



**CITY OF AUSTIN
PUBLIC WORKS DEPARTMENT**

**PROJECT MANUAL
Contract Documents and Technical
Specifications**

VOLUME 1 of 3

**Walnut Creek Tertiary Filter Rehabilitation
Project**

C.I.P. PROJECT NUMBER: 3023.025

SOLICITATION NO: CLMC 587

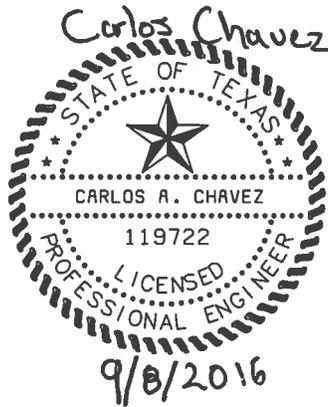
FDU: 4480 2307 8235

**CITY OF AUSTIN
Public Works Department
PO Box 1088
Austin, TX 78767**

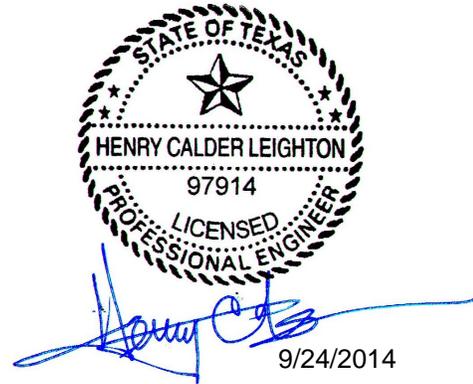
September 19, 2016



**PROJECT MANUAL
FOR THE
WALNUT CREEK WWTP TERTIARY FILTER REHABILITATION PROJECT**



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CERTIFICATIONS



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CERTIFICATIONS

**Document
Number**

Title

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END

**Bidding Requirements, Contract Forms and Conditions of the Contract
INVITATION FOR BIDS
Section 00020**

Following is a summary of information for this Project. Bidder is cautioned to refer to other sections of the Project Manual, Drawings and Addenda (Bid Documents) for further details.

The City of Austin, hereafter called OWNER, is requesting sealed written Bids for furnishing all labor, materials, equipment, supervision, and incidentals, and for performing all Work required for the following Project:

Walnut Creek Wastewater Treatment Plant Tertiary Filter Rehabilitation Project

Located at: **Walnut Creek Wastewater Treatment Plant, 7113 FM 969, Austin, TX 78724**

CIP ID# **3023.025**

IFB# **6100 CLMC 587**

The Work consists of rehabilitating the tertiary filters at Walnut Creek Wastewater Treatment Plant. The Work includes complete rehabilitation of Filters 1 through 4 including replacement of underdrains, media and troughs; replacement of troughs and media in Filters 5 through 10; construction of a new Southside Clearwell and a new Northwest Clearwell; installation of two new centrifugal blowers in a new blower building; replacement of all filter influent valves, effluent valves, effluent meters and associated piping; installation of two new backwash pumps; installation of two new non-potable water pumps; and related improvements to filter system electrical, instrumentation and controls systems.

Bid Documents are obtained through the City’s Vendor Connection website, log on www.austintexas.gov/financeonline/vendor_connection/index.cfm. A complete set of Bid Documents, including all sections of the Project Manual and Drawings, are included in the attachments section of each solicitation.

All addenda and answers to Bidders questions will also be posted in the attachments section for each solicitation on the City’s Vendor Connection website.

Sealed Bids will be received at the Capital Contracting Office, One Texas Center, 505 Barton Springs Rd., Suite 1045-C, Austin, Texas 78704 and then publicly opened and read aloud in the **SUITE 1045-C, Congress Conference Room.**

ALL BIDS ARE DUE PRIOR TO (Austin time) October 27, 2016 at 9:00AM.

ALL COMPLIANCE PLANS ARE DUE PRIOR TO (Austin time) October 27, 2016 at 1:00PM.

BIDS WILL BE OPENED AT (Austin time) October 27, 2016 at 1:00PM.

ALL BIDS AND COMPLIANCE PLANS NOT RECEIVED PRIOR TO THE DATE AND TIME SET FORTH ABOVE WILL NOT BE ACCEPTED FOR CONSIDERATION. The time stamp clock in **SUITE 1045-C** is the time of record and is verified with www.time.gov, the official U.S. time.

All CONTRACTORS must be registered to do business with OWNER prior to the Contract Award. All Subcontractors must be registered with the OWNER prior to execution of a contract. Prime Contractors are responsible for ensuring that their Subcontractors are registered as vendors with the City of Austin. Registration can be done through the OWNER’s on-line Vendor Registration system. Log onto <https://www.ci.austin.tx.us/vss/Advantage> and follow the directions.

All City procurements are subject to the City’s Minority-Owned and Women-Owned Business Enterprise Procurement Program found at Chapter 2-9-A of the City Code, as amended. The Program provides Minority-Owned and Women-Owned Business Enterprises (MBEs/WBEs) or Disadvantaged Business Enterprises (DBEs) full opportunity to participate in all City contracts.

Goals for MBE/WBE or DBE participation are stated for each solicitation. Information on achieving the goals or documenting good faith efforts to achieve the goals are contained in the MBE/WBE Procurement Program Package or DBE Procurement Program Package attached to the solicitation. When goals are established, Bidders are required to complete and return the MBE/WBE or DBE Compliance Plan with their Bid. If a Compliance Plan is not submitted prior to the date and time set forth in the solicitation, the Bid will not be accepted for consideration. (See Section 00820 for MBE/WBE requirements on "no goal" solicitations.)

All Bids shall be accompanied by an acceptable Bid guaranty in an amount of not less than five percent (5%) of the total Bid, as specified in Section 00100, Instructions To Bidders.

Performance and payment bonds when required shall be executed on forms furnished by OWNER. Each bond shall be issued in an amount of one hundred percent (100%) of the Contract Amount by a solvent corporate surety company authorized to do business in the State of Texas, and shall meet any other requirements established by law or by OWNER pursuant to applicable law.

Minimum insurance requirements are specified in Section 00810, Supplemental General Conditions.

Minimum wage rates have been established and are specified in Section 00830, Wage Rates and Payroll Reporting.

Contract Time is of the essence and all Work shall be substantially completed within **1,095 Calendar Days** after date specified in the Notice to Proceed, in accordance with the Bid Form, Section 00300. Final completion shall be achieved within **30 Calendar Days** after substantial completion. Liquidated damages are **\$1,500 per Calendar Day** for failure to substantially complete the work and **\$700 per Calendar Day** for failure to achieve final completion within **30 Calendar Days** after substantial completion, in accordance with the Bid Form, Section 00300.

OWNER reserves the right to reject any or all Bids and to waive any minor informality in any Bid or solicitation procedure (a minor informality is one that does not affect the competitiveness of the Bid).

A **mandatory** Pre-Bid Conference will be held on **September 28, 2016** at **9:30AM** (Austin time) at the **Walnut Creek Wastewater Treatment Plant, 7113 FM 969, Austin, Texas, Administration Building, Civics Room**

A non-mandatory site visit will be held immediately following the Pre-Bid Conference.

Attendance is mandatory unless otherwise stated. Bidders must attend any mandatory Pre-Bid Conference and are encouraged to attend any non-mandatory Pre-Bid Conference to ensure their understanding of Owner's bidding and contracting requirements, particularly MBE/WBE Procurement Program requirements. If the Pre-Bid Conference is mandatory the Bidder must arrive and sign-in within fifteen (15) minutes of the scheduled start time of the meeting, otherwise the Bidder will not be allowed to submit a Bid for the project.

The persons listed below may be contacted for information regarding the Invitation for Bid. If the Bidder contacts any other City employee, including Council Members and members of Boards and Commissions, the Bidder may be found in violation of Ordinance No. 20111110-052, dated November 10, 2011, regarding Anti-Lobbying and Procurement. The text of that Ordinance may be viewed at <http://www.cityofaustin.org/edims/document.cfm?id=161145>.

AUTHORIZED CONTACT PERSONS

PROJECT MANAGER: Steve Parks (512) 974-3576 / steve.parks@austintexas.gov

CONTRACT COMPLIANCE REP.: Monica Lopez (512) 974-7057 / monica.lopez@austintexas.gov

END

Bidding Requirements, Contract Forms and Conditions of the Contract
INSTRUCTIONS TO BIDDERS
Section 00100

1. Preparation of Bid

- a. **Bid Documents.** Each Bidder must prepare its Bid in ink on forms furnished by OWNER or as otherwise specified or permitted. Blank spaces for each item in Bid form must be filled. Bidder must submit a price for each item in Bid. In case of conflict between unit prices and extensions, unit prices shall govern. The Bid must be executed in the complete and correct legal name of individual, partnership, firm, corporation or other legal entity constituting the Bidder.
- b. **Vendor Registration.** All CONTRACTORS must be registered to do business with OWNER prior to Contract Award. All Subcontractors must be registered with the OWNER prior to execution of a contract. Prime Contractors are responsible for ensuring that their Subcontractors are registered as vendors with the City of Austin. Registration can be done through the OWNER's on-line Vendor Registration system. Log onto <https://www.ci.austin.tx.us/vss/Advantage> and follow the directions.
- c. **Pre-Bid Conference.** Unless otherwise notified, Bidders must attend the Pre-Bid Conference to ensure their understanding of OWNER's bidding and contracting requirements, particularly MBE/WBE Procurement Program requirements.
- d. **Sales Tax Exemption.** The Owner is a tax-exempt organization as defined by Chapter 11 of the Property Tax Code of Texas. Bid prices shall not include sales tax on materials, supplies, or equipment that are incorporated into the real property interest of the OWNER or are otherwise completely used and consumed in the performance of the Contract. OWNER will furnish CONTRACTOR with a Sales Tax Exemption Certificate to be issued to Suppliers in lieu of the tax.
- e. **Minimum Wages.** Workers on Project shall be paid not less than wage rates, including fringe benefits, as published by the Department of Labor (DOL) for Building Construction and Heavy and Highway Trades "AS APPLICABLE" and/or the \$13.03 minimum wage required by City of Austin Ordinance No. 20160324-015, whichever is higher. The Total Minimum Wage required can be met using any combination of cash and non-cash qualified fringe benefits provided the cash component meets or exceeds the \$13.03 minimum wage required.
- f. **Addenda.** Bidder shall be knowledgeable of all Addenda issued and shall acknowledge all Addenda in spaces provided on Bid form. Further information regarding the Bid documents and the Project may be obtained from the Project Manager listed at the end of Section 00020, Invitation for Bids.
- g. **Required Items.** Bids must include all specified items in this section and be submitted in accordance with paragraph No. 7 below. Any additional requirement to the bid submittal is specified in Section 00820. Any corrections to a Bid shall be initialed by the person signing the Bid.
- h. **Professional Services.** Bidders must secure any required professional services that are defined as professional services under the Professional Services Procurement Act, Chapter 2254 of the Texas Government Code (for example: registered professional land surveyors and professional engineers) using the qualifications based selection process prescribed by that chapter. (Note: It is a violation of State Law to solicit Bids for professional services.)
- i. **Further Information.** Prospective Bidders desiring further information or

interpretation of Project Manual or Drawings must make a written request for such information to OWNER addressed to the Authorized Contact Person listed in Section 00020 no later than seven (7) Working Days before Bid opening. Interpretation of Project Manual or Drawings will be made by Addendum only and a copy of each Addendum will be provided to each person to whom a set of Bid Documents has been furnished. Any verbal communications will not be binding on the OWNER.

- j. **Anti-Lobbying and Procurement.** Article 6, Chapter 2-7, Austin City Code, prohibits lobbying activities or representations by the Bidder between the date that the Invitation for Bid (IFB) is issued and the date of contract execution. The text of the pertinent City Ordinance may be viewed at <http://www.cityofaustin.org/edims/document.cfm?id=161145>.

(1) Definitions

- (A) "Agent" means a person authorized by a bidder to act for or in place of bidder, including a person acting at the request of bidder, a person acting with the knowledge and consent of a bidder, or a person acting with any arrangement, coordination, or direction between the person and the bidder.
- (B) "Authorized Contact Person" means the Project Manager listed in Section 00020, IFB, or other persons specifically identified in the IFB as the contact regarding the solicitation, or the authorized contact person's designee during the course of the no-contact period.
- (C) "City Employee" means a person employed by the City.
- (D) "City Official" is defined in Section 2-7-2 of the City Code.
- (E) "No-Contact Period" means the period of time from the date the IFB is issued until a contract is executed. If the City withdraws the IFB or rejects all bids with the stated intention to reissue the same or a similar IFB for the same or similar project, the no-contact period continues during the time period between the withdrawal and reissue.
- (F) "Response" means a bid.
- (G) "Respondent" means a bidder. The term "respondent" also includes:
 - (i) an owner, board member, officer, employee, contractor, subsidiary, joint enterprise, partnership, agent, lobbyist, or other representative of a bidder;
 - (ii) a person or representative of a person that is involved in a joint venture with the bidder, or a subcontractor in connection with the bidder's bid; and
 - (iii) a bidder who has withdrawn a bid or who has had a bid rejected or disqualified by the City.
- (H) "Representation" means a communication related to a bid to a council member, official, employee, or City representative that is intended to or that is reasonably likely to:
 - (i) provide information about the bid;
 - (ii) advance the interests of the bidder;
 - (iii) discredit the bid of another bidder;
 - (iv) encourage the City to withdraw the IFB;
 - (v) encourage the City to reject all of the bids;
 - (vi) convey a complaint about a particular bid; or
 - (vii) directly or indirectly ask, influence, or persuade any City official, City employee, or body to favor or oppose, recommend

or not recommend, vote for or against, consider or not consider, or take action or refrain from taking action on any vote, decision, or agenda item regarding the solicitation.

- (I) "Solicitation" means an opportunity to compete to conduct business with the City that requires City Council approval under City Charter Article VII Section 15 (Purchase Procedure).
- (J) "City" means Owner.

(2) Restriction on Contacts.

- (A) During a no-contact period, a bidder shall make a representation only through the authorized contact person.
- (B) During the no-contact period, a bidder may not make a representation to a City official or to a City employee other than to the authorized contact person. This prohibition also applies to a vendor that makes a representation and then becomes a bidder.
- (C) The prohibition of a representation during the no-contact period applies to a representation initiated by a bidder, and to a representation made in response to a communication initiated by a City official or a City employee other than the authorized contact person.
- (D) If the City withdraws an IFB or rejects all bids with a stated intention to reissue the same or similar IFB for the same or similar project, the no-contact period shall expire after the ninetieth day after the date the IFB is withdrawn or all bids are rejected if the IFB has not been reissued during the ninety day period.
- (E) The no-contact period shall expire when the first of the following occurs: contract is executed or solicitation is cancelled.
- (F) The purchasing officer or the Capital Contracting Office Director may allow bidders to make representations to city employees or city representatives in addition to the authorized contact person for a solicitation that the purchasing officer or the Capital Contracting Office Director finds must be conducted in an expedited manner; an expedited solicitation is one conducted for reasons of health or safety under the shortest schedule possible with no extensions. The purchasing officer's or Capital Contracting Office Director's finding and additional city employees or city representatives who may be contacted must be included in the solicitation documents.
- (G) Representations to an independent contractor hired by the City to conduct or assist with a solicitation will be treated as representations to a City employee.
- (H) A current employee, director, officer, or member of a bidder, or a person related within the first degree of consanguinity or affinity to a current employee, director, officer or member of a bidder, is presumed to be an agent of the bidder for purposes of making a representation. This presumption is rebuttable by a preponderance of the evidence as determined by the purchasing officer or Capital Contracting Office Director.
- (I) A bidder's representative is a person or entity acting on a bidder's behalf with the bidder's request and consent. For example, a bidder may email their membership list and ask members to contact council members on the bidder's behalf. The members are then acting per bidder's request and with their consent, and the members have become bidder representatives.

(3) Permitted Representations

- (A) If City seeks additional information from bidder, the bidder shall submit the

representation in writing only to the authorized contact person. The authorized contact person will then distribute the written representation in accordance with the terms of the IFB. A bidder cannot amend or add information to a bid after the bid deadline.

- (B) If bidder wishes to send a complaint to the City, the bidder shall submit the complaint in writing only to the authorized contact person. The authorized contact person will then distribute a complaint regarding the process to members of the city council or members of the City board, to the Capital Contracting Office Director, and to all bidders on the IFB. However, the Capital Contracting Office Director or purchasing officer shall not permit distribution of any complaint that promotes or disparages the qualifications of a bidder, or that amends or adds information to a bid. A determination of what constitutes promoting or disparaging the qualifications of a bidder or constitutes amending or adding information is at the Capital Contracting Office Director's or purchasing officer's sole discretion. Bid protests are not subject to this subsection. Documents related to a bid protest may not be forwarded to council under this subsection.
- (C) If a bidder submits a written inquiry regarding an IFB, the authorized contact person will provide a written answer and distribute both the inquiry and answer to all bidders on the IFB.
- (D) If a bidder does not receive a response from the authorized contact person, the bidder may contact the Capital Contracting Office Director or purchasing officer as appropriate.
- (E) A bidder may ask a purely procedural question, for example a question regarding the time or location of an event, or where information may be obtained, of a City employee other than the authorized contact person. This provision does not permit a bidder to make suggestions or complaints about the contract process that constitute a representation to a City employee other than the authorized contact person. Notwithstanding this provision, a bidder may not ask a procedural question of a councilmember, a councilmember's aide, or of a City board member except in a meeting held under the Texas Government Code, Chapter 551 (Open Meetings Act).
- (F) Article 6 of the City Code allows representations:
 - (i) made at a meeting convened by the authorized contact person, including meetings to evaluate bids or negotiate a contract;
 - (ii) required by Financial Services Department protest procedures for vendors;
 - (iii) made at a Financial Services Department protest hearing;
 - (iv) provided to the Small & Minority Business Resources Department in order to obtain compliance with Chapter 2-9A-D (the Minority-Owned and Women-Owned Business Enterprise Procurement Program);
 - (v) made to the City Risk Management coordinator about insurance requirements for a bid;
 - (vi) made in public at a meeting held under the Texas Open Meetings Act; or
 - (vii) made from a bidder's attorney to an attorney in the Law Department in compliance with Texas Disciplinary Rules of Professional Conduct.
- (G) Communication regarding the solicitation is permitted between or among City officials or City employees acting in their official capacity.
- (H) A contribution or expenditure as defined in Chapter 2-2 (Campaign Finance)

is not a representation.

(4) Contract Voidable.

If a contract is awarded to a bidder who has violated these Anti- Lobbying & Procurement provisions, the contract is voidable by the Owner.

(5) Debarment.

If a bidder has been disqualified under these provisions more than two times in a sixty month period, the purchasing officer shall debar the bidder from bidding for a period not to exceed three years, provided the bidder is given written notice and a hearing in advance of the debarment.

k. **City's Minority-Owned and Women-Owned Business Enterprise / Disadvantaged Business Enterprise (MBE/WBE or DBE) Program Requirements. Good Faith Efforts.** When a bidder cannot achieve the MBE/WBE or DBE goals or subgoals established for the project, the bidder must document its Good Faith Efforts to meet the goals or subgoals. Good Faith Effort evaluations will consider, at a minimum, the bidder's efforts to do the following:

- (1) Soliciting through at least two reasonable, available and verifiable means MBEs/WBEs within the Significant Local Business Presence boundaries at least seven (7) business days prior to the bid opening date to allow the MBEs/WBEs or DBEs to respond to the bid.
- (2) Providing interested MBEs/WBEs or DBEs adequate information about the bid documents and requirements, including addenda, in a timely manner to assist them in responding to the bid.
- (3) Negotiating in good faith with interested MBEs/WBEs DBEs that have submitted bids to the bidder.
- (4) Publishing notice in a local publication such as a newspaper, trade association publication or via electronic/social media.
- (5) Not rejecting MBEs/WBEs or DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities.
- (6) Making economically feasible portions of the work available to MBE/WBE or DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available MBE/WBE or DBE subcontractors and suppliers, so as to facilitate meeting the goals or subgoals.
- (7) The ability or desire of the bidder to perform the project work with its own organization does not relieve the bidder of the responsibility to make Good Faith Efforts.
- (8) Bidders are not required to accept higher quotes in order to meet the goals or subgoals.
- (9) Effectively using the services of Minority Person/Women community organizations; Minority Person/Women Contractors groups; local, state and federal Minority Person/Women business assistance offices; and other organizations to provide assistance in solicitation and utilization of MBEs, WBEs and/or DBEs.
- (10) In assessing minimum Good Faith Efforts, the OWNER may consider (1) whether the bidder sought guidance from the City of Austin Small and Minority Business Resources Department (SMBR) on any question regarding compliance with these requirements; and (2) the performance of other bidders in meeting the goals.

For additional information, refer to the MBE/WBE or DBE Compliance Program Requirements Volume of the Project Manual.

Bid shopping is not allowed in conjunction with this solicitation and may result in the disqualification of prospective bidders and subcontractors.

2. Estimates of Quantities (Unit Price Contracts Only)

Quantities listed in unit price Bid form are to be considered approximate quantities and will be used only for comparison of Bids. Payment to CONTRACTOR will be made only for actual quantities of Work performed or materials furnished in accordance with Contract and it is understood that quantities may be increased or decreased as provided in Section 00700, General Conditions, and as may be modified by Section 00810, Supplemental General Conditions.

3. Drawings, Project Manual and Site (s) of Work

Before submitting a Bid, the Bidder shall carefully examine the Bid Documents, site(s) of the proposed Work, soils, and other conditions that may affect the performance of the Work to satisfy the Bidder as to character, quality and quantities of Work to be performed and materials to be furnished. By submitting a Bid, the Bidder will be deemed to have certified that the Bidder has complied with these requirements. If, during preparation of the Bid, the Bidder discovers any suspected discrepancies or errors, the Bidder must immediately notify the Authorized Contact Person in writing of the suspected discrepancy or error. Failure to provide written notice of any suspected discrepancies or errors may be cause for rejection of the Bid.

4. Bid Guaranty

All Bids shall be accompanied by a Bid guaranty in an amount of not less than five percent (5%) of the total Bid. If the total Bid amount is \$100,000 or less, Bidder has the option of providing a cashier's or certified check, made payable to City of Austin accompanied by a letter from a surety company indicating that Bidder can be bonded for the amount of the Project, or a Bid bond with Power of Attorney attached, issued by a solvent surety authorized under laws of the State of Texas and acceptable to OWNER. If the total Bid amount exceeds \$100,000, the only acceptable Bid guaranty will be a Bid bond with Power of Attorney attached, issued by a solvent surety authorized under laws of the State of Texas and acceptable to OWNER.

The Bid guaranty accompanying the Bid of the three (3) apparent low Bidders will be retained until Contract is awarded and successful Bidder executes Contract and furnishes required bonds and insurance, after which Bid guaranty will be returned to the Bidders. All other Bid guaranties will be returned after Bid certification. In the event that the Bidder to whom the Contract is awarded fails to timely execute the Contract, the Bidder agrees that the OWNER in its discretion may rescind the initial award and award the Contract to the next lowest responsible Bidder.

5. Performance and Payment Bonds

When performance and/or payment bonds are required, each shall be issued in an amount equal to the Contract Amount as security for the faithful performance and/or payment of all Contractor's obligations under the Contract Documents. Performance and payment bonds shall be issued by a solvent corporate surety authorized to do business in the State of Texas, and shall meet any other requirements established by law or by OWNER pursuant to applicable law.

6. Consideration of Bid Amount

For purpose of award, after Bids are opened, read aloud, reviewed, and certified, the total

amount of the Bid, including accepted Bid alternates, will be considered the amount of the Bid. Upon request, certified Bid tabulations will be made available to the public. OWNER reserves the right to reject any or all Bids and to waive any minor informality in any Bid or solicitation procedure (a minor informality is one that does not affect the competitiveness of the Bids).

7. Submission of Bid

Each Bid must be completed and signed by person(s) authorized to bind individual, partnership, firm, corporation, or any other legal entity submitting the Bid, and, shall include the following in one envelope furnished by OWNER:

- (a) One copy of Bid form (Section 00300L or 00300U) completed and signed.
- (b) Acknowledgment of receipt of Addenda issued in spaces provided in Bid form.
- (c) Required Bid guaranty.
- (d) Copy of statement of legal entity status, as applicable, including but not limited to, as applicable, Statement of Sole Proprietorship, Articles of Partnership or Incorporation and resolution, or corporate board minutes, empowering signatory to bind Bidder, attested to by an officer of Bidder. The required information is set forth in Section 00100, Paragraph 15.
- (e) One copy of the Insurance Cost Form (Section 00425A), completed and signed (ROCIP projects only).
- (f) One copy of the Affidavit - Prohibited Activities (Section 00440), completed and signed.
- (g) One copy of the Nonresident Bidder Provisions (Section 00475), completed and signed.
- (h) One copy of the Nondiscrimination Certificate (Section 00630), completed and signed.
- (i) Required information indicated in Drawings or Project Manual.

Bid must be accompanied by a MBE/WBE or DBE Compliance Plan, signed by the authorized representative described above. Compliance Plans should be submitted separately, in a second envelope, prior to the date and time set forth in Section 00020, Invitation for Bids. The Compliance Plan forms are included in the MBE/WBE Procurement Program Package or DBE Procurement Program Package (a separately bound volume).

Bid shall include all specified items in this section and be placed in a sealed envelope, clearly identified on outside as a Bid to OWNER, with Bidder's name and address, project name, bid due date/time, signed acknowledgement of the number of Addenda received and authorized signature. Failure to submit Bid appropriately may subject Bidder to disqualification. Bid may be mailed or delivered (in person or by Federal Express, Express Mail or other delivery service) to:

City of Austin
Capital Contracting Office
One Texas Center
505 Barton Springs Rd.
Suite 1045-C
Austin, Texas 78704

When sent by mail, Federal Express, Express Mail, or other delivery service, sealed Bid (marked as indicated above) shall be enclosed in an additional envelope, or other appropriate packaging, clearly identified on outside as a Bid to OWNER with Bidder's name and address, Project name, and Bid date and time. It is the sole responsibility of the Bidder to ensure timely delivery of Bid. OWNER will not be responsible for failure of

service on the part of the U.S. Post Office, courier services, or any other form of delivery service chosen by the Bidder. (See Section 00820, Modifications to Bidding Requirements and Contract Forms, for modifications to solicitations without MBE/WBE or DBE goals.)

In submitting its Bid, Bidder certifies that it has not lobbied the City or its officials, managers, employees, consultants, or contractors in such a manner as to influence or to attempt to influence the bidding process. In the event it reasonably appears that the Bidder influenced or attempted to influence the bidding process, the City may, in its discretion, reject the Bid.

8. Withdrawal of Bid

A Bid may be withdrawn by a Bidder, provided an authorized individual of the Bidder submits a written request to withdraw the Bid prior to the time set for opening the Bids.

9. Rejection of Bids

A. The following **will** be cause to reject a Bid:

- (1) Failure to submit Section 00300 (Bid Form) and signed by an individual empowered to bind the Bidder.
- (2) Bids which are not accompanied by acceptable Bid guaranty, with Power of Attorney attached, or a letter certifying the Bidder's ability to be bonded, from a surety company, in accordance with Paragraph 4 above.
- (3) More than one Bid for same Work from an individual, firm, partnership or corporation.
- (4) Evidence of collusion among Bidders.
- (5) Sworn testimony or discovery in pending litigation with OWNER which discloses misconduct or willful refusal by contractor to comply with subject contract or instructions of OWNER.
- (6) Failure to submit MBE/WBE or DBE Compliance Plan in accordance with the separately bound volume titled MBE/WBE Procurement Program Package or DBE Procurement Program Package.
- (7) Failure to have an authorized agent of the Bidder attend the mandatory Pre- Bid Conference, if applicable.
- (8) Bids received from a Bidder who has been debarred or suspended by OWNER's Purchasing Officer.
- (9) Bids received from a Bidder when Bidder or principals are currently debarred or suspended by Federal, State or City governmental agencies. (Applicable for Bid amounts equal to or in excess of \$25,000.00).
- (10) Failure to submit any of the items specified above in paragraph 7, "Submission of Bid".

B. The following **may** be cause to reject a Bid:

- (1) Poor performance in execution of work under a previous City of Austin contract.
- (2) Failure to achieve reasonable progress on an existing City of Austin

- contract.
- (3) Default on previous contracts or failure to execute Contract after award.
 - (4) Evidence of failure to pay Subcontractors, Suppliers or employees in accordance with Contract requirements.
 - (5) Bids containing omissions, alterations of form, additions, qualifications or conditions not called for by OWNER, or incomplete Bids may be rejected. In any case of ambiguity or lack of clarity in the Bid, OWNER reserves right to determine most advantageous Bid or to reject the Bid.
 - (6) Failure to acknowledge receipt of Addenda.
 - (7) Failure to submit any of the items specified below in paragraph 11, "Submission of Post Bid Information".
 - (8) Failure to identify a dollar amount (price) of a unit price(s) in the 00300U including all Bid Alternates in the Bid Form 00300U or 00300L
 - (9) Failure to submit post-Bid information within the allotted time(s) (see paragraph 11 for post-Bid requirements)
 - (10) Failure to timely execute Contract after award.
 - (11) Previous environmental violations resulting in fines or citations by a governmental entity (i.e. U.S. Environmental Protection Agency, Texas Commission on Environmental Quality, etc.).
 - (12) Safety record as set forth in Section 00410, Statement of Bidder's Safety Experience.
 - (13) Failure of Bidder to demonstrate the minimum experience required as specified in Section 00400 if that Section is included in the bidding documents.
 - (14) Evidence of Bidder's lack of sufficient resources, workforce, equipment or supervision, if required by inclusion of appropriate attachments in Section 00400.
 - (15) Evidence of poor performance on previous Projects as documented in Owner's project performance evaluations.
 - (16) Unbalanced Unit Price Bid: "Unbalanced Bid" means a Bid, which includes a Bid that is based on unit prices which are significantly less than cost for some Bid items and significantly more than cost for others. This may be evidenced by submission of unit price Bid items where the cost are significantly higher/lower than the cost of the same Bid items submitted by other Bidders on the project.

10. Protest Procedures

The OWNER's Capital Contracting Office Director has the authority to settle or resolve any claim of an alleged deficiency or protest. The procedures for notifying OWNER of an alleged deficiency or filing a protest are listed below. If you fail to comply with any of these requirements, the Capital Contracting Office Director may dismiss your complaint or protest.

Prior to Bid opening: If you are a prospective Bidder and you become aware of the facts

regarding what you believe is a deficiency in the solicitation process before the Bid is opened, you must notify OWNER in writing of the alleged deficiency before that date, giving OWNER an opportunity to resolve the situation prior to the Bid opening.

After Bid opening: If you submit a Bid to OWNER and (1) you have been found non-responsive, or

(2) you believe that there has been a deficiency in the solicitation process or the award, you have the opportunity to protest the solicitation process or the recommended award as follows:

1. You must file written notice of your intent to protest within four (4) calendar days of the date that you know or should have known of the facts relating to the protest. If you do not file a written notice of intent within this time, you have waived all rights to protest the solicitation process or the award.
2. You must file your written protest within fourteen (14) calendar days of the date that you know or should have known of the facts relating to the protest unless you know of the facts before the Bid has been opened. If you know of the facts before that date, you must notify OWNER as stated above.
3. You must submit your protest in writing and must include the following information:
 - a. your name, address, telephone, and email address;
 - b. the solicitation number and the CIP number, if applicable;
 - c. a detailed statement of the factual grounds for the protest, including copies of any relevant documents.
4. Your protest must be concise and presented logically and factually to help with OWNER's review.
5. When OWNER receives a timely written protest, the Capital Contracting Office Director will determine whether the grounds for your protest are sufficient. If the Capital Contracting Office Director decides that the grounds are sufficient, the Capital Contracting Office will schedule a protest hearing, usually within five (5) working days. If the Capital Contracting Office Director determines that your grounds are insufficient, you will be notified of that decision in writing.
6. The protest hearing is informal and is not subject to the Open Meetings Act. The purpose of the hearing is to give you a chance to present your case; it is not an adversarial proceeding. Those who may attend from OWNER are: representatives from the department that requested the purchase, the Law Department, the Capital Contracting Office, and other appropriate City staff. You may bring a representative or anyone else that will present information to support the factual grounds for your protest with you to the hearing.
7. A decision will usually be made within fifteen (15) calendar days after the hearing.
8. The Capital Contracting Office Director will send you a copy of the hearing decision after the appropriate City staff has reviewed the decision.
9. When a protest is filed, OWNER usually will not make an award until a decision on the protest is made. However, OWNER will not delay an award if the City Manager or the Capital Contracting Office Director determines that:
 - a. OWNER urgently requires the supplies or services to be purchased, or
 - b. Failure to make an award promptly will unduly delay delivery or performance.

In those instances, the Capital Contracting Office will notify you and make every effort to

resolve your protest before the award.

The protest or notice of intent and the protest shall be submitted in writing to the following address:

City of Austin
Capital Contracting Office
ATTN: Capital Contracting Officer
One Texas Center
505 Barton Springs Rd.
Suite 1045-A
Austin, Texas 78704
PHONE: 512/974-7141

11. Submission of Post Bid Information

Prior to determination of the certified low Bidder, the three (3) apparent low Bidders must submit to OWNER the following information within three (3) business days of receipt of notice of apparent low Bidder status by the OWNER:

1. One copy of Attachments A-I and any other specifically designated Attachments of the Statement of Bidder's Experience (Section 00400), completed and signed. (Unless provided to the contrary in Section 00820 Modifications to Bidding Requirements and Contract Forms).
2. One Copy of the Certificate of Non-Suspension or Debarment (Section 00405), completed and signed. (Applicable for Bid amounts equal to or in excess of \$25,000.00.)
3. One copy of Section 00410, Statement of Bidder's Safety Experience, including required attachments, completed and signed.
4. One copy of the Title VI Assurances Appendix A (Section 00631), completed and signed.
5. One copy of Exhibit A Federal Provisions (Section 00810A, pages 1-9) completed and signed. (Federal projects only)
6. Such other information as is required to evaluate Bid or Bidder.

Upon notification of status as certified low Bidder, Bidder shall submit the following information to OWNER within three (3) business days:

1. Letter(s) of intent between Bidder and all subcontractor(s) and all supplier(s) identified in the MBE/WBE Compliance Plan.
2. Section 00425B, VII Subcontractor Affidavit of Receipt and Provision of ROCIP Information (for Subcontractor(s) of all tiers identified in the MBE/WBE Compliance Plan). For ROCIP projects.
3. Such other information as required. (Note: OWNER reserves the right to solely determine whether the comparable experience documentation provided by the Bidder is sufficient and relevant to the Work described in the Contract Documents for the Bidder to be considered a responsible Bidder. In addition, the Bidder acknowledges and agrees that the failure to timely provide the additional information required by this section will result in a determination that, for the purposes of this solicitation, the Bidder has not provided sufficient information for the OWNER to be able to determine that the Bidder is a responsible Bidder.)

12. Award and Execution of Contract

OWNER will process Bids expeditiously. Award of Contract will be to the lowest, responsible Bidder meeting all requirements of the Bid Documents. OWNER may not award Contract to a nonresident Bidder unless the nonresident underbids the lowest Bid submitted by a responsible resident Bidder by an amount that is not less than the amount by which a resident Bidder would be required to underbid the nonresident Bidder to obtain a comparable contract in the state in which the nonresident's principal place of business is located.

Award of Contract will occur within the period identified on the Bid form, unless mutually agreed between the parties. Capital Contracting Office Director shall submit recommendation for award to the City Council for those project awards requiring City Council action. Contract will be signed by City Manager or his/her designee after award and submission of required documentation by Bidder. Contract will not be binding upon OWNER until it has been executed by both parties. OWNER will process the Contract expeditiously. However, OWNER will not be liable for any delays prior to the award or execution of Contract.

Upon contract award, the selected Bidder must submit either their existing or an updated personnel policy (on letterhead) documenting conformity with City Code, Chapter 5-4, § 5-4-2. If the company does not submit a copy of their personnel policy incorporating the non-discrimination policy, the City of Austin Nondiscrimination Policy (Section 00630) will be considered the Bidder's nondiscrimination policy.

In any case of ambiguity or lack of clarity in the Bid, OWNER reserves the right to determine the most advantageous Bid or to reject the Bid.

Notwithstanding anything in this Section 00100 to the contrary, the OWNER may award a contract for construction services in an amount of less than \$100,000 to a bidder whose principal place of business is in the City of Austin and whose bid is within 5% of the lowest bid price received from a bidder whose principal place of business is not within the City of Austin, if the City finds that the local bidder offers the City the best combination of contract price and additional economic development opportunities for the City created by the contract award including the employment of resident of the City and increased tax revenues to the City.

13. Partnering

In order to complete the Work in a manner that is most beneficial to the OWNER and CONTRACTOR, OWNER and CONTRACTOR may form a "Partnering Team", which will include the E/A, and any major Subcontractors. This partnering relationship will draw on the strength of all parties to identify and achieve mutual goals. The objectives of this partnering relationship are effective and efficient communication and Contract performance, which is intended to ensure that the Project is completed within budget, on schedule, and in accordance with the Drawings and Specifications and other Contract requirements. While the partnering relationship will be multilateral in makeup and participation will be totally voluntary, the OWNER and CONTRACTOR agree to cooperate and use reasonable good faith efforts to discuss and resolve any and all Project issues and disputes. Section 01100, Special Project Procedures and/or Section 01200, Project Meetings contain additional information regarding the intent of the partnering relationship and responsibilities of the entities entering into the partnering charter.

14. ROCIP Requirements

If the insurance on this Project will be under the Rolling Owner Controlled Insurance Program (ROCIP), the Bidder is directed to Section 00810, Supplemental General Conditions, Section 00820, Modifications to Bidding Requirements and Contract Forms, and the Project Safety Manual included with these contract documents for information and bidding requirements.

The Insurance Cost Form, Section 00425A, Rolling Owner Controlled Insurance Program Information Section 00425B, VI Contractor Affidavit of Receipt and Provision of ROCIP Information must be accurately completed and submitted with the Bid to indicate insurance removed from Base Bid and Alternates. CONTRACTOR shall remove from the Bid the cost of insurance for the CONTRACTOR and Subcontractors of all tiers working on site.

The Statement of Bidder's Safety Experience, Section 00410, must be accurately completed and submitted with the Bid.

The Rolling Owner Controlled Insurance Program Information, Section 00425 B, VII Subcontractor Affidavit of Receipt and Provision of ROCIP Information for subcontractor(s) of all tiers identified in the MBE/WBE Compliance Plan must be accurately completed and submitted as a post bid submittal and further Subcontractor Affidavits must be submitted throughout the duration of the Contract as Subcontractor(s) are added.

15. Signature Requirements

The Bid and any subsequent supporting Bid documents and Contract must be executed in the Bidder's full name and legal entity status by an authorized representative of the Bidder and accompanied by sufficient documentation, which clearly indicates not only the legal name and entity status of Bidder, but also the capacity and authority of the person signing on behalf of Bidder. Accordingly, a partnership/joint venture must file its partnership/joint venture agreement, a corporation must file its articles and bylaws, a limited liability company must file its certificate of organization and article of organization and regulations, and a limited partnership must file not only limited partnership agreement and the certificate of limited partnership, but also the documentation for its general partner, and any Bidder must file a copy of any assumed name certificate, or such limited portion of such documents reasonably establishing signature authority.

The following samples show the entity information and signature requirements that will apply to all Bid and contract execution documents for the type of entity indicated:

1. Individual/Sole Proprietor (sample)

The individual/sole proprietor must sign the document in his or her personal capacity or in any assumed name capacity accompanied by a copy of any assumed name certificate.

Name of Contractor (d/b/a, if appropriate), a sole proprietor By: _____

Printed Name: _____

2. Partnership/Joint Venture (sample)

A partner/joint venturer must sign the document in his or her capacity as a partner/joint venturer and in any assumed name capacity accompanied by a copy of the assumed name certificate, if any, and a copy of the partnership or joint venture agreement, as applicable, with additional documentation, if

necessary, establishing the authority of the signatory individual.

Name of Partnership/Joint Venture, a Texas Partnership/JV, as appropriate By: _____

Printed or Typed Name: _____

Title: _____ (Partner, managing partner, venturer, managing venturer, as approp.)
Authorized Representative

3. Corporation (sample)

An authorized officer or agent of the corporation must sign the documents on behalf of the corporation in his or her capacity as the authorized representative of the corporation accompanied by a copy of a corporate resolution and minutes granting such authority with a certificate of an officer of the corporation as to the authority of the signatory to bind the CONTRACTOR signed and dated no more than one week before the date of execution of the document.

Name of Contractor, Inc. or Co., a Texas corporation, as appropriate By: _____

Printed or Typed Name: _____

Title: _____ (Officer or Agent (as appropriate)) Authorized Representative

4. Limited Liability Company (sample)

An authorized manager or member of the LLC must sign the document in his or her capacity as a manager or member accompanied by a copy of the LLC's certificate of organization and articles of organization and regulations evidencing such person's signatory authority.

Name of Contractor, L.L.C., a Texas limited liability company, as appropriate By: _____,

Printed or Typed Name: _____

Title: _____, (Manager or Member (as appropriate)) Authorized Representative

5. Limited Partnership (sample)

The general partner of a limited partnership must execute the documents on behalf of the limited partnership, accompanied by copy of the limited partnership agreement and the certificate of limited partnership. In addition, the signatory must sign the documents in his or her capacity as an authorized officer or agent of the corporation or member or manager of the LLC, as appropriate, accompanied by a copy of the corporate or LLC documentation stipulated above.

Name of Contractor, Ltd., a Texas limited partnership, as appropriate By: Name of General Partner (usually a Texas corporation or an L.L.C.) By: _____

Printed or Typed Name: _____

Title: _____ Officer or Agent of
Corporation or LLC Authorized Representative

16. Contractor Evaluation

The Owner will review and evaluate the Contractor's Work and performance on the Project and provide the Contractor with a written Contractor Evaluation Report in accordance with City of Austin Administrative Rule R161-13.37. Rule R161-13.37 provides an appeal process.

<http://www.austintexas.gov/department/contract-management>

17. Texas Ethics Commission Certificate of Interested Parties Disclosure Form

(1) Definitions:

(A) "Interested Party" – means a person who has a controlling interest in a Business Entity with whom the Owner contacts or who actively participates in facilitating the Contract or negotiating the terms of the Contract, including a broker, intermediary, adviser, or attorney for the Business Entity.

(B) "Business Entity" – means any entity recognized by law through which business is conducted, including a sole proprietorship, partnership, or corporation.

(2) As a condition to entering the Contract, the Business Entity constituting the successful Bidder must provide a Texas Ethics Commission Certificate of Interested Parties Form to the Owner at the time the Business Entity/Bidder submits the signed Contract to the Owner in full compliance with the following requirements under which the successful Bidder shall:

(i) go to the Ethics Commission's website (www.ethics.state.tx.us),

(ii) complete the "Interested Parties" information, in accordance with the requirements of the Texas Ethics Commission Rules published at Title 1, Part 2, Chapter 46, of the Texas Administrative Code and available on the referenced website,

(iii) include the City's contract identification number,

(iv) include a short description of the goods or services to be used by the City, and

(v) indicate whether each interested party has a controlling interest in the business entity, is an intermediary in the contract for which the disclosure is being filed, or both.

(3) In accordance with the Commission Rules, the Certificate of Filing and completed Certificate of Interested Parties must be (i) printed, (ii) signed by an authorized agent of the business entity, and (iii) submitted to the City at the time of the submission of the signed contract to the City. The City then must notify the Ethics Commission in electronic format of receipt of the document within 30 days of contracting and the Commission will make the disclosure of interested parties available to the public on its website.

End

Bidding Requirements, Contract Forms & Conditions of the Contract
Geotechnical Data
Section 00220

Depending on Project requirements, OWNER may have obtained geotechnical information, which may include laboratory test results and logs of borings from geotechnical consultants. That information will be included in this section and/or on the Drawings. The CONTRACTOR shall be familiar with the subsurface materials and conditions on the Project and shall be knowledgeable of how they will affect the Work. The following is a partial listing of sources of information available to the CONTRACTOR about subsurface materials and conditions: the geotechnical information provided by the OWNER; geologic maps, publications and reports available from the University of Texas Bureau of Economic Geology at the J.J. Pickle Research Center in Austin, Texas; subcontractors familiar with local ground conditions; and, local consulting geologists and geotechnical engineers. The CONTRACTOR may make their own subsurface investigations.

Geotechnical Data Report for Filter Improvements, Walnut Creek WWTP, Austin, Texas dated January 30, 2013, prepared by **HVJ Associates, Inc.** are attached. The requirements in the Drawings and Specifications shall be used in the event of a conflict between this report and the Drawings and Specifications.

End

**GEOTECHNICAL DATA REPORT
FOR
FILTER IMPROVEMENTS
WALNUT CREEK WWTP
AUSTIN, TEXAS**

**SUBMITTED TO:
BLACK AND VEATCH
1701 DIRECTORS BOULEVARD, SUITE 940
AUSTIN, TEXAS 78744**

**BY
HVJ ASSOCIATES, INC.
JANUARY 30, 2013**

REPORT NO. AG 11 14441



Houston | 4201 Freidrich Lane, Ste. 110
Austin | Austin, TX 78744-1045
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San Antonio | 512.443.3442 Fax
www.hvj.com

January 30, 2013

Ms. Teresa Smith-DeHesus, PE
Black and Veatch Corp.
1701 Directors Blvd., Suite 940
Austin, Texas 78744

Re: Geotechnical Study for Walnut Creek WWTP – Filter Improvements
Owner: City of Austin
HVJ Proposal No. AG11 14441

Dear Ms. DeHesus:

Submitted herein is the data report of our geotechnical investigation for the above referenced project. This study was performed in accordance with our proposal number AG 11 14441, dated May 25, 2012 and revised October 22, 2012.

It has been a pleasure to work for you on this project and we appreciate the opportunity to be of service. Please notify us if there are questions or if we may be of further assistance.

Sincerely,

HVJ ASSOCIATES, INC.
Texas Firm Registration No. F-000646

A handwritten signature in blue ink that reads "Jason Schwarz".

Jason Schwarz, P.E.
Project Manager



1-30-13

A handwritten signature in blue ink that reads "Nishant Dayal".

Nishant Dayal, P.E.
Project Engineer

This document has been released under authorization by Jason Schwarz, PE99343 on January 30, 2013. Alteration of a sealed document without proper notification to the responsible engineer is an offense under the Texas Engineering Practice Act.

Copies submitted: (1)Electronic – Edgar Perry, P.E., C.F.M., Black & Veatch Corp.

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1. INTRODUCTION

1.1 General

HVJ Associates, Inc. was retained by Black and Veatch Corp. to perform a geotechnical investigation for the Filter Improvements Project at the Walnut Creek WWTP. A key component to this project consists of foundation recommendations for clearwells with improved capacity.

1.2 Project Location

The wastewater treatment plant facility is located in the eastern portion of the City of Austin, east of Highway 183 and south of RM 969, as illustrated on the *Site Vicinity Map* (Plate 1). The proposed filter improvements will take place within the central portion of the property, approximately 500 feet south of FM 969. The existing clearwells will be expanded on its south and west side.

1.3 Objective and Scope of Work

The primary objective of our investigation is to provide Black and Veatch with geotechnical based recommendations for the proposed filter improvements. The objectives will be accomplished by:

1. Drilling and sampling a total of five (5) test borings and utilize existing information to better define or confirm the subsurface stratigraphy at the site;
2. Performing laboratory tests to better define or confirm the physical and engineering characteristics of the subsurface materials; and
3. Performing engineering/foundation analyses which will be included as a separate design report.

2. SUBSURFACE EXPLORATION

2.1 General

HVJ conducted a subsurface exploration at the tank site on December 26, 2012 through January 2, 2013. A total of five borings were drilled, three at the south and two on the west of the existing filter and are referred to throughout this report as borings B-1 through B-5. The borings were drilled to a depth of 50 feet using a truck-mounted drill rig with dry auger (approximate inner diameter of 3 1/4 inches with an outer diameter of 6 5/8 inches) technique. The approximate boring locations are illustrated on the *Plan of Borings*, Plate 3. The boring logs are presented on Plates 4 through 8. A key to terms and symbols is provided on Plate 9.

2.2 Sampling Methods

Thin-walled tube samples were collected within cohesive soils. The 3-inch diameter tubes were pushed into the soil in general accordance with ASTM standard D 1587- *Thin Walled Tube Sampling of Soils*. The samples were extruded in the field and a calibrated pocket penetrometer was used to obtain an estimate of the unconfined compressive strength of the sample.

Standard Penetration Tests (SPTs) were conducted within soil containing a substantial amount of sand or gravel or where the advancement of thin-walled tubes into the material was not possible. The SPTs were performed in accordance with ASTM D 1586 – *Penetration Test and Split-Barrel Sampling of Soils*. This procedure consisted of driving a standardized 1.50 ± 0.005 inch inner diameter split-spoon sampler into undisturbed soil with a 140-pound hammer falling 30 inches. The split-spoon sampler was first seated 6 inches to penetrate any loose cuttings, and was then driven an additional 12 inches with blows from the hammer. The number of hammer blows required to drive the sampler each 6-inch increment was then recorded. The penetration resistance, or “N-value,” is defined as the number of hammer blows required to drive the sampler the final 12 inches. The N-value was used in the field to estimate either the density of granular soil or the consistency of cohesive soil. In very dense or hard material, where the SPT test reached 50 blows from the hammer, the test was terminated and the measurement was instead recorded as 50 blows per distance penetrated (e.g. 50 blows over 3 inches).

After extrusion, both the split-spoon and Shelby tube samples were visually described and documented on field boring logs and were subsequently wrapped and sealed for transport to our laboratory. The pocket penetrometer results and SPT N-values were also recorded on the field boring logs.

2.3 Groundwater Observation

Groundwater observations were made during the drilling operations and more information is provided in section 4.4. Groundwater levels should be anticipated to fluctuate with seasonal variations in precipitation.

2.4 Borehole Completion

Five (5) project borings were backfilled with soil cuttings and bentonite chips upon completion of drilling so as to match the existing ground conditions. Pavement was patched with a single lift of cold mix asphalt.

3. LABORATORY AND FIELD TESTING

3.1 Laboratory Testing Program

Selected soil samples were tested in the laboratory to determine applicable physical and engineering properties. All tests were performed according to relevant ASTM Standards. The laboratory program included moisture contents, Atterberg limits, sieve analyses, percent finer than No. 200 sieves, corrosivity, and sulfate content determination.

Atterberg Limits

Select samples were tested to determine the Atterberg Limits of the selected samples in accordance with ASTM D4318-10. The Atterberg Limit test is used to classify the soil using the Unified Soil Classification System (USCS). The Atterberg Limit test consists of two parts: a liquid limit test and a plastic limit test. The liquid limit equipment setup consists of a brass cup partially filled with soil, grooved with a specialized grooving tool, and then dropped freely from a specified height to the rubber base below at a constant rate of 2 drops per second. The liquid limit test is performed on soil that has been sieved through the No. 40 sieve and brought to a moisture content that would

close the 1/2-inch groove within 20 to 30 blows for two consecutive tests. The moisture content of the soil is then measured and recorded as the liquid limit. The second part of the tests consists of rolling a remolded sample between the tips of the fingers and a glass plate until transverse cracks appear at a rolled diameter of 1/8-inch. The moisture content of the rolled sample is taken and recorded as the plastic limit.

Moisture Content

Moisture content testing was performed on select soil samples to determine the in situ state of moisture. Fresh samples are weighed before being placed in an oven with a controlled temperature of 230°F and dried back to a constant mass. Upon the drying and reweighing of the sample, the total mass of water lost was recorded. The ratio of the water lost to the dried mass is recorded as the moisture content. This test was performed in accordance with ASTM D2216-10.

Percent Passing the No. 200 Sieve

In accordance with ASTM D1140-00 a soil specimen is washed over a 75- μ m (No. 200) sieve, removing silt, clay and other water soluble materials. The loss in mass resulting from the washing process is calculated as mass percent of the original sample and is reported as the percentage of material finer than a 75- μ m (No. 200) sieve. The results are used in conjunction with the Atterberg Limits determination to classify the soil using the Unified Soil Classification System (USCS).

Unconfined Compressive Strength Testing

Select cohesive soil samples were tested for unconfined compressive strength in accordance with ASTM D2166-06. The intact specimen is placed in a loading device and is subjected to a load producing an axial strain at a rate between 1/2% and 2% per minute. The load is applied until failure occurs at the maximum rate of strain. The maximum axial strain is then used to calculate the soil's unconfined compressive strength.

Sieve Analysis

Sieve and hydrometer analyses (ASTM D422) were performed on select non-cohesive soil samples to determine the particle size distribution of the soil for use of the Unified Soil Classification System. Oven dried material was weighed and then mechanically shaken through a full set of sieves, ranging in size from 75 mm through 75- μ m with the weights retained on each sieve recorded.

Sulfate and Corrosivity Testing

Sulfate content was determined in accordance with TEX-620-J, which is a gravimetric approach. The corrosivity was determined by SW 9045D Method (Environmental Protection Agency). This method is an electromagnetic procedure for measuring pH in soils and waste samples. The sample is mixed with reagent water and the pH of the resulting aqueous solution is measured. The test reports are provided in Appendix A.

Pocket Penetrometer Testing

A calibrated spring-loaded rod (1/4-inch diameter) is pushed into soil to a penetration of 6 mm and the gauge read for unconfined compressive strength (= twice the undrained shear strength) in tons per square foot (tsf). Penetration is limited to soils with unconfined compressive strength less than and equal to 4.5 tsf. Data are representative for soils with Plasticity Index (PI) greater than 12. Below this value, the angle of internal friction of granular particles increases strength to more than the measured value of the undrained shear strength.

3.2 Final Boring Logs

The sampling information obtained in the field was used in conjunction with the additional laboratory examination and testing to generate final boring logs. The final boring logs are provided in Plates 4 through 8. A Key of Terms and Symbols for the boring logs is provided on Plate 9. The laboratory test results are provided on the final borings logs and are also tabulated in Appendix A.

4. SITE CHARACTERIZATION

4.1 Site Conditions

The treatment plant, which is situated approximately one mile to the east of U.S. 183, is located along the southern side of FM 969 and just to the east of Johnny Morris Rd. The existing filter is positioned at the north of Walnut Creek Wastewater Treatment Facility. The existing site is relatively flat, with only two trees within the immediate vicinity. As previously mentioned, the project location is illustrated in Plate 1 - *Site Vicinity Map*.

4.2 General Geology

Austin, Texas is located on the boundary of the Edwards Plateau to the west and the Gulf Coastal Plains to the east and southeast. These physiographic provinces are separated by the Balcones Fault Zone (BFZ), a belt of inactive faults, which trends generally southwest to northeast through central Austin. The site is located east of the BFZ. Based on review of available geological information¹, and field exploration program, the site lies within an area characterized by alluvium underlain by the shaley clay of the Taylor Group (Kta).

Alluvium, which is made up of floodplain deposits, typically consists of a combination of various percentages of sand, silt, clay and/or gravel. Silts and clays associated with this formation tend to be dark gray to dark brown and calcareous. Associated sand is largely composed of quartz whereas gravel alluvium can consist of both siliceous and/or carbonate material, mainly chert, quartzite, limestone and petrified wood fragments.

The Taylor Group (Kta) has been divided into three formations, based on Keith Young (1965), from bottom to top: Sprinkle, Pecan Gap, and Bergstrom. The formations consist of calcareous, montmorillonitic, highly over-consolidated clay, marly clay, and clay shale varying in color from dark gray to green gray and calcium carbonate content. It is highly plastic with high swelling potential, and very unstable. When left exposed to the air, it will slake. Thickness of the Taylor Group ranges from approximately 50 feet thick southeast of Austin to approximately 300 feet thick in areas around Walnut Creek. Based on the referenced geologic map, no fault exists within the project limit as shown in the *Geology Map*, Plate 2.

4.3 Soil Stratigraphy

Our interpretation of soil and groundwater conditions at the site is based on information obtained at the boring locations only. Significant variations in areas not explored by the project borings may require reevaluation of our findings.

¹ Geologic Atlas of Texas, Austin Sheet (University of Texas Bureau of Economic Geology, 1974) and Environmental Geology of the Austin Area: An Aid to Urban Planning (University of Texas Bureau of Economic Geology, 1976).

Based on the borings, the subsurface within the depth of exploration consists of fill, alluvium and Lower Colorado River terrace deposits, as noted in the following table.

Table 1 - Stratum Types Encountered

Stratum Type	General Material Description	Depth Encountered (ft.)	Bottom of Stratum (ft.)
Fill (Soil)	Medium stiff to hard, Lean Clay (CL) and Sandy Lean Clay (CL) ; Medium dense to dense, Clayey Sand (SC) ; Very dense, Silty Sand (SM)	0	13 – 15
Cohesive Alluvium	Very soft to hard, Fat Clay (CH) , Lean Clay (CL) , and Lean Clay (CL) with varying amount of sand	13 – 15	47 – 50
Granular Alluvium	Very soft, Lean Clay with Sand (CL) ; Well Graded Sand With Silt (SW-SM) ; Poorly Graded Sand With Silt (SP-SM) ; Silty Sand (SM)	47 – 50+*	50+*

*Borings terminated at 50 feet.

Detailed descriptions of these encountered subsurface materials are presented in the following paragraphs, as well as on the final boring logs included on Plates 4 through 8.

Fill - Upper Soil Stratum

Fill was encountered in all five (5) borings, extending from the ground surface to a maximum depth of 15 feet below existing grade. In all the borings, the fill generally consists of dark brown to brown, stiff to hard, Lean Clay (CL) and Clayey Sand (SC) with sand/gravel in different proportions. Representative soil samples of the fill were selected for the laboratory classification testing. The resulting laboratory test data is presented in the table below, which also includes the field pocket penetrometer readings.

Table 2 - Laboratory and Field Test Data for Fill

Test	Number of Tests	Average	Max	Min	Standard Deviation
Pocket Penetrometer (tsf)	14	3.9	4.5*	0.3	1.2
% Passing #200 Sieve	7	42.2	69.7	19.2	20.5
Liquid Limit	6	49	66	34	11
Plasticity Index	6	31	38	23	5
Moisture Content (%)	9	13.1	21.0	7.7	3.8
Dry Unit Weight (pcf)	2	106.6	112.9	100.3	8.9
Unconfined Compressive Strength (tsf)	2	1.5	2.4	0.6	1.3

Note: tsf - tons per square foot, pcf - pounds per cubic foot

*PP values greater than 4.5 tsf were taken as 4.5 tsf for ease of calculation

Alluvium (Qal)

Alluvium was encountered in all borings, extending from a depth of approximately 13 feet to a depth of 50 feet. In these borings, the alluvium generally consists of a cohesive stratum underlain by a stratum of granular, non-cohesive soil. Please note that different sampling methods required for

each of these two stratum types. For the purpose of this analysis, each stratum type was analyzed separately.

The cohesive alluvium generally consists of stiff to hard, Fat Clay (CH), Lean Clay (CL), Sandy Lean Clay (CL), and Lean Clay (CL) with sand. Representative soil sample of the cohesive alluvium material were selected for laboratory classification and strength testing. The resulting laboratory test data is presented in the table below, which also includes the field pocket penetrometer readings.

Table 3 - Laboratory and Field Testing Data on Cohesive Alluvium

Test	Number of Tests	Average	Max	Min	Standard Deviation
Pocket Penetrometer (tsf)	34	3.0	4.3	1.0	0.8
% Passing #200 Sieve	7	91.6	99.1	78.1	7.2
Liquid Limit	6	52	65	43	9
Plasticity Index	6	35	47	27	7
Moisture Content (%)	10	21.8	25.0	18.6	2.1
Dry Unit Weight (pcf)	4	103.6	105.7	101.3	2.0
Unconfined Compressive Strength (tsf)	4	2.8	3.4	2.4	0.5

Note: tsf - tons per square foot, pcf - pounds per cubic foot
 *PP values greater than 4.5 tsf were taken as 4.5 tsf for ease of calculation

The granular or non-cohesive Alluvium was encountered below the cohesive stratum and persisted to final depth of around 50 feet in all but boring B-1 and B-2. In general, the granular Alluvium (Qal) consists of loose to dense, Poorly-Graded Sand with Silt (SP-SM), Silty Sand (SM), and Well Graded Sand with Silt (SW-SM).

Table 4 - Laboratory and Field Testing Data on Granular Alluvium (Qal)

Test	Number of Tests	Average	Max	Min	Standard Deviation
% Passing #200 Sieve	3	10.7	19.6	5.7	7.7
Moisture Content (%)	3	19	23	16	3

4.4 Sulfate and Corrosivity Test Results

Sulfate content was determined in accordance with TEX-620-J, which is a gravimetric approach. The corrosivity was determined by SW 9045D Method (Environmental Protection Agency). This method is an electromagnetic procedure for measuring pH in soils and waste samples. The sample is mixed with reagent water and the pH of the resulting aqueous solution is measured. Table 5 below illustrates the results:

Table 5 – Sulfate and Corrosivity Test Result Summary

Boring No.	Depth (feet)	Corrosivity (pH)	Sulfate (ppm-dry)
B-1	18.5 – 20.0	7.29	59.3
B-2	6.5 – 8.0	7.48	265.0
B-3	33.0 – 35.0	7.52	23.8
B-4	33.5 – 35.0	7.50	19.0
B-5	18.0 – 20.0	7.47	160.0

The details of the test are provided in Appendix A. According to TxDOT, sulfate content lower than 3000 ppm causes low sulfate heave. More information on this topic would be provided in the design report.

