public enemy, fire, floods, epidemics, quarantine restrictions, strikes, labor disputes, industry-wide shortage of raw materials, sabotage or freight embargoes, the CONTRACTOR shall be entitled to an adjustment in the Contract Time. No such adjustment will be made unless the CONTRACTOR shall notify the OWNER in writing of the causes of delay within 15 calendar days from the beginning of any such delay. The OWNER shall ascertain the facts and the extent of the delay. No adjustment in time shall be made for delays resulting from noncompliance with the Contract Documents, accidents, failure on the part of the CONTRACTOR to carry out the provisions of the Contract Documents including failure to provide materials, equipment or workmanship meeting the requirements of the Contract Documents; the occurrence of such events shall not relieve the CONTRACTOR from the necessity of maintaining the required progress.

B. If the CONTRACTOR is delayed in completing the WORK beyond the Contract Time by reason of shortages of raw materials required for CONTRACTOR-furnished items, the CONTRACTOR shall be entitled to an adjustment in the Contract Time in like manner as if the WORK had been suspended for the convenience and benefit of the OWNER; provided, however, that the CONTRACTOR shall furnish documentation acceptable to the OWNER that he placed or attempted to place firm orders with Suppliers at a reasonable time in advance of the required date of delivery of the items in question, that such shortages shall have developed following the date such orders were placed or attempts made to place same, that said shortages are general throughout the affected industry, that said shortages are shortages of raw materials required to manufacture CONTRACTOR furnished items and not simply failure of CONTRACTOR's Suppliers to manufacture, assemble or ship items on time, and that the CONTRACTOR shall, to the degree possible, have made revisions in the sequence of his operations, within the terms of the Contract Documents, to offset the expected delay. The CONTRACTOR shall notify the OWNER, in writing, concerning the cause of delay, within 15 calendar days of the beginning of such delay. The validity of any claim by the CONTRACTOR to an adjustment in the Contract Time shall be determined by the OWNER, and his findings thereon shall be based on the OWNER’s knowledge and observations of the events involved and documentation submitted by the CONTRACTOR, showing all applicable facts relative to the foregoing provisions. Only the physical shortage of raw materials will be considered under these provisions as a cause for adjustment of time and no consideration will be given to any claim that items could not be obtained at a reasonable, practical, or economical cost or price, unless it is shown to the satisfaction of the OWNER that such items could have been obtained only at exorbitant prices entirely out of line with current rates taking into account the quantities involved and the usual practices in obtaining such quantities.

C. If the CONTRACTOR is delayed in completion of the WORK by any act of the OWNER not authorized by the Contract Documents, an adjustment in the Contract Time will be made by the OWNER in like manner as if the WORK had been suspended for the convenience and benefit of the OWNER. In the event of such delay, the CONTRACTOR shall notify the OWNER in writing of the causes of delay within 15 calendar days from the beginning of any such delay.

ARTICLE 13 – WARRANTY AND GUARANTEE; TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

13.01 WARRANTY, GUARANTEE AND CORRECTION PERIOD

A. The CONTRACTOR warrants and guarantees to the OWNER and the ENGINEER that all work, equipment, materials and workmanship are in accordance with the Contract Documents and are not defective. Reasonably prompt notice of defects discovered by the OWNER or ENGINEER shall be given to the CONTRACTOR. All defective work, whether or not in place, may be rejected, corrected, or accepted as provided in this Article 13.

B. If within one (1) year after the date of final completion, as set by the Contractor's Certificate of Final Completion, or a longer period of time prescribed by Laws or Regulations or by the terms of any applicable special guarantee or specific provisions of the Contract Documents, any part of the WORK is found to be defective, the OWNER shall notify the CONTRACTOR in writing and the CONTRACTOR shall promptly, without cost to the OWNER and in accordance with the OWNER's written notification, either correct the defective work, or, if it has been rejected by the OWNER, remove it from the site and replace it with non-defective work. In the event the CONTRACTOR does not promptly comply with the notification, or in an emergency where delay would cause serious risk of loss or damage, the OWNER may have the defective work corrected or rejected work removed and replaced. All direct, indirect, and consequential costs of the removal and replacement including but not limited to fees and charges of engineers, architects, attorneys and other professionals will be paid by the CONTRACTOR. This paragraph shall not be construed to limit nor diminish the CONTRACTOR's absolute guarantee to complete the WORK in accordance with the Contract Documents.

13.02 ACCESS TO WORK

A. The ENGINEER, other representatives of the OWNER, testing agencies, and governmental agencies with jurisdictional interests shall have access to the work at reasonable times for their observation, inspections, and testing. The CONTRACTOR shall provide proper and safe conditions for their access.

13.03 TESTS AND INSPECTIONS

A. The CONTRACTOR shall give the OWNER timely notice of readiness of the WORK for all required inspections, tests, or approvals.

B. If Laws or Regulations of any public body other than the OWNER, with jurisdiction over the WORK require any work to be specifically inspected, tested, or approved, the CONTRACTOR shall pay all costs in connection therewith. The CONTRACTOR shall also be responsible for and shall pay all costs in connection with any inspection or

testing required in connection with the OWNER's acceptance of a Supplier of materials or equipment proposed as a substitution or "or-equal" to be incorporated in the WORK and of materials or equipment submitted for review prior to the CONTRACTOR's purchase for incorporation in the WORK. The cost of all inspections, tests, and approvals, with the exception of the above which are required by the Contract Documents, shall be paid by the OWNER (unless otherwise specified).

C. The OWNER will make, or have made, such inspections and tests as the OWNER deems necessary to see that the WORK is being accomplished in accordance with the Contract Documents. The CONTRACTOR, without additional cost to the OWNER, shall provide the labor and equipment necessary to make the WORK available for inspections. Unless otherwise specified in the Supplementary General Conditions, all other costs of inspection and testing will be borne by the OWNER. In the event the inspections or tests reveal non-compliance with the requirements of the Contract Documents, the CONTRACTOR shall bear the cost of corrective measures deemed necessary by the OWNER, as well as the cost of subsequent re-inspection and retesting. Neither observations by the OWNER nor inspections, tests, or approvals by others shall relieve the CONTRACTOR from the CONTRACTOR's obligation to perform the WORK in accordance with the Contract Documents.

D. All inspections, tests, or approvals other than those required by Laws or Regulations of any public body having jurisdiction shall be performed by properly licensed organizations selected by the OWNER.

E. If any work (including the work of others) that is to be inspected, tested, or approved is covered without the OWNER’s written authorization, it must, if requested by the OWNER, be uncovered for testing, inspection, and observation. The uncovering shall be at the CONTRACTOR's expense unless the CONTRACTOR timely notified the OWNER of the CONTRACTOR's intention to cover the same and the OWNER failed to act with reasonable promptness in response to the notice.

F. If any work is covered contrary to the written request of the OWNER, it must, if requested by the OWNER, be uncovered for the OWNER’s observation at the CONTRACTOR's expense.

G. If the OWNER considers it necessary or advisable that covered work be observed, inspected or tested by the OWNER or others, the OWNER shall direct the CONTRACTOR to uncover, expose, or otherwise make available for observation, inspection, or testing that portion of the work in question. The CONTRACTOR shall comply with the OWNER’s direction and furnish all necessary labor, material, and equipment. If the work is defective, the CONTRACTOR shall bear all direct, indirect and consequential costs of uncovering, exposure, observation, inspection, and testing and of satisfactory reconstruction of the work, including, but not limited to, fees and charges for engineers, architects, attorneys, and other professionals. However, if the work is not defective, the CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both. The increase in Contract Time and Contract Price shall be the CONTRACTOR's actual time and costs directly attributable to uncovering and exposing the work. If the parties are unable to agree as to the amount or extent of the changes, the CONTRACTOR may make a claim therefor as provided in Articles 11 and 12.

13.04 OWNER MAY STOP THE WORK

A. If the WORK is defective, or the CONTRACTOR fails to perform work in such a way that the completed WORK will conform to the Contract Documents, the OWNER may order the CONTRACTOR to stop the WORK, or any portion thereof, until the cause for the order has been eliminated. This right of the OWNER to stop the WORK shall not give rise to any duty on the part of the OWNER to exercise this right for the benefit of the CONTRACTOR or any other party.

13.05 CORRECTION OR REMOVAL OF DEFECTIVE WORK

A. When directed by the OWNER, the CONTRACTOR shall promptly correct all defective work, whether or not fabricated, installed, or completed, or, if the work has been rejected by the OWNER, remove it from the site and replace it with non-defective work. The CONTRACTOR shall bear all direct, indirect and consequential costs of correction or removal, including but not limited to fees and charges of engineers, architects, attorneys, and other professionals made necessary thereby. If the CONTRACTOR does not correct the defective work within 30 days, the OWNER may correct the WORK and charge the CONTRACTOR for the cost of correcting the defective WORK.

13.06 ACCEPTANCE OF DEFECTIVE WORK

A. If, instead of requiring correction or removal and replacement of defective work, the OWNER prefers to accept the work, the OWNER may do so. The CONTRACTOR shall bear all direct, indirect, and consequential costs attributable to the OWNER's evaluation of and determination to accept the defective work. If any acceptance of defective work occurs prior to final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the WORK, and the OWNER shall be entitled to an appropriate decrease in the Contract Price.

ARTICLE 14 – PAYMENTS TO CONTRACTOR, LIQUIDATED DAMAGES AND COMPLETION

14.01 LUMP SUM BID

A. A schedule of values or lump sum price breakdown will serve as the basis for progress payments for a lump sum Bid and will be incorporated into the form of Application for Payment included in the Contract Documents.

14.02 UNIT PRICE BID

A. Progress payments for a unit price Bid will be based on the number of units completed.

14.03 APPLICATION FOR PROGRESS PAYMENT

A. Unless otherwise prescribed by the OWNER, on the 25th of each month, the CONTRACTOR shall submit to the OWNER for review and approval, an Application for Payment completed and signed by the CONTRACTOR covering the WORK completed as of the date of the Application and accompanied by such supporting documentation as required by the Contract Documents.

B. The Application for Payment shall identify, as a sub-total, the amount of the CONTRACTOR's Total Earnings to Date, plus the Net Value of Materials On-site which have not yet been incorporated in the WORK.

C. The Net Payment Due to the CONTRACTOR shall be the above-mentioned sub-total, from which shall be deducted the retainage amount and the total amount of all previous payments made to the CONTRACTOR.

D. The OWNER may retain five percent of the amount otherwise due to the Contractor as retainage. Monies retained shall be placed in an interest-bearing account for the benefit of the CONTRACTOR.

E. Except as otherwise provided in the Supplementary General Conditions, the value of materials stored at the site shall be valued at 95 percent of the value of the materials. This amount shall be based upon the value of all acceptable materials and equipment stored at the site or at another location agreed to in writing by the OWNER; provided, each individual item has a value of more than $5000 and will become a permanent part of the WORK. The Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that the CONTRACTOR has received the materials and equipment free and clear of all liens, charges, security interests, and encumbrances (which are hereinafter referred to as "Liens") and evidence that the materials and equipment are covered by appropriate property insurance and other arrangements to protect the OWNER's interest therein, all of which will be satisfactory to the OWNER.

14.04 CONTRACTOR'S WARRANTY OF TITLE

A. The CONTRACTOR warrants and guarantees that title to all work, materials, and equipment covered by an Application for Payment, whether incorporated in the WORK or not, will pass to the OWNER no later than the time of final payment, free and clear of all liens.

14.05 REVIEW OF APPLICATIONS FOR PROGRESS PAYMENT

A. The OWNER will, within 7 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to the OWNER, or return the Application to the CONTRACTOR indicating in writing the OWNER’s reasons for refusing to recommend payment. In the latter case, the CONTRACTOR may make the necessary corrections and resubmit the Application. Thirty days after presentation of the Application for Payment with the OWNER’s REPRESENTATIVE recommendation, the amount recommended will (subject to the provisions of Paragraph 14.05B) become due and when due will be paid by the OWNER to the CONTRACTOR.

B. The OWNER may refuse to make payment of the full amount recommended by the OWNER’s REPRESENTATIVE to compensate for claims made by the OWNER on account of the CONTRACTOR's performance of the WORK or other items entitling the OWNER to a credit against the amount recommended, but the OWNER must give the CONTRACTOR written notice within 7 days stating the reasons for such action.

14.06 PARTIAL UTILIZATION

A. The OWNER may utilize or place into service any item of equipment or other usable portion of the WORK at any time prior to completion of the WORK. The OWNER shall notify the CONTRACTOR in writing of its intent to exercise this right. The notice will identify the equipment or specific portion or portions of the WORK to be utilized or otherwise placed into service.

B. It shall be understood by the CONTRACTOR that until such written notification is issued, all responsibility for care and maintenance of all items or portions of the WORK to be partially utilized shall be borne by the CONTRACTOR. Upon the issuance of a notice of partial utilization, the OWNER's REPRESENTATIVE will deliver to the OWNER and the CONTRACTOR a written recommendation as to division of responsibilities between the OWNER and the CONTRACTOR with respect to security, operation, safety, maintenance, heat, utilities and insurance.

C. The CONTRACTOR shall retain full responsibility for satisfactory completion of the WORK, regardless of whether a portion thereof has been partially utilized by the OWNER, and the CONTRACTOR's one-year correction period shall commence only after the date of Final Completion for the WORK.

14.07 DAMAGES

A. The CONTRACTOR shall pay to the OWNER the amount specified in the Supplementary General Conditions, not as a penalty but as liquidated damages, if he fails to complete the WORK or specified parts of the WORK within the Contract Time. The periods for which these damages shall be paid shall be the number of Days from the Contract Time as contained in the Agreement, or from the date of termination of any extension of time approved by the OWNER, to the date or dates on which the OWNER issues the Notice of Substantial Completion as provided in Article 14.08, herein. The OWNER may deduct the amount of said damages from any monies due or to become due the CONTRACTOR. After Substantial Completion, if the CONTRACTOR fails to complete the remaining WORK within 45 days or any proper extension thereof granted by OWNER, CONTRACTOR shall pay OWNER the amount stated in the Supplementary General Conditions as liquidated damages for each day that expires after the 45 days, until readiness for final payment.

B. The said amount is fixed and agreed upon by and between the CONTRACTOR and the OWNER because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the OWNER would sustain; and said amount is agreed to be the amount of damages which the OWNER would sustain.

C. If actual damages are assessed, they will include all costs incurred by the OWNER as a result of a delay in the completion time of the work beyond the contract time.

D. All times specified in the Contract Documents are hereby declared to be of the essence.

14.08 SUBSTANTIAL COMPLETION

A. When the CONTRACTOR considers the WORK ready for its intended use, the CONTRACTOR will notify the OWNER in writing that the WORK is Substantially

Complete. Within a reasonable time thereafter, the OWNER and the CONTRACTOR, shall make an inspection of the WORK to determine the status of completion. If the OWNER does not consider the WORK Substantially Complete, the OWNER will notify the CONTRACTOR in writing giving the reasons therefor. If the OWNER considers the WORK Substantially Complete, the OWNER will execute the Notice of Substantial Completion signed by the CONTRACTOR, which shall fix the date of Substantial Completion.

B. The Notice of Substantial Completion shall be a release by the CONTRACTOR of the OWNER and its agents from all claims and liability to the CONTRACTOR for anything done or furnished for, or relating to, the WORK or for any act or neglect of the OWNER or of any person relating to or affecting the WORK, to the date of Substantial Completion, except demands against the OWNER for the remainder of the amounts kept or retained from progress payments and excepting pending, unresolved claims filed in writing prior to the date of Substantial Completion. At the time of delivery of the Notice of Substantial Completion, the OWNER's REPRESENTATIVE will deliver to the OWNER and the CONTRACTOR, if applicable, a written recommendation as to division of responsibilities between the OWNER and the CONTRACTOR with respect to security, operation, safety, maintenance, heat, utilities and insurance. Upon the OWNER's acceptance of these recommendations, the recommendation will be binding on the OWNER and the CONTRACTOR until final payment.

C. The OWNER, upon written notice to the CONTRACTOR, shall have the right to exclude the CONTRACTOR from the WORK after the date of Substantial Completion, and complete all or portions of the WORK at the CONTRACTOR's expense.

14.09 COMPLETION AND FINAL PAYMENT

A. Upon written certification from the CONTRACTOR that the WORK is complete (if a Notice of Substantial Completion has been issued this certification must occur within 45 days of that date), the OWNER will make a final inspection with the CONTRACTOR. If the OWNER does not consider the WORK complete, the OWNER will notify the CONTRACTOR in writing of all particulars in which this inspection reveals that the WORK is incomplete or defective. The CONTRACTOR shall immediately take the measures necessary to remedy these deficiencies. If the OWNER considers the WORK complete, the CONTRACTOR may proceed to file its application for final payment pursuant to this Article. At the request of the CONTRACTOR, the OWNER's REPRESENTATIVE may recommend to the OWNER that certain minor deficiencies in the WORK that do not prevent the entire WORK from being used by the OWNER for its intended use, and the completion of which will be unavoidably delayed due to no fault of the CONTRACTOR, be exempted from being completed prerequisite to final payment. These outstanding items of pickup work, or "punch list items", shall be listed on the Notice of Substantial Completion, together with the recommended time limits for their completion, and extended warranty requirements for those items and the value of such items.

B. After the issuance of the Notice of Completion and after the CONTRACTOR has completed corrections that have not been exempted to the satisfaction of the OWNER and delivered to the OWNER all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, marked-up record documents and other documents, all as required by the Contract Documents; and after the OWNER has

indicated that the WORK is acceptable, the CONTRACTOR may make application for final payment following the procedure for progress payments. The final application for payment shall be accompanied by all documentation called for in the Contract Documents and other data and schedules as the OWNER may reasonably require, including an affidavit of the CONTRACTOR that all labor, services, material, equipment and other indebtedness connected with the WORK for which the OWNER or his property might in any way be responsible, have been paid or otherwise satisfied, and a consent of the payment bond surety to final payment, all in forms approved by the OWNER.

14.10 FINAL APPLICATION FOR PAYMENT

A. If, on the basis of the OWNER's observation of the WORK during construction and final inspection, and the OWNER's review of the final application for payment and accompanying documentation, all as required by the Contract Documents, the OWNER is satisfied that the WORK has been completed and the CONTRACTOR has fulfilled all of his obligations under the Contract Documents, the OWNER's REPRESENTATIVE will, within ten days after receipt of the final application for payment, indicate in writing his recommendation of payment and present the application to the OWNER for payment. Thereupon, the OWNER's REPRESENTATIVE will give written notice to the OWNER and the CONTRACTOR that the WORK is acceptable by executing the Notice of Completion. Otherwise, the OWNER will return the application to the CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case the CONTRACTOR shall make the necessary corrections and resubmit the application.

B. Within 45 calendar days after the Notice of Completion, the OWNER will make final payment including all deducted retainage and interest to the CONTRACTOR. The OWNER's remittance of final payment shall be the OWNER's acceptance of the WORK if formal acceptance of the WORK is not indicated otherwise. The final payment shall be that amount remaining after deducting all prior payments and all amounts to be kept or retained under the provisions of the Contract, including the following items:

1. Liquidated or actual damages, as applicable.

2. Two times the value of any outstanding items of pickup work or "punch list items", indicated on the OWNER's Notice of Completion as being yet uncompleted.