Soil pH is one of the several properties used as a general indicator of soil corrosivity. According to National Resources Conservation Service (NRCS), highly alkaline (pH>8.5) or highly acidic (pH<5.0) soils are generally corrosive to steel. Soils with pH < 5.5 are likely to be highly corrosive to concrete.

4.5 Groundwater

Groundwater was encountered in all but one (1) project boring (B-1) during drilling operations (Table 6). It should be noted that groundwater levels may fluctuate seasonally, in response to climatic conditions. Perched groundwater conditions may also exist at the interface between soil and rock surface.

Table 6 – Groundwater Depth

Boring No.	Ground Water Encountered (feet)
B-1	Not Encountered
B-2	48
B-3	47
B-4	46
B-5	47

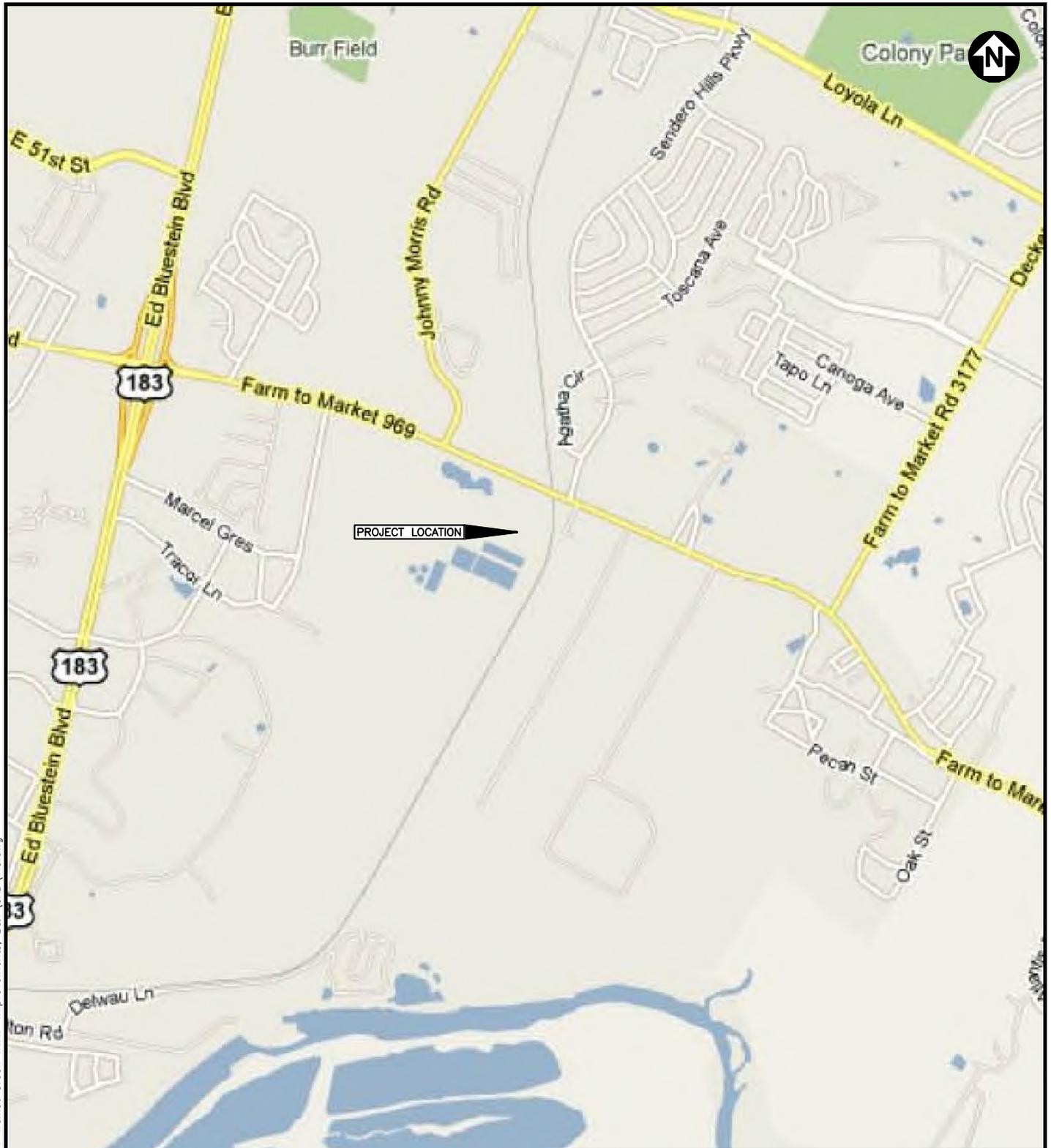
5. DESIGN REVIEW AND LIMITATIONS

This study was performed for the exclusive use of Black & Veatch Corp. and City of Austin for specific application to the Walnut Creek WWTP - Filter Improvement Project in Austin, Texas. HVJ Associates, Inc. has endeavored to comply with generally accepted geotechnical engineering practice common in the local area. HVJ Associates, Inc. makes no warranty, express or implied.

The methods used indicate subsurface conditions only at the specific locations where samples obtained, only at the time they were obtained, and only to the depth penetrated. The samples cannot be relied on to accurately reflect the strata variations that usually exist between sampling locations. Should any subsurface conditions other than those described in the boring logs be encountered, HVJ Associates, Inc. should be immediately notified so that further investigation and supplemental recommendations can be provided.

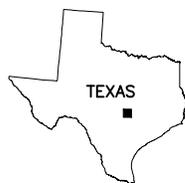
Subsurface conditions at the site can differ significantly from those encountered in the borings due to the natural variation of geologic conditions, which may not have been detected by the field boring program. In the event that any changes in the nature, design or location of the improvements are made, the conclusions and recommendations in this report should not be considered valid until the changes are reviewed and the conclusions and recommendations modified or verified in writing by HVJ Associates, Inc.

ILLUSTRATIONS



DATE: 12/31/2012
 FILE: P:\Geo\Projects\2011\AG 11 14441 Walnut Creek WWTP Improvements_B&V\CAD\VIC.dwg

Base Map Source: Google Maps



MAP LOCATION



SCALE: N.T.S

DATE: 12/31/2012

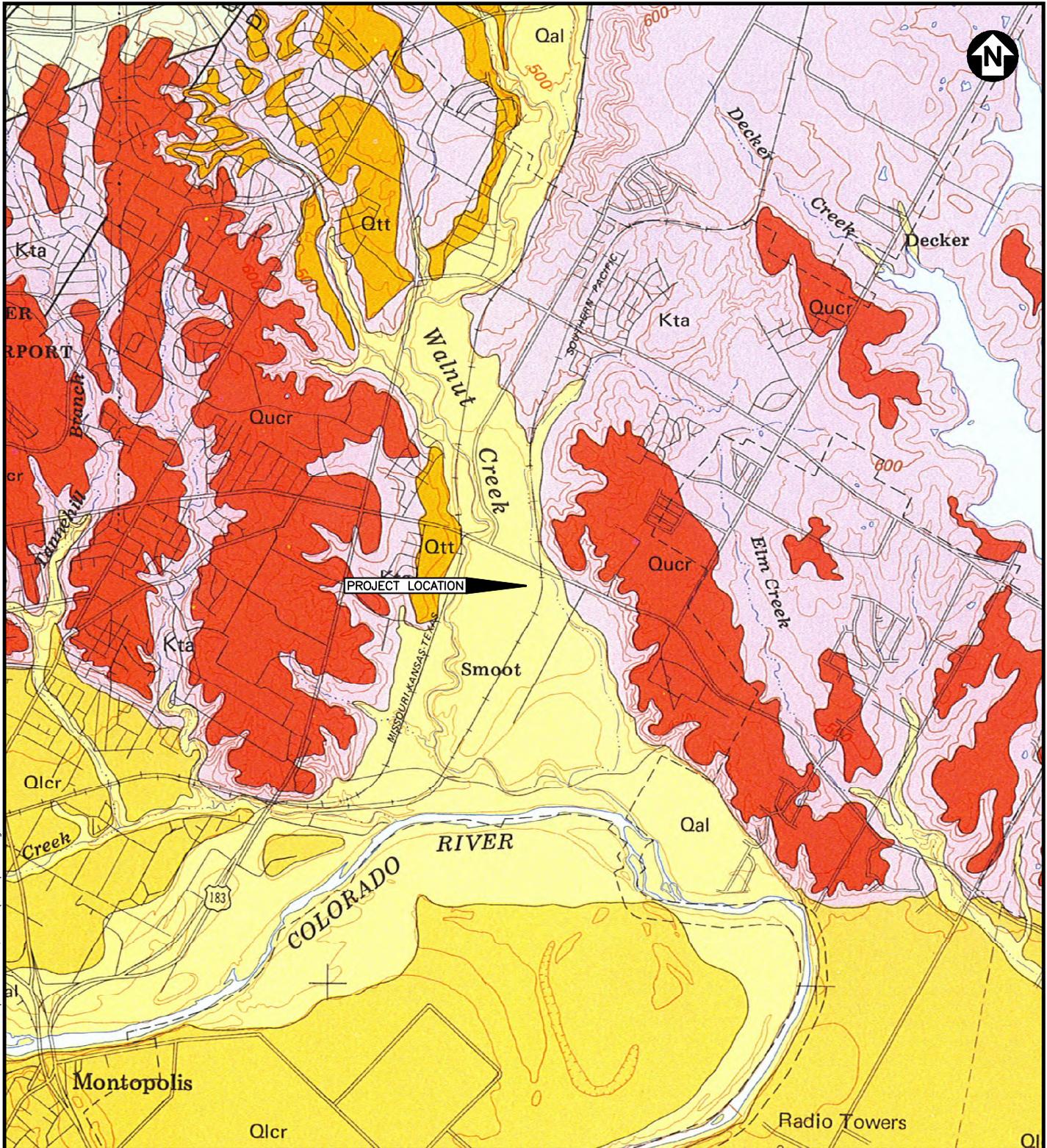
DRAWN BY: ND	PROJ. CHK: JS	APPRV. BY: JS
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SITE VICINITY MAP
 GEOTECHNICAL INVESTIGATION
 WALNUT CREEK WWTP – FILTER IMPROVEMENTS
 AUSTIN, TEXAS

PROJECT NO.:
 AG 11 14441

FILENAME:
 VIC

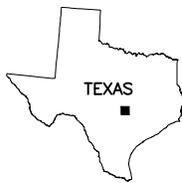
PLATE 1



Base Map Source: Bureau of Economic Geology, GEOLOGIC ATLAS OF TEXAS, AUSTIN SHEET, 1992

LEGEND

- Qal ALLUVIUM
- Qlcr LOWER COLORADO RIVER TERRACE DEPOSITS
- Qucr UPPER COLORADO RIVER TERRACE DEPOSITS
- Qtt TRIBUTARY TERRACE DEPOSITS
- Kta TAYLOR GROUP



MAP LOCATION



SCALE: N.T.S

DATE: 12/31/2012

DRAWN BY: ND	PROJ. CHK: JS	APPRV. BY: JS
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GEOLOGY MAP
 GEOTECHNICAL INVESTIGATION
 WALNUT CREEK WWTP – FILTER IMPROVEMENTS
 AUSTIN, TEXAS

PROJECT NO.:
AG 11 14441

FILENAME:
GEO

PLATE 2

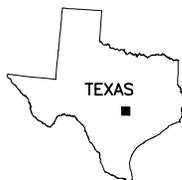
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DATE: 12/31/2012
 FILE: P:\geo\Projects\2011\AG 11 14441 Walnut Creek WWTP Improvements_B&V\CAD\POB.dwg



APPROXIMATE BORING LOCATION

Base Map Source: Google Earth



MAP LOCATION



SCALE: N.T.S

DATE: 12/31/2012

DRAWN BY: ND	PROJ. CHK: JS	APPRV. BY: JS
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PLAN OF BORINGS
 GEOTECHNICAL INVESTIGATION
 WALNUT CREEK WWTP – FILTER IMPROVEMENTS
 AUSTIN, TEXAS

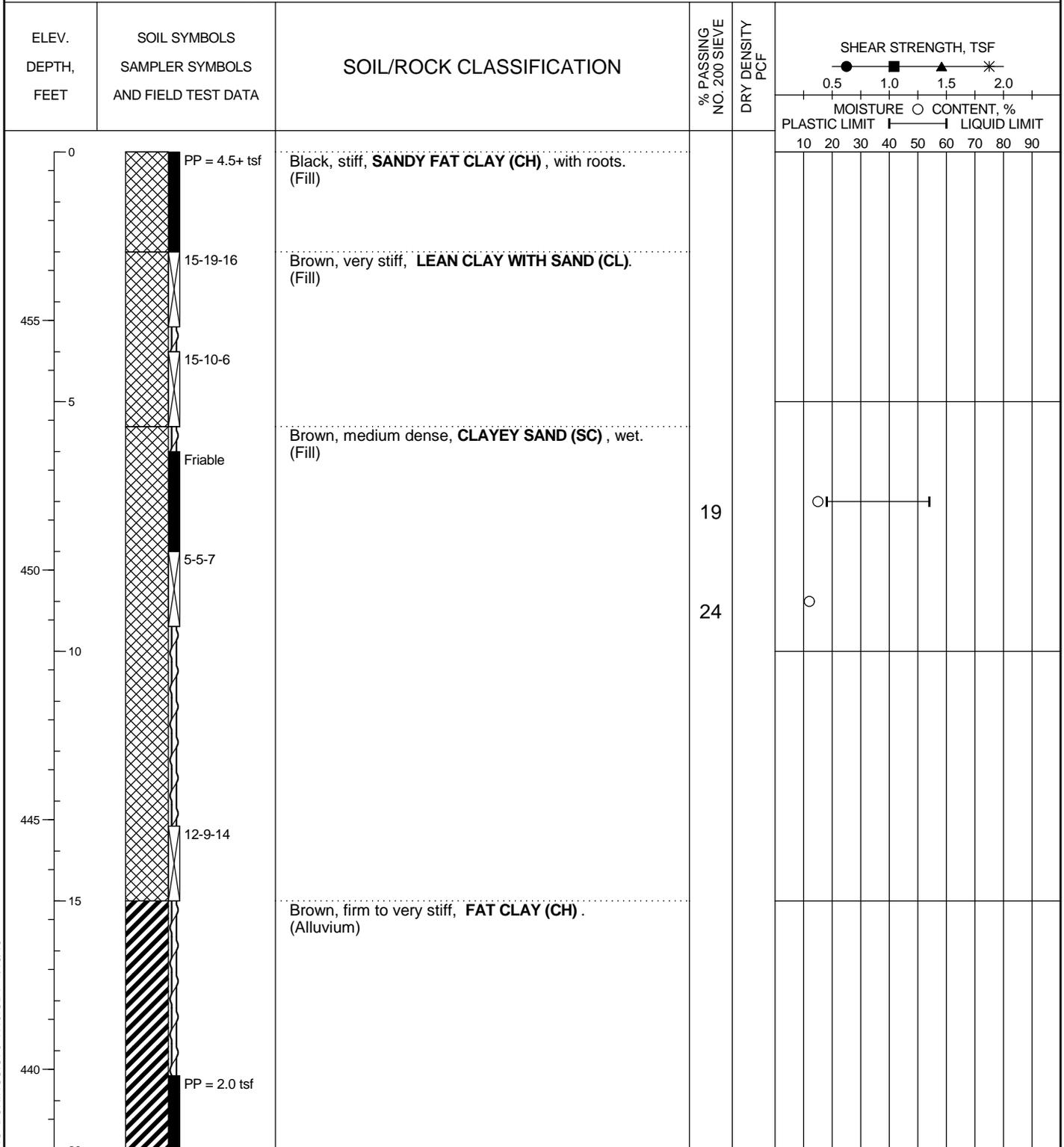
PROJECT NO.: AG 11 14441	FILENAME: POB	PLATE 3
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LOG OF BORING

Project: Walnut Creek WWTP Filter Improvements
 Boring No.: B-1
 Groundwater during drilling: ---
 Groundwater after drilling: ---

Date: 12/26/2012
 Northing: 10,075,928.8
 Easting: 3,142,690.0

Project No.: AG1114441
 Elevation: 458.3722 feet
 Station: --
 Offset: --



LOG OF SOIL BORING BORINGS.GPJ HVJ.GDT 1/18/13

Shear Types: ● = Hand Penet. ■ = Torvane ▲ = Unconf. Comp. * = UU Triaxial

See Plate 3 for boring location.



PLATE 4a

LOG OF BORING

Project: Walnut Creek WWTP Filter Improvements
 Boring No.: B-1
 Groundwater during drilling: ---
 Groundwater after drilling: ---

Date: 12/26/2012
 Northing: 10,075,928.8
 Easting: 3,142,690.0

Project No.: AG1114441
 Elevation: 458.3722 feet
 Station: --
 Offset: --

ELEV. DEPTH, FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	SOIL/ROCK CLASSIFICATION	% PASSING NO. 200 SIEVE	DRY DENSITY PCF	SHEAR STRENGTH, TSF MOISTURE CONTENT, % PLASTIC LIMIT LIQUID LIMIT
40		Brown and reddish brown, very stiff, FAT CLAY (CH) . (Alluvium) [Continued...]			
415		Mottled brown and gray, hard, FAT CLAY (CH) . (Alluvium)		101	3.4
410		Brown and reddish brown, very stiff, FAT CLAY (CH) . (Alluvium)			
50					
405					
55					
400					
60					

Shear Types: ● = Hand Penet. ■ = Torvane ▲ = Unconf. Comp. * = UU Triaxial

See Plate 3 for boring location.



PLATE 4c

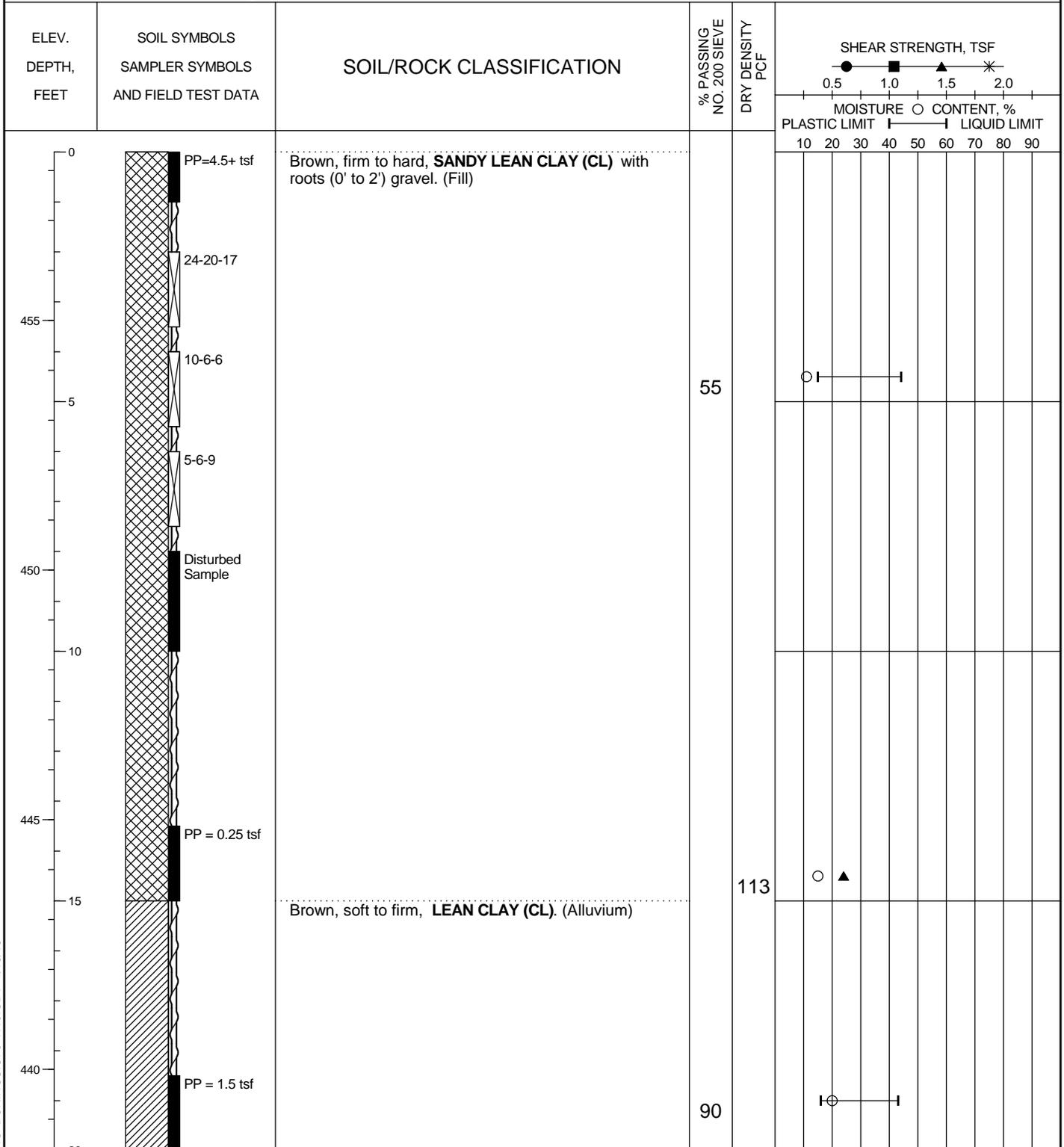
LOG OF SOIL BORING BORINGS.GPJ HVJ.GDT 1/18/13

LOG OF BORING

Project: Walnut Creek WWTP Filter Improvements
 Boring No.: B-2
 Groundwater during drilling: 48 feet
 Groundwater after drilling: ---

Date: 12/26/2012
 Northing: 10,075,874.4
 Easting: 3,142,652.5

Project No.: AG1114441
 Elevation: 458.3722 feet
 Station: --
 Offset: --



Shear Types: ● = Hand Penet. ■ = Torvane ▲ = Unconf. Comp. * = UU Triaxial

See Plate 3 for boring location.



PLATE 5a

LOG OF SOIL BORING BORINGS.GPJ HVJ.GDT 1/18/13

LOG OF BORING

Project: Walnut Creek WWTP Filter Improvements
 Boring No.: B-2
 Groundwater during drilling: 48 feet
 Groundwater after drilling: ---

Date: 12/26/2012
 Northing: 10,075,874.4
 Easting: 3,142,652.5

Project No.: AG1114441
 Elevation: 458.3722 feet
 Station: --
 Offset: --

ELEV. DEPTH, FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	SOIL/ROCK CLASSIFICATION	% PASSING NO. 200 SIEVE	DRY DENSITY PCF	SHEAR STRENGTH, TSF ● — ■ — ▲ — * MOISTURE CONTENT, % PLASTIC LIMIT — LIQUID LIMIT 10 20 30 40 50 60 70 80 90
40 415 45 410 50 405 55 400 60		Brown and reddish brown, very stiff, FAT CLAY (CH) . (Alluvium) [Continued...] Mottled brown and gray, very stiff, FAT CLAY (CH) . (Alluvium) GROUNDWATER ENCOUNTERED AT 48.0 FEET DURING DRILLING. Reddish brown, LEAN CLAY WITH SAND (CL) . (Alluvium)	78		

Shear Types: ● = Hand Penet. ■ = Torvane ▲ = Unconf. Comp. * = UU Triaxial

See Plate 3 for boring location.



PLATE 5c

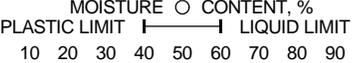
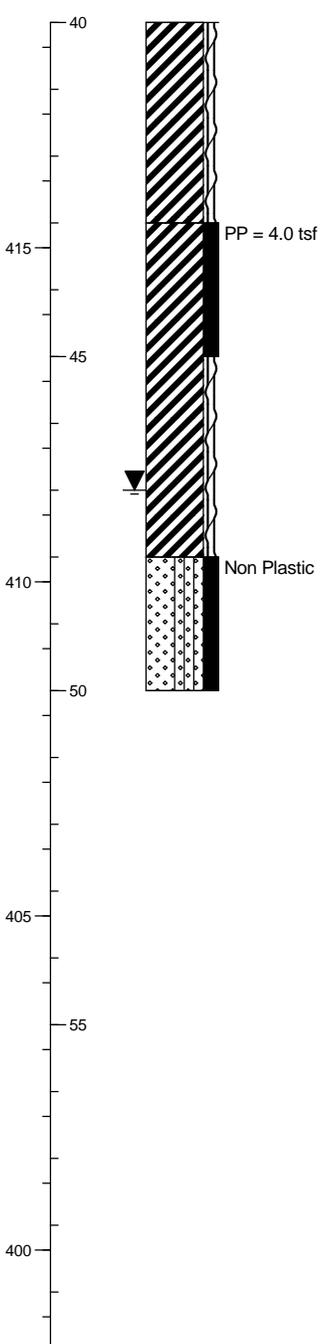
LOG OF SOIL BORING BORINGS.GPJ HVJ.GDT 1/18/13

LOG OF BORING

Project: Walnut Creek WWTP Filter Improvements
 Boring No.: B-3
 Groundwater during drilling: 47 feet
 Groundwater after drilling: ---

Date: 12/28/2012
 Northing: 10,075,740.8
 Easting: 3,142,892.1

Project No.: AG1114441
 Elevation: 458.3722 feet
 Station: --
 Offset: --

ELEV. DEPTH, FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	SOIL/ROCK CLASSIFICATION	% PASSING NO. 200 SIEVE	DRY DENSITY PCF	SHEAR STRENGTH, TSF  MOISTURE CONTENT, % PLASTIC LIMIT LIQUID LIMIT 
40		Brown, very stiff, FAT CLAY (CH) . (Alluvium) [Continued...]			
415		Brown and reddish brown, very stiff, FAT CLAY (CH) . (Alluvium)			
410		GROUNDWATER ENCOUNTERED AT 47 FEET DURING DRILLING.	Brown, WELL GRADED SAND WITH SILT (SW-SM) . (Alluvium)	7	○
50					
405					
55					
400					
60					

Shear Types: ● = Hand Penet. ■ = Torvane ▲ = Unconf. Comp. * = UU Triaxial

See Plate 3 for boring location.



PLATE 6c

LOG OF SOIL BORING BORINGS.GPJ HVJ.GDT 1/18/13

LOG OF BORING

Project: Walnut Creek WWTP Filter Improvements
 Boring No.: B-4
 Groundwater during drilling: 46 feet
 Groundwater after drilling: ---

Date: 1/2/2013
 Northing: 10,075,715.2
 Easting: 3,142,875.8

Project No.: AG1114441
 Elevation: 458.3722 feet
 Station: --
 Offset: --

ELEV. DEPTH, FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	SOIL/ROCK CLASSIFICATION	% PASSING NO. 200 SIEVE	DRY DENSITY PCF	SHEAR STRENGTH, TSF MOISTURE CONTENT, % PLASTIC LIMIT LIQUID LIMIT
0	24-16-14	3" ASPHALTIC CONCRETE 9" tan, FLEX BASE			
455	PP = 4.5+ tsf	Brown, very dense, SILTY SAND (SM) with gravel. (FILL)			
5	PP = 4.5+ tsf	Dark brown, hard, LEAN CLAY WITH GRAVEL (CL). (Fill)	51		○ —
450	PP = 4.5+ tsf				
10					
445	PP = 4.0 tsf				
15		Brown, stiff to very stiff, FAT CLAY (CH). (Alluvium)			
440	PP = 3.5 tsf		95		⊕ —
20					

LOG OF SOIL BORING BORINGS.GPJ HVJ.GDT 1/18/13

Shear Types: ● = Hand Penet. ■ = Torvane ▲ = Unconf. Comp. * = UU Triaxial

See Plate 3 for boring location.



PLATE 7a

SOIL SYMBOLS

Soil Types



Clay



Silt



Sand



Fill

Modifiers



Clayey



Silty



Sandy Clay



Cemented

Construction Materials



Asphaltic Concrete



Stabilized Base



Fill or Debris



Base

SAMPLER TYPES



Thin Walled Shelby Tube



No Recovery



Split Barrel



Auger



Liner Tube



Jar Sample

WATER LEVEL SYMBOLS



Groundwater level determined during drilling operations



Groundwater level after drilling in open borehole or piezometer

SOIL GRAIN SIZE

Classification

Clay
Silt
Sand
Gravel
Cobble
Boulder

Particle Size

< 0.002 mm
0.002 - 0.075 mm
0.075 - 4.75 mm
4.75 - 75 mm
75 - 200 mm
> 200 mm

Particle Size or Sieve No. (U.S. Standard)

< 0.002 mm
0.002 mm - #200 sieve
#200 sieve - #4 sieve
#4 sieve - 3 in.
3 in. - 8 in.
> 8 in.

DENSITY OF COHESIONLESS SOILS

Descriptive Term	Penetration Resistance "N" * Blows/Foot
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	> 50

CONSISTENCY OF COHESIVE SOILS

Consistency	Undrained Shear Strength (tsf)
Very Soft	0 - 0.125
Soft	0.125 - 0.25
Firm	0.25 - 0.5
Stiff	0.5 - 1.0
Very Stiff	1.0 - 2.0
Hard	> 2.0

PENETRATION RESISTANCE

3/6
50/4"
0/18"

Blows required to penetrate each of three consecutive 6-inch increments per ASTM D-1586 *
If more than 50 blows are required, driving is discontinued and penetration at 50 blows is noted
Sampler penetrated full depth under weight of drill rods and hammer

* The N value is taken as the blows required to penetrate the final 12 inches

TERMS DESCRIBING SOIL STRUCTURE

<i>Slickensided</i>	Fracture planes appear polished or glossy, sometimes striated
<i>Fissured</i>	Breaks along definite planes of fracture with little resistance to fracturing
<i>Inclusion</i>	Small pockets of different soils, such as small lenses of sand scattered through a mass of clay
<i>Parting</i>	Inclusion less than 1/4 inch thick extending through the sample
<i>Seam</i>	Inclusion 1/4 inch to 3 inches thick extending through the sample
<i>Layer</i>	Inclusion greater than 3 inches thick extending through the sample
<i>Laminated</i>	Soil sample composed of alternating partings of different soil type
<i>Stratified</i>	Soil sample composed of alternating seams or layers of different soil type

<i>Intermixed</i>	Soil sample composed of pockets of different soil type and laminated or stratified structure is not evident
<i>Calcareous</i>	Having appreciable quantities of calcium carbonate
<i>Ferrous</i>	Having appreciable quantities of iron
<i>Nodule</i>	A small mass of irregular shape



PROJECT NO.:
AG 11 14441
DRAWING NO.:
PLATE 9

KEY TO TERMS AND SYMBOLS
USED ON BORING LOGS FOR SOIL

APPENDIX A
LABORATORY TEST RESULTS SUMMARY

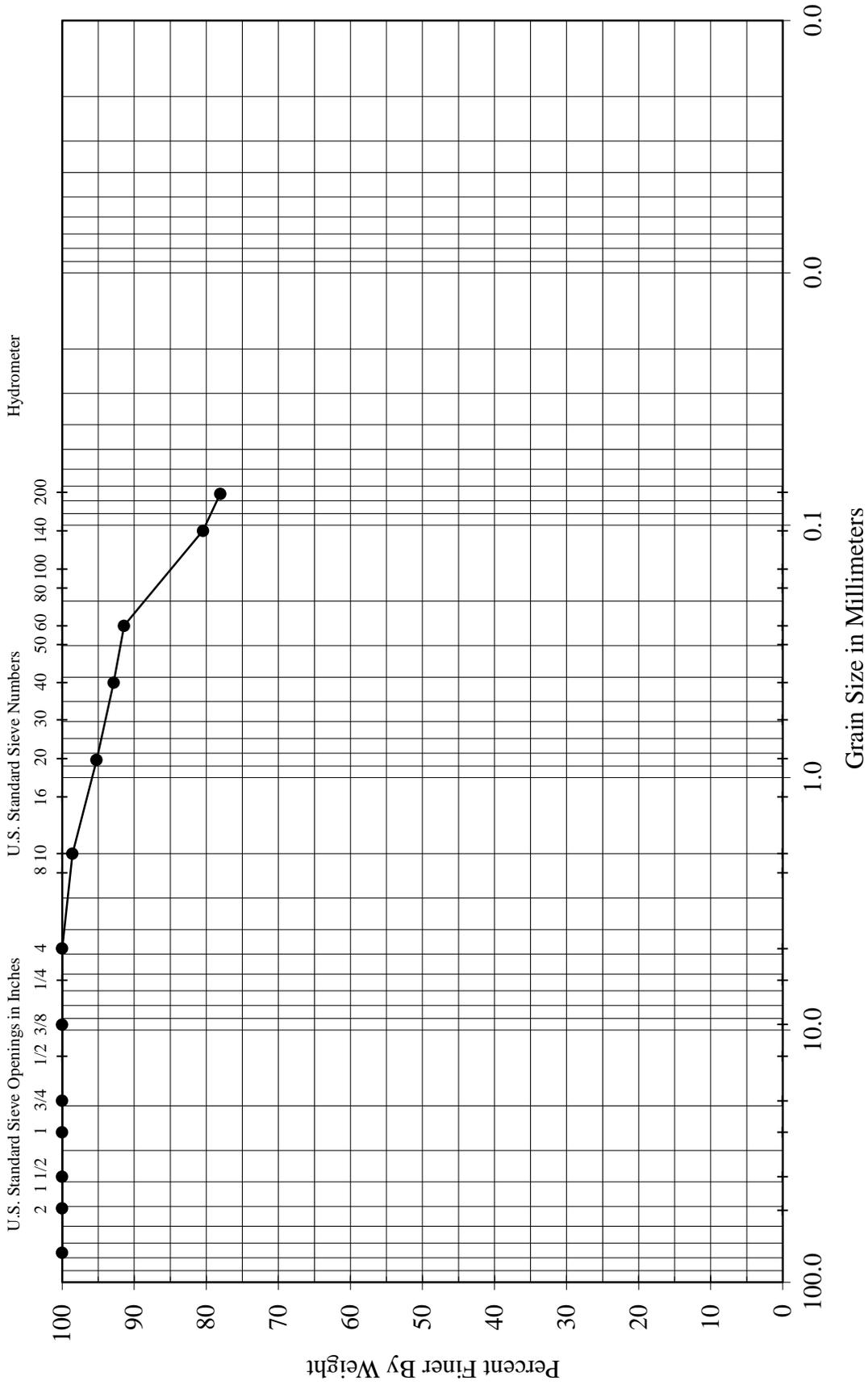
LABORATORY TEST RESULTS SUMMARY

Project Name: WALNUT CREEK WWTP - FILTER IMPROVEMENTS

Project Number: AG 11 14441

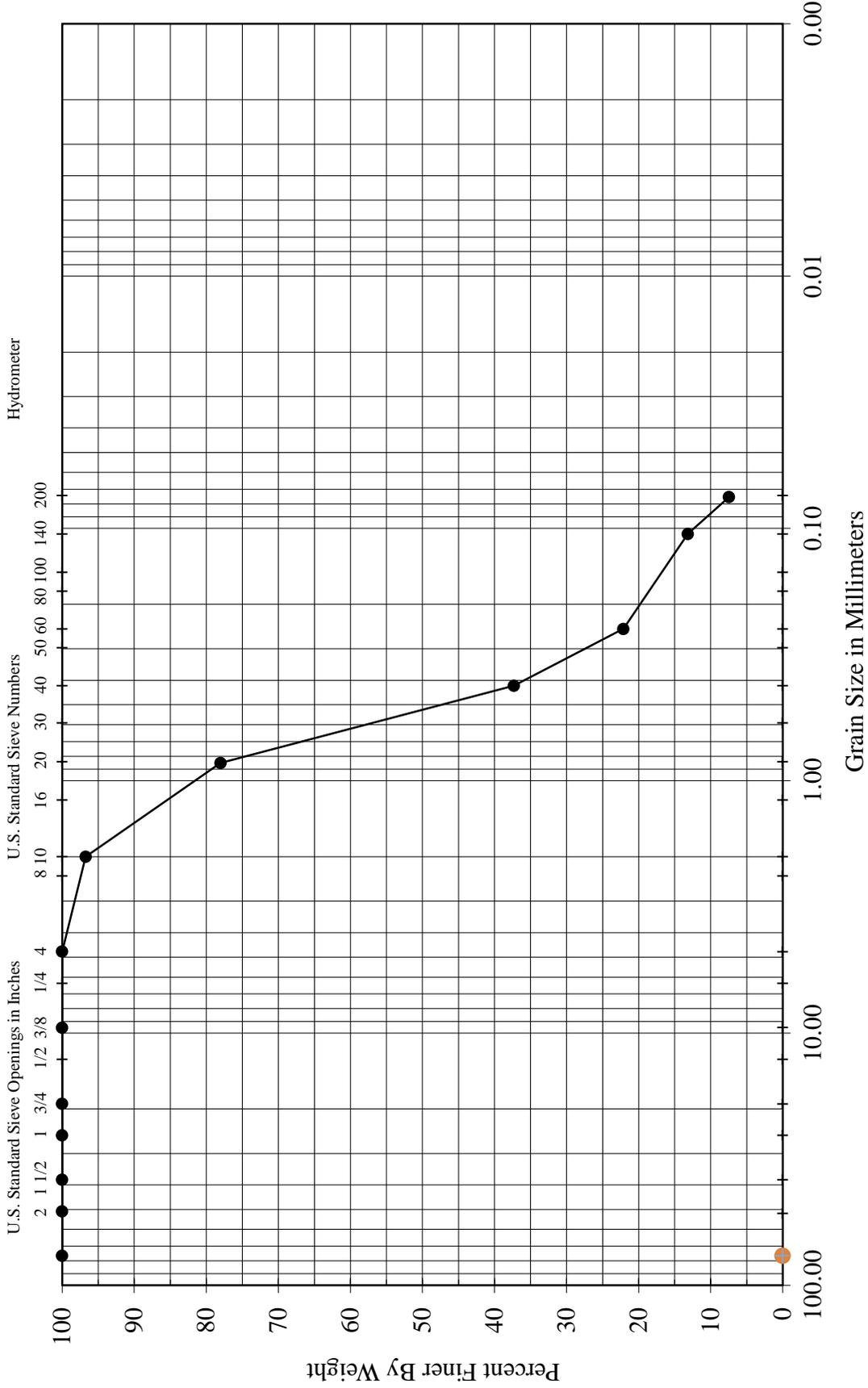
Boring No.	Depth (ft)	% Passing No. 200 Sieve	Liquid Limit (%)	Plasticity Index (%)	Moisture Content (%)	Wet Unit Wt. (pcf)	Dry Unit Wt. (pcf)	Compressive Strength (tsf)	Hand Penetrometer Reading (tsf)				
B-1	6-8	19.2	54	36	15				2.0				
	8-9.5	23.8			11.5								
	18.5-20	94.7	49	33	22.5					127.8	104.6	2.4	1.0
	28.5-30				23.8					125.5	101.3	3.4	4.0
	43-45												
B-2	4-5.5	55.1	44	29	11.4			0.6	0.25				
	6.5-8	90.1	43	27	15.4					130.2	112.9	1.5	
	13.5-15.5				20.1							2.0	
	18.5-20				22.1							0.00	
	23.5-25	78.1											
48.5-49.5													
B-3	8-10	20.5	66	38	9.9				3.5				
	18-20	87.1	45	29	18.6				3.0				
	23-25								3.0				
	33-35								3.3				
	38-40	6.9			15.9				3.5				
	48-50												
B-4	3-5	51.1	34	23	12.6			2.9	4.5+				
	18-20	95.3	50	34	19.7				3.5				
	33-35	96.5	65	47	23				126.2	102.6	3.0		
	38-40				25						2.0		
	43-45				19.8						4.25		
	48-50	5.7											
B-5	1-3	55.7	47	29	7.7			2.4	4.5				
	7-9	69.7	49	30	13.1				4.5				
	13-15	99.1	60	37	21				121.4	100.3	3.5		
	18-20				2.4				3.5				
	28-30				2.4				2.5				
	38-40	23.2			2.4				3.5				
	48-50	19.6			22.5								

Percent Coarser By Weight



Project No. AP 11 14441 Depth, Ft. B-2, 48.5-49.5 Classification Lean Clay With Sand (CL)

Percent Coarser By Weight

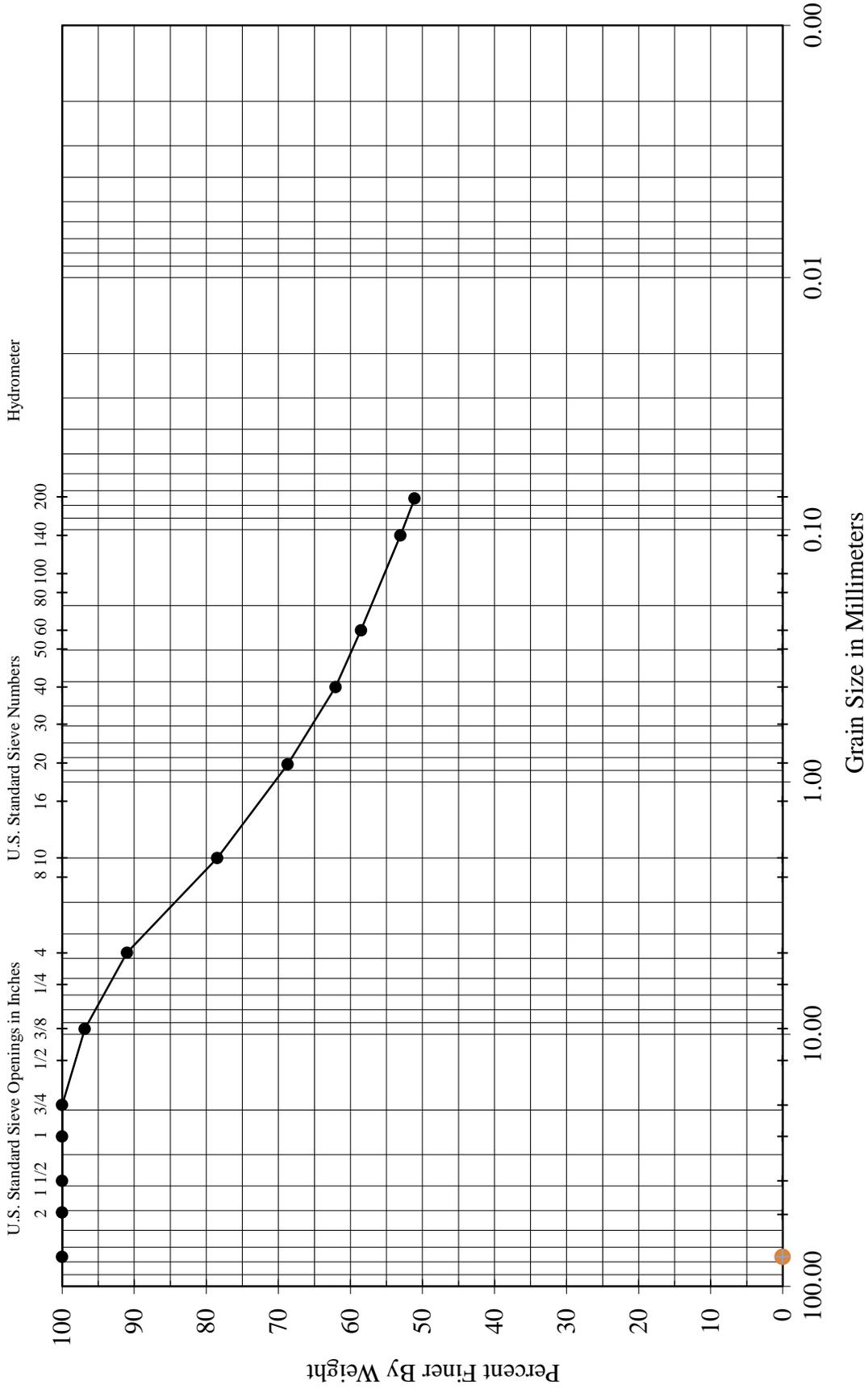


Classification
 Well Graded Sand With
 Silt (SW-SM)

Depth, Ft.
 B-3, 48-50

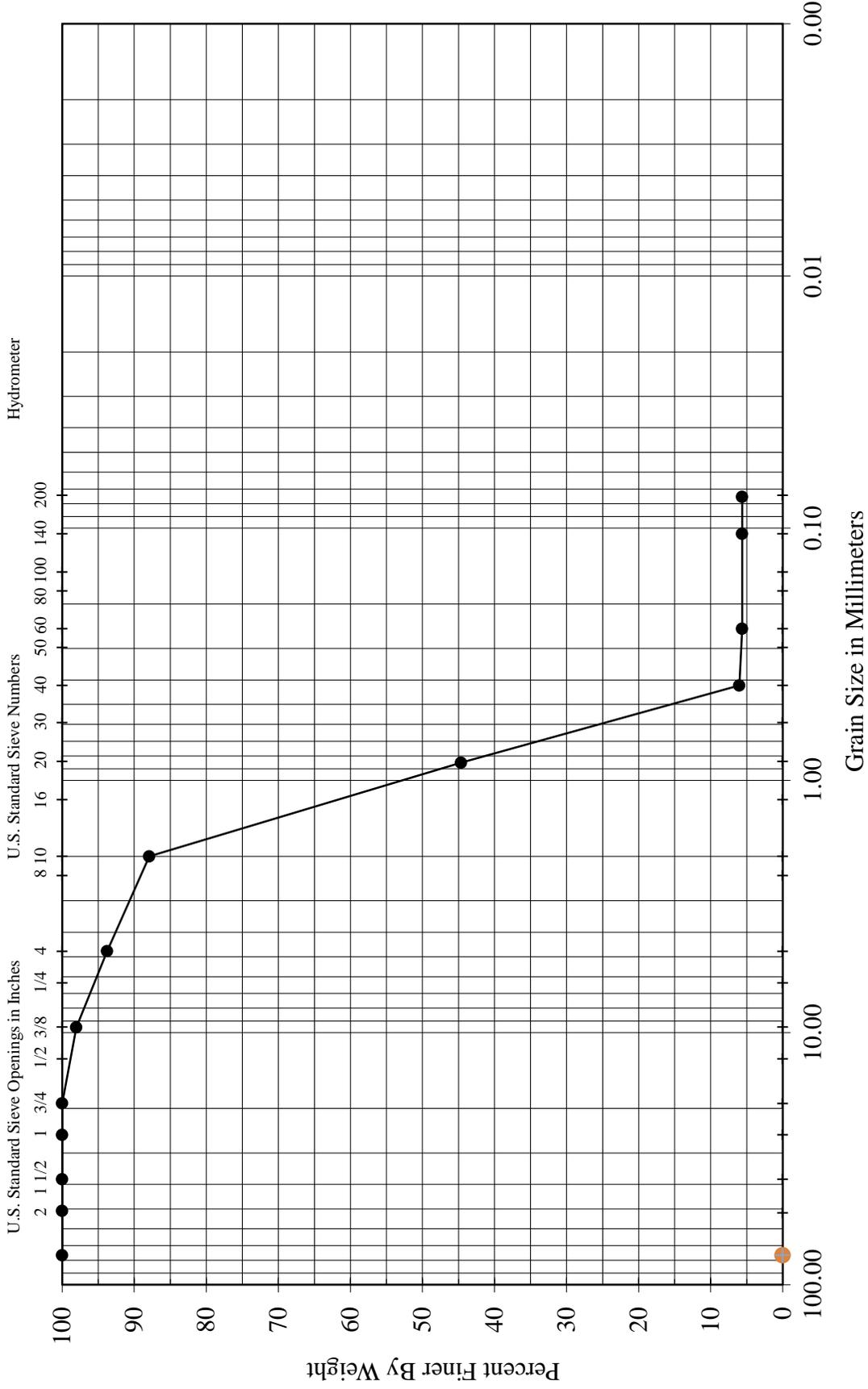
Project No.
 AP 11 14441

Percent Coarser By Weight



Project No. AP 11 14441
 Depth, Ft. B-4, 3-5
 Classification Sandy Lean Clay (CL)

Percent Coarser By Weight

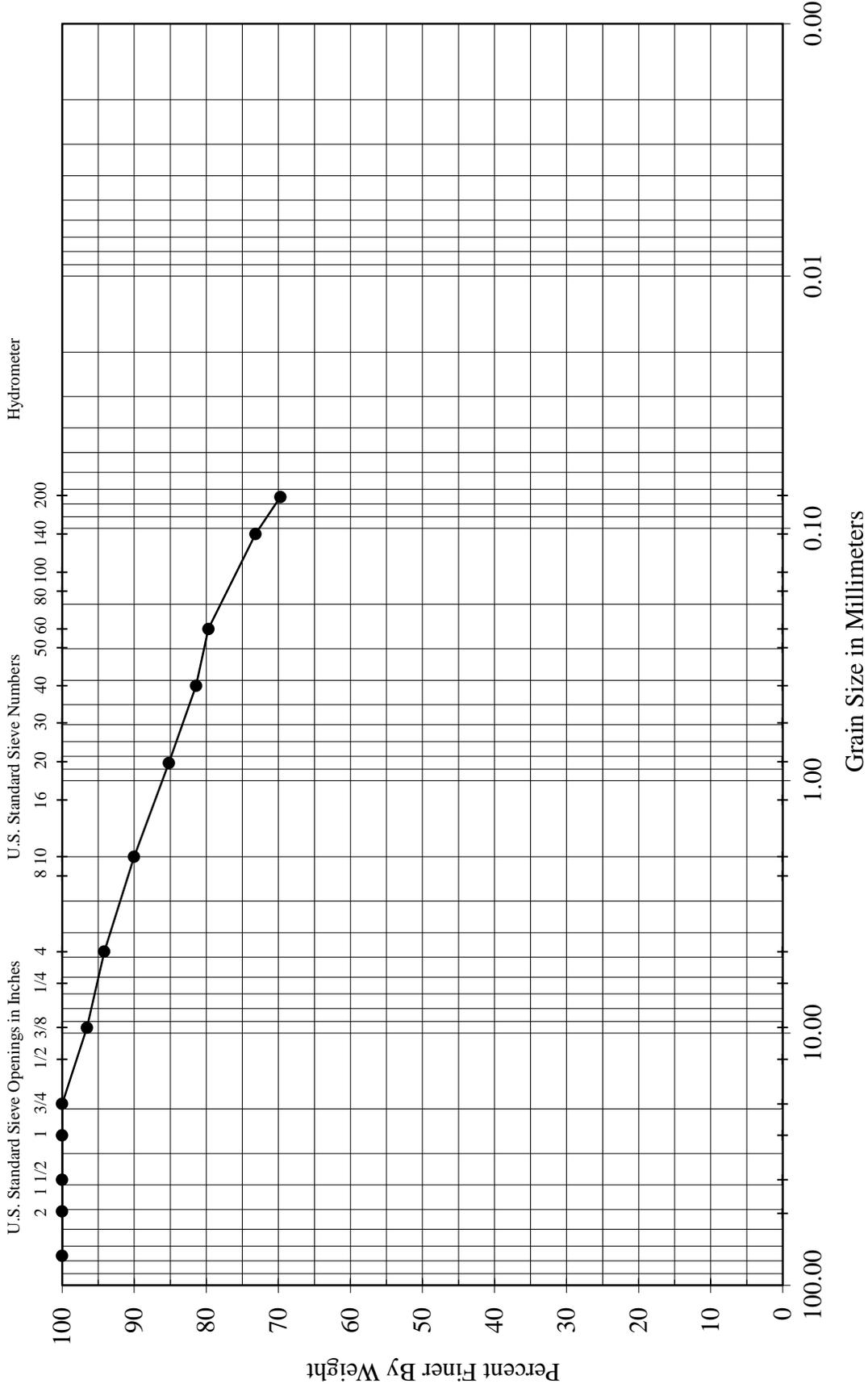


Classification
 Poorly Graded Sand With
 Silt (SP-SM)

Depth, Ft.
 B-4, 48-50

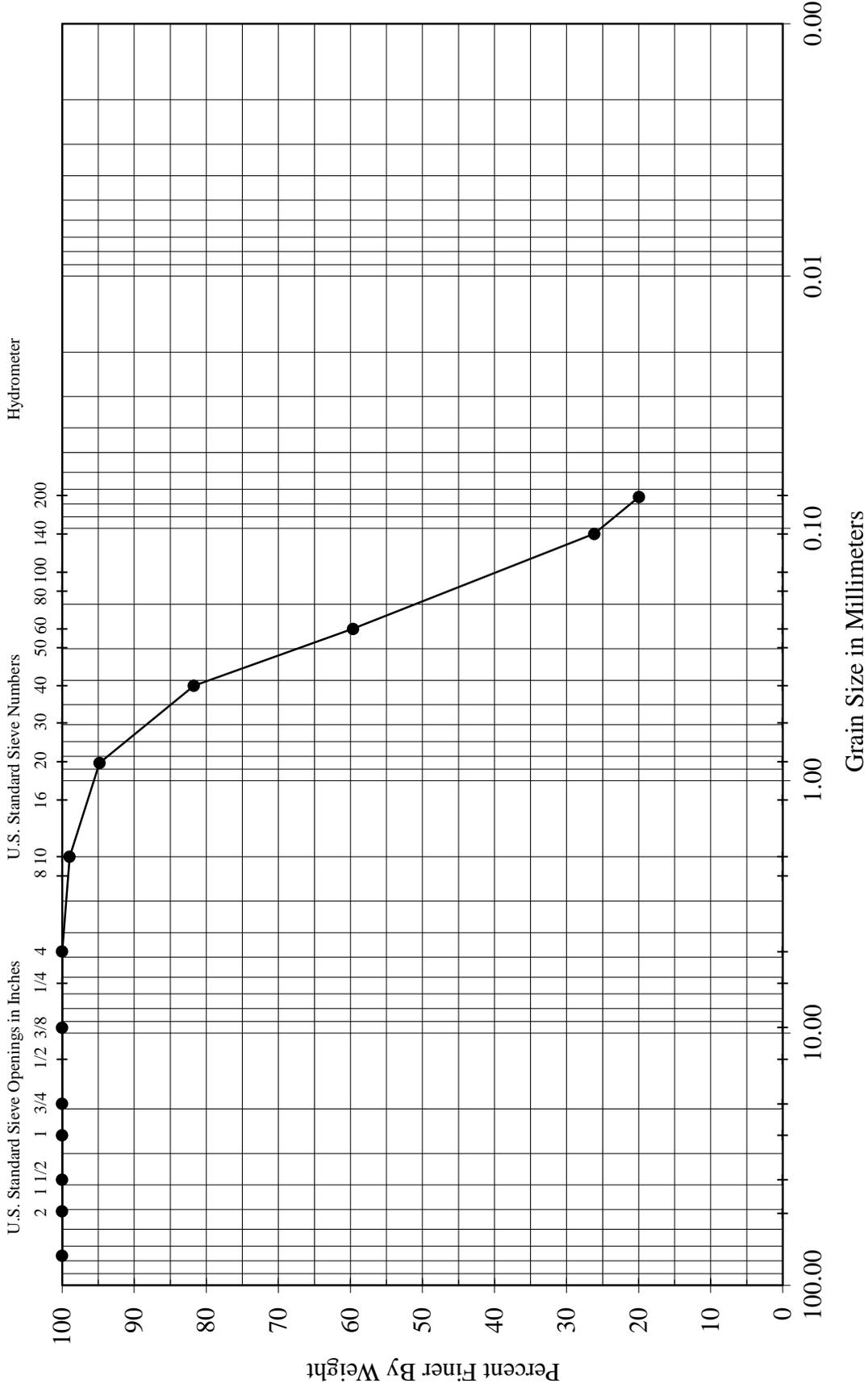
Project No.
 AP 11 14441

Percent Coarser By Weight



Project No. AP 11 14441
Depth, Ft. B-5, 7-9
Classification Sandy Lean Clay (CL)

Percent Coarser By Weight



Project No.
AP 11 14441

Depth, Ft.
B-5, 28-50

Classification
Silty Sand (SM)



January 14, 2013

Jason Schwarz
HVJ Associates, Inc.
4201 Freidrich Lane, Suite 110
Austin, Texas 78744-1045
TEL: (512) 447-9081
FAX (512) 443-3442
RE: Walnut Creek WWTP

Order No.: 1301043

Dear Jason Schwarz:

DHL Analytical, Inc. received 5 sample(s) on 1/8/2013 for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative and all estimated uncertainties of results are within method specifications.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

A handwritten signature in black ink, appearing to read "John DuPont", is written over a white background.

John DuPont
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-12-9



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AnalyticalQCSummaryReport 1301043	11

CLIENT: HVJ Associates, Inc.
Project: Walnut Creek WWTP
Lab Order: 1301043

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition and TEX620J.

All method blanks, sample duplicates, laboratory spikes, and/or matrix spikes met quality assurance objectives.

DHL Analytical, Inc.

Date: 14-Jan-13

CLIENT: HVJ Associates, Inc.
Project: Walnut Creek WWTP
Project No: AG1114441
Lab Order: 1301043

Client Sample ID: B-1 18.5-20'
Lab ID: 1301043-01
Collection Date: 01/08/13
Matrix: SOIL

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
PH OF SOLID (CORROSIVITY)		SW9045D					Analyst: JBC
pH	7.29	0	0		pH Units	1	01/09/13 11:10 AM
CHLORIDE AND SULFATE CONTENT IN SOIL		TEX620J					Analyst: JBC
Sulfate	59.3	2.00	4.99	N	ppm-dry	1	01/09/13 12:12 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: 14-Jan-13

CLIENT: HVJ Associates, Inc.
Project: Walnut Creek WWTP
Project No: AG1114441
Lab Order: 1301043

Client Sample ID: B-2 6.5-8'
Lab ID: 1301043-02
Collection Date: 01/08/13
Matrix: SOIL

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
PH OF SOLID (CORROSIVITY)		SW9045D					Analyst: JBC
pH	7.48	0	0		pH Units	1	01/09/13 11:10 AM
CHLORIDE AND SULFATE CONTENT IN SOIL		TEX620J					Analyst: JBC
Sulfate	265	1.96	4.90	N	ppm-dry	1	01/09/13 12:27 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: 14-Jan-13

CLIENT: HVJ Associates, Inc.
Project: Walnut Creek WWTP
Project No: AG1114441
Lab Order: 1301043

Client Sample ID: B-3 33-35'
Lab ID: 1301043-03
Collection Date: 01/08/13
Matrix: SOIL

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
PH OF SOLID (CORROSIVITY)		SW9045D					Analyst: JBC
pH	7.52	0	0		pH Units	1	01/09/13 11:10 AM
CHLORIDE AND SULFATE CONTENT IN SOIL		TEX620J					Analyst: JBC
Sulfate	23.8	2.00	5.00	N	ppm-dry	1	01/09/13 12:42 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: 14-Jan-13

CLIENT: HVJ Associates, Inc.
Project: Walnut Creek WWTP
Project No: AG1114441
Lab Order: 1301043

Client Sample ID: B-4 33.5-35'
Lab ID: 1301043-04
Collection Date: 01/08/13
Matrix: SOIL

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
PH OF SOLID (CORROSIVITY)		SW9045D					Analyst: JBC
pH	7.50	0	0		pH Units	1	01/09/13 11:10 AM
CHLORIDE AND SULFATE CONTENT IN SOIL		TEX620J					Analyst: JBC
Sulfate	19.0	1.98	4.96	N	ppm-dry	1	01/09/13 12:57 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: 14-Jan-13

CLIENT: HVJ Associates, Inc.
Project: Walnut Creek WWTP
Project No: AG1114441
Lab Order: 1301043

Client Sample ID: B-5 18-20'
Lab ID: 1301043-05
Collection Date: 01/08/13
Matrix: SOIL

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
PH OF SOLID (CORROSIVITY)		SW9045D					Analyst: JBC
pH	7.47	0	0		pH Units	1	01/09/13 11:10 AM
CHLORIDE AND SULFATE CONTENT IN SOIL		TEX620J					Analyst: JBC
Sulfate	160	1.96	4.91	N	ppm-dry	1	01/09/13 01:11 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT: HVJ Associates, Inc.
Work Order: 1301043
Project: Walnut Creek WWTP

ANALYTICAL QC SUMMARY REPORT

RunID: IC_130109A

The QC data in batch 55424 applies to the following samples: 1301043-01A, 1301043-02A, 1301043-03A, 1301043-04A, 1301043-05A

Sample ID: MB-55424	Batch ID: 55424	TestNo: Tex620J	Units: ppm-dry							
SampType: MBLK	Run ID: IC_130109A	Analysis Date: 1/9/2013 9:21:04 AM	Prep Date: 1/8/2013							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	5.00								N

Sample ID: LCS-55424	Batch ID: 55424	TestNo: Tex620J	Units: ppm-dry							
SampType: LCS	Run ID: IC_130109A	Analysis Date: 1/9/2013 9:35:40 AM	Prep Date: 1/8/2013							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	1120	5.00	1000	0	112	80	120			N

Sample ID: LCSD-55424	Batch ID: 55424	TestNo: Tex620J	Units: ppm-dry							
SampType: LCSD	Run ID: IC_130109A	Analysis Date: 1/9/2013 9:50:17 AM	Prep Date: 1/8/2013							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	1130	5.00	1000	0	113	80	120	1.08	20	N

Sample ID: 1301040-01A DUP	Batch ID: 55424	TestNo: Tex620J	Units: ppm-dry							
SampType: DUP	Run ID: IC_130109A	Analysis Date: 1/9/2013 10:20:36 AM	Prep Date: 1/8/2013							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	177	4.99	0	174.5				1.16	25	N

Qualifiers: B Analyte detected in the associated Method Blank
 J Analyte detected between MDL and RL
 ND Not Detected at the Method Detection Limit
 RL Reporting Limit
 J Analyte detected between SDL and RL
 DF Dilution Factor
 MDL Method Detection Limit
 R RPD outside accepted control limits
 S Spike Recovery outside control limits
 N Parameter not NELAC certified

CLIENT: HVJ Associates, Inc.
Work Order: 1301043
Project: Walnut Creek WWTP

ANALYTICAL QC SUMMARY REPORT

RunID: PH_130109A

The QC data in batch 55448 applies to the following samples: 1301043-01A, 1301043-02A, 1301043-03A, 1301043-04A, 1301043-05A

Sample ID: 1301043-01A DUP	Batch ID: 55448	TestNo: SW9045D	Units: pH Units							
SampType: DUP	Run ID: PH_130109A	Analysis Date: 1/9/2013 11:10:00 AM	Prep Date: 1/9/2013							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	7.25	0	0	7.290				0.495	5	

<p>Qualifiers:</p> <ul style="list-style-type: none"> B Analyte detected in the associated Method Blank J Analyte detected between MDL and RL ND Not Detected at the Method Detection Limit RL Reporting Limit J Analyte detected between SDL and RL 	<ul style="list-style-type: none"> DF Dilution Factor MDL Method Detection Limit R RPD outside accepted control limits S Spike Recovery outside control limits N Parameter not NELAC certified
--	---

CLIENT: HVJ Associates, Inc.
Work Order: 1301043
Project: Walnut Creek WWTP

ANALYTICAL QC SUMMARY REPORT

RunID: PH_130109A

Sample ID: ICV-130109	Batch ID: PH_S-41283	TestNo: SW9045D	Units: pH Units
SampType: ICV	Run ID: PH_130109A	Analysis Date: 1/9/2013 11:10:00 AM	Prep Date: 1/9/2013

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
---------	--------	----	-----------	---------	------	----------	-----------	------	----------	------

pH	10.0	0	10.00	0	100	99	101			
----	------	---	-------	---	-----	----	-----	--	--	--

Sample ID: CCV-130109	Batch ID: PH_S-41283	TestNo: SW9045D	Units: pH Units
SampType: CCV	Run ID: PH_130109A	Analysis Date: 1/9/2013 11:10:00 AM	Prep Date: 1/9/2013

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
---------	--------	----	-----------	---------	------	----------	-----------	------	----------	------

pH	7.03	0	7.000	0	100	97.1	102.9			
----	------	---	-------	---	-----	------	-------	--	--	--

Qualifiers:

B Analyte detected in the associated Method Blank	DF Dilution Factor
J Analyte detected between MDL and RL	MDL Method Detection Limit
ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
RL Reporting Limit	S Spike Recovery outside control limits
J Analyte detected between SDL and RL	N Parameter not NELAC certified

Bidding Requirements, Contract Forms and Conditions of the Contract
LUMP SUM BID FORM
Section 00300L

City Manager
Austin, Texas

The undersigned, in compliance with the Invitation for Bids for construction of the following Project: **Walnut Creek Wastewater Treatment Plant Tertiary Filter Rehabilitation Project**

(CIP ID# 3023.025) (IFB# CLMC 587)
for the City of Austin, Texas, having examined the Project Manual, Drawings and Addenda, the site of the proposed Work and being familiar with all of the conditions surrounding construction of the proposed Project, having conducted all inquiries, tests and investigations deemed necessary and proper; hereby proposes to furnish all labor, permits, material, machinery, tools, supplies and equipment, and incidentals, and to perform all Work required for construction of the Project in accordance with the Project Manual, Drawings and Addenda within the time indicated for the lump sum price of:

MINIMUM WAGES: Workers on Project shall be paid not less than wage rates, including fringe benefits, as published by the Department of Labor (DOL) for Building Construction and Heavy and Highway Trades "AS APPLICABLE" and/or the \$13.03 minimum Wage required by City of Austin Ordinance No. 20160324-015, whichever is higher. The Total Minimum Wage required can be met using any combination of cash and non-cash qualified fringe benefits provided the cash component meets or exceeds the \$13.03 minimum wage required.

EXCAVATION SAFETY SYSTEMS UNIT PRICES: The undersigned Bidder agrees that the Base Bid for the Work includes the following amounts in the Bid for excavation safety systems as specified in Item Number 509S of the Specifications and in case of an authorized adjustment to the scope of Work, the following unit price(s) will be used in adjusting the Contract Amount:

<u>Quantity</u>	<u>Unit</u>	<u>Item Description</u>	<u>Unit Price</u>	<u>Amount</u>
_____	LF	Trench Safety systems	\$ _____	\$ _____

ALLOWANCES

Allowance #1	Filter Building Doors Allowance	<u>\$20,000</u>
Allowance #2	Modular Building Allowance	<u>\$50,000</u>
Allowance #3	Concrete Walls Condition/Repair Allowance	<u>\$50,000</u>
Allowance #4	Existing Piping/Equipment Allowance	<u>\$50,000</u>
Allowance #5	Site Condition Allowance	<u>\$100,000</u>
Allowance #6	Travel Allowance	<u>\$25,000</u>

SUBTOTAL ALLOWANCES: **\$295,000**

BASE BID..... = \$ _____
(Base Bid includes Allowances and Excavation Safety Systems Unit Prices) Figures

ALTERNATE NO. 1 : Media Retention Baffles for Filters 5-10* = \$
Figures

*For all work identified as "BID ALTERNATE NO. 1" on the drawings related to the media retention baffles on the troughs for Filters 5-10 See Specification 01030 for additional information

TOTAL BID (Base Bid Plus Alternate)..... = \$
Figures

Notes:

1. For information pertaining to Bid alternate prioritization, see Section 00820.
2. For a more detailed explanation of Bid alternates, see Section 01030.
3. For a more detailed explanation of Bid allowances, see Section 1020.

BID GUARANTY: A Bid guaranty must be enclosed with this Bid, as required in Section 00020, in the amount of not less than five percent (5%) of the total Bid. Following the Bid opening, submitted Bids may not be withdrawn for a period of 120 Calendar Days. Award of Contract will occur within this period, unless mutually agreed between the parties. The Bid guaranty may become the property of the OWNER, or the OWNER may pursue any other action allowed by law, if:

- Bidder withdraws a submitted Bid within the period stated above;
- Bidder fails to submit the required post Bid information within the period specified in Section 00020 or 00100, or any mutually agreed extension of that period; or
- Bidder fails to execute the Contract and furnish the prescribed documentation (bonds, insurance, etc.) needed to complete execution of the Contract within five (5) Working Days after notice of award, or any mutually agreed extension of that period.

GEOTECHNICAL BASELINE ACKNOWLEDGEMENT: The undersigned bidder certifies that he/she has read and understands the Geotechnical Baseline Report (GBR), the Geotechnical Data Report, the Reflection Survey Report, and all other geological and geotechnical information and data as provided in the Contract Documents, including all Addenda. **The Bidder acknowledges and agrees that the GBR represents the contractual statement of the subsurface conditions reasonably anticipated to be encountered during construction. The GBR will be used to evaluate whether subsurface conditions differ materially from those indicated in the GBR.**

TIME OF COMPLETION: The undersigned Bidder agrees to commence work on the date specified in the written "Notice to Proceed" to be issued by the OWNER and to **substantially** complete construction of the improvements, as required by the Project Manual, Drawings and Addenda for the Work within **One thousand ninety-five (1095) Calendar Days**. **If a Substantial Completion date has been specified, the Bidder further agrees to reach Final Completion within Thirty (30) Calendar Days after Substantial Completion as required by the Project Manual, Drawings and Addenda for the work.** The Bidder further agrees that should the Bidder fail to **substantially complete the Work or to finally** complete the Work within the number of days indicated in the Bid or as subsequently adjusted, Bidder shall pay the liquidated damages for each consecutive day thereafter as provided below; unless the OWNER elects to pursue any other action allowed by law.

WAIVER OF ATTORNEY FEES: In submitting its bid, in consideration for the waiver of its right to attorney’s fees by the OWNER, the Bidder knowingly and intentionally agrees to and shall waive the right to attorney’s fees under Section 271.153 of the Texas Local Government Code in any administrative proceeding, alternative dispute resolution proceeding, or litigation arising out of or connected to any Contract awarded pursuant to this solicitation process.

LIQUIDATED DAMAGES: The Bidder understands and agrees that the timely completion of the described Work is of the essence. The Bidder and OWNER further agree that the OWNER’s actual damages for delay caused by failure to timely complete the Project are difficult, if not impossible to measure. However, with respect to the additional administrative and consultant costs to be incurred by OWNER, the reasonable estimate of such damages has been calculated and agreed to by OWNER and Bidder. Therefore, the Bidder and the OWNER agree that for each and every **Calendar** Day the Work or any portion thereof, remains incomplete after the **Substantial Completion** date as established by the above paragraph, "Time of Completion", payment will be due to the Owner in the amount of **Fifteen Hundred dollars (\$1500)** per **Calendar** Day as liquidated damages, not as a penalty, but for delay damages to the OWNER. **If both Substantial and Final Completion dates have been specified, the Bidder and the OWNER further agree that for each and every Calendar Day the Work or any portion thereof, remains incomplete after the Final Completion date as established by the above paragraph , "Time of Completion", payment will be due to the OWNER in the amount of Seven Hundred dollars (\$700) per Calendar Day as liquidated damages, not as a penalty, but for delay damages to the OWNER.** Such amount shall be deducted by the OWNER from any Contract payment due. In the event of a default or breach by the CONTRACTOR and demand is made upon the surety to complete the project, in accordance with the Contract Documents, the surety shall be liable for liquidated damages pursuant to the Contract Documents in the same manner as the CONTRACTOR would have been.

OWNER reserves the right to reject any or all Bids and to waive any minor informality in any Bid or solicitation procedure (a minor informality is one that does not affect the competitiveness of the Bidders).

The undersigned acknowledges receipt of the following addenda:

- Addendum No. 1 dated _____ Received _____
- Addendum No. 2 dated _____ Received _____
- Addendum No. 3 dated _____ Received _____
- Addendum No. 4 dated _____ Received _____

BID DOCUMENT EXECUTION AND ACKNOWLEDGEMENT:

The undersigned Bidder certifies that he/she has read and understands the Section 00020 Invitation for Bids, the Section 00100 Instructions to Bidders, and all other requirements applicable to the bidding process provided in the Bid and Contract Documents.

Bidder will initial each of the blanks set forth below to represent and certify that the Bidder has completed, executed, and enclosed the corresponding supplemental Bid Documents with its Bid.

Bidder acknowledges and agrees by its signature below that in addition to any signatures required to be set forth in the following supplemental Bid

Documents. Bidder is bound to the terms and conditions of each of the following documents, which are incorporated herein by reference:

_____ 00440 Affidavit - Prohibited Activities

_____ TWDB-0459 Vendor Compliance with Reciprocity of Non-Resident Bidders

_____ 00630 Non-Discrimination and Non-Retaliation Certificate
(NOTE: THIS FORM MUST STILL BE SEPARATELY SIGNED AND PROPERLY NOTARIZED)

_____ MBE/WBE Compliance Document

Secretary, *if Bidder is a Corporation

Bidder

(Seal)

Authorized Signature

Title

Date

Address

Telephone Number / FAX Number

Email Address for Person Signing Bid

Email Address for Bidder's Primary Contact Person

* Copy of Corporate Resolution and minutes with certificate of officer of Bidder as to authority of signatory to bind Bidder is to be signed and dated no earlier than one week before Bid date, and attached to this document.

End

Bidding Requirements, Contract Forms and Conditions of the Contract
STATEMENT OF BIDDERS EXPERIENCE
Section 00400

Project Name: Walnut Creek Wastewater Treatment Plant Tertiary Filter Rehabilitation Project

IFB Number: CLMC 587

CIP ID Number: 3023.025

Bidder's Name: _____

Bidder must complete all Attachments to Section 00400 clearly and comprehensively. If necessary, responses may be continued on separately attached sheets.

To be considered a responsive and responsible bidder, the apparent three (3) low Bidders must complete and submit within three (3) working days of notification of low bidder status Attachments A through L in accordance with Article 11, Section 00100. Any information in Attachments A through L that indicates the Bidder or a "Subcontractor" is not responsible or that might negatively impact a Bidder's ability to complete the Work within the Contract Time and for the Contract Price may result in the Bid being rejected.

The Bidder is responsible for the accuracy and completeness of all of the information provided by the Bidder or a proposed Subcontractor in response to this Invitation for Bids.

POST-BID SUBMITTALS

ATTACHMENT A – BIDDER’S INFORMATION

ATTACHMENT B – EXPERIENCE REQUIREMENTS (GENERAL CONTRACTOR)

ATTACHMENT C – PROJECT MANAGER AND SUPERINTENDENT EXPERIENCE

ATTACHMENT D– EXPERIENCE REQUIREMENTS (SPECIFIC CONSTRUCTION OR TECHNICAL EXPERIENCE)

ATTACHMENT E – AVAILABLE EQUIPMENT

ATTACHMENT F – AVAILABLE WORKFORCE

ATTACHMENT G – CURRENT PROJECTS

ATTACHMENT H – COMPLETED PROJECTS

ATTACHMENT I – PROPOSED SUBCONTRACTORS FORM

ATTACHMENT J – EQUIPMENT QUESTIONNAIRE

ATTACHMENT K – FILTER CONTROL SYSTEM SUPPLIER QUESTIONNAIRE

ATTACHMENT L – BIDDER’S AUTHENTICATION

**ATTACHMENT A
BIDDER'S INFORMATION**

(Complete and return within three (3) days of notification of the three (3) low bidders' status)

IFB Number: CLMC 587

CIP ID Number: 3023.025

A. Name of Bidder: _____

B. Bidder's Permanent Address: _____

C. Bidder's Phone No.: () _____ - _____

D. Number of years in business under current company name: _____

(Note: Bidder must have been in existence for a minimum of one (1) year under its current company name. Changes in company name during the experience period are acceptable, if the continuity of the company can be demonstrated. Attach separate documentation, if applicable.)

If Bidder answers "YES" for any of questions D through G, Bidder must attach separate sheets with a brief description or explanation of the answer and provide pertinent contact information (parties' names, addresses and telephone numbers).

E. Has the Bidder ever defaulted on a contract?

YES (___) NO (___)

F. Are there currently any pending judgments, claims, or lawsuits against the Bidder?

YES (___) NO (___)

G. Does Bidder currently have any pending claims, judgments or lawsuits against any prior client?

YES (___) NO (___)

H. Is the Bidder or its principals involved in any bankruptcy or reorganization proceedings?

YES (___) NO (___)

ATTACHMENT B

EXPERIENCE REQUIREMENTS (GENERAL CONTRACTOR)

(Complete and return within three (3) days of notification of the three (3) low bidders' status)

IFB Number: CLMC 587

CIP ID Number: 3023.025

GENERAL CONTRACTOR EXPERIENCE

Bidder must list and describe Bidder's (not proposed subcontractors') construction experience as a general contractor for a minimum of three (3) successfully completed projects of comparable size, scope and complexity to the Work described in the Contract Documents. Bidders should refer to the 1.2 Description of Work section in contract document 01010 Summary of Work to determine what is reasonably comparable. Decisions on "comparability" are at the complete discretion of the OWNER.

Bidder must have completed the projects within the past ten (10) years.

PROJECT NO. 1:

Name of Project: _____

Location: _____

OWNER's Name and Address: _____

OWNER's Contact Person (Print): _____

Phone/Fax No.: _____ / _____

Initial Contract Price: _____

Final Contract Price: _____

Contract Start Date: _____ (*Date of Notice To Proceed*)

Contract Time: _____ () *Calendar Days* () *Working Days*

Contract Substantial Completion Date: _____

Actual Substantial Completion Date: _____

If contract time extensions were added to the contract as a result of Bidder's responsibilities, provide a short explanation of each.

Project Description and why it is comparable to this Contract:

PROJECT NO. 2:

Name of Project: _____

Location: _____

OWNER's Name and Address: _____

OWNER's Contact Person (Print): _____

Phone/Fax No.: _____ / _____

Initial Contract Price: _____

Final Contract Price: _____

Contract Start Date: _____ (*Date of Notice To Proceed*)

Contract Time: _____ () *Calendar Days* () *Working Days*

Contract Substantial Completion Date: _____

Actual Substantial Completion Date: _____

If contract time extensions were added to the contract as a result of Bidder's responsibilities, provide a short explanation of each.

Project Description and why it is comparable to this Contract:

PROJECT NO. 3:

Name of Project: _____

Location: _____

OWNER's Name and Address: _____

OWNER's Contact Person (Print): _____

Phone/Fax No.: _____ / _____

Initial Contract Price: _____

Final Contract Price: _____

Contract Start Date: _____ (*Date of Notice To Proceed*)

Contract Time: _____ () *Calendar Days* () *Working Days*

Contract Substantial Completion Date: _____

Actual Substantial Completion Date: _____

If contract time extensions were added to the contract as a result of Bidder's responsibilities, provide a short explanation of each.

Project Description and why it is comparable to this Contract:

ATTACHMENT C

PROJECT MANAGER & SUPERINTENDENT EXPERIENCE

(Complete and return within three (3) days of notification of the three (3) low bidders' status)

IFB Number: CLMC 587

CIP ID Number: 3023.025

Bidder must attach resumes for the Project Manager and Superintendent who will be assigned to this project. The resumes must demonstrate that these individuals have worked on at least three (3) similar, successfully completed projects in the capacity of Project Manager or Superintendent, or other responsible supervisory capacity, as applicable, during the last 10 years.

Project Manager (name): _____

Superintendent (name): _____

(Insert Resumes & Experience)

ATTACHMENT D

(Complete and return within three (3) days of notification of the three (3) low bidders' status)

SPECIFIC CONSTRUCTION EXPERIENCE (GENERAL CONTRACTOR OR SUBCONTRACTOR PERFORMING THE WORK)

Bidder must provide the following project history information for each Construction Experience requirement listed below. OWNER may in its reasonable discretion deem the provided experience information insufficient and reject the Bid.

For each Construction Experience item listed below, list and describe the applicable Construction Experience for a minimum of three (3) successfully completed projects of comparable size, scope, and complexity to the Work described for this project. Comparability requirements may be spread among the three (3) projects per item submitted, e.g. One Project may demonstrate comparable size, another Project may demonstrate comparable scope and another may demonstrate comparable complexity. Decisions on "comparability" are at the complete discretion of the OWNER.

The Work must have been performed within the past ten (10) years.

Bidder must provide all requested information in a complete, clear, and accurate manner. If necessary, additional information may be provided on separate attached sheets. Failure to provide any requested information may cause the Bid to be rejected by OWNER as non-responsive.

If the Bidder proposes to fulfill any specific construction experience requirement with subcontracted resources, the applicable Subcontractor must be included in the Bidder's Original MBE/WBE Compliance Plan. Failure to include subcontractors on the MBE/WBE Compliance Plan may render your bid non-responsive.

SPECIFIC CONSTRUCTION EXPERIENCE ITEMS REQUIRED:

- ITEM 1. Large Water/Wastewater treatment plant rehabilitation while maintaining continual operation of existing facility. Experience working in and around existing facilities process areas, operating equipment in various stages of replacement, and the coordination needed to keep different required systems in operation.
- ITEM 2. Electrical construction including coordination of demolition of existing facilities, construction of new systems, and comparable electrical equipment.
- ITEM 3. Mechanical installations including large diameter piping installed in deep engineered excavations. Experience must include installation of PCCP, steel, and DIP piping, valves, gates, and the installation of various types of equipment.
- ITEM 4. Gravity Filter Rehabilitation.

The Bidder shall complete and duplicate the following specific Construction Experience Form as required to provide the requested documentation for a minimum of three (3) successfully completed projects for each of the above specific Construction Experience requirements.

CONSTRUCTION EXPERIENCE DOCUMENTATION FORM

EXPERIENCE ITEM NUMBER: _____

Project Number: _____

Does Bidder plan to self perform this work? YES (____) NO (____)

If "NO", provide the following Subcontractor information:

Company Name: _____

Permanent Address: _____

Phone Number: _____

Number of years Subcontractor has been in business under current company name: _____

Name of Project: _____

Location: _____

OWNER's Name: _____

OWNER's Address: _____

OWNER's Contact Person (Print): _____

Phone/Fax No.: _____ / _____

Initial Contract Price: _____

Final Contract Price: _____

Contract Start Date: _____ (*Date of Notice To Proceed*)

Contract Time: _____ () *Calendar Days* () *Working Days*

Contract Substantial Completion Date: _____

Actual Substantial Completion Date: _____

If contract time extensions were added to the contract as a result of Bidder's responsibilities, provide a short explanation of each.

Project Description and why it is comparable to the size, scope, and/or complexity for this item:

ATTACHMENT E

AVAILABLE EQUIPMENT LIST

(Complete and return within three (3) days of notification of the three (3) low bidders' status)

Name of Bidder: _____

IFB Number: CLMC 587 _____

CIP ID Number: 3023.025 _____

Provide a list of equipment that is available to the CONTRACTOR or its Subcontractor(s) and is specifically intended to be used on the Work under this Contract. Also indicate whether the equipment is owned or will be leased by the CONTRACTOR and/or Subcontractor(s).

<u>EQUIPMENT</u>	<u>OWNED OR LEASED</u>	<u>COMMITTED TO ANOTHER PROJECT?</u>	<u>AVAILABLE / RELEASE DATE</u>
		(Yes / No)	

Use additional pages, as necessary

ATTACHMENT F

AVAILABLE WORKFORCE

(Complete and return within three (3) days of notification of the three (3) low bidders' status)

Name of Bidder: _____

IFB Number: CLMC 587

CIP ID Number: 3023.025

Provide a list of the available workforce for the various disciplines and crafts required for the Work on this Project, including the number of work crews, and number and worker classification for each equipment operator, mechanic, and laborer for that portion of the Work that Bidder will actually perform.

Number of Anticipated Work Crews: _____

<u>DISCIPLINE OR CRAFT</u>	<u>NO. OF EMPLOYEES</u>	<u>COMMITTED TO ANOTHER PROJECT?</u> (Yes / No)	<u>AVAILABLE / RELEASE DATE</u>
----------------------------	-------------------------	--	---------------------------------

Professional (specify)

Superintendent

Technical (specify)

Skilled Workers (specify)

Semiskilled Workers (specify)

Equipment Operators (list)

Other

Other

Use additional pages, as necessary

ATTACHMENT G

CURRENT PROJECT LISTING (INCLUDING ALL CITY OF AUSTIN PROJECTS)

(Complete and return within three (3) days of notification of the three (3) low bidders' status)

Name of Bidder: _____

IFB Number: CLMC 587 _____

CIP ID Number: 3023.025 _____

Provide a list of all current projects, including all City of Austin projects. Include the following for all jobs that Bidder is currently committed to or has currently underway: brief statement regarding the job type; estimated project duration; project contact; and project description.

Name of Project: _____ Location: _____

Type of Job: _____ City of Austin Job? Yes / No

Project Start Date: _____ Estimated Completion Date: _____

Project Contact: _____

Brief Description: _____

Name of Project: _____ Location: _____

Type of Job: _____ City of Austin Job? Yes / No

Project Start Date: _____ Estimated Completion Date: _____

Project Contact: _____

Brief Description: _____

Name of Project: _____ Location: _____

Type of Job: _____ City of Austin Job? Yes / No

Project Start Date: _____ Estimated Completion Date: _____

Project Contact: _____

Brief Description: _____

Name of Project: _____ Location: _____

Type of Job: _____ City of Austin Job? Yes / No

Project Start Date: _____ Estimated Completion Date: _____

Project Contact: _____

Brief Description: _____

Use additional pages, as necessary

ATTACHMENT H

COMPLETED PROJECTS (INCLUDING ALL CITY OF AUSTIN PROJECTS)

(Complete and return within three (3) days of notification of the three (3) low bidders' status)

Name of Bidder: _____

IFB Number: CLMC 587

CIP ID Number: 3023.025

Provide a list of all completed projects, including all City of Austin projects that Bidder has completed in the past five (5) years by calendar year (or life of company if less than five (5) years). Include the following: a brief statement regarding the job type, the estimated project duration, project contact, and project description.

Calendar Year of _____

Name of Project: _____ Location: _____

Type of Job: _____ City of Austin Job? Yes / No

Project Duration: _____ Project Contact: _____

Brief Description: _____

Name of Project: _____ Location: _____

Type of Job: _____ City of Austin Job? Yes / No

Project Duration: _____ Project Contact: _____

Brief Description: _____

Name of Project: _____ Location: _____

Type of Job: _____ City of Austin Job? Yes / No

Project Duration: _____ Project Contact: _____

Brief Description: _____

Name of Project: _____ Location: _____

Type of Job: _____ City of Austin Job? Yes / No

Project Duration: _____ Project Contact: _____

Brief Description: _____

Use additional pages as necessary to achieve a representative listing covering 5 years

**ATTACHMENT I
PROPOSED SUBCONTRACTORS FORM**

(Complete and return within three (3) days of notification of the three (3) low bidders' status)

Name of Bidder: _____

IFB Number: CLMC 587

CIP ID Number: 3023.025

In compliance with the Instructions to Bidders and other Contract Documents, the undersigned submits the following names of Subcontractors to be used in performing the Work for the Walnut Creek WWTP Tertiary Filter Rehabilitation Project. If the Bidder proposes to self perform work listed below insert Not Applicable in the space provided.

Bidder certifies that all Subcontractors listed are eligible to perform the Work.

<u>Subcontractor's Work</u>	<u>Subcontractor's Name</u>
Site Work	_____
Excavation	_____
Concrete	_____
Painting/Coating	_____
Masonry	_____
Mechanical	_____
Electrical	_____
Plumbing	_____
Filter Control System Supplier	_____

In addition to the proposed Subcontractors listed above, the following Subcontractors are proposed for use in performing the Work on subcontracts which will exceed 5 percent of the Contract Price.

_____	_____
_____	_____
_____	_____
_____	_____

Bidder's Signature

**ATTACHMENT J
EQUIPMENT QUESTIONNAIRE**

(Complete and return within three (3) days of notification of the three (3) low bidders' status)

Name of Bidder: _____

IFB Number: CLMC 587 _____

CIP ID Number: 3023.025 _____

The Bidder shall circle the names of the manufacturers of equipment which Bidder proposes to furnish, and shall submit this Equipment Questionnaire with its Bid. Owner will review and evaluate the information before award of the Contract. If "Other" is circled the Bidder shall write in the name of the manufacturer proposed to be evaluated as an Owner approved equal.

Only one manufacturer's name shall be listed for each item of equipment. Upon award of a contract, the named equipment shall be furnished. Substitutions will be permitted only if named equipment does not meet the requirements of the Contract Documents, the manufacturer is unable to meet the delivery requirements of the construction schedule, or the manufacturer is dilatory in complying with the requirements of the Contract Documents. Substitutions shall be subject to concurrence of Owner and shall be confirmed by Change Order.

Preliminary acceptance of equipment listed by manufacturer's name shall not in any way constitute a waiver of the specifications covering such equipment; final acceptance will be based on full conformity with the Contract Documents.

Failure to furnish all information requested or entering more than one manufacturer's name for any item in this Equipment Questionnaire may be cause for rejection of the Bid.

	<u>Equipment</u>	<u>Manufacturer</u>
1.	Filter Control System	Filter Magic Other: _____
2.	Multistage Centrifugal Blowers	Continental Gardner Denver Spencer
3.	Horizontal End Suction Centrifugal Pumps	Goulds Fairbanks Morse Flowserve
4.	AWWA Butterfly Valves	DeZurik Pratt Other: _____
5.	AWWA Butterfly Valve Actuators	Limatorque Rotork
6.	Filter Underdrain System	WesTech Suez

- | | | |
|----|--|--|
| 7. | Cast Iron Slide Gates | Hydro Gate
Rodney Hunt-Fontaine
Waterman
Whipps |
| 8. | Open-Channel Metal Slide Gates
And Weir Gates | Hydro Gate
Rodney Hunt-Fontaine
Waterman
Whipps
Golden Harvest |
| 9. | 480 Volt Motor Control Centers | Square D Company
General Electric Company
Allen-Bradley
Cutler Hammer Corporation
Other: _____ |

ATTACHMENT K

FILTER CONTROL SYSTEM SUPPLIER QUESTIONNAIRE

(Complete and return within three (3) days of notification of the three (3) low bidders' status)

Name of Bidder: _____

IFB Number: CLMC 587 _____

CIP ID Number: 3023.025 _____

The Bidder shall submit with its Bid a copy of this Filter Control System Supplier Questionnaire completed by Bidder's intended Filter Control System Supplier. The completed Questionnaire may be a loose copy attached to the Bid. Owner will review and evaluate the information before award of the Contract.

Upon award of a contract, the named Filter Control System Supplier shall be employed to perform the work and the named equipment shall be furnished, unless changes are specifically authorized by Owner. Substitutions will be permitted only if named equipment does not meet the requirements of the Contract Documents, the manufacturer is unable to meet the delivery requirements of the construction schedule, or the manufacturer is dilatory in complying with the requirements of the Contract Documents. Substitutions shall not be permitted where equipment warranty issues are concerned.

Preliminary acceptance of equipment listed by manufacturer's name shall not in any way constitute a waiver of the specifications covering such equipment; final acceptance will be based on full conformity with the Contract Documents.

Failure to furnish all information requested or entering more than one manufacturer's name for any item in this Instrumentation and Control System Supplier Questionnaire may be cause for rejection of the Bid.

1. Filter Control System Supplier _____

Address _____

Telephone number _____

2. Number of full-time design personnel on staff _____

3. Number of full-time service personnel on staff (not including personnel in Item 2 above) _____

4. Geographic location of service personnel for this Project _____

5. Number of years Supplier has _____
successfully provided
prepackaged filter control
systems and SCADA system
integration services

a. Reference – Project Owner's _____
name

Address _____

Contact person's name and telephone number

Consultant _____

General Contractor _____

Owner _____

General description of
project _____

b. Reference – Project Owner's _____
name

Address _____

Contact person's name and telephone number

Consultant _____

General Contractor _____

Owner _____

General description of
project _____

c. Reference – Project Owner's _____
name

Address _____

Contact person's name and telephone number

Consultant _____

General Contractor _____

Owner _____

General description of project _____

d. Reference – Project Owner's name _____

Address _____

Contact person's name and number

Consultant _____

General Contractor _____

Owner _____

General description of project _____

e. Reference – Project Owner's name _____

Address _____

Contact person's name and telephone number:

Consultant _____

General Contractor _____

Owner _____

General description of project _____

6. Manufacturers of principal devices for use on this Project (one manufacturer only for each item)

- a. **Prepackaged Filter Control System** _____
- b. **Control system hardware** _____
- c. **Control system application software** _____
- d. **Historical application software** _____
- e. **Programmable logic controllers** _____
- f. **Magnetic flowmeters** _____
- g. **Pressure and differential pressure transmitters** _____
- h. **Ultrasonic level and flow transmitters** _____
- i. **Low range turbidimeters analyzers** _____
- j. **Filter media level/turbidity combination analyzers** _____
- k. **Ethernet switches** _____
- l. **Valve actuators** _____
- m. **Valves** _____

ATTACHMENT L
BIDDERS AUTHENTICATION

(Complete and return within three (3) days of notification of the three (3) low bidders' status)

Name of Bidder: _____

IFB Number: CLMC 587 _____

CIP ID Number: 3023.025 _____

THE STATE OF TEXAS

COUNTY OF TRAVIS

I certify that my responses and the information provided in Attachments A-K are true and correct to the best of my personal knowledge and belief and that I have made no willful misrepresentations in this Section, nor have I withheld any relevant information in my statements and answers to questions. I am aware that any information given by me in this Section may be investigated and I hereby give my full permission for any such investigation and I fully acknowledge that any misrepresentations or omissions in my responses and information may cause my bid to be rejected.

Bidder's full name and entity status:

Company's Name

Signature, Authorized Representative of Bidder

Title

Date

Bidding Requirements, Contract Forms and Conditions of the Contract
CERTIFICATE OF NON-SUSPENSION OR DEBARMENT
Section 00405

The City of Austin is prohibited from contracting with or making prime or sub-awards to parties that are suspended or debarred or whose principals are suspended or debarred from Federal, State, or City of Austin Contracts. Covered transactions include procurement contracts for goods or services equal to or in excess of \$25,000.00 and all non-procurement transactions. This certification is required for all bidders on all City of Austin Contracts to be awarded with values equal to or in excess of \$25,000.00 and all non-procurement transactions.

The CONTRACTOR hereby certifies that its firm and its principals are not currently suspended or debarred from bidding on any Federal, State, or City of Austin Contracts.

PROJECT Name **Walnut Creek Wastewater Treatment Plant Tertiary Filter Rehab Project**

PROJECT Address 7113 FM 969, Austin, TX 78724

CONTRACTOR'S Name _____

Signed by (Authorized Representative) _____

Printed Name: _____

Title _____

Date _____

END

SAFETY RECORD QUESTIONNAIRE
& STATEMENT OF BIDDER'S SAFETY EXPERIENCE
(To Be Submitted Post-Bid)

Project: Walnut Creek Wastewater Treatment Plant Tertiary Filter Rehabilitation Project

CIP ID Number: 3023.025

IFB Number: 587

Pursuant to Section 252.0435 of the Local Government Code, the Austin City Council will consider the safety records of potential contractors prior to awarding bids on City contracts. The City of Austin has adopted the following written definitions and criteria for accurately determining the safety record of a Bidder prior to awarding bids on City contracts. The term "Bidder" includes the firm, corporation, partnership, or other legal entity represented by the Bidder or anyone acting for such firm, corporation, partnership or other entity submitting the bid. The definitions and criteria for determining the safety record of a Bidder are:

"Citations" include notices of violation, notices of enforcement, suspension/revocations of state or federal licenses or registrations, fines assessed pending criminal complaints, indictments, or convictions, administrative orders, draft orders, final orders, and judicial final judgments. Notice of Violations and Notice of Enforcement received from the TCEQ shall include those classified as major violations and moderate violations under the TCEQ'S regulations for documentation of Compliance History, 30 Texas Administrative Code, Chapter 60.2 (c) (1) and (2).

"Environmental Protection Agency" includes, but is not limited to the Texas Commission on Environmental Quality (TCEQ), the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, the Texas Department of Health, the Texas Parks and Wildlife Department, the Structural Pest Control Service, agencies of local governments responsible for enforcing environmental protection laws or regulations, and similar regulatory agencies of other states of the United States.

1. If the Bidder's response to the following questions reveals more than two (2) cases in which final orders have been entered by the Occupational Safety and Health Review Commission (OSHRC) against the Bidder for serious violations of Occupational Safety & Health Administration (OSHA) regulations within the past five (5) years, the City will, at its discretion, determine whether to disqualify the Bidder.
2. If the Bidder's response to the following questions reveals more than one (1) case in which Bidder has received a citation or for which final orders have been entered from an environmental protection agency for violations within the past five (5) years, the City will, at its discretion, determine whether to disqualify the Bidder.
3. If the Bidder's response to the following questions reveals that the Bidder has been convicted of a criminal offense within the past ten (10) years or has been subject to a judgment for a negligent act or omission, which resulted in serious bodily harm or death, at its discretion, the City will determine whether to disqualify the Bidder.
4. The City may consider the responses to each question listed below separately when making a discretionary determination of whether to disqualify a Bidder and it may consider the cumulative impact of the information generated by the Bidder's responses in making the determination.

5. The Bidder acknowledges the requirements for Safety Training (listed in Section 00700) must be met before any work commences on the project.
6. In order to consider the safety records of potential contractors prior to awarding bids on City contracts, the City requires that Bidders answer the following questions and submit them upon request:

QUESTION ONE

Has the Bidder received any Citations for violations of OSHA within the past five (5) years? Yes No

QUESTION TWO

Has the Bidder received any Citations for violations of environmental protection laws or regulations within the past five (5) years? Yes No

QUESTION THREE

Has the Bidder ever been convicted, within the past ten (10) years, of a criminal offense or has been subject to a judgment for a negligent act or omission, which resulted in serious bodily injury or death? Yes No

If the Bidder has indicated "Yes" to any question above, the Bidder must provide to the City, with its bid submission, the following information:

Date of Citation or offense and location where violation or offense occurred, type of violation or offense, final disposition of violation or offense, if any, and penalty assessed.

In addition, the City will utilize the following information and in its discretion, as additional support to make any discretionary determination of whether to disqualify a Bidder. Accordingly, Bidder must answer the following questions and provide evidence that it meets minimum OSHA construction safety standards and has a lost time injury rate that does not exceed the limits established below:

1. Does the Bidder have a written construction safety program? Yes No
2. Does the Bidder conduct regular construction site safety inspections? Yes No
3. Does the Bidder have an active construction safety training program? Yes No
4. Does the Bidder or affected subcontractors have competent persons in the following areas (as applicable to the scope of the current Project):
 - A. Scaffolding Yes No N/A
 - B. Excavation Yes No N/A
 - C. Cranes & Hoists Yes No N/A
 - D. Electrical Yes No N/A
 - E. Fall Protection Yes No N/A
 - F. Confined Spaces Yes No N/A
 - G. Material Handling Yes No N/A
 - H. Demolition Yes No N/A
 - I. Steel Erection Yes No N/A
 - J. Underground Construction Yes No N/A

- 5. Does the company have a lost time injury rate and a total recordable injury rate of less than or equal to the national average for North American Industrial Classification System (NAICS) Category 23 for each of the past five (5) years? (Attach the Bidder's OSHA 300 and 300A logs for the past five (5) years) Yes No

- 6. Does the Bidder have an experience modifier rate of 1.0 or less? (Attach the Bidder's NCCI workers compensation experience rating sheets for the past five (5) years) Yes No

- 7. Has the Bidder had any OSHA inspections within the past six (6) months? Yes No
(If "YES", provide sufficient documentation to indicate the nature of the inspection, the findings, and magnitude of the issues.)

ACKNOWLEDGEMENT

THE STATE OF TEXAS

COUNTY OF TRAVIS

I certify that my responses and the information provided are true and correct to the best of my personal knowledge and belief and t

hat I have made no willful misrepresentations in this Questionnaire, nor have I withheld any relevant information in my statements and answers to questions. I am aware that any information given by me in this questionnaire may be investigated and I hereby give my full permission for any such investigation and I fully acknowledge that any misrepresentations or omissions in my responses and information may cause my bid to be rejected.

Bidder's full name and entity status:

Company's Name

Signature, Authorized Representative of Bidder

Title

Date

END

Bidding Requirements, Contract Forms and Conditions of the Contract
AFFIDAVIT - PROHIBITED ACTIVITIES
Section 00440

CITY OF AUSTIN
BIDDER'S AFFIDAVIT OF NON-COLLUSION,
NON-CONFLICT OF INTEREST, AND ANTI-LOBBYING FOR
IFB NO. 587
FOR

Walnut Creek Wastewater Treatment Plant Tertiary Filter Rehabilitation Project

CIP ID Number: 3023.025

State of Texas

County of Travis

The undersigned "Affiant" is a duly authorized representative of the bidder for the purpose of making this Affidavit, and, after being first duly sworn, has deposed and stated and hereby deposes and states, to the best of his or her personal knowledge and belief as follows:

The term "**Bidder**", as used herein, includes the individual or business entity submitting the bid and for the purpose of this Affidavit includes the directors, officers, partners, managers, members, principals, owners, agents, representatives, employees, other parties in interest of the Bidder, and anyone or any entity acting for or on behalf of the Bidder, including a subcontractor in connection with this bid.

The terms "**City**" and "**Owner**" are synonymous.

1. **Anti-Collusion Statement.** The Bidder has not and will not in any way directly or indirectly:
 - a. colluded, conspired, or agreed with any other person, firm, corporation, bidder or potential bidder to the amount of this bid or the terms or conditions of this bid.
 - b. paid or agreed to pay any other person, firm, corporation bidder or potential bidder any money or anything of value in return for assistance in procuring or attempting to procure a contract or in return for establishing the prices in the attached bid or the bid of any other bidder.
2. **Preparation of Invitation for Bid and Contract Documents.** The Bidder has not received any compensation or a promise of compensation for participating in the preparation or development of the underlying bid or contract documents., In addition, the Bidder has not otherwise participated in the preparation or development of the underlying bid or contract documents, except to the extent of any comments or questions and responses in the bidding process, which are available to all bidders, so as to have an unfair advantage over other bidders, provided that the Bidder may have provided relevant product or process information to a consultant in the normal course of its business.
3. **Participation in Decision Making Process.** The Bidder has not participated in the evaluation of bids or proposals or other decision making process for this solicitation, and, if Bidder is awarded a contract hereunder, no individual, agent, representative, consultant or sub contractor or consultant associated with Bidder, who may have been involved in the evaluation or other decision making process for this solicitation, will have any direct or indirect financial interest in the Contract, provided that the Bidder may have provided relevant product or process information to a consultant in the normal course of its business.
4. **Present Knowledge.** Bidder is not presently aware of any potential or actual conflicts of interest regarding this solicitation, which either enabled Bidder to obtain an advantage over other bidders or would

prevent Bidder from advancing the best interests of OWNER in the course of the performance of the Contract.

- 5. **City Code.** As provided in Sections 2-7-61 through 2-7-65 of the City Code, no individual with a substantial interest in Bidder is a City official or employee or is related to any City official or employee within the first or second degree of consanguinity or affinity.
- 6. **Chapter 176 Conflict of Interest Disclosure.** In accordance with Chapter 176 of the Texas Local Government Code, the Bidder:
 - a. does not have an employment or other business relationship with any local government officer of OWNER or a family member of that officer that results in the officer or family member receiving taxable income;
 - b. has not given a local government officer of OWNER one or more gifts, other than gifts of food lodging transportation or entertainment accepted as a guest, that have an aggregate value of more than \$100 in the twelve month period preceding the date the officer becomes aware of the execution of the Contract or that OWNER is considering doing business with the Bidder; and
 - c. does not have a family relationship with a local government officer of OWNER in the third degree of consanguinity or the second degree of affinity.

As required by Chapter 176, Bidder must file the Conflicts of Interest Questionnaire with the Purchasing Department no later than the seventh business day after the commencement of contract discussions or negotiations with the City or the submission of a Bid, response to a request for proposals, or other writing related to a potential contract with OWNER. The questionnaire must be updated not later than the seventh day after the date of an event that would make a statement in the questionnaire inaccurate or incomplete. There are statutory penalties for failure to comply with Chapter 176.

- 7. **Anti-Lobbying Ordinance.** As set forth in paragraph 1.i. of the Instructions to Bidders Section 00100, between the date that the Invitation for Bid was issued and the date of full execution of the Contract, Bidder has not made and will not make a representation to a member of the City Council, a member of a City Board, or any other official, employee or agent of the City, other than the authorized contact person for the solicitation, except as permitted by the Ordinance.

If the Bidder cannot affirmatively swear and subscribe to the forgoing statements, the Bidder shall provide a detailed written explanation in the space provided below or, as necessary, on separate pages to be annexed hereto.

Signature: _____ Date: _____

Printed Name: _____

Title: _____

Firm/Entity: _____

Subscribed and sworn to before me this ____ day of _____, 20__.

Notary Public My Commission Expires _____

BIDDER'S EXPLANATION:

END

Bidding Requirements, Contract Forms and Conditions of the Contract
AGREEMENT SECTION
Section 00500

STATE OF TEXAS
COUNTY OF TRAVIS

THIS AGREEMENT is made and entered into this _____ day of _____, 20____, by and between the City of Austin, Texas, a municipal corporation, organized and existing under laws of State of Texas, acting through its City Manager or other duly authorized designee, hereinafter referred to as the "OWNER," and _____, of the City of _____, County of _____, and State of _____, hereinafter referred to as the "CONTRACTOR."

In consideration of the promises, performances, payments and agreements set forth herein CONTRACTOR hereby agrees to commence and complete the following Project:

Walnut Creek Wastewater Treatment Plant Tertiary Filter Rehabilitation Project

and all Work in accordance with the Project Manual, Drawings and Addenda, which are incorporated herein by reference and made a part hereof and which have been prepared by **City of Austin** and approved by OWNER, and OWNER agrees to pay the CONTRACTOR the total amount of:

\$ _____
(Figures) (Words)

The CONTRACTOR hereby agrees to commence work on the date specified in the written "Notice to Proceed" to be issued by the OWNER and to **substantially** complete construction of the improvements, as required by the Project Manual, Drawings and Addenda for the Work within **one thousand and ninety-five (1095) Calendar Days**. **If a Substantial Completion date has been specified, the CONTRACTOR further agrees to reach Final Completion within thirty (30) Calendar Days after Substantial Completion as required by the Project Manual, Drawings and Addenda for the work.** Waiver of any breach of this Contract shall not constitute waiver of any subsequent breach.

In consideration of the award and execution of this Contract, and in consideration of the waiver of its right to attorney's fees by the OWNER, the CONTRACTOR knowingly and intentionally waives its right to attorney's fees under Section 271.153 of the Texas Local Government Code in any administrative proceeding, alternative dispute resolution proceeding, or litigation arising out of or connected to this Contract.

OWNER agrees to pay CONTRACTOR from available funds for performance of the Contract in accordance with the Bid and the provisions of the Contract Documents, subject to additions and deductions, as provided therein.

The OWNER's payment obligations are payable only and solely from funds available for the purposes of this Agreement.

Although drafted by OWNER, this Agreement, in event of any disputes over its meaning or application, shall be interpreted fairly and reasonably, and neither more strongly for nor against either party.

OWNER

§ CONTRACTOR
§

By: _____
City of Austin (Signature)

Date

Title of Signatory

APPROVED AS TO FORM:

By: _____
Law Department

Date

§ By: _____
§ (Signature)
§ _____
§ Date

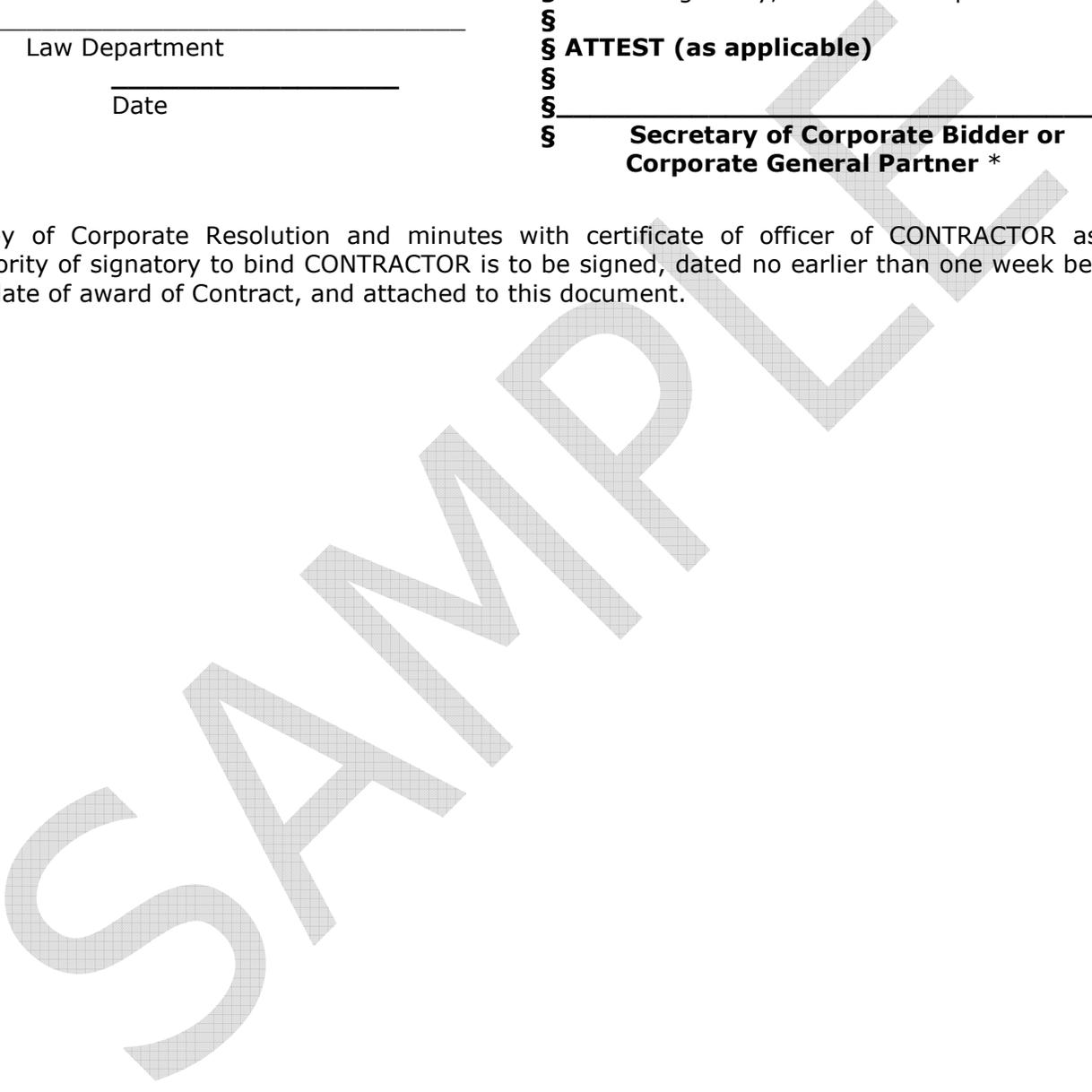
§ _____
§ Printed Name of Signatory

§ _____
§ Title of Signatory, Authorized Representative

§ **ATTEST (as applicable)**
§ _____
§ **Secretary of Corporate Bidder or**
§ **Corporate General Partner ***

*Copy of Corporate Resolution and minutes with certificate of officer of CONTRACTOR as to authority of signatory to bind CONTRACTOR is to be signed, dated no earlier than one week before the date of award of Contract, and attached to this document.

END



Bidding Requirements, Contract Forms and Conditions of the Contract
PERFORMANCE BOND
Section 00610

STATE OF TEXAS
COUNTY OF _____

Bond No. _____
C.I.P. ID No. 3023.025

Project Name **Walnut Creek Wastewater Treatment Plant Tertiary Filter Rehabilitation Project**

Know All Men By These Presents: That _____
of the City of _____, County of _____, and
State of _____, as Principal, and _____, a
solvent company authorized under laws of the State of Texas to act as surety on bonds for
principals, are held and firmly bound unto _____
(OWNER), in the penal sum of _____

_____ U.S. Dollars (\$ _____ U.S.) for
payment whereof, well and truly to be made, said Principal and Surety bind themselves and their
heirs, administrators, executors, successors and assigns, jointly and severally, by these presents:

Conditions of this Bond are such that, whereas, Principal has entered into a certain written contract
with OWNER, dated the _____ day of _____, _____, which
Agreement is hereby referred to and made a part hereof as fully and to the same extent as if
copied at length herein.

Now, therefore, the condition of this obligation is such, that if said Principal shall faithfully perform
said Agreement and shall in all respects duly and faithfully observe and perform all and singular
covenants, conditions and agreements in and by said contract agreed and covenanted by Principal
to be observed and performed, and according to true intent and meaning of said Agreement hereto
annexed, then this obligation shall be void; otherwise to remain in full force and effect. If OWNER
notifies Principal and Surety the OWNER is considering declaring Principal in default, Surety agrees
to meet with OWNER and Principal no later than fifteen days after receipt of such notice to discuss
methods of performing the Work of the Contract.

Provided, however, that this bond is executed pursuant to provisions of Chapter 2253, Texas
Government Code as amended and all liabilities on this bond shall be determined in accordance
with provisions of said Article to same extent as if it were copied at length herein.

Surety, for value received, stipulates and agrees that no change in Contract Time or Contract
Amount shall in anywise affect its obligation on this bond, and it does hereby waive notice of any
such change in Contract Time or Contract Amount.

In witness whereof, said Principal and Surety have signed and sealed this instrument this
_____ day of _____, _____.

Principal

Surety

By _____
(Signature)

By _____
(Signature)

Title _____

Title _____

Address _____

Address _____

Telephone _____ Fax _____

E-Mail Address _____

Name and address of Resident Agent of Surety:

Note: Bond shall be issued by a solvent Surety company authorized to do business in Texas, and shall meet any other requirements established by law or by OWNER pursuant to applicable law. A copy of surety agent's "Power of Attorney" must be attached hereto.

END

Telephone _____ Fax _____

E-Mail Address _____

Name and address of Resident Agent of Surety:

Note: Bond shall be issued by a solvent Surety company authorized to do business in Texas, and shall meet any other requirements established by law or by OWNER pursuant to applicable law. A copy of surety agent's "Power of Attorney" must be attached hereto.

END

Bidding Requirements, Contract Forms and Conditions of the Contract
NON-DISCRIMINATION AND NON-RETALIATION CERTIFICATE
Section 00630

CIP ID Number:

City of Austin, Texas
Equal Employment/Fair Housing Office

To: City of Austin, Texas, ("OWNER")

I hereby certify that our firm conforms to the Code of the City of Austin Section 5-4-2 as reiterated below:

Chapter 5-4. Discrimination in Employment by City Contractors.

Sec. 4-2 Discriminatory Employment Practices Prohibited. (B) As an Equal Employment Opportunity (EEO) employer, the Contractor will conduct its personnel activities in accordance with established federal, state and local EEO laws and regulations and agrees:

- (1) Not to engage in any discriminatory employment practice defined in this chapter.
- (2) To take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without discrimination being practiced against them as defined in this chapter. Such affirmative action shall include, but not be limited to: all aspects of employment, including hiring, placement, upgrading, transfer, demotion, recruitment, recruitment advertising; selection for training and apprenticeship, rates of pay or other forms of compensation, and layoff or termination.
- (3) To post in conspicuous places, available to employees and applicants for employment, notices to be provided by OWNER setting forth the provisions of this chapter.
- (4) To state in all solicitations or advertisements for employees placed by or on behalf of Contractor, that all qualified applicants will receive consideration for employment without regard to race, creed, color, religion, national origin, sexual orientation, gender identity, disability, veteran status, sex or age.
- (5) To obtain a written statement from any labor union or labor organization furnishing labor or service to Contractors in which said union or organization has agreed not to engage in any discriminatory employment practices as defined in this chapter and to take affirmative action to implement policies and provisions of this chapter.
- (6) To cooperate fully with OWNER's Equal Employment/Fair Housing Office in connection with any investigation or conciliation effort of said Equal Employment/Fair Housing Office to ensure that the purpose of the provisions against discriminatory employment practices are being carried out.
- (7) To require compliance with provisions of this chapter by all subcontractors having fifteen or more employees who hold any subcontract providing for expenditure of \$2,000.00 or more in connection with any contract with OWNER subject to the terms of this chapter. .

For the purposes of this Bid and any resulting Contract, Contractor adopts the provisions of the City's Minimum Standard Nondiscrimination and Non-Retaliation Policy as set forth below.

City of Austin

Minimum Standard Non-Discrimination and Non-Retaliation in Employment Policy

As an Equal Employment Opportunity (EEO) employer, the Contractor will conduct its personnel activities in accordance with established federal, state and local EEO laws and regulations.

The Contractor will not discriminate against any applicant or employee based on race, creed, color, national origin, sex, age, religion, veteran status, gender identity, disability, or sexual orientation. This policy covers all aspects of employment, including hiring, placement, upgrading, transfer, demotion, recruitment, recruitment advertising, selection for training and apprenticeship, rates of pay or other forms of compensation, and layoff or termination.

The Contractor agrees to prohibit retaliation, discharge or otherwise discrimination against any employee or applicant for employment who has inquired about, discussed or disclosed their compensation.

Further, employees who experience discrimination, sexual harassment, or another form of harassment should immediately report it to their supervisor. If this is not a suitable avenue for addressing their complaint, employees are advised to contact another member of management or their human resources representative. No employee shall be discriminated against, harassed, intimidated, nor suffer any reprisal as a result of reporting a violation of this policy. Furthermore, any employee, supervisor, or manager who becomes aware of any such discrimination or harassment should immediately report it to executive management or the human resources office to ensure that such conduct does not continue.

Contractor agrees that to the extent of any inconsistency, omission, or conflict with its current non-discrimination and non-retaliation employment policy, the Contractor has expressly adopted the provisions of the City's Minimum Non-Discrimination Policy contained in Section 5-4-2 of the City Code as set forth above and the City's Non-Retaliation Policy, as the Contractor's Non-Discrimination and Non-Retaliation Policy or as an amendment to such Policy and such provisions are intended to not only supplement the Contractor's policy, but will also supersede the Contractor's policy to the extent of any conflict.

UPON CONTRACT AWARD, THE CONTRACTOR SHALL PROVIDE A COPY TO THE CITY OF THE CONTRACTOR'S NON-DISCRIMINATION AND NON-RETALIAITON POLICY ON COMPANY LETTERHEAD, WHICH CONFORMS IN FORM, SCOPE, AND CONTENT TO THE CITY'S MINIMUM NON-DISCRIMINATION AND NON-RETALIATION POLICY, AS SET FORTH HEREIN, OR THIS NON-DISCRIMINATION AND NON-RETALIATION POLICY, WHICH HAS BEEN ADOPTED BY THE CONTRACTOR FOR ALL PURPOSES (THE FORM OF WHICH HAS BEEN APPROVED BY THE CITY'S EQUAL EMPLOYMENT/FAIR HOUSING OFFICE), WILL BE CONSIDERED THE CONTRACTOR'S NON-DISCRIMINATION AND NON-RETALIATION POLICY WITHOUT THE REQUIREMENT OF A SEPARATE SUBMITTAL. (<http://austintexas.gov/page/bid-docs>).

Sanctions:

Our firm understands that non-compliance with Chapter 5-4 may result in sanctions, including termination of the contract and suspension or debarment from participation in future City contracts until deemed compliant with the requirements of Chapter 5-4.

Term:

The Contractor agrees that this Section 00630 Non-Discrimination and Non-Retaliation Certificate or the Contractor's separate conforming policy, which the Contractor has executed and filed with the Owner, will remain in force and effect for one year from the date of filing. The Contractor further agrees that, in consideration of the receipt of continued Contract payments, the Contractor's Non-Discrimination Policy will automatically renew from year-to-year for the term of the underlying Contract.

Dated this _____ day of _____, _____.

CONTRACTOR _____

Authorized Signature _____

Title _____

END

Bidding Requirements, Contract Forms and Conditions of the Contract
TITLE VI ASSURANCES APPENDIX A
Section 00631

During the performance of this contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. Compliance with Regulations: The contractor shall comply with the Regulations relative to nondiscrimination in Federally-assisted programs of the Department of Transportation (hereinafter, "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.
2. Nondiscrimination: The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.
3. Solicitations for Subcontracts, Including Procurements of Materials and Equipment: In all solicitations either by competitive bidding or negotiation made by the contract for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.
4. Information and Reports: The contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its book, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the Texas Department of Transportation to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information the contractor shall so certify to the Recipient, or the Texas Department of Transportation as appropriate, and shall set forth what efforts it has made to obtain the information.
5. Sanctions for Noncompliance: In the event of the contractor's noncompliance with the nondiscrimination provisions of this contract, the Recipient shall impose such contract sanctions as it or the Texas Department of Transportation may determine to be appropriate, including, but not limited to:
 - (a) withholding of payments to the contractor under the contract until the contractor complies, and or
 - (b) cancellation, termination or suspension of the contract, in whole or in part.
6. Incorporation of Provisions: The contractor shall include the provisions of paragraphs (1) through (6) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. The contractor shall take such action with respect to any subcontract or procurement as the Recipient or the Texas Department of Transportation may direct as a means of enforcing such provisions including sanctions for non-compliance: Provided, however, that, in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the contractor may request the Recipient to enter into such litigation to protect the

interests of the Recipient, and, in addition, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

(DOT 1050.2, 08/24/71)

Contractor's full name and entity status:

Signature, Authorized Representative of Contractor

Title

Date

END

Bidding Requirements, Contract Forms and Conditions of the Contract
CERTIFICATE OF INSURANCE
 Section 00650

This Certificate shall be completed by a licensed insurance agent:

Name and Address of Agency: _____

Phone: _____ / _____

Name and Address of Insured: _____

Phone: _____ / _____

Prime or Sub-Contractor?: _____

Name of Prime Contractor, if different from Insured: _____

City of Austin Reference:

Project Name: **Walnut Creek Wastewater Treatment Plant Tertiary Filter Rehabilitation Project**

C.I.P. No.: **3023.025**

Project Location: **7113 FM 969, Austin, Texas 78724**

Managing Dept.: **Public Works**

Contract No.: _____

Project Mgr.: **Steve Parks**

Insurers Affording Coverages:

Insurer A: _____

Insurer B: _____

Insurer C: _____

Insurer D: _____

INSR LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFE- CTIVE DATE (MM/DD/YYYY)	POLICY EXPIR- ATION DATE (MM/DD/YYYY)	LIMITS OF LIABILITY	
	Commercial General Liability Policy As defined in the Policy, does the Policy provide:				Each Occurrence	\$
					General Aggregate	\$
	<input type="checkbox"/> Yes <input type="checkbox"/> No -- Completed Operations/Products				Completed Operations /Products Aggregate	\$
	<input type="checkbox"/> Yes <input type="checkbox"/> No -- Contractual Liability				Personal & Advertising Injury	\$
	<input type="checkbox"/> Yes <input type="checkbox"/> No -- Explosion				Deductible or Self Insured Retention	\$
	<input type="checkbox"/> Yes <input type="checkbox"/> No -- Collapse					
	<input type="checkbox"/> Yes <input type="checkbox"/> No -- Underground					
	<input type="checkbox"/> Yes <input type="checkbox"/> No -- Contractors/ Subcontractors Work					
	<input type="checkbox"/> Yes <input type="checkbox"/> No -- Aggregate Limits per Project Form CG 2503					
	<input type="checkbox"/> Yes <input type="checkbox"/> No -- Additional Insured Form – CG 2010					
	<input type="checkbox"/> Yes <input type="checkbox"/> No -- 30 Day Notice of Cancellation Form – CG 0205					
<input type="checkbox"/> Yes <input type="checkbox"/> No -- Waiver of Subrogation Form – CG 2404						
	Pollution/ Environmental Impairment Policy				Occurrence	\$
					Aggregate	\$

Bidding Requirements, Contract Forms and Conditions of the Contract
TEXAS SALES AND USE TAX EXEMPTION CERTIFICATE
Section 00670

City of Austin, Texas
P.O. Box 1088
Austin, Texas 78767

CONTRACTOR/PURCHASER: _____		
Street Address: _____		
City, State, ZIP Code: _____		
PROJECT: <u>Walnut Creek Wastewater Treatment Plant Tertiary Filter Rehabilitation Project</u>		
Project Manager: <u>Steve Parks</u>		
FDU No.: <u>4480 2307 8235</u>		
CIP ID No. <u>3023.025</u>		
Description of items to be purchased or as described on the attached order or invoice: _____ _____		
The Contractor may purchase all labor, materials, supplies, and equipment to be incorporated in the City of Austin realty, including easements, or completely consumed at the Project jobsite and services required by or integral to the performance of the contract for the Project without paying sales or use tax in accordance with State Comptroller Rule 3.291.		
Contractor/Purchaser claims this exemption for the following reason: This contract is to be performed for the City of Austin, a tax exempt entity under the Texas Tax Code.		
I understand that I will be liable for payment of sales and use taxes which may become due for failure to comply with the provisions of the Tax Code. I also understand that it is a criminal offense to give an exemption certificate to the contractor for taxable items that I know, at the time of purchase, will be used in a manner other than that expressed in this certificate and depending on the amount of tax evaded, the offense may range from a Class B misdemeanor to a felony of the second degree.		