14.11 CONTRACTOR'S CONTINUING OBLIGATIONS

A. The CONTRACTOR's obligation to perform and complete the WORK in accordance with the Contract Documents shall be absolute. Neither recommendation of any progress or final payment by the OWNER, nor the issuance of a Notice of Substantial Completion or Notice of Completion, nor payment by the OWNER to the CONTRACTOR under the Contract Documents, nor any use or occupancy of the WORK or any part thereof by the OWNER, nor any act of acceptance by the OWNER nor any failure to do so, nor any review of a shop drawing or sample submittal, will constitute an acceptance of work or materials not in accordance with the Contract Documents or a release of the CONTRACTOR's obligation to perform the WORK in accordance with the Contract Documents.

14.12 FINAL PAYMENT TERMINATES LIABILITY OF OWNER

A. Final payment is defined as the last progress payment made to the CONTRACTOR for earned funds, less deductions listed in Paragraph 14.10B herein. The acceptance by the CONTRACTOR of the final payment referred to in Paragraph 14.10 herein, shall be a release of the OWNER and its agents from all claims of liability to the CONTRACTOR for anything done or furnished for, or relating to, the work or for any act or neglect of the OWNER or of any person relating to or affecting the work, except demands against the OWNER for the remainder, if any, of the amounts kept or retained under the provisions of Paragraph 14.10 herein; and excepting pending, unresolved claims filed prior to the date of the Notice of Substantial Completion.

ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

15.01 SUSPENSION OF WORK BY OWNER

A. The OWNER may, by written notice to the Contractor, temporarily suspend the WORK, in whole or in part, for a period or periods of time, but not to exceed 90 days, for the convenience and benefit of the OWNER upon the occurrence of any one or more of the following: (1) unsuitable weather; (2) delay in delivery of OWNER- furnished equipment or materials, or such other conditions as are considered unfavorable for prosecution of the work; (3) Shortfall in construction funds; (4) Constraints imposed by public entities, public utilities, property owners or legal proceedings; (5) Failure or delay in acquisition of easements or right-of-way by the OWNER; or (6) Other conditions which, in the opinion of the OWNER, warrant a delay in the WORK. Suspended WORK shall be resumed by the CONTRACTOR within 10 calendar days of receipt from the OWNER of written notice to resume work. Whenever the OWNER temporarily suspends work for any conditions enumerated in this Article, the CONTRACTOR shall be entitled to an adjustment in the Contract Time as specified in Article 12.03 C.

B. The suspension of work shall be effective upon receipt by the CONTRACTOR of a written order suspending the work and shall be terminated upon receipt by the Contractor of a written order terminating the suspension.

C. The CONTRACTOR hereby indemnifies and holds harmless the OWNER, their officers, agents and employees, from and against all claims, damages, losses and expenses, including lost profits and attorney's fees, arising out of or resulting from the temporary suspension of the WORK, whether for the OWNER's convenience described in this Article or for whatever other reasons, including the stoppage of work by the OWNER for the CONTRACTOR's failure to comply with any order issued by the OWNER.

15.02 TERMINATION OF AGREEMENT BY OWNER (CONTRACTOR DEFAULT)

A. In the event of default by the CONTRACTOR, the OWNER may give written notice to the CONTRACTOR of OWNER's intent to terminate the Agreement. The notice shall state the event of default and the time allowed to remedy the default. It shall be considered a default by the CONTRACTOR whenever the CONTRACTOR shall: (1) declare bankruptcy, become insolvent, or assign its assets for the benefit of its creditors; (2) fail to provide materials or workmanship meeting the requirements of the Contract Documents; (3) disregard or violate provisions of the Contract Documents or OWNER's instructions, (4) fail to prosecute the WORK according to the approved progress

schedule; or, (5) fail to provide a qualified superintendent, competent workmen, or materials or equipment meeting the requirements of the Contract Documents. If the CONTRACTOR fails to remedy the conditions constituting default within the time allowed, the OWNER may then issue a Notice of Termination.

B. In the event the Agreement is terminated in accordance with Paragraph 15.02A, the OWNER may take possession of the WORK and may complete the WORK by whatever method or means the OWNER may select. The cost of completing the WORK shall be deducted from the balance which would have been due the CONTRACTOR had the Agreement not been terminated and the WORK completed in accordance with the Contract Documents. If such cost exceeds the balance which would have been due, the CONTRACTOR shall pay the excess amount to the OWNER. If such cost is less than the balance which would have been due, the CONTRACTOR shall have no claim to the difference.

15.03 TERMINATION OF AGREEMENT BY OWNER (FOR CONVENIENCE)

A. The OWNER may terminate the Agreement at any time if it is found that reasons beyond the control of either the OWNER or CONTRACTOR make it impossible or against the OWNER's interests to complete the WORK. In such a case, the CONTRACTOR shall have no claims against the OWNER except: (1) for the value of the work, as determined by the OWNER, performed by the Contractor up to the date the Agreement is terminated; and, (2) for the cost of materials and equipment on hand, in transit, or on definite commitment, as of the date the Agreement is terminated, which would be needed in the WORK and which meet the requirements of the Contract Documents. The value of work performed and the cost of materials and equipment delivered to the site, as mentioned above, shall be determined by the OWNER in accordance with the procedure prescribed from making the final application for payment and final payment under Paragraphs 14.09 and 14.10.

15.04 TERMINATION OF AGREEMENT BY CONTRACTOR

A. The CONTRACTOR may terminate the Agreement upon 10 days written notice to the OWNER, whenever: (1) the WORK has been suspended under the provisions of Paragraph 15.01, for more than 90 consecutive days through no fault or negligence of the CONTRACTOR, and notice to resume work or to terminate the agreement has not been received from the OWNER within this time period; or, (2) the OWNER should fail to pay the CONTRACTOR any monies due him in accordance with the terms of the Contract Documents and within 60 days after presentation to the OWNER by the CONTRACTOR of a request therefore, unless within said 10-day period the OWNER shall have remedied the condition upon which the payment delay was based. In the event of such termination, the CONTRACTOR shall have no claims against the OWNER except for those claims specifically enumerated in Paragraph 15.03, and as determined in accordance with the requirements of that paragraph.

ARTICLE 16 – NOTICE

16.01 GIVING NOTICE

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a

member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

16.02 TITLE TO MATERIALS FOUND ON THE WORK

A. The OWNER reserves the right to retain title to all soils, stone, sand, gravel, and other materials developed and obtained from excavations and other operations connected with the WORK. Unless otherwise specified in the Contract Documents, neither the CONTRACTOR nor any Subcontractor shall have any right, title, or interest in or to any such materials. The CONTRACTOR will be permitted to use in the WORK, without charge, any such materials which meet the requirements of the Contract Documents.

16.03 RIGHT TO AUDIT

A. If the CONTRACTOR submits a claim to the OWNER for additional compensation, the OWNER shall have the right, as a condition to considering the claim, and as a basis for evaluation of the claim, and until the claim has been settled, to audit the CONTRACTOR's books. This right shall include the right to examine books, records, documents, and other evidence and accounting procedures and practices, sufficient to discover and verify all direct and indirect costs of whatever nature claimed to have been incurred or anticipated to be incurred and for which the claim has been submitted. The right to audit shall include the right to inspect the CONTRACTOR's plants, or such parts thereof, as may be or have been engaged in the performance of the WORK. The CONTRACTOR further agrees that the right to audit encompasses all subcontracts and is binding upon subcontractors. The right to examine and inspect herein provided for shall be exercisable through such representatives as the OWNER deems desirable during the CONTRACTOR's normal business hours at the office of the CONTRACTOR. The CONTRACTOR shall make available to the OWNER for auditing, all relevant accounting records and documents, and other financial data, and upon request, shall submit true copies of requested records to the OWNER.

16.04 HAZARDOUS MATERIALS

A. If the CONTRACTOR during the course of work observes the existence of hazardous material, the CONTRACTOR shall promptly notify the OWNER. The OWNER shall consult with others regarding removal or encapsulation of the hazardous material and the CONTRACTOR shall not perform any work pertinent to the hazardous material prior to receipt or special instruction from the OWNER.

ARTICLE 17 – SUBCONTRACT LIMITATIONS

17.01 SUBCONTRACT LIMITATIONS

A. In addition to the provisions of Paragraph 6.05 of the General Conditions, the CONTRACTOR shall perform not less than 30 percent of the WORK with its own forces (i.e., without subcontracting). The 30 percent requirement shall be understood to refer to the WORK, the value of which totals not less than 30 percent of the Contract Price.

ARTICLE 18 – PATENTS AND COPYRIGHTS

18.01 PATENTS AND COPYRIGHTS

A. The CONTRACTOR shall indemnify and save harmless the OWNER, the ENGINEER, and their officers, agents, and employees, against all claims or liability arising from the use of any patented or copyrighted design, device, material, or process by the CONTRACTOR or any of his subcontractors in the performance of the WORK.

-END OF SECTION-

SECTION 00800
SUPPLEMENTARY GENERAL CONDITIONS

PART 1 – GENERAL

These Supplementary General Conditions make additions, deletions, or revisions to the General Conditions as indicated herein. All provisions which are not so added, deleted, or revised remain in full force and effect. Terms used in these Supplementary General Conditions which are defined in the General Conditions have the meanings assigned to them in the General Conditions.

SGC-1 DEFINITIONS

Add the following definitions to Article 1:

OWNER – The OWNER is further defined as South Valley Water Reclamation Facility, 7495 South 1300 West, West Jordan, Utah 84084. Telephone No.: (801) 566-7711.

OWNER'S REPRESENTATIVE – The OWNER'S REPRESENTATIVE is defined in SGC – 9.03 on page 00800-5. The OWNER'S REPRESENTATIVE for this project shall be Taigon Worthen.

BIDDER – The person, firm, or corporation, partnership or joint venture or LLC submitting a Bid for the Work.

CONTRACTOR – The person, firm, or corporation, partnership or joint venture or LLC with whom the OWNER has executed the Agreement.

ENGINEER – Defined as the firm of JWO Engineering, PLLC, located at 1307 N Locust Ln, Provo, Utah 84604.

SGC-2.02 COPIES OF DOCUMENTS

The OWNER shall furnish to the CONTRACTOR 5 copies of the Contract Documents which may include bound reduced drawings, if any, together with 2 sets of full-scale Drawings if requested. Additional quantities of the Contract Documents will be furnished at reproduction cost plus mailing costs if copies are mailed.

SGC-4.02 REPORTS OF PHYSICAL CONDITIONS

In the preparation of the Contract Documents, the OWNER has relied upon:

A. The following drawings of physical conditions in or relating to existing surface and subsurface structures (except Underground utilities) which are at or contiguous to the site of the WORK.

1. Drawings dated May 28, 1982, prepared by James M. Montgomery, Consulting Engineers, Inc. entitled "SVWRF – Project 2A."

2. Drawings dated May 8, 1984, prepared by James M. Montgomery, Consulting Engineers, Inc. entitled "SVWRF - Project 2B."

3. Drawings dated January 23, 1992, prepared by James M. Montgomery, Consulting Engineers, Inc. entitled “SVWRF – Project 3.”

B. Copies of these drawings may be examined at the office of the OWNER, during regular business hours. As provided in Paragraph 4.02 of the General Conditions and as identified and established above, the CONTRACTOR may rely upon the accuracy of the technical data contained in such reports and drawings, except for such physical dimensions that can be field verified; however, the interpretation of such technical data, including any interpolation or extrapolation thereof, and opinions contained in such reports and drawings are not to be relied on by the CONTRACTOR.

SGC-5.01 BONDS

Delete the first sentence of Paragraph 5.1A and add the following:

The CONTRACTOR shall furnish a satisfactory Performance Bond in the amount of 100 percent of the Contract Price and a satisfactory Payment Bond in the amount of 100 percent of the Contract Price as security for the faithful performance and payment of all the CONTRACTOR’s obligations under the Contract Documents.

SGC-5.02 INSURANCE

A. Substitute for Paragraph 5.02.B. the following:

All insurance required by the Contract Documents to be purchased and maintained by the CONTRACTOR shall be obtained from insurance companies that are duly licensed, admitted, and authorized to issue insurance policies for the limits and coverage so required in the State in which the Project is located. Such insurance companies shall have a current Best’s Rating of at least an “A” (Excellent) general policy holder’s rating and a Class VIII financial size category and shall also meet such additional requirements and qualifications as may be provided in the Supplementary General Conditions.

B. Add the following to Paragraph 5.02.B.5:

If the OWNER finds it necessary to occupy or use a portion or portions of the project prior to Substantial Completion, the OWNER shall provide notice of occupancy without the need for mutual agreement between the OWNER and the CONTRACTOR and to which the insurance company providing the Builder’s Risk Insurance has consented by endorsement to the policy or policies.

C. The limits of liability for the insurance required by Paragraph 5.2 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations. Limits may be provided by a combination of primary and excess liability policies or through a single policy. If the limits are provided by a combination of primary and excess liability policies, then the excess or umbrella liability coverages shall include commercial general, comprehensive automobile, and employer’s liability and shall provide coverage at least as broad as the underlying policies.

1. Workers' Compensation:

a. State: Statutory
b. Applicable Federal (e.g. USHL&H): Statutory
c. Employer's Liability: $1,000,000

2. Comprehensive or Commercial General Liability:

Combined Single Limit:

a. Premises/operations

$ 1,000,000 Each Occurrence
$ 2,000,000 Annual Aggregate

b. Products/completed operations

$ 1,000,000 Each Occurrence
$ 2,000,000 Annual Aggregate

c. Personal Injury

$ 1,000,000 Each Occurrence
$ 2,000,000 Annual Aggregate

d. Policies shall include premises/operations, products, completed operations, independent contractors, owners' and contractors' protective, explosion, collapse, underground hazards, broad form contractual, personal injury with employment contractual exclusions deleted, and broad form property damage.

e. If policies are written on a Commercial General Liability form, the General Aggregate shall be at least two times the each occurrence limit or be written on a "per project" basis.

f. All policies shall be written on an occurrence basis. If the CONTRACTOR would like to substitute any "claims made" liability policies, then these must be pre-approved in writing according to the terms and conditions they may impose.

g. If policies are written for split limits, limits shall be equal for bodily injury and property damage liability.

3. Comprehensive Automobile Liability (including owned, hired, and non-owned vehicles):

Combined Single Limit:

a. Bodily Injury and Property Damage: $2,000,000 each accident

b. If policies are written for split limits, limits shall be equal for bodily injury per person, bodily injury per accident and property damage.

4. Excess Liability Insurance:

   a. $4,000,000 over all underlying coverage lines

5. Builder's Risk Insurance:

   a. In an amount equal to the replacement cost of the completed value of the project or $4,000,000 whichever is greater.

   b. Any deductibles of self-insured retentions shall be as agreed to by the OWNER and CONTRACTOR.

   c. The CONTRACTOR shall include flood and earthquake coverage in the Builder's Risk Insurance requirements under Paragraph 5.02.B.5 of the General Conditions, with a minimum limit of $4,000,000 per event or occurrence.

D. All policies shall provide that the CONTRACTOR agrees to waive all rights of subrogation against the OWNER, the ENGINEER, and their subconsultants, employees, officers and directors, for WORK performed under the Agreement. Endorsements shall be provided with certificates of insurance.

E. All policies shall also specify that the insurance provided by the CONTRACTOR will be considered primary and not contributory to another insurance available to the OWNER or ENGINEER.

F. All policies except Workers' Compensation and Builders Risk shall name the OWNER, including their officers, directors or board members, employees agents or any others associated with the management or operations of South Valley Water Reclamation Facility; Engineer, their consultants, subconsultants, shall be additional insureds on the Auto Liability and Commercial General Liability policies. The Builders Risk insurance shall name the CONTRACTOR, OWNER, and ENGINEER as named insureds and subcontractors and additional insureds. The Workers' Compensation policy shall name the OWNER as additional insured by means of an alternative employer endorsement, with respect to the employer's liability coverage only.

G. All policies shall provide for 60 days notice prior to any cancellation, reduction in coverage or nonrenewal.

H. The deductible or self-insured retention on Comprehensive or Commercial General Liability shall not be greater than $25,000. All deductibles are the responsibility of the CONTRACTOR.

SGC-6.05 SUBCONTRACT LIMITATIONS

Add the following as paragraph 6.05.B of the General Conditions

B. The CONTRACTOR shall perform not less than 30 percent of the WORK with its own forces (i.e., without subcontracting). The 30 percent requirement shall be understood to

refer to the WORK, the value of which totals not less than 30 percent of the Contract Price.

SGC-6.06 PERMITS

A. The CONTRACTOR shall acquire and comply with the following permits if applicable:

1. State permits to construct and/or operate sources of air pollution.

2. Certificates and permits are required for sources such as, but not limited to, the following:

a. Fuel burning equipment
b. Gasoline and petroleum distillate storage containers
c. Land disturbing activities
d. Processing equipment (sand, gravel, concrete batch plant, etc.)
e. Odors.

3. Permit-Required Confined Space: The workspace in which the WORK is to be performed may contain permit-required confined spaces (permit spaces) as defined in 29 CFR 1910.146. Permit space entry is allowed in such spaces only through compliance with a confined space entry program meeting the requirements of 29 CFR 1910.146.

4. Encroachment Permit

B. The CONTRACTOR shall comply with OWNER requirements for a “Hot Work Permit” as described in Section 01520 – Security/Process Safety Management.

SGC-9.03 PROJECT REPRESENTATION

A. The OWNER’s Representative, will act as directed by and under the supervision of the OWNER and will confer with the OWNER regarding its actions. The OWNER’s REPRESENTATIVE dealings in matters pertaining to the WORK shall, in general, be only with the OWNER and the CONTRACTOR, and dealings with Subcontractors shall only be through or with the full knowledge of the CONTRACTOR.

B. The OWNER’s REPRESENTATIVE shall have the duties and responsibilities set forth in this paragraph.

1. Review the progress schedule of Shop Drawing submittals and schedule of values prepared by the CONTRACTOR and consult with the ENGINEER concerning their acceptability, as applicable.

2. Attend preconstruction conferences. Arrange a schedule of progress meetings and other job conferences as required and notify in advance those expected to attend.
Attend meetings and maintain and circulate copies of minutes thereof.

3. Serve as the OWNER's liaison with the CONTRACTOR, working principally through the CONTRACTOR's superintendent and assist said superintendent in understanding the intent of the Contract Documents.

4. Receive Shop Drawings and samples furnished by the CONTRACTOR.

5. Conduct on-site observations of the WORK in progress to assist the OWNER in determining if the WORK is proceeding in accordance with the Contract Documents.

6. Transmit to the CONTRACTOR the OWNER's or ENGINEER's clarifications and interpretations of the Contract Documents.

7. Consider and evaluate the CONTRACTOR's suggestions for modifications in the Contract Documents and report them with recommendations to the OWNER.

8. Review applications for payment with the CONTRACTOR for compliance with the established procedure for their submittal and forward them with recommendations to the OWNER, noting particularly their relation to the schedule of values, work completed, and materials and equipment delivered at the Site but not incorporated in the WORK.