City of Austin, Texas	Title	Date
 ELAINE HART	CHIEF FINANCIAL OFFICER	March 20, 2014

CONTRACTOR/PURCHASER: _____

By: _____

Title: _____

Date: _____

NOTE: This certificate cannot be issued for the purchase, lease, or rental of a motor vehicle. THIS CERTIFICATE DOES NOT REQUIRE A NUMBER TO BE VALID. Sales and Use Tax "Exemption Numbers" or "Tax Exempt" Numbers do not exist. This certificate should be furnished to the supplier. Do not send the completed certificate to the Comptroller of Public Accounts.

End

Bidding Requirements, Contract Forms and Conditions of the Contract
NON-USE OF ASBESTOS AFFIDAVIT (CONTRACTOR PRIOR TO
CONSTRUCTION)
Section 00680

STATE OF TEXAS
COUNTY OF TRAVIS

BEFORE ME, the undersigned authority, personally appeared the Affiant who, being by me first duly sworn, upon oath deposed and stated:

"My name is _____, hereinafter known as Affiant.

"I am over the age of 18 years and I have never been convicted of a crime. I am the _____ of _____ hereinafter known as CONTRACTOR.

"I am fully competent to make this affidavit. I have personal knowledge of the facts set forth below and they are all true and correct.

"WHEREAS CONTRACTOR has submitted a bid to the City of Austin as the Prime CONTRACTOR and anticipates being awarded a contract for the construction of _____, located at _____, Austin, Texas, hereinafter known as Project, for the City of Austin, Texas, hereinafter known as OWNER, and

"WHEREAS asbestos in a dust form is a recognized health hazard, and

"WHEREAS the OWNER desires not to have any asbestos containing materials used or incorporated into the construction of the Project;

"THEREFORE the CONTRACTOR affirms and understands the following:

1. The CONTRACTOR, any person, firm or organization representing or represented by the CONTRACTOR, or employed by the CONTRACTOR shall not cause or allow any material to be incorporated into the construction of the project, or allow any building material on the project site that is an asbestos containing material or any other material defined as containing asbestos by any laws, rules or regulations promulgated by the United States Government, the State of Texas or any governmental organization or agency operating under the authority of either of those entities.
2. Realizing that there might be some materials in which a satisfactory non-asbestos containing material could not be obtained, the Consultant has received prior approval from the OWNER before specifying any such asbestos containing material. Those approved materials are the only asbestos containing materials that are exempt from the above prohibition.
3. The CONTRACTOR certifies and affirms their understanding that if any asbestos containing materials not approved by the City of Austin for inclusion into the Project, are determined, as a result of any inspection and sample analysis performed by an individual(s) and/or firm(s) certified and/or licensed to perform such inspection by the United States Government and/or the State of Texas, to have been incorporated into the construction of the Project, or brought onto the site of the Project, the OWNER shall look to the CONTRACTOR for reimbursement of any and all costs incurred in the removal and/or other abatement of said asbestos containing materials.

Non-Use of Asbestos Affidavit (Contractor Prior to Construction) / 00680

4. CONTRACTOR further understands that OWNER shall also look to the CONTRACTOR for any and all damages to OWNER which result from the inability of the OWNER to use any portion or all of the Project due to the incorporation of asbestos containing materials that have not been approved by OWNER.
5. CONTRACTOR further understands that OWNER will pursue reimbursement of any said cost and compensation for any said damages from the CONTRACTOR by any and every means within OWNER's right and power.

Signature of Affiant: _____

**STATE OF TEXAS
COUNTY OF TRAVIS**

ON _____, 20____, personally appeared _____
_____ and been duly sworn by me, subscribed to the
foregoing affidavit and has stated that the facts stated therein are true and correct.

Notary Public, State of Texas

Printed Name of Notary

My Commission Expires: _____

End

**Bidding Requirements, Contract Forms and Conditions of the Contract
NON-USE OF ASBESTOS AFFIDAVIT (CONTRACTOR AFTER
CONSTRUCTION)**

Section 00681

**STATE OF TEXAS
COUNTY OF TRAVIS**

BEFORE ME, the undersigned authority, personally appeared the Affiant who, being by me first duly sworn, upon oath deposed and stated:

"My name is _____, hereinafter known as Affiant.

"I am over the age of 18 years and I have never been convicted of a crime. I am the _____ of _____ hereinafter known as CONTRACTOR.

"I am fully competent to make this affidavit. I have personal knowledge of the facts set forth below and they are all true and correct.

"WHEREAS CONTRACTOR was awarded a Contract for, and was the Prime CONTRACTOR for the construction of _____, located at _____, Austin, Texas, hereinafter known as Project, for the City of Austin, Texas, hereinafter known as OWNER, and

"WHEREAS asbestos in a dust form is a recognized health hazard, and

"WHEREAS the OWNER desires not to have any asbestos containing materials used or incorporated into the construction of the Project;

"THEREFORE the CONTRACTOR affirms and understands the following:

1. The CONTRACTOR, any person, firm or organization representing or represented by the CONTRACTOR, or employed by the CONTRACTOR has not caused or allowed any material to be incorporated into the construction of the project, or allowed any building material on the project site that is an asbestos containing material or any other material defined as containing asbestos by any laws, rules or regulation promulgated by the United States Government, the State of Texas or any governmental organization or agency operating under the authority of either of those entities.
2. Realizing that there were some materials in which a satisfactory non-asbestos containing material could not be obtained, the Consultant received prior approval from the OWNER before specifying any such asbestos containing material. Those approved materials were the only asbestos containing materials incorporated into the construction of the Project and are listed below, with their locations:

3. The CONTRACTOR certifies and affirms their understanding that if any asbestos containing materials not approved by the City of Austin for inclusion into the Project, are determined, as a result of any inspection and sample analysis performed by an individual(s) and/or firm(s) certified and/or licensed to perform such inspection by the United States Government and/or the State of Texas, to have been incorporated into the

Non-Use of Asbestos Affidavit (Contractor After Construction) / 00681

construction of the Project, or brought onto the site of the Project, the OWNER shall look to the CONTRACTOR for reimbursement of any and all costs incurred in the removal and/or other abatement of said asbestos containing materials.

4. CONTRACTOR further understands that OWNER shall also look to the CONTRACTOR for any and all damages to OWNER which result from the inability of the OWNER to use any portion or all of the Project due to the incorporation of asbestos containing materials that have not been approved by OWNER.
5. CONTRACTOR further understands that OWNER will pursue reimbursement of any said cost and compensation for any said damages from the CONTRACTOR by any and every means within OWNER's right and power.

Signature of Affiant: _____

**STATE OF TEXAS
COUNTY OF TRAVIS**

ON _____, 20____, personally appeared _____
_____ and been duly sworn by me, subscribed to the
foregoing affidavit and has stated that the facts stated therein are true and correct.

Notary Public, State of Texas

Printed Name of Notary

My Commission Expires: _____

End

Bidding Requirements, Contract Forms and Conditions of the Contract
GENERAL CONDITIONS OF THE CONTRACT
Section 00700

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ARTICLE 1 – DEFINITIONS

Whenever used in these General Conditions or in the other Contract Documents the following terms have the meanings indicated which are applicable to both the singular and plural thereof:

- 1.1 Addendum** - Written instruments issued by the Contract Awarding Authority which clarify, correct or change the bidding requirements or the Contract Documents prior to the Due Date. "Addenda" is the plural form of Addendum.
- 1.2 Agreement** - Prescribed form, Section 00500.
- 1.3 Alternative Dispute Resolution** - The process by which a disputed Claim may be settled if the OWNER and the CONTRACTOR cannot reach an agreement between themselves, as an alternative to litigation.
- 1.4 Bid** - A complete, properly signed response to an Invitation for Bid that, if accepted, would bind the Bidder to perform the resultant Contract.
- 1.5 Bidder** - A person, firm, or entity that submits a Bid in response to a Solicitation. Any Bidder may be represented by an agent after submitting evidence demonstrating the agent's authority. The agent cannot certify as to his own agency status.
- 1.6 Bid Documents** - The advertisement or Invitation for Bids, instructions to Bidders, the Bid form, the Contract Documents and Addenda.
- 1.7 Calendar Day** - Any day of the week; no days being excepted. Work on Saturdays, Sundays, and/or Legal Holidays shall be coordinated with OWNER.
- 1.8 Change Directive** - A written directive to CONTRACTOR, signed by OWNER, ordering a change in the Work and stating a proposed basis for adjustment, if any, in the Contract Amount or Contract Time, or both. A Change Directive may be used in the absence of total agreement on the terms of a Change Order. A Change Directive does not change the Contract Amount or Contract Time, but is evidence that the parties expect that the change directed or documented by a Change Directive will be incorporated in a subsequently issued Change Order.
- 1.9 Change Orders** - Written agreements entered into between CONTRACTOR and OWNER authorizing an addition, deletion, or revision to the Contract, issued on or after the Execution Date of the Agreement.
- 1.10 Claim** - A written demand seeking, as a matter of right, adjustment or interpretation of Contract terms, payment of money, extension of time or other relief with respect to the terms of the Contract.
- 1.11 Contract** - The binding legal agreement between the OWNER and the CONTRACTOR. The Contract represents the entire and integrated agreement between OWNER and CONTRACTOR for performance of the Work, as evidenced by the Contract Documents.
- 1.12 Contract Amount** - The moneys payable by OWNER to CONTRACTOR for completion of the Work in accordance with the Contract Documents.
- 1.13 Contract Awarding Authority** - A City department authorized to enter into Contracts on behalf of the City.
- 1.14 Contract Documents** - Project Manual, Drawings, Addenda and Change Orders.
- 1.15 Contract Time** - The number of days allowed for completion of the Work as defined by the Contract. When any period is referred to in days, it will be computed to exclude the first and include the last day of such period. A day of twenty-four hours measured from midnight to the next midnight will constitute a day.
- 1.16 CONTRACTOR** - The individual, firm, corporation, or other business entity with whom OWNER has entered into the Contract for performance of the Work.

- 1.17 Critical Path** - The longest series of tasks that runs consecutively from the beginning to the end of the project, as determined by duration and workflow sequence. This longest path sets the managerial standard for how quickly a project can be completed, given appropriate resources.
- 1.18 Drawings** - Those portions of the Contract Documents which are graphic representations of the scope, extent and character of the Work to be furnished and performed by CONTRACTOR and which have been approved by OWNER. Drawings may include plans, elevations, sections, details, schedules and diagrams. Shop Drawings are not Drawings as so defined.
- 1.19 Due Date** - The date and time specified for receipt of Bids.
- 1.20 Engineer/Architect (E/A)** - The OWNER's design professional identified as such in the Contract. The titles of "Architect/Engineer," "Architect" and "Engineer" used in the Contract Documents shall read the same as Engineer/Architect (E/A). Nothing contained in the Contract Documents shall create any contractual or agency relationship between E/A and CONTRACTOR.
- 1.21 Equal** - The terms "equal" or "approved equal" shall have the same meaning.
- 1.22 Execution Date** - Date of last signature of the parties to the Agreement.
- 1.23 Field Order** - A written order issued by Owner's Representative which orders minor changes in the Work and which does not involve a change in the Contract Amount or the Contract Time.
- 1.24 Final Completion** - The point in time when OWNER determines that all Work has been completed and final payment to CONTRACTOR will be made in accordance with the Contract Documents.
- 1.25 Force Account** - a basis of payment for the direct performance of Work with payment based on the actual cost of the labor, equipment and materials furnished and consideration for overhead and profit as set forth in Section 11.5.
- 1.26 Inspector** - The authorized representative of any regulatory agency that has jurisdiction over any portion of the Work.
- 1.27 Invitation for Bid (IFB)** - a Solicitation requesting pricing for a specified Good or Service which has been advertised for Bid in a newspaper and/or the Internet.
- 1.28 Legal Holidays**
 - 1.28.1** The following are recognized by the OWNER:

<u>Holiday</u>	<u>Date Observed</u>
New Year's Day	January 1
Martin Luther King, Jr.'s Birthday	Third Monday in January
President's Day	Third Monday in February
Memorial Day	Last Monday in May
Independence Day	July 4
Labor Day	First Monday in September
Veteran's Day	November 11
Thanksgiving Day	Fourth Thursday in November
Friday after Thanksgiving	Friday after Thanksgiving
Christmas Eve	December 24
Christmas Day	December 25
 - 1.28.2** If a Legal Holiday falls on Saturday, it will be observed on the preceding Friday.
If a Legal Holiday falls on Sunday, it will be observed on the following Monday.

- 1.28.3** Christmas Eve is observed only if it falls on a Monday through Thursday. If Christmas Eve falls on a Friday, that day is observed as the Christmas Day holiday.
- 1.29 Milestones** - A significant event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.
- 1.30 Notice to Proceed** - A Written Notice given by OWNER to CONTRACTOR fixing the date on which the Contract Times will commence to run and on which CONTRACTOR shall start to perform CONTRACTOR's obligations under the Contract Documents.
- 1.31 OWNER** - City of Austin, Texas, a municipal corporation, home rule city and political subdivision organized and existing under the laws of the State of Texas, acting through the City Manager or his/her designee, officers, agents or employees to administer design and construction of the Project.
- 1.32 Owner's Representative** - The designated representative of the OWNER. The Owner's Representative will be identified at the pre-construction conference.
- 1.33 Partial Occupancy or Use** - Use by OWNER of a substantially completed part of the Work for the purpose for which it is intended (or a related purpose) prior to Substantial Completion of all the Work, provided OWNER and CONTRACTOR have accepted in writing the responsibilities assigned to each of them for payments, retainage if any, security, maintenance, utilities, corrective work, insurance and warranties.
- 1.34 Project** - The subject of the Work and its intended result.
- 1.35 Project Manual** - That portion of the Contract Documents which may include the following: introductory information; bidding requirements, Contract forms and General and Supplemental General Conditions; General Requirements; Specifications; Drawings; MBE/WBE or DBE Procurement Program Package; Project Safety Manual; and Addenda.
- 1.36 Resident Project Representative** - The authorized representative of E/A who may be assigned to the site or any part thereof.
- 1.37 Shop Drawings** - All drawings, diagrams, illustrations, schedules and other data or information which are specifically prepared or assembled by or for CONTRACTOR and submitted by CONTRACTOR as required by the Contract Documents.
- 1.38 Specifications** - Those portions of the Contract Documents consisting of written technical descriptions as applied to the Work, which set forth to CONTRACTOR, in detail, the requirements which must be met by all materials, equipment, construction systems, standards, workmanship, equipment and services in order to render a completed and useful project.
- 1.39 Solicitation** - Solicitation means, as applicable, an Invitation for Bid or a Request for Proposal.
- 1.40 Substantial Completion** - The stage in the progress of the Work when the Work, or designated portion thereof, is sufficiently complete in accordance with the Contract Documents so OWNER can occupy or utilize the Work for its intended use, as evidenced by a Certificate of Substantial Completion approved by OWNER.
- 1.41 Subcontractor** - An individual, firm, corporation, or other business entity having a direct contract with CONTRACTOR for the performance of a portion of the Work under the Contract.
- 1.42 Sub-Subcontractor** - A person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the work.

- 1.43 Superintendent** - The representative of CONTRACTOR authorized in writing to receive and fulfill instructions from the Owner's Representative, and who shall supervise and direct construction of the Work.
- 1.44 Supplemental General Conditions** - The part of the Contract Documents which amends or supplements the General Conditions. All General Conditions which are not so amended or supplemented remain in full force and effect.
- 1.45 Supplier** - An individual or entity having a direct contract with CONTRACTOR or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by CONTRACTOR or any Subcontractor.
- 1.46 Time Extension Request** - An approved request for time extension on a form acceptable to OWNER.
- 1.47 Work** - The entire completed construction, or the various separately identifiable parts thereof, required to be furnished under the Contract Documents.
- 1.48 Working Day** - Any day of the week, not including Saturdays, Sundays, or Legal Holidays in which conditions under the CONTRACTOR's control will permit work for a continuous period of not less than seven (7) hours between 7:00 a.m. and 6:00 p.m. Upon agreement with Owner's Representative, work on Saturdays, Sundays and/or Legal Holidays may be allowed and will be considered a Working Day.
- 1.49 Working Hours**
 - 1.49.1 Working Day Contract:** All Work shall be done between 7:00 a.m. and 6:00 p.m. unless authorized by Owner's Representative. However, emergency work may be done without prior permission as indicated in paragraph 6.11.5. If night Work is authorized and conditions under CONTRACTOR's control will permit Work for a continuous period of not less than seven (7) hours between 12:00 a.m. and 11:59 p.m. it will be considered a Working Day. Night Work may be revoked at any time by OWNER if CONTRACTOR fails to maintain adequate equipment and supervision for the prosecution and control of the night Work.
 - 1.49.2 Calendar Day Contract:** All Work shall be done between 7:00 a.m. and 6:00 p.m. unless authorized by Owner's Representative. However, emergency work may be done without prior permission as indicated in paragraph 6.11.5. Night Work may be revoked at any time by OWNER if CONTRACTOR fails to maintain adequate equipment and supervision for the prosecution and control of the night Work.
- 1.50 Written Notice** - Written communication between OWNER and CONTRACTOR. Written Notice shall be deemed to have been duly served if delivered in person to Owner's Representative or CONTRACTOR's duly authorized representative, or if delivered at or sent by registered or certified mail to the attention of Owner's Representative or CONTRACTOR's duly authorized representative at the last business address known to the party giving notice.

ARTICLE 2 - PRELIMINARY MATTERS

- 2.1 Delivery of Agreement, Bonds, Insurance, etc.:** Within five (5) Working Days after written notification of award of Contract, CONTRACTOR shall deliver to OWNER signed Agreement, Bond(s), Insurance Certificate(s) and other documentation required for execution of Contract.
- 2.2 Copies of Documents:** OWNER shall furnish to CONTRACTOR one (1) Project Manual with original signatures, one (1) copy of the executed Project Manual, one (1) set of Drawings

and one (1) copy of the Contract Documents in .pdf format. Additional copies will be furnished, upon request, at the cost specified in the Supplemental General Conditions."

2.3 Commencement of Contract Times; Notice to Proceed: The Contract Time(s) will begin to run on the day indicated in the Notice to Proceed. Notice to Proceed will be given at any time within sixty (60) calendar days after the Execution Date of the Agreement, unless extended by written agreement of the parties.

2.4 Before Starting Construction:

2.4.1 No Work shall be done at the site prior to the preconstruction conference without OWNER's approval. Before undertaking each part of the Work, CONTRACTOR shall carefully study the Contract Documents to check and verify pertinent figures shown thereon compare accurately to all applicable field measurements. CONTRACTOR shall promptly report in writing to Owner's Representative any conflict, error, ambiguity or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from Owner's Representative before proceeding with any Work affected thereby. CONTRACTOR shall be liable to OWNER for failure to report any conflict, error, ambiguity or discrepancy in the Contract Documents of which CONTRACTOR knew or reasonably should have known.

2.4.2 It is mutually agreed between CONTRACTOR and OWNER that successful completion of the Work within the Contract completion date is of primary importance. Therefore, the CONTRACTOR hereby agrees to submit to the Owner's Representative for review and approval, or acceptance, as appropriate, all information requested within this section, including a Baseline Schedule, no later than five working days prior to the preconstruction conference. The Owner's Representative will schedule the preconstruction conference upon the timely submittal of the required documents, unless time is extended by written mutual agreement. CONTRACTOR will submit the following:

- .1** A proposed Baseline Schedule developed using Microsoft Project software, unless otherwise approved by Owner's Representative ("Baseline Schedule") to confirm that all Work will be completed within the Contract time. The Baseline Schedule must (i) indicate the times (number of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents, (ii) identify the Critical Path for completing the Work, (iii) identify when all Subcontractors will be utilized, and (iv) take into consideration any limitations on Working Hours, including baseline Rain Days on Calendar Day Contracts, and (v) be prepared accordance with Section 01310, Schedules and Reports, if applicable; otherwise in accordance with Section 01300, Submittals. This Baseline Schedule, a copy of which shall be made available at the job site(s), must contain sufficient detail to indicate that the CONTRACTOR has properly identified required Work elements and tasks, has provided for a sufficient and proper workforce and integration of Subcontractors, has provided sufficient resources and has considered the proper sequencing of the Work required to result in a successful Project that can be completed within the Contract time;
- .2** An organizational chart showing the principals and management personnel who will be involved with the Work, including each one's responsibilities for the Work;
- .3** To the extent not set forth in the Section 00400 Statement of Contractor's Experience, a complete listing of the CONTRACTOR's employees proposed for the Work. List each one by name and job title, and show length of employment with CONTRACTOR;

- .4 To the extent not set forth in the Section 00410 Statement of Bidder's Safety Experience, a discussion and confirmation of the CONTRACTOR's commitment to safety by providing a copy of its employee's safety handbook and the safety records for the past three years of CONTRACTOR's proposed project manager and Superintendent;
- .5 A preliminary schedule of Shop Drawing and sample submittals;
- .6 A preliminary schedule of values for all of the Work, subdivided into component parts in sufficient detail to serve as the basis for progress payments during construction. Such prices will be deemed to include an appropriate amount of overhead and profit applicable to each item of Work;
- .7 To the extent not set forth in the Section 00400 Statement of Contractor's Experience, a letter designating CONTRACTOR's Superintendent and project manager, and a confirmation of past project experience for the CONTRACTOR's Superintendent and project manager specifically intended for the Work;
- .8 A letter from CONTRACTOR and Subcontractor(s) listing salaried specialists. A salaried specialist is anyone except an hourly worker whose wage rate is governed by Section 00830 of this agreement;
- .9 A letter designating the "Competent Person(s)" on general safety and excavation safety measures along with certifications or other documentation of the safety representative's qualifications;
- .10 If applicable, an excavation safety system plan;
- .11 If applicable, a plan illustrating proposed locations of temporary facilities;
- .12 A completed Non-Use of Asbestos Affidavit (Prior to Construction);
- .13 A letter designating the Texas Registered Professional Land Surveyor for layout of the Work, if the Work requires the services of a surveyor; and
- .14 Appropriate safety training certificates for workers that will initially be on site;
- .15 A certificate of worker's compensation insurance coverage for all persons providing services on the Project (refer to 5.2.1.3 in Section 00700 for definition of persons providing services on the Project);
- .16 A Construction Equipment Emissions Reduction Plan.

2.4.3 Neither the acceptance nor the approval of any of the submittals required in paragraph 2.4.2, above, will constitute the adoption, affirmation, or direction of the CONTRACTOR'S means and methods.

2.5 Preconstruction Conference: Prior to commencement of Work at the site, CONTRACTOR must attend a preconstruction conference with Owner's Representative and others, as set forth in Division 1. Additionally, prior to commencement of work, the CONTRACTOR shall host a preconstruction conference for the Subcontractors identified on the originally approved compliance plan, Owner's Representative and others, as set forth in Division 1. The CONTRACTOR shall notify all Subcontractors five (5) working days prior to the preconstruction conference. If the CONTRACTOR has included Subcontractors in the initial preconstruction conference, the additional Subcontractor preconstruction conference will not be required.

2.6 Initially Acceptable Schedules: Unless otherwise provided in the Contract Documents, CONTRACTOR shall obtain approval of Owner's Representative on the Baseline Schedule submitted in accordance with paragraph 2.4.2.1 and Division 1 before the first progress payment will be made to CONTRACTOR. The Baseline Schedule must provide for an orderly

progression of the designated portion of the Work to completion within any specified Milestones and Contract Times. Acceptance of the schedule by Owner's Representative will neither impose on Owner's Representative responsibility or liability for the sequencing, scheduling or progress of the Work nor interfere with or relieve CONTRACTOR from CONTRACTOR's full responsibility for such Work. CONTRACTOR's schedule of Shop Drawings and sample submissions must provide an acceptable basis for reviewing and processing the required submittals. CONTRACTOR's schedule of values must conform to the requirements set forth in Division 1.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.1 Intent:

3.1.1 The intent of the Contract Documents is to include all information necessary for the proper execution and timely completion of the Work by CONTRACTOR. The CONTRACTOR will execute the Work described in and reasonably inferable from the Contract Documents as necessary to produce the results indicated by the Contract Documents. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all. In cases of disagreement, the following order of precedence shall generally govern (top item receiving priority of interpretation):

- Signed Agreement
- Addendum to the Contract Documents, including approved changes
- Supplemental General Conditions
- General Conditions
- Other Bidding Requirements and Contract Forms
- Special Provisions to the Standard Technical Specifications
- Special Specifications
- Standard Technical Specifications
- Drawings (figured dimensions shall govern over scaled dimensions)
- Project Safety Manual (if applicable),

with the understanding that a common sense approach will be utilized as necessary so that the Contract Documents produce the intended response.

3.1.2 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

3.2 Reporting and Resolving Discrepancies: If, during the performance of the Work, CONTRACTOR discovers any conflict, error, ambiguity or discrepancy within the Contract Documents or between the Contract Documents and any provisions of any such law or regulation applicable to the performance of the Work or of any such standard, specification, manual or code or instructions of any Supplier, CONTRACTOR shall report it to Owner's Representative in writing at once, and CONTRACTOR shall not proceed with the Work affected thereby until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in paragraph 3.3.1 or 3.3.2. CONTRACTOR shall be liable to OWNER for failure to report any such conflict, error, ambiguity or discrepancy of which CONTRACTOR knew or reasonably should have known.

3.3 Amending and Supplementing Contract Documents:

3.3.1 The Contract Documents may be amended to provide for additions, deletions and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways:

- .1 Change Order.
- .2 Change Directive.
- .3 Time Extension Request.

3.3.2 In addition, the requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, in one or more of the following ways:

- .1 Field Order.
- .2 Review of a Shop Drawing or sample.
- .3 Written interpretation or clarification.

3.4 Reuse of Documents Prohibited: CONTRACTOR and any Subcontractor or Supplier or other person or organization performing or furnishing any of the Work under a direct or indirect contract with OWNER: (i) shall not have or acquire any title to or ownership rights in any of the Drawings, Specifications or other documents (or copies of any thereof) prepared by or bearing the seal of E/A or E/A's consultant, and (ii) shall not reuse any of such Drawings, Specifications, other documents or copies on extensions of the Project or any other project without written consent of OWNER and E/A.

3.5 In the event of the breach by the OWNER or CONTRACTOR of any of its obligations under the Contract, so as to support a claim by the other party, the provisions of this Contract will be equitably construed to allow the resolution of such a claim and all of the other provisions of this Contract shall continue in full force and effect as to the rights, responsibilities, and remedies of the OWNER and CONTRACTOR.

ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS

4.1 Availability of Lands: The OWNER will provide access to all land and interests in land required for the Work and will notify CONTRACTOR of any restrictions in such access. CONTRACTOR may make a claim if OWNER fails to provide timely access to the Work. CONTRACTOR must obtain any additional temporary construction facilities, stockpiling or storage sites not otherwise provided.

4.2 Subsurface and Physical Conditions:

4.2.1 CONTRACTOR specifically represents that it has carefully examined the plans, the geotechnical report, if any, and the site of the proposed Work and is thoroughly familiar with all of the conditions surrounding construction of the Project, having had the opportunity to conduct any and all additional inquiry, tests and investigation that he/she deems necessary and proper. CONTRACTOR acknowledges the receipt of the geotechnical report, if any, and agrees that the report, while it is an accurate record of the geotechnical conditions at the boring locations, is not a guarantee of specific site conditions which may vary between boring locations.

4.2.2 CONTRACTOR must notify OWNER in writing as soon as reasonably possible, but no later than three (3) calendar days, if unforeseen conditions are encountered at the site which are (i) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (ii) unknown physical conditions of an unusual nature, that differ materially from those normally encountered in the type of work being performed under this Contract. CONTRACTOR may not disturb the conditions until OWNER conducts an investigation. Owner's Representative and E/A will promptly investigate such

conditions with E/A. If it is determined that such conditions differ materially and cause an increase or decrease in the CONTRACTOR's cost of or time required for performance of any part of the Work, Owner's Representative will recommend an equitable adjustment in the Contract Amount or Contract Time, or both. If it is determined that such conditions are not materially different from those indicated in the Contract Documents, Owner's Representative will notify CONTRACTOR in writing of such findings and the Contract will not be adjusted. CONTRACTOR may dispute such a determination in accordance with Article 16.

4.2.3 Notwithstanding any other provision of this Contract, CONTRACTOR is solely responsible for the location and protection of any and all public utility lines and utility customer service lines in the Work area. "Public utility lines" means the utility distribution and supply system, and "utility customer service lines" means the utility lines connecting customers to the utility distribution and collection system. Generally, existing utility customer service line connections are not shown on the Drawings. CONTRACTOR shall notify "One Call" and exercise due care to locate, mark, uncover and otherwise protect all such lines in the construction zone and any of CONTRACTOR's work or storage areas. CONTRACTOR's responsibility for the location and protection of utilities is primary and nondelegable. CONTRACTOR shall indemnify or reimburse such expenses or costs (including fines that may be levied against OWNER) that may result from unauthorized or accidental damage to all public lines and utility customer service lines in the work area. OWNER reserves the right to repair any damage CONTRACTOR causes to such utilities at CONTRACTOR's expense. If a public line and/or customer service line is damaged by CONTRACTOR, CONTRACTOR shall give verbal notice within one (1) hour and written notice within twenty-four (24) hours to the Owner's Representative.

4.2.4 CONTRACTOR shall take reasonable precaution to avoid disturbing primitive records and antiquities of archaeological, paleontological or historical significance. No objects of this nature shall be disturbed without written permission of OWNER and Texas Historical Commission. When such objects are uncovered unexpectedly, CONTRACTOR shall stop all Work in close proximity and notify Owner's Representative and Texas Historical Commission of their presence and shall not disturb them until written permission and permit to do so is granted. All primitive rights and antiquities uncovered on OWNER's property shall remain property of State of Texas, Texas Historical Commission conforming to Texas Natural Resources Code. If it is determined by OWNER, in consultation with Texas Historical Commission, that exploration or excavation of primitive records or antiquities on Project site is necessary to avoid loss, CONTRACTOR shall cooperate in salvage work attendant to preservation. If the Work stoppage or salvage work causes an increase in CONTRACTOR's cost of, or time required for, performance of the Work, the Contract Amount and/or Contract Time will be equitably adjusted.

4.3 Reference Points: Unless otherwise specified, all control lines and bench marks suitable for use in layout will be furnished by OWNER. Lay out of the Work shall be performed in accordance with Division 1. Controls, bench marks and property boundary markers shall be carefully preserved by CONTRACTOR by use of flags, staffs or other visible devices and in case of destruction or removal by CONTRACTOR or its employees, such controls and bench marks shall be replaced by a Registered Professional Land Surveyor at CONTRACTOR's expense. City of Austin survey monuments damaged by CONTRACTOR will be reestablished by OWNER at CONTRACTOR's expense.

4.4 Hazardous Materials:

4.4.1 To the extent provided by applicable law, OWNER shall be responsible for any hazardous material uncovered or revealed at the site which was not shown,

indicated or identified in the Contract Documents to be within the scope of the Work and which may present a substantial danger to persons or property exposed thereto in connection with the Work at the site. CONTRACTOR shall immediately notify Owner's Representative of any suspected hazardous materials encountered before or during performance of the Work and shall take all necessary precautions to avoid further disturbance of the materials.

4.4.2 CONTRACTOR shall be responsible for any hazardous materials brought to the site by CONTRACTOR, Subcontractor, Suppliers or anyone else for whom CONTRACTOR is responsible.

4.4.3 No asbestos-containing materials shall be incorporated into the Work or brought on Project site without prior approval of OWNER. The CONTRACTOR shall not knowingly use, specify, request or approve for use any asbestos containing materials or lead-based paint without the OWNER'S written approval. When a specific product is specified, the CONTRACTOR shall endeavor to verify that the product does not include asbestos containing material.

4.4.4 Refer to Division 1 for hazardous material definitions and procedures.

- .1** Unless otherwise expressly provided in the Contract Documents to be part of the Work, CONTRACTOR is not responsible for any unexpected Hazardous Materials encountered at the site. Upon encountering any Hazardous Conditions, CONTRACTOR must stop Work immediately in the affected area and duly notify OWNER and, if required by applicable law or regulations, all government or quasi-government entities with jurisdiction over the Project or site.
- .2** Upon receiving notice of the presence of suspected Hazardous Materials, OWNER shall take the necessary measures required to ensure that the Hazardous Materials are remediated or rendered harmless. Such necessary measures shall include OWNER retaining qualified independent experts to (i) ascertain whether Hazardous Materials have actually been encountered, and, if they have been encountered, (ii) prescribe the remedial measures that OWNER must take either to remove the Hazardous Materials or render the Hazardous Materials harmless.
- .3** CONTRACTOR shall be obligated to resume Work at the affected area of the Project only after OWNER's Representative provides written certification that (i) the Hazardous Materials have been removed or rendered harmless and (ii) all necessary approvals have been obtained from all government and quasi-government entities having jurisdiction over the Project or site. The CONTRACTOR shall be responsible for continuing the Work in the unaffected portion of the Project and site.
- .4** CONTRACTOR will be entitled, in accordance with these General Conditions, to an adjustment in its Contract Amount and/or Contract Time(s) to the extent CONTRACTOR's cost and/or time of performance have been adversely impacted by the presence of Hazardous Materials.
- .5** Notwithstanding the preceding provisions of this Section 4.1, OWNER is not responsible for Hazardous Materials introduced to the Site by CONTRACTOR, Subcontractors or anyone for whose acts they may be liable. CONTRACTOR shall indemnify, defend and hold harmless OWNER and OWNER's officers, directors, employees and agents from and against all claims, losses, damages, liabilities and expenses, including attorneys' fees and expenses, arising out of or resulting from those hazardous materials introduced to the site by CONTRACTOR, Subcontractors or anyone for whose acts they may be liable.

- 4.4.5** CONTRACTOR shall be responsible for use, storage and remediation of any hazardous materials brought to the Site by CONTRACTOR, Subcontractors, Suppliers or anyone else for whom CONTRACTOR is responsible.

ARTICLE 5 - BONDS AND INSURANCE

5.1 Surety and Insurance Companies: All bonds and insurance required by the Contract Documents shall be obtained from solvent surety or insurance companies that are duly licensed by the State of Texas and authorized to issue bonds or insurance policies for the limits and coverages required by the Contract Documents. The bonds shall be in a form acceptable to OWNER and shall be issued by a surety which complies with the requirements of Texas Insurance Code, Title 12, Chapter 3503. The surety must obtain reinsurance for any portion of the risk that exceeds 10% of the surety's capital and surplus. For bonds exceeding \$100,000, the surety must also hold a certificate of authority from the U.S. Secretary of the Treasury or have obtained reinsurance for any liability in excess of \$1,000,000 from a reinsurer that is authorized as a reinsurer in Texas or holds a certificate of authority from the U.S. Secretary of the Treasury. In the event that the proposed surety for a contract award in excess of \$100,000 does not hold a certificate of authority from the U.S. Secretary of the Treasury and/or its proposed reinsurer does not hold a certificate of authority from the U.S. Secretary of the Treasury, the OWNER may require additional financial solvency information from the Bidder/Contractor and the proposed surety company and/or reinsurer as part of the 00400 Statement of Bidders Experience and determination of bidder responsibility in the award of the Contract.

5.2 Workers' Compensation Insurance Coverage:

5.2.1 Definitions:

- .1** Certificate of coverage ("certificate") - A copy of a certificate of insurance, a certificate of authority to self-insure issued by the commission, or a coverage agreement (DWC-81, DCW-82, DCW-83, or DCW84), showing statutory workers' compensation insurance coverage for the person's or entity's employees providing services on the Project, for the duration of the Project.
- .2** Duration of the Project - includes the time from the beginning of the Work on the Project until the CONTRACTOR's/ person's Work on the Project has been completed and accepted by OWNER.
- .3** Persons providing services on the Project ("subcontractor" in Texas Labor Code, Section 406.096) - includes all persons or entities performing all or part of the services the CONTRACTOR has undertaken to perform on the Project, regardless of whether that person contracted directly with the CONTRACTOR and regardless of whether that person has employees. This includes, without limitation, independent contractors, Subcontractors, leasing companies, motor carriers, owner-operators, employees of any such entity, or employees of any entity which furnishes persons to provide services on the Project. "Services" include, without limitation, providing, hauling, or delivering equipment or materials, or providing labor, transportation, or other service related to a project. "Services" does not include activities unrelated to the Project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.

5.2.2 CONTRACTOR shall provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all

employees of the CONTRACTOR providing services on the Project, for the duration of the Project.

- 5.2.3** CONTRACTOR must provide a certificate of coverage to OWNER prior to being awarded the Contract.
- 5.2.4** If the coverage period shown on the CONTRACTOR's current certificate of coverage ends during the duration of the Project, the CONTRACTOR must, prior to the end of the coverage period, file a new certificate of coverage with OWNER showing that coverage has been extended.
- 5.2.5** CONTRACTOR shall obtain from each person providing services on the Project, and provide to OWNER:
 - .1** A certificate of coverage, prior to that person beginning Work on the Project, so OWNER will have on file certificates of coverage showing coverage for all persons providing services on the Project; and
 - .2** No later than seven (7) days after receipt by CONTRACTOR, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the Project.
- 5.2.6** CONTRACTOR shall retain all required certificates of coverage for the duration of the Project and for one (1) year thereafter.
- 5.2.7** CONTRACTOR shall notify OWNER in writing by certified mail or personal delivery, within ten (10) days after CONTRACTOR knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the Project.
- 5.2.8** CONTRACTOR shall post on each Project site a notice, in the text, form and manner prescribed by the Texas Workers' Compensation Commission, informing all persons providing services on the Project that they are required to be covered, and stating how a person may verify coverage and report lack of coverage.
- 5.2.9** CONTRACTOR shall contractually require each person with whom it contracts to provide services on a Project, to:
 - .1** Provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all of its employees providing services on the Project, for the duration of the Project;
 - .2** Provide to CONTRACTOR, prior to that person beginning Work on the Project, a certificate of coverage showing that coverage is being provided for all employees of the person providing services on the Project, for the duration of the Project;
 - .3** Provide CONTRACTOR, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the Project;
 - .4** Obtain from each other person with whom it contracts, and provide to CONTRACTOR: a) a certificate of coverage, prior to the other person beginning Work on the Project; and b) a new certificate of coverage showing extension of coverage, prior to the end of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the Project;
 - .5** Retain all required certificates of coverage on file for the duration of the Project and for one (1) year thereafter;

- .6 Notify OWNER in writing by certified mail or personal delivery, within ten (10) days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the Project; and
- .7 Contractually require each person with whom it contracts, to perform as required by paragraphs 5.2.9.1 - 5.2.9.7, with the certificates of coverage to be provided to the person for whom they are providing services.

5.2.10 By signing this Contract or providing or causing to be provided a certificate of coverage, CONTRACTOR is representing to OWNER that all employees of the CONTRACTOR who will provide services on the Project will be covered by workers' compensation coverage for the duration of the Project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of a self-insured, with the Texas Worker's Compensation Commission's Division of Self- Insurance Regulation. Providing false or misleading information may subject CONTRACTOR to administrative penalties, criminal penalties, civil penalties, or other civil actions.

5.2.11 CONTRACTOR's failure to comply with any of these provisions is a breach of Contract by CONTRACTOR which entitles OWNER to declare the Contract void if CONTRACTOR does not remedy the breach within ten (10) days after receipt of notice of breach from OWNER.

5.3 Other Bond and Insurance Requirements: For additional insurance requirements, refer to the Supplemental General Conditions.

5.4 Bonds:

5.4.1 General.

- .1 Bonds, when required, shall be executed on forms furnished by or acceptable to OWNER. All bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act.
- .2 If the surety on any bond furnished by CONTRACTOR is declared bankrupt or becomes insolvent or its right to do business is terminated in the State of Texas or it ceases to meet the requirements of the preceding paragraph, CONTRACTOR shall within ten (10) days thereafter substitute another bond and surety, both of which must be acceptable to OWNER.
- .3 When Performance Bonds and/or Payment Bonds are required, each shall be issued in an amount of one hundred percent (100%) of the Contract Amount as security for the faithful performance and/or payment of all CONTRACTOR's obligations under the Contract Documents. Performance Bonds and Payment Bonds shall be issued by a solvent surety company authorized to do business in the State of Texas, and shall meet any other requirements established by law or by OWNER pursuant to applicable law. Any surety duly authorized to do business in Texas may write Performance and Payment Bonds on a project without reinsurance to the limit of ten percent (10%) of its capital and surplus. Such a surety must reinsure any obligations over ten percent (10%).

5.4.2 Performance Bond.

- .1 If the Contract Amount exceeds \$100,000, CONTRACTOR shall furnish OWNER with a Performance Bond in the form set out in Section 00610.
- .2 If the Contract Amount exceeds \$25,000 but is less than or equal to \$100,000, CONTRACTOR shall furnish OWNER with a Performance Bond in the form set out in Section 00610, unless the original Contract Time is 60 Calendar

Days/40 Working Days or less, in which case CONTRACTOR can agree to the following terms and conditions for payment in lieu of providing a Performance Bond: no moneys will be paid to CONTRACTOR until completion and acceptance of the Work by OWNER; CONTRACTOR shall be entitled to receive 95% of the Contract Amount following Final Completion, and the remaining 5% of the Contract Amount following the one (1) year warranty period.

- .3 If the Contract Amount is less than or equal to \$25,000, CONTRACTOR will not be required to furnish a Performance Bond; provided that no moneys will be paid to CONTRACTOR until completion and acceptance of the Work by OWNER under the following terms and conditions: CONTRACTOR shall be entitled to receive 95% of the Contract Amount following Final Completion, and the remaining 5% of the Contract Amount following the one (1) year warranty period.
- .4 If a Performance Bond is required to be furnished, it shall extend for the one (1) year warranty period.

5.4.3 Payment Bond.

- .1 If the Contract Amount exceeds \$50,000, CONTRACTOR shall furnish OWNER with a Payment Bond in the form set out in Section 00620.
- .2 If the Contract Amount is less than or equal to \$50,000, CONTRACTOR will not be required to furnish a Payment Bond; provided that no moneys will be paid to CONTRACTOR until completion and acceptance of the Work by OWNER under the terms and conditions specified in paragraph 5.4.2.3.

5.4.4 Maintenance Bond: If the Contract Documents contemplate a period of maintenance beyond the one (1) year contractual warranty period, OWNER agrees that any bond to be required for such maintenance work will be in the amount of the maintenance work during any extended maintenance period.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

6.1 Supervision and Superintendence:

- 6.1.1** CONTRACTOR shall supervise, inspect and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences and procedures of construction. CONTRACTOR shall be responsible to see that the completed Work complies accurately with the Contract Documents.
- 6.1.2** CONTRACTOR shall have an English-speaking, competent Superintendent on the Work at all times that work is in progress. The Superintendent will be CONTRACTOR's representative on the Work and shall have the authority to act on the behalf of CONTRACTOR. All communications given to the Superintendent shall be as binding as if given to CONTRACTOR. Either CONTRACTOR or the Superintendent shall provide a cellular telephone number and an emergency and home telephone number at which one or the other may be reached if necessary when work is not in progress. The Superintendent must be an employee of the CONTRACTOR, unless such requirement is waived in writing by the Owner's Representative. If the CONTRACTOR proposes a management structure with a Project Manager supervising, directing, and managing construction of the work in addition to or in substitution of a Superintendent, the requirements of these Construction Documents with respect to the Superintendent shall likewise apply to any such Project Manager.

- .1 CONTRACTOR shall present the resume of the proposed Superintendent to the Owner's Representative showing evidence of experience and successful superintendence and direction of work of a similar scale and complexity. If, in the opinion of the Owner's Representative, the proposed Superintendent does not indicate sufficient experience in line with the Work, he/she will not be allowed to be the designated Superintendent for the Work.
- .2 The Superintendent shall not be replaced without Written Notice to Owner's Representative. If CONTRACTOR deems it necessary to replace the Superintendent, CONTRACTOR shall provide the necessary information for approval, as stated above, on the proposed new Superintendent.
- .3 A qualified substitute Superintendent may be designated in the event that the designated Superintendent is temporarily away from the Work, but not to exceed a time limit acceptable to the Owner's Representative. CONTRACTOR shall replace the Superintendent upon OWNER's request in the event the Superintendent is unable to perform to OWNER's satisfaction.

6.2 Labor, Materials and Equipment:

- 6.2.1** CONTRACTOR shall maintain a work force adequate to accomplish the Work within the Contract Time. CONTRACTOR agrees to employ only orderly and competent workers, skillful in performance of the type of Work required under this Contract. CONTRACTOR, Subcontractors, Sub-subcontractors, and their employees may not use or possess any alcoholic or other intoxicating beverages, illegal drugs or controlled substances while on the job or on OWNER's property, nor may such workers be intoxicated, or under the influence of alcohol or drugs, on the job. Subject to the applicable provisions of Texas law, CONTRACTOR, Subcontractors, Sub-subcontractors, and their employees may not use or possess any firearms or other weapons while on the job or on OWNER'S property. If OWNER or Owner's Representative notifies CONTRACTOR that any worker or representative of Contractor is incompetent, disorderly, abusive, or disobedient, has knowingly or repeatedly violated safety regulations, has possessed any firearms in contravention of the applicable provisions of Texas law, or has possessed or was under the influence of alcohol or drugs on the job, CONTRACTOR shall immediately remove such worker or representative, including an officer or owner of CONTRACTOR, from performing Contract Work, and may not employ such worker or representative again on Contract Work without OWNER's prior written consent. CONTRACTOR shall at all times maintain good discipline and order on or off the site in all matters pertaining to the Project. Workers on Project shall be paid not less than wage rates, including fringe benefits, as published by the Department of Labor (DOL) for Building Construction and Heavy and Highway Trades "AS APPLICABLE" and/or the \$13.03 minimum Wage required by City of Austin Ordinance No. 20160324-015, whichever is higher. The Total Minimum Wage required can be met using any combination of cash and non-cash qualified fringe benefits provided the cash component meets or exceeds the \$13.03 minimum wage required.
- 6.2.2** Unless otherwise specified in Division 1, CONTRACTOR shall provide and pay for all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up and completion of the Work.
- 6.2.3** All materials and equipment shall be of good quality and new (including new products made of recycled materials, pursuant to Section 361.426 of the Texas Health & Safety Code), except as otherwise provided in the Contract Documents. If required by Owner's Representative, CONTRACTOR shall furnish satisfactory evidence (reports of required tests, manufacturer's certificates of compliance with

material requirements, mill reports, etc.) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with instructions of the applicable Supplier, except as otherwise provided in the Contract Documents.

6.2.4 Substitutes and "Approved Equal" Items:

- .1** Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function and quality required. Unless the specification or description contains words reading that no like, equivalent or "approved equal" item or no substitution is permitted, other items of material or equipment of other Suppliers may be submitted by CONTRACTOR, at CONTRACTOR'S sole risk, including disruptions to the Critical Path of the Progress Schedule, to E/A through Owner's Representative under the following circumstances:
 - .1.1** "Approved Equal": If in E/A's sole discretion an item of material or equipment proposed by CONTRACTOR is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by E/A as an "approved equal" item, in which case review of the proposed item may, in E/A's sole discretion, be accomplished without compliance with some or all of the requirements for evaluation of proposed substitute items. CONTRACTOR shall provide E/A with the documentation required for E/A to make its determination.
 - .1.2** Substitute Items: If in E/A's sole discretion an item of material or equipment proposed by CONTRACTOR does not qualify as an "approved equal" item under subparagraph 6.2.4.1.1, it will be considered a proposed substitute item. CONTRACTOR shall submit sufficient information as provided in Division 1 to allow E/A to determine that the item of material or equipment proposed is essentially equivalent to that named and a substitute therefor.
- .2** Substitute Construction Methods and Procedures: If a specific means, method, technique, sequence or procedure of construction is shown or indicated in and expressly required by the Contract Documents, CONTRACTOR may, at CONTRACTOR'S sole risk, including disruptions to the Critical Path of the Progress Schedule, with prior approval of E/A furnish or utilize a substitute means, method, technique, sequence, or procedure of construction. CONTRACTOR shall submit sufficient information to Owner's Representative to allow E/A, in E/A's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The procedure for review by E/A will be same as that provided for substitute items in Division 1.
- .3** E/A's Evaluation: E/A will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to subparagraphs 6.2.4.1.1 and 6.2.4.1.2. E/A will be the sole judge of acceptability. No "approved equal" or substitute shall be ordered, installed, or utilized until E/A's review is complete, which will be evidenced by either a Change Order or completion of the Shop Drawing review procedure. OWNER may require CONTRACTOR to furnish at CONTRACTOR's expense a special performance guarantee or other surety bond with respect to any "approved equal" or substitute or for any other delay or disruption to the Critical Path of the Project Schedule attributable to any such substitution. OWNER shall not be responsible for any delay due to review time for any "approved equal" or substitute.

- .4 CONTRACTOR's Expense: All data and documentation to be provided by CONTRACTOR in support of any proposed "approved equal" or substitute item will be at CONTRACTOR's expense.
- .5 The approval of the E/A will not relieve the CONTRACTOR from primary responsibility and liability for the suitability and performance of any proposed substitute item, method or procedure and will not relieve CONTRACTOR from its primary responsibility and liability for curing defective Work and performing warranty work, which the CONTRACTOR shall cure and perform, regardless of any claim the CONTRACTOR may choose to advance against the E/A or manufacturer.

6.2.5 CONTRACTOR agrees to assign to OWNER any rights it may have to bring antitrust suits against its Suppliers for overcharges on materials incorporated in the Project growing out of illegal price fixing agreements. CONTRACTOR further agrees to cooperate with OWNER should OWNER wish to prosecute suits against Suppliers for illegal price fixing.

6.3 Progress Schedule: Unless otherwise provided in Division 1, CONTRACTOR shall adhere to the Baseline Schedule established in accordance with paragraph 2.6 as it may be adjusted from time to time as provided below:

6.3.1 CONTRACTOR shall submit to Owner's Representative for review and approval any proposed adjustments in the Progress Schedule that will not change the Contract Times or Milestones on a monthly basis. Any such proposed adjustments must be substantiated with documentation of any changes to the underlying logic of the Progress Schedule. CONTRACTOR's Progress Schedule must show how the CONTRACTOR will consistently advance the progress of the Work in accordance with the Critical Path of the Work and the Contract Time or Milestones. Such adjustments will conform generally to the Progress Schedule then in effect and additionally will comply with any provisions of Division 1 applicable thereto.

6.3.2 Proposed adjustments in the Progress Schedule that will change the Contract Times or Milestones shall be submitted in accordance with the requirements of Article 12. Any such proposed adjustments must be substantiated with documentation of any changes to the underlying logic of the Progress Schedule. Such adjustments may only be made by a Change Order or Time Extension Request in accordance with Article 12.

6.4 Concerning Subcontractors, Suppliers and Others:

6.4.1 Assignment: CONTRACTOR agrees to retain direct control of and give direct attention to the fulfillment of this Contract. CONTRACTOR agrees not to, by Power of Attorney, or otherwise, assign said Contract without the prior written consent of OWNER. In addition, without OWNER'S written consent, the CONTRACTOR will not subcontract the performance of the entire Work or the supervision and direction of the Work.

6.4.2 Award of Subcontracts for Portions of the Work: CONTRACTOR shall not employ any Subcontractor, Supplier or other person or organization, whether initially or as a substitute, against whom OWNER may have reasonable objection. OWNER will communicate such objections by Written Notice. If OWNER requires a change without good cause of any Subcontractor, person or organization previously accepted by OWNER, the Contract Amount shall be increased or decreased by the difference in the cost occasioned by any such change, and appropriate Change Order shall be issued. CONTRACTOR shall not substitute any Subcontractor, person or organization that has been accepted by OWNER, unless the substitute has been accepted in writing by OWNER. No acceptance by OWNER of any Subcontractor,

Supplier or other person or organization shall constitute a waiver of any right of OWNER to reject defective Work.

- 6.4.3** CONTRACTOR shall enter into written agreements with all Subcontractors and Suppliers which specifically binds the Subcontractors or Suppliers to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and E/A. The OWNER reserves the right to specify that certain requirements shall be adhered to by all Subcontractors and Sub-subcontractors as indicated in other portions of the Contract Documents and these requirements shall be made a part of the agreement between CONTRACTOR and Subcontractor or Supplier. Subject to and in accordance with the above requirements, the CONTRACTOR must provide and will be deemed for all purposes to have provided in its contracts with major Subcontractors or Suppliers on the Project (those contracts of more than \$10,000) the following specific provision: alternative dispute resolution (paragraphs 16.2 and 16.3), which shall be mandatory in the event of a subcontractor or supplier claim and a prerequisite for the submission of any derivative claim. The CONTRACTOR's standard subcontract form is subject to the OWNER's review and approval. The OWNER may request and the CONTRACTOR will provide within five (5) working days a copy of any subcontract requested by the OWNER.
- 6.4.4** CONTRACTOR shall be fully responsible to OWNER for all acts and omissions of the Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR just as CONTRACTOR is responsible for CONTRACTOR's own acts and omissions. Nothing in the Contract Documents shall create for the benefit of any such Subcontractor, Supplier or other person or organization any contractual relationship between OWNER and any such Subcontractor, Supplier or other person or organization, nor shall it create any obligation on the part of OWNER or E/A to pay or to see to the payment of any moneys due any such Subcontractor, Supplier or other person or organization except as may otherwise be required by laws and regulations.
- 6.4.5** CONTRACTOR shall be solely responsible for efficiently scheduling and coordinating the Work of Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR in order to avoid any delays or inefficiencies in the prosecution of the Work. CONTRACTOR shall require all Subcontractors, Suppliers and such other persons and organizations performing or furnishing any of the Work to communicate with Owner's Representative through CONTRACTOR.
- 6.4.6** The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing or delineating the Work to be performed by any specific trade.
- 6.4.7** CONTRACTOR shall pay each Subcontractor and Supplier their appropriate share of payments made to CONTRACTOR not later than ten (10) Calendar Days of CONTRACTOR's receipt of payment from OWNER. Upon request from Owner, the CONTRACTOR has two (2) Working Days to provide documentation verifying Payment to Subcontractor(s). The CONTRACTOR is required to notify the Subcontractor(s) in writing of rejection of Application for Payment within two (2) Working Days following notification by Owner. Failure of CONTRACTOR to make payments to Subcontractors or for labor, materials or equipment in accordance to this contract, may be cause to reject future Bids by the CONTRACTOR in accordance with Section 00100 9.B.4 and may be cause to reject payment in accordance with 00700 14.4.1.3.
- 6.4.8** To the extent allowed by Texas law, the OWNER shall be deemed to be a third party beneficiary to each subcontract and may, if OWNER elects, following a termination of the CONTRACTOR, require that the Subcontractor(s) perform all or a portion of

unperformed duties and obligations under its subcontract(s) for the benefit of the OWNER, rather than the CONTRACTOR; however, if the OWNER requires any such performance by a Subcontractor for the OWNER's direct benefit, then the OWNER shall be bound and obligated to pay such Subcontractor the reasonable value for all Work performed by such Subcontractor to the date of the termination of the CONTRACTOR, less previous payments, and for all Work performed thereafter. In the event that the OWNER elects to invoke its right under this section, OWNER will provide notice of such election to the CONTRACTOR and the affected Subcontractor(s).

6.5 Patent Fees and Royalties:

- 6.5.1** CONTRACTOR shall be responsible at all times for compliance with applicable patents or copyrights encompassing, in whole or in part, any design, device, material, or process utilized, directly or indirectly, in the performance of the Work or the formulation or presentation of its Bid.
- 6.5.2** CONTRACTOR shall pay all royalties and license fees and shall provide, prior to commencement of Work hereunder and at all times during the performance of same, for lawful use of any design, device, material or process covered by letters, patent or copyright by suitable legal agreement with the patentee, copyright holder, or their duly authorized representative whether or not a particular design, device, material, or process is specified by OWNER.
- 6.5.3** CONTRACTOR shall defend all suits or claims for infringement of any patent or copyright and shall save OWNER harmless from any loss or liability, direct or indirect, arising with respect to CONTRACTOR's process in the formulation of its Bid or the performance of the Work or otherwise arising in connection therewith. OWNER reserves the right to provide its own defense to any suit or claim of infringement of any patent or copyright in which event CONTRACTOR shall indemnify and save harmless OWNER from all costs and expenses of such defense as well as satisfaction of all judgments entered against OWNER.
- 6.5.4** OWNER shall have the right to stop the Work and/or terminate this Agreement at any time in the event CONTRACTOR fails to disclose to OWNER that CONTRACTOR's work methodology includes the use of any infringing design, device, material or process.

6.6 Permits, Fees: Unless otherwise provided in the Supplemental General Conditions, CONTRACTOR shall obtain and pay for all construction permits, licenses and fees required for prosecution of the Work.

6.7 Laws and Regulations:

- 6.7.1** CONTRACTOR shall give all notices and comply with all laws and regulations applicable to furnishing and performing the Work, including arranging for and obtaining any required inspections, tests, approvals or certifications from any public body having jurisdiction over the Work or any part thereof. Except where otherwise expressly required by applicable laws and regulations, neither OWNER nor E/A shall be responsible for monitoring CONTRACTOR's compliance with any laws and regulations.
- 6.7.2** Maintaining clean water, air and earth or improving thereon shall be regarded as of prime importance. CONTRACTOR shall plan and execute its operations in compliance with all applicable Federal, State and local laws and regulations concerning control and abatement of water pollution and prevention and control of air pollution.
- 6.7.3** If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to laws or regulations, CONTRACTOR shall bear all claims, costs, losses and damages arising therefrom; however, it shall not be CONTRACTOR's primary

responsibility to make certain that the Specifications and Drawings are in accordance with laws and regulations, but this does not relieve CONTRACTOR of CONTRACTOR's obligations under Article 3.

6.8 Taxes:

- 6.8.1** CONTRACTOR shall pay only those sales, consumer, use and other similar taxes required to be paid by CONTRACTOR in accordance with the laws and regulations of the State of Texas in the performance of this public works contract.
- 6.8.2** OWNER is an exempt organization as defined by Chapter 11 of the Property Tax Code of Texas and is thereby exempt from payment of Sales Tax under Chapter 151, Limited Use Sales, Excise and Use Tax, Texas Tax Code, and Article 1066 (C), Local Sales and Use Tax Act, Revised Civil Statutes of Texas.

6.9 Use of Premises:

- 6.9.1** CONTRACTOR shall confine construction equipment, the storage of materials and equipment and the operations of workers to the site and land and areas identified in and permitted by the Contract Documents and other land and areas permitted by laws and regulations, right-of-way, permits and easements, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof or of any adjacent land or areas, resulting from the performance of the Work. Should any claim be made by any such owner or occupant because of or in connection with the performance of the Work, CONTRACTOR shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law. CONTRACTOR shall indemnify, defend and hold harmless OWNER, E/A, E/A'S Consultants and anyone directly or indirectly employed by any of them from and against all claims, costs, losses and damages (including court costs and reasonable attorney's fees) arising out of or resulting from any claim or action, legal or equitable, brought by any such owner or occupant against OWNER, E/A or any other party indemnified hereunder to the extent caused by or based upon performance of the work or failure to perform the Work.
- 6.9.2** During the progress of the Work and on a daily basis, CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the Work. At the completion of the Work, CONTRACTOR shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery and surplus materials. CONTRACTOR shall leave the site clean and ready for occupancy by OWNER at Substantial Completion of the Work. CONTRACTOR shall, at a minimum, restore to original condition all property not designated for alteration by the Contract Documents. If the CONTRACTOR fails to clean up at the completion of the Work, OWNER may do so and the cost thereof will be charged against the CONTRACTOR.
- 6.9.3** CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

- 6.10 Record Documents:** CONTRACTOR shall maintain in a safe place at the site, or other location acceptable to OWNER, one (1) record copy of all Drawings, Specifications, Addenda, Change Orders, Change Directives, Field Orders and written interpretations and clarifications (issued pursuant to paragraph 9.5) in good order and annotated to show all changes made during construction. These record documents together with all final samples and all final Shop Drawings will be available to OWNER and E/A for reference during performance of the Work. Upon Substantial Completion of the Work, these record documents, samples and Shop Drawings shall be promptly delivered to Owner's Representative.

6.11 Safety and Protection:

6.11.1 CONTRACTOR shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Upon request, and prior to installation of measures, CONTRACTOR shall submit a site security plan for approval by OWNER. By reviewing the plan or making recommendations or comments, OWNER will not assume liability nor will CONTRACTOR be relieved of liability for damage, injury or loss. 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 the Work site or who may be affected by the Work;
- .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, but not limited to, trees, shrubs, lawns, walks, pavements, roadways, structures, utilities and underground facilities not designated for removal, relocation or replacement in the course of construction.

6.11.2 CONTRACTOR shall comply with all applicable laws and regulations of any public body having jurisdiction for 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. CONTRACTOR shall notify owners of adjacent property and of underground facilities, and utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation and replacement of their property. All damage, injury or loss to any property referred to in paragraph 6.11.1.2 and 6.11.1.3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, Subcontractor, Supplier or any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of OWNER, or E/A, or E/A's consultant or anyone employed by any of them or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the faults or negligence of CONTRACTOR or any Subcontractor, Supplier or other person or organization directly or indirectly employed by any of them). CONTRACTOR's duties and responsibilities for safety and protection of the Work shall continue until such time as all the Work is completed and Owner's Representative has issued a notice to OWNER and CONTRACTOR in accordance with Article 14 that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion). Without limitation, CONTRACTOR shall comply with the following specific provisions:

It shall be the duty and responsibility of CONTRACTOR and all of its subcontractors to be familiar with and comply with 29 USC Section 651, et seq., the Occupational Safety and Health Act of 1970, as amended ("OSHA") and to enforce and comply with all provisions of this Act.

The CONTRACTOR and all of its subcontractors shall comply with all applicable requirements of Subpart P of Part 1926 of 29 C.F.R, OSHA Safety and Health Standards, Texas Health and Safety Code Section 756.023, as amended, and shall submit a unit price for the particular excavation safety systems to be utilized by the Contractor for all excavations which exceed a depth of five feet (5').

Before commencing any excavation which will exceed a depth of five feet (5'), the CONTRACTOR shall provide the Owner with detailed plans and specifications regarding the safety systems to be utilized. Said plans and specifications shall

include a certification from a Texas licensed professional engineer indicating full compliance with the OSHA provisions cited above.

6.11.3 Safety Representative: CONTRACTOR shall designate in writing a qualified and experienced safety representative (the "Safety Representative") at the site whose duties and responsibilities shall include safety training; identifying and mitigating hazardous conditions and unsafe work practices; and developing, maintaining and supervising the implementation of safe work practices and safety programs as deemed necessary and appropriate for the Project. The term "Safety Representative" includes any designated Safety Supervisor, Superintendent or Safety Manager. The Safety Representative shall exercise due diligence in the execution of all Project related safety duties. The Safety Representative shall report directly to a company executive, not an on site project manager. Upon request of OWNER, CONTRACTOR shall provide certifications or other acceptable documentation of the Safety Representative's qualifications. The following requirements will be effective as of September 1, 2010:

- .1 The Safety Representative shall present certification of completion of the OSHA 30-hour Construction Industry Training Outreach Program described at: http://www.osha.gov/dte/outreach/construction_generalindustry/construction.html
- .2 The Safety Representative shall verify that all construction workers (defined as persons covered by a prevailing wage determination) on the job site, whether employed by the CONTRACTOR or subcontractors, have completed the OSHA 10-hour Construction Industry Training Outreach Program described at: http://www.osha.gov/dte/outreach/construction_generalindustry/construction.html. The Safety Representative must receive a certificate of training completion before allowing a worker on site and shall have all such certificates available for inspection by the OWNER.
- .3 The Safety Representative shall ensure that workers, including designated competent persons, have completed all applicable OSHA specific or other training needed to perform their job assignments. Training topics applicable to the scope of the current Project may include, but are not limited to, scaffolds, fall protection, cranes, excavations, electrical safety, tools, concrete and masonry construction, steel erection, operation of motor vehicles and mechanized equipment.
- .4 The Safety Representative shall post notice on the site of the Work stating that all workers shall have completed OSHA Construction Industry Training. The Owner may require, and the Safety Representative should consider providing a means of readily identifying workers who have completed the required training to monitor compliance with these requirements.
- .5 The Safety Representative shall ensure that all required OSHA and Workers Compensation notices to workers are posted in English and Spanish at one or more conspicuous locations on the work site.

6.11.4 Hazard Communication Programs: CONTRACTOR shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the site in accordance with laws and regulations.

6.11.5 Emergencies:

- .1 In emergencies affecting the safety or protection of persons or the Work at the site or adjacent thereto, CONTRACTOR, without special instruction or authorization from OWNER or E/A, is obligated to act reasonably to prevent threatened damage, injury or loss and to mitigate damage or loss to the Work.

CONTRACTOR shall give Owner's Representative telephone notification as soon as reasonably practical and a prompt written notice if CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby. If Owner's Representative determines that a change in the Contract Documents is required because of the action taken by CONTRACTOR in response to such an emergency, a Change Directive or Change Order will be issued to document the consequences of such action; otherwise OWNER will not be responsible for CONTRACTOR's emergency action.

- .2 Authorized agents of CONTRACTOR shall respond immediately to call-out at any time of any day or night when circumstances warrant the presence on Project site of CONTRACTOR or his agent to protect the Work or adjacent property from damage, restriction or limitation or to take such action or measures pertaining to the Work as may be necessary to provide for the safety of the public. Should CONTRACTOR and/or their agent fail to respond and take action to alleviate such an emergency situation, OWNER may direct other forces to take action as necessary to remedy the emergency condition, and OWNER will deduct any cost of such remedial action from the funds due CONTRACTOR under this Contract.
- .3 In the event there is an accident involving injury to any individual or damage to any property on or near the Work, CONTRACTOR shall provide to Owner's Representative verbal notification within one (1) hour and written notification within twenty-four (24) hours of the event and shall be responsible for recording the location of the event and the circumstances surrounding the event through photographs, interviewing witnesses, obtaining medical reports, police accident reports and other documentation that describes the event. Copies of such documentation shall be provided to Owner's Representative, for OWNER's and E/A's records, within forty-eight (48) hours of the event. Contractor shall cooperate with OWNER on any OWNER investigation of any such incident.

6.11.6 Rest Breaks:

- .1 Except as provided in subsection 6.11.6.2 below, an employee performing construction activity at a construction site is entitled to a rest break of not less than ten (10) minutes for every four (4) hours worked. No employee may be required to work more than 3.5 hours without a rest break. A rest break means a break from work within working hours, excluding meal breaks, during which an employee may not work. A rest break shall be scheduled as near as possible to the midpoint of the work period.
- .2 An employee is not entitled to a rest break under subsection 6.11.6.1 on any day the employee works less than 3.5 hours or spends more than half of his or her work time engaged in non-strenuous labor in a climate controlled environment.
- .3 A sign describing the requirements of this Section 6.11.6 in English and Spanish shall be posted by the employer in each establishment subject to the requirement of a rest break in a conspicuous place or places where notices to employees are customarily posted, in accordance with the OWNER's then current rules for size, content, and location of such signage.
- .4 The violation of Ordinance No. 20100729-047, enacted July 29, 2010, which establishes the rest break requirements set forth above, may be enforced with criminal penalties and civil remedies, as set forth in the Ordinance.

6.11.7 If the Contractor fails to carry out the Work in accordance with the Contract Documents so that a safety violation has occurred, the Owner may order the Contractor to stop the Work or any portion thereof, until the cause for such order has been eliminated. However, the right of the Owner to stop the Work under this paragraph shall not give rise to a duty on the part of the Owner to supervise the Contractor's Work or to control the Contractor's means and methods or to exercise this right for the benefit of the Contractor or any other person or entity. All time lost due to Project shut down will be the Contractor's sole responsibility, will be charged against the Contract Time, and the Contractor will be responsible for any and all expenses incurred. This provision is in addition to and supplemental to the applicable provisions of the Project's ROCIP Safety Manual.

6.11.8 Confined Space Program

- .1 Contractor acknowledges and agrees that the Owner is temporarily transferring management and control of the site of the Work to the Contractor for the purpose of constructing the Project. The Contractor's responsibilities to manage the Work includes the responsibility to manage the property for purposes of compliance with 29 CFR 1926 subpart AA. To the best of Owner's knowledge and belief, Owner has provided the following information in the plans and specifications and other Contract Documents: (i) the location of each known permit space, (ii) the hazards or potential hazards in each space or the reason it is a permit space; and (iii) any precautions that the Owner or any previous contractor has implemented for the protection of employees in the permit space. This transfer will result in the Contractor being both the host employer and the controlling contractor for this portion of the Work.

6.12 Continuing the Work: CONTRACTOR shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as OWNER and CONTRACTOR may otherwise agree in writing.

6.13 CONTRACTOR's General Warranty and Guarantee:

6.13.1 CONTRACTOR warrants and guarantees to OWNER that all Work will conform to the plans and specifications, be performed in a good and workmanlike manner in accordance with the Contract Documents and will not be defective. This warranty will survive the termination or expiration of the Contract. CONTRACTOR's warranty and guarantee hereunder excludes defects or damage caused by:

- .1 abuse, modification or improper maintenance or operation by persons other than CONTRACTOR, Subcontractors or Suppliers; or
- .2 normal wear and tear under normal usage.

6.13.2 CONTRACTOR's obligation to perform and complete the Work in a good and workmanlike manner in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of CONTRACTOR's obligation to perform the Work in accordance with the Contract Documents:

- .1 observations by Owner's Representative and/or E/A;
- .2 recommendation of any progress or final payment by Owner's Representative;
- .3 the issuance of a certificate of Substantial Completion or any payment by OWNER to CONTRACTOR under the Contract Documents;
- .4 use or occupancy of the Work or any part thereof by OWNER;

- .5 any acceptance by OWNER or any failure to do so;
- .6 any review of a Shop Drawing or sample submittal;
- .7 any inspection, test or approval by others; or
- .8 any correction of defective Work by OWNER.

6.14 INDEMNIFICATION:

6.14.1 CONTRACTOR shall defend, indemnify and hold harmless OWNER, E/A, E/A'S Consultants and Sub consultants and their respective officers, directors, partners, employees, agents and other Consultants and any of them (the "INDEMNIFIED PARTIES") from and against all claims, costs, losses and damages (including but not limited to all fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs) arising out of or resulting from the performance of the Work, provided that any such claim, cost, loss or damage:

- .1 Is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself), including the loss of use resulting therefrom, and
- .2 Is caused in whole or in part by any negligent act or omission of CONTRACTOR, any Subcontractor, any Supplier, any person or organization directly or indirectly employed by any of them to perform or furnish any of the work or anyone for whose acts any of them may be liable, regardless of whether or not caused in part by any negligence or omission of the INDEMNIFIED PARTIES hereunder or whether liability is imposed upon such INDEMNIFIED PARTY by laws and regulations regardless of the negligence of any such person or entity.

In the event that indemnification of the INDEMNIFIED PARTIES is prohibited by law, CONTRACTOR shall nonetheless be solely responsible for any liability arising out of or resulting from the performance of the Work, subject to the limitations set forth above, and shall indemnify and hold harmless the remaining INDEMNIFIED PARTIES, who may be legally indemnified, from such liability of the CONTRACTOR and the associated costs described above.

6.14.2 The indemnification obligation under paragraph 6.14.1 shall not be limited in any way by any limitation on the amount or type of damages, or compensation or benefits payable by or for CONTRACTOR or any such Subcontractor, Supplier or other person or organization under workers' compensation acts, disability benefit acts or other employee benefit acts.

6.14.3 The obligations of CONTRACTOR under paragraph 6.14.1 shall not extend to the liability of OWNER, E/A, E/A's consultants, and their officers, directors, partners, employees or agents caused primarily by negligent preparation of maps, drawings, surveys, designs or specifications upon which is placed the applicable state-authorized design professional seal of OWNER's, E/A's or E/A's consultant's officers, directors, partners, employees or agents.

6.14.4 In the event CONTRACTOR fails to follow OWNER's directives concerning use of the site, scheduling or course of construction, or engages in other conduct which proximately causes damage to property based on inverse condemnation or otherwise, then and in that event, CONTRACTOR shall indemnify OWNER against all costs resulting from such claims.

6.14.5 In the event CONTRACTOR unreasonably delays progress of the work being done by others on the site so as to cause loss for

which OWNER becomes liable, then CONTRACTOR shall indemnify OWNER from and reimburse OWNER for such loss.

- 6.15 Survival of Obligations:** All representations, indemnifications, warranties and guarantees made in, required by or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion and acceptance of the Work and termination or completion of the Agreement.
- 6.16 Losses from Natural Causes:** Unless otherwise specified, all loss or damage to CONTRACTOR arising out of the nature of the Work to be done or from action of the elements, floods or from unforeseeable circumstances in prosecution of the Work or from unusual obstructions or difficulties which may be encountered in prosecution of the Work, shall be sustained and borne by CONTRACTOR at its own cost and expense.
- 6.17 Notice of Claim:** Should CONTRACTOR suffer injury or damage to person or property because of any error, omission or act of OWNER or of any of OWNER's employees or agents or others for whose acts OWNER is liable, a Claim must be made to the other party within thirty (30) calendar days of the event giving rise to such injury or damage. The provisions of this paragraph 6.17 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitations or statute of repose.
- 6.18 Liquidated Damages:** CONTRACTOR or its Surety shall be liable for liquidated damages for the failure of the CONTRACTOR to timely complete the Work or any portion thereof within the Contract Time.

ARTICLE 7 - OTHER WORK

- 7.1** OWNER may perform other work related to the Project at the site by OWNER's own forces, or let other contracts therefor, or have other work performed by utility owners. CONTRACTOR and OWNER agree to and shall use best efforts to cooperate and coordinate the Work with others performing work and other work related to the Project in order to avoid conflicts and delays in the Work. If CONTRACTOR believes that delay or additional cost is involved because of such action by OWNER, CONTRACTOR may make a Claim as provided in Article 11 or 12.
- 7.2** CONTRACTOR shall afford other contractors who are in a contract with OWNER and each utility owner (and OWNER, if OWNER is performing the additional work with 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 such other work and shall properly connect and coordinate the Work with theirs. Unless otherwise provided in the Contract Documents, 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 such other work. CONTRACTOR shall not endanger any work of others by cutting, excavating or otherwise altering their work and will only cut or alter their work with the written consent of Owner's Representative and the other contractors whose work will be affected. CONTRACTOR shall promptly remedy damage wrongfully caused by CONTRACTOR to completed or partially completed construction or to property of the OWNER or separate contractors.
- 7.3** If the proper execution or results of any part of CONTRACTOR's Work depends upon work performed by others under this Article 7, CONTRACTOR shall inspect such other work and promptly report to Owner's Representative in writing any delays, defects or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of CONTRACTOR's Work. CONTRACTOR's failure to report will constitute an acceptance of such other work as fit and proper for integration with CONTRACTOR's Work except for latent or non-apparent defects and deficiencies in such other work.

- 7.4** OWNER shall provide for coordination of the activities of the OWNER's own forces and of each separate contractor with the Work of CONTRACTOR, who shall cooperate with them. CONTRACTOR shall participate with other separate contractors and Owner's Representative in reviewing their construction Progress Schedules when directed to do so. On the basis of such review, CONTRACTOR shall make any revisions to the construction Progress Schedule deemed necessary after a joint review and mutual agreement. The agreed upon construction Progress Schedules shall then constitute the Progress Schedules to be used by CONTRACTOR, separate contractors and OWNER until subsequently revised.
- 7.5** Costs caused by delays or by improperly timed activities or defective construction shall be borne by the party responsible therefor.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

- 8.1** Prior to the start of construction, OWNER will designate in writing a person or entity to act as Owner's Representative during construction. Except as otherwise provided in these General Conditions, OWNER shall issue all communications to CONTRACTOR through Owner's Representative.
- 8.2** OWNER will not supervise, direct, control or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences or procedures of construction or the safety precautions and programs incident thereto. OWNER is not responsible for any failure of CONTRACTOR to comply with laws and regulations applicable to furnishing or performing the Work. OWNER is not responsible for CONTRACTOR's failure to perform or furnish the Work in accordance with the Contract Documents. Failure or omission of OWNER to discover, or object to or condemn any defective Work or material shall not release CONTRACTOR from the obligation to properly and fully perform the Contract.
- 8.3** OWNER is not responsible for the acts or omissions of CONTRACTOR, or of any Subcontractor, any Supplier, or of any other person or organization performing or furnishing any of the Work. CONTRACTOR acknowledges and agrees that OWNER'S direction to perform Work in accordance with the approved Progress Schedule is not a demand for acceleration or a dictation of CONTRACTOR'S means or methods.
- 8.4** Information or services under the OWNER's control shall be furnished by the OWNER with reasonable promptness to avoid delay in orderly progress of the Work. The OWNER shall have a reasonable amount of time to investigate site conditions, review submittals, analyze requests for changes, and to make other decisions in the orderly administration of the Contract. CONTRACTOR must notify the OWNER in writing, if the time for the investigation, review, analysis of any submittals, required for changes or otherwise required for OWNER'S decision, impacts in any way the Critical Path of the approved Progress Schedule.
- 8.5** The foregoing are in addition to other duties and responsibilities of the OWNER enumerated herein and especially those in respect to Article 4 (Availability of Lands; Subsurface and Physical Conditions; Reference Points), Article 7 (Other Work) and Article 14 (Payments to CONTRACTOR and Completion).
- 8.6** **Notice of Claim:** Should OWNER suffer injury or damage to person or property because of any error, omission or act of CONTRACTOR or of any of CONTRACTOR's employees or agents or others for whose acts CONTRACTOR is liable, a Claim will be made to the other party within thirty (30) calendar days of receipt of actual or constructive notice of the event giving rise to such injury or damage. The provisions of this paragraph 8.6 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitations or statute of repose.

ARTICLE 9 - ENGINEER/ARCHITECT'S STATUS DURING CONSTRUCTION**9.1 E/A's Authority and Responsibilities:**

- 9.1.1** The duties and responsibilities and the limitations of authority of E/A during construction, as set forth in the Contract Documents, may be assigned or assumed by the OWNER, but shall not be extended without written consent of OWNER and/or E/A. The assignment of any authority, duties or responsibilities to E/A under the Contract Documents, or under any agreement between OWNER and E/A, or any undertaking, exercise or performance thereof by E/A, is intended to be for the sole and exclusive benefit of OWNER and not for the benefit of CONTRACTOR, Subcontractor, Supplier, or any other person or organization, or for any surety or employee or agent of any of them.
- 9.1.2** E/A will not supervise, direct, control or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto. E/A is not responsible for any failure of CONTRACTOR to comply with laws and regulations applicable to the furnishing or performing the Work. E/A is not responsible for CONTRACTOR's failure to perform or furnish the Work in accordance with the Contract Documents. Failure or omission of E/A to discover, or object to or condemn any defective Work or material shall not release CONTRACTOR from the obligation to properly and fully perform the Contract.
- 9.1.3** E/A is not responsible for the acts or omissions of CONTRACTOR, or of any Subcontractor, any Supplier, or of any other person or organization performing or furnishing any of the Work.
- 9.1.4** If OWNER and E/A agree, E/A will review the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds and certificates of inspection, tests and approvals and other documentation required to be delivered by Article 14, but only to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests and approvals that the results certified indicate compliance with, the Contract Documents.
- 9.1.5** The limitations upon authority and responsibility set forth in this paragraph 9.1 shall also apply to E/A's Consultants, Resident Project Representative and assistants.

9.2 E/A as Owner's Representative: E/A may be designated as the Owner's Representative under paragraph 8.1.

9.3 Visits to Site: If OWNER and E/A agree, E/A will make visits to the site at intervals appropriate to the various stages of construction as E/A deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of CONTRACTOR's executed Work. Based on information obtained during such visits and observations, E/A will endeavor for the benefit of OWNER to determine, in general, if the Work is proceeding in accordance with the Contract Documents. E/A will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. E/A's efforts will be directed toward providing for OWNER a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and on-site observations, E/A will keep OWNER informed of the progress of the Work and will endeavor to guard OWNER against defective Work. E/A's visits and on-site observations are subject to all the limitations on E/A's authority and responsibility set forth in paragraph 9.1.

- 9.4 Resident Project Representative:** If OWNER and E/A agree, E/A will furnish a Resident Project Representative to assist E/A in providing more continuous observation of the Work. The responsibilities and authority and limitations of any such Resident Project Representative and assistants will be as provided in paragraph 9.1 and in the Supplemental General Conditions. OWNER may designate another representative or agent to represent OWNER at the site who is not E/A, E/A's consultant, agent or employee.
- 9.5 Clarifications and Interpretations:** E/A may determine that written clarifications or interpretations of the requirements of the Contract Documents (in the form of drawings or otherwise) are necessary. Such written clarifications or interpretations will be consistent with the intent of and reasonably inferable from the Contract Documents, will be issued with reasonable promptness by Owner's Representative and will be binding on OWNER and CONTRACTOR. If OWNER or CONTRACTOR believes that a written clarification or interpretation justifies an adjustment in the Contract Amount or the Contract Times, OWNER or CONTRACTOR may make a Claim therefor as provided in Article 11 or 12.
- 9.6 Rejecting Defective Work:** E/A will recommend that OWNER disapprove or reject Work which E/A believes to be defective, or believes will not produce a completed Project that conforms to the Contract Documents or will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
- 9.7 Shop Drawings:** Refer to Division 1 for E/A's authority concerning Shop Drawings.

ARTICLE 10 - CHANGES IN THE WORK

10.1 Changes:

- 10.1.1** Without invalidating the Contract and without notice to any surety, OWNER may, at any time or from time to time, order additions, deletions or revisions in the Work. Such changes in the Work will be authorized by Change Order, Change Directive or Field Order. In the event that the OWNER and the CONTRACTOR are unable to negotiate the terms of a Change Order for the performance of additional Work, the OWNER may, at its election, perform such additional Work with its own forces or with another contractor and such work will be considered "Other Work" in accordance with Article 7.
- 10.1.2** Changes in the Work shall be performed under applicable provisions of the Contract Documents, and CONTRACTOR shall proceed promptly, unless otherwise provided in the Change Order, Change Directive or Field Order. CONTRACTOR's proposals for changes in the Contract Amount and/or Contract Time shall be submitted within ten (10) Calendar Days of request by Owner's Representative, including impacts to the approved Progress Schedule, unless Owner's Representative grants an extension. OWNER will review each proposal and respond to CONTRACTOR within ten (10) Calendar Days. After review by OWNER, CONTRACTOR shall provide any supporting data requested by Owner's Representative within seven (7) Calendar Days, unless Owner's Representative grants an extension. OWNER will determine within seven (7) Calendar Days whether to pursue the change in Work.
- 10.1.3** CONTRACTOR shall not be entitled to an increase in the Contract Amount or an extension of the Contract Times with respect to any Work performed that is not required by the Contract Documents as amended, modified and supplemented as provided in paragraphs 3.3.1 and 3.3.2, except in the case of an emergency as provided in paragraph 6.11.5 or in the case of uncovering Work as provided in paragraph 13.4.

- 10.1.4** Except in the case of an emergency as provided in paragraph 6.11.5, a Change Order or Change Directive is required before CONTRACTOR commences any activities associated with a change in the Work which, in CONTRACTOR 's opinion, will result in a change in the Contract Amount and/or Contract Times.
- 10.1.5** If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Amount or Contract Times) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR's responsibility, and the amount of each applicable Bond will be adjusted accordingly.

10.2 Change Orders:

- 10.2.1** OWNER and CONTRACTOR shall execute appropriate written Change Orders covering:
 - .1 a change in the Work;
 - .2 the amount of the adjustment in the Contract Amount, if any; and
 - .3 the extent of the adjustment in the Contract Time, if any.
- 10.2.2** An executed Change Order shall represent the complete, equitable, and final amount of adjustment in the Contract Amount and/or Contract Time owed to CONTRACTOR or OWNER as a result of the occurrence or event causing the change in the Work encompassed by the Change Order.

10.3 Change Directives:

- 10.3.1** Without invalidating the Contract, OWNER may, by written Change Directive, using the Force Account method, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Amount and Contract Time being adjusted as necessary. "Force Account" means a basis of payment for the direct performance of Work with payment based on the actual cost of the labor, equipment and materials furnished and consideration for overhead and profit as set forth in Section 11.5, below. A Change Directive shall be used in the absence of complete and prompt agreement on the terms of a Change Order. Where practicable, any items of Work that may be agreed upon, prior to the performance of Work under this Section, will be included in a separate Change Order. For example, the cost of the installation of additional asphalt may be agreed upon based on the unit prices in the Bid.
- 10.3.2** If the Change Directive provides for an adjustment to the Contract Amount, the adjustment shall be based on the method provided in paragraph 11.5.
- 10.3.3** A Change Directive shall be effective immediately and shall be recorded later by preparation and execution of an appropriate Change Order.
- 10.3.4** Upon receipt of a Change Directive, CONTRACTOR shall promptly proceed with the change in the Work involved, provided, prior to the commencement of any Work under this section, the CONTRACTOR must submit its proposed Work plan, anticipated schedule, and a list of its work force and equipment proposed to be used in the Work for OWNER'S approval. Upon such approval, CONTRACTOR must promptly commence and make continuous progress in the Work. The OWNER reserves the right to withhold payment for low production or lack of progress.

10.4 Field Order:

- 10.4.1** Owner's Representative may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Amount or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the

Contract Documents. These shall be accomplished by written Field Order and shall be binding on OWNER and on CONTRACTOR who shall perform the Work involved promptly.

10.4.2 If CONTRACTOR believes that a Field Order would require an adjustment in the Contract Amount and/or Contract Times, CONTRACTOR shall make a prompt written request to Owner's Representative for a Change Order. Any request by CONTRACTOR for an adjustment in Contract Amount and/or Contract Times must be made in writing prior to beginning the work covered by the Field Order.

10.5 No Damages for Delay: CONTRACTOR shall receive no compensation for delays or hindrances to the Work, except when direct and unavoidable extra cost to CONTRACTOR is caused by failure of OWNER to provide information or material, if any, which is to be furnished by OWNER or access to the Work and only to the extent that such acts continue after the CONTRACTOR furnishes OWNER with written notice of such failure. When such extra compensation is claimed a written statement thereof shall be presented by CONTRACTOR to OWNER and if by OWNER found correct shall be approved. If delay is caused by specific orders given by OWNER to stop work or by performance of extra Work or by failure of OWNER to provide material or necessary instructions for carrying on the Work, then such delay will entitle CONTRACTOR to an equivalent extension of time, CONTRACTOR's application for which shall, however, be subject to approval of OWNER. No such extension of time shall release CONTRACTOR or surety on its performance bond from all CONTRACTOR's obligations hereunder which shall remain in full force until discharge of the Contract. In no event shall the CONTRACTOR be entitled to any compensation or recovery of any special damages in connection with any delays, including without limitation: consequential damages, lost opportunity costs, impact damages, or other similar damages. The OWNER'S exercise of any of its rights or remedies under the Contract Documents (including without limitation ordering changes in the Work, or directing suspension, rescheduling, or correction of the Work), regardless of the extent or frequency of the OWNER'S exercise of such rights or remedies, shall not be construed as active interference in the CONTRACTOR'S performance of the Work. Except as otherwise provided herein, an extension of Contract Time, to the extent permitted under Article 12, shall be the sole remedy of the CONTRACTOR for any acknowledged delays.

ARTICLE 11 - CHANGE OF CONTRACT AMOUNT

11.1 The Contract Amount is stated in the Agreement and, including authorized adjustments, is the total amount payable by OWNER to CONTRACTOR for performance of the Work under the Contract Documents.

11.2 The original Contract Amount may not be increased by more than twenty-five percent (25%) and it may not be decreased more than twenty-five percent (25%) without the consent of the CONTRACTOR to such decrease, except in the event of a termination for convenience under paragraph 15.2 or the failure of the City Council to appropriate sufficient funding for the Project, in which events it is agreed that the consent of the CONTRACTOR will not be required.

11.3 The Contract Amount shall only be changed by a Change Order. Any claim for an adjustment in the Contract Amount shall be made by Written Notice delivered by the party making the Claim to the other party promptly (but in no event later than thirty (30) calendar days) after the start of the occurrence or 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 within thirty (30) calendar days after Written Notice of Claim is delivered by claimant, and shall represent that the adjustment claimed covers all known amounts to which claimant is entitled as a result of said occurrence or event. If OWNER and

CONTRACTOR cannot otherwise agree, all Claims for adjustment in the Contract Amount shall be determined as set out in Article 16.

11.4 Determination of Value of Work:

11.4.1 The value of any Work covered by a Change Order for an adjustment in the Contract Amount will be determined by one or more of the following methods:

- .1 by application of unit prices contained in the Contract Documents to the quantities of the items involved.
- .2 by a mutually agreed lump sum properly itemized and supported by sufficient substantiating data, including documentation by subcontractors performing the work, to permit evaluation.
- .3 by cost of Work plus CONTRACTOR's fee for all overhead costs and profit (determined as provided in paragraph 11.5).
- .4 No cost will be included in the change order for time spent preparing the change order, nor will costs be included for an estimate of time to negotiate the change order costs for machinery, tools, or equipment as described in subparagraph 11.5.3

11.4.2 Before using the method described in paragraph 11.4.1.3, OWNER and CONTRACTOR agree to negotiate a Change Order using the methods identified in paragraphs 11.4.1.1 and 11.4.1.2, as appropriate, to determine the adjustment in the Contract Amount.

11.5 Cost of Work: If neither of the methods defined in paragraphs 11.4.1.1 nor 11.4.1.2 can be agreed upon before a change in the Work is commenced which will result in an adjustment in the Contract Amount, then the change in the Work will be performed by Change Directive, using the Force Account method, and payment will be made as follows:

11.5.1 For all personnel, CONTRACTOR will receive actual field cost wage rates for each hour that said personnel are actually engaged in such Work, as substantiated by its certified payroll, to which will be added an amount equal to twenty-five percent (25%) of the sum thereof as compensation for CONTRACTOR's and any effected Subcontractor's total overhead and profit. No separate charge will be made by CONTRACTOR or its Subcontractor(s) for organization or overhead expenses. In no case will the rate of wage be less than the minimum shown in the Contract for a particular category. CONTRACTOR will also receive an amount equal to 55% of the wages paid personnel, excluding the 25% compensation provided above, for CONTRACTOR's and any effected Subcontractor's cost of premiums on public liability insurance, workers' compensation insurance, social security and unemployment insurance. The actual cost of CONTRACTOR's bond(s) on the extra Work will be paid based on invoices from surety. No charge for superintendence will be made unless considered necessary and ordered by OWNER.

11.5.2 CONTRACTOR will receive the actual cost, including freight charges, of the materials used and installed on such Work, to which costs will be added a sum equal to twenty-five percent (25%) thereof as compensation for CONTRACTOR's and any effected Subcontractor's total overhead and profit. In case material invoices indicate a discount may be taken, the actual cost will be the invoice price minus the discount.

11.5.3 For machinery, trucks, power tools, or other similar equipment (the "equipment") agreed to be necessary by OWNER and CONTRACTOR, OWNER will allow CONTRACTOR the Regional and Model Year adjusted Monthly Ownership Cost divided by 176 plus the Hourly Estimated Operating Costs as given in the latest edition of the "Rental Rate Blue Book" as published by EquipmentWatch (1-800-

669-3282) for each hour that said equipment is in use on such work. The established equipment rates will be paid for each hour that the equipment is utilized in the Work. In the event that the equipment is used intermittently during the Work, full payment for an eight-hour day will be made if the equipment is not idle more than four (4) hours of the day. If the equipment is idle more than four (4) hours in a day, then payment will be made only for the actual hours worked. No additional compensation will be allowed on the equipment for CONTRACTOR's or any affected Subcontractor's overhead and profit. OWNER may accept an actual rental invoice in lieu of the method of calculation set forth in paragraph 11.5.3 for equipment rented exclusively for Force Account Work or for equipment not included in the Rental Rate Blue Book.

- 11.5.4** The compensation, as herein provided for, shall be received by CONTRACTOR and any affected Subcontractor as payment in full for work done by Change Directive and will include use of small tools, and total overhead expense and profit. CONTRACTOR and Owner's Representative shall compare records of work done by Change Directive at the end of each day. Copies of these records will be made upon forms provided for this purpose by OWNER and signed by both Owner's Representative and CONTRACTOR, with one copy being retained by OWNER and one by CONTRACTOR. Refusal by CONTRACTOR to sign these records within two (2) working days of presentation does not invalidate the accuracy of the record.

11.6 Unit Price Work:

- 11.6.1** Where the Contract Documents provide that all or part of the Work is to be unit price Work, initially the Contract Amount will be deemed to include for all unit price work an amount equal to the sum of the established unit price for each separately identified item of unit price work times the estimated quantity of each item as indicated in the Bid. The estimated quantities of items of unit price work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Amount. Determinations of the actual quantities and classifications of unit price work performed by CONTRACTOR will be made by Owner's Representative. Owner's Representative will review with CONTRACTOR the preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise).
- 11.6.2** When "plan quantity" is indicated for a Bid item, CONTRACTOR shall be paid amount specified in the Contract Documents without any measurements.
- 11.6.3** Each unit price will be deemed to include an amount considered by CONTRACTOR to be adequate to cover CONTRACTOR's overhead and profit for each separately identified item.
- 11.6.4** A Major Item is any individual Bid item in the Bid that has a total cost equal to or greater than five percent (5%) of the original Contract Amount or \$50,000, whichever is greater, computed on the basis of Bid quantities and Contract unit prices.
- 11.6.5** OWNER or CONTRACTOR may make a Claim for an adjustment in the Contract Amount in accordance with Article 11 if:
- .1** the actual quantity of any Major Item should become as much as twenty percent (20%) more than or twenty percent (20%) less than that in the Bid; or
 - .2** CONTRACTOR presents documentation contesting accuracy of "plan quantity" and Owner's Representative verifies quantity and determines original value is in error by five percent (5%) or more;

Provided, however, in the event a Major Item is reduced by twenty percent (20%) or more of the amount in the Bid, no additional Article 11 profit or overhead will be added, if, due to other additions in the Work, the net value of the Contract Amount is not reduced.

ARTICLE 12 - CHANGE OF CONTRACT TIMES

12.1 Working Day and Calendar Day Contracts:

- 12.1.1** The Contract Times (or Milestones) may only be changed by Change Order or Time Extension Request duly executed by both CONTRACTOR and Owner's Representative. Any claim for an adjustment of the Contract Times (or Milestones) shall be made by Written Notice delivered by the party making the Claim to the other party promptly (but in no event later than thirty (30) calendar days after the start of the occurrence or event giving rise to the delay) and stating the general nature of the delay. Notice of the extent of the delay with supporting data shall be delivered within thirty (30) calendar days after Written Notice of Claim is delivered by claimant, and shall represent that the adjustment claimed is the entire adjustment to which claimant is entitled as a result of said occurrence or event. If OWNER and CONTRACTOR cannot otherwise agree, all Claims for adjustment in the Contract Times (or Milestones) shall be determined as set out in Article 16. No Claim for an adjustment in the Contract Times (or Milestones) will be valid if not submitted in accordance with the requirements of this paragraph.
- 12.1.2** When CONTRACTOR is at fault and OWNER stops the Work, so that corrections in the Work can be made by CONTRACTOR, no extension in time will be allowed.
- 12.1.3** When CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of both OWNER and CONTRACTOR, an extension of the Contract Times (or Milestones) in an amount equal to the time lost due to such delay shall be CONTRACTOR's sole and exclusive remedy for such delay. If performance by the CONTRACTOR or OWNER is interrupted by any occurrence not occasioned by its own conduct, whether such occurrence be an act of god or the result of war, riot, civil commotion, sovereign conduct, or the conduct of a third party, then such performance will be excused for a period of time necessary to remedy its effects, provided, however, in such an event, a conference will be held within three (3) business days to establish a proposed new Progress Schedule for the Project.
- 12.1.4** OWNER will consider time extension requests and may grant CONTRACTOR an extension of time because of:
- .1** Changes ordered in the work which justify additional time.
 - .2** Failure of materials or products being at the Project site due to delays in transportation or failures of Suppliers, which are not the result of CONTRACTOR's, Subcontractor's or Supplier's negligence. The request for an extension of time shall be supported by a citation of acts demonstrating that the delays are beyond CONTRACTOR's control, including, but not limited to, CONTRACTOR's efforts to overcome such delays documented as follows:
 - a)** Copy of purchase order for delayed item(s) indicating date ordered by CONTRACTOR/ Subcontractor and date purchase order received by Supplier.
 - b)** If item(s) require Shop Drawings or other submittal information in accordance with the Contract Documents, provide record of date

submittal(s) forwarded to Owner's Representative, date submittal(s) returned to CONTRACTOR, and date submittal(s) forwarded to Supplier.

- c) Copy of document(s) from Supplier, on Supplier's letterhead, indicating date(s) item(s) would be ready for shipment and/or actual shipment date(s).
- d) Copies of all correspondence between CONTRACTOR / Subcontractor and Supplier indicating CONTRACTOR / Subcontractor's efforts to expedite item(s).
- e) If item(s) are being purchased by a Subcontractor, provide correspondence, meeting notes, etc., that reflect CONTRACTOR's efforts with the Subcontractor to expedite delivery of the item(s).

.3 When acts of OWNER, E/A, utility owners or other contractors employed by OWNER delay progress of work through no fault of CONTRACTOR. The CONTRACTOR will only be entitled to an extension of time for delays that affect the Critical Path of the Work and that are not caused by the CONTRACTOR.

.4 When CONTRACTOR is delayed by strikes, lockouts, fires, losses from natural causes, or other unavoidable cause or causes beyond CONTRACTOR's control.

12.2 Calendar Day Contracts:

12.2.1 Under a Calendar Day Contract, CONTRACTOR may be granted an extension of time because of unusual inclement weather, including but not limited to unusual rainfall events, which are beyond the normal rainfall recorded and expected for Austin, Texas. However, the CONTRACTOR will not be granted an extension of time for "normal rainfall", as described below.

12.2.2 "Unusual Inclement Weather" is defined as a rain event or other weather related event which occurs at the site and is of sufficient magnitude to prevent CONTRACTOR from performing units of Work critical to maintaining the Progress Schedule.

12.2.3 Baseline Rain Day Determination. "Normal rainfall" compiled by the State climatologist, based on U.S. Weather Bureau Records for Austin, Texas, is considered a part of the Calendar Day Contract, and is not a justification for an extension of time. Listed below are the number of days in each month for which no compensatory days for rainfall events ("Rain Days") in such months may be claimed:

- January..... 8 days
- February..... 8 days
- March..... 7 days
- April..... 7 days
- May..... 9 days
- June..... 6 days
- July..... 5 days
- August..... 5 days
- September..... 7 days
- October..... 7 days

November..... 7 days

December..... 7 days

Rain Days in addition to the baseline Rain Day determination described above will be measured with the Owner’s Representative’s approval at the nearest operational public weather data collection facility to the site, including but not limited to the OWNER’s early warning flood gauge system.

12.2.4 CONTRACTOR may receive credit in any month for Unusual Inclement Weather, and specifically for any Rain Days in that month which exceed the number of Rain Days allocated to that month, if a Claim is made in accordance with paragraph 12.1.1 and the weather event meets the definition for "Unusual Inclement Weather", and as applicable, "Rain Day" and such claimed day is a day on which Work critical to maintaining the Progress Schedule is scheduled to be performed and is otherwise capable of being performed.

ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.1 Notice of Defects: Prompt notice of all defective Work of which OWNER or E/A has actual knowledge will be given to CONTRACTOR. All defective Work may be rejected, corrected or accepted as provided in Article 13. CONTRACTOR must give OWNER and E/A prompt notice of any defective Work of which CONTRACTOR has actual knowledge.

13.2 Access to Work: OWNER, E/A, E/A's Consultants, other representatives and personnel of OWNER, independent testing laboratories and governmental agencies having jurisdiction will have access to the Work at reasonable times for observing, inspecting and testing. CONTRACTOR shall provide them proper and safe conditions for such access, and advise them of CONTRACTOR's site safety procedures and programs so that they may comply therewith as applicable.

13.3 Tests and Inspections:

13.3.1 CONTRACTOR shall give timely notice of readiness of the Work for all required inspections, tests or approvals, and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

13.3.2 OWNER shall employ and pay for services of an independent testing laboratory to perform all inspections, tests or approvals required by the Contract Documents except:

- .1 for inspections, tests or approvals covered by paragraphs 13.3.3 and 13.3.4 below;
- .2 that costs incurred for tests or inspections conducted pursuant to paragraph 13.4.3 shall be paid as provided in paragraph 13.4.3;
- .3 for reinspecting or retesting defective Work, including any associated costs incurred by the testing laboratory for cancelled tests or standby time; and
- .4 as otherwise specifically provided in the Contract Documents.

13.3.3 If laws or regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested or approved by an employee or other representative of such public body, CONTRACTOR shall assume full responsibility for arranging and obtaining such inspections, tests or approvals, pay

all costs in connection therewith and furnish Owner's Representative the required certificates of inspection or approval.

- 13.3.4** CONTRACTOR shall also be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests or approvals required for OWNER's and E/A's review of submittals covering materials, equipment, and mix designs to be incorporated in the Work.
- 13.3.5** All testing laboratories shall meet the requirements of ASTM E-329.

13.4 Uncovering Work:

- 13.4.1** If any Work (or the work of others) that is to be inspected, tested or approved is covered by CONTRACTOR without written concurrence of Owner's Representative, or if any Work is covered contrary to the written request of Owner's Representative, it must, if requested by Owner's Representative, be uncovered and recovered at CONTRACTOR's expense.
- 13.4.2** Uncovering Work as provided in paragraph 13.4.1 shall be at CONTRACTOR's expense unless CONTRACTOR has given Owner's Representative timely notice of CONTRACTOR's intention to cover the same and Owner's Representative has not acted within five (5) working days to such notice.
- 13.4.3** If Owner's Representative considers it necessary or advisable that covered Work be observed, inspected or tested, CONTRACTOR shall uncover, expose or otherwise make available for observation, inspection or testing that portion of the Work in question, furnishing all necessary labor, material and equipment. If it is found that such Work is defective, CONTRACTOR shall pay all claims, costs, losses and damages caused by, arising out of or resulting from such uncovering, exposure, observation, inspection and testing and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and OWNER shall be entitled to an appropriate decrease in the Contract Amount, and may make a Claim therefor as provided in Article 11. If, however, such Work is not found to be defective, CONTRACTOR shall be allowed an increase in the Contract Amount or an extension of the Contract Times (or Milestones), or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement and reconstruction; and CONTRACTOR may make a Claim therefor as provided in Articles 11 and 12.

13.5 OWNER May Stop the Work:

- 13.5.1** If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workers, suitable materials, and/or equipment; or fails to furnish or perform the Work in such a way that the Work in progress or the completed Work will conform to the Contract Documents, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of OWNER to stop the Work shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR or any surety or other party.
- 13.5.2** If CONTRACTOR fails to correct defective Work or submit a satisfactory plan to take corrective action, with procedure and time schedule, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until cause for such order has been eliminated, or take any other action permitted by this Contract. A notice to stop the Work, based on defects, shall not stop calendar or working days charged to the Project.

13.6 Correction or Removal of Defective Work: If required by OWNER, CONTRACTOR shall promptly, as directed, either correct all defective Work, whether or not fabricated, installed or completed, or, if the Work has been rejected by Owner's Representative, remove it from the site and replace it with Work that is not defective. CONTRACTOR shall correct or remove and replace defective Work, or submit a plan of action detailing how the deficiency will be corrected, within the time frame identified in the notice of defective Work. CONTRACTOR shall pay all claims, costs, losses and damages caused by or resulting from such correction or removal (including but not limited to all costs of repair or replacement of work of others).

13.7 Warranty period:

13.7.1 If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by laws or regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents (e.g. paragraph 14.11.2), any Work, including work performed after the Substantial Completion date, is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER's written instructions:

- (i) correct such defective Work, or, if it has been rejected by OWNER, remove it from the site and replace it with Work that is not defective, and
- (ii) satisfactorily correct or remove and replace any damage to other Work or the work of others resulting therefrom.

If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the defective Work corrected or the rejected Work removed and replaced, and all claims, costs, losses and damages caused by or resulting from such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by CONTRACTOR. The warranty period will be deemed to be renewed and recommenced in connection with the completed items of Work requiring correction.

13.7.2 In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the warranty period for that item may start to run from an earlier date if so provided in the Contract Documents.

13.7.3 If correction of defective Work will affect the function or use of the facility CONTRACTOR shall not proceed with correction of defective Work without prior coordination and approval of OWNER.

13.7.4 The obligations of the CONTRACTOR to perform warranty work will survive the acceptance of the Work and any termination of the Contract.

13.8 Acceptance of Defective Work: If, instead of requiring correction or removal and replacement of defective Work, OWNER decides to accept it, OWNER may do so. CONTRACTOR shall pay all claims, costs, losses and damages attributable to OWNER's evaluation of and determination to accept such defective Work. If any such acceptance occurs prior to recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents and compensating OWNER for the diminished value of the defective Work. If the acceptance occurs after such recommendation, an appropriate amount will be paid by CONTRACTOR to OWNER after a calculation by OWNER of the diminution in value of the defective Work.

13.9 OWNER May Correct Defective Work: If CONTRACTOR fails within a reasonable time after Written Notice of OWNER to correct defective Work, or to remove and replace rejected Work, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract

Documents, OWNER may, after seven (7) calendar days' Written Notice to CONTRACTOR, correct and remedy any such deficiency. If, in the opinion of the Owner's Representative, significant progress has not been made during this seven (7) calendar day period to correct the deficiency, the OWNER may exercise any actions necessary to remedy the deficiency. In exercising the rights and remedies under this paragraph, OWNER shall proceed expeditiously. In connection with such corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the site, take possession of all or part of the Work, and suspend CONTRACTOR's services related thereto, and incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, its agents and employees, OWNER's other contractors, E/A and E/A's consultants access to the site to enable OWNER to exercise the rights and remedies under this paragraph. All claims, costs, losses and damages incurred or sustained by OWNER in exercising such rights and remedies will be charged against CONTRACTOR and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work. Such claims, costs, losses and damages will include but not be limited to all costs of repair or replacement of work of others destroyed or damaged by correction, removal or replacement of CONTRACTOR's defective Work. CONTRACTOR shall not be allowed an extension of the Contract Times (or Milestones), or claims of damage because of any delay in the performance of the Work attributable to the exercise by OWNER of OWNER's rights and remedies hereunder.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

14.1 Application for Progress Payment:

- 14.1.1** Within 45 days from when the work was performed by the Contractor and Subcontractors, but not more often than once a month, CONTRACTOR shall submit to Owner's Representative for review an Application for Payment, in a form acceptable to OWNER, filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents.
- 14.1.2** Such applications shall not include requests for payment on account of changes in the Work which have been properly authorized by Change Directives but not yet included in Change Orders.
- 14.1.3** Such applications shall not include requests for payment of amounts the CONTRACTOR does not intend to pay to a Subcontractor or Supplier because of a dispute or other reason.
- 14.1.4** If payment is requested on the basis of materials or equipment not incorporated in the Work but delivered and suitably stored at the site or at another location agreed to in writing, the Application for Payment shall be accompanied by such bills of sale, data and other procedures satisfactory to OWNER substantiating OWNER's title to such materials or equipment or otherwise protecting OWNER's interest. Payment on account of such materials or equipment will not include any amount for CONTRACTOR's overhead or profit or relieve CONTRACTOR of its obligation to protect and install such materials or equipment in accordance with the requirements of the Contract and to restore damaged or defective Work. If materials or equipment are stored at another location, at the direction of the OWNER they shall be stored in a bonded and insured facility, accessible to E/A and OWNER, and shall be clearly marked as property of OWNER. Title to materials delivered to the site of the Work or a staging area will pass to OWNER upon payment by OWNER without the necessity for further documentation. Risk of loss will not pass to OWNER until acceptance.

14.1.5 Where the original Contract Amount is less than \$400,000, OWNER will pay CONTRACTOR total amount of approved Application for Payment, less ten percent (10%) of amount thereof, which ten percent (10%) will be retained until final payment, less all previous payments and less all other sums that may be retained by OWNER under the terms of this Agreement. Where the original Contract Amount is \$400,000 or more, OWNER will pay CONTRACTOR total amount of approved Application for Payment, less five percent (5%) of amount thereof, which five percent (5%) will be retained until final payment, less all previous payments and less all other sums that may be retained by OWNER under the terms of this Agreement. In either case, if the Work is near completion and delay occurs due to no fault or neglect of CONTRACTOR, OWNER may pay a portion of the retained amount to CONTRACTOR. CONTRACTOR, at OWNER's option, may be relieved of the obligation to complete the Work and, thereupon, CONTRACTOR shall receive payment of the balance due under the Contract subject to the conditions stated under paragraph 15.2. A Subcontractor may submit a written request to the CONTRACTOR and Project Manager requesting release of retainage for work by the Subcontractor that has been completed and approved. The Project Manager will evaluate the request and if it is approved, the Project Manager will request the CONTRACTOR to include the request for release of an appropriate amount of retainage in the next Pay Application.

14.1.6 Applications for Payment shall include the following documentation:

- .1 updated Progress Schedule;
- .2 monthly subcontractor report;
- .3 any other documentation required under the Supplemental General Conditions.

14.2 CONTRACTOR's Warranty of Title: CONTRACTOR warrants and guarantees that title to all Work, materials and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER free and clear of all Liens no later than the time of payment to CONTRACTOR.

14.3 Review of Applications for Progress Payment:

14.3.1 Owner's Representative will, within seven (7) calendar days after receipt of each Application for Payment, either indicate a recommendation for payment and forward the Application for processing by OWNER, or return the Application to CONTRACTOR indicating Owner's Representative's reasons for refusing to recommend payment. In the latter case, CONTRACTOR shall make the necessary corrections and resubmit the Application.

14.3.2 Owner's Representative's recommendation of any payment requested in an Application for Payment will constitute a representation by Owner's Representative, based upon Owner's Representative's on-site observations of the executed Work and on Owner's Representative's review of the Application for Payment and the accompanying data and schedules, that to the best of Owner's Representative's knowledge, information and belief:

- .1 the Work has progressed to the point indicated; and
- .2 the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for unit price Work, and to any other qualifications stated in the recommendation).

- 14.3.3** By recommending any such payment, Owner's Representative will not thereby be deemed to have represented that:
- .1 exhaustive or continuous on-site inspections have been made to check the quality or the quantity of the Work;
 - .2 examination has been made to ascertain how or for what purpose CONTRACTOR has used money previously paid on account of the Contract Amount;
 - .3 CONTRACTOR's construction means, methods, techniques, sequences or procedures have been reviewed; or
 - .4 that there may not be other matters or issues between the parties that might entitle CONTRACTOR to be paid additionally by OWNER or entitle OWNER to withhold payment to CONTRACTOR.

14.4 Decisions to Withhold Payment:

- 14.4.1** OWNER may withhold or nullify the whole or part of any payment to such extent as may be necessary on account of:
- .1 defective Work not remedied;
 - .2 third party Claims filed or reasonable evidence indicating probable filing of such Claims;
 - .3 failure of CONTRACTOR to make payments properly to Subcontractors for labor, materials or equipment;
 - .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Amount;
 - .5 damage to OWNER or another contractor;
 - .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;
 - .7 failure of CONTRACTOR to submit a schedule of values in accordance with the Contract Documents;
 - .8 failure of CONTRACTOR to submit a submittal schedule in accordance with the Contract Documents;
 - .9 failure of CONTRACTOR to submit and update a construction Progress Schedule in accordance with the Contract Documents;
 - .10 failure of CONTRACTOR to maintain a record of changes on drawings and documents;
 - .11 failure of CONTRACTOR to maintain weekly payroll reports and, as applicable, provide copies of reports in a timely manner upon request of OWNER;
 - .12 failure of CONTRACTOR to submit monthly subcontractor reports;
 - .13 CONTRACTOR's neglect or unsatisfactory prosecution of the Work, including failure to clean up;
 - .14 failure of CONTRACTOR to comply with the Austin City Code, Chapter 2-9-A, as amended, "Minority-Owned and Women-Owned Business Enterprise Procurement Program;" or
 - .15 failure of CONTRACTOR to comply with any provision of the Contract Documents.

14.4.2 When the above reasons for withholding payment are removed, CONTRACTOR shall resubmit a statement for the value of Work performed. Payment will be made within thirty (30) calendar days of receipt of approved Application for Payment.

14.4.3 Subcontractors may request Partial Payment when the OWNER withholds payment of an invoice to the CONTRACTOR for any reason listed in Section 14.4.1. If payment is withheld by the OWNER, the CONTRACTOR shall notify all affected Subcontractors within two (2) working days of notice that payment is being withheld. Upon notification, Subcontractors may submit a formal written request for Partial Payment to the CONTRACTOR and OWNER. If directed by the OWNER, the CONTRACTOR shall within three (3) working days resubmit to the OWNER an invoice for the same period that includes only the work performed by the requesting Subcontractors during this period. The OWNER will review this resubmitted invoice in accordance with Section 14.3.1. Upon receipt of payment for the resubmitted invoice, CONTRACTOR shall pay the subcontractor within ten (10) Calendar Days in accordance with Section 6.4.7.

14.5 Delayed Payments: Should OWNER fail to make payment to CONTRACTOR of sum named in any Application for Payment within thirty (30) calendar days after the day on which OWNER received the mutually acceptable Application for Payment, then OWNER will pay to CONTRACTOR, in addition to sum shown as due by such Application for Payment, interest thereon at the rate specified in Government Code, Section 2251.025(b) from date due until fully paid, which shall fully liquidate any injury to CONTRACTOR growing out of such delay in payment.

14.6 Arrears: No money shall be paid by OWNER upon any claim, debt, demand or account whatsoever, to any person, firm or corporation who is in arrears to City for taxes; and City shall be entitled to counterclaim and automatically offset against any such debt, claim, demand or account in the amount of taxes so in arrears and no assignment or transfer of such debt, claim, demand or account after said taxes are due, shall affect the right of OWNER to so offset said taxes, and associated penalties and interest if applicable, against the same.

14.7 Substantial Completion:

14.7.1 When the CONTRACTOR considers that the Work, or a portion thereof which the OWNER agrees to accept separately, is substantially complete, the CONTRACTOR shall notify Owner's Representative and request a determination as to whether the Work or designated portion thereof is substantially complete. If Owner's Representative does not consider the Work substantially complete, Owner's Representative will notify CONTRACTOR giving reasons therefor. After performing any required Work, CONTRACTOR shall then submit another request for Owner's Representative to determine Substantial Completion. If Owner's Representative considers the Work substantially complete, Owner's Representative will prepare and deliver a certificate of Substantial Completion which shall establish the date of Substantial Completion, shall include a punch list of items to be completed or corrected before final payment, shall establish the time within which CONTRACTOR shall finish the punch list, and shall establish responsibilities of the OWNER and CONTRACTOR for security, maintenance, heat, utilities, damage to the Work, warranty and insurance. Failure to include an item on the punch list does not alter the responsibility of CONTRACTOR to complete all Work in accordance with the Contract Documents. If a Certificate of Occupancy is required by public authorities having jurisdiction over the Work, said certificate shall be issued before the Work or any portion thereof is considered substantially complete. The certificate of Substantial Completion shall be signed by OWNER and CONTRACTOR to evidence acceptance of the responsibilities assigned to them in such certificate.

14.7.2 OWNER shall have the right to exclude CONTRACTOR from the Work after the date of Substantial Completion, but OWNER will allow CONTRACTOR reasonable access to complete or correct items on the punch list and complete warranty work.

14.8 Partial Utilization: Use by OWNER, at OWNER's option, of any substantially completed part of the Work which: (i) has specifically been identified in the Contract Documents, or (ii) OWNER and CONTRACTOR agree constitutes a separately functioning and usable part of the Work that can be used by OWNER for its intended purpose without significant interference with CONTRACTOR's performance of the remainder of the Work, may be accomplished prior to Substantial Completion of all the Work in accordance with the following:

14.8.1 OWNER at any time may request CONTRACTOR to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and substantially complete. If CONTRACTOR agrees that such part of the Work is substantially complete, CONTRACTOR shall certify to Owner's Representative that such part of the Work is substantially complete and request Owner's Representative to issue a certificate of substantial Completion for that part of the Work. CONTRACTOR at any time may notify Owner's Representative that CONTRACTOR considers any such part of the Work ready for its intended use and substantially complete and request Owner's Representative to issue a certificate of Substantial Completion for that part of the Work. The provisions of paragraphs 14.7.1 and 14.7.2 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

14.8.2 Such partial utilization is authorized by public authorities having jurisdiction over the Work.

14.9 Final Inspection: Upon Written Notice from CONTRACTOR that the entire Work or an agreed portion thereof is complete, Owner's Representative will make a final inspection with CONTRACTOR and provide Written Notice of all particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.10 Final Application for Payment: CONTRACTOR may make application for final payment following the procedure for progress payments after CONTRACTOR has completed all such corrections to the satisfaction of Owner's Representative and delivered the following documents:

14.10.1 Affidavit by CONTRACTOR certifying the payment of all debts and claims;

14.10.2 Three (3) complete operating and maintenance manuals, each containing maintenance and operating instructions, schedules, guarantees, and other documentation required by the Contract Documents;

14.10.3 Record documents (as provided in paragraph 6.10);

14.10.4 Consent of surety, if any, to final payment. If surety is not provided, complete and legally effective releases or waivers (satisfactory to OWNER) of all claims arising out of or filed in connection with the Work;

14.10.5 Certificate evidencing that insurance required by the Supplemental General Conditions will remain in force after final payment and through the warranty period;

14.10.6 Non-Use of Asbestos Affidavit (After Construction);

14.10.7 Subcontractor report and all other documentation necessary for evaluation of CONTRACTOR's fulfillment of the Contract MBE/WBE or DBE goals;

14.10.8 Documentation of notice to claimants, to the extent applicable and subject to subparagraph 14.11.4; and

14.10.9 Any other documentation called for in the Contract Documents.

14.11 Final Payment and Acceptance:

14.11.1 If, on the basis of observation of the Work during construction, final inspection, and review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Owner's Representative is satisfied that the Work has been completed and CONTRACTOR's other obligations under the Contract Documents have been fulfilled and there are no outstanding claims, Owner's Representative will recommend the final Application for Payment and thereby notify the OWNER, who will pay to CONTRACTOR the balance due CONTRACTOR under the terms of the Contract. If the sole remaining unfinished item to complete the Work is the reestablishment of vegetation, CONTRACTOR may execute a revegetation letter with fiscal posted (letter of credit) to ensure completion of this item. This Work must be accomplished within one hundred twenty (120) Calendar Days of the date of Final Completion of the Work. When the permanent erosion control has been established, OWNER will initiate an inspection for final acceptance of the erosion controls. If the revegetation is not completed within the one hundred twenty (120) Calendar Days, OWNER, at its option, may complete the Work using the posted fiscal.

14.11.2 If the Contract measures Contract Time to Final Completion, rather than Substantial Completion, Owner's Representative will issue a letter of final acceptance to CONTRACTOR which establishes the Final Completion date and initiates the one-year warranty period. If the sole remaining unfinished item to complete the Work is the reestablishment of vegetation and CONTRACTOR has executed a revegetation letter with fiscal posted (letter of credit) to ensure completion of this item, the Owner's Representative will issue a letter of conditional acceptance to CONTRACTOR which established the Final Completion date and initiates the one-year warranty period.

14.11.3 Final payment is considered to have taken place when CONTRACTOR or any of its representatives negotiates OWNER's final payment check, whether labeled final or not, for cash or deposits check in any financial institution for its monetary return.

14.11.4 The OWNER will withhold funds sufficient to cover the amount of any unresolved contract claims from final payment for six months under the following limited conditions:

- .1 CONTRACTOR must provide written notice to the claimant (via certified mail or hand delivery) that (i) OWNER will hold funds in the amount of the disputed claim for six (6) months from the date of the receipt of the notice and (ii) CONTRACTOR and the claimant have certain alternative dispute resolution rights; and
- .2 CONTRACTOR must provide OWNER with a copy of the receipted notice.

Provided the claimant has received notice under this section, OWNER will release the withheld funds, if the CONTRACTOR provides a bond in substantial compliance with the provisions of Section 52.231 of the Texas Property Code; when the OWNER receives a settlement or release of the claim with accompanying instructions regarding payment; upon resolution of the claim in litigation, if suit is filed within such six (6) month period and the OWNER receives written notice of such filing; or when such six (6) month period has passed, if no such bond, settlement, release, or notice of filing of suit have been received. The above provisions notwithstanding, if efforts to timely resolve a disputed claim are not

being made to OWNER'S reasonable satisfaction, OWNER may, in its complete discretion, file an interpleader action and deposit the withheld funds in the registry of a court of competent jurisdiction. In addition, CONTRACTOR must include a provision in each of its subcontracts that the prevailing party in any litigation arising thereunder will be entitled to recover its costs of court and reasonable attorney's fees.