9. During the course of the WORK, verify that certificates, maintenance and operation manuals, and other data required to be assembled and furnished by the CONTRACTOR are applicable to the items actually installed.

10. Before the OWNER prepares a Notice of Completion, as applicable, submit to the CONTRACTOR a list of observed items requiring completion or correction.

11. Conduct final inspection in the company of the ENGINEER, the OWNER, and the CONTRACTOR, and prepare a punch list of items to be completed or corrected.

12. Verify that all items on the punch list have been completed or corrected and make recommendations concerning acceptance.

SGC-11.03D EQUIPMENT

The CONTRACTOR will be paid for the use of equipment at the rental rate listed for such equipment specified in the current edition of the following reference publication:

A. "Rental Rate Blue Book for Construction Machinery" as published by the Machinery Information Division of the K-III Directory Corporation, telephone number (800) 669-3282.

SGC-12.02 WEATHER DELAYS

The CONTRACTOR's construction schedule shall anticipate 30 days of delay due to unusually severe weather.

SGC-14.03C AMOUNT OF RETENTION

Add the following to Paragraph 14.03C of the General Conditions:

Unless otherwise prescribed by law, the OWNER may retain a portion of the amount otherwise due to the CONTRACTOR, as follows:

1. Retention of 5 percent of each approved progress payment until the WORK is certified as having reached substantial completion.

SGC-14.03D VALUE OF MATERIALS STORED AT THE SITE

Unless otherwise prescribed by law or prescribed in Assigned Purchase Order Agreements, the value of materials stored at the SVWRF shall be 95 percent of the value of such materials.

SGC-14.05.A REVIEW OF APPLICATIONS FOR PROGRESS PAYMENT

Replace the last sentence with the following: “Forty-Five days after presentation of the Application for Payment with the ENGINEER’S recommendation, the amount recommended will (subject to the provisions of Paragraph 14.05B) become due and when due will be paid by the OWNER to the CONTRACTOR.”

SGC-14.07.A DAMAGES

Add the following sentence: “The amount of liquidated damages shall be $500.00 per calendar day.”

-END OF SECTION-

SECTION 00810
SUPPLEMENTARY GENERAL CONDITIONS (UTAH)

SGC-18 UTAH STATE REQUIREMENTS

A. Retainage of Compensation to CONTRACTOR: Pursuant to Utah Code Ann. 13-8-5, any retainage of CONTRACTOR's compensation hereunder shall be placed in an interest-bearing escrow account and the interest which accrues thereon shall do so for the benefit of CONTRACTOR and Subcontractors. Release of the retainage shall be as contemplated by the General Conditions and Supplementary General Conditions, Article 14 – Payments to Contractor, Liquidated Damages and Completion. Any interest which has accrued on the retainage and which is released to the CONTRACTOR shall be promptly disbursed by CONTRACTOR to itself and/or to Subcontractors on a pro rata basis.

B. Certification of Change Orders: Pursuant to Utah Code Ann. Section 63G-6-602, no change order shall be authorized without a written certification, signed by an official representative of the OWNER responsible for monitoring and reporting the status of the costs of the total Project or the contract budget, stating that funds are available for the subject change order.

C. Adjustments in Price: Pursuant to Utah Code Ann. Section 63G-6-601, any adjustment in compensation due CONTRACTOR under this agreement shall be computed in one or more of the following ways:

1. By agreement on a fixed-price adjustment before commencement of the pertinent performance or as soon as practicable;

2. By unit prices specified in the contract or subsequently agreed upon;

3. By the costs attributable to the events or situations with adjustment of profit or fee, all as specified in the contract or subsequently agreed upon;

4. In any other manner as OWNER and CONTRACTOR may mutually agree;

5. In the absence of agreement between CONTRACTOR and OWNER, by a unilateral determination by OWNER of the costs attributable to the events or situations with adjustment of profit or fee, all as computed by the OWNER in accordance with Utah Code Ann. Section 63G-6-415 and/or the rules and regulations promulgated thereunder.

D. Cost Principles: CONTRACTOR shall comply in all respects with applicable provisions of Utah Code Ann. Section 63G-6-415, and the rules and regulations promulgated thereunder. To the extent that such provisions are inconsistent with the other terms and conditions of this agreement, the former shall prevail. OWNER may, at reasonable times and places, audit the books and records of CONTRACTOR, any Subcontractor, or any other person who has submitted cost or pricing data pursuant to said section. The books and records of CONTRACTOR shall be maintained for 3 years following the end of the fiscal year in which final payment is made under the Contract. The books and records of the Subcontractor and all other persons shall be maintained for 3 years following the end of the fiscal year in which final payment is made under the subcontract and/or to the person, unless a shorter period is otherwise authorized in writing.

E. Project Safety: CONTRACTOR shall comply in all respects with the Utah Occupational Safety and Health Act, Utah Code Ann. Sections 34A-6-101 et seq., and the rules, regulations and standards promulgated thereunder by the Utah State Industrial Commission, as such act, rules, regulations or standards now exist or may be amended during the term of this agreement. Specifically, but not in limitation, CONTRACTOR shall comply with Construction Standards, Rules and Regulations, promulgated by the Utah Occupation and Safety and Health Division, Utah State Industrial Commission.

F. Protection of Underground Utility Facilities: CONTRACTOR shall comply in all respects with Utah Code Ann. Section 54 Chapter 8a et seq. and the rules and regulations promulgated thereunder, as it now exists or may be amended during the term of this agreement, with regard to the protection of underground utility facilities. Specifically, but not in limitation, CONTRACTOR shall notify the appropriate public utility(s) when making an excavation with power equipment. CONTRACTOR shall further refrain from proceeding with excavation until such time as the appropriate public utility(s) have advised CONTRACTOR of the location of any underground facilities in the area proposed for excavation by marking such facilities with stakes, paint, or other customary way, indicating horizontal location within 24 inches of the outside dimensions of both sides of the underground facility.

G. Review of Construction by OWNER: OWNER may, at its option, assign a field representative to review the construction of the Project in progress. Said representative will cooperate with the ENGINEER/OWNER in attempting to note deviations from, or necessary adjustments to, the Contract Documents or deficiencies or defects in the construction. Said representative's presence on the Project, however, shall in no way relieve CONTRACTOR of its primary responsibility for construction of the Project in accordance with the Contract Documents.

H. OWNER Inspection: Pursuant to Utah Code Ann. Section 63G-6-418, OWNER may, at reasonable times, inspect the plant or place of business of the CONTRACTOR or any Subcontractor which is related to the performance of this contract or any subcontract entered into hereunder.

I. Code Requirements: The provisions of the latest editions of the International Building Code, National Electric Code, and Utah Plumbing Code, as adopted or followed in Utah, including standards adopted in relation thereto, as supplemented or amended, shall apply to the Project except as specific variances may be expressly authorized by the OWNER. If the Contract Documents fail to meet the minimum standards of the referenced codes, CONTRACTOR shall be responsible to bring such information to the attention of the architect/OWNER associated with the Project. Subcontractors shall also inform CONTRACTOR of any infractions of the above-referenced codes regarding their own particular trades. In the event that workmanship or incidental materials are not specified or indicated, they shall at least conform to the above-referenced codes and shall be incorporated into the Work without any additional cost to the OWNER. If the Contract Documents call for items or workmanship which exceed code requirements, the Contract Documents shall take precedence over such requirements.

J. Workers Compensation: CONTRACTOR shall comply in all respects with Utah Code Ann. Section 34A-2-101, et seq. and the rules and regulations promulgated thereunder by the Utah State Industrial Commission, as such law, rules or regulations now exist or may be amended during the term of this agreement.

K. Archaeological, Anthropological, or Paleontological Findings: CONTRACTOR shall comply with Utah Code Ann. Section 9-8-301 et seq., with respect to the discovery of archaeological, anthropological, or paleontological findings at or on the Project site. Specifically, but not in limitation, CONTRACTOR shall promptly notify the Utah Division of State History of any such findings.

L. Nondiscrimination Equal Employment Opportunity: CONTRACTOR shall comply in all respects with the Utah Anti-Discrimination Act of 1965, Utah Code Ann. Section 34A-5-101 et seq., and the rules and regulations promulgated thereunder by the Utah State Industrial Commission and/or its Anti-Discrimination Division, as such act, rules or regulations now exist or may be amended during the term of this agreement, specifically:

1. CONTRACTOR shall not discriminate against any employee or applicant for employment because of race, color, sex, religion, ancestry or national origin.

2. In all solicitations or advertisements for employees, CONTRACTOR shall state that all qualified applicants shall receive consideration without regard to race, color, sex, religion, ancestry or national origin.

3. CONTRACTOR shall send to each labor union or worker's representative notices to be provided, stating the CONTRACTOR's responsibilities under the statute.

4. CONTRACTOR shall furnish such information or reports as are requested by the Utah State Industrial Commission and/or its Anti-Discrimination Division, for the purpose of determining compliance with the statute.

5. CONTRACTOR shall include the provisions of paragraphs 1 through 4 above in all subcontracts for this Project.

6. Failure of the CONTRACTOR to comply with the statute, the rules and regulations promulgated thereunder, and this provision, shall be deemed a breach of contract entitling OWNER, in its discretion, to cancel, terminate, or suspend this agreement in whole or in part.

M. Affirmative Action: CONTRACTOR shall take affirmative action to insure that applicants are employed and that employees are treated during employment without regard to their race, color, religion, sex or national origin. Such action shall include, but shall not be limited to: employment; upgrading; demotion or transfer; recruitment or recruitment advertising; layout or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.

At its discretion, OWNER may perform a compliance review at CONTRACTOR's place of business and/or the Project site to verify CONTRACTOR's compliance with this provision. Such compliance verifications may be conducted with such frequency as is needed to assure CONTRACTOR's compliance with this provision.

N. Citizens Preferred: Pursuant to Utah Code Ann. Section 34-30-1, CONTRACTOR shall give preference in hiring to citizens of the United States or those having declared their intention to become citizens; failure to comply may render this contract null and void at the discretion of OWNER.

O. Veterans' Preference: Pursuant to Utah Code Ann. Section 71-10-2, CONTRACTOR shall give preference in hiring to honorable discharged veterans who have served in the Armed Forces of the United States during a period of conflict, war, or other national emergencies as defined by Congress, and to any un-remarried surviving spouse of an honorably discharged veteran, if they possess qualifications for that employment and if the honorably discharged veteran is or, if deceased, was a resident of the State of Utah.

P. Specific OWNER Requirements: CONTRACTOR shall comply with the specific rules and regulations promulgated by OWNER pursuant to authority granted or retained under the Utah Procurement Code, Utah Code Ann. Section 63G-6-101, et seq.

-END OF SECTION-

SECTION 01010
SUMMARY OF WORK

PART 1 – GENERAL

1.1 THE REQUIREMENT

A. The WORK to be performed under this Contract shall consist of furnishing all plant, tools, equipment, materials, supplies, and manufactured articles and furnishing all labor, transportation, and services, including fuel, power, water, and essential communications, and performing all WORK, or other operations required for the fulfillment of the Contract in strict accordance with the Contract Documents. The WORK shall be complete, and all WORK, materials, and services not expressly indicated or called for in the Contract Documents which may be necessary for the complete, safe and proper construction of the WORK in good faith shall be provided by the CONTRACTOR as though originally so indicated, at no increase in cost to the OWNER.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. The Project consists of the construction of the "South Valley Water Reclamation Facility – Clarifier Rehabilitation", complete and operational including:

1. In Clarifiers No. 3 and 5, addition of washers on all scum baffle bolts; removal of miscellaneous hardware; replacement of bungees and locking arms connected to launder covers; replacement of carbon steel through bolts and self-tapping screws with stainless steel through bolts and washers; blasting and painting of steel structures; reinforcement of structural components; rehabilitation and testing of torque meter and drive train; replacement of squeegees on clarifier equipment; reinforcement of scum baffle; sprayer piping and nozzle replacement; and heat tracing and insulation of sprayer pipes, provision of services and materials from Westech.

1.3 CONTRACT METHOD

A. The WORK hereunder will be performed under a single lump sum contract.

1.4 WORK BY OTHERS

A. There may be two or more contracts being performed at one time on the same Site or adjacent land in such a manner that work under one contract may interfere with work under another. The OWNER will determine the sequence and order of the WORK in either or both contracts. When the Site of one contract is the necessary or convenient means of access for performance of work under another, the OWNER may grant privilege of access or other reasonable privilege to the CONTRACTOR so desiring, to the extent, amount, and in manner and at time that the OWNER may determine. No OWNER determination of method or time or sequence or order of the work or access privilege shall be the basis for a claim for delay or damage except under provisions of the General Conditions for temporary suspensions of the work. The CONTRACTOR shall conduct its operations so as to cause a minimum of interference with the work of such other contractors, and shall cooperate fully with such contractors to allow continued safe access to their respective portions of the Site, as required to perform work under their respective contracts.

1.5 WORK SEQUENCE AND SCHEDULING CONSTRAINTS

A. WORK sequence and scheduling constraints are described in Section 01030 – Special Project Constraints.

1. If Schedule A is awarded, the CONTRACTOR may deliver equipment and materials required for that Work as early as possible following the Notice to Proceed.
2. The Work shall be complete by October 18, 2017.

1.6 CONTRACTOR USE OF PROJECT SITE

A. The CONTRACTOR's use of the project Site shall be limited to its construction operations, including on-site storage of materials and on-site fabrication facilities. Details regarding CONTRACTOR us of project site will be discussed during the pre-construction meeting.

1.7 OWNER USE OF THE PROJECT SITE

A. The OWNER may utilize all or part of the existing facilities during the entire period of construction for the conduct of the OWNER’s normal operations. The CONTRACTOR shall cooperate and coordinate with the OWNER to facilitate the OWNER's operations and to minimize interference with the CONTRACTOR's operations at the same time. In any event, the OWNER shall be allowed safe access to the Site during the period of construction.

1.8 PARTIAL UTILIZATION OF THE WORK BY OWNER (not used.)

1.9 OUTAGE PLAN AND REQUESTS

A. Outage Plans are discussed in Section 1030 – Special Project Constraints

1.5 PROJECT MEETINGS

A. Preconstruction Conference

1. Prior to the commencement of WORK at the Site, a preconstruction conference will be held at a mutually agreed time and place. The CONTRACTOR'S Project Manager, its Superintendent, its Safety Representative, and its Subcontractors shall attend the conference as the CONTRACTOR deems appropriate. Other attendees will be:

    a. ENGINEER;
    b. Representatives of OWNER;
    c. Governmental representatives as appropriate;
    d. Others as requested by CONTRACTOR, OWNER, or ENGINEER.

2. The CONTRACTOR shall bring the preconstruction conference submittals in accordance with Section 01300 – Contractor Submittals.

3. The purpose of the conference is to designate responsible personnel and establish a working relationship. Matters requiring coordination will be discussed and procedures for handling such matters established. The complete agenda will be

furnished to the CONTRACTOR prior to the meeting date. However, CONTRACTOR should be prepared to discuss all of the items listed below.

a. Status of CONTRACTOR's insurance and bonds.
b. CONTRACTOR's tentative schedules.
c. Transmittal, review, and distribution of CONTRACTOR's submittals.
d. Processing applications for payment.
e. Maintaining record documents.
f. Critical WORK sequencing.
g. Field decisions and Change Orders.
h. Use of project site, office and storage areas, security, housekeeping, and OWNER's needs.
i. Major equipment deliveries and priorities.
j. CONTRACTOR's assignments for safety and first aid.
k. Contract authority and channels of communication.
l. Utilities required for construction.
m. CONTRACTOR's preliminary schedule.
n. Establishment of emergency contacts.

4. The OWNER will preside at the preconstruction conference and will arrange for keeping and distributing the minutes to all persons in attendance.

5. The CONTRACTOR and its Subcontractors should plan on the conference taking no less than one half working day.

B. Progress Meetings

1. The CONTRACTOR shall schedule and hold regular on-site progress meetings at times requested by OWNER or as required by progress of the WORK. The CONTRACTOR, OWNER and all Subcontractors active on the Site must attend each meeting. CONTRACTOR may at its discretion request attendance by representatives of its suppliers, manufacturers, and other subcontractors.

2. The OWNER will preside at the progress meetings and will arrange for keeping and distributing the minutes. The purpose of the meetings will be to review the progress of the WORK, maintain coordination of efforts, discuss changes in scheduling, and resolve other problems which may develop. During each meeting, the CONTRACTOR shall present any issues which may impact its progress with a view to resolving these issues expeditiously.

1.11 SURVEY CONTROL AND REQUIREMENTS (not applicable)

1.12 BUILDING PERMIT (not applicable)

1.13 DEFINITIONS APPLICABLE TO TECHNICAL SPECIFICATIONS

A. The following words shall have the defined meaning in the Technical Portions of the WORK:

Indicated is a word used to direct the CONTRACTOR to information contained on the Drawings or in the Specifications. Terms such as "shown," "noted," "scheduled," and "specified" also may be used to assist in locating information, but no limitation of location is implied or intended.

Furnish	means to supply and deliver to the site, to unload and unpack ready for assembly, installation, testing, and startup.
Install	defines operations at the site including assembly, erection, placing, anchoring, applying, shaping to dimension, finishing, curing, protecting, and cleaning, ready for the OWNER's use.
Provide	is defined as furnish and install, test, adjust, program, and demonstrate proper operation if required by the specification, ready for the intended use.
Installer	a person or firm engaged by the CONTRACTOR or its subcontract or any subcontractor for the performance of installation, erection, or application work at the site. Installers must be expert in the operations they are engaged to perform.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

-END OF SECTION-

SECTION 01025
MEASUREMENT AND PAYMENT

PART 1 – GENERAL

1.1 SCOPE

A. Payment for the various items of the Bid Schedule, as further specified herein, shall include all compensation to be received by the CONTRACTOR for furnishing all tools, equipment, supplies and manufactured articles, and for all labor, operations and incidentals appurtenant to the items of work being described, as necessary to complete the various items of the WORK, all in accordance with the requirements of the Contract Documents, including appurtenances thereto, and including all costs of permits and cost of compliance with the regulations of public agencies having jurisdiction, including Safety and Health Requirements of the Occupational Safety and Health Administration of the U. S. Department of Labor (OSHA). No separate payment will be made for any item that is not specifically set forth in the Bid Schedule(s), and all costs therefore shall be included in the prices named in the Bid Schedule(s) for the various appurtenant items of work.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

-END OF SECTION-

SECTION 01030
SPECIAL PROJECT CONSTRAINTS

PART 1 – WORK INVOLVED WITH EXISTING PLANT

1.1 GENERAL

A. The WORK shall be executed while the existing wastewater treatment plant is in operation. Operation of the existing plant shall not be jeopardized nor shall the efficiency of wastewater treatment be reduced as a result of the execution of the WORK.

B. Critical events in the sequence of construction are described in this Section and shall be utilized by the CONTRACTOR as a guideline. The construction constraints presented are intended to describe the sequence of critical events necessary to minimize disruption to the ongoing treatment plant processes. It shall be understood and agreed by the CONTRACTOR that the critical events described are not all inclusive and that additional items of work not described may be required to minimize disruption and ensure compliance.