14.12 Waiver of Claims: The making and acceptance of final payment will constitute:

14.12.1 a waiver of claims by OWNER against CONTRACTOR, except claims arising from unsettled claims, from defective Work appearing after final inspection, from failure to comply with the Contract Documents or the terms of any warranty specified therein, or from CONTRACTOR's continuing obligations under the Contract Documents; and

14.12.2 a waiver of all claims by CONTRACTOR against OWNER other than those previously made in writing and still unsettled.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

15.1 OWNER May Suspend Work Without Cause: At any time and without cause, OWNER may suspend the Work or any portion thereof for a period of not more than ninety (90) calendar days by Written Notice to CONTRACTOR which will fix the date on which the Work will be resumed. CONTRACTOR shall resume the Work on the date so fixed. CONTRACTOR shall be allowed an adjustment in the Contract Amount or an extension of the Contract Times, or both, directly attributable to any such suspension if CONTRACTOR makes an approved Claim therefor as provided in Articles 11 and 12.

15.2 OWNER May Terminate Without Cause: Upon seven (7) calendar days' Written Notice to CONTRACTOR, OWNER may, without cause and without prejudice to any right or remedy of OWNER, elect to terminate the Agreement. In such case, CONTRACTOR shall be paid (without duplication of any items):

15.2.1 for completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination;

15.2.2 for reasonable demobilization costs;

15.2.3 for anticipated profits on completed and accepted Work not previously paid and not included in separate pay items calculated to date of termination but not for anticipated profit on the entire Contract not previously paid, unabsorbed overhead, or lost opportunity; and

15.2.4 for all claims incurred in settlement of terminated contracts with Subcontractors, Suppliers and others, including for anticipated profits on completed and accepted Work not previously paid and not included in separate pay items calculated to date of termination but not for anticipated profit on the entire Contract not previously paid, unabsorbed overhead, or lost opportunity. CONTRACTOR agrees to negotiate in good faith with Subcontractors, Suppliers and others to mitigate OWNER's cost.

15.3 OWNER May Terminate With Cause:

15.3.1 Upon the occurrence of any one or more of the following events:

.1 if CONTRACTOR persistently fails to perform the Work in accordance with the Contract Documents;

- .2 if CONTRACTOR disregards laws or regulations of any public body having jurisdiction;
- .3 if CONTRACTOR disregards the authority of Owner's Representative;
- .4 if CONTRACTOR makes fraudulent statements;
- .5 if CONTRACTOR fails to maintain a work force adequate to accomplish the Work within the Contract Time;
- .6 if CONTRACTOR fails to make adequate progress and endangers successful completion of the Contract; or
- .7 if CONTRACTOR otherwise violates in any substantial way any provisions of the Contract Documents;

OWNER may, after giving CONTRACTOR (and the surety, if any) seven (7) calendar days Written Notice terminate the services of CONTRACTOR. OWNER, at its option, may proceed with negotiation with surety for completion of the Work. Alternatively, OWNER may under these circumstances exclude CONTRACTOR from the site and take possession of the Work (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as OWNER may deem expedient. In such case CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Amount exceeds all claims, costs, losses and damages sustained by OWNER arising out of or resulting from completing the Work, such excess will be paid to CONTRACTOR. If such claims, costs, losses and damage exceed such unpaid balance, CONTRACTOR or surety shall pay the difference to OWNER. In the event that a termination for cause is found to be wrongful, the termination shall be converted to a termination without cause as set forth in Section 15.2 and CONTRACTOR'S remedy for wrongful termination is limited to the recovery of the payments permitted for termination without cause as set forth in Section 15.2.

- 15.3.2** Where CONTRACTOR's services have been so terminated by OWNER, the termination will not affect any rights or remedies of OWNER against CONTRACTOR and surety then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by OWNER will not release CONTRACTOR from liability. In the event OWNER terminates Contract with cause, OWNER may reject any and all Bids submitted by CONTRACTOR for up to three (3) years after the date of such termination. These Progressive Sanctions will be administered in accordance with the City of Austin Purchasing Office Probation, Suspension, and Debarment Procedures for Vendors, which include notice and an opportunity for a hearing.

- 15.4 CONTRACTOR May Stop Work or Terminate:** If through no act or fault of CONTRACTOR, the Work is suspended for a period of more than ninety (90) calendar days by OWNER or under an order of court or other public authority, or (except during disputes) Owner's Representative fails to forward for processing any mutually acceptable Application for Payment within thirty (30) calendar days after it is submitted, or (except during disputes) OWNER fails for sixty (60) calendar days after it is submitted to pay CONTRACTOR any sum finally determined by OWNER to be due, then CONTRACTOR may, upon seven (7) calendar days' Written Notice to OWNER, and provided OWNER does not remedy such suspension or failure within that time, terminate the Agreement and recover from OWNER payment on the same terms as provided in paragraph 15.2. In lieu of terminating the Agreement and without prejudice to any other right or remedy, if (except during disputes) Owner's Representative has failed to forward for processing any mutually acceptable Application for Payment within thirty (30) calendar days after it is submitted, or (except during disputes)

OWNER has failed for sixty (60) calendar days after it is submitted to pay CONTRACTOR any sum finally determined by OWNER to be due, CONTRACTOR may upon seven (7) calendar days' Written Notice to OWNER stop the Work until payment of all such amounts due CONTRACTOR, including interest thereon. The provisions of this paragraph 15.4 are not intended to preclude CONTRACTOR from making a Claim under Articles 11 and 12 for an increase in Contract Amount or Contract Times or otherwise for expenses or damage directly attributable to CONTRACTOR's stopping Work as permitted by this paragraph.

- 15.5 Discretionary Notice to Cure:** In its complete discretion, OWNER may, but is not required to, provide a Notice to Cure to CONTRACTOR and its surety to cure an event of default described above and/or an anticipatory breach of contract and, if required by OWNER, to attend a meeting with OWNER, regarding the Notice to Cure, the event of default, and/or the anticipatory breach of contract. The Notice to Cure will set forth the time limit in which the cure is to be completed or commenced and diligently prosecuted. Upon receipt of any Notice to Cure, CONTRACTOR shall prepare a report describing its program and measures to affect the cure of the event of default and/or anticipatory breach of contract within the time required by the Notice to Cure. The CONTRACTOR'S report must be delivered to OWNER at least three (3) days prior to any requested meeting with the OWNER and surety.
- 15.6 Bankruptcy:** If CONTRACTOR declares bankruptcy or is adjudged bankrupt or makes an assignment for the benefit of creditors or if a receiver is appointed for the benefit of creditors or if a receiver is appointed by reason of CONTRACTOR'S insolvency, CONTRACTOR may be unable to perform this Contract in accordance with the Contract requirements. In such an event, OWNER may demand CONTRACTOR or its successor in interest provide OWNER with adequate assurance of CONTRACTOR'S future performance in accordance with the terms and conditions of the Contract. If CONTRACTOR fails to provide adequate assurance of future performance to OWNER'S reasonable satisfaction within ten (10) days of such a request, OWNER may terminate the CONTRACTOR'S services for cause or without cause, as set forth above. If CONTRACTOR fails to provide timely adequate assurance of its performance and actual performance, OWNER may prosecute the Work with its own forces or with other contractors on a time and material or other appropriate basis and the cost of which will be charged against the Contract balance.
- 15.7 Duty to Mitigate:** In the event of any termination or suspension under this Contract, the CONTRACTOR agrees to and shall take all reasonable actions to mitigate its damages and any and all claims which may be asserted against the OWNER.
- 15.8 Responsibility during Demobilization:** While demobilizing, the CONTRACTOR will take all necessary and reasonable actions to preserve and protect the Work, the site and other property of the OWNER or others at the site.

ARTICLE 16 - DISPUTE RESOLUTION

16.1 Filing of Claims:

- 16.1.1** Claims arising from the circumstances identified in paragraphs 3.2, 4.1, 4.2.2, 4.2.4, 6.4.2, 6.11.5.2, 6.17, 7.5, 8.6, 9.5, 10.4.2, 13.4.3, 13.8, 13.9, 15.1, 15.2, 15.3, or 15.4, or other occurrences or events, shall be made by Written Notice delivered by the party making the Claim to the other party within thirty (30) calendar days after the start of the occurrence or 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 in writing within thirty (30) calendar days after Written Notice of Claim is delivered by claimant and shall represent that the adjustment claimed covers all known amounts and/or extensions of time to which claimant is entitled.

16.1.2 Within thirty (30) calendar days of receipt of notice of the amount of the Claim with supporting data, Owner's Representative and CONTRACTOR shall meet to discuss the Claim, after which an offer of settlement or notification of no settlement offer will be made to claimant. If claimant is not satisfied with the proposal presented, claimant shall have thirty (30) calendar days in which to: (i) submit additional supporting data requested by the other party; (ii) modify the initial Claim; or (iii) request Alternative Dispute Resolution.

16.2 Alternative Dispute Resolution:

16.2.1 If a dispute exists concerning a Claim, the parties agree to use the following procedure prior to pursuing any other available remedies. OWNER reserves the right to include the E/A as a party.

16.2.2 Negotiating with Previously Uninvolved Personnel: Either party may make a written request for a meeting to be held between representatives of each party within fourteen (14) Calendar Days of the request or such later period that the parties may agree to. Each party shall endeavor to include, at a minimum, one (1) previously uninvolved senior level decision maker (an owner, officer, or employee of each organization) empowered to negotiate on behalf of their organization. If a previously uninvolved senior level decision maker is unavailable due to the size of the CONTRACTOR'S organization or any other reason, the CONTRACTOR shall nonetheless provide an appropriate senior level decision maker for the meeting. The purpose of this and any subsequent meetings will be good faith negotiations of the matters constituting the dispute. Negotiations shall be concluded within thirty (30) Calendar Days of the first meeting, unless mutually agreed otherwise. This step may be waived by a written agreement signed by both parties, in which event the parties may proceed directly to mediation as described below.

16.2.3 Mediation:

- .1** If the procedure described in 16.2.2 proves unsuccessful or is waived pursuant to its terms, the parties shall initiate the mediation process. OWNER and CONTRACTOR agree to select within thirty (30) calendar days a mediator trained in mediation skills, to assist with resolution of the dispute. OWNER and CONTRACTOR agree to act in good faith in the selection of the mediator and to give consideration to qualified individuals nominated to act as mediator. Nothing in this agreement prevents the parties from relying on the skills of a person who also is trained in the subject matter of the dispute and/or a contract interpretation expert. Should the parties fail to agree on a mediator within thirty (30) calendar days of initiation of the mediation process, the parties agree to ask the Travis County Dispute Resolution Center to select a qualified individual, which selection shall be binding on the parties.
- .2** Mediation is a forum in which an impartial person, the mediator, facilitates communication between parties to promote reconciliation, settlement, or understanding among them. The parties hereby agree that mediation, at a minimum, shall provide for (i) conducting an on-site investigation, if appropriate, by the mediator for fact gathering purposes, (ii) a meeting of all parties for the exchange of points of view and (iii) separate meetings between the mediator and each party to the dispute for the formulation of resolution alternatives. The parties agree to participate in mediation in good faith for up to thirty (30) calendar days from the date of the first mediation session, unless mutually agreed otherwise. Should the parties fail to reach a resolution of the dispute through mediation, then each party is released to pursue other remedies available to them.

16.3 Resolution of Disputes between Contractor and Subcontractor or Supplier: If a dispute exists concerning a claim between a CONTRACTOR and a Subcontractor or Supplier, the CONTRACTOR agrees to participate with such Subcontractor and/or Supplier in a process substantially paralleling the steps set out in paragraphs 16.1 and 16.2 above, including the delivery of written notices, submission of supporting data, negotiation with previously uninvolved personnel, and, if such alternative dispute resolution process is unsuccessful, mediation between the parties to the claim. If the CONTRACTOR and Subcontractor or Supplier agreement provides an alternative dispute resolution process, which provides substantially equivalent rights to those set forth herein, it may be followed, unless the CONTRACTOR and affected Subcontractor or Supplier agree to follow the process outlined above. The OWNER is not a party to the alternative dispute resolution process between the CONTRACTOR and Subcontractor or Supplier and will not pay any costs incurred in the process. Each party will be responsible for its own expenses incurred in the process, which will include an equal share of the mediation expenses, unless otherwise determined by the mediator. NOTICE: THE PROCESS SET FORTH HEREIN IS NOT A SUBSTITUTE FOR THE STATUTORY PAYMENT BOND CLAIM PROCESS.

16.4 Claim Calculation:

16.4.1 Delay Claims: The intent of paying for delay damages is to reimburse the CONTRACTOR for actual expense arising out of a compensable delay. No profit or force account markups, other than labor burden, will be allowed for delay claims by the CONTRACTOR seeking reimbursement for expenses arising out of an alleged event of delay. No consequential damages will be allowed to the CONTRACTOR in connection with any claimed delays. If the CONTRACTOR requests compensation for delay damages and the delay is determined to be compensable, then standby equipment costs and project overhead compensation will be based on the duration of the compensable delay and the following:

- .1 Standby equipment costs will not be allowed during periods when the equipment would have otherwise been idle. Standby equipment time will not exceed more than eight (8) hours per twenty-four (24) hour day, forty (40) hours per week, and one hundred seventy-six (176) hours per month. Standby equipment costs will be paid at 50 percent (50%) of the applicable Rental Rate Blue Book rates and calculated by dividing the monthly rate by one hundred seventy-six (176), multiplying the result by the number of standby hours and multiplying that number by the regional adjustment factor and the rate adjustment factor contained in the Blue Book. Operating costs will not be allowed.
- .2 Project overhead will be determined from actual costs that the CONTRACTOR will be required to document. Project overhead is defined as the administrative and supervisory expenses incurred at the work site and will not include home office overhead.

16.4.2 General: Except as limited with respect to delay claims, as set forth above, the criteria set forth in Section 11.4.1 may be used as a basis to calculate an adjustment in the Contract Amount in the resolution of a claim, provided that there will be no compensation for home office overhead.

16.5 MBE/WBE Program Progressive Sanctions: CONTRACTOR is subject to progressive sanctions for failure of CONTRACTOR to comply with Austin City Code, Chapter 2-9A, as amended: "Minority-owned and Women-owned Business Enterprise Procurement Program." Available sanctions for Program violations are set forth in Program rules adopted by the Small and Minority Business Resources Department (SMBR), as amended, and may include the following progressive sanctions for Program violations within a rolling 24-month period: (i) a period of probation for up to six (6) months for the first violation (ii) a period of suspension from bidding for up to 24 months for the second violation, and (iii) a period of

debarment for up to five (5) years for the third violation. If the CONTRACTOR engages in more than one of the violations listed below at any given time, OWNER has the discretion to determine whether such actions should be counted as multiple violations of the MBE/WBE Ordinance. Program violations include:

- .1 providing false or misleading information to the OWNER in connection with the submission of a Bid, responses to request for qualifications or Proposals, Good Faith Efforts documentation, post award compliance or other Program operations;
- .2 substituting M/WBE Subcontractors without first receiving approval for such substitutions;
- .3 failure to comply with the approved Compliance Plan without an approved request for a change, an approved Change Order or other approved change to the Contract;
- .4 violation of any other provision of the "Minority-owned and Women-owned Business Enterprise Procurement Program";
- .5 providing false or misleading information to the OWNER in connection with an application for or challenge to certification, recertification or decertification as a MBE/WBE; and
- .6 bid shopping.

The Progressive Sanctions will be administered in accordance with the City of Austin Purchasing Office Probation, Suspension, and Debarment Procedures for Vendors, which includes notice and an opportunity for a hearing.

ARTICLE 17 – MISCELLANEOUS

- 17.1 Venue:** In the event of any suit at law or in equity involving the Contract, venue shall be exclusively in Travis County, Texas and the laws of the State of Texas shall apply to the interpretation and enforcement of the Contract.
- 17.2 Extent of Agreement:** This Contract represents the entire and integrated agreement between the OWNER and CONTRACTOR with respect to the subject matter hereof and supersedes all prior negotiations, representations or agreements, either written or oral.
- 17.3 Cumulative Remedies:** The rights and remedies available to the parties are not to be construed in any way as a limitation of any rights and remedies available to any or all of them which are otherwise imposed or available by laws or regulations, by special warranty or guarantees or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right and remedy to which they apply. Specifically, the OWNER is not required to only assess liquidated damages, and OWNER may elect to pursue its actual damages resulting from the failure of the CONTRACTOR to complete the Work in accordance with the requirements of the Contract Documents.
- 17.4 Severability:** If any word, phrase, clause, sentence or provision of the Contract, or the application of same to any person or set of circumstances is for any reason held to be unconstitutional, invalid or unenforceable, that finding shall only effect such word, phrase, clause, sentence or provision, and such finding shall not affect the remaining portions of this Contract; this being the intent of the parties in entering into the Contract; and all provisions of the Contract are declared to be severable for this purpose.

- 17.5 Independent Contractor:** The Contract shall not be construed as creating an employer/employee relationship, a partnership, or a joint venture. CONTRACTOR is an independent contractor and CONTRACTOR's services shall be those of an independent contractor. CONTRACTOR agrees and understands that the Contract does not grant any rights or privileges established for employees of OWNER.
- 17.6 Prohibition of Gratuities:** OWNER may, by Written Notice to CONTRACTOR, terminate the Contract without liability if it is determined by OWNER that gratuities were offered or given by CONTRACTOR or any agent or representative of CONTRACTOR to any officer or employee of OWNER with a view toward securing the Contract or securing favorable treatment with respect to the awarding or amending or the making of any determinations with respect to the performing of such Contract. In the event the Contract is terminated by OWNER pursuant to this provision, OWNER shall be entitled, in addition to any other rights and remedies, to recover or withhold the amount of the cost incurred by CONTRACTOR in providing such gratuities.
- 17.7 Prohibition Against Personal Interest in Contracts:** No officer, employee, independent consultant, or elected official of OWNER who is involved in the development, evaluation, or decision-making process of the performance of any solicitation shall have a financial interest, direct or indirect, in the Contract resulting from that solicitation. Any violation of this provision, with the knowledge, expressed or implied, of CONTRACTOR shall render the Contract voidable by OWNER.
- 17.8 OWNER'S Right to Audit:**
- 17.8.1** Records means all records generated by or on behalf of CONTRACTOR and each Subcontractor and Supplier of CONTRACTOR, whether paper, electronic, or other media, which are in any way related to performance of or compliance with this Contract, including, without limitation:
- .1 accounting records;
 - .2 written policies and procedures;
 - .3 subcontract files (including proposals of successful and unsuccessful Bidders, Bid recaps, etc.);
 - .4 original estimates and estimating work sheets;
 - .5 correspondence;
 - .6 Change Order files (including documentation covering negotiated settlements);
 - .7 back charge logs and supporting documentation;
 - .8 general ledger entries detailing cash and trade discounts earned, insurance rebates and dividends;
 - .9 lump sum agreements between CONTRACTOR and any Subcontractor or Supplier;
 - .10 records necessary to evaluate: Contract compliance, Change Order pricing, and any Claim submitted by CONTRACTOR or any of its payees; and
 - .11 any other CONTRACTOR record that may substantiate any charge related to this Contract.
- 17.8.2** CONTRACTOR shall allow OWNER'S agent or its authorized representative to inspect, audit, and/or reproduce, or all three, all Records generated by or on behalf of CONTRACTOR and each Subcontractor and Supplier, upon OWNER'S written request. Further, CONTRACTOR shall allow OWNER'S agent or authorized

representative to interview any of CONTRACTOR'S employees, all Subcontractors and all Suppliers, and all their respective employees.

17.8.3 CONTRACTOR shall retain all its Records, and require all its Subcontractors and Suppliers to retain their respective Records, during this Contract and for three (3) years after final payment, until all audit and litigation matters that OWNER has brought to the attention of CONTRACTOR are resolved, or as otherwise required by law, whichever is longer. OWNER'S right to inspect, audit, or reproduce Records, or interview employees of CONTRACTOR or its respective Subcontractors or Suppliers exists during this Contract, and for three (3) years after final payment, until all audit and litigation matters that OWNER has brought to CONTRACTOR'S attention are resolved, or as otherwise required by law, whichever is longer, and at no cost to OWNER, either from CONTRACTOR or any of its Subcontractors or Suppliers that may furnish Records or make employees available for interviewing.

17.8.4 CONTRACTOR must provide sufficient and accessible facilities during its normal business hours for OWNER to inspect, audit, or reproduce Records, or all three, and to interview any person about the Records.

17.8.5 CONTRACTOR shall insert these requirements in each written contract between CONTRACTOR and any Subcontractor or Supplier and require each Subcontractor and Supplier to comply with these provisions.

17.9 Survival: The terms and conditions of this Contract, which contemplate a period of time beyond completion or termination will survive such completion or termination and not be merged therein or otherwise terminated.

17.10 No Waiver: The waiver of any provision of this Contract will not be deemed to be a waiver of any other provision of this Contract. No waiver of any provision of this Contract will be deemed to constitute a continuing waiver unless expressly provided in writing, nor will a waiver of any default be deemed a waiver of any subsequent defaults of the same type. The failure at any time to enforce this Contract, whether the default is known or not, shall not constitute a waiver or estoppel of the right to do so.

17.11 Conditions Precedent to Right to Sue: Notwithstanding anything herein to the contrary, the CONTRACTOR will have at least 90 days to give notice of a claim for damages as a condition precedent to the right to sue on the Contract, subject to the contractual claim and alternative dispute resolution processes set forth herein.

17.12 Waiver of Trial by Jury: OWNER and CONTRACTOR agree that they have knowingly waived the right to trial by jury and have instead agreed that, in the event of any litigation arising out of or connected to this Contract, to proceed with a trial before the court, unless both parties subsequently agree otherwise in writing.

17.13 Contractor Evaluation: The Owner will review and evaluate the Contractor's Work and performance on the Project and provide the Contractor with a written Contractor Evaluation Report in accordance with City of Austin Administrative Rule R161-13.37. Rule R161-13.37 provides an appeal process.

<http://www.austintexas.gov/department/contract-management>

End

Bidding Requirements, Contract Forms and Conditions of the Contract
SUPPLEMENTAL GENERAL CONDITIONS
Section 00810

The Supplemental General Conditions contained herein amend or supplement the General Conditions, Section 00700.

ARTICLE 1 - DEFINITIONS

Add the following definition:

"1.20 Engineer/Architect (E/A): Add the following:

Name: Black & Veatch Corporation
Carlos Chavez, P.E.
Address: 1701 Directors Blvd. Suite 940
Austin, TX 78744 "

Add the following definition:

"1.56 Allowance - Allowance is defined as "a not-to-be-exceeded amount", either individually or in the aggregate, which is established between the Owner and the Contractor as part of its Bid Proposal when the precise scope of a particular line item(s) has not been defined to a level which is adequate for the Contractor to provide a definitive line item pricing for that particular scope of Work. The use of any Allowances by the Contractor will be subject to the Owner's sole approval and it is the Owner's intent to minimize the use of Allowances to the fullest extent possible. For any Allowances which the Owner allows the Contractor to use, the following rules shall apply: (i) Allowances shall cover the cost to the Contractor of the Cost of Work; (ii) Contractor's overhead and profit associated with the stated Allowance shall be included in the Allowance; and (iii) upon completion of the portion of the Work subject to an Allowance, the Contract Amount for that portion of the Work will be adjusted based upon the approved actual cost of the Work, which will not exceed the approved aggregate amount of the Allowances."

Add the following definition:

"1.57 "Mobilization Prompt Payment Program - The Owner's Mobilization Prompt Payment Program, will allow bimonthly payments during "critical mobilization stages" as specified in the Contract Documents by the Prime Contractor. The Mobilization Prompt Payment Program will only apply to projects with a construction cost of greater than \$2,000,000."

ARTICLE 2 - PRELIMINARY MATTERS

2.4 Before Starting Construction:

Delete 2.4.2.6 and replace with the following (changes to the original text are identified by underlining):

".6 a preliminary schedule of values for all of the Work, subdivided into component parts in sufficient detail to serve as the basis for progress payments during construction. At a minimum, the schedule of values shall be broken out by trade and split between materials and labor. Prices will include an appropriate amount of overhead and profit applicable to each item of Work;"

ARTICLE 5 - BONDS AND INSURANCE

"5.3 Insurance:**5.3.1 CONTRACTOR Provided Insurance****5.3.1.1 General Requirements.**

- .1** CONTRACTOR shall carry insurance in the types and amounts indicated below for the duration of the Contract, which shall include items owned by OWNER in the care, custody and control of CONTRACTOR prior to and during construction and warranty period.
- .2** CONTRACTOR must complete and forward the Certificate of Insurance, Section 00650, to OWNER before the Contract is executed as verification of coverage required below. CONTRACTOR shall not commence Work until the required insurance is obtained and until such insurance has been reviewed by OWNER. Approval of insurance by OWNER shall not relieve or decrease the liability of CONTRACTOR hereunder and shall not be construed to be a limitation of liability on the part of CONTRACTOR. CONTRACTOR must also complete and forward the Certificate of Insurance, Section 00650, to OWNER whenever a previously identified policy period has expired as verification of continuing coverage.
- .3** CONTRACTOR's insurance coverage is to be written by companies licensed to do business in the State of Texas at the time the policies are issued and shall be written by companies with A.M. Best ratings of B+VII or better, except for hazardous material insurance which shall be written by companies with A.M. Best ratings of A- or better.
- .4** All endorsements naming the OWNER as additional insured, waivers, and notices of cancellation endorsements as well as the Certificate of Insurance shall indicate: City of Austin, Capital Contracting Office, P.O. Box 1088, Austin, Texas 78767.
- .5** The "other" insurance clause shall not apply to the OWNER where the OWNER is an additional insured shown on any policy. It is intended that policies required in the Contract, covering both OWNER and CONTRACTOR, shall be considered primary coverage as applicable.
- .6** If insurance policies are not written for amounts specified below, CONTRACTOR shall carry Umbrella or Excess Liability Insurance for any differences in amounts specified. If Excess Liability Insurance is provided, it shall follow the form of the primary coverage.
- .7** OWNER shall be entitled, upon request and without expense, to receive certified copies of policies and endorsements thereto and may make any reasonable requests for deletion or revision or modification of particular policy terms, conditions, limitations, or exclusions except where policy provisions are established by law or regulations binding upon either of the parties hereto or the underwriter on any such policies.
- .8** OWNER reserves the right to review the insurance requirements set forth during the effective period of this Contract and to make reasonable adjustments to insurance coverage, limits, and exclusions when deemed necessary and prudent by OWNER based upon changes in statutory law, court decisions, the claims history of the industry or financial condition of the insurance company as well as CONTRACTOR.
- .9** CONTRACTOR shall not cause any insurance to be canceled nor permit any insurance to lapse during the term of the Contract or as required in the Contract.

- .10 CONTRACTOR shall be responsible for premiums, deductibles and self-insured retentions, if any, stated in policies. All deductibles or self-insured retentions shall be disclosed on the Certificate of Insurance.
- .11 CONTRACTOR shall provide OWNER thirty (30) days written notice of erosion of the aggregate limits below occurrence limits for all applicable coverages indicated within the Contract.
- .12 If OWNER owned property is being transported or stored off-site by CONTRACTOR, then the appropriate property policy will be endorsed for transit and storage in an amount sufficient to protect OWNER's property.
- .13 The insurance coverages required under this contract are required minimums and are not intended to limit the responsibility or liability of CONTRACTOR.

5.3.1.2 Business Automobile Liability Insurance. Provide coverage for all owned, non-owned and hired vehicles. The policy shall contain the following endorsements in favor of OWNER:

- a) Waiver of Subrogation endorsement CA 0444;
- b) 30 day Notice of Cancellation endorsement CA 0244; and
- c) Additional Insured endorsement CA 2048.

Provide coverage in the following types and amounts:

- .1 A minimum combined single limit of \$1,000,000 minimum per occurrence for bodily injury and property damage.

5.3.1.3 Workers' Compensation And Employers' Liability Insurance. Coverage shall be consistent with statutory benefits outlined in the Texas Workers' Compensation Act (Section 401). CONTRACTOR shall assure compliance with this Statute by submitting two (2) copies of a standard certificate of coverage (e.g. ACCORD form) to Owner's Representative for every person providing services on the Project as acceptable proof of coverage. The Certificate of Insurance, Section 00650, must be presented as evidence of coverage for CONTRACTOR. CONTRACTOR's policy shall apply to the State of Texas and include these endorsements in favor of OWNER:

- a) Waiver of Subrogation, form WC 420304; and
- b) 30 day Notice of Cancellation, form WC 420601.

The minimum policy limits for Employers' Liability Insurance coverage shall be as follows:

- .1 \$100,000 bodily injury per accident, \$500,000 bodily injury by disease policy limit and \$100,000 bodily injury by disease each employee.

5.3.1.4 Commercial General Liability Insurance. The Policy shall contain the following provisions:

- a) Contractual liability coverage for liability assumed under the Contract and all contracts relative to this Project.
- b) Completed Operations/Products Liability for the duration of the warranty period.
- c) Explosion, Collapse and Underground (X, C & U) coverage.
- d) Independent Contractors coverage (Contractors/ Subcontractors work).
- e) Aggregate limits of insurance per project, endorsement CG 2503.

- f) OWNER listed as an additional insured, endorsements CG 2010 and CG 2037 or equivalent.
- g) 30 day notice of cancellation in favor of OWNER, endorsement CG 0205.
- h) Waiver of Transfer of Recovery Against Others in favor of OWNER, endorsement CG 2404.

Provide coverages A&B with minimum limits as follows:

- .1 A combined bodily injury and property damage limit of \$1,000,000 minimum per occurrence.

5.3.1.5

Builders' Risk Insurance. CONTRACTOR shall maintain Builders' Risk Insurance or Installation Insurance on an all risk physical loss form in the Contract Amount. Coverage shall continue until the Work is accepted by OWNER. OWNER shall be a loss payee on the policy. If off-site storage is permitted, coverage shall include transit and storage in an amount sufficient to protect property being transported or stored.

5.3.1.6

Hazardous Materials Insurance.

For Work which involves lead and asbestos or any hazardous materials or pollution defined as lead and asbestos, CONTRACTOR or Subcontractor responsible for the Work shall comply with the following insurance requirements in addition to those specified above:

- .1 Provide a lead and asbestos abatement endorsement to the Commercial General Liability policy with minimum bodily injury and property damage limits of \$1,000,000 per occurrence for coverages A&B and products/completed operations coverage with a separate aggregate of \$1,000,000. This policy shall not exclude lead and asbestos or any hazardous materials or pollution defined as lead and asbestos, and shall provide "occurrence" coverage without a sunset clause. The policy shall provide 30 day Notice of Cancellation and Waiver of Subrogation endorsements in favor of OWNER.
- .2 CONTRACTOR or Subcontractor responsible for transporting lead and asbestos or any hazardous materials defined as lead and asbestos shall provide pollution coverage. Federal law requires interstate or intrastate transporters of lead and asbestos to provide an MCS 90 endorsement with a \$5,000,000 limit when transporting lead and asbestos in bulk in conveyances of gross vehicle weight rating of 10,000 pounds or more. Interstate transporters of lead and asbestos in non-bulk in conveyances of gross vehicle weight rating of 10,000 pounds or more must provide an MCS 90 endorsement with a \$1,000,000 limit. The terms "conveyance" and "bulk" are defined by Title 49 CFR 171.8. All other transporters of lead and asbestos shall provide either an MCS 90 endorsement with minimum limits of \$1,000,000 or an endorsement to their Commercial General Liability Insurance policy which provides coverage for bodily injury and property damage arising out of the transportation of lead and asbestos. The endorsement shall, at a minimum, provide a \$1,000,000 limit of liability and cover events caused by the hazardous properties of airborne lead and asbestos arising from fire, wind, hail, lightning, overturn of conveyance, collision with other vehicles or objects, and loading and unloading of conveyances.

- .3 CONTRACTOR shall submit complete copies of the policy providing pollution liability coverage to OWNER.**5.3.1.7** Professional Liability Insurance. For Work which

requires professional engineering or professional survey services to meet the requirements of the Contract, including but not limited to excavation safety systems, traffic control plans, and construction surveying, the CONTRACTOR or Subcontractors, responsible for performing the professional services shall provide Professional Liability Insurance with a minimum limit of \$500,000 per claim and in the aggregate to pay on behalf of the assured all sums which the assured shall become legally obligated to pay as damages by reason of any negligent act, error, or omission committed with respect to all professional services provided in due course of the Work of this Contract.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

6.6 Permits, Fees: Add the following:

"OWNER will obtain and pay for the following permits, licenses and/or fees:

- .1 Site Development Permit.
- .2 Building Permit(s). OWNER's responsibility for obtaining and paying for the Building Permit(s) shall be limited to the following where applicable: the required Electrical Service (Aid of Construction) Fee, Water and Wastewater Tap Fees, Water and Wastewater Capital Recovery Fees, and Septic Permit Fee. The OWNER's responsibility for obtaining and paying for the Building Permit(s) excludes securing and paying for the following where applicable: Driveway Permit (Concrete) Fee, Electrical Permit, Mechanical Permit, Plumbing Permit, Water Engineering Inspection Fee, Temporary Use of Right-of Way Permit, the gas company's Gas Yard Line Contribution Fee, and any other permits/fees not listed above.
- .3 Texas Department of Transportation permit for Work in State rights-of-way.
- .4 Railroad Utility License Agreement."

6.7 Laws and Regulations: Add the following:

"6.7.4 This Work is subject to the Texas Pollution Discharge Elimination System (TPDES) permitting requirements for the installation and maintenance of temporary and permanent erosion and sediment controls and storm water pollution prevention measures throughout the construction period.

OWNER has prepared a Storm Water Pollution Prevention Plan (SWPPP). Reference Section 01096 for this SWPPP.

OWNER shall file the Owner's Notice of Intent to the Texas Commission on Environmental Quality (TCEQ). OWNER shall pay the TPDES storm water application fee.

CONTRACTOR's responsibilities are as follows:

- .1 Obtain a signed certification statement from all Subcontractors responsible for implementing the erosion / sedimentation controls and other best management practices that are part of the SWPPP. This statement shall indicate that the Subcontractor understands the permit requirements. The certified statement forms shall be attached to and become part of the SWPPP.
- .2 Fill out the TCEQ's "Construction Site Notice" form, which is Attachment 2 to the TPDES General Permit TXR150000 (form available from OWNER or on the Internet at <http://www.tceq.state.tx.us/assets/public/permitting/waterquality/attachments/stormwater/txr152d2.pdf> and post it near the main entrance of

the Work, or at multiple postings if the Work is linear. Mail a copy of the completed Construction Site Notice form to the local Municipal Separate Storm Sewer Systems (MS4) representative:

TPDES Program Coordinator
City of Austin – WPD – ERM
P.O. Box 1088
Austin, TX 78767

- .3 Maintain all erosion/sedimentation controls and other protective measures identified in the SWPPP in effective operating condition.
- .4 Perform inspections every five (5) working days and after every ½ inch rainfall event, noting the following observations on an inspection form provided by OWNER:
 - Locations of discharges of sediment or other pollutants from the site.
 - Locations of storm water / erosion / sedimentation controls that are in need of maintenance.
 - Locations of storm water / erosion / sedimentation controls that are not performing, failing to operate, or are inadequate.
 - Locations where additional storm water / erosion / sedimentation controls are needed.
- .5 Maintain at Work site at all times a copy of the SWPPP (with all updates, as described below) and inspection reports.
- .6 Update the SWPPP as necessary to comply with TPDES permitting requirements, which includes noting changes in erosion / sedimentation controls and other best management practices that are part of the SWPPP and which may be necessary due to the results of inspection reports. Any SWPPP revisions or updates must be signed and certified by a Certified Professional in Erosion and Sedimentation Control (CPESC) or a Registered Professional Engineer. If the SWPPP includes engineering calculations, then SWPPP must be sealed and signed by a Registered Professional Engineer.
- .7 Upon completion of the Work, provide TPDES records to OWNER."

ARTICLE 7 – OTHER WORK

7.6 Add the following:

"**7.6** OWNER may perform work to re-pave the CONTRACTOR Staging Area indicated on the Drawings through a separate contractor during the course of this project. If requested by the OWNER, CONTRACTOR shall provide access to the Contractor Staging Area and perform temporary relocation of CONTRACTOR property, trailers, stored material, and any other items located in the Contractor Staging Area."

ARTICLE 11 - CHANGE OF CONTRACT AMOUNT

11.4 Determination of Value of Work: Add the following to paragraph 11.4.1.2:

"11.4.1.2 In the case of a Change Order determined by a mutually agreed lump sum or unit price properly itemized and supported by sufficient substantiating data, including documentation by subcontractors performing the work, to permit evaluation, the following method may be used:

COMPONENT ONE - The R.S. Means Co., Inc. 'Building Construction Cost Data' - latest edition - will be used as a basis for evaluating:

- 1a - the cost of labor (base rate, including fringe benefits),
- 1b - the cost of material and equipment to be incorporated in the Work, and
- 1c - the cost of tools, equipment and facilities necessary to accomplish the Work described in the change.

COMPONENT TWO - The costs of payroll taxes and insurance, Liability and Builder's Risk Insurance, shall be calculated as follows:

- 2a - Payroll taxes and Workers' Compensation Insurance <25% of payroll (Item 1a) (14.65% of 1a for ROCIP Projects)>
- 2b - Liability and Builder's Risk Insurance <2% of "total costs" (Items 1a, 1b, 1c, and 2a) (.034% of "total costs" for ROCIP Projects)>

COMPONENT THREE - Overhead and profit shall be calculated as follows:

3a - For Subcontractors and for those portions of the Work performed by CONTRACTOR'S own forces:

15% of the first \$10,000.00 of costs and 10% of the balance over \$10,000.00.

("costs" = Items 1a, 1b, and 1c, above, broken down into Contractor and Subcontractor costs).

3b - For the CONTRACTOR for that portion of the Work performed by Subcontractors:

10% of the first \$10,000.00 of the Subcontractor costs and 7.5% of the balance over \$10,000.00.

("costs" = Items 1a, 1b, and 1c, above, broken down into Subcontractor costs)

COMPONENT FOUR - Bonds

Performance and Payment Bond according to the following table ("TOTAL COST" = Items 1a, 1b, 1c, 2a, 2b, 3a and 3b,):

DOLLAR VALUE OF CONTRACT	% OF TOTAL COST OF CHANGE ORDER ADDED FOR BOND EXPENSE
100,000 or less	2.5
100,001 thru 500,000	1.5
500,001 thru 2,500,000	1.0
2,500,001 thru 5,000,000	0.75
5,000,001 thru 7,500,000	0.70
OVER 7,500,000	0.65

- The total costs for the change, whether additive or deductive, shall be the sum total of COMPONENTS ONE - FOUR.

ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.7 Warranty Period: Delete 13.7.2 and replace with the following:

"**13.7.2** In special circumstances where a particular item of equipment or portion of Work is placed in continuous service before Substantial Completion of all Work, the warranty period for that item shall extend to one year after the date of Substantial Completion of all Work.

Add the following:

"**13.7.5** OWNER will utilize a "Warranty Item Form" (attached at the end of this Section) for the purpose of providing Written Notice of warranty defects to CONTRACTOR. CONTRACTOR shall date, sign, complete and return the form to OWNER when the defect is corrected, including such information on or attached to the form to describe the nature of the repairs or corrections that were made. If the defect cannot be corrected in seven (7) Calendar Days, CONTRACTOR shall provide a written explanation to the Owner's Representative describing the repairs needed and the time required to complete the repairs."

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

14.1 Application for Progress Payment: Delete 14.1.1 and replace with the following (changes to the original text are identified by underling):

"14.1.1 No more often than once a month, unless authorized as part of the Mobilization Prompt Payment Program, CONTRACTOR shall submit to Owner's Representative for review a completed and executed Application for Payment, in a form acceptable to OWNER, covering the Work completed as of the date of the Application and not previously paid and accompanied by such supporting documentation as required by the Contract Documents.

Add the following .1:

.1 - Mobilization Prompt Payment Program. During critical mobilization periods, as identified by the CONTRACTOR and as approved by OWNER in accordance with 00700 2.4.2.1 of this Contract, CONTRACTOR shall submit bi-monthly Applications for Payment. The additional Pay Applications will include any costs accrued during the periods of critical mobilization. The Program will allow the CONTRACTOR and Subcontractors to invoice for costs as they are accrued during periods of critical mobilization. The CONTRACTOR shall submit bimonthly invoices to the OWNER for such costs. The CONTRACTOR shall pay Subcontractors for costs within 10 days of receipt of payment from OWNER.

14.7 Substantial Completion:

Reference 14.7.1, and add the following provision:

“14.7.1.1 For wastewater treatment construction Substantial Completion means that the Facilities are completed to the point that they function as intended and approved to the satisfaction of the Engineer; all process equipment is installed and operational, or temporary arrangements satisfactory to Owner shall have been made; all Functional Acceptance Testing has been successfully completed; and all Work has been installed and ready for Owner's continuous use including: Sodium Bisulfite System, Northwest Clearwell, Southside Clearwell, Blower Building, Filter Gallery, Filters 1-4, and Filters 5-10 and substantial clean-up. A certificate of Substantial Completion will not be issued. Work that remains after Substantial Completion would include final clean up. Owner’s Representative will issue a notice specifying what portion of the Work is partially completed for the purpose of payment and what Work remains to be done on the portion being accepted as Substantially Complete. This subsection 14.7.1.1 changes the 00700 General Conditions definition of Substantial Completion.”

14.8 Partial Utilization: Delete 14.8.1 and replace with the following (changes to the original text are identified by underlining):

“.1 OWNER at any time may request CONTRACTOR to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and substantially complete. If CONTRACTOR agrees that such part of the Work is substantially complete, CONTRACTOR will certify to Owner’s Representative that such part of the Work is substantially complete and request Owner’s Representative to issue a notice specifying what portion of the Work is substantially complete for the purpose of payment and what Work remains to be done on the portion being accepted. CONTRACTOR at any time may notify Owner’s Representative that CONTRACTOR considers any such part of the Work ready for its intended use and substantially complete and request Owner’s Representative to issue a notice specifying what portion of the Work is partially completed for the purpose of payment and what Work remains to be done on the portion being accepted. The provisions of paragraphs 14.7.1 and 14.7.2 will apply with respect to the notice specifying what portion of the Work is partially completed for the purpose of payment and what Work remains to be done on the portion being accepted.”

14.11 Final Payment and Acceptance:

Add the following to paragraph 14.11.1:

“If the sole remaining, unfinished item of the Work is revegetation or other permanent erosion control, including, if applicable, tree mitigation, (collectively, the “revegetation”), the CONTRACTOR may execute a zero-cost “Revegetation Change Order” for such Work and post fiscal security acceptable to Owner to ensure completion of the revegetation.

The fiscal security will be a bond, letter of credit, or cash escrow in a form promulgated by OWNER and posted with OWNER’s Watershed Protection Department.

Upon receipt of the executed Revegetation Change Order and fiscal security, the Owner’s Representative will issue a conditional letter of final acceptance to the CONTRACTOR for the Work, excluding the revegetation, which establishes the Final Completion Date for that Work and initiates the one year warranty period.

This revegetation must be accomplished within 120 Calendar Days of the date of Final Completion of the balance of the Work or such other stipulated time for

completion directed in the Change Order. When the revegetation has been established, OWNER will inspect for final acceptance of that portion of the Work and, as applicable, initiate the one year warranty period for that Work.

If the revegetation is not completed within the 120 Calendar Days or such other time set forth in the Change Order, the OWNER, at its option, may complete the Work using the posted fiscal security."

WARRANTY ITEM NO. _____ (PROJECT NAME)
The General Conditions of the Contract require that Warranty Defects be corrected within 7 days after written notice is received.

TO: _____
contractor name address / telephone / fax / email

ATTENTION OF: _____

FROM: _____
project manager name / address / telephone / fax / email

PROJECT: _____
name / location / CIP ID number

END OF ONE YEAR WARRANTY: _____

SUBJECT: _____

- If checked, the damage requires immediate attention. The Contractor has been called.
- If checked, the Consultant has been asked to consult with the Contractor on the problem.

PLEASE CORRECT OR REPAIR THE FOLLOWING ITEM(S):

DATE OF REQUEST _____

SIGNATURE _____
Project Manager

- XC:
- _____ Phone No. _____
 - _____ Phone No. _____
 - _____ Phone No. _____
 - _____ Phone No. _____

RESPONSE FROM CONTRACTOR: DATE CORRECTION WAS MADE: _____

The Contractor must endeavor to correct the defect within 7 calendar days after written notice is given. If the defect cannot be corrected in that time, Contractor shall provide a written explanation to the Owner's Representative describing the repairs needed and the time required to complete the repairs.

Description of corrections made:

DATE OF REPLY _____ **SIGNATURE** _____

When the repair is complete, the contractor should return a copy to each of the following:

- _____ Phone No. _____

END

Texas Water Development Board
Supplemental Contract Conditions and Instructions
TWDB-0552



Texas Water Development Board
Supplemental Contract Conditions and Instructions
(TWDB-0552)

For Construction Services for
Projects Funded through State Programs

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Forms and Guidance:

The Texas Water Development Board (TWDB) forms and guidance documents noted in this instruction document may be accessed through the TWDB's Financial Assistance web site at:

<http://www.twdb.texas.gov/financial/instructions/index.asp>

Search by either the document number or name.

I. INSTRUCTIONS TO APPLICANT

1. Applicability

These Supplemental Conditions contain provisions that are worded to comply with certain statutes and regulations which specifically relate to projects receiving state funds only. These supplemental conditions apply to projects funded by the following financial assistance programs:

- (a) the Texas Water Development Fund (DFund),
- (b) State Participation (SP),
- (c) Rural Water Assistance Fund (RWAFF),
- (d) Economically Distressed Areas Program (EDAP), and
- (e) State Water Implementation Fund for Texas (SWIFT).

Provisions that are applicable to the project's funding source or dollar value of the contract are so noted within these provisions.

2. Use of Conditions

The language and conditions listed under ***Section II: Instructions to Bidders***, are to be included in the instructions to bidders for construction services. The provisions listed under ***Section III: Construction Contract Supplemental Conditions*** shall be included in their entirety with the other general and special conditions that are typically included in the construction contract documents by the design engineer.

3. Modifications to Provisions

These provisions shall be included as a stand-alone section in the contract documents. The Applicant and the consulting engineer (Engineer) should carefully study these provisions before incorporating them into the construction contract documents. In particular, Water Districts and other types of districts should be aware of statutes relating to their creation and operation which may affect the application of these conditions. The TWDB Project Engineer/Reviewer should be consulted if the Applicant thinks there is a need to modify parts of these provisions.

Supplemental Condition #13 (Archeological Discoveries and Cultural Resources) and #14 (Endangered Species) may be superseded or modified by project specific conditions established during the environmental review process.

These documents may confer certain duties and responsibilities on the Engineer that are beyond, or short of, what the Applicant intends to delegate. The Applicant should ensure that the contractual agreement with the Engineer provides for the appropriate services. Otherwise the Applicant should revise the wording in these special conditions to agree with actually delegated functions.

4. Good Business Practices

There are other contract provisions that the Applicant (Owner) and Engineer should include as a matter of good business practices. It is recommended that provisions addressing the following matters be included in the construction contract.

- (a) Specifying the time frame for accomplishing the construction of the project, and the consequences of not completing on time, including liquidation damages.
- (b) Specifying the type, dollar value, and documentation of insurance the contractor is to carry. At a minimum the contractor should carry worker's compensation, liability and builder's risk insurance.
- (c) Identifying the responsibility of the contractor – Responsibility and Warranty of Work.
- (d) Price reduction for defective pricing of negotiated costs.
- (e) Differing site conditions - notice and claims regarding site conditions differing from indicated conditions.
- (f) Covenants against contingent fees - prohibit contingent fees for securing business.
- (g) Gratuities - prohibitions against offering and accepting gratuities.
- (h) Audit and access to records.
- (i) Suspension of work - conditions under which the Owner may suspend work.
- (j) Termination - conditions under which the Owner may terminate the contract.
- (k) Remedies - procedures for resolving disputes.

5. Other Requirements

There may be other local government requirements and applicable Federal and State statutes and regulations that are not accommodated by these conditions. It is the Applicant's responsibility to ensure that the project and all contract provisions are consistent with the relevant statutes and regulations.

6. Advertisements for Bids

State procurement statutes require advertising a contract for bids for at least two (2) consecutive weeks. By not following this requirement, the project may need to be re-advertised. The official advertisement for bids that is published in newspapers shall include certain information such as, but not limited to, the following:

- (a) A clear description of what is being procured.
- (b) How to obtain plans and specifications (P&S) and necessary forms and information.
- (c) The date and time by which bids are to be submitted (deadline).
- (d) The address where bids are to be provided.
- (e) This contract is contingent upon release of funds from the Texas Water Development Board (TWDB).
- (f) This contract is subject to the U.S. Iron and Steel and Manufactured Goods requirements of Texas Water Code §17.183 (only applicable to projects funded by EDAP and/or DFund).
- (g) Acknowledgement of any special requirements such as mandatory pre-bid conference.
- (h) Right to reject any and all bids.
- (i) General bond requirements.

7. Bid Proposal

The Bid Proposal form should account for the following:

- (a) If lump sum bid, include a list of the materials used and associated costs.
- (b) Distinguish eligible and ineligible items.
- (c) Accommodate trench safety requirements with separate per unit pay item for trench excavation safety protection, Health and Safety Code Chapter 756, Subchapter C.
- (d) Include space for the Contractor to acknowledge receipt of each Addendum issued during the bidding process.

8. Bidding Process

The Plans and Specifications (P&S) should include an explanation of how the bids will be processed. The explanation should include the following components:

- (a) Whether a pre-bid conference will be held, whether it is optional or mandatory, where and when it will be held.
- (b) Specify the criteria and process for determining responsiveness and responsibility of the bidder.
- (c) Specify the method of determining the successful bidder and award (e.g., award to the lowest responsive, responsible bidder, accounting for any multiple parts to bids) and accounting for non-resident bidder reciprocity requirements.
- (d) Allow for withdrawal of a bid due to a material mistake.
- (e) Identify the time frame that the bids may be held by the Applicant before awarding a contract (e.g., typically for 60 or 90 days).
- (f) Acknowledge right of the Applicant to reject any and all bids.

9. Release of Funds

- (a) Submittal of Bid Documents to TWDB Project Engineer/Reviewer to allow contingent award of contract:
 - (1) Advertisement and affidavit of advertisement.
 - (2) Bid tabulation.
 - (3) All addenda submitted and approved for the contract.
 - (4) Bid proposal of apparent low bidder (or chosen bidder, with explanation) with bid bond.
 - (5) Site certificate (ED-101).
 - (6) Consulting engineer's recommendation to award letter.
 - (7) A description of any bidding irregularities.
 - (8) Construction inspection proposal.
 - (9) Vendor Compliance with Reciprocity of Non-Resident Bidders Form (TWDB-0459).
 - (10) Bidder's Certifications Form (WRD-255).

- (b) Following contingent award of the contract, TWDB Project Engineer/Reviewer should receive either a digital or bound copy of the executed contract documents (including specifications). This document should include:
- (1) Executed agreement.
 - (2) Contractor's act of assurance (ED-103).
 - (3) Contractor's act of assurance resolution (ED-104).
 - (4) Payment and Performance bond (must be executed on or after the date of execution of the contract).
 - (5) Contractor's Certificate of Insurance.
 - (6) Sufficiency of funds letter (if the project is not 100% funded with TWDB funds).

After reviewing and approving the executed bid documents, the TWDB will issue an authorization for the Applicant to issue a notice to proceed. At this time, TWDB staff can begin releasing construction funds, in accordance with program specific requirements.

For any questions or proposed modifications to these conditions, please contact your TWDB Project Engineer/Reviewer.

II. INSTRUCTIONS TO BIDDERS

The language and conditions listed in this section shall be included in the “Instructions to Bidders” section of the construction contract document.

1. Contingent Award of Contract

This contract is contingent upon release of funds from the Texas Water Development Board. Any contract or contracts awarded under this Invitation for Bids is/are expected to be funded in part by a loan or grant from the Texas Water Development Board. Neither the state of Texas, nor any of its departments, agencies, or employees are or will be a party to this Invitation for Bids or any resulting contract.

2. U.S. Iron and Steel and Manufactured Goods (only applicable for projects funded by EDAP and/or DFund)

Any contract(s) awarded under this Invitation for Bids is/are subject to the U.S. Iron and Steel and Manufactured Goods requirements (Texas Water Code §17.183). Refer to Guidance TWDB-1105 – “Requirements for U.S. Iron and Steel and Manufactured Goods”.

3. Bid Guarantee

Each bidder shall furnish a bid guarantee equivalent to five percent of the bid price (Water Code §17.183). If a bid bond is provided, the Contractor shall utilize a surety company which is authorized to do business in Texas in accordance with Surety Bonds and Related Instruments, Chapter 3503 of the Insurance Code.

4. Award of Contract to Nonresident Bidder

A governmental entity may not award a governmental contract to a nonresident bidder unless the nonresident underbids the lowest bid submitted by a responsible resident bidder by an amount that is not less than the amount by which a resident bidder would be required to underbid the nonresident bidder to obtain a comparable contract in the state in which the nonresident's principal place of business is located. A non-resident bidder is a Contractor whose corporate offices or principal place of business is outside of the state of Texas (Source: Texas Government Code, Chapter 2252, Subchapter A, Nonresident Bidders, §2252.002).

The bidder will complete form TWDB-0459, Vendor Compliance with Reciprocity on Non-Resident Bidders, **which must be submitted with the bid.**

III. SUPPLEMENTAL CONTRACT CONDITIONS

1. Supersession

The Owner and the Contractor agree that the TWDB Supplemental Conditions apply to the work eligible for Texas Water Development Board assistance to be performed under this contract and these clauses supersede any conflicting provisions of this contract.

2. Privity of Contract

Funding for this project is expected to be provided in part by a loan or grant from the Texas Water Development Board. Neither the state of Texas, nor any of its departments, agencies or employees is, or will be, a party to this contract or any lower tier contract. This contract is subject to applicable provisions in 31 TAC Chapter 363 in effect on the date of the assistance award for this project.

3. Definitions

- (a) The term “Owner” means the local entity contracting for the construction services.
- (b) The term "TWDB" means the Executive Administrator of the Texas Water Development Board, or other person who may be at the time acting in the capacity or authorized to perform the functions of such Executive Administrator, or the authorized representative thereof.
- (c) The term “Engineer” means the Owner’s authorized consulting engineer for the project.

4. Laws to be Observed

In the execution of the contract, the Contractor must comply with all applicable local, state and federal laws, including but not limited to laws concerned with labor, safety, minimum wages, and the environment. The Contractor shall be familiar with and at all times shall observe and comply with all federal, state, and local laws, ordinances and regulations which in any manner affect the conduct of the work, and shall indemnify and save harmless the Owner, Texas Water Development Board, and their representatives against any claim arising from violation of any such law, ordinance or regulation by the Contractor, their Subcontractor or their employees.

5. Review by Owner and TWDB

- (a) The Owner, authorized representatives and agents of the Owner, and the TWDB shall, at all times have access to and be permitted to observe and review all work, materials, equipment, payrolls, personnel records, employment conditions, material invoices, and other relevant data and records pertaining to this contract, provided, however that all instructions and approval with respect to the work will be given to the Contractor only by the Owner through authorized representatives or agents.
- (b) Any such inspection or review by the TWDB shall not subject the state of Texas, or its representatives, to any action for damages.

6. Performance and Payment Bonds

Each Contractor awarded a construction contract must furnish performance and payment bonds:

- (a) the performance bond shall include without limitation guarantees that work done under the contract will be completed and performed according to approved plans and specifications and in accordance with sound construction principles and practices;
- (b) the performance and payment bonds shall be in a penal sum of not less than 100 percent of the contract price and remain in effect for one year beyond the date of approval by the Engineer of the political subdivision; and
- (c) the Contractor shall utilize a surety company that is authorized to do business in Texas in accordance with Surety Bonds and Related Instruments, Chapter 3503 of the Insurance Code.

7. Payments Schedule and Cost Breakdown

- (a) The Contractor shall submit for approval immediately after execution of the Agreement, a carefully prepared Progress Schedule, showing the proposed dates of starting and completing each of the various sections of the work, the anticipated monthly payments to become due to the Contractor, and the accumulated percent of progress each month.
- (b) The following paragraph applies only to contracts awarded on a lump sum contract price:

COST BREAKDOWN - The Contractor shall submit to the Owner a detailed breakdown of the estimated cost of all work to be accomplished under the contract, so arranged and itemized as to meet the approval of the Owner or funding agencies. This breakdown shall be submitted promptly after execution of the agreement and before any payment is made to the Contractor for the work performed under the contract. After approval by the Owner the unit prices established in the breakdown shall be used in estimating the amount of partial payments to be made to the Contractor.

8. Workers' Compensation Insurance Coverage (as applicable, consistent with Texas Labor Code § 406.096)

- (a) The Contractor shall certify in writing that they provide workers' compensation insurance coverage for each employee of the Contractor employed on the public project.
- (b) Each Subcontractor on the public project shall provide such a certificate relating to coverage of the Subcontractor's employees to the general Contractor, who shall provide the Subcontractor's certificate to the governmental entity.
- (c) A Contractor who has a contract that requires workers' compensation insurance coverage may provide the coverage through a group plan or other method satisfactory to the governing body of the governmental entity.
- (d) The employment of a maintenance employee by an employer who is not engaging in

building or construction as the employer's primary business does not constitute engaging in building or construction.

(e) In this section:

- (1) "Building or construction" includes:
 - i. erecting or preparing to erect a structure, including a building, bridge, roadway, public utility facility, or related appurtenance;
 - ii. remodeling, extending, repairing, or demolishing a structure; or
 - iii. otherwise improving real property or an appurtenance to real property through similar activities.
- (2) "Governmental entity" means this state or a political subdivision of this state. The term includes a municipality.

9. U.S. Iron and Steel and Manufactured Goods (only applicable for projects funded by EDAP and/or DFund)

In the execution of the contract, the Contractor shall be familiar with and at all times shall observe and comply with all applicable federal, state, and local laws, ordinances and regulations concerned with the use of iron and steel and manufactured goods made in the United States which in any manner affect the conduct of the work, and shall indemnify and save harmless the Texas Water Development Board against any claim arising from violation of any such law, ordinance or regulation by the Contractor or by their Subcontractor or their employees

Consistent with Texas Water Code Section 17.183, iron and steel products and manufactured goods used in the project shall be produced in the United States, unless:

- (a) such products or goods are not:
 - (1) available in sufficient quantities;
 - (2) readily available; or
 - (3) of a satisfactory quality; or
- (b) the use of such products or goods will increase the total cost of the project by more than 20 percent.

10. Prevailing Wage Rates

This contract is subject to Government Code Chapter 2258 concerning payment of Prevailing Wage Rates. The Owner will determine what the general prevailing rates are in accordance with the statute. The applicable provisions include, but are not limited to the following:

§2258.021. Right to be Paid Prevailing Wage Rates

- (a) A worker employed on a public work by or on behalf of the state or a political subdivision of the state shall be paid:
 - (1) not less than the general prevailing rate of per diem wages for work of a similar character in the locality in which the work is performed; and
 - (2) not less than the general prevailing rate of per diem wages for legal holiday and overtime work.
- (b) Subsection (a) does not apply to maintenance work.

- (c) A worker is employed on a public work for the purposes of this section if the worker is employed by a Contractor or Subcontractor in the execution of a contract for the public work with the state, a political subdivision of the state, or any officer or public body of the state or a political subdivision of the state.

§2258.023. Prevailing Wage Rates to be Paid by Contractor and Subcontractor; Penalty

- (a) The Contractor who is awarded a contract by a public body or a Subcontractor of the Contractor shall pay not less than the rates determined under Section 2258.022 to a worker employed by it in the execution of the contract.
- (b) A Contractor or Subcontractor who violates this section shall pay to the state or a political subdivision of the state on whose behalf the contract is made, \$60 for each worker employed for each calendar day or part of the day that the worker is paid less than the wage rates stipulated in the contract. A public body awarding a contract shall specify this penalty in the contract.
- (c) A Contractor or Subcontractor does not violate this section if a public body awarding a contract does not determine the prevailing wage rates and specify the rates in the contract as provided by Section 2258.022.
- (d) The public body shall use any money collected under this section to offset the costs incurred in the administration of this chapter.
- (e) A municipality is entitled to collect a penalty under this section only if the municipality has a population of more than 10,000.

§2258. 024. Records

- (a) A Contractor and Subcontractor shall keep a record showing:
 - (1) the name and occupation of each worker employed by the Contractor or Subcontractor in the construction of the public work; and
 - (2) the actual per diem wages paid to each worker.
- (b) The record shall be open at all reasonable hours to inspection by the officers and agents of the public body.

§2258. 025. Payment Greater Than Prevailing Rate Not Prohibited

This chapter does not prohibit the payment to a worker employed on a public work an amount greater than the general prevailing rate of per diem wages.