1.2 The construction constraints described herein shall be incorporated into the CONTRACTOR's schedule.

A. Operational functions or shutdown of portions of the existing plant required to facilitate CONTRACTOR's operation will be done by the plant personnel only.

B. The plant operation and maintenance personnel will cooperate in every way that is practical in order to facilitate CONTRACTOR's operation.

C. If it is necessary for the proper operation or maintenance of portions of the plant, the OWNER may require the CONTRACTOR to reschedule an approved shutdown. The CONTRACTOR shall then reschedule his operations so there shall be no conflict with necessary operations or maintenance of the plant.

1.3 COMPLIANCE WITH UPDES PERMIT

A. Operations by the CONTRACTOR shall not impair in anyway the OWNER's responsibility to comply with the facility's UPDES permit requirements.

1.4 OUTAGE PLANS

A. It is the CONTRACTOR's responsibility to coordinate and plan their construction activities in detail and provide such to the OWNER on an as needed or as requested basis by the OWNER or the ENGINEER. Outage plans shall be complete, concise, and provided two weeks in advance to the OWNER for review.

1.5 SCHEDULE CONSTRAINTS

A. It is the CONTRACTOR's responsibility to coordinate and plan the construction activities to integrate each schedule constraint into performance of the overall WORK.

1.6 CONSTRUCTION SEQUENCING

A. Clarifier 3 and 5 rehabilitation: Contractor may work on the clarifiers sequentially or simultaneously. Each clarifier must be completed, adjusted, tested, and all test results provided to the Owner before the work will be considered complete. Clarifier's shall be tented or tarped prior to application of coatings so that overspray is prevented at all times. Contractor shall be liable for costs to remediate overspray on nearby vehicles and buildings.

1.7 LIQUIDATED DAMAGES AND INCENTIVES

A. OWNER and CONTRACTOR recognize that time is of the essence for this Agreement and that the OWNER will suffer financial loss if the WORK is not completed by the listed milestones, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. They also recognize the delays, expense and difficulties involved in proving in a legal proceeding the actual loss suffered by the OWNER if the WORK is not completed on time. Accordingly, instead of requiring any such proof, the OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty), the CONTRACTOR shall pay the OWNER $500.00 for each calendar day thereafter, until the WORK is ready for use.

1.8 SAFETY PLAN

A. At the Preconstruction Conference, the CONTRACTOR shall submit a Safety, Health and Environmental Action Plan (SHEAP). SVWRF will review the SHEAP to ensure its compatibility with the safety policies of SVWRF. The CONTRACTOR shall address the topics provided on the SVWRF-SHEAP outline (outline is included in appendix to specifications).

B. CONTRACTOR shall be solely responsible for initiating, maintaining and supervising all health safety and environmental issues for his or her employees, including all aspects of on-site construction, operation and activities associated with the contract.

C. The CONTRACTOR shall provide the following insurance and safety data, for each of the past three years including the current year to date. See form entitled "Job Related Accident Reports" (form is included in appendix to specification)

D. The CONTRACTOR shall provide a list of employees including employees of subcontractors that will be coming to the SVWRF. Include names, positions and length of service. CONTRACTOR agrees to provide valid photo identifications of all employees and employees of subcontractors that will be coming to the SVWRF and further agrees to allow SVWRF to copy said photo IDs for security and safety use at SVWRF.

1.9 GENERAL REQUIREMENTS FOR ALL WORK

A. During all rehabilitation, modification and demolition work, safe working conditions for the OWNER's and CONTRACTOR's personnel shall be maintained at all times. The foregoing includes, but is not limited to, proper trench excavation, the provision of temporary equipment guards, supports, warning signs, walkways, covers over openings, hand-railing and protection of electrical equipment and power supply. All temporary facilities shall be constructed in accordance with applicable codes and regulations so that they operate safely and properly. Valves to be temporarily shut off during the

WORK shall be tagged as such and shall be wired shut with a crimped lead seal and padlocked. Electrical and mechanical equipment shall be similarly shut down.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

-END OF SECTION-

SECTION 01070
ABBREVIATIONS OF INSTITUTIONS

PART 1 – GENERAL

1.1 GENERAL

Wherever in the Contract Documents references are made to the standards, specifications, or other published data of the various international, national, regional, or local organizations, such organizations may be referred to by their acronym or abbreviation only. As a guide to the reader, the following acronyms or abbreviations which may appear in the Contract Documents shall have the meanings indicated herein.

1.2 ABBREVIATIONS

AAMA	Architectural Aluminum Manufacturer's Association
AAR	Association of American Railroads
AASHTO	American Association of State Highway and Transportation Officials
AATCC	American Association of Textile Chemists and Colorists
ACI	American Concrete Institute
AFBMA	Anti-Friction Bearing Manufacturer's Association, Inc.
AGA	American Gas Association
AGMA	American Gear Manufacturers Association
AHAM	Association of Home Appliance Manufacturers
AI	The Asphalt Institute
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
AMCA	Air Moving and Conditioning Association
ANS	American Nuclear Society
ANSI	American National Standards Institute, Inc.
APA	American Plywood Association
API	American Petroleum Institute
APWA	American Public Works Association
ASA	Acoustical Society of America
ASAE	American Society of Agricultural Engineers
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers
ASLE	American Society of Lubricating Engineers
ASME	American Society of Mechanical Engineers
ASQC	American Society for Quality Control
ASSE	American Society of Sanitary Engineers
ASTM	American Society for Testing and Materials
AWPA	American Wood Preservers Association
AWPI	American Wood Preservers Institute
AWS	American Welding Society
AWWA	American Water Works Association
BBC	Basic Building Code, Building Officials and Code Administrators International

BHMA	Builders Hardware Manufacturer's Association
CBM	Certified Ballast Manufacturers
CEMA	Conveyors Equipment Manufacturer's Association
CGA	Compressed Gas Association
CLPCA	California Lathing and Plastering Contractors Association
CLFMI	Chain Link Fence Manufacturer's Institute
CMA	Concrete Masonry Association
CRSI	Concrete Reinforcing Steel Institute
DCDMA	Diamond Core Drill Manufacturer's Association
EIA	Electronic Industries Association
ETL	Electrical Test Laboratories
EPA	Environmental Protection Agency
FM	Factory Mutual System
FPL	Forest Products Laboratory
HI	Hydronics Institute
IAPMO	International Association of Plumbing and Mechanical Officials
ICBO	International Conference of Building Officials
ICEA	Insulated Power Cable Engineers Association
IEEE	Institute of Electrical and Electronics Engineers
IES	Illuminating Engineering Society
IME	Institute of Makers of Explosives
IP	Institute of Petroleum (London)
IPC	Institute of Printed Circuits
ISA	Instrument Society of America
ISO	International Organization for Standardization
ITE	Institute of Traffic Engineers
ITU	International Telecommunications Union
MBMA	Metal Building Manufacturer's Association
MPTA	Mechanical Power Transmission Association
MSS	Manufacturers Standardization Society
MTI	Marine Testing Institute
NAAMM	National Association of Architectural Metal Manufacturer's
NACE	National Association of Corrosion Engineers
NBS	National Bureau of Standards
NCCLS	National Committee for Clinical Laboratory Standards
NEC	National Electrical Code
NEMA	National Electrical Manufacturer's Association
NFPA	National Fire Protection Association
NFPA	National Forest Products Association
NLGI	National Lubricating Grease Institute
NMA	National Microfilm Association
NSF	National Sanitation Foundation
NWMA	National Woodwork Manufacturers Association
OSHA	Occupational Safety and Health Administration
PCA	Portland Cement Association
PPI	Plastics Pipe Institute
RCRA	Resource Conservation and Recovery Act
RIS	Redwood Inspection Service
RVIA	Recreational Vehicle Industry Association
RWMA	Resistance Welder Manufacturer's Association
SAE	Society of Automotive Engineers
SAMA	Scientific Apparatus Makers Association

SMA	Screen Manufacturers Association
SMACCNA	Sheet Metal and Air Conditioning Contractors National Association
SPI	Society of the Plastics Industry, Inc.
SPIB	Southern Pine Inspection Bureau
SPR	Simplified Practice Recommendation
SSA	Swedish Standards Association
SSBC	Southern Standard Building Code, Southern Building Code Congress
SSPC	Steel Structures Painting Council
SSPWC	Standard Specifications for Public Works Construction
TAPPI	Technical Association of the Pulp and Paper Industry
TFI	The Fertilizer Institute
TIA	Telecommunications Industry Association
UBC	Uniform Building Code
UL	Underwriters Laboratories, Inc.
WCLIB	West Coast Lumber Inspection Bureau
WCRSI	Western Concrete Reinforcing Steel Institute
WEF	Water Environment Federation
WIC	Woodwork Institute of California
WRI	Wire Reinforcement Institute, Inc.
WWPA	Western Wood Products Association

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

-END OF SECTION-

SECTION 01090
REFERENCE STANDARDS

PART 1 – GENERAL

1.1 GENERAL

A. Titles of Sections and Paragraphs: Captions accompanying specification sections and paragraphs are for convenience of reference only, and do not form a part of the Specifications.

B. Applicable Publications: Whenever in these Specifications references are made to published specifications, codes, standards, or other requirements, it shall be understood that wherever no date is specified, only the latest specifications, standards, or requirements of the respective issuing agencies which have been published as of the date that the Work is advertised for bids, shall apply; except to the extent that said standards or requirements may be in conflict with applicable laws, ordinances, or governing codes. No requirements set forth herein or shown on the Drawings shall be waived because of any provision of, or omission from, said standards or requirements.

C. Specialists, Assignments: In certain instances, specification text requires (or implies) that specific work is to be assigned to specialists or expert entities, who must be engaged for the performance of that work. Such assignments shall be recognized as special requirements over which the CONTRACTOR has no choice or option. These requirements shall not be interpreted so as to conflict with the enforcement of building codes and similar regulations governing the Work; also they are not intended to interfere with local union jurisdiction settlements and similar conventions. Such assignments are intended to establish which party or entity involved in a specific unit of work is recognized as "expert" for the indicated construction processes or operations. Nevertheless, the final responsibility for fulfillment of the entire set of contract requirements remains with the CONTRACTOR.

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. Without limiting the generality of other requirements of the Specifications, all work specified herein shall conform to or exceed the requirements of applicable codes and the applicable requirements of the following documents.

B. References herein to "Building Code" or "International Building Code" shall mean International Building Code of the International Conference of Building Officials (ICBO). Similarly, references to "Mechanical Code" or "International Mechanical Code," "Plumbing Code" or "International Plumbing Code," "Fire Code" or "International Fire Code," shall mean International Mechanical Code, International Plumbing Code and International Fire Code of the International Conference of the Building Officials (ICBO). "Electric Code" or "National Electric Code (NEC)" shall mean the National Electric Code of the National Fire Protection Association (NFPA). The latest edition of the codes as approved by the Municipal Code and used by the local agency as of the date that the Work is advertised for bids, as adopted by the agency having jurisdiction, shall apply to the Work herein, including all addenda, modifications, amendments, or other lawful changes thereto.

C. In case of conflict between codes, reference standards, drawings and the other Contract Documents, the most stringent requirements shall govern. All conflicts shall be brought to the attention of the ENGINEER for clarification and directions prior to ordering or providing any materials or furnishing labor. The CONTRACTOR shall bid for the most stringent requirements.

D. The CONTRACTOR shall construct the Work indicated herein in accordance with the requirements of the Contract Documents and the referenced portions of those referenced codes, standards, and specifications listed herein.

E. Applicable Standard Specifications: References in the Contract Documents to the "Standard Specifications" shall mean the Uniform Standard Specifications for Public Works Construction Off-Site Improvements, Salt Lake County Area, latest version.

F. References herein to "OSHA Regulations for Construction" shall mean Title 29, Part 1926, Construction Safety and Health Regulations, Code of Federal Regulations (OSHA), including all changes and amendments thereto.

G. References herein to "OSHA Standards" shall mean Title 29, Part 1910, Occupational Safety and Health Standards, Code of Federal Regulations (OSHA), including all changes and amendments thereto.

H. References herein to “UDOT Standards” shall mean Standard Specifications for Road and Bridge Construction.

I. References herein to “MSHA Standards” shall mean Mine Safety and Health Administration, latest version.

1.3 REGULATIONS RELATED TO HAZARDOUS MATERIALS

A. The CONTRACTOR is responsible that all work included in the Contract Documents, regardless if shown or not, shall comply with all EPA, OSHA, RCRA, NFPA, and any other Federal, State, and Local Regulations governing the storage and conveyance of hazardous materials, including petroleum products.

B. Where no specific regulations exist, all chemical, hazardous, and petroleum product piping and storage in underground locations must be installed with double containment piping and tanks, or in separate concrete trenches and vaults, or with an approved lining which cannot be penetrated by the chemicals, unless waived in writing by the OWNER.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

-END OF SECTION-

SECTION 01300
CONTRACTOR SUBMITTALS

PART 1 – GENERAL

1.1 GENERAL

A. CONTRACTOR "Submittals" may be Shop Drawings, schedules, surveys, reports, samples, plans, lists, drawings, documents, findings, programs, manuals, data, or any other item or information required by the Contract Documents to be submitted or offered by the CONTRACTOR in accomplishing the Work.

B. Wherever Submittals are required hereunder, all such documents shall be furnished to the OWNER.

C. The CONTRACTOR shall be responsible for the accuracy, completeness, and coordination of all Submittals. The CONTRACTOR shall not delegate this responsibility in whole or in part to any Subcontractor. Submittals may be prepared by the CONTRACTOR, Subcontractor, or Supplier, but the CONTRACTOR shall ascertain that each Submittal meets the requirements of the Contract and the Project. The CONTRACTOR shall ensure that there is no conflict with other Submittals and shall notify the OWNER in each case where its Submittal may affect the work of another Contractor or the OWNER. The CONTRACTOR shall ensure coordination of Submittals of related crafts and Subcontractors.

1.2 PRECONSTRUCTION CONFERENCE SUBMITTALS

A. At the preconstruction conference referred to in Section 01010 - Summary of Work, submit the following items for review:

1. A project overview bar chart.

2. The names and qualifications of Designated Safety Representative and Designated Competent Persons.

3. At the Preconstruction Conference, the Contractor shall submit a Safety, Health and Environmental Action Plan (SHEAP). SVWRF will review the SHEAP to ensure its compatibility with the safety policies of SVWRF.

1.3 SHOP DRAWINGS

A. Wherever called for in the Proposal Documents, or where required by the OWNER, the CONTRACTOR shall furnish to the OWNER for review, 5 copies of each shop drawing submittal. The term "Shop Drawings" as used herein shall be understood to include detail design calculations, shop drawings, fabrication, and installation drawings, erection drawings, list, graphs, catalog sheets, data sheets, and similar items. Whenever the CONTRACTOR is required to submit design calculations as part of a submittal, such calculations shall bear the signature and seal of an engineer registered in the appropriate branch and in the state wherein the project is to be built, unless otherwise directed.

B. Except as may otherwise be indicated herein, the OWNER will return prints of each submittal to the CONTRACTOR with its comments noted thereon, within 20 working days following their receipt by the OWNER. It is considered reasonable that the CONTRACTOR shall make a complete and acceptable submittal to the OWNER by the second submission of a submittal item. The OWNER reserves the right to withhold monies due to the CONTRACTOR to cover additional costs of the OWNER's review beyond the second submittal.

C. If a submittal is returned to the CONTRACTOR marked "NO EXCEPTIONS TAKEN," formal revision and resubmission of said submittal will not be required.

D. If a submittal is returned to the CONTRACTOR marked "MAKE CORRECTIONS NOTED," formal revision and resubmission of said submittal will not be required.

E. If a submittal is returned to the CONTRACTOR marked "AMEND-RESUBMIT," the CONTRACTOR shall revise said submittal and shall resubmit the required number of copies of said revised submittal to the OWNER.

F. If a submittal is returned to the CONTRACTOR marked "REJECTED-RESUBMIT," the CONTRACTOR shall revise said submittal and shall resubmit the required number of copies of said revised submittal to the OWNER.

G. Fabrication of an item shall be commenced only after the OWNER has reviewed the pertinent submittals and returned copies to the CONTRACTOR marked either "NO EXCEPTIONS TAKEN" or MAKE CORRECTIONS NOTED." Corrections indicated on submittals shall be considered as changes necessary to meet the requirements of the Proposal Documents and shall not be taken as the basis for changes to the proposal requirements.

H. All CONTRACTOR shop drawings submittals shall be carefully reviewed by an authorized representative of the CONTRACTOR, prior to submission to the OWNER. Each submittal shall be dated, signed, and certified by the CONTRACTOR, as being correct and in strict conformance with the Proposal Documents. In the case of shop drawings, each sheet shall be so dated, signed, and certified. No consideration for review by the OWNER of any CONTRACTOR submittals will be made for any items that have not been so certified by the CONTRACTOR. All non-certified submittals will be returned to the CONTRACTOR without action taken by the OWNER, and any delays caused thereby shall be the total responsibility of the CONTRACTOR.

I. The OWNER's review of CONTRACTOR shop drawings submittals shall not relieve the CONTRACTOR of the entire responsibility for the correctness of details and dimensions. The CONTRACTOR shall assume all responsibility and risk for any misfits due to any errors in CONTRACTOR submittals. The CONTRACTOR shall be responsible for the dimensions and the design of adequate connections and details.

1.4 OWNER'S MANUAL (NOT USED)

1.5 SPARE PARTS LIST (NOT USED)

1.6 CONTRACTOR’S SCHEDULE

A. The CONTRACTOR's construction schedules and reports shall be prepared and submitted to the OWNER.

1.7 WEEKLY FORCE REPORT

A. The CONTRACTOR and each Subcontractor shall submit to the OWNER, or designee, a weekly force report. Deliver report not later than 9:00 A.M. of the Monday following the report date and include the following:

1. Days of week, date, CONTRACTOR name and Report number.

2. Summary of work in process (segregated by CONTRACTOR and Subcontractor).

3. Details of work accomplished including quantities of work installed.

4. Summary of equipment working and where working.

5. Summary of manpower by work element and Subcontractor.

6. Receipt of major equipment or materials.

7. All required testing performed and, if available, documented results.

1.8 REQUESTS FOR INFORMATION

A. In the event that the CONTRACTOR, Subcontractor or supplier, at any tier, determines that some portion of the drawings, specifications, or other Contract Documents requires clarification or interpretation by the OWNER, the CONTRACTOR shall submit a Request for Information in writing to the OWNER. Requests for Information may only be submitted by the CONTRACTOR and shall only be submitted on the Request for Information form provided by the OWNER. The CONTRACTOR shall clearly and concisely set forth the issue for which clarification or interpretation is sought and why a response is needed from the OWNER. In the Request for Information the CONTRACTOR shall set forth their own interpretation or understanding of the requirement along with reasons why they have reached such an understanding.

B. The OWNER will review all Requests for Information to determine whether they are Requests for Information within the meaning of this term. If the OWNER determines that the document is not a Request for Information it will be returned to the CONTRACTOR, unreviewed as to content, for resubmittal on the proper form and in the proper manner.

C. Responses from the OWNER will not change any requirement of the Contract Documents unless so noted by the OWNER in the response to the Request for Information. In the event the CONTRACTOR believes that a response to a Request for Information will cause a change to the requirements of the Contract Documents the CONTRACTOR shall immediately give written notice to the OWNER stating that the CONTRACTOR considers the response to be a Change Order. Failure to give such written notice immediately shall waive the CONTRACTOR’s right to seek additional time or cost under the Contract.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

-END OF SECTION-

SECTION 01505
MOBILIZATION

PART 1 – GENERAL

1.1 GENERAL

A. Mobilization shall include the obtaining of all permits; moving onto the site of all plant and equipment; furnishing and erecting plants, temporary buildings, and other construction facilities; implementing security requirements; all as required for the proper performance and completion of the WORK. Mobilization shall include the following principal items.

1. Providing all required insurance certificates and bonds.

2. Moving on to the site, or portion of site as available, of all the CONTRACTOR's plant and equipment required for first month operations including office and storage trailers.

3. Providing on-site sanitary facilities and potable water facilities.

4. Constructing and implementing security features and requirements complying with Section 01520 – Security and Process Safety Management.

5. Obtaining all required permits.

6. Posting all OSHA required notices and establishment of safety programs.

7. Submitting initial submittals.

1.2 PAYMENT FOR MOBILIZATION

A. The CONTRACTOR shall include mobilization as an item on the Schedule of Values (Lump Sum Price breakdown). No payment for mobilization, or any part thereof, will be made until all mobilization items listed above have been completed as specified.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

-END OF SECTION-

SECTION 01520
SECURITY AND PROCESS SAFETY MANAGEMENT

PART 1 – GENERAL

1.1 SECURITY PROGRAM

A. The CONTRACTOR shall:

1. Protect WORK, existing premises and OWNER's operations from theft, vandalism, and unauthorized entry.

2. Maintain program throughout construction period.

3. Require that the workers employed by the CONTRACTOR, his Subcontractors and his Vendors shall obey all Rules and Ordinances enacted by the SVWRF regarding the existence of firearms on SVWRF property. The CONTRACTOR shall immediately suspend any such worker who disobeys said Rules and Ordinances and remove such worker from the SVWRF property.

1.2 ENTRY CONTROL

A. The CONTRACTOR shall:

1. Limit entry of persons and vehicles into project site.

2. Allow entry only to authorized persons.

3. Require that all personal vehicles of the workers employed by the CONTRACTOR, his Subcontractors and his Vendors shall park their cars where designated by the OWNER.

B. OWNER will control entrance of persons and vehicles related to OWNER's operations.

1.3 PERSONNEL IDENTIFICATION

A. The CONTRACTOR shall:

1. Maintain a list of their authorized employees, subcontractors, vendors and other persons and submit a copy to OWNER on request.

2. Require that an identifying badge shall be worn by each of the workers of the CONTRACTOR, his subcontractors and vendors on the front of their construction hard hats. Further, the CONTRACTOR shall collect the Driver's License of each worker as he first comes on-site and submit them to the OWNER's REPRESENTATIVE. The OWNER will oversee the production of the badges for CONTRACTOR key personnel and will return the Driver's Licenses with Badges to the CONTRACTOR's Project Superintendent.

1.4 SAFETY PLAN

A. At the Preconstruction Conference the CONTRACTOR shall submit a Safety, Health, and Environmental Action Plan (SHEAP). SVWRF will review the SHEAP to ensure its compatibility with the safety policies of SVWRF. The CONTRACTOR shall address the topics provided on the SVWRF-SHEAP outline (outline is included in the appendix to specification)

B. CONTRACTOR shall be solely responsible for initiating, maintaining and supervising all health safety and environmental issues for his or her employees, including all aspects of on-site construction, operation and activities associated with the contract.

C. The CONTRACTOR shall provide the following insurance and safety data for each of the past three years including the current year to date. See form entitled "Job Related Accident Reports" (form is included in appendix to specification)

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

-END OF SECTION-

SECTION 01600 - PRODUCTS, MATERIALS and EQUIPMENT

PART 1 - GENERAL

1.1 DEFINITIONS

A. The word "Products," as used herein, is defined to include purchased items for incorporation into the WORK, regardless of whether specifically purchased for the project or taken from CONTRACTOR's stock of previously purchased products. The word "Materials," is defined as products which must be substantially cut, shaped, worked, mixed, finished, refined, or otherwise fabricated, processed, installed, or applied to form units of work. The word "Equipment" is defined as products with operational parts, regardless of whether motorized or manually operated, and particularly including products with service connections (wiring, piping, and other like items). Definitions in this paragraph are not intended to negate the meaning of other terms used in the Contract Documents, including "specialties," "systems," "structure," "finishes," "accessories," "furnishings," special construction," and similar terms, which are self-explanatory and have recognized meanings in the construction industry.

B. Neither "Products" nor "Materials" nor "Equipment" includes machinery and equipment used for preparation, fabrication, conveying and erection of the WORK.

1.2 QUALITY ASSURANCE

A. Source Limitations: To the greatest extent possible for each unit of work, the CONTRACTOR shall provide products, materials, and equipment of a singular generic kind from a single source.

B. Compatibility of Options: Where more than one choice is available as options for CONTRACTOR's selection of a product, material, or equipment, the CONTRACTOR shall select an option which is compatible with other products, materials, or equipment. Compatibility is a basic general requirement of product, material and equipment selections.

1.3 PRODUCT DELIVERY AND STORAGE

A. The CONTRACTOR shall deliver and store the WORK in accordance with methods and means that will prevent damage, deterioration, and loss including theft. Delivery schedules shall be controlled to minimize long-term storage of products at the CONTRACTOR'S facility and the OWNER'S site and overcrowding of construction spaces. In particular, the CONTRACTOR shall ensure coordination to ensure minimum holding or storage times.

1.4 TRANSPORTATION AND HANDLING

A. Products shall be transported by methods to avoid damage and shall be delivered in undamaged condition.

B. The CONTRACTOR shall provide equipment and personnel to handle products, materials, and equipment, by methods to prevent soiling and damage while the equipment is in the CONTRACTOR'S control.

C. The CONTRACTOR shall provide additional protection during handling to prevent marring and otherwise damaging products, packaging, and surrounding surfaces.

D. The CONTRACTOR shall be responsible to deliver the equipment to the job site. The CONTRACTOR will also be responsible for unloading, storing, protecting and installing the equipment at the job site.

1.5 STORAGE AND PROTECTION PRIOR TO SHIPMENT

A. Products shall be stored in accordance with component manufacturer's written instructions and with seals and labels intact and legible. Sensitive products shall be stored in weather-tight climate controlled enclosures and temperature and humidity ranges shall be maintained within tolerances required by manufacturer's recommendations.

B. For exterior storage of fabricated products, products shall be placed on sloped supports above ground. Products subject to deterioration shall be covered with impervious sheet covering and ventilation shall be provided to avoid condensation.

C. Storage shall be arranged to provide access for inspection. The CONTRACTOR shall periodically inspect to assure products are undamaged and are maintained under required conditions.

D. Storage shall be arranged in a manner to provide access for maintenance of stored items and for inspection.

1.6 MAINTENANCE OF STORAGE

A. Stored products shall be periodically inspected on a scheduled basis. The CONTRACTOR shall maintain a log of inspections and shall make the log available on request.

B. The CONTRACTOR shall maintain manufacturer-required environmental conditions continually.

C. The CONTRACTOR shall ensure that surfaces of products exposed to the elements are not adversely affected and that weathering of finishes does not occur.

D. For mechanical and electrical components, the CONTRACTOR shall provide a copy of the component manufacturer's service instructions with each item and the exterior of the package shall contain notice that instructions are included.

E. Products shall be serviced on a regularly scheduled basis, and a log of services shall be maintained and submitted as a record document prior to acceptance by the OWNER in accordance with the Proposal Documents.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

-END OF SECTION-

SECTION 01640 - DEMOLITION AND RECONSTRUCTION

PART 1 - GENERAL

1.1 THE REQUIREMENT

A. The CONTRACTOR shall demolish and reconstruct existing civil, landscaping, structural, architectural, and mechanical, HVAC, electrical, and instrumentation facilities as indicated, in accordance with the Contract Documents.

1.2 COORDINATION

A. The CONTRACTOR shall carefully coordinate the work in areas where existing facilities are interconnected with new facilities. Existing facilities shall remain operational during all phases of demolition and construction. The CONTRACTOR shall schedule all demolition and reconstruction to minimize equipment 'down-time'. If necessary, the CONTRACTOR shall provide a sufficient number of temporary lights to maintain a well-lighted and safe environment.

B. The WORK indicated in the Contract Documents is not all inclusive and the CONTRACTOR shall be responsible to perform the reconstruction indicated plus that which can be reasonably inferred from the Contract Documents as necessary to complete the Project. The Specifications and Drawings identify the major facilities that shall be demolished and reconstructed, but auxiliary utilities such as water, air, chemicals, drainage, lubrication, fluid power, electrical wiring, controls, and instrumentation are not necessarily shown. The CONTRACTOR shall comply with sequencing requirements in Section 01030 – Special Project Constraints.

C. The CONTRACTOR shall note that the Drawings used to indicate demolition and reconstruction are based on record drawings of the existing facilities, which have been reproduced to show existing conditions and to clarify the scope of work as much as possible. Prior to bidding, the CONTRACTOR shall conduct a comprehensive survey at the Site to verify the correctness and exactness of the Drawings, the scope of work, and the extent of auxiliary utilities. A complete set of record drawings is available for review at the South Valley Water Reclamation Facility (SVWRF) during regular business hours.

D. While demolition and reconstruction are being performed the CONTRACTOR shall provide adequate access for the continued operation and maintenance of equipment and treatment processes. The CONTRACTOR shall erect and maintain fences, warning signs, barricades, and other devices around the reconstruction as required for the protection of the CONTRACTOR's employees and the OWNER's personnel at the plant. The CONTRACTOR shall remove all such protection when reconstruction activities are complete, or as work progresses, or when directed by the OWNER.

1.3 CUTTING, DRILLING, & CORE-DRILLING

A. Perform cutting operations in a manner that will not damage or weaken structures or the Work.

B. CONTRACTOR shall layout locations of cuts, core-drills, and other drilling and shall notify OWNER for inspection prior to beginning Work. The OWNER may require non-destructive examination such as x-rays, ground penetrating radar, or other means and methods of determining location of reinforcing steel, electrical conduits, etc. CONTRACTOR shall avoid cutting or damaging reinforcing steel, electrical conduits, etc. unless directed to by the ENGINEER.

C. Patched concrete and asphalt surfaces will be keyed into remaining Work.

D. Interior concrete removal will be accomplished in a manner to minimize the spread of dust, i.e. wet cutting, vacuum at point of dust creation, work area enclosed. Remove all cuttings from Owner's property and legally dispose of cuttings and other debris resulting from these operations.

E. Do not allow dust and dirt to accumulate in work areas. Clean up at end of each shift and leave areas free from accumulation of materials and equipment so no interference results to plant operations.

1.4 REHABILITATION

A. Damage to existing civil, landscaping, structural, architectural, mechanical, HVAC electrical, and instrumentation work due to reconstruction activities shall be repaired and rehabilitated.

B. Damaged items shall be repaired or replaced with new items to restore damaged items or surfaces to a condition equal to and matching that existing prior to damage.

C. In all demolition where electrical installation exists, remove the wiring and conduit back to the respective panel or remaining connection point. Where conduit can continue in service, remove old conductors back to the panel and run new conductors. Keep track of remaining circuits by labeling, coding, etc.

1.5 DISPOSAL

A. The CONTRACTOR shall be responsible for the offsite disposal of debris resulting from demolition and reconstruction in compliance with local, state, and federal codes and requirements.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

-END OF SECTION-

SECTION 01700
PROJECT CLOSEOUT

PART 1 – GENERAL

1.1 FINAL CLEANUP

A. The CONTRACTOR shall promptly remove from the vicinity of the completed WORK, all rubbish, unused materials, construction equipment, and temporary facilities used during construction. Final acceptance of the WORK by the OWNER will be withheld until the CONTRACTOR has satisfactorily performed the final cleanup of the Site.

1.2 CLOSEOUT TIMETABLE

A. The CONTRACTOR shall establish dates for equipment testing, acceptance periods, and on-site instructional periods (as required under the Contract). Such dates shall be established not less than one week prior to beginning any of the foregoing items, to allow the OWNER, the ENGINEER, and their authorized representatives sufficient time to schedule attendance at such activities.

1.3 TECHNICAL MANUAL SUBMITTAL

A. No portion of the project will be accepted for partial utilization until approved Technical Manual(s) for each piece of mechanical equipment within that portion is submitted.

C. Approved Technical Manuals shall be submitted prior to shipment of individual pieces of equipment. Money claimed by the CONTRACTOR for stored materials related to the receipt of equipment will be withheld until approved Technical Manuals are submitted.

1.4 FINAL SUBMITTALS

A. The CONTRACTOR, prior to requesting final payment, obtain and submit the following items to the ENGINEER for transmittal to the OWNER:

1. Written guarantees, where required.

2. Technical Manuals and Instructions.

3. Maintenance stock items; spare parts; special tools.

4. Completed record drawings.

5. Release from all parties who are entitled to claims against the subject project, property, or improvement pursuant to the provisions of the law.

1.5 MAINTENANCE AND GUARANTEE

A. The CONTRACTOR shall comply with the maintenance and guarantee requirements contained in the General Conditions.

B. The CONTRACTOR shall make all repairs and replacements promptly upon receipt of written order from the OWNER. If the CONTRACTOR fails to make such repairs or replacements promptly, the OWNER reserves the right to do the Work and the CONTRACTOR and his surety shall be liable to the OWNER for the cost thereof.

1.6 BONDS

A. The CONTRACTOR shall provide bonds as required by the General Conditions.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

-END OF SECTION-

SECTION 05500
METAL FABRICATIONS

PART 1 – GENERAL

1.1 SUMMARY

A. Furnish, fabricate, and install metal fabrications in accordance with Contract Documents.

1.2 REFERENCES

A. ASTM International (ASTM) standards, most recent editions:

ASTM A36	Specification for Structural Steel
ASTM A48	Gray Iron Castings
ASTM A53	Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless
ASTM A123	Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM A153	Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A193	Standard Specification for Alloy-Steel and Stainless Steel Bolting for High Temperature or High Pressure Service and Other Special Purpose Applications
ASTM A194	Standard Specification for Carbon and Alloy Steel Nuts for Bolts for High Pressure or High Temperature Service, or Both
ASTM A197	Standard Specification for Cupola Malleable Iron
ASTM A276	Standard Specification for Stainless Steel Bars and Shapes
ASTM A325	Specification for Structural bolts, Steel Heat Treated, 120/105 ksi Minimum Tensile Strength
ASTM A500	Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
ASTM A536	Standard Specification for Ductile Iron Castings
ASTM A563	Specification for Carbons and Alloy Steel Nuts
ASTM F593	Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs
ASTM F594	Standard Specification for Stainless Steel Nuts

ASTM A653	Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM A666	Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar
ASTM A780	Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings
ASTM F1554	Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength

B. American National Standards Institute (ANSI), most recent editions:

ANSI A14.3	Standard for Ladders - Fixed - Safety Requirements

C. American Water Works Association (AWWA) Standards, most recent editions:

AWWA C217	AWWA Standard for Petrolatum and Petroleum Wax Tape Coatings for the Exterior of Connections and Fittings for Steel Water Pipelines

D. American Welding Society (AWS) Standards, most recent editions:

AWS D1.1	Structural Welding Code – Steel
AWS D1.2	Structural Welding Code – Aluminum
AWS D1.6	Structural Welding Code – Stainless Steel
AWS QC1	Specification for AWS Certification of Welding Inspectors

AWS Welding Handbook

E. National Sanitation Foundation (NSF), most recent edition:

NSF 61	Drinking Water System Components, Health Effects

F. Federal Specifications:

MIL-A-907E	Anti-seize Thread Compound, High Temperature

G. Occupational Safety and Health Administration (OSHA), most recent editions:

OSHA 1910.27 - Fixed Ladder

H. Society for Protective Coatings (SSPC):

SSPC-PA 1	Shop, Field, and Maintenance Painting of Steel

1.3 DEFINITIONS

A. Metal Fabrications: Defined as items to be fabricated from metal shapes, plates, or bars and their products.

1.4 SUBMITTALS

A. Shop Drawings: Submit shop drawings of all metal fabrications to the ENGINEER for review.

1. Shop drawings detailing fabrication and erection of each metal fabrication indicated. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items. Provide templates for anchors and bolts specified for installation under other Sections.
2. Submit layout drawings for grating showing the direction of span, type and depth of grating, size and shape of grating panels, seat angle details, and details of grating hold down fasteners. Submit load and deflection tables for each style and depth of grating used.

B. Submit ICC-ES report listing the ultimate load capacity in tension and shear for each size and type of concrete anchor submitted. Submit manufacturer's recommended installation instructions and procedures for adhesive anchors. Upon review, by ENGINEER, these instructions shall be followed specifically.

C. No substitution for the indicated adhesive anchors will be considered unless accompanied by an ICC-ES report verifying strength and material equivalency, including temperature at which load capacity is reduced to 90 percent of that determined at 75 degrees F.

1.5 QUALITY ASSURANCE

A. All weld procedures and welder qualifications shall be available in the CONTRACTOR's field office for review.

B. Qualification of Welders: Use welders with current certifications (previous 12 months) for the material, type, and position of welding used. Certify in accordance with AWS Specifications according to the following:

1. AWS D1.1, Structural Welding Code – Steel.
2. AWS D1.6, Structural Welding Code – Stainless Steel.

C. All welding shall be inspected by a CONTRACTOR-furnished inspector qualified in accordance with AWS requirements and approved by the ENGINEER.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Metal fabrications shall be loaded for transport in such a manner that they may be transported and unloaded without being excessively stressed, deformed, or otherwise damaged.

B. Protect metal fabrications from corrosion and deterioration.

C. Store material in a dry area and do not place in direct contact with the ground.

1. Do not place materials on the structure in a manner that might cause distortion or damage to the members or supporting structures.
2. Repair or replace damaged materials or structures as directed.

1.7 PROJECT CONDITIONS

A. Check actual locations of walls and other construction to which metal fabrications must fit by accurate field measurements before fabrication. Show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delaying the WORK.

1. Where field measurements cannot be made without delaying the WORK, guarantee dimensions and proceed with fabricating products without field measurements. Coordinate construction to ensure that actual dimensions correspond to guaranteed dimensions. Allow for trimming and fitting.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with the Contract Documents, the following Manufacturers are acceptable:

1. Concrete and masonry anchors:
   a. Hilti, Inc.
   b. ITW Ramset/Redhead.
   c. Simpson Strong Tie Company, Inc.
   d. ENGINEER approved equal.

2.2 MATERIALS

A. Stainless steel: ASTM A666 and ASTM A276, Type 316 or 316L

B. Bolts and Anchors:

1. All bolts, nuts, and washers shall be stainless steel.
2. Stainless steel bolts, anchor bolts, nuts, and washers shall be Type 316 stainless steel, conforming to ASTM F593 for bolts and to ASTM F594 for nuts. All threads on stainless steel bolts shall be protected with an anti-seize lubricant suitable for submerged stainless steel bolts, to meet government specification MIL-A-907E and classified as acceptable for potable water use

by NSF. Buried bolts in poorly drained soil shall be coated the same as the buried pipe.