11. Employment of Local Labor (only applicable to projects funded by EDAP)

The Contractor shall, to the maximum feasible extent, employ local labor for construction of the project. The Contractor and every Subcontractor undertaking to do work on the project which is, or reasonably may be done as on-site work, shall employ qualified persons who regularly reside within the political subdivision boundary of the Owner and the economically distressed area where the project is located (Texas Water Code, Section 17.183).

12. Payments

(a) Progress Payments:

- (1) The Contractor shall prepare their requisition for progress payment as of the last day of the month and submit it, with the required number of copies, to the Engineer for review. Except as provided in paragraph (3) of this subsection, the amount of the payment due the Contractor shall be determined by adding to the total value of work completed to date, the value of materials properly stored on the site and deducting: (1) five percent (5%) minimum of the total amount, as a retainage and (2) the amount of all previous payments. The total value of work completed to date shall be based on the actual or estimated quantities of work completed and on the unit prices contained in the agreement (or cost breakdown approved pursuant to section 7b relating to lump sum bids) and adjusted by approved change orders. The value of materials properly stored on the site shall be based upon the estimated quantities of such materials and the invoice prices. Copies of all invoices shall be available for inspection by the Engineer.
- (2) The Contractor shall be responsible for the care and protection of all materials and work upon which payments have been made until final acceptance of such work and materials by the Owner. Such payments shall not constitute a waiver of the right of the Owner to require the fulfillment of all terms of the Contract and the delivery of all improvements embraced in this contract complete and satisfactory to the Owner in all details.
- (3) This clause applies to contracts when the Owner is a District or Authority. The retainage shall be ten percent of the amount otherwise due until at least fifty percent of the work has been completed. After the project is fifty percent completed, and if the District or Authority's Board finds that satisfactory progress is being made, then the District may authorize any of the remaining progress payments to be made in full. The District is not obligated to pay interest earned on the first 50% of work completed (Texas Water Code Sec. 49.276(d)).
- (4) The five percent (5%) retainage of the progress payments due to the Contractor may not be reduced until the building of the project is substantially complete and a reduction in the retainage has been authorized by the TWDB.

(b) Withholding Payments. The Owner may withhold from any payment otherwise due the Contractor so much as may be necessary to protect the Owner and if so elects may also withhold any amounts due from the Contractor to any Subcontractors or material dealers, for work performed or material furnished by them. The foregoing provisions shall be construed solely for the benefit of the Owner and will not require the Owner to determine or adjust any claims or disputes between the Contractor and their Subcontractors or Material dealers, or to withhold any monies for their protection unless the Owner elects to do so. The failure or refusal of the Owner to withhold any monies from the Contractor shall in no way impair the obligations of any surety or sureties under any bond or bonds furnished under this contract.

(c) Payments Subject to Submission of Certificates. Each payment to the Contractor by the

Owner shall be made subject to submission by the Contractor of all written certifications required of the Contractor, their Subcontractors and other general and special conditions elsewhere in this contract.

(d) Final Payment.

- (1) Upon satisfactory completion of the work performed under this contract, as a condition before final payment under this contract or as a termination settlement under this contract the Contractor shall execute and deliver to the Owner a release of all claims against the Owner arising under, or by virtue of, this contract, except claims which are specifically exempted by the Contractor to be set forth therein. Unless otherwise provided in this contract, by state law or otherwise expressly agreed to by the parties to this contract, final payment under this contract or settlement upon termination of this contract shall not constitute a waiver of the Owner' s claims against the Contractor or their sureties under this contract or applicable performance and payment bonds.
- (2) After final inspection and acceptance by the Owner of all work under the Contract, the Contractor shall prepare their requisition for final payment which shall be based upon the carefully measured or computed quantity of each item of work at the applicable unit prices stipulated in the Agreement or cost breakdown (if lump sum), as adjusted by approved change orders. The total amount of the final payment due to the Contractor under this contract shall be the amount computed as described above less all previous payments.
- (3) The retainage and its interest earnings, if any, shall not be paid to the Contractor until the TWDB has authorized a reduction in, or release of, retainage on the contract work.
- (4) Withholding of any amount due to the Owner, under general and/or special conditions regarding "Liquidated Damages" shall be deducted from the final payment due the Contractor.

13. Archaeological Discoveries and Cultural Resources

No activity which may affect properties listed or properties eligible for listing in the National Register of Historic Places or eligible for designation as a State Archeological Landmark is authorized until the Owner has complied with the provisions of the National Historic Preservation Act and the Antiquities Code of Texas. The Owner has previously coordinated with the appropriate agencies and impacts to known cultural or archeological deposits have been avoided or mitigated. However, the Contractor may encounter unanticipated cultural or archeological deposits during construction.

If archeological sites or historic structures which may qualify for designation as a State Archeological Landmark according to the criteria in 13 TAC Chapter 26, or that may be eligible for listing on the National Register of Historic Places in accordance with 36 CFR Part 800, are discovered after construction operations are begun, the Contractor shall immediately cease operations in that particular area and notify the Owner, the TWDB, and the Texas Historical Commission, 1511 N. Colorado St. , P. O. Box 12276, Capitol Station, Austin, Texas 78711-2276. The Contractor shall take reasonable steps to protect

and preserve the discoveries until they have been inspected by the Owner's representative and the TWDB. The Owner will promptly coordinate with the State Historic Preservation Officer and any other appropriate agencies to obtain any necessary approvals or permits to enable the work to continue. The Contractor shall not resume work in the area of the discovery until authorized to do so by the Owner.

14. Endangered Species

No activity is authorized that is likely to jeopardize the continued existence of a threatened or endangered species as listed or proposed for listing under the Federal Endangered Species Act (ESA), and/or the State of Texas Parks and Wildlife Code on Endangered Species, or to destroy or adversely modify the habitat of such species.

If a threatened or endangered species is encountered during construction, the Contractor shall immediately cease work in the area of the encounter and notify the Owner, who will immediately implement actions in accordance with the ESA and applicable State statutes. These actions shall include reporting the encounter to the TWDB, the U.S. Fish and Wildlife Service, and the Texas Parks and Wildlife Department, obtaining any necessary approvals or permits to enable the work to continue, or implement other mitigation actions. The Contractor shall not resume construction in the area of the encounter until authorized to do so by the Owner.

15. Hazardous Materials

Materials utilized in the project shall be free of any hazardous materials, except as may be specifically provided for in the specifications.

If the Contractor encounters existing material on sites owned or controlled by the Owner or in material sources that are suspected by visual observation or smell to contain hazardous materials, the Contractor shall immediately notify the Engineer and the Owner. The Owner will be responsible for the testing and removal or disposal of hazardous materials on sites owned or controlled by the Owner. The Owner may suspend the work, wholly or in part during the testing, removal or disposal of hazardous materials on sites owned or controlled by the Owner.

16. Changes

*Provisions identified with an asterisk below are consistent with Local Government Code 271.060. Counties and Municipalities may modify the identified provisions, when applicable, to conform to Local Government Code 252.048 (Counties) or 252.048 (Municipalities).

- (a) The Owner may at any time, without notice to any surety, by written order designated or indicated to be a change order, make changes in the work within the general scope of the contract, including but not limited to changes:
 - (1) In the specifications (including drawings and designs);
 - (2) In the time, method or manner of performance of the work;
 - (3) To decrease or increase the quantity of work to be performed or materials, equipment or supplies to be furnished;

- (b) *The total price of a contract may not be increased by a change order unless provision has been made for the payment of the added cost by the appropriation of current funds or bond funds for that purpose, by the authorization of the issuance of certificates, or by a combination of those procedures.
- (c) *A contract with an original contract price of \$1 million or more may not be increased by more than 25 percent. If a change order for a contract, with an original contract price of less than \$1 million, increases the contract amount to \$1 million or more, subsequent change orders may not increase the revised contract amount by more than 25 percent.
- (d) *A governing body may grant authority to an official or employee responsible for purchasing or for administering a contract to approve a change order that involves an increase or decrease of \$50,000 or less.
- (e) Changes that involve an increase in price will be supported by documentation of the cost components. For projects funded through the EDAP program, or with grant proceeds, TWDB staff may request this information to be provided in a format equivalent to the Cost and Pricing Information form (No. WRD-277).
- (f) Any change orders involving a change in the project requiring a relocation of project components, sizing, or process may require additional environmental approval. A map and description of the proposed changes should be sent to the TWDB Environmental Reviewer for coordination and approval as soon as possible to avoid any delay.

17. Operation and Maintenance Manuals and Training

- (a) The Contractor shall obtain installation, operation, and maintenance manuals from manufacturers and suppliers for equipment furnished under the contract. The Contractor shall submit three copies of each complete manual to the Engineer within 90 days after approval of shop drawings, product data, and samples, and not later than the date of shipment of each item of equipment to the project site or storage location.
- (b) The Owner shall require the Engineer to promptly review each manual submitted, noting necessary corrections and revisions. If the Engineer rejects the manual, the Contractor shall correct and resubmit the manual until it is acceptable to the Engineer as being in conformance with the design concept of the project and for compliance with information given in the contract documents. Owner may assess Contractor a charge for reviews of same items in excess of three (3) times. Such procedure shall not be considered cause for delay.
- (c) Acceptance of manuals by Engineer does not relieve Contractor of any requirements of terms of Contract.
- (d) The Contractor shall provide the services of trained, qualified technicians to check final equipment installation, to assist as required in placing same in operation, and to instruct operating personnel in the proper manner of performing routine operation and maintenance of the equipment.

- (e) Operations and maintenance manuals specified hereinafter are in addition to any operation, maintenance, or installation instructions required by the Contractor to install, test, and start-up the equipment.
- (f) Each manual is to be bound in a folder and labeled to identify the contents and project to which it applies. The manual shall contain the following applicable items:
 - (1) A listing of the manufacturer's identification, including order number, model, serial number, and location of parts and service centers.
 - (2) A list of recommended stock of parts, including part number and quantity.
 - (3) Complete replacement parts list.
 - (4) Performance data and rating tables.
 - (5) Specific instructions for installation, operation, adjustment, and maintenance.
 - (6) Exploded view drawings for major equipment items.
 - (7) Lubrication requirements.
 - (8) Complete equipment wiring diagrams and control schematics with terminal identification.

18. As-built Dimensions and Drawings

- (a) Contractor shall make appropriate daily measurements of facilities constructed and keep accurate records of location (horizontal and vertical) of all facilities.
- (b) Upon completion of each facility, the Contractor shall furnish the Owner with one set of direct prints, marked with red pencil, to show as-built dimensions and locations of all work constructed. As a minimum, the final drawings shall include the following:
 - (1) Horizontal and vertical locations of work.
 - (2) Changes in equipment and dimensions due to substitutions.
 - (3) "Nameplate" data on all installed equipment.
 - (4) Deletions, additions, and changes to scope of work.
 - (5) Any other changes made.

19. Close-Out Procedures

To close-out the contract and release final retainage, the following steps must be completed:

- (a) TWDB Staff must conduct a construction contract final inspection (CCFI).
- (b) The following submittals must be received, reviewed, and accepted by TWDB:
 - (1) The final change order, adjustment of quantities, or a statement that all change orders have previously been submitted and there will be no more change orders;
 - (2) The final pay request from the Contractor;
 - (3) An affidavit by the Contractor that all bills have been paid;
 - (4) Certification by the consulting Engineer that the work has been completed and was constructed in accordance with the approved plans and specifications and sound engineering principles and construction practices;
 - (5) Acceptance of the project by the Owner in the form of a written resolution or other formal action;

- (6) Notification of the beginning date of the warranty period for the contract; and
- (7) Confirmation that the Owner has received as-built drawings from the Contractor.

(c) TWDB will issue a Certificate of Approval allowing the release of retainage.

IV. FORMS AND GUIDANCE LIST

The following documents, mentioned throughout this guidance are available on the TWDB website at: <http://www.twdb.texas.gov/financial/instructions/index.asp>

Forms:

The following forms must be included in the bid documents:

- TWDB-0459, Vendor Compliance with Reciprocity of Non-Resident Bidders.
- Site Certificate (ED-101)
- Contractor's Act of Assurance (ED-103)
- Contractor's Act of Assurance Resolution (ED-104)
- Bidder's Certifications Form (WRD-255)

Guidance Document:

- Requirements for U.S. Iron and Steel and Manufactured Goods (TWDB-1105)

VENDOR COMPLIANCE WITH RECIPROCITY ON NON-RESIDENT BIDDERS (TWDB-0459)

Government Code 2252.002 provides that, in order to be awarded a contract as low bidder, a non-resident bidder must bid projects for construction, improvements, supplies or services in Texas at an amount lower than the lowest Texas resident bidder by the same amount that a Texas resident bidder would be required to underbid a non-resident bidder in order to obtain a comparable contract in the state in which the non-resident's principal place of business is located. A non-resident bidder is a contractor whose corporate offices or principal place of business is outside of the state of Texas. This requirement does not apply to a contract involving Federal funds. The appropriate blanks in Section A must be filled out by all out-of-state or non-resident bidders in order for your bid to meet specifications. The failure of out-of-state or non-resident contractors to do so will automatically disqualify that bidder. Resident bidders must check the blank in Section B.

A. Non-resident vendors in _____(give state), our principal place of business, are required to be _____ percent lower than resident bidders by state law. A copy of the statute is attached.

Non-resident vendors in _____(give state), our principal place of business, are not required to underbid resident bidders.

B. Our principal place of business or corporate offices are in the State of Texas: _____ .

BIDDER:

Company _____

City State Zip

By: (please print)

Signature

Title: (please print)

THIS FORM MUST BE RETURNED WITH THE BID

STATE OF TEXAS

COUNTY OF _____

§
§
§

SITE CERTIFICATE

Before me, the undersigned notary, on this day personally appeared _____, a person whose identify is known to me or who has presented to me a satisfactory proof of identity. After I administered an oath, this person swore to the following:

- (1) My name is _____. I am over 18 years of age and I am of sound mind, and capable of swearing to the facts contained in this Site Certificate. The facts stated in this certificate are within my personal knowledge and are true and correct.
- (2) I am an authorized representative of _____, an entity that has filed an application for financial assistance with the Texas Water Development Board for a (water) (wastewater) project.

LEGAL CERTIFICATION – OWNERSHIP INTEREST

This is to certify that _____
(Legal Name of Applicant, i.e., City, District, etc.)

has acquired or is in the process of acquiring the necessary real property interest, as evidenced by fee simple purchase or fully executed earnest money contracts, firm option agreements to purchase the subject property or the initiation of eminent domain procedures, that such acquisition will guarantee access and egress and such interest will contain the necessary easements, rights of way or unrestricted use as is required for the project being financed by the Texas Water Development Board. The legal description is referenced below:

_____.

(Location, and Description of Property Interests acquired for Project)

Any deeds or other instruments required to be recorded to protect the title(s) held by

(Legal Name of Applicant)

have been recorded or filed for the record in the County deed records or other required location.

LEGAL CERTIFICATION – LEASE/CONTRACT

In the alternative, I certify that _____
(Legal Name of Applicant, i.e., City, District, etc.)

has executed a written lease or other contractual agreement to use the property needed for this (water) (wastewater) project that extends through _____, the life of the Texas Water Development Board loan or grant that will be used to finance this project, either in whole or in part. A copy of this lease or agreement is attached hereto.

LEGAL CERTIFICATION – PROPERTY EASEMENT

In the alternative, I certify that _____
(Legal Name of Applicant, i.e., City, District, etc.)

has executed an express easement to use the property needed for this (water) (wastewater) project that extends through _____, the life of the Texas Water Development Board loan or grant that will be used to finance this project, either in whole or in part. A copy of the express easement agreement is attached hereto.

EXECUTED this _____ day of _____, 20____.

(Signature)

(Print Name)

(Title)

Sworn to and subscribed before me by _____ on _____, 20_____.

Notary Public in and for the State of Texas

[SEAL]

My Commission expires: _____

CONTRACTOR'S RESOLUTION ON AUTHORIZED REPRESENTATIVE

Name or Names

I hereby certify that it was RESOLVED by a quorum of the directors of the

_____, meeting on the
Name of Corporation

____ day of _____ 20____, that _____,

_____, _____, and

_____, be, and hereby is/are authorized to act on behalf of

_____, as its representative in all business
name of corporation

transactions conducted in the State of Texas, and;

That all above resolution was unanimously ratified by the Board of Directors at said meeting and that the resolution has not been rescinded or amended and is now in full forces and effect; and;

In authentication of the adoption of this resolution, I subscribe my name and affix the seal of the corporation this _____ day of _____, 20__.

Secretary

(seal)

BIDDER'S CERTIFICATIONS

Project Name: _____

Project Number: _____

Contract For: _____

The following certifications must be completed by the bidder for each contract.

A. EQUAL EMPLOYMENT OPPORTUNITY:

I have developed and have on file at my each establishment affirmative action programs pursuant to 41 CFR Part 60-2.

I have participated in previous contract(s) or subcontract(s) subject to the equal opportunity clause under **Executive Orders 11246 and 11375**. I have filed all reports due under the requirements contained in 41 CFR 60-1.7.

I have not participated in previous contracts(s) subject to the equal opportunity clause under **Executive Orders 11246 and 11375**.

I will obtain a similar certification from any proposed subcontractor(s), when appropriate.

B. NONSEGREGATED FACILITIES

I certify that I do not and will not maintain any facilities provided for my employees in a segregated manner, or permit my employees to perform their services at any location under my control where segregated facilities are maintained; and that I will obtain a similar certification prior to the award of any federally assisted subcontract exceeding \$10,000 which is not exempt from the equal opportunity clause as required by 41 CFR 60-1.8.

I understand that a false statement on this certification may be grounds for rejection of this bid proposal or termination of the contract award.

Typed Name & Title of Bidder's Authorized Representative

Signature of Bidder's Authorized Representative Date

Name & Address of Bidder

PART 1 GENERAL

1.01 SECURITY POLICY

- A. Paramount to the Austin Water Utility are 1) the production and delivery of an adequate supply of safe drinking water to all customers, 2) uninterrupted collection of wastewater, without spills, and 3) and adequate processing of wastewater to safely return to the environment . The Utility shall provide high quality physical security at all its facilities and shall initiate, implement, enforce, and update as needed, specific rules and procedures to protect property, personnel, facilities, and material against unauthorized entry, trespass, damage, sabotage, or other acts that might threaten the security of these facilities, the quality of the drinking water, or the quality of treated wastewater.

1.02 RELATED DOCUMENTS

- A. The most current version of the Austin Water Utility's "Facility Security Procedures for Contractors, SP-1070" shall be considered a part of this Specification Section.

1.03 SECURITY PROCEDURE

- A. The CONTRACTOR shall become familiar with this Specification Section and the most current version of the Austin Water Utility's "Facility Security Procedure for Contractors, SP-1070", and shall assure that all SUBCONTRACTORS do likewise. The CONTRACTOR and each SUBCONTRACTOR shall sign an affidavit attesting to the fact that they have read, understood, and will abide by this procedure. The CONTRACTOR's signed affidavit shall be delivered to the Utility no later than the Pre-construction Conference and before any access is allowed to the work site.

1.04 SUBMITTALS

- A. The CONTRACTOR shall submit a "Contractor's Acknowledgement" form (Appendix A of "Facility Security Procedure for Contractors, SP-1070") signed by the Contractor's Project Manager and Site Superintendent no later than the Pre-Construction Conference. This submittal shall be an original document, with original signatures. Copies or facsimiles will not be accepted.
- B. The CONTRACTOR shall submit a "Contractor's Acknowledgement" form (Appendix A of "Facility Security Procedure for Contractors, SP-1070") signed by each Subcontractor's Project Manager and Site Supervisor no later than two weeks prior to the date the Subcontractor wishes to enter the secured area. Each submittal shall be an original document, with original signatures. Copies or facsimiles will not be accepted.
- C. The CONTRACTOR shall submit an "Application for Authorization to Enter Secured Austin Water Utility Facilities" form (Appendix B of "Facility Security Procedure for Contractors, SP-1070") for every Contractor's and Subcontractors' employee that will need to enter the secured area. Each application shall be accompanied by a complete "Background Security Check" (including fingerprint card), performed by a governmental law enforcement agency, as described in the "Facility Security Procedure for Contractors, SP-1070". These submittals

shall each be an original document, with original signatures. Copies or facsimiles will not be accepted.

- D. The CONTRACTOR shall submit a sample of their company's Security Identification Badge, sized and formatted as described in the "Facility Security Procedure for Contractors, SP-1070".

PART 2 PRODUCTS

2.01 GENERAL

- A. The CONTRACTOR shall be responsible for developing an employee security badging system for the project. Each employee must receive and wear a security badge in order to enter and work on the site. Contractor shall submit the general proposed format of the badge for approval prior to final production. See SP-1070 for the badging details. The CONTRACTOR must complete Criminal Background Checks through the Department of Public Safety (DPS) for each and every employee that will work at the project site. There is a charge by DPS for each Criminal Background Check. The Criminal Background Check along with a fingerprint card constitutes the Security Background Check that shall be submitted to the Plant Engineer for review and approval prior to an individual being allowed on site to work. The OWNER will issue a security decal to each individual whose Security Background Check is approved, which is to be placed on that individual's CONTRACTOR-issued badge. All costs associated with the security checks and badging system shall be considered in the lump sum Bid.

PART 3 EXECUTION

3.01 SITE SECURITY

The CONTRACTOR shall be responsible for maintaining absolute site security and for following all provisions of the UTILITY's "Facility Security Procedures for Contractors, SP-1070" in good faith. Failure to follow any of the provisions of this procedure shall be considered a breach of this CONTRACT.

- A. **FENCES AND GATES:** All existing fences and gates shall be maintained secure. If existing fences or gates must be moved or removed, equally secure temporary fencing shall be erected to maintain site security before any removal is initiated. If there is no existing fencing, temporary fencing and gates, as identified in another section of these specifications, shall be erected before any other work is performed. Gates shall be maintained closed and locked at all times. If necessary for convenient access, a guard, fluent in speaking and reading English, may be stationed at the gate to open and close it. In addition, the guard shall notify the Contractor's Site Superintendent of the arrival of all deliveries and shall examine the Identification Badges of all personnel seeking to enter the site, to assure that only persons with proper Security Identification Badges are allowed to enter.
- B. **BUILDINGS:** All existing buildings shall be maintained secure. If access to an existing building is controlled by an existing security system, the CONTRACTOR, all SUBCONTRACTORS, and their respective employees shall follow the procedures for access as described in the "Facility Security Procedures for Contractors, SP-1070"

3.02 PERSONNEL

Personnel access to the construction site shall be limited to those identified in the "Facility Security Procedures for Contractors, SP-1070", and access will be controlled by the use of Security Identification Badges. The CONTRACTOR shall be responsible for assuring that all personnel

allowed to enter the work site have proper Security Identification Badges. A proper Security Identification Badge is a picture badge, as described in SP-1070, either issued by the CONTRACTOR or SUBCONTRACTOR with the proper Utility-applied authorization decal, or a badge issued by the UTILITY. The CONTRACTOR shall deny access to any person lacking a proper Security Identification Badge. Any person discovered on the work site without a proper identification badge will be escorted off the site and may be subject to arrest by law enforcement authorities.

- A. **ACCESS AUTHORIZATION:** The CONTRACTOR shall provide an original "Application for Authorization to Enter Secured Austin Water Utility Facilities" (including Background Security Check and fingerprint card) for each person who will be working on the site at least five (5) working days prior to the date that person is scheduled to begin work on the site. The UTILITY shall determine whether or not to grant each person access to the work site based upon the results of the Background Security Check. Random audits shall be performed by the UTILITY on the results of the Background Security Checks.

The original "Application for Authorization to Enter Secured Austin Water Utility Facilities" shall be kept on file by the Utility's Facility Manager or Project Manager. A copy of this document will be returned to the CONTRACTOR with an indication of the approval or denial of access for the named employee. The Background Security Check and fingerprint card shall be returned to the CONTRACTOR also, but must be kept available for audit until one year following Final Completion.

- B. **IDENTIFICATION BADGES:** The CONTRACTOR shall provide Security Identification Badges for each of their employees and their SUBCONTRACTORS' employees. The badges shall be picture badges conforming to all the requirements of the "Facility Security Procedure for Contractors, SP-1070". The badge must be worn by all persons at all times while present on the work site, and must be worn above the waist and be clearly visible from the front. Following a satisfactory review of each person's Background Security Check, and presentation of a government-issued picture identification, the UTILITY will apply a permanent access authorization decal to the badge.

END OF SECTION

**City of Austin Water Utility
Water and Wastewater Treatment Plants,
Water Pump Stations and Reservoirs,
and Lift Stations**

**FACILITY SECURITY PROCEDURE FOR
CONTRACTORS**

SP-1070

June, 2005

SP-1070

06/10/05

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**Facility Security Procedure for
Contractors SP-1070**

Facility Security Procedure For Contractors

SP-1070 Revision Record

Revision	Date of revision	Revision Description- affected pages	Revision approved by
0		Initial issue, all pages	
1	22 Nov 02	All pages	
2	20 Jun 03	All pages	
3	25 Mar 04	All pages	
4	10 Jun 05	All pages	

**City of Austin Water Utility
Water and Wastewater Treatment Plants,
Water Pump Stations and Reservoirs,
and Lift Stations**

FACILITY SECURITY PROCEDURE FOR CONTRACTORS

SP-1070

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1 SECURITY POLICY

Paramount to the Austin Water Utility are 1) the production and delivery of an adequate supply of safe drinking water to all customers, 2) uninterrupted collection of wastewater, without spills, and 3) adequate processing of wastewater to safely return to the environment. The Utility shall provide high quality physical security at all its facilities and shall initiate, implement, enforce, and update as needed, specific rules and procedures to protect property, personnel, equipment, and material against unauthorized entry, trespass, damage, sabotage, or other acts that might threaten the security of essential facilities, the quality of the drinking water, or the quality of treated wastewater.

2 SECURITY PROCEDURE

2.1 PURPOSE

The purpose of this Procedure is to provide Contractors and Subcontractors with standard operating methods, directives and instructions in accordance with the Utility's mission to protect its assets.

2.2 SECURITY PROCEDURE MAINTENANCE

The maintenance and updating of this Facility Security Procedure is the responsibility of the Treatment Program Division Managers and the Security Manager.

This Facility Security Procedure will be reviewed and updated at least yearly. A record of all revisions will be maintained at the front of all copies.

2.3 CONTRACTOR'S BASIC SECURITY RESPONSIBILITIES

2.3.1 Read-and-Follow Requirement

All Contractors and Subcontractors shall read and follow this Procedure. The Contractor's Project Manager and Site Superintendent, and all Subcontractors' on-site Supervisors will be required to sign the "Contractor's Acknowledgement" (Appendix A) attesting to the fact that they have read and understood this Procedure. The "Contractor's Acknowledgement" signed by the Contractor's Project Manager and Site Superintendent shall be delivered to the Utility at the

Pre-construction Conference, and before any access is permitted to the work site. The “Contractor’s Acknowledgement” signed by the Subcontractors’ Project Managers and Site Supervisors will be delivered to the Utility at least two weeks before the Subcontractor requires access to the site.

All Contractor’s and Subcontractors’ employees are expected to be thoroughly knowledgeable in the contents of this Procedure. Contractors and Subcontractors shall instruct their employees on the provisions and requirements of this procedure and shall emphasize the importance of their compliance. Any person’s failure to follow any of the provisions or requirements of this Procedure shall be considered sufficient grounds for their immediate removal from the job site and loss of access privileges.

2.3.2 Basic Security Functions

The basic security functions of Contractors and Subcontractors shall center on the protection of water and wastewater quality, personnel, and the Utility’s and Contractors’ property. These basic functions will involve securing and monitoring the project site, controlling access, preventing unlawful entry, unlocking and locking buildings, and enforcing Utility rules, policies, procedures and directives.

Contractors and Subcontractors shall provide deterrence against fire, theft, vandalism, and trespass and shall assist in the elimination of safety hazards and security breaches. In some cases, Contractors and Subcontractors will be called upon to assist in the detection and detention of persons guilty of trespassing on or committing offenses on Utility property. Uniformed officers from the Austin Police Department and local Sheriffs’ Departments shall provide the enforcement support for criminal acts committed on Utility property.

Contractors and Subcontractors shall accurately report and record all transgressions and incidents.

2.4 APPLICATIONS FOR AUTHORITY TO ENTER FACILITIES, BACKGROUND SECURITY CHECKS AND IDENTIFICATION BADGES

2.4.1 Applications for Authority to Enter Facilities

The Contractor shall submit an “Application for Authorization to Enter Secured Austin Water Utility Facilities” (Appendix B) for each of their employees and their Subcontractors’ employees before that employee is allowed to enter the project site. All information requested on the application shall be provided, including required signatures. Each application submitted shall be an original document. Copies or facsimiles are not acceptable.

Each application shall be accompanied by a complete background security check and fingerprint card. Each employee's application and background security check shall be submitted at least five (5) working days prior to the first day that employee is to work on the secured site to allow for adequate review of the documents. Each background check submitted shall be an original document. Copies or facsimilies are not acceptable (fingerprint card may be a copy if investigating agency elects to keep the original).

2.4.2 Background Security Checks

The Contractor shall provide a current background security check for each of their employees and their Subcontractors' employees, submitted along with the "Application for Authorization to Enter Secured Austin Water Utility Facilities". The background check must be performed by either the United States Federal Government (FBI) or the Department of Public Safety from the employee's home state (the state in which the employee resides and from whom they obtained their driver's license or identification card). The background security check for a non-US citizen shall be performed by their native country's national law-enforcement agency (e.g. a Canadian citizen shall submit a background check performed by the Royal Canadian Mounted Police).

The results of each background check shall be dated and submitted as an original, certified official document from the agency performing the check, and shall bear all appropriate letterheads, seals, and signatures. The background check shall clearly indicate the agency performing the check and include their address and telephone number. Background checks performed less than one year prior to the subject Contract's Notice-to-Proceed will be acceptable. The results of background checks may be audited at any time.

Each background check shall include fingerprint identification on the appropriate card designated by the agency performing the background check. (It has been noted that the FBI and various state Departments of Public Safety each have their own particular fingerprint card for making background checks. The FBI and some states allow fingerprints to be taken by other law-enforcement professionals as long as they are taken on the card designated by the investigating agency).

2.4.3 Security Identification Badges

Security Identification Badges for employees of Contractors and Subcontractors shall be picture badges as approved by Treatment Program Division Managers and authorized by the Security Manager. Contractors shall provide a Security ID Badge for each of their employees and their Subcontractors' employees who require access to protected Utility facilities to perform their work. The facilities they may access shall be limited to those locations necessary for the performance of their contract. Contractors shall provide clear, plastic badge holders with an

appropriate clip that will protect the badge and allow it to be worn and displayed safely by employees on the outside of their clothing.

The Security ID Badge shall be made of durable plastic material with minimum dimensions of 2 1/8 inches by 3 3/8 inches, and shall show a clear, photographic image of the bearer, with a vertical facial image no less than 3/4 inches high. Each badge shall clearly display the name of the employee and the Company he/she works for. A space at least 3/4 inch high and one inch wide shall be kept free of information and shall be reserved for the Utility to apply a permanent, access authorization decal.

The Utility's Plant Superintendent or Division Manager shall supervise and control the application of the permanent decal authorizing the badge bearer to enter protected Utility facilities. Such authorization to enter protected facilities shall require a review of the background security check and approval from ALL of the following: the Contractors' Project Manager, the Utility's Project Manager, and the Plant Superintendent or Division Manager responsible for the site to be accessed.

The permanent decal shall be valid only for the year in which it is issued. If the construction project continues past the first year a decal is applied, AND the bearer still requires access, the Utility may apply a new decal to the Security ID Badge.

2.4.4 Identification Badge Control and Handling

All personnel on the job site shall wear the Security Identification Badge on the outside of their clothing, in the front, at or above their waist.

Security Identification Badge holders will take reasonable care to protect their badge from unauthorized use. ID badge holders will not allow others to use their badge.

In the event that a Security Identification Badge holder discovers that their badge has been lost, the badge holder shall immediately report the loss to the Contractor's Site Superintendent, who will immediately report the loss to the Project Manager, and to the Plant Superintendent (at treatment plants) or the Central Security Operator and the Security Manager at the South First Support Center (512-972-0501) (for pump stations and reservoirs).

2.4.5 Revoking Access Authorization

Authorization to enter and/or work on any Austin Water Utility site is at the sole discretion of the Utility and may be revoked at any time.

Authorization to enter secured Utility sites shall be revoked immediately for the following reasons:

- the badge holder ends their employment with the Contractor or Subcontractor
- the badge holder allows another person to use their badge, or the badge holder permits, suffers, or allows another person without a badge to enter a secured site.
- the badge holder acts without authorization to defeat any security device at any secured site.
- The badge holder's actions (or inaction) result(s) in damage to Utility facilities or threaten(s) the quality of the drinking water.

Personnel in the following positions may revoke Access Authorization:

- W&WW Utility Director and Assistant Directors for Treatment and for Engineering
- W&WW Division Heads, Plant Superintendents, and Supervisors in the Treatment Program Area
- Security Manager
- W&WW and Consultant's Project Managers
- Contractor's Project Manager and Site Superintendent

If a person in one of the positions listed above ever believes that another person's Access Authorization should be immediately revoked to eliminate or mitigate a threat to site security or the security of the water, they shall contact the Project Manager or the Contractor's Site Superintendent. Any decal authorizing entry to Utility protected facilities shall be removed, and at the discretion of the Contractor, the badge taken from the person. The person shall be escorted from the work site.

2.5 FACILITY SECURITY AND ACCESS CONTROL

2.5.1 Access to Facilities

Access to Utility facilities shall be limited to:

- Utility employees who possess appropriate unescorted access authorization by the Utility and have a valid Security Identification Badge.
- Contractor's and Subcontractors' employees who possess appropriate access authorization(s) and possess and wear a proper Utility-authorized Security Identification Badge. All Contractor's and Subcontractors' employees will follow Utility procedures while on the site.
- Contractor's or Subcontractors' supplier delivery personnel. Delivery personnel may be permitted access to complete material deliveries and will not be required to obtain a Security Identification Badge. Delivery personnel shall be closely escorted within the secured site by

the Contractor's Site Superintendent and shall be permitted access only for the time required to unload the material being delivered. Under no circumstances will any delivery personnel be allowed to remain on site for longer than one hour. If delivery of any material or equipment is projected to require more than one hour's time, an "Application for Authorization to Enter Secured Water Treatment Facilities", complete Background Security Check, and Security Identification Badge will be required for all personnel associated with making that delivery.

- Visitors who have been authorized in advance, in writing, by the Plant Superintendent or Division Manager. (Persons who perform work on the site or deliver equipment or materials to the site are not considered to be visitors) Visitors who have been authorized such access will be closely escorted within the Utility facility by either a Utility employee who possesses the appropriate access authorization and Security Identification Badge, or the Contractor's Site Superintendent (who also possesses appropriate access authorization and Security Identification Badge). The Contractor shall maintain a Visitor Register to record all visits. The Visitor Register shall record the name of each visitor, their employer, citizenship, date of the visit, arrival and departure times, the purpose of visit and the name of the escort. This Visitor Register shall be made available at every project progress meeting and shall be delivered to the Utility Project Manager at the end of the project. Visitors do not require an ID badge.

2.5.2 Site Security Requirements

All Utility facilities shall be kept secure at all times. The following provisions, at a minimum shall be maintained:

- An eight-foot high perimeter fence shall be maintained without gaps or holes, with gate(s) locked with a tempered chain and padlock. A security guard may also be employed if desired by the Contractor or required by other sections of the Contract.
- All perimeter door(s) (if present) shall be locked and alarmed.
- Other installed security devices (if present) such as motion detectors, fence monitors and CCTV cameras shall be operational.
- All classified material (if present) within shall be properly stored.

During the Contractor's working hours, the Contractor's Site Superintendent shall maintain an active cellular telephone to enable the Utility's Plant Superintendent or the Central Security Operator to contact him/her in the event that a security alarm is triggered on the job site. If an alarm is triggered and the Plant Superintendent or the Central Security Operator is unable to contact the Contractor's Site Superintendent to ascertain the reason for the alarm, law enforcement officers will be summoned to the site.

At the beginning of each day that the Contractor or a Subcontractor performs work on a pump station or reservoir site, a Supervisor authorized by the Contractor (and previously identified to the Central Security Operator) shall open the security gate to the site as follows:

- Place a telephone call to the Central Security Operator (972-0501) before unlocking the gate.
- Identify themselves and advise the Central Security Operator that they are at the site entrance, identify where on the site they intend to work, and advise that they are about to open the gate. The Central Security Operator will disarm any alarms that might be triggered by the gate opening or by employees working in the areas identified. The Central Security Operator will advise the Supervisor placing the call when the alarms are disarmed.
- Unlock the gate, enter the site, and lock the gate or post a guard to assure that only authorized personnel wearing required, proper Security Identification Badges, may enter.

At the end of every work day at a pump station or reservoir site, when the last employee has left the job site, the Contractor's Site Superintendent shall place a call to the Central Security Operator to advise that everyone has left the site, that the security gate is locked, and that the alarms should be rearmed.

2.5.3 Combinations and Key Controls

Knowledge of the combination of locks and access to any keys will be limited to designated individuals assigned to work in the associated facilities. All combinations will be changed regularly at times designated by the Division Manager, and whenever it is suspected the combination has been compromised.

Facility keys are cut to fit a number of cylinders. If a key shared with the Contractor is lost, all similar lock cylinders, whether present on the site or off the site, will be re-keyed by the Utility, at the expense of the Contractor.

2.5.4 Operation of Access-Controlled Doors at Remote Facilities

Entry to all remote facilities will be coordinated with the Central Security Operator (CSO). Many facilities include an access-control door. An access-control door may be used by authorized Security Identification Badge holders for entry and exit using the following procedure:

Entry procedure:

1. Contact the Central Security Operator (972-0501) and request permission to enter.
Hang up the telephone.

2. The CSO will call back the person requesting to enter (on their previously authorized number) and verify the request.
3. The CSO will unlock the door or request that the person's Security Identification Badge be presented to the exterior card reader.
4. Unlock the deadbolt (if present)
5. Enter PIN
6. Open door
7. Enter
8. Close the door

Exit procedure:

1. Press crash bar
2. Open door
3. Exit
4. Close the door
5. Lock the deadbolt (if present)
6. Contact the CSO and request that the door be locked, advise them that the site's alarms need to be re-armed
7. The CSO shall lock the door and re-arm all alarm devices
8. The CSO shall call back and ask the requestor to verify that the door is locked

2.5.5 Tailgating

Tailgating is the entry of multiple individuals through an access-controlled door or gate without closing the door (or gate) between entries. Tailgating is allowed by authorized ID Badge holders provided that each presents their badge to the card reader or person controlling access prior to entry. Tailgating by unauthorized individuals or anyone not possessing an authorized ID Badge is not allowed.

APPENDIX A

CONTRACTOR'S ACKNOWLEDGEMENT

**OF CITY OF AUSTIN WATER UTILITY
FACILITY SECURITY PROCEDURES FOR CONTRACTORS**

PROJECT NAME: _____

CIP NUMBER: _____

By signing this document, I acknowledge that I have received a copy of the Austin Water Utility's **FACILITY SECURITY PROCEDURE FOR CONTRACTORS**, and that I have read it and understand its contents. Furthermore, I agree to follow all the provisions contained therein.

CONTRACTOR: _____

PROJECT MANAGER:

Print

Signature

SITE SUPERINTENDENT:

Print

Signature

SUBCONTRACTOR: _____

PROJECT MANAGER:

Print

Signature

SITE SUPERINTENDENT:

Print

Signature

SUBCONTRACTOR: _____

PROJECT MANAGER:

Print

Signature

SITE SUPERINTENDENT:

Print

Signature

Bidding Requirements, Contract Forms and Conditions of the Contract
MODIFICATIONS TO BIDDING REQUIREMENTS AND CONTRACT FORMS
Section 00820

SECTION 00100 – INSTRUCTIONS TO BIDDERS

6. Consideration of Bid Amount

Add the following to Paragraph 6:

“OWNER has established a priority order (Alternate No. 1 has highest priority) for acceptance of Bid alternates based on the Project needs and budget. Alternates will be accepted in the order listed on the Bid Form, not to exceed the construction contract budget. Bidders are to respond to all alternates listed on the Bid Form, even if acceptance or rejection of an alternate will not change the Bid amount.”

7. Submission of Bid

Replace Paragraph 7(g) Nonresident Bidders Provisions (Section 00475) as that language is not applicable to this project

With Paragraph 7(g) Vendor Compliance with Reciprocity of Non-Resident Bidders, TWDB-0459 Form, completed and signed.

9. Rejection of Bids

Add Paragraph 9 A. The following **will** be cause to reject a Bid:

“(11) Failure to submit Vendor Compliance with Reciprocity of Non-Resident Bidders, TWDB-0459 Form completed and signed”

Add Paragraph 9 B. The following **may** be cause to reject a Bid:

“(17) Failure to submit copy of TWDB forms, ED-103 Contractor’s Act of Assurance, ED-104 Contractor’s Resolution on Authorized Representative, WRD-255 Bidder’s Certifications

11. Submission of Post Bid Information

Add (7) One copy of TWDB forms, ED-103 Contractor’s Act of Assurance, ED-104 Contractor’s Resolution on Authorized Representative, WRD-255 Bidder’s Certifications

Delete Paragraph 13, Partnering, and replace with the following:

“13. Partnering

To complete this Work most beneficially for all parties, OWNER desires to form a Partnering Team among OWNER, E/A, CONTRACTOR, and Subcontractor(s). This relationship will draw on the strength of all parties to identify and achieve mutual goals. The objectives are effective and efficient Contract performance, intended to achieve completion within budget, on schedule, and in accordance with the Drawings and Specifications. The partnering relationship will be multilateral in makeup and participation will be totally voluntary. Refer to Section 01100, Special Project Procedures, and/or Section 01200, Project Meetings, for clarification of the intents and responsibilities of the persons and entities entering into the partnering charter.”

SECTION 00810TWDB- TEXAS WATER DEVELOPMENT BOARD (TWDB) SUPPLEMENTAL CONTRACT CONDITIONS AND INSTRUCTIONS

General notes regarding Section 00810TWDB Requirements

1. Any contract or contracts awarded under this invitation for Bids is/are expected to be funded in part by a loan or grant from the TWDB. Neither the state of Texas, nor any of its departments, agencies or employees are or will be a party to this Invitation for Bids or any resulting contract. The requirements of Section 00810TWDB shall govern over all other sections of the Contract Documents, as applicable.
2. This project is not funded by EDAP or DFund mechanisms, and therefore the U.S. Iron and Steel and Manufactured Goods and the Employment of Local Labor requirements do not apply to this project.

END

Bidding Requirements, Contract Forms and Conditions of the Contract
WAGE RATES AND PAYROLL REPORTING
Section 00830

I. Payment

A. Classification Definitions, Building and Heavy and Highway

Definitions for Building Construction and Heavy and Highway classifications shall conform to the current "Dictionary of Occupational Titles" as published by the U.S. Department of Labor.

B. Minimum Wages

Workers on Project shall be paid not less than wage rates, including fringe benefits, as published by the Department of Labor (DOL) or the \$13.03 minimum wage required by City of Austin Ordinance No. 20160324-015, whichever is higher. The Total Minimum Wage required can be met using any combination of cash and non-cash qualified fringe benefits provided the cash component meets or exceeds the \$13.03 minimum wage required.

Such wage rates shall be used throughout the Contract. If a classification is to be used, which is not listed in the attached wage rates, CONTRACTOR shall submit to OWNER rates and classification proposed for use, for approval, **prior** to performance of the Work.

All laborers and mechanics working upon the Work for this Project shall be paid unconditionally and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by Secretary of Labor under the Copeland Act, Title 29 CFR, Part 3) full wages accrued and when due, computed at rates not less than wage rates bound herein pertaining to type of Work being performed. When Work is of such a nature that both Building and Heavy and Highway wage scales are incorporated into contract, CONTRACTOR shall pay wage rates to mechanics or laborers performing Work in more than one classification at the rate indicated for each classification for time actually worked as determined by area practice applicable to type (Site Construction Crafts or Building Construction Crafts) of Work being performed without regards to skill. Salaried specialists (project superintendent and administrative personnel only) in the permanent employment of CONTRACTOR do not fall under any Wage Classification. A supervisor/foreman who is not exempt under 29CFR Part 541 and who spends more than a substantial amount of time (20 percent) in a given workweek as a laborer or mechanic must be paid the applicable Wage Rate for the classification of work performed for all hours engaged in such work as a laborer or mechanic.

Wage rates shall be posted by CONTRACTOR at site(s) of Work in prominent, easily accessible places where they can be seen by all workers. The following shall also be posted by the CONTRACTOR: City of Austin wage contact posters (English and Spanish), City of Austin Equal Employment Opportunity posters (English and Spanish), Workers' Compensation Notice (English and Spanish), Texas Payday Law (English and Spanish), City Rest Break Ordinance (English

and Spanish), City of Austin Non-Discrimination Statement (related to Title VI of the Civil Rights Act), and Federal Notices, as appropriate.

C. Overtime Requirements

No CONTRACTOR, Subcontractor, or Sub-subcontractor contracting for any part of contract Work which may require or involve the employment of laborers or mechanics shall require or permit any laborer or mechanic in any workweek in which he is employed on such Work, to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times their basic rate of pay for all hours in excess of forty hours in such workweek.

Overtime wages must be calculated using the Adjusted Wage Rate specified in the Wage Rate Determination or the actual basic rate of pay, whichever is higher.

II. Apprentices

Locally & Federally Funded Projects

The terms journeyman and apprentice apply to both union and independent workers, and are not intended to imply that these positions are union workers only.

Apprentices and Trainees will be permitted to work as such only when they are registered, individually, under a bonafide Apprenticeship or Trainee program registered with the Bureau of Apprenticeship and Training, United States Department of Labor. The allowable ratio of Apprentices or Trainees to journeymen in any craft classification shall not be greater than the ratio permitted to CONTRACTOR as stated in the registered apprenticeship program standards. Any employee listed on a payroll at an Apprentice or Trainee wage rate, who is not registered as above, shall be paid the wage rate provided in Contract for Work employee actually performed. CONTRACTOR, Subcontractor, or Sub-subcontractor shall furnish to OWNER written evidence of registration of his program for Apprentices and Trainees as well as of the appropriate ratios and wage rates, for the area of construction **prior** to using any Apprentices or Trainees on this Contract.

III. Withholding of Payments

OWNER may withhold or cause to be withheld from CONTRACTOR as much of the accrued payments as necessary to pay laborers and mechanics employed by CONTRACTOR, Subcontractors, or Sub-subcontractors the amount of wages required to comply with the Contract. In the event of nonpayment of wages to laborers or mechanics working on the site of the Work of this Contract, OWNER may, after Written Notice to CONTRACTOR, take such action as may be necessary to cause suspension of any further payments or advance of funds to CONTRACTOR until such violations have ceased and until restitution has been made. Payments may also be withheld if CONTRACTOR fails to maintain weekly payroll reports or fails to provide copies in a timely manner upon request of Owner.

IV. Payrolls

A. CONTRACTOR shall keep records showing:

1. the name, address and occupation of each worker employed by the CONTRACTOR or subcontractor(s) in the construction of the public work.
 2. the actual per diem wages paid to each worker.
 3. Employee Certification. CONTRACTOR, all levels of Subcontractors shall identify in writing, the classification agreed to by all laborers and mechanics employed by them in the execution of the Contract, and pay not less than rates specified in the attached Wage Rate Determination(s). Contractor shall prepare a completed form for the signature of Employee and a witness shall sign the form in the presence of Employee. If work performed by worker is different than the trade classification agreed upon, the worker shall be paid for that work no less than the minimum prevailing wage for that specified trade.
 4. Payroll Deduction Authorization Form. CONTRACTOR, Subcontractor, and Subsubcontractor shall prepare for employee signature a payroll deduction authorization form to identify all payroll deductions excluding those required by statute, such as federal income taxes, medicare and social security.
- B. The record shall be open at all reasonable hours to inspection by the officers and agents of the Owner as requested. CONTRACTOR will be responsible to provide copies of records as requested by the Owner within two (2) working days. Payrolls relating to this Work shall be maintained during term of Contract and preserved for a period of three (3) years thereafter by CONTRACTOR for all laborers and mechanics working on the Work.
- C. A Statement of Compliance, a letter signed and dated by party responsible for supervising the payment of persons employed by CONTRACTOR or subcontractor shall accompany payrolls required by Owner. The Statement of Compliance letter shall identify but is not limited to:
1. name of signatory party and title,
 2. name of project, payroll period and
 3. name of CONTRACTOR or Subcontractor.
- The signed letter attests that the payroll complies with 29CFR issued by the Secretary of Labor.
- D. Federal Funding
- In the event that federal funding is used:
1. Contractor and all levels of Subcontractors shall submit weekly certified payroll reports and signed wage compliance statements to the Owner's designated office no later than seven (7) calendar days after the scheduled payday.

2. Contractors and all levels of Subcontractors shall pay all “mechanics and laborers” not less often than once per week, for work performed the previous week.
3. Submit to the Owner’s designated office Standard Form 1413, Statement and Acknowledgement, from each subcontractor prior to the subcontractor performing work on the project.

V. Noncompliance

According to Chapter 2258 Texas Government Code Title 10A, a CONTRACTOR or subcontractor(s) who violates this section shall pay to the political subdivision on whose behalf the contract is made, \$60 for each worker employed for each calendar day or part of the day that the worker is paid less than the wage rates stipulated in the contract. A public body shall use any money collected under this section to offset the costs incurred in the administration of this chapter.

Confirmed Disciplinary action taken by CONTRACTOR against employees who provide information during an interview or investigation by the Owner on wages received, may result in suspension or debarment from consideration of award of City contracts.

VI. Area Practice

- A. Heavy and Highway Construction Rates shall be used on this Project, unless the Project consists primarily of Building Construction and Building Construction Rates are to be used.
 1. Building Construction consists generally of all aspects of construction of buildings, which are sheltered enclosures with walk-in access for the purpose of housing persons, machinery, equipment or supplies, including without limitation the installation of utilities and equipment, both above and below grade level, as well as incidental demolition, grading, utilities, paving and other site work. Buildings need not be “habitable” to be classified as Building Construction and the installation of heavy machinery and/or equipment will not generally change a Building Construction project’s classification.
 2. The determination of Building Construction Wage Rates includes all construction trades and work necessary to complete a building, regardless of the number of contracts involved, so long as all such contracts are closely related in purpose, time and place.
- B. For projects that involve both Building Construction and Heavy and Highway trades, the following classifications shall be used:
 1. A multiple classification shall be used if Building Construction items are more than 20% of the Heavy and Highway project cost.
 2. A multiple classification shall be used if Heavy and Highway Construction items are more than 20% of the Building Construction Project cost.
- C. Split classifications/multiple wage rate schedules: When construction work requires that an employee perform work under multiple classifications or multiple wage scales, the employer must pay that worker (at least) the

highest prevailing wage or the employer payroll records must accurately set forth the times spent performing the work of each classification and under each scale. For those projects that involve both Building Construction and Heavy and Highway trades, the Heavy and Highway wage rates may only be applied to workers when engaged in site work at least five (5) feet beyond the building.

VII. Texas Open Records Act

Unless covered by an exception to mandatory disclosure under the Texas Public Information Act, Chapter 552, Texas Government Code, any and all documents submitted to the City of Austin become Public Records and are, therefore, subject to public disclosure.

Wage Rates For This Project Are Attached

End

Bidding Requirements, Contract Forms Conditions of the Contract
WAGE RATES AND PAYROLL REPORTING
 Section 00830BC

WAGE RATE DETERMINATION

BUILDING CONSTRUCTION TYPE

COUNTY NAME : TRAVIS

Wages based on DOL Prevailing Wage Rate General Decision:TX160323 8/26/2016 TX323 and City of Austin Ordinance #20160324-015

DOL Rate column is for information only. The Total Minimum Wage Rate is derived from the Adjusted Wage Rate Required pursuant to City Ordinance plus the DOL Fringes and can be met using any combination of cash and non-cash qualified fringe benefits, provided the cash component is at least \$13.03/hour.

CLASSIFICATION	DOL RATE for info only	ADJUSTED WAGE RATE REQUIRED pursuant to City Ordinance	DOL FRINGES	TOTAL MINIMUM WAGE RATE REQUIRED
Asbestos Worker/Heat & Frost Insulator (Duct, Pipe, and Mechanical System Insulation)	\$ 21.57	\$ 21.57	\$ 10.02	\$ 31.59
Boilermaker	\$ 23.14	\$ 23.14	\$ 21.55	\$ 44.69
Bricklayer	\$ 20.07	\$ 20.07	\$ -	\$ 20.07
Carpenter	\$ 20.75	\$ 20.75	\$ 7.30	\$ 28.05
Carpenter (Acoustical Ceiling Installation only)	\$ 14.00	\$ 14.00	\$ -	\$ 14.00
Carpenter (Form Work Only)	\$ 15.62	\$ 15.62	\$ 0.05	\$ 15.67
Cement Mason/Concrete Finisher	\$ 15.71	\$ 15.71	\$ -	\$ 15.71
Drywall Finisher/Taper	\$ 17.06	\$ 17.06	\$ 4.43	\$ 21.49
Drywall Hanger and Metal Stud Installer	\$ 17.47	\$ 17.47	\$ 3.45	\$ 20.92
Electrical Installer (Sound and Communication Systems, Excluding Wiring)	\$ 18.00	\$ 18.00	\$ 2.30	\$ 20.30
Electrician (Excludes Installation of Sound and Communication Systems)	\$ 27.15	\$ 27.15	\$ 7.88	\$ 35.03
Elevator Mechanic <5 years experience	\$ 37.76	\$ 37.76	\$ 32.25	\$ 70.01
Elevator Mechanic >5 years experience	\$ 37.76	\$ 37.76	\$ 33.01	\$ 70.77
Floor Layer (Carpet)	\$ 21.88	\$ 21.88	\$ -	\$ 21.88
Glazier	\$ 12.83	\$ 13.03	\$ -	\$ 13.03
HVAC Mechanic (HVAC Unit Installation Only)	\$ 23.78	\$ 23.78	\$ 6.89	\$ 30.67
Ironworker, Ornamental	\$ 23.02	\$ 23.02	\$ 6.35	\$ 29.37
Ironworker, Reinforcing	\$ 12.27	\$ 13.03	\$ -	\$ 13.03
Ironworker, Structural	\$ 20.73	\$ 20.73	\$ 5.24	\$ 25.97
*Lead Paint or Asbestos Abatement Worker	*	\$ 13.03	\$ -	\$ 13.03
Laborer, Common or General	\$ 11.44	\$ 13.03	\$ -	\$ 13.03
Laborer, Mason Tender - Brick	\$ 12.22	\$ 13.03	\$ -	\$ 13.03
Laborer, Mason Tender - Cement/Concrete	\$ 11.85	\$ 13.03	\$ -	\$ 13.03
Laborer, Pipelayer	\$ 12.45	\$ 13.03	\$ -	\$ 13.03
Laborer, Roof Tearoff	\$ 11.28	\$ 13.03	\$ -	\$ 13.03
Operator, Backhoe/Excavator/Trackhoe	\$ 19.43	\$ 19.43	\$ 3.49	\$ 22.92
Operator, Bobcat/Skid Steer/Skid Loader	\$ 13.00	\$ 13.03	\$ -	\$ 13.03
Operator, Bulldozer	\$ 14.00	\$ 14.00	\$ -	\$ 14.00

Operator, Crane	\$ 34.85	\$ 34.85	\$ 9.85	\$ 44.70
Operator, Drill	\$ 14.50	\$ 14.50	\$ -	\$ 14.50
Operator, Forklift	\$ 16.64	\$ 16.64	\$ 6.26	\$ 22.90
Operator, Grader/Blade	\$ 19.30	\$ 19.30	\$ -	\$ 19.30
Operator, Loader	\$ 14.00	\$ 14.00	\$ -	\$ 14.00
Operator, Mechanic	\$ 18.75	\$ 18.75	\$ 5.12	\$ 23.87
Operator, Paver (Asphalt, Aggregate, and Concrete)	\$ 16.03	\$ 16.03	\$ -	\$ 16.03
Operator, Roller	\$ 11.25	\$ 13.03	\$ -	\$ 13.03
Painter (Brush, Roller, and Spray, Excludes Drywall Finishing/Taping)	\$ 18.76	\$ 18.76	\$ 6.35	\$ 25.11
Pipefitter (Including HVAC Pipe Installation)	\$ 28.03	\$ 28.03	\$ 12.43	\$ 40.46
Plumber, Excludes HVAC Pipe Installation	\$ 23.57	\$ 23.57	\$ 6.37	\$ 29.94
Roofer	\$ 12.00	\$ 13.03	\$ -	\$ 13.03
*Roofer, Metal	\$ 14.05	\$ 14.05	\$ -	\$ 14.05
Sheet Metal Worker (Including HVAC Duct Installation)	\$ 24.38	\$ 24.38	\$ 13.74	\$ 38.12
Sprinkler Fitter (Fire Sprinklers)	\$ 28.18	\$ 28.18	\$ 17.52	\$ 45.70
Tile Finisher	\$ 11.32	\$ 13.03	\$ -	\$ 13.03
Tile Setter	\$ 16.35	\$ 16.35	\$ -	\$ 16.35
Truck Driver, Dump Truck	\$ 12.39	\$ 13.03	\$ 1.18	\$ 14.21
Truck Driver, Flatbed Truck	\$ 19.65	\$ 19.65	\$ 8.57	\$ 28.22
Truck Driver, Semi-Trailer Truck	\$ 12.50	\$ 13.03	\$ -	\$ 13.03
Truck Driver, Water Truck	\$ 12.00	\$ 13.03	\$ 4.11	\$ 17.14
Waterproofers	\$ 16.30	\$ 16.30	\$ 0.06	\$ 16.36

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

See below for Additional Wage Information.

Note: *Lead Paint & Asbestos Abatement and Roofer, Metal Classifications have been added to this Prevailing Wage Rate Determination pursuant to a City of Austin Prevailing Wage Survey (trades absent from DOL).

The Wage Compliance information detailed below was excerpted from DOL General Decision TX160323 or other sources.

1. Additional Trade information:

Electricians** - Including low voltage wiring for computers, fire/smoke alarms.

Elevator Mechanics*** - also must be paid for 7 holidays - New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, and Veterans Day.

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

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

2. Wages

The Total Wage may be met by any combination of cash wages and credible "bona fide" fringe benefits paid for by the employer. Overtime wages must be calculated using the Adjusted Wage Rate specified in the Wage Rate Determination or the actual basic rate of pay, whichever is higher.

City of Austin Ordinance No. 20160324-015 requires that construction workers are paid a Minimum Wage of at least \$13.03/hour. The cash portion of their compensation must meet or exceed this amount.

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

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

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

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

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

4. Annualization of Benefit Costs

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

5. Proper Designation of Trade

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

6. Split Classification

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

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

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

----- WAGE DETERMINATION APPEALS PROCESS

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

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

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

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

Branch of Construction Wage Determinations
Wage and Hour Division

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

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

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

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

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

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

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

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Bidding Requirements, Contract Forms and Conditions of the Contract
ADDENDUM
Section 00900

Notice to Bidders: This form, Addendum – Section 00900, is included for your information only. If an actual Addendum is issued for this project, the format shown below will be used.

ADDENDUM No. _____

Date _____, _____

City of Austin

Project Name **Walnut Creek Wastewater Treatment Plant Tertiary Filter Rehab Project**

C.I.P. No. **3023.025** IFB No.: _____

This Addendum forms a part of the Contract and corrects or modifies original Bid Documents, dated _(first advertisement date should go here)_, _____. Acknowledge receipt of this addendum in space provided on bid form. Failure to do so may subject bidder to disqualification.

A. Project Manual Revisions:

B. Drawing Revisions:

This addendum consists of _____ page(s)/sheet(s).

Approved by OWNER

Approved by ENGINEER/ARCHITECT

END

PART 1 - GENERAL

1.1 Related Documents:

Drawings and general provisions of Contract, including General Conditions, Section 00700, and Supplemental General Conditions, Section 00810, and Division 1 requirements.

1.2 DESCRIPTION OF WORK:

The Work of this Contract includes sustainability requirements as shown in the Division 1 Section 01352 and/or 01505 and all other applicable specification sections. It is the intent of the Owner to work in partnership with the Contractor in implementing sustainable construction practices to the greatest extent possible.

The Work of this Contract comprises the following: (1) complete rehabilitation of filters 1 through 4, (2) the partial rehabilitation of filters 5 through 10, (3) installation of two new clearwells, (4) erection of a new blower building, (5) work within the filter gallery, (6) work inside the filter buildings, and (7) installation of a new sodium bisulfite system.