3. Bolt requirements:
   a. The bolt and nut material shall be free-cutting steel.
   b. The nuts shall be capable of developing the full strength of the bolts.
   c. Threads shall be Coarse Thread Series conforming to the requirements of the American Standard for Screw Threads.
   d. Provide bolts with hexagon heads. Provide nuts conforming to Heavy Hexagon Series.
   e. Install all bolts and nuts with washers fabricated of material matching the base material of bolts, except that hardened washers for high strength bolts shall conform to the requirements of the AISC Specification.
   f. Install lock washers with washers where indicated and fabricated of material matching the bolts.
   g. Provide bolts of length such that after joints are made up, each bolt shall extend through the entire nut, but in no case more than ½-inch beyond the nut.

C. Epoxy Anchors: Unless otherwise indicated, all drilled concrete or masonry anchors shall be epoxy anchors. No substitutions will be considered unless accompanied with ICC-ES reports verifying strength and material equivalency.

1. Epoxy anchors are required for drilled anchors where exposed to weather, in submerged, wet, splash, overhead, and corrosive conditions, and for anchoring handrails, pumps, mechanical equipment, and reinforcing bars. Provide threaded stainless steel rod, Type 316.
2. Unless otherwise indicated, epoxy anchors will also be permitted in locations not indicated above.
3. Products:
   a. HIT-RE 500-SD, Hilti.
   b. Set XP, Simpson Strong-Tie.
   c. Epcon G5, ITW Ramset/Redhead.
   d. ENGINEER approved equal.

2.3 MANUFACTURED UNITS

A. Metal grating:

1. Metal grating shall be of the design, sizes, and types indicated. Grating shall be completely banded at all edges and cutouts using material and cross section equivalent to the bearing bars. Such banding shall be welded to each cut bearing bar. Grating shall be supported at bearings by support members. Where grating is supported on concrete, embedded support angles matching grating material shall be used unless indicated otherwise. Such angles shall be mitered and welded at corners.
2. Bearing bars:
   a. Type: Rectangular bar.
   b. Thickness: 3/16 inch minimum.
   c. Depth: 1-1/2 inch unless otherwise indicated on Contract Documents.
   d. Spacing: 1 3/16 inch maximum.

e. Configuration of top surface: Plain unless otherwise indicated on Contract Documents.

3. Cross Bars:
   a. Cross bars shall be welded or mechanically locked tightly into position so that there is no movement allowed between bearing and cross bars.
   b. Spacing: 4 inches maximum.
4. All pieces of grating shall be fastened in at least two locations to each support.
5. Where grating forms the landing at the top of a stairway, the edge of the grating, which forms the top riser, shall have an integral non-slip nosing, width equal to that of the stairway.
6. Where grating depth is not given, grating shall be provided which will be within allowable stress levels, and which shall not exceed a deflection of ¼-inch or the span divided by 180, whichever is less. For standard duty plank, and safety grating, the loading to be used for determining stresses and deflections shall be the uniform live load of the adjacent floor or 100 psf, whichever is greater or a concentrated moving load of 1000 pounds.
7. Material:
   a. Except where indicated otherwise, bar grating shall be fabricated entirely of Type 316 stainless steel.
8. No single piece of grating shall weigh more than 80 pounds or be wider than 3 feet, unless indicated otherwise on Contract Documents.

2.4 FABRICATION

A. Verify field conditions and dimensions prior to fabrication.

B. Form metal fabrications from materials of size, thickness, and shapes indicated but not less than that needed to comply with performance requirements indicated. Work to dimensions indicated or accepted on shop drawings, using proven details of fabrication and support. Use type of materials indicated or specified for various components of each metal fabrication.

C. Form exposed work true to line and level with accurate angles and surfaces straight and sharp edges.

D. Drill and punch holes with smooth edges.

E. Allow for thermal movement resulting from the following maximum change (range) in ambient temperature in the design, fabrication, and installation of installed metal assemblies to prevent buckling, opening up of joints, and overstressing of welds and fasteners. Base design calculations on actual surface temperatures of metals due to both solar heat gain and nighttime sky heat loss.

   1. Temperature Range: 0 degrees F minimum to 110 degrees F maximum ambient temperature.

F. Shear and punch metals cleanly and accurately. Remove burrs.

G. Ease exposed edges to a radius of approximately 1/32 inch unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

H. Remove sharp or rough areas on exposed traffic surfaces.

I. Welding

1. Welding shall be by the metal-arc method or gas-shielded arc method as described in the American Welding Society's "Welding Handbook" as supplemented by other pertinent standards of the AWS. Qualification of welders shall be in accordance with the AWS Standards governing same.
2. In assembly and during welding, the component parts shall be adequately clamped, supported and restrained to minimize distortion and for control of dimensions. Weld reinforcement shall be as indicated by the AWS Code. Upon completion of welding, all weld splatter, flux, slag, and burrs left by attachments shall be removed. Welds shall be repaired to produce a workmanlike appearance, with uniform weld contours and dimensions. All sharp corners of material that are to be painted or coated shall be ground to a minimum of 1/32-inch on the flat.
3. Weld corners and seams continuously to comply with the following:
    a. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
    b. Obtain fusion without undercut or overlap.
    c. Remove welding flux immediately.
    d. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing, and contour of welded surface matches those adjacent.

J. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners whenever possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts. Locate joints where least conspicuous.

K. Provide for anchorage of type indicated; coordinate with supporting structure. Fabricate and space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.

L. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.

M. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.

N. Fabricate joints that will be exposed to weather in a manner to exclude water, or provide weep holes where water may accumulate.

2.5 LOOSE BEARING AND LEVELING PLATES

A. Provide loose bearing and leveling plates for steel items bearing on masonry or concrete construction, made flat, free from warps or twists, and of the required thickness and bearing area. Drill plates to receive anchor bolts and for grouting as required. Hot-dip galvanize after fabrication.

2.6 STEEL WELD PLATES AND ANGLES

A. Provide steel weld plates and angles not specified in other Sections, for items supported from concrete construction as needed to complete the WORK. Provide each unit with no fewer than two integrally welded steel studs for embedding into concrete.

PART 3 - EXECUTION

3.1 PREPARATION

A. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions, and directions for installing anchorages, including concrete inserts, sleeves, anchor bolts, and miscellaneous items having integral anchors that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to Project site.

B. Inspect and verify condition of substrate. Correct any surface defects or conditions which might interfere with or prevent a satisfactory installation.

C. Set sleeves in concrete with tops flush with finish surface elevations. Protect sleeves from water and concrete entry.

3.2 INSTALLATION

A. Set metal work level, true to line, plumb.

B. In fabrication and erection of structural steel, conform to the requirements of the American Institute of Steel Construction "Manual of Steel Construction."

C. Shim and grout as necessary.

D. To the maximum extent possible, use bolted field connections. Where practicable, conceal the fastenings. When field welding is warranted, comply with the following requirements:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish/grind exposed welds and surfaces smooth and blended so that no roughness shows after finishing, and contour of welded surface matches those adjacent.

E. Unless noted or specified otherwise:

1. Connect steel members to steel members with 3/4-inch diameter high strength bolts.
2. Connect aluminum to aluminum with 3/4-inch diameter aluminum bolts.
3. Connect aluminum to structural steel using 3/4-inch diameter stainless steel bolts.
4. Connect aluminum and steel members to concrete and masonry using 3/4-inch stainless steel epoxy anchors. Provide a minimum of 5 1/2 inches of embedment into concrete or masonry.

F. Do not field splice fabricated items unless said items exceed standard shipping length or change of direction requires splicing. Provide fully welded splices where continuity is required.

G. Provide each fabricated item complete with attachment devices as indicated or required to install.

H. Anchor metal items so that items will not be distorted nor fasteners overstressed from expansion and contraction.

I. Install bollards in concrete as detailed. Fill pipe with concrete and round off at top of pipe.

J. Attach grating to end and intermediate supports with grating saddle clips and bolts.

1. Maximum spacing: 2 feet on center with a minimum of two attachments per support.
2. Attach individual units of grating together with clips or attachments at 2 feet on center maximum with a minimum of two clips per side.

3.3 DRILLED ANCHORS

A. Drilled-in anchors and reinforcing bars shall be installed in strict accordance with the manufacturer's instructions. Holes shall be roughened with a brush on a power drill, cleaned and dried. Drilled anchors shall not be installed until the concrete has reached the specified 28-day compressive strength. Epoxy anchors shall not be loaded until the adhesive has reached its indicated strength in accordance with the manufacturer's instructions.

3.4 SETTING LOOSE PLATES

A. Clean concrete and masonry bearing surfaces of bond-reducing materials, and roughen to improve bond to surfaces. Clean bottom surface of bearing plates.

B. Set loose level and bearing plates on wedges or other adjustable devices. After the bearing members have been positioned and plumbed, tighten the anchor bolts. Do not remove wedges or shims, but if protruding, cut off flush with the edge of the bearing plate before packing with grout.

1. Use nonshrink grout in concealed locations where not exposed to moisture.

2. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.

END OF SECTION

SECTION 09900
COATINGS AND PAINTING

PART 1 – GENERAL

1.1 WORK INCLUDED

A. This section covers surface preparation, furnishing, and application of paint and special protective coatings, complete.

B. Shop or existing surface preparation methods, cleanliness, and existing paint, rust, and mill scale removal is not known nor documented. Contractor shall be solely responsible for determining work effort, abrasive blast requirements, and any other factors that may affect work productivity as required for providing the specified surface preparation cleanliness; regardless of prior system preparation or coating application.

1.2 ABBREVIATIONS

ANSI	American National Standards Institute
AWWA	American Water Works Association
FRP	Fiberglass Reinforced Plastic
HCl	Hydrochloric Acid
MDFT	Minimum Dry Film Thickness
MDFTPC	Minimum Dry Film Thickness Per Coat
Mil	Thousandths of an Inch
MIL-P	Military Specification – Paint
OSHA	Occupational Safety and Health Act
PSDS	Paint System Data Sheet
SFPG	Square Feet Per Gallon
SFPGPC	Square Feet Per Gallon Per Coat
SP	Surface Preparation
SSPC	Steel Structures Painting Council

1.3 REFERENCES

A. This Section contains references to the governing standards and documents listed below. They are a part of this Section as specified and modified; the current version shall apply unless otherwise noted. In case of conflict between the requirements of this section and those of the listed documents, the more stringent of the requirements shall prevail.

B. NACE International, (NACE)

1. NACE RP0287 – Field Measurement of Surface Profile of Abrasive Blast-Cleaned Steel Surfaces Using a Replica Tape
2. NACE SP0188 – Standard Practice for Discontinuity (Holiday) Testing of New Protective Coatings on Conductive Substrates
3. NACE No. 2/SSPC-SP 10 - Near-White Metal Blast Cleaning.

4. NACE No. 3/SSPC-SP 6 Commercial Blast Cleaning

C. SSPC: The Society for Protective Coatings, (SSPC)

1. SSPC PA1 - Shop, Field, and Maintenance Painting of Steel
2. SSPC-PA2 – Paint Application Specification No. 2: Measurement of Dry Coating Thickness with Magnetic Gages.
3. SSPC-PA11 - Protecting Edges, Crevices, and Irregular Steel Surfaces by Stripe Coating
4. SSPC-SP 6/NACE No. 3 - Commercial Blast Cleaning.
5. SSPC-SP10/NACE 2 - Near White Metal Blast Cleaning
6. SSPC-SP16 – Brush-off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-Ferrous Metals
7. SSPC-VIS 1 - Guide to Reference Photographs for Steel Surfaces Prepared by Dry Abrasive Blast Cleaning

D. Unless otherwise specified, references to documents shall mean the documents in effect at the time of receipt of Bids. If referenced documents have been discontinued by the issuing organization references to those documents shall mean the replacement documents or the last version of the document before it was discontinued.

1.4 DEFINITIONS

A. Dry Film Thickness (DFT): Thickness of fully cured coating, measured in mils.

B. Volatile Organic Compound (VOC): Content of air polluting hydrocarbons in uncured coating product measured in units of grams per liter per pounds per gallon, as determined by EPA Method 24.

1.5 SUBMITTALS

A. Submittals shall be made in accordance with Section 01300 – Contractor Submittals of these Specifications.

B. Product Data: Furnish the following Data Sheets:

1. For each paint system used herein, furnish a Paint System Data Sheet (PSDS), Technical Data Sheets, and paint colors available (where applicable) for each product used in the paint system, except for products applied by equipment manufacturers. A sample PSDS form is appended at the end of this section. For each color selected submit two samples 3”x4” square minimum size.
2. The required information shall be submitted on a system-by-system basis.
3. Safety Data Sheets for materials.
4. The Contractor shall also provide copies of the paint system submittals to the coating applicator.
5. Indiscriminate submittal of manufacturer's literature only is not acceptable.

C. Where ANSI/NSF Standard 60 and 61 approval is required, submit ANSI/NSF certification letter for each coating in the system indicating product application limits on

size of tank or piping, dry film thickness, number of coats, specific product tested, colors certified, and approved additives.

D. Provide TCLP test data for lead and other regulated heavy metals in non-recyclable, slag type abrasive blast media to be used on the project. Acceptable abrasive test data shall indicate the abrasive manufacturer, location of manufacture, and media gradation and type. Surface preparation will not be permitted to begin until acceptable test data has been submitted.

E. Quality Control Submittals: Furnish the following:

1. Applicator: List of references substantiating the experience requirements as specified and proof of acceptability of Applicator by manufacturer.
2. Factory Applied Coatings: Manufacturer's certification stating factory applied coating systems meets or exceeds requirements specified herein.
3. If the manufacturer of finish coating differs from that of shop primer, provide both manufacturer's written confirmation that materials are compatible.

1.5 QUALITY ASSURANCE

A. The paint manufacturer shall provide a representative to visit the jobsite at intervals during surface preparation and painting as may be required for product application quality assurance, and to determine compliance with manufacturer's instructions and these Specifications, and as may be necessary to resolve field problems attributable to, or associated with, the manufacturer's products furnished under this Contract.

B. Applicator's Experience: Minimum of 3 years' practical experience with documented skill and successful experience in application of specified products with a letter of recommendation from the paint manufacturer local representative.

C. Continuity of Contractor: Contractor's site supervisor shall be coordinated with the Engineer. Any replacement of the supervisor on site will require notification of Engineer 72 hours in advance, and will be subject to approval by the Owner.

D. Mockup:

1. Before proceeding with the work under this section, finish one complete space or item of each color scheme required showing selected colors, finish texture, materials, and workmanship.
2. After approval, the sample spaces or items shall serve as a standard for similar work throughout the project.

E. Inspection:

1. Inspect and provide substrate surfaces prepared in accordance with these specifications and the printed directions and recommendations of paint manufacturer whose product is to be applied.
2. Provide minimum 3 days' advance notice prior to start of surface preparation work or coating application work.
3. Provide a fulltime, on-site person whose dedicated responsibilities will include quality control of the coating application.

4. Inspection by the Engineer, or the waiver of inspection of any particular portion of the work, shall not be construed to relieve the Contractor of responsibility to perform the work in accordance with these specifications.

F. Jobsite Reports:

Submit at the completion of Work.

1. Daily Reports: Include surface preparation, ambient conditions, application methods, material applied, material quantities, material batch number, and description of items completed.
2. Applicator shall maintain a copy of records until the expiration of the specified warranty period.

1.6 PAINT DELIVERY, STORAGE, AND HANDLING

A. Deliver material in manufacturer's original, unopened and undamaged packages. Clearly identify manufacturer's, brand name, contents, color, batch number, and any personal safety hazards associated with the use of or exposure to the materials on each package.

B. Store paints in a suitable protected area that is heated or cooled as required for maintaining temperatures within the range recommended by the paint manufacturer and in accordance with all of manufacturer's requirements.

C. Shipping:

1. Where precoated items are to be shipped to the jobsite, protect coating from damage. Batten coated items to prevent abrasion.
2. Use nonmetallic or padded slings and straps in handling.
3. Items will be rejected for excessive damage.

1.7 QUALITY ASSURANCE

A. Warranty: The Contractor and coating manufacturer shall jointly and severally warrant to the Owner and guarantee the work under this section against defective workmanship and materials for a period of 3 years commencing on the date of final acceptance of the work.

B. Program: The Contractor shall submit their quality control procedures and practices identifying how they will monitor storage, surface preparation, mixing, application and inspection.

C. Pre-Installation Conference: General Contractor, Applicator, and Manufacturer's Technical Representative shall meet on-site with Engineer to discuss approved products and workmanship to ensure proper surface preparation and application of the coatings. Review foreseeable methods and procedures related to the coating Work including but not necessarily limited to the following:
Review Project requirements and the Contract Documents.
Review required submittals.
Review requirements of on-site quality control inspection and testing.
Review the requirements for preparing the quality control report as specified herein.
Review availability of materials, tradesmen, equipment and facilities needed to make progress and avoid delays.

Review material storage and staging.
Review equipment storage and staging.
Review waste management and disposal.
Review environmental conditions, other Project conditions, and procedures for coping with unfavorable conditions.
Review regulations concerning code compliance, environmental protection, health, safety, fire and similar considerations.
Review procedures required for the protection of the completed work during the remainder of the construction period

PART 2 – PRODUCTS

2.1 PAINT AND COATINGS MANUFACTURERS

A. Products of Tnemec Company, Inc., Kansas City, Missouri are listed to establish a standard of performance and quality. Local Representation: Call Coating Consultants, 801-282-2327, ccc@tnemec.com

B. Materials specified are those that have been evaluated for the specific service. Request for material substitutions shall be in accordance with requirements of the project specifications. Equivalent materials of other manufacturers may be submitted on written approval of the Engineer. No request for substitution shall be considered that would decrease film thickness or offer a change in the generic type of coating specified. In no case will the request be considered unless information is received, in writing, ten (10) days prior to the bid opening date.

C. Requests for substitution shall include:

1. Manufacturer's literature for each product giving name, product number, generic type, descriptive information, laboratory testing showing results equal to the performance criteria of the products specified herein.
2. Side by side comparison of the performance attributes of the proposed materials as compared to the specified coating system.
3. List of ten (10) projects in which each product has been used and rendered satisfactory service.
4. The sum which will be added to or deducted from the base bid should alternate materials be accepted.

D. After first submittal, Engineer/Owner's Agent hourly rate will be charged to review further submittals.

2.2 PAINT MATERIALS

A. Products shall meet federal, state, and local requirements limiting the emission of volatile organic compounds. Specific information may be secured through the local office of the Air Pollution Control Officer.

B. Materials Including Primer and Finish Coats: Produced by same paint manufacturer.

C. Thinners, Cleaners, Driers, and Other Additives: As recommended by paint manufacturer of the particular coating. Where coatings are required to meet ANSI/NSF Standard 60 and 61, addition of thinners, driers, and other paint additives not approved under the ANSI/NSF certification letter will not be permitted without written approval from the Engineer.

D. VOC Content of Field-Applied Interior Paints and Coatings: Provide products that comply with the following limits for VOC content, exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24); these requirements do not apply to paints and coatings that are applied in a fabrication or finishing shop:

1. Flat Paints, Coatings, and Primers: VOC content of not more than 50 g/L.
2. Nonflat Paints, Coatings, and Primers: VOC content of not more than 150 g/L.
3. Anti-Corrosive and Anti-Rust Paints Applied to Ferrous Metals: VOC not more than 250 g/L.
4. Floor Coatings: VOC not more than 100 g/L.
5. Shellacs, Clear: VOC not more than 730 g/L.
6. Shellacs, Pigmented: VOC not more than 550 g/L.
7. Flat Topcoat Paints: VOC content of not more than 50 g/L.
8. Nonflat Topcoat Paints: VOC content of not more than 150 g/L.
9. Anti-Corrosive and Anti-Rust Paints Applied to Ferrous Metals: VOC not more than 250 g/L.
10. Floor Coatings: VOC not more than 100 g/L.
11. Shellacs, Clear: VOC not more than 730 g/L.
12. Shellacs, Pigmented: VOC not more than 550 g/L.
13. Primers, Sealers, and Undercoaters: VOC content of not more than 200 g/L.
14. Dry-Fog Coatings: VOC content of not more than 400 g/L.
15. Zinc-Rich Industrial Maintenance Primers: VOC content of not more than 340 g/L.
16. Pre-Treatment Wash Primers: VOC content of not more than 420 g/L.

E. Chemical Components of Field-Applied Interior Paints and Coatings: Provide topcoat paints and anti-corrosive and anti-rust paints applied to ferrous metals that comply with the following chemical restrictions; these requirements do not apply to paints and coatings that are applied in a fabrication or finishing shop:

1. Aromatic Compounds: Paints and coatings shall not contain more than 1.0 percent by weight of total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).
2. Restricted Components: Paints and coatings shall not contain any of the following:
    a. Acrolein.
    b. Acrylonitrile.
    c. Antimony.
    d. Benzene.
    e. Butyl benzyl phthalate.
    f. Cadmium.
    g. Di (2-ethylhexyl) phthalate.
    h. Di-n-butyl phthalate.
    i. Di-n-octyl phthalate.

j. 1,2-dichlorobenzene.
k. Diethyl phthalate.
l. Dimethyl phthalate.
m. Ethylbenzene.
n. Formaldehyde.
o. Hexavalent chromium.
p. Isophorone.
q. Lead.
r. Mercury.
s. Methyl ethyl ketone.
t. Methyl isobutyl ketone.
u. Methylene chloride.
v. Naphthalene.
w. Toluene (methylbenzene).
x. 1,1,1-trichloroethane.
y. Vinyl chloride.

F. Paint products are listed in the coatspecs.

2.3 COLORS

A. Colors not otherwise specified shall be selected by the Owner.

B. Formulated with colorants free of lead, lead compounds, or other materials which might be affected by the presence of hydrogen sulfide or other gas likely to be present at the project.

2.4 FILM THICKNESS TESTING GAUGES

A. Provide a magnetic type or electronic dry film thickness gauge to test coating thickness specified in mils, as manufactured by:

1. Nordson Corp., Anaheim, CA, Mikrotest.
2. DeFelsko Corp., Anaheim, CA, Positector
3. Automation Corp, Quanix
4. Or equal.

B. Provide an electrical holiday detector, low voltage, wet sponge type to test finish coat, except coatings greater than 10 mils, zinc primer, high-build elastomeric coatings, and galvanizing, for holidays and discontinuities as manufactured by:

1. Tinker and Razor, San Gabriel, CA, Model M-1.
2. Or equal.

C. Provide an electrical holiday detector, high voltage, variable output in 100 volt increments, to test elastomeric coatings and coating systems in excess of 10 mils dry film thickness, except zinc primer, for holidays and discontinuities as manufactured by:

1. Elcometer D236, Rochester Hills, Michigan
2. Or equal.

2.5 Equipment

Installation equipment shall be acceptable to the coatings manufacturer.

PART 3 – EXECUTION

3.1 GENERAL

A. The intention of these specification is for all new, interior and exterior, wood, masonry, concrete, and metal, whether atmospheric or submerged exposure surfaces be painted, whether specifically mentioned or not, except as modified herein. The intent is for all of the metal portions of the clarifier to be prepared and coated as specified.

B. Surface preparation and coating application shall be in conformance with these specifications and the coating manufacturer's written product data sheets and written recommendations of the manufacturer's technical representative. Where conflicts occur between the manufacturer's recommendations and these specifications, the more stringent of the two shall apply unless approved by the Engineer.

C. For immersion coatings, obtain full cure for completed system before immersing or allowing exposure to water or condensation for more than 12 hours. Consult coatings manufacturer's written instructions for these requirements.

D. Protect surrounding areas and surfaces not scheduled to be coated from damage during surface preparation and application of coatings.

E. Immediately remove coatings that fall on surrounding areas and surfaces not scheduled to be coated.

3.2 REGULATORY REQUIREMENTS

A. Meet federal, state, and local requirements limiting the emission of volatile organic compounds and worker exposures.

B. Protect workers and comply with applicable federal, state, and local air pollution and environmental regulations for surface preparation, blast cleaning, disposition of spent aggregate and debris, coating application and dust prevention including, but not limited to the following Acts, Regulations, Standards, and Guidelines:

1. Clean Air Act
2. National Ambient Air Quality Standard
3. Resource Conservation and Recovery Act (RCRA)
4. SSPC Guide 6I

C. Comply with applicable federal, state, and local regulations for confined space entry.

D. Provide and operate equipment that meets explosion proof requirements.

3.3 ENVIRONMENTAL CONDITIONS

A. Do not perform abrasive blast cleaning whenever the relative humidity exceeds 85 percent, whenever surface temperature is less than 5 degrees F above the dew point of the ambient air.

B. Surface preparation power tools and blast equipment shall contain dust collection equipment that will prevent discharge of dust particles into the atmosphere around electrical or mechanical equipment unless otherwise permitted by the Engineer.

C. Proceed with coating Work only when temperature of substrate, air temperature, relative humidity, dew point and other conditions comply with the manufacturer's written recommendations and when no damaging environmental conditions are forecasted for the time when the material will be vulnerable to such environmental damage. Record such conditions and include in Daily Report.

1. Maintain substrate temperature and ambient temperature before, during and after installation in accordance with manufacturer's instructions.
2. Provide adequate ventilation during installation and full curing periods of the coatings.
3. Do not apply coatings when it is expected that surface temperatures will drop below 5 degrees above dew point within 8 hours after application of coating.
4. Protect work and adjacent areas from excessive dust and airborne contaminants during coating application and curing. Schedule work to avoid excessive dust and contaminants.
5. Clarifier's shall be tented or tarped prior to application of coatings so that overspray is prevented at all times. Contractor shall be liable for costs to remediate overspray on nearby vehicles and buildings.

D. Environmental Monitoring

1. Humidity: Humidity shall be monitored with sling psychrometer or electronic hydrometer. Equipment shall be accurate to within ±2% relative humidity and electronic meters shall have been calibrated for accuracy not less than 2 months prior to beginning work.
2. Air Temperature: Dry bulb air temperatures readings shall be monitored using a mercury thermometer or electronic hydrometer located in a shaded area. Accuracy shall be within ±2 degrees F.
3. Surface Temperature: Surface temperature shall be monitored using bimetallic magnetic surface contact thermometers, electronic surface contact thermometers, or infrared surface temperature measurement devices. All surface temperatures measurements shall be within ±2 degrees F.
4. Calibration: Contractor to provide documentation of calibration of electronic equipment used for environmental condition monitoring.
5. Measure and record environmental and surface conditions every two hours of work shift.

3.4 DEHUMIDIFICATION

A. Where weather conditions or project requirements dictate, Contractor shall provide and operate dehumidification equipment to maintain environmental conditions suitable for abrasive blasting and coating application as specified.

B. Contractor shall provide dehumidification equipment sized to maintain dew point temperature 17 degrees or more below surface temperature of metal surfaces to be cleaned and painted. System shall provide ventilation within environmentally controlled areas and shall meet the following requirements:

1. Two air exchanges per hour, minimum
2. Maintenance of personnel exposure limits (PEL) at 50 percent of OSHA PEL limits for all chemicals used in the performance of the work, and
3. Maintenance of lower explosive limits (LEL) to less than 50 percent of the most volatile solvent used in the performance of the work.

C. Dehumidification equipment type, size, air flow, and power requirements shall be designed by a qualified company knowledgeable in dehumidification equipment, and its operation based on project requirements and anticipated seasonal weather conditions for the project schedule. Design to include evaluation of existing conditions, humidity, and temperature within the environmentally controlled area, proper air exchange requirements, ventilation requirements, ducting requirements for adequate air flow, and any other issues necessary to achieve the specified performance and environmental conditions throughout the duration of the project.

D. Dehumidification equipment supplier or subcontractor shall either operate the equipment or provide training to Contractor on the proper operation and setup of dehumidification equipment. Dehumidification subcontractor shall provide a technical representative on site for a minimum of two 8 hour days to insure proper operation of the equipment, achievement of desired environmental control, and to insure Contractor can properly setup, operate, monitor, and maintain the equipment.

E. Cleaned metal surfaces shall be prevented from flash rusting throughout the project duration, condensation or icing shall be prevented throughout surface preparation and coating application.

F. Dehumidification equipment shall operate 24 hours per day and continuously throughout surface preparation and coating application and cure.

G. Contractor shall monitor ambient temperature, humidity, dew point temperature, and pipe surface temperature both outdoors and within the environmentally controlled area at the start, midpoint, and end of each work shift, minimum, but not more than 5 hours between measurements.

H. Daily environmental condition monitoring and maintenance of the equipment shall be documented in writing and posted near the equipment for review by the Engineer.

I. Reblasting of flash rusted metal surfaces or removal of damaged coatings, as a result of equipment malfunction, shutdown, or other events that result in the loss of environmental control, will be at the sole expense of the Contractor. Cleaned metal surfaces subject to flash rusting shall be cleaned to the same cleanliness as prior to the flash rust formation and shall be approved by the Engineer.

3.5 VENTILATION AND ILLUMINATION

A. Adequate illumination shall be provided while work is in progress. Whenever required by the inspector, the 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 the inspector.

B. Ventilation shall be used to control potential dust and hazardous conditions within the work area. Ventilation flow rates shall be in accordance with OSHA regulations and as required to reduce air contamination to non-hazardous conditions.

3.6 SURFACES NOT REQUIRING PAINTING

A. Unless otherwise stated herein or shown, the following areas or items will not require painting:

1. Concrete and masonry surfaces
2. Nonferrous and corrosion-resistant ferrous alloys such as copper, bronze, monel, aluminum, chromium plate, atmospherically exposed weathering steel, and stainless steel, except where:
    a. Required for electrical insulation between dissimilar metals.
    b. Aluminum is embedded in concrete or masonry, or aluminum is in contact with concrete or masonry.
    c. Color coding of equipment and piping is required.
3. Nonmetallic materials such as glass, PVC, wood, porcelain, and plastic (FRP) except as required for architectural painting or color coding.
4. Prefinished electrical and architectural items such as motor control centers, switchboards, switchgear, panelboards, transformers, disconnect switches, acoustical tile, cabinets, elevators, building louvers, wall panels, etc.; color coding of equipment is required.
5. Non-submerged electrical conduits attached to unpainted concrete surfaces.
6. Heating and ventilation ducting, unless otherwise specified.
7. Cathodic protection anodes.
8. Items specified to be galvanized after fabrication unless specifically required elsewhere or subject to immersion.
9. Insulated piping and/or insulated piping with aluminum or stainless steel jacket will not require exterior coating, except as required for architectural painting or color coding.

3.7 PREPARATION OF SURFACES

A. Surface Preparation Inspection:

1. Inspect and provide substrate surfaces prepared in accordance with these Specifications and the printed directions and recommendations of paint manufacturer whose product is to be applied.
2. Provide minimum 2 days' advance notice prior to start of surface preparation work or coating application work.
3. Perform such work only in the presence of Engineer, unless Engineer grants prior approval to perform such work in Engineer's absence.

B. Metal Surface Preparation:

1. General:
   a. Do not perform a surface preparation blast prior to submission of samples or before unacceptable areas or conditions have been corrected. Workmanship for metal surface preparation as specified shall meet current Steel Structures Painting Council (SSPC) Specifications (SSPC PA1 – Shop, Field and Maintenance Painting of Steel) as follows:
      1) Solvent Cleaning: SP 1
      2) Hand Tool Cleaning: SP 2
      3) Power Tool Cleaning: SP 3
      4) White Metal Blast Cleaning: SP 5
      5) Commercial Blast Cleaning: SP 6
      6) Brush-Off Blast Cleaning: SP 7
      7) Pickling: SP 8
      8) Near-White Blast Cleaning: SP 10
      9) Bare Metal Power Tool Cleaning: SP 11
   b. All surface preparation shall be assumed to be on a SSPC Grade A steel surface condition, unless specifically noted otherwise.
   c. Wherever the words "solvent cleaning", "hand tool cleaning", "wire brushing", or "blast cleaning", or similar words of equal intent are used in these Specifications or in paint manufacturer's specifications, they shall be understood to refer to the applicable SSPC Specifications listed above.
   d. Where OSHA or EPA regulations preclude standard abrasive blast cleaning, wet or vacu-blast methods may be required. Coating manufacturers' recommendations for wet blast additives and first coat application shall apply.
   e. Hand tool clean areas that cannot be cleaned by power tool cleaning.

2. Welds and adjacent areas:
   a. Prepared such that there is:
      1) No undercutting or reverse ridges on the weld bead.
      2) No weld spatter on or adjacent to the weld or any other area to be painted.
      3) No sharp peaks or ridges along the weld bead.
   b. Grind embedded pieces of electrode or wire flush with the adjacent surface of the weld bead.

3. Preblast Cleaning Requirements:
   a. Remove oil, grease, welding fluxes, and other surface contaminants prior to blast cleaning.
   b. Cleaning methods: Steam, open flame, hot water, or cold water with appropriate detergent additives followed with clean water rinsing.
   c. Clean small isolated areas as above or solvent cleaned with suitable solvents and clean cloths.
   d. Round or chamfered all sharp edges and grind smooth burrs, jagged edges, and surface defects.

4. Blast Cleaning Requirements:
   a. General:

1) Type of Equipment and Speed of Travel: Designed to obtain specified degree of cleanliness.
2) Select type and size of abrasive to produce a surface profile that meets the coating manufacturer's recommendations for the particular coating to be applied or not less than 20 percent of the specified coating thickness, whichever is more stringent.
3) Abrasive blast surface preparation work on surfaces coated with lead paint shall be with recyclable abrasive and reclamation equipment unless specified otherwise. Contractor may use conventional blast equipment with non-recyclable abrasive with existing coating having low lead (less than 1,000 mg/kg).
6) Meet applicable federal, state, and local air pollution control regulations for blast cleaning and disposition of spent aggregate and debris.
7) Do not reuse abrasive, unless abrasive is a recyclable abrasive.

b. Shop Blasting
1) Notify Engineer at least 7 days prior to start of shop blast cleaning to allow for inspection of the work during surface preparation and shop application of paints. Work shall be subject to the Engineer's approval before shipment to the jobsite.
2) Items such as structural steel, metal doors and frames, metal louvers, and similar items as reviewed by the Engineer may be shop prepared and primed. Centrifugal wheel blast cleaning is an acceptable alternate to shop blast cleaning. Blast clean and prime in accordance with these Specifications.

c. Field Blasting
1) Perform sandblasting for items and equipment where specified and as required to restore damaged surfaces previously shop or field blasted and primed. Materials, equipment, procedures, shall meet requirements of Steel Structures Painting Council.
2) Field blasting in areas with electrical or mechanical equipment, within buildings shall be performed with dustless abrasive systems such as “Sponge-Jet”, dry ice abrasive blasting.

5. Post-Blast Cleaning and Other Cleaning Requirements:
a. Clean surfaces of dust and residual particles from cleaning operations by dry (no oil or water vapor) air blast cleaning or other method prior to painting. Vacuum clean enclosed areas and other areas where dust settling is a problem and wiped with a tack cloth.
b. Paint surfaces the same day they are sandblasted. Reblast surfaces that have started to rust before they are painted to original cleanliness prior to occurrence of flash rusting.

6. Inspect and record the specified degree of surface cleanliness of the ferrous metal surface in accordance with SSPC-VIS 1. Specified surface profile of the prepared substrate shall be verified in accordance with ASTM D4417 – Method C Replica Tape or NACE RP0287

7. Surfaces shall meet the manufacturer’s recommended anchor profile and degree of blast cleaning.

C. Concrete Surface Preparation:

1. Do not begin until 30 days after the concrete has been placed.
2. Remove grease, oil, dirt, salts or other chemicals, loose materials or other foreign matter by solvent, detergent, or other suitable cleaning methods.
3. Clean concrete using mechanical or chemical methods for the degree of cleaning specified for the coating system in accordance with SSPC SP-13, Surface preparation of Concrete.
4. Unless otherwise required for proper adhesion, ensure surfaces are dry prior to coating.
5. Bug holes, air pockets, and other voids in the concrete will be filled or patched in chemical exposure areas, secondary containment, and where specifically required.
6. Concrete Surface Preparation Inspection:
    a. Adhesion Testing:
        1) Tensile testing of the surface preparation shall be performed by the Engineer as necessary using Type 4 or Type 5 pneumatic adhesion testing equipment in accordance with ASTM D4541 using 2-inch diameter dollies for concrete surface adhesion testing.
        2) Concrete surface or applied coating shall be scored for concrete adhesion testing on high cohesive strength or elastomeric coatings or coatings greater than 35 mils in thickness.
        3) Adhesive failure greater than 50 percent of the dolly surface area shall indicate inadequate surface preparation.
        4) Cohesive failures which results in loss of sound concrete will be acceptable provided the loss is greater than 50 percent of the dolly surface area.
        5) Low adhesion cohesive failures with a thin layer of concrete due to weak concrete or laitance over 50 percent of the dolly surface will be rejected.
    b. Concrete Soundness:
        1) Concrete soundness shall be determined using the scratching or hammer impact methods as defined in SSPC SP-13.
    c. Moisture Content:
        1) Moisture shall be tested as Specified in SSPC SP-13 and shall not exceed the moisture content recommended by the coating manufacturer.

D. Preparation of Existing Coated Surfaces:

1. General:
    a. Shop primed or coated surfaces shall be reviewed with the Engineer to determine the extent of damage to the coating and suitability of the finish coats to adhere to the shop applied coats.
    b. If a cured epoxy, polyurethane, or plural-component material is to be top coated, contact the coating manufacturer concerned for additional surface preparation requirements.
    c. Surface preparation recommendations of the manufacturer shall be subject to approval of the Engineer.

2. To be Recoated or Final Coated:
    a. Detergent wash and freshwater rinse.
    b. Perform touch-up repairs of existing coating.
    c. Asphaltic varnish coated ductile iron pipe will require an application of a seal coat prior to the application of a cosmetic finish coat.

3. Touch-up Repairs:
    a. Clean loose, abraded, or damaged coatings to substrate by Hand or Power Tool, SP 2 or SP 3.
    b. Feather surrounding intact coating.
    c. Apply one spot coat of the specified primer to bare areas overlapping the prepared existing coating.
    d. Apply one full finish coat of the specified primer or finish coat(s) overall.

4. Application of a Cosmetic Coat:
    a. The exact nature of shop-applied coatings is not known in all cases.
    b. Check compatibility by application to a small area prior to starting the coating.
    c. If lifting or other problems occur, request disposition from the Engineer.
    d. Cured epoxy, polyurethane, plural component materials or any other coating system which has exceeded its maximum recoat window shall be prepared by brush-off blasting to provide a profile for adhesion and to remove all gloss from the previous coating surface.

I. Brush-off Blast Cleaning:

1. Equipment, procedure, and degree of cleaning shall meet SSPC-SP 7, Brush-off Blast Cleaning.
2. Abrasive: Either conventional abrasive blasting with sand, grit, or nut shells or other suitable specialized abrasive blasting technology. Abrasives shall be 50 grit mesh, minimum.
3. Select various surface preparation parameters such as size and hardness of the abrasive, nozzle size, air pressure, and nozzle distance from the surface such that the surface is cleaned without pitting, chipping, or other damage.
4. Surface profile shall have the appearance of 100 grit sandpaper with no exposed metal substrate. Where metal substrate is exposed, Contractor shall apply full coating system for new metal surface as specified.
5. Verify parameter selection by blast cleaning a trial area that will not be exposed to view.
6. The Engineer shall approve trial blast cleaned area and shall used area as a representative sample of surface preparation.
7. Repair or replace surfaces damaged by blast cleaning, where damage is defined as visible metal substrate. If less than 5 percent of prepared surface has the metal substrate visible, the coating shall be repaired by application of a brush applied coat. If greater than 5 percent the coating shall be fully removed to meet the specified surface cleanliness..

K. Solvent Cleaning:

1. Consists of removal of foreign matter such as oil, grease, soil, drawing and cutting compounds, and any other surface contaminants by the use of solvents,

emulsions, cleaning compounds, steam cleaning, or similar materials and methods which involve a solvent or cleaning action.

2. Method meets SSPC-SP 1.

3.8 PROTECTION OF MATERIALS NOT TO BE PAINTED

A. Remove, mask, or otherwise protect hardware, lighting fixtures, switch plates, aluminum surfaces, machined surfaces, couplings, shafts, bearings, nameplates on machinery, and other surfaces not intended to be painted.

B. Provide drop cloths to prevent paint materials from falling on or marring adjacent surfaces.

C. Protect working parts of mechanical and electrical equipment from damage during surface preparation and painting process.

D. Mask openings in motors to prevent paint and other materials from entering the motors.

3.9 PAINT MIXING

A. Multiple-component coatings:

1. Prepare using all of the contents of the container for each component as packaged by the paint manufacturer.
2. No partial batches will be permitted.
3. Do not use multiple-component coatings that have been mixed shall not be used beyond their pot life.
4. Provide small quantity kits for touchup painting and for painting other small areas.
5. Mix only components specified and furnished by the paint manufacturer.
6. Do not intermix additional components for reasons of color or otherwise, even within the same generic type of coating.

B. Keep paint materials sealed when not in use.

C. Where more than one coat of a material is applied within a given system, alternate color to provide a visual reference that the required number of coats have been applied.

3.10 APPLICATION OF PAINT

A. General:

1. Inspection: Schedule with Engineer in advance for cleaned surfaces and all coats prior to the succeeding coat.
2. Apply coatings in accordance with the paint manufacturer's recommendations. Allow sufficient time between coats to assure thorough drying of previously applied paint.
3. Fusion Bonded Coatings Method Application: Electrostatic, fluidized bed, or flocking.
4. Paint units to be bolted together and to structures prior to assembly or installation.

5. Shop Primed or Factory Finished Surfaces:
    a. Inspection: Schedule with Engineer in advance for shop primed or factory-finished items delivered to jobsite for compliance with these Specifications.
    b. Hand or power sand areas of chipped, peeled, or abraded coating, feathering the edges. Follow with a spot primer using specified primer.
    c. For two-package or converted coatings, consult the coatings manufacturer for specific procedures as relates to top coating of these products. Where scarification of the existing coating is required, Contractor shall prepare the surface in accordance with Brush-off Blasting Cleaning this section.
    d. Prior to application of finish coats, clean shop primed surfaces of dirt, oil, and grease, and apply a mist coat of specified primer, 1.0 mil dry film thickness.
    e. After welding, prepare and prime holdback areas as required for the specified paint system. Apply primer in accordance with manufacturer's instructions.
6. Manufacturer Applied Paint Systems:
    a. Repair abraded areas on factory-finished items in accordance with the equipment manufacturer's directions.
    b. Carefully blend repaired areas into the original finish.

B. Application Safety

1. Performed painting in accordance with recommendations of the following:
    a. Paint manufacturer's instructions.
    b. NACE contained in the publication, Manual for Painter Safety.
    c. Federal, state, and local agencies having jurisdiction.
2. Contractor will be solely and completely responsible for condition of the project site, including safety of all persons (including employees) and property during performance of the work. This requirement will apply continuously and not be limited to normal working hours. Safety provisions will conform to U.S. Department of Labor, Occupational Safety and Health Act, any equivalent state law, and all other applicable federal, state, county, and local laws, ordinances, and codes.
3. Contractor will comply with all safety-training requirements promulgated or required for this project.

C. Film Thickness:

1. Coverage is listed as either total minimum dry film thickness in mils (MDFT) or the spreading rate in square feet per gallon (SFPG). Per coat determinations are listed as MDFTPC or SFPGPC.
2. Applied coating system film thickness per coat shall be applied at the specified coating thickness or the manufacturer’s recommended minimum thickness, whichever is greater. Where the manufacturer has not specified a minimum coating thickness on the product data sheets, the minimum recommended coating application thickness shall apply.
3. Maximum film build per coat shall not exceed the coating manufacturer's recommendations. Apply coatings to be free of film characteristics or defects that would adversely affect the performance or appearance of coating system.

4. Surfaces that are immersed shall be stripe coated on all angles, edges, corners, threads, welds, bolts and similar type surfaces. Stripe coat shall be an extra coat of the intermediate or topcoat material. The stripe coat shall be a separate coat of paint from coats specified under the coating system. Stripe coats shall be alternated in color similar to a full coat.
5. Number of coats: Minimum required irrespective of the coating thickness. Additional coats may be required to obtain the minimum required paint thickness, depending on method of application, differences in manufacturers' products, and atmospheric conditions.

D. Porous Surfaces, Such as Concrete, Masonry:

1. Prime Coat:
   a. May be thinned to provide maximum penetration and adhesion.
   b. Type and Amount of Thinning: Determined by the paint manufacturer and is dependent on surface density and type of coating.
   c. Surfaces Specified to Receive Water Base Coating: Damp, but free of running water, just prior to application of the coating.

E. Damaged Coatings, Pinholes, and Holidays:

1. Feather edges and repaired in accordance with the recommendations of the paint manufacturer.
2. Repair fusion bonded coatings to be as recommended by the original applicator. Applicator shall provide liquid repair kits for this purpose as recommended by the coating manufacturer.
3. Apply finish coats, including touchup and damage-repair coats in a manner that will present a uniform texture and color-matched appearance.

F. Unsatisfactory Application:

1. If the item has an improper finish color, or insufficient film thickness, clean and topcoat surface with specified paint material to obtain the specified color and coverage. Obtain specific surface preparation information from the coating manufacturer.
2. Hand or power sand visible areas of chipped, peeled, or abraded paint and feather the edges. Follow with primer and finish coat in accordance with the Specifications. Depending on the extent of repair and its appearance, a finish sanding and topcoat may be required.
3. Evidence of runs, bridges, shiners, laps, or other imperfections shall be cause for rejection.
4. Existing coating surfaces that have exceeded the maximum recoat period shall be scarified by Brush-off cleaning as specified this section.
5. Repair defects in coating system per written recommendations of coating manufacturer and as approved by the Engineer.
6. Leave all staging up until the Engineer has inspected the surface or coating. Replace staging removed prior to approval by Engineer.

3.11 COATING INSPECTION

A. General

1. Film thickness measurements and electrical inspection of the coated surfaces:
2. Perform with properly calibrated instruments.
3. Recoat and repair as necessary for compliance with the Specifications.
4. All coats will be subject to inspection by the Engineer and the coating manufacturer's representative.
5. Visually inspect concrete, nonferrous metal, plastic, and wood surfaces to ensure proper and complete coverage has been attained.
6. Give particular attention to edges, angles, flanges, and other areas where insufficient film thicknesses are likely to be present and ensure proper mil thickness in these areas.

B. Coating Thickness Testing:

1. Engineer shall conduct coating thickness testing as necessary and without limitation. Testing conformance to the requirements of SSPC PA-2 is specifically excluded from this specification.
2. Measure coating thickness specified in mils with a magnetic type dry film thickness gauge as specified.
3. Check each coat for the correct mil thickness. Do not make measurement before a minimum of 8 hours after application of the coating.
4. Tests for concrete coating thickness shall be with a Tooke Gauge, which is a destructive test. Contractor shall repair coating after thickness testing.

C. Coating Continuity Testing

1. Test finish coat, except zinc primer, galvanizing, and coatings in excess of 20 mils dry, for holidays and discontinuities with an electrical holiday detector, low voltage, wet sponge type as specified or a high voltage tester that has variable voltage capabilities using on a maximum test voltage of 125 volts per mil of applied coating.
2. Holiday detect coatings in excess of 20 mils dry and concrete and secondary containment coatings with high voltage units recommended by the coating manufacturer in accordance with NACE RP0188.
3. Holiday detect coatings on pipe for buried application with high voltage spark tester in accordance with NACE RP0274.

3.12 CLEANUP

A. Place cloths and waste that might constitute a fire hazard in closed metal containers or destroyed at the end of each day.

B. Upon completion of the work, remove staging, scaffolding, and containers from the site or destroyed in a legal manner.

C. Completely remove paint spots, oil, or stains upon adjacent surfaces and floors and leave entire job clean.

D. Damages due to over spray on buildings, vehicles, trees, or other surfaces not specified to be painted would be the responsibility of the Contractor.

3.13 MANUFACTURER' SERVICES

A. Furnish paint manufacturer's representative to visit jobsite at intervals during surface preparation and painting as may be required for product application quality assurance, and to determine compliance with manufacturer's instructions and these specifications, and as may be necessary to resolve field problems attributable to, or associated with, manufacturer's products furnished under this Contract.

3.14 PROTECTIVE COATING SYSTEMS AND APPLICATION SCHEDULE:

A. Unless otherwise shown or specified in these Specifications painted or coated the work in accordance with the following application schedule.

B. In the event of discrepancies or omissions in the following, request clarification from the Engineer before starting the work in question.

System No.	Title
1	Submerged Metal
2	Non-Submerged Metal
3	Galvanized Metal Repair

C. System No. 1 Submerged Metal:

1. Surface Preparation and Coating System

Surface Prep.	Paint Material	Min. Coats, Cover
Carbon steel -- SSPC SP 10/NACE 2 Near White Blast Cleaning with minimum angular anchor profile of 2.0 mils Stainless steel – SSPC SP16 Brush off Blast Cleaning… with a minimum angular anchor profile of 2.0 mils	Primer Coat Series 161HS-1255 Beige Hi-Build Epoxoline Stripe Coat 161HS-Color TBD Hi-Build Epoxoline Intermediate Coat Series 161HS Color TBD Hi-Build Epoxoline Finish Coat Series 161HS Color TBD Hi-Build Epoxoline Polyamide Epoxy (NSF 61 Certified Coating)	1 coat, 4-6 mils dft As per SSPC PA11 2 coats, 4-6 mils dft per coat 1 coat, 4-6 mils dft

2. Application:
   a. All metal surfaces below a plane 1 foot above the maximum liquid surface, metal surfaced above the maximum liquid surface which are a part of the immersed equipment, concrete embedded surfaces of metallic items under submerged conditions, such as wall pipes, pipes, pipe

sleeves, access manholes, gate guides, and thimbles, and structural steel, except reinforcement steel,

b. The following specific surfaces unless otherwise specified.
   1. Clarifier structure and mechanism metal surfaces.

D System No. 2 Non-Submerged Metal:

1. Surface Preparation and Coating System

Surface Prep.	Paint Material	Min. Coats, Cover
Carbon Steel— SSPC SP 10/NACE 2 Near White Blast Cleaning with minimum angular anchor profile of 2.0 mils Stainless Steel – SSPC-SP16 Brush off Blast Cleaning… with a minimum angular anchor profile of 2.0 mils	Primer Coat Series 161HS-1255 Beige Hi-Build Epoxoline	1 coat, 4-6 mils dft
	Stripe Coat 161HS-Color TBD Hi-Build Epoxoline	As per SSPC-PA11
	Intermediate Coat Series 161HS Color TBD Hi-Build Epoxoline	2 coats, 4-6 mils dft per coat
	Finish Coat Series 1075 Color TBD Endura Shield II	1 coat, 3-5 mils dft

2. Application:
   a. Exposed metal surfaces located inside of structures, manholes, and vaults.
   b. Including the following surfaces:
      1) Clarifier Drive, Bridge, Rail, Platform, and other Mechanism components that are not submerged.

3. Special Requirements:
   a. Insulated piping shall be primed and epoxy coated under the insulation, but may be fully coated at the Contractor's option before insulation is applied.

E. System No. 3 Galvanized Metal Repair:

1. Surface Preparation and Coating System

Surface Prep.	Paint Material	Min. Coats, Cover
Solvent Clean (SP 1) Followed by Hand Tool (SP 2), or Power Tool (SP 3), or Brush-off Blast (SP 7)	Organic Zinc Rich Primer Series 90-97	1 Coat, 3 MDFT

2. Application:

a. All galvanized surfaces which are abraded, chipped, or otherwise damaged and are not specified to be coated.

(See PSDS form following this section)

PAINT SYSTEM DATA SHEET

Attached products' Technical Data Sheet (if applicable) to this sheet for each paint system submittal.

Paint System Number (from spec.):
Paint System Title (from spec.):
Coatings Manufacturer:
Representative:
Surface Preparation:

Paint Material (Generic)	Product Name/Number Proprietary)	Min. Coats, Coverage

Additional Information Required (check applicable items):

☐ ANSI/NSF Certification letter for each paint material listed above requiring ANSI/NSF Standard 60 and 61 approval.

☐ Manufacturer's minimum and maximum recommended coating thickness per coat and for total coating system.

☐ Immersion coating cure requirements from minimum coating application temperature to 100 degrees in 15-degree temperature increments.

SECTION 16855

HEAT TRACING

PART 1 – GENERAL

1.1 DESCRIPTION

A. This section describes the requirements for supplying, installing, and testing of the electric heat tracing system of the sprayer piping.

1.2 SUBMITTALS

A. Shop Drawings

B. Manufacturer's descriptive literature

PART 2 – PRODUCTS

2.1 SYSTEM DESIGN REQUIREMENTS

A. Design Heating Load for Piping:

Nominal Pipe Size (in)	75-degree Column Heat Trace Minimum Capacity (watts/ft)
¼	2.9
½	3.9
¾	4.5
1	4.3
1-1/4	3.9
1-1/2	4.3
2	5.0
2-1/2	5.8
3	6.8
3-1/2	5.5
4	6.0

2.2 SPRAYER PIPE HEAT TRACING

A. The sprayer pipes shall be heat-traced as indicated on the Drawings and as specified herein.

ELECTRICAL HEATING TAPE

A. Cable: Self-limiting, parallel circuit construction consisting of continuous inner core of variable resistance conductive heating material between two parallel copper bus wires. Provide tinned copper braid for PVC, RFP, and stainless-steel pipe applications.

B. UL Listing: Listed as self-limiting pipe tracing material for pipe freeze protection application in ordinary conditions and suitable for below grade installations.

C. Maximum Maintenance Temperature: 150 degrees F (65℃)

D. Maximum Intermittent Temperature: 185 degrees F (85℃).

E. Service Voltage: As indicated by branch circuits provided by heat tracing on the Drawings.

F. Manufacturers and Products:

1. Raychem; Chemelex BTV or BRV-C.
2. Thermon; PSX or PSX-BC

2.3 CONNECTION SYSTEM

A. Rating: NEMA 250, Type 4 and Factory Mutual approved.

B. Operating Monitor Light: Furnish with each circuit power connection kit to indicate when heat tracing is energized.

C. Manufacturers and Products:

1. Power Connection Kit:

a. Raychem; Chemelex AM-BC
b. Thermon; ECA-1

2. Splice Kit:

a. Raychem; Chemelex AM-BS
b. Thermon; ECS-1

3. Tee Kit:

a. Raychem; Chemelex AM-B4S
b. Thermon; ECT-2

4. End Seal Kit:

a. Raychem; Chemelex AM-E
b. Thermon; ET-8C

5. Pilot Light:

a. Raychem; Chemelex AM-L
b. Thermon; VIL-4C

6. Pipe Adapter Kit:

a. Raychem; Chemelex AM-P or AM-T
b. Thermon; XP-1

2.4 SECURING TAPE

A. Plastic Piping Systems:

1. Type: Aluminum foil coated adhesive tape

2. Manufacturers and Products

a. Raychem; Chemelex AT-180
b. Thermon; AL-20P

B. Metallic Piping Systems:

1. Type: Glass or polyester cloth pressure sensitive tape

2. Manufacturers and Products:

a. Raychem; Chemelex GS54 or GT66
b. Thermon; PF-1

PART 3 – EXECUTION

3.1 INSTALLATION

A. General:

1. Install in accordance with the manufacturer's instructions and recommended practices.

2. Ground metallic structures or materials used for support of heating cable or on which it is installed in accordance with applicable codes.

3. Wiring between power connection points of heat tracing cable branch lines shall be provided by heat tracing system supplier.

4. Provide end of circuit pilot lights on heat tracing circuits for buried piping.

B. Electrical Heating Tape

1. Determine required length of electrical heating tape by considering length of circuit and number and type of fittings and fixtures, design heating load, and heating tape output.

2. Install by spiraling where design heating loads exceeds heating tape capacity.

3. Derate heating tape capacity when installed on plastic piping.

4. Install in locations as shown on Detail drawings.

5. Install additional heating tape at bolted flanges, valves, pipe supports, and other fittings and fixtures as recommended by supplier, but not less than the following:

Item	**Heating Tape Length (min. feet)**
Bolted flanges (per pair)	Two times pipe diameter
Valves	Four times valve length
Pipe hanger or support penetrating insulations	Three times pipe diameter

6. Install additional heating tape where piping extends below grade to the depth of the frost line.

C. Heat Tracing Circuits: Limit individual lengths of heat tracing circuits such that maximum single circuit capacity requirement does not exceed 20 amps when starting the circuit at 40 degrees F.

3.2 FIELD QUALITY CONTROL

A. Test each circuit with 500-volt insulation tester between circuit and ground with neutrals isolated from ground.

1. Insulation Resistance: Minimum 1,000 megohms per 1,000 feet.

END OF SECTION