- 1. Filters 1-4.** Complete rehabilitation of filters 1 through 4 consists of removing the existing concrete troughs, the surface wash piping and nozzles, the sand and anthracite filter media, and the clay tile underdrains. The concrete filter boxes will be inspected and any concrete repairs required will be repaired by contractor as part of this contract. Upon completion of necessary repairs and cleaning of the concrete filter boxes, the new nozzle underdrain system, anthracite media, troughs, trough baffles, and the extension of concrete wall will be installed.
- 2. Filters 5-10.** Partial rehabilitation of filters 5 through 10 will consist of demolition of the existing troughs and then construction of trough wall height increase, installation of new troughs and trough baffles and addition of anthracite media to bring in the desired level of 48".
- 3. New Clearwells.** A new Southside clearwell immediately south of the existing clearwell under filters 1 and 3 will be constructed. A new Northwest clearwell will be constructed at the west end of the Filter Building 2 immediately over the existing 66" effluent overflow line. The existing 66" effluent overflow line will be removed from the location of the new Northwest clearwell to the connection to the existing 72" plant effluent line to the south and a new 66" line from the Northwest clearwell to the 72" line will be constructed.
- 4. Blower Building.** A new blower building to house two new centrifugal blowers will be constructed on top of the Southside clearwell. The exiting air piping to filters 5 though 10 will be removed and new air piping from the new blower building will be installed to all ten filters.
- 5. Filter Gallery.** The following appurtenances in the underground filter gallery will be removed and replaced:
 - All three existing 54" influent BFVs;
 - All ten (10) existing 36" filter influent valves will be removed and replaced with new 36" filter influent BFVs;
 - All ten (10) existing 36" backwash drain BFVs will be removed and replaced with new 36" backwash drain BFVs;

- All ten (10) existing 30" backwash supply BFVs will be removed and replaced with new 30" backwash supply BFVs;
- All ten (10) existing 20" filter effluent BFVs will be removed and replaced with new 20" filter effluent BFVs;
- All ten (10) existing filter effluent venturi meters will be removed and replaced with new 20" magmeters;
- The single 24" backwash supply BFV will be removed and replaced with a new 24" backwash supply BFV;
- The two (2) existing backwash pumps will be removed and replaced with two new backwash pumps;
- The existing vacuum prime system will be rehabilitated, except for the two liquid-ring pumps. They will remain and be re-used; and
- The existing non-potable water system will be removed and a new system will be installed.

6. Filter Buildings. Renovations within the existing above-grade filter buildings include: installing new floor tile, replacing acoustical ceiling tile, installing new ceiling insulation, replacing all internal doors and one external double door in Filter Building 1, HVAC work.

7. Sodium Bisulfite System. The existing sodium bisulfite system that feeds the existing south clearwell will be demolished. A new sodium bisulfite structure will be erected near the existing Headworks Building with two chemical totes, two metering pumps, and a canopy. Dual feed lines will be installed from the new structure to a feed point at an existing junction box. A drain for the sodium bisulfite pad will be installed that feeds into the existing headworks processes.

Debris will be removed and hauled daily. Concrete finisher, painter and signage installer will be required to complete the Work.

Contract documents indicate the Work of the contract and related requirements and conditions.

1.3 SUBMITTALS

Provide shop drawings and other information as required by Section 01300 for coordination of the work.

1.4 CONTRACTOR'S USE OF CONSTRUCTION SITE

Existing facilities at the Walnut Creek Wastewater Treatment Plant shall be kept in continuous operation throughout the construction period. No interruption will be permitted which adversely affects the degree of service provided by such facilities. Provided permission is obtained from OWNER in advance, portions of the existing facilities may be taken out of service for short periods corresponding with periods of minimum service demands.

CONTRACTOR shall provide temporary facilities and make temporary modifications as necessary to keep the existing facilities in operation during the construction period.

The construction site will be in use by Austin Water Staff and other contractors performing Other Work throughout the duration of contract. Contractor shall not unreasonably encumber the construction site with materials or equipment and shall assume reasonable responsibility for protection of construction site. The CONTRACTOR shall refer to Section 00700, General Conditions, for coordination required to minimize disturbance associated with Other Work and ongoing activities at the construction site.

1.5 ABATEMENT OF LEAD CONTAINING PAINT (LCP) AND ASBESTOS CONTAINING MATERIALS (ACM)

Paint containing lead has been found on metal piping, equipment, pumps and appurtenances in the filter gallery including the filter gallery walls. Additionally, asbestos containing materials (ACMs) have been found in the floor tile and mastic on the floor of Filter Building #1, and in the insulation in the block walls of Filter Buildings 1 and 2. All flooring material has been removed from Filter Building #1 with the possible exception of small amounts of the flooring that may be under the existing filter control panels.

It is anticipated that three disturbances to the ACM in the block walls of the Filter Buildings may be made. If such penetrations are required, Contractor shall coordinate with the Owner for an Abatement Contractor, already under contract with Owner, to perform all abatement work on this project. See Section 01920 for abatement of lead containing materials (LCMs).

1.6 TOBACCO-FREE WORKPLACE POLICY

The Austin Water Utility (AWU) adheres to a Tobacco-Free Workplace (TFW) policy. Tobacco use of any kind, including snuf, and e-cigarettes, are prohibited while on any AWU location. This includes buildings, garages, construction sites, treatments plants, and a 100 foot parameter from entrances and exits. Tobacco use is prohibited in vehicles parked on AWU sites. Contractors and their employees shall comply with this policy when making deliveries or providing services to any AWU location.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

End

Part 1 – GENERAL

1.1 RELATED DOCUMENTS

Applicable portions of the Project Manual including but not limited to the Drawings and Specifications.

1.2 SUMMARY

This Section includes administrative and procedural requirements governing allowances.

1.3 DEFINITIONS

1. Allowances. "Allowance" is defined as "a not-to-be-exceeded amount", either individually or in the aggregate, which is established between the Owner and the CONTRACTOR as part of the bid documents when the precise scope of a particular line item(s) has not been defined to a level which is adequate for the CONTRACTOR to provide a definitive line item pricing for that particular scope of Work.

1.5 COORDINATION

At the earliest practical date after award of the Contract, the Contractor shall advise Owner of the date when final selection and purchase of each product or Work described by an Allowance must be completed to avoid delaying the Work.

Coordinate Allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

1.5 PROCEDURES

Submit cost proposals for purchase of products or work included in Allowances in the form specified for Change Orders.

Coordinate and process submittals for Allowance items in accordance with Section 01300 as for other portions of the Work.

The use of any Allowances by the CONTRACTOR will be subject to the Owner's sole approval and it is the Owner's intent to minimize the use of Allowances to the fullest extent possible.

For any Allowances which the Owner allows the CONTRACTOR to use, the following rules shall apply: (i) the Allowance shall cover the cost to the CONTRACTOR of the cost of Work, as defined in the Agreement and the CONTRACTOR'S portion of overhead and profit associated with the stated Allowance; and (iii) upon completion of the portion of the Work subject to an Allowance, the Contract Amount for that portion of the Work will be adjusted based upon the approved actual Cost of the Work, including the proportionate overhead and profit, provided however that the total amount

of payments under the Allowances will not exceed the approved aggregate amount of the Allowances.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION

3.1 SCHEDULE OF ALLOWANCES

Allowance #1 Filter Building Doors Allowance. The allowance Filter Building doors includes any items encountered during construction not shown on the Drawings or specified in the Contract Documents. Allowance includes but is not limited to repairs, additional preparation, different door hardware, material of construction, painting, repairs, etc. Equipment and material shown on the Drawings or specified in the Contract Documents is not included in this allowance. Payment will be made based on the invoiced amount paid by the Contractor for the selected items plus an appropriate markup per the General Conditions. Contractor shall submit a change request detailing the scope and cost of the work to be completed under the allowance for Owner's consideration and approval prior to beginning any work under the allowance. Any unused portion of the allowance will be credited to the Owner by a deductible change order.

Allowance #2 Modular Building Allowance. The allowance for Modular Building includes any items encountered during construction not shown on the Drawings or specified in the Contract Documents. Allowance includes but is not limited to different building materials selection, partitions, appurtenances, etc. Equipment and material shown on the Drawings or specified in the Contract Documents is not included in this allowance. Payment will be made based on the invoiced amount paid by the Contractor for the selected items plus an appropriate markup per the General Conditions. Contractor shall submit a change request detailing the scope and cost of the work to be completed under the allowance for Owner's consideration and approval prior to beginning any work under the allowance. Any unused portion of the allowance will be credited to the Owner by a deductible change order.

Allowance #3 Concrete Walls Condition/Repair Allowance. The allowance for concrete walls condition/repair in the existing Filter and Clearwells walls includes any items encountered during construction not shown on the Drawings or specified in the Contract Documents. Allowance includes but is not limited to repairs, additional preparation, etc. at the Filter and Clearwells walls. Equipment and material shown on the Drawings or specified in the Contract Documents is not included in this allowance. Payment will be made based on the invoiced amount paid by the Contractor for the selected items plus an appropriate markup per the General Conditions. Contractor shall submit a change request detailing the scope and cost of the work to be completed under the allowance for Owner's consideration and

ALLOWANCES
Section 01020

approval prior to beginning any work under the allowance. Any unused portion of the allowance will be credited to the Owner by a deductible change order.

Allowance #4 Existing Piping/Equipment Allowance. The allowance for existing piping and equipment in the existing Filter Gallery and Filter Building includes any items encountered during construction not shown on the Drawings or specified in the Contract Documents. Allowance includes but is not limited to painting, removal, replacement, modifications, maintenance, equipment, and material, etc. Equipment and material shown on the Drawings or specified in the Contract Documents is not included in this allowance. Payment will be made based on the invoiced amount paid by the Contractor for the selected items plus an appropriate markup per the General Conditions. Contractor shall submit a change request detailing the scope and cost of the work to be completed under the allowance for Owner's consideration and approval prior to beginning any work under the allowance. Any unused portion of the allowance will be credited to the Owner by a deductible change order.

Allowance #5 Site Condition Allowance. The allowance for site condition includes any items encountered during construction not shown on the Drawings or specified in the Contract Documents. Allowance is for additional improvements including but not limited to removal, replacement, modifications, maintenance, etc. for yard piping, yard structures, grading, paving, etc. Equipment and material shown on the Drawings or specified in the Contract Documents is not included in this allowance. Payment will be made based on the invoiced amount paid by the Contractor for the selected items plus an appropriate markup per the General Conditions. Contractor shall submit a change request detailing the scope and cost of the work to be completed under the allowance for Owner's consideration and approval prior to beginning any work under the allowance. Any unused portion of the allowance will be credited to the Owner by a deductible change order.

Allowance #6 Travel Allowance. Travel for testing allowance shall be used for Owner personnel to attend all tests that are not performed at the Owner facilities including but not limited to costs for airfare, car rental, hotel expense, meal expense, etc. Any unused portion of the allowance will be credited to the Owner by a deductible change order.

3.2 PAYMENT

Once the cost proposal for the Allowance has been incorporated into the Contract by Change Order, Payment for the Allowance will be based upon either the unit prices or a schedule of values provided with the proposal and incorporated in the Change Order.

END

PART 1 – GENERAL**1.1 RELATED DOCUMENTS**

Applicable portions of the Project Manual, including but not limited to relevant Drawings and Specifications.

1.2 SUMMARY

This Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

1. Alternate: A Bid Item for a scope of work described in the Section 00300 Bid Requirements and Contract Documents that, if accepted by Owner, may result in additions to or deductions from the Base Bid.

1.4 PROCEDURES

- A. Coordination: The Contractor must modify or adjust any affected adjacent Work as necessary to completely integrate work of the Alternate into the Project.
- B. The Contractor must include as part of each Alternate, any miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of the Alternate.
- C. Notification: The awarded contract will include all accepted Alternates.
- D. Schedule: A Schedule of Alternates is included at the end of this Section. Specification Sections referenced in such schedule contain requirements for materials necessary to achieve the Work described under each Alternate.
- E. Bidders must respond to all Alternates listed on the 00300 Bid Form, even if acceptance or rejection of an alternate will not change the Bid amount. Bid amounts must be entered in the spaces for each Alternate in the Bid Form.

The Owner has established a priority order (Alternate No. 1 has the highest priority) for the acceptance of Bid Alternates based on the Project needs and budget. Alternates will be accepted in the order listed on the Bid Form, but such acceptance will not exceed the Project budget.

PART 2 - PRODUCTS (Not Used)

PART 3 – EXECUTION

3.1 SCHEDULE OF ALTERNATES

Alternate No. 1: Media Retention Baffles for Filters 5-10. All work identified as "BID ALTERNATE 1" on the drawings related to the media retention baffles on the troughs for Filters 5-10 as shown on sheet M-09 and described in specification section 06600 "Fiberglass Reinforced Plastic Fabrications" or section 05990 "Structural and Miscellaneous Metals" depending on the type of trough provided.

END

**Division 1 General Requirements
Grades, Lines and Levels
Section 01050**

1. CONTRACTOR shall perform all layout work to transfer all controls for grades, lines, levels and measurements from a minimum of two reference points provided by OWNER. All survey work will be performed under the direct supervision of a Texas Registered Professional Land Surveyor (RPLS).
2. Within 5 work days of the Notice To Proceed date, or within 10 Working Days of initiating work based on the approved Schedule in a new area of the Project, the CONTRACTOR shall survey and stake the locations of all proposed improvements behind the curb and within the ROW (examples: manholes, storm inlets, fire hydrants, etc.), or any other improvements identified by the OWNER'S REPRESENTATIVE, for the purpose of identifying the nature and location of these improvements to the adjacent property owner(s). The OWNER'S REPRESENTATIVE will identify to the CONTRACTOR the improvements to be staked.
3. OWNER will not stake for construction and will not be on site for survey layout activities, except to perform quality control checks.
4. CONTRACTOR shall be required to set elevation hubs (blue tops) for subgrade and base course on centerline, at quarter points and curb lines or edge of pavement at intervals not exceeding 50 feet.
5. The construction plans will include horizontal and vertical control points. References to approved COA benchmarks used in establishing controls on the drawings will be provided by the Owner's E/A. In addition, on building projects and/or projects not built within an existing public ROW, a boundary survey will be supplied together with a legal description of the property and all easements where Work will take place.
6. CONTRACTOR shall submit construction staking layout sheets sealed by a Professional Engineer or Registered Professional Land Surveyor registered in the State of Texas. CONTRACTOR shall use a qualification based selection process consistent with the Professional Services Procurement Act, Chapter 2254.004 of the Texas Government Code, when securing the services of a Professional Engineer or Registered Professional Land Surveyor. It is a violation of State Law to solicit bids for the services of a Professional Engineer or Registered Professional Land Surveyor.
 - 6.1 Any discrepancies found with the construction documents' dimensional layout will be corrected. CONTRACTOR shall assure that the Owner's Representative and E/A are notified so that the appropriate actions are taken to correct the Contract drawings.
 - 6.2 All Work shall be done to the lines, grades and elevations indicated on the drawings. Information concerning basic horizontal and vertical control points will be provided by the E/A, **Black & Veatch**. These points shall be used as the datum basis under this Contract.
 - 6.3 All work to transfer all controls for grades, lines, levels, layout and measurements shall be performed under the supervision of a Texas Registered Professional Land Surveyor, provided by the CONTRACTOR. Such work shall

conform to the standards for construction staking in the most recent edition of the Texas Society of Professional Surveyors Manual of Practice for Land Surveying, Category 5, Sections 1-12 inclusive.

- 6.4 The **centerline and** offset centerline stakes will be set at no greater than fifty (50) foot intervals **and at points of alignment or grade changes**. References to lines and grades as established by the CONTRACTOR's surveyor shall be in reference to these stake lines. The CONTRACTOR is required to provide a sealed statement from his RPLS that the controls are correct and the site layout has been done by their professional staff.
- 6.5 The CONTRACTOR shall place grade stakes and submit construction staking layout sheets. The CONTRACTOR shall allow a minimum of ten (10) days after submission to the Owner's Representative for review of construction staking layout sheets. Construction staking layout sheets shall include, at a minimum, the information contained in the form included at the end of this section. No Work shall be performed without Owner's Representative review and return to CONTRACTOR of construction staking layout sheets. The Owner's Representative, E/A and the CONTRACTOR shall review the survey controls on the ground.
- 6.6 Prior to any excavation, the CONTRACTOR shall establish the elevation to top of ground at **centerline of the pipe as well as cuts and** offset stakes at the distance deemed appropriate by the CONTRACTOR to preclude disturbance of offset stakes during construction. **The CONTRACTOR shall set all blue tops for subgrade and base courses on centerline at quarter points, at curb lines or edge of pavement, and other points that may be indicated on the Drawings, all at intervals not to exceed 50 feet.**
- 6.7 The CONTRACTOR shall furnish, without charge, experienced personnel and such calibrated survey equipment, tools, stakes, and other materials that the Owner's Representative may require in establishing or checking control points, or in checking survey, layout, and measurement work performed by the CONTRACTOR.
- 6.8 The CONTRACTOR shall keep the Owner's Representative informed in a reasonable time in advance of the times and places at which he wishes to do work, so that any checking deemed necessary by the OWNER may be done with minimum inconvenience to the E/A and minimum delay to the CONTRACTOR. Surveying will be coordinated between the Owner's Representative and CONTRACTOR in a manner convenient to both.
- 6.9 During layout, CONTRACTOR shall field verify the elevation and alignment of all tie-in points to existing infrastructure. This work shall be performed sufficiently in advance of construction so that any conflicts may be resolved without delay. Any work done without being properly located may be ordered removed and replaced at the CONTRACTOR's expense.
- 6.10 The CONTRACTOR shall carefully preserve all monuments, benchmarks, reference points, and stakes. In case of the destruction thereof, the CONTRACTOR shall bear the cost of replacement and shall be responsible for any mistake or loss of time that may be caused. Permanent monuments or benchmarks, which must be removed or disturbed, shall be protected until properly referenced for relocation. The CONTRACTOR shall furnish materials and assistance for the proper replacement of such monuments or benchmarks.

- 6.11 The CONTRACTOR shall satisfy himself before commencing work as to the meaning and correctness of all survey control stakes, marks, etc., and no claim will be entertained by the OWNER for or on account of any alleged inaccuracies, unless the CONTRACTOR notifies the OWNER in writing before commencing the affected Work.
7. As needed for necessary documentation of the work progress, the CONTRACTOR shall maintain and/or protect offset or survey staking for the duration of the project. Any re-staking required to meet this requirement shall be done at the CONTRACTOR'S expense.
8. This item is subsidiary to the work as a whole.
9. Upon completion of construction, or at intervals specified in the Contract, CONTRACTOR shall provide a record survey of the work in progress or completed. This information will be submitted to the Owner's Representative and shall be supplied electronically and on a separate full size plan sheet to be transmitted to the E/A for evaluation and merging into the Record Drawings.

End See attached "Construction Staking Layout Sheet"

Section 01080

CONSTRUCTION SEQUENCING

1. DESCRIPTION. The intent of this Section is to provide the CONTRACTOR a suggested sequence to perform the Work in such a manner that continuous, uninterrupted treatment of wastewater and all essential Plant services and facilities are maintained operational throughout the construction period.

Except for the shutdown durations specified in this section, the CONTRACTOR'S means and methods shall be implemented such that the existing plant shall remain in continuous satisfactory operation during the entire construction period. Work shall be scheduled and conducted by the CONTRACTOR such that it shall not impede any treatment process, create potential hazards to operating equipment and plant personnel, or cause other nuisances. In performing the Work shown and specified, the CONTRACTOR shall plan and schedule the Work to meet both the constraints outlined in this Section and plant operating requirements.

Work not specifically covered on the Contract Drawings or in the following paragraphs may, in general, be done at any time during the Contract period for this project, subject to the operating requirements outlined in this section. All references to days in this Section are consecutive calendar days.

Unless otherwise specified or indicated, CONTRACTOR shall make all necessary connections to existing facilities, including structures, drain lines, and utilities such as water, sewer, gas, telephone, and electric. In each case, CONTRACTOR shall receive permission from OWNER or the owning utility prior to undertaking connections. CONTRACTOR shall protect facilities against deleterious substances and damage. Connections to existing facilities which are in service shall be thoroughly planned in advance, and all required equipment, materials, and labor shall be on hand at the time of undertaking the connections. Work shall proceed continuously (around the clock) if necessary to complete connections in the minimum time. Operation of valves or other appurtenances on existing utilities, when required, shall be by or under the direct supervision of the owning utility.

The CONTRACTOR has the option of providing additional temporary facilities that can eliminate a constraint provided it is done without additional cost to the OWNER and provided that all specified requirements are fulfilled.

The CONTRACTOR shall be responsible for coordinating all shutdowns with the ENGINEER and OWNER. The CONTRACTOR shall, whenever possible, combine discrete shutdown procedures identified in this Section or by the CONTRACTOR into a single shutdown when the duration of the shutdowns or

the Work requirements allow such combining to occur on a unit process or work area. The intent of combining procedures is to minimize the impacts upon plant operations and processes by limiting the number of shutdowns required.

The CONTRACTOR shall not shut off or disconnect any operating system of the plant, unless approved by the OWNER, in writing. All existing plant equipment shall be operated and shutdown by the OWNER, unless otherwise noted. CONTRACTOR shall seal OWNER operated gates and valves to prevent unnecessary leakage.

The CONTRACTOR shall be responsible for supplying all temporary pipelines, valves, pumps, meters, spare parts, electrical controls, and any other appurtenances required for the installation and operation of temporary bypass lines, pumping systems, or conveyance systems required to maintain operations of the plant during construction activities. All temporary pumps shall be provided with magnetic flow meters capable of providing a 4-20 mA output signal. The CONTRACTOR shall submit to the ENGINEER, for review and approval, the design for all temporary lines, pumping, or conveyance systems at least 30 days prior to the commencement of the Work.

The following constraints shall be applied to all equipment and appurtenant utility systems on the plant site.

2. GENERAL CONSTRAINTS.

2.01. Load limits on Access Roads. Existing and new underground facilities, such as electrical duct banks, pipelines, etc., in, under, and crossing plant roads, have been designed for a maximum wheel load of AASHTO H-20. The CONTRACTOR shall not exceed this weight limit and shall provide means of protecting the underground facilities.

2.02. Access to Plant Site. An unobstructed traffic route through all plant gates shall be maintained at all times.

2.03. Safety Barriers. The CONTRACTOR shall place safety barriers, in accordance with OSHA regulations, around areas under construction located around operational areas accessible to plant Personnel.

2.04. Personnel Access. Plant Personnel shall have access to all areas that remain in operation throughout the construction period.

2.05. Plant Water System. The existing plant water systems including the domestic water and process water systems shall be kept in operation at all times, unless otherwise specified.

2.06. Plumbing Facilities. Sanitary facilities in the existing structures shall be

operational at all times for plant Operating Personnel, unless otherwise specified. All other building plumbing systems, such as roof and floor drains, pumping, etc., shall be maintained for all structures.

2.07. Storm Drainage. Storm drainage on the site shall be operational at all times, unless otherwise specified.

2.08. Building Heating and Ventilating. In the CONTRACTOR'S Work areas and areas affected by the CONTRACTOR'S operations, building heating and ventilating shall be provided and maintained in structures, including pipe galleries. The temperatures to be maintained in any area occupied by plant personnel, such as offices, lunchrooms, locker rooms, toilet rooms, facilities containing computer control equipment, etc., shall be at least 65° F and not greater than 80° F. The temperatures to be maintained in all other interior plant areas, whether new, existing or temporary, shall be maintained at a minimum of 55° F and not greater than 90° F.

2.09. Power, Light, and Communication Systems. Electric power, lighting service, and communication systems shall be maintained in uninterrupted operation in all areas.

2.10. Sump Pumps and Sumps. All existing sumps shall be maintained in an operable condition with either existing pumps or temporary pumps provided by the CONTRACTOR. Interim piping, power, and controls shall be provided by the CONTRACTOR, as required by the construction sequence and as directed by the ENGINEER and OWNER.

2.11. Seal and Service Water Piping. A supply of service and seal water and the necessary connections to existing equipment shall be maintained during construction, unless otherwise specified in this section. Interim piping shall be provided by the CONTRACTOR, as required.

2.12. Cleaning. The OWNER will dewater process basins, filters, and other Work areas. It is the CONTRACTOR'S responsibility to maintain a clean and dry work area by pumping and properly disposing of all wash down and cleaning water, storm water, and other liquids that accumulate in the Work areas.

2.13. Draining Process Pipes and Conduits. CONTRACTOR shall coordinate draining of pipes and conduits with the OWNER and submit a plan to the ENGINEER for approval prior to commencing the Work. Pipes and conduits may be drained either to the sanitary sewer, or if approved by OWNER, to a process basin. CONTRACTOR shall provide any hoses, piping, or pumps necessary for draining pipes or conduits. No facilities shall be allowed to drain to the storm water drainage system unless specifically approved by the Engineer.

2.14. Temporary Partitions and Enclosures. The CONTRACTOR shall provide

temporary partitions and enclosures as shown and necessary to maintain dust-free, heated, and ventilated spaces in all areas which are adjacent to the Work and which must be kept operational by the plant.

2.15. Dead End Valves or Pipe. CONTRACTOR shall provide blind flanges on all valves or pipes which dead-end a line on a temporary or permanent basis. Blind flanges shall be braced and blocked, as required or as directed by the ENGINEER.

2.16. Start-up Scheduling. The CONTRACTOR shall schedule all startups for Monday through Thursday. No startups will be allowed on Friday, Saturday, and Sunday.

2.17. Normal Plant Operations Scheduling. The CONTRACTOR shall schedule all work such that normal plant operations are maintained at all times other than during scheduled plant shutdowns. Any limited shutdown for these facilities must be coordinated with and approved by the plant operations staff.

3. SHUTDOWNS

3.01 Unit Shutdowns. A shutdown shall be defined as a portion of the normal operation of a plant unit that has to be suspended or taken out of service in order to perform the specified Work. For each shutdown, the CONTRACTOR shall compile an inventory of labor and materials required to perform tasks, an estimate of the time required, and a written description of steps required to complete all tasks. The inventory, the estimate, and written procedures shall be submitted to the ENGINEER for review 45 calendar days prior to the proposed start date of the shutdown. The CONTRACTOR shall also request, in writing from the ENGINEER, approval for each shutdown a minimum of 14 calendar days prior to the proposed shutdown date. No shutdown shall be initiated until the inventory of materials and labor is verified onsite by the ENGINEER at least one week prior to the proposed start date.

The Work required herein and any other Work required by the ENGINEER that may interrupt the normal plant operations shall be accomplished at such times that will be convenient to the OWNER. OWNER shall be notified of all Lock-Out-Tag-Out (LOTO) operations prior to the CONTRACTOR locking out any system.

The CONTRACTOR shall also have on hand and located in close proximity to the Work area, all tools, equipment, spare parts, and materials, both temporary and permanent, necessary to complete each Work category without interruption. Adequate numbers of personnel shall be scheduled for each shutdown, so that the Work shall be accomplished within the specified time frame. Prefabrication of all piping and other assemblies shall be completed, to the greatest degree possible, prior to any shutdown. The ENGINEER shall be satisfied that the CONTRACTOR has complied with these requirements, to the fullest extent

possible, before shutdowns will be authorized.

For shutdowns of electrical systems, the CONTRACTOR shall lock out and tag circuit breakers and switches operated by the OWNER, with assistance of ENGINEER and shall check cables and wires to be sure that they are de-energized to ground potential before Work begins. Upon completion of the Work, the CONTRACTOR shall remove the locks and tags and notify the ENGINEER that the facilities are available for use.

3.02 Filter and Plant Shutdowns. Shutdown constraints for the Walnut Creek Wastewater Treatment Plant are defined below in consideration of the City's treatment demands, operational constraints, and permit requirements. CONTRACTOR shall coordinate specific shutdown schedules with OWNER and ENGINEER and shall verify dates that plant facilities must be returned to full operation at the end of each shutdown period.

1. Definitions:

- a. "Summer" is defined as the timeframe May 1 through October 31 for this project.
- b. "Winter" is defined as the timeframe November 1 through April 30 for this project.
- c. A "Full bypass" is defined as a shutdown of all Filters (filters 1-10) simultaneously.
- d. A "Partial bypass" is defined as a shutdown of Filters where one of the following conditions is met:
 - i. Four rehabilitated filters (filters 1-4) are in operation. This means that all construction is complete in filters 1-4 and the filters are completely operational.
 - ii. Five or more of the existing filters are in operation. This means that no work is being performed on at least five filters and they are completely operational.
- e. A "Full plant shutdown" is defined as a temporary hydraulic shutdown of the plant's main treatment process.

2. Summer Shutdown Constraints:

- a. Full bypass – A full bypass is allowed for a duration not to exceed 48 hours, noon to noon, and can be performed once per week.
- b. Partial bypass – A partial bypass is allowed for a duration up to one month (approximately 30 days), starting in the middle of the month (i.e. May 15 – June 15). All filters (1-10) must be in operation for at

least 48 hours between two consecutive partial bypass shutdown periods.

3. Winter Shutdowns:
 - a. Full bypass – A full bypass is not allowed during the winter.
 - b. Partial bypass – A partial bypass is allowed for a duration up to one week, at an interval of every other week.
4. Full Plant Shutdown – A full plant shutdown is allowed for a duration up to six (6) hours, from 4 AM to 10 AM, throughout the construction period as approved by the plant operation staff. Any dewatering activities required for the Work must be performed during this timeframe.

3.03 Unscheduled Shutdowns. Penalties imposed on the OWNER as a result of any unscheduled shutdown caused by the actions of the CONTRACTOR, his employees, or subcontractors, shall be born in full by the CONTRACTOR, including legal fees and other expenses to the OWNER resulting directly or indirectly from the unscheduled shutdown.

If the CONTRACTOR'S procedures cause an unscheduled shutdown of the facilities, the CONTRACTOR shall continuously perform Work as necessary to immediately re-establish satisfactory operation. The CONTRACTOR shall notify the ENGINEER, in writing, immediately of any unscheduled shutdown. The CONTRACTOR shall permit OWNER'S personnel to work with CONTRACTOR'S personnel, as required, to maintain the plant in continuous satisfactory operation.

Unscheduled shutdown and/or interruptions of continued safe and satisfactory operation of the facilities that result in fines levied by the U.S. Environmental Protection Agency, Texas Commission on Environmental Quality (TCEQ) and City of Austin shall be the responsibility of the CONTRACTOR if it is demonstrated that the CONTRACTOR was negligent in his Work or did not exercise proper precautions in the conduct of his Work.

4. PLANT OPERATIONS SCHEDULE. CONTRACTOR shall submit a detailed schedule identifying any operational outage required for construction. The operations schedule shall be coordinated with the construction schedule specified in the General Conditions and shall meet the restrictions and conditions specified in this Section.

5. OVERTIME. All overtime Work by the CONTRACTOR necessary to conform to the requirements of this Section and related Sections shall be performed by the CONTRACTOR, at no additional cost to the OWNER and shall be performed in accordance with the General Conditions. The CONTRACTOR shall make no claims for extra compensation as a result thereof.

6. CONSTRUCTION SEQUENCING PLANS. Individual construction sequencing plans (CSPs) identified to perform the Work are provided at the end of this Section. Procedural steps, time and scheduling constraints outlined in the CSPs are intended to assist the CONTRACTOR in developing a sequence of Work and timing in order to maintain continuous operation of the plant. The CSPs were developed based on available information at the time of design. The CSPs do not include all Work required by the Contract Documents.

The CONTRACTOR shall develop individual detailed descriptions of the sequence of construction for each of the CSPs. The individual sequencing plans shall be submitted to the ENGINEER for review and approval in accordance with the Submittals Section and the following:

- Within thirty (30) days following the Notice to Proceed, the Contractor shall meet with the Owner's representatives to review the CSP requirements (CSP Review Meeting).
- The CONTRACTOR shall coordinate the sequence of construction requirements for the CSPs with the contract schedule requirements set forth in the General Conditions Section. The individual CSPs shall be incorporated into the overall project schedule showing relationships and timing.
- As a minimum, each individual CSP shall contain details of the following:
 - Step-by-step tasks for completing the work
 - Manpower required for each task
 - Duration planned for each task
 - Materials and specialized equipment required for the work
 - Copies of drawings, photos, or field sketches to help define the work
 - Constraints identified for the work
 - Special coordination requirements
 - Special safety issues or procedures identified by the Contractor for the work

A list of CSPs is provided below including a brief description. This list does not address all required tie-ins, but only those anticipated to be of significant impact to plant operations. The CONTRACTOR is required to make all tie-ins, connections, and replacements necessary to perform the Work.

List of CSPs

1.00 Preliminary Tasks

- 1.01 Install Weir on Northwest Junction Box
- 1.02 Sodium Bisulfite System

2.00 Northwest Clearwell

- 2.01 Install Temporary Plugs in 66" Overflow Line
- 2.02 66" Northwest Clearwell Effluent Line Connection

- 2.03 Connect 48" Filter Effluent Line to Effluent Conduit
- 2.04 Demolish and Plug 6" Heating Main
- 2.05 Relocate Instrumentation Duct Bank
- 3.00 Southside Clearwell
 - 3.01 Temporary Bulkheads
 - 3.02 Demolish and Replace 72" Filter Effluent Line
 - 3.03 Temporary Plugs for 72" Connections
 - 3.04 Demo 72" Steel Filter Effluent Pipe
 - 3.05 72" Pipe Connections
 - 3.06 Permanent Bulkhead
 - 3.07 Relocate 3" Potable Water Line
 - 3.08 Relocate 4" Chlorine Solution Lines
 - 3.09 Relocate 8" Clearwell Drain
 - 3.10 Support 54" Filter Influent Line
 - 3.11 Demolish and Plug 36" Backwash Supply
 - 3.12 Relocate 12" Unfiltered Effluent Line
 - 3.13 Relocate 10" Low Pressure Air Line
 - 3.14 Relocate 8" Potable Water Line
 - 3.15 Relocate 16" Non-Potable Water Line
 - 3.16 Relocate 1.5" Air Lines
- 4.00 Blower Building
 - 4.01 Air Blowers and Piping
- 5.00 Filter Gallery
 - 5.01 Replace Intermediate 54" Filter Influent Header BFV(BFV-045)
 - 5.02 Replace Southeast 54" Filter Influent Header BFV (BFV-005)
 - 5.03 Replace West 54" Filter Influent Header BFV (BFV-084)
 - 5.04 Demolish Existing Air Scour Piping
 - 5.05 Install New Air Scour Header Piping
 - 5.06 Backwash Supply Header BFVs and Flow Meter (BFV-026, BFV-046, FE-110)
 - 5.07 Backwash Pumps (BWP-001, BWP-002)
 - 5.08 Demolish 12" Non-Potable Water Suction Piping and Supports
 - 5.09 Install New 12" Non-Potable Water Suction Piping
 - 5.10 Non-Potable Water System
- 6.00 Filters 1 – 4
 - 6.01 Demolish Filters 1-4
 - 6.02 New Air Scour Piping Connections to Filters 1-4
 - 6.03 Install New Underdrains and Media
 - 6.04 Replace Filter Influent BFVs, Effluent Meters, and Effluent Piping for Filters 1-4 (BFV-029, BFV-031, BFV-039, BFV-041, FE-001, FE-002, FE-003, FE-004)
 - 6.05 Replace Filter Effluent BFVs and Piping (BFV-024, BFV-025, BFV-035, BFV-036)
 - 6.06 Replace Backwash Supply BFVs (BFV-030, BFV-032, BFV-040, BFV-042)
 - 6.07 Replace Backwash Drain BFVs (BFV-033, BFV-034, BFV-043,

- BFV-044)
- 7.00 Filters 5 – 10
 - 7.01 Replace Filter Influent BFVs, Effluent Meters, and Effluent Piping for Filters 5-10 (BFV-051, BFV-052, BFV-063, BFV-064, BFV-075, BFV-076, FE-005, FE-006, FE-007, FE-008, FE-009, FE-010)
 - 7.02 Replace Filter Effluent BFVs and Piping (BFV-047, BFV-048, BFV-059, BFV-060, BFV-071, BFV-072)
 - 7.03 Replace Backwash Supply BFVs and Piping for Filters 5-10 (BFV-049, BFV-050, BFV-061, BFV-062, BFV-073, BFV-074)
 - 7.04 Replace Backwash Drain BFVs for Filters 5-10 (BFV-057, BFV-058, BFV-069, BFV-070, BFV-082, BFV-083)
- 8.00 Electrical Systems
 - 8.01 Filter Building Electrical (Part 1)
 - 8.02 WRI-MCC-1R
 - 8.03 Filter Building Electrical (Part 2)
 - 8.04 WRI-MCC-1L
- 9.00 Filter Control System

7. TEMPORARY PROVISIONS. The CONTRACTOR shall be responsible for coordinating with OWNER and ENGINEER on all temporary provisions required to perform the Work and maintain the plant in operation. The CONTRACTOR shall submit a detailed temporary provisions plan for review by the OWNER, the ENGINEER, and the plant operations staff. The plan shall be submitted no less than 45 days prior to implementation of the plan.

The temporary provisions shall be designed and constructed according to standard industry practices. The temporary provisions shall be tested, to the extent practical, prior to modifying existing facilities to demonstrate the provision meets the requirements of the intended service. The CONTRACTOR shall be responsible for any damages to site that occur as a result of the temporary provisions not performing according to the requirements of the intended service. The CONTRACTOR shall also be responsible for the protection and maintenance of equipment, and shall conform to all safety requirements of OSHA and the UFC for the handling of chemicals.

End of Section

1.00 Preliminary Tasks – Construction Sequencing Plan (CSP) Overview

Related CSPs:	1.01 through 1.02	Location:	Various
Task Description:	The following CSPs describe tasks that should be completed at the beginning of the project, before any other major construction.		
Constraints:	<ul style="list-style-type: none"> • Must be completed before other major construction tasks. • The 51st Street WRI tank must be full prior to any shutdown. • Plant Polymer System must be in place and operational for work during the summer (May 1 – October 31) 		
OWNER Role & Tasks:	Coordinate necessary shutdowns.		
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Coordinate with Owner prior to commencing the work. • Install/extend weir on Northwest Junction Box. • Construct Sodium Bisulfite Structure. 		
ENGINEER Role & Tasks:			

Construction Sequencing Plan (CSP) 1.01: Install Weir on Northwest Junction Box

Related CSPs:	Location: Northwest Junction Box
Process Units Out-of-Service for this Task: None	Shutdown Duration: None
Task Description: Extend the weir on the Northwest Junction Box to elevation 456.67 feet.	
Constraints:	<ul style="list-style-type: none"> • Work must be performed when the Northwest Junction Box is not in danger of overflowing. • Safety equipment must be available to workers.
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Verify that the Northwest Junction Box is not in danger of overflowing before work commences. • Backwash all filters before work commences.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Coordinate with Owner prior to commencing the work. • Provide fall protection safety equipment for workers. • Provide confined space entry equipment for workers. • Install/extend weir to new elevation.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 1.02: Sodium Bisulfite System	
Related CSPs: 1.00	Location: North of Headworks building
Process Units Out-of-Service for this Task: Entire Plant	Shutdown Duration: 6 Hours (maximum)
Task Description:	Construct the new Sodium Bisulfite Structure and System. Connect the new system to the Plant Effluent at the Far West Junction Box. Connection at Far West Junction Box may require fall protection, confined space entry and/or respiratory protection.
Constraints:	<ul style="list-style-type: none"> • Work must be completed before the existing Sodium Bisulfite System is demolished. • The connection must be completed in a 6-hour full plant shutdown.
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Coordinate plant shutdown. • Manually operate System until the System is connected to SCADA.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Coordinate with Owner and Owner's safety group prior to commencing the work. • Submit early submittals for System. • Construct Sodium Bisulfite Building and Feed Line. • Make connection to Plant Effluent at the Far West Junction Box. • Provide fall protection, confined space entry, and/or respiratory protection if needed. • Complete electrical and control wiring and systems for the system. • Configure the plant SCADA system to integrate the Sodium Bisulfite System for operator control of the system from the operations center. • Complete SAT test on the Sodium Bisulfite Feed System.
ENGINEER Role & Tasks:	<ul style="list-style-type: none"> • Observe SCADA system startup and commissioning for change to integrate the Sodium Bisulfite Feed system.

Construction Sequencing Plan (CSP) 1.03: I&C Duct Bank Relocation

Related CSPs: 2.01-2.03	Location: West of Filter Complex
Process Units Out of Service for this Task: DAF process and Filters 1-10	Duration: 6 hour maximum for communication switchover
Task Description:	Relocate the SCADA Communication duct bank, pull new cable, reterminate wires, and reestablish SCADA communications.
Constraints:	<ul style="list-style-type: none"> • Must be completed before work on the Northwest Clearwell commences. • New duck bank, cable pulled, and wires and fibers terminated with communications established prior to demolition of existing duct bank.
OWNER Role & Tasks:	Coordinate necessary shutdowns.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Install new instrumentation manholes and duct bank. • Pull new SCADA communication cable and fiber optic cable. • Terminate fiber optic cable • Terminate SCADA communication cable. • Establish SCADA network on new fiber. • Establish SCADA communication on coax cable.
ENGINEER Role & Tasks:	<ul style="list-style-type: none"> • Observe the communication switchover. .

2.00 Northwest Clearwell – Construction Sequencing Plan (CSP) Overview

Related CSPs: 2.01 through 2.05	Location: West of Filter Complex
Task Description:	Construct the Northwest Clearwell.
Constraints:	<ul style="list-style-type: none"> • All utilities and yard piping shall be relocated and/or supported before work begins. • Construction cannot begin until Preliminary Tasks (CSP 1.00) are complete. • The 51st Street WRI tank must be full prior to any shutdown. • Plant Polymer System must be in place and operational for work during the summer (May 1 – October 31)
OWNER Role & Tasks:	Coordinate necessary shutdowns.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Coordinate with Owner and Owner’s safety group prior to commencing work. • Relocate and Support yard piping. • Excavate for Structure and 66” Filter Effluent Line. • Provide and deploy trench safety equipment as needed prior to entering trench. • Demolish and Replace 66” PCCP Filter Effluent Pipe with 66” Steel Pipe. • Lay new 48” Filter Effluent Line and connect to the Filter Effluent Conduit. • Submit early submittals for Gates and Wall Thimbles. • Relocate existing IM duct bank, pull new communication wire, and reestablish SCADA communications.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 2.01: Install Temporary Plugs in 66" Overflow Line

Related CSPs: 2.02	Location: 66" Overflow Line
Process Units Out-of-Service for this Task: Entire Plant	Shutdown Duration: 6 Hours (maximum)
Task Description: Install temporary plugs in 66" overflow line and provide temporary provisions if needed.	
Constraints:	<ul style="list-style-type: none"> • The plug near the Northwest Junction Box must be installed when the Junction Box is not in danger of overflowing. • The plug near the intersection of the 66" effluent line and 72" effluent must be completed during a full plant shutdown. • Truck access for chemical deliveries, particularly to the chlorine building, shall be maintained.
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Verify the Northwest Junction Box will not be in danger of overflowing. • Schedule Full Plant Shutdown. • Backwash all filters before work commences. • Make every effort to ensure the plant SCADA System does not experience interrupted service and that any loss of service is brief. • Fill 51st Street tank before shutdown.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Give Owner 24 hour notice to backwash filters before work commences. • Provide and deploy trench safety equipment as needed prior to entering trench. • Provide and deploy portable pumps and piping to speed dewatering if needed. • Remove sections of 66" PCCP pipe to install temporary plugs. • After plugs are installed Contractor to remove remaining sections of 66" PCCP Pipe to replace with 66" Steel Pipe. • Provide temporary service for line if needed. • Make every effort to ensure the plant SCADA System does not experience interrupted service and that any loss of service is brief.

Construction Sequencing Plan (CSP) 2.02: 66" Northwest Clearwell Effluent Line Connection	
Related CSPs: 2.00	Location: Northwest Clearwell, Yard
Process Units Out-of-Service for this Task: Entire Plant	Shutdown Duration: 6 Hours (maximum)
Task Description:	Remove temporary plugs and connect new 66" Northwest Clearwell Effluent Line to the 72" Effluent Line and the Northwest Junction Box.
Constraints:	<ul style="list-style-type: none"> • New 66" Northwest Clearwell Effluent Line must be laid and in place. • Connection at the Northwest Junction Box must be completed while the Junction Box is not in danger of overflowing. • Connection at the 72" Effluent Line must be completed during a 6-hour full-plant shutdown.
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Schedule full-plant shutdown. • Verify the Northwest Junction Box is not in danger of overflowing before work begins. • Make every effort to ensure the plant SCADA System does not experience interrupted service and that any loss of service is brief.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Coordinate with Owner prior to commencing the work. • Provide and deploy trench safety equipment as needed prior to entering trench. • Remove temporary plugs and make connections. • Make every effort to ensure the plant SCADA System does not experience interrupted service and that any loss of service is brief. • Fill line and perform leak test and visual inspection without cover.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 2.03: Connect 48" Filter Effluent Line to Effluent Conduit

Related CSPs: 2.00	Location: Effluent Conduit
Process Units Out-of-Service for this Task: All Filters	Shutdown Duration: 2 Days (maximum)
Task Description:	Core drill through west wall of Filter Complex and connect the 48" effluent line to the existing filter effluent conduit. The Northwest Junction Box and 66" (north) Filter Influent pipe must be protected and supported during excavation for the 48" Filter Effluent pipe.
Constraints:	<ul style="list-style-type: none"> • The filter effluent conduit can be shut down for a maximum of 48 hours during the summer (May 1 – October 31) during a full-filter shutdown. • 66" (north) Filter Influent pipe must remain in service during construction of the 48" Filter Effluent pipe.
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Coordinate Filter Complex shutdown. • Review Contractor's excavation plan.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Coordinate with Owner prior to commencing work. • Submit an excavation plan for acceptance by Engineer and Owner Prior to excavation. • Provide and deploy trench safety equipment as needed prior to entering trench. • Provide and implement confined space entry procedures as needed prior to entry. • Protect and support the 66" (north) Filter Influent pipe and Northwest Junction Box. • Core drill through effluent conduit wall. • Connect new 48" effluent line to filter effluent conduit.
ENGINEER Role & Tasks:	Review Contractor's excavation plan.

Construction Sequencing Plan (CSP) 2.04: Demolish and Plug 6" Heating Main

Related CSPs:	Location: Northwest Clearwell
Process Units Out-of-Service for this Task: None	Shutdown Duration: None
Task Description: Demolish and plug abandoned 6" Heating Main in yard as necessary.	
Constraints: Work to be coordinated with other yard piping relocations.	
OWNER Role & Tasks: Provide historical knowledge to assist with locating Heating Main.	
CONTRACTOR Role & Tasks: <ul style="list-style-type: none"> • Coordinate with Owner prior to commencing the work. • Demolish and plug pipe. • Check for insulation. If found, test for asbestos prior to disposal. 	
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 2.05: Relocate Instrumentation Duct Bank

Related CSPs:	Location: Northwest Clearwell
Process Units Out-of-Service for this Task: Plant is able to function in manual mode. DAF, Filter Gallery, and Administration Building Control room	Shutdown Duration: Switch over shall be completed within 2-hours
Task Description:	<ul style="list-style-type: none"> • Install new handholes by intercepting existing duct bank • Install new duct bank between new handholes • Install, terminate, test, and connect new SCADA communication cable • Remove instrumentation duct bank between manhole IM-M and IM-A.
Constraints:	<ul style="list-style-type: none"> • Plant shall remain operational in manual mode • Relocation must be performed and completed before excavation and/or installation of shoring designed by Contractor begins. • The duct bank must remain in service during a full plant shutdown.
OWNER Role & Tasks:	Make every effort to ensure the plant SCADA System does not experience interrupted service and that any loss of service is brief.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Coordinate and schedule communication switch over with Owner • Make every effort to ensure the plant SCADA System does not experience interrupted service and that any loss of service is brief.
ENGINEER Role & Tasks:	<ul style="list-style-type: none"> • Observe the communication switch over.

3.00 Southside Clearwell – Construction Sequencing Plan (CSP) Overview

Related CSPs: 3.01 through 3.13	Location: South of Filter Complex
Task Description: Construct the Southside Clearwell.	
Constraints:	
<ul style="list-style-type: none"> • All utilities and yard piping shall be relocated and/or supported before work begins. • Construction cannot begin until Preliminary Tasks (CSP 1.00) are complete. • The 51st Street WRI tank must be full prior to any shutdown. • Plant Polymer System must be in place and operational for work during the summer (May 1 – October 31) 	
OWNER Role & Tasks: Coordinate necessary shutdowns.	
CONTRACTOR Role & Tasks:	
<ul style="list-style-type: none"> • Coordinate with Owner and Owner’s Safety group prior to commencing work. • Relocate and Support yard piping. • Excavate for Structure and 72” Filter Effluent Line. • Demolish and Replace 72” PCCP Filter Effluent Pipe with 72” Steel Pipe. • Install Gates and Connections. • Install and Remove Temporary Bulkheads as needed for shutdowns. • Construct Permanent Bulkhead. 	
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 3.01: Temporary Bulkheads

Related CSPs: 3.00, 5.08	Location: Filter Effluent Conduit
Process Units Out-of-Service for this Task: Filter Complex	Shutdown Duration: 2 Days (maximum)
Task Description: Design and install North and South Temporary Bulkheads to isolate Even and Odd Filters as needed for Partial Filter Shutdowns.	
Constraints:	<ul style="list-style-type: none"> • Work must be performed and completed during the summer (May 1 – October 31). • If work cannot be completed in 2 days, multiple shutdowns can occur (once per week), each with a maximum duration of 2 days. • Plant polymer system must be in place and operational.
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Coordinate Filter Complex shutdown. • Shutdown ASC #1 if possible and operate ASC #2 and #3.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Coordinate with Owner prior to commencing work. • Provide and implement confined space entry procedures as needed prior to entry. • Provide and deploy portable pumps and piping to speed dewatering if needed. • Remove 12" NPW suction piping as needed. • Provide and deploy trench safety equipment as needed prior to entering trench. • Install bulkhead frames and hardware in Effluent Conduit during a prior Filter Complex shutdown. • Install/remove temporary bulkheads as needed.
ENGINEER Role & Tasks:	Review Contractor's design of temporary bulkheads.

Construction Sequencing Plan (CSP) 3.02: Demolish and Replace 72" Filter Effluent Line

Related CSPs: 3.04	Location: Southside Clearwell
Process Units Out-of-Service for this Task: (1) Existing Clearwell, Odd (south) Filters (2) Entire Plant	Shutdown Duration: (1) 1 Month (maximum) (2) 6 Hours (maximum)
Task Description:	Replace existing 72" PCCP Filter Effluent Pipe with 72" Steel Pipe. A temporary plug must be installed in the 72" PCCP Filter Effluent Pipe, north of the 72" Plant Effluent connection to prevent backflow during the work.
Constraints:	<ul style="list-style-type: none"> • Work must be performed and completed during the summer (May 1 – October 31). • Existing Clearwell must be out of service. • South Temporary Bulkhead must be installed prior to commencing work. • Temporary plug must be installed/removed during a full-plant shutdown.
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Coordinate shutdowns and drain existing clearwell. • Shut down ASC#1 if possible.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Coordinate with Owner prior to commencing work. • Provide and deploy trench safety equipment as needed prior to entering trench. • Provide and deploy portable pumps and piping to speed dewatering if needed. • Remove section of 72 "PCCP Pipe to install temporary plug. • Remove remaining 72" PCCP Pipe and replace with 72" Steel Pipe. • Clean and pressure wash existing clearwell to drain. • Connect new 72" Steel Filter Effluent to Existing Clearwell. • Remove temporary plug and connect new 72" Steel Filter Effluent to existing 72" PCCP Filter Effluent. • Fill line and perform leak testing and visual inspection without cover.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 3.03: Temporary Plugs for 72" Connections	
Related CSPs: 3.05	Location: Southside Clearwell
Process Units Out-of-Service for this Task: Existing Clearwell, Odd (south) Filters	Shutdown Duration: 1 Week (maximum during winter) 1 Month (maximum during summer)
Task Description:	Core drill through the south wall of the Existing Clearwell and the south wall of the Effluent Conduit and insert temporary plugs at future 72" connection locations.
Constraints:	<ul style="list-style-type: none"> • South Temporary bulkhead must be installed during work. • Must be completed in a maximum of 1 week during the Winter (November 1 – April 30), or • Must be completed in a maximum of 1 month during the Summer (May 1 – October 31)
OWNER Role & Tasks:	Coordinate filter shutdown and drain existing clearwell.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Coordinate with Owner prior to commencing the work. • Provide and deploy trench safety equipment as needed prior to entering trench. • Provide and implement confined space entry procedures as needed prior to entry. • Ensure South Temporary Bulkhead is installed. • Core drill through Existing Clearwell and Effluent Conduit Walls. • Install temporary plugs for future pipe connection installation.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 3.04: Demolish 72" Steel Filter Effluent Pipe	
Related CSPs: 3.02	Location: Southside Clearwell
Process Units Out-of-Service for this Task: (1) Existing Clearwell, Odd (south) Filters (2) Entire Plant	Shutdown Duration: (1) 1 Month (maximum during summer), 1 week (maximum during winter) (2) 6 Hours (maximum)
Task Description:	Demolish and remove 72" steel pipe internal to the Southside Clearwell and seal ends against southside clearwell walls. A temporary plug must be installed in the 72" PCCP Filter Effluent Pipe, north of the 72" Plant Effluent connection to prevent backflow during the work.
Constraints:	<ul style="list-style-type: none"> • Work can be performed during the summer (May 1 – October 31) for a maximum of 1 month, or • Work can be performed during the winter (November 1 – April 30) for a maximum of 1 week. • South Temporary Bulkhead must be installed prior to commencing work. • Temporary plug must be installed/removed during a full-plant shutdown. • Coordinate work with gate installation.
OWNER Role & Tasks:	Coordinate shutdowns and drain existing clearwell.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Coordinate with Owner prior to commencing the work. • Provide and implement confined space entry procedures as needed prior to entry. • Provide and deploy trench safety equipment as needed prior to entry. • Remove section of steel pipe to install temporary plug. • Demo/remove remaining steel pipe. • Seal ends against southside clearwell walls.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 3.05: 72" Pipe Connections

Related CSPs: 3.03	Location: Southside Clearwell
Process Units Out-of-Service for this Task: Existing Clearwell, Odd (south) Filters	Shutdown Duration: 1 Week (maximum during winter) 1 Month (maximum during summer)
Task Description: Remove temporary plugs and install 72" Pipe Connections in Existing Clearwell and Effluent Conduit walls.	
Constraints: <ul style="list-style-type: none"> • South Temporary Bulkhead must be installed to perform work. • Work must be performed in a maximum of 1 week during the winter (November 1 – April 30), or • Work must be performed in a maximum of 1 month during the summer (May 1 – October 31) 	
OWNER Role & Tasks: Coordinate filter shutdown and drain existing clearwell.	
CONTRACTOR Role & Tasks: <ul style="list-style-type: none"> • Coordinate with Owner prior to commencing the work. • Provide and deploy trench safety equipment as needed prior to entering trench. • Provide and implement confined space entry procedures as needed prior to entry. • Ensure South Temporary Bulkhead is installed. • Remove temporary plugs and install pipe connections. 	
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 3.06: Permanent Bulkhead

Related CSPs:	Location: Existing Clearwell and Effluent Conduit
Process Units Out-of-Service for this Task: Existing Clearwell, Odd (south) Filters	Shutdown Duration: 1 Week (maximum during winter) 1 Month (maximum during summer)
Task Description:	Construct Permanent Bulkhead between the Existing Clearwell and Effluent Conduit.
Constraints:	<ul style="list-style-type: none"> • South Temporary Bulkhead must be installed to perform work. • Work must be performed in a maximum of 1 week during the Winter (November 1 – April 30), or • Work must be performed in a maximum of 1 month during the Summer (May 1 – October 31)
OWNER Role & Tasks:	Coordinate filter shutdown and drain existing clearwell.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Coordinate with Owner prior to commencing the work. • Provide and implement confined space entry procedures as needed prior to entry. • Provide and deploy trench safety equipment as needed prior to entering trench. • Ensure South Temporary Bulkhead is installed. • Construct permanent bulkhead.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 3.07: Relocate 3" Potable Water Line

Related CSPs: 3.08, 3.16	Location: South of Filter Complex
Process Units Out-of-Service for this Task: Filter Complex Restroom	Shutdown Duration:
Task Description:	Relocate existing 3" potable water line to provide permanent provisions for continued use. Temporary provisions for this potable water line are not required.
Constraints:	<ul style="list-style-type: none"> • Relocation must be performed and completed before excavation and/or installation of shoring designed by Contractor begins. • Work to be coordinated with other yard piping relocations. • Work to be performed and completed within an 8-hour day not to include a weekend or holiday.
OWNER Role & Tasks:	Shut off potable water and Lockout/Tagout valve(s).
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Coordinate with Owner prior to commencing the work. • Remove existing line and relocate. • Reconnect to existing line. • Pressure test for leaks. • Chlorinate, test, and provide analytical services to properly disinfect line (follow COA Pipe Disinfection Plan).
ENGINEER Role & Tasks:	Review and confirm disinfection procedures and analytical results demonstrate adequate disinfection.

Construction Sequencing Plan (CSP) 3.08: Relocate 4" Chlorine Solution Lines

Related CSPs:	3.07, 3.16	Location:	South of Filter Complex and South of Southside Clearwell
Process Units Out-of-Service for this Task:	Chlorine service to Filter Complex and Chlorine Contact Basins 3 & 4	Shutdown Duration:	1 Week (maximum)
Task Description:	Remove and relocate existing 4" Chlorine Solution lines and provide temporary provisions if needed.		
Constraints:	<ul style="list-style-type: none"> • Relocation must be performed and completed before excavation and/or installation of shoring designed by Contractor begins. • Coordinate work with other yard piping relocations. • ASC 2 must be shut down during relocation. 		
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Shut off Chlorine solution and flush with NPW to clear line of chlorine solution before work begins. • Lockout/Tagout chlorine solution valves. • Shut down ASC 2 and operate plant on ASC 1 & 3 		
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Coordinate with Owner prior to commencing the work. • Remove existing line and relocate. • Reconnect to existing line. 		
ENGINEER Role & Tasks:			

Construction Sequencing Plan (CSP) 3.09: Relocate 8" Clearwell Drain

Related CSPs:	Location: South of Filter Complex
Process Units Out-of-Service for this Task: Existing Clearwell, Odd (south) Filters	Shutdown Duration: 1 Week (maximum during winter) 1 Month (maximum during Summer)
Task Description: Relocate the existing 8" clearwell drain pipe up to the new 12" clearwell drain connection. The remainder of the existing 8" clearwell drain will be demolished and replaced with a 12" clearwell drain pipe.	
Constraints: <ul style="list-style-type: none"> • Relocation must be performed and completed before excavation and/or installation of shoring designed by Contractor begins. • Coordinate work with other yard piping relocations. • South Temporary Bulkhead must be in place for partial filter shutdown. • Northwest Clearwell must be in operation for partial filter shutdown. 	
OWNER Role & Tasks: <ul style="list-style-type: none"> • Coordinate Filter shutdown. • Drain Existing Clearwell. 	
CONTRACTOR Role & Tasks: <ul style="list-style-type: none"> • Coordinate with Owner prior to commencing the work. • Provide and deploy trench safety equipment as needed prior to entering trench. • Remove and relocate drain pipe. • Reconnect pipe to existing and new system. 	
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 3.10: Support 54" Filter Influent Line

Related CSPs:	Location: Between Filter Complex and Chlorine Contact Basin 1 & 2
Process Units Out-of-Service for this Task: None	Shutdown Duration: None
Task Description: Support the 54" PCCP Filter Influent Line during excavation and construction for the Southside Clearwell.	
Constraints: <ul style="list-style-type: none"> The line must remain in service at all times. 	
OWNER Role & Tasks: None	
CONTRACTOR Role & Tasks: <ul style="list-style-type: none"> Prepare support drawings, calculations, and construction sequencing plan for submittal to Engineer. Coordinate with Owner prior to commencing the work. Provide and deploy trench safety equipment as needed prior to entering trench. Ensure the line is properly supported and is properly filled, bedded, and compacted after it is exposed. 	
ENGINEER Role & Tasks: Review Contractor's drawings, calculations, and construction sequencing plan to support this line.	

Construction Sequencing Plan (CSP) 3.11: Demolish and Plug 36" Backwash Supply

Related CSPs:	Location: Southside Clearwell
Process Units Out-of-Service for this Task: None	Shutdown Duration: None
Task Description:	Demolish and plug abandoned 36" PCCP Backwash Supply pipe as needed for construction of the Southside Clearwell.
Constraints:	Coordinate work with other yard piping relocations
OWNER Role & Tasks:	Shut down ASC #1 and operate ASC #2 and #3 if possible.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Coordinate with Owner prior to commencing the work. • Provide and deploy trench safety equipment as needed prior to entering trench. • Provide and implement confined space entry procedures as needed prior to entry. • Dewater, demolish, and install permanent plug in abandoned line.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 3.12: Relocate 12" Unfiltered Effluent Line	
Related CSPs: 3.10	Location: Southside Clearwell
Process Units Out-of-Service for this Task: None	Shutdown Duration: None
Task Description: Temporarily relocate the 12" Unfiltered Effluent Line during construction for the Southside Clearwell if needed.	
Constraints:	<ul style="list-style-type: none"> • Relocation must be performed and completed before excavation and/or installation of shoring designed by Contractor begins.
OWNER Role & Tasks:	
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Coordinate with Owner prior to commencing the work. • Provide and deploy trench safety equipment as needed prior to entering trench. • Dewater if needed.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 3.13: Relocate 10" Low Pressure Air Line

Related CSPs:	Location: Southside Clearwell
Process Units Out-of-Service for this Task: None	Shutdown Duration: 2 Days (maximum)
Task Description:	Provide temporary provisions for the 10" LPA line during construction of the Southside Clearwell as needed.
Constraints:	10" LPA line can be shut down for a maximum duration of 2 days.
OWNER Role & Tasks:	Isolate 10" LPA line.
CONTRACTOR Role & Tasks:	Coordinate with Owner prior to commencing the work. Provide and deploy trench safety equipment as needed prior to entering trench.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 3.14: Relocate 8" Potable Water Line

Related CSPs:	Location: Southside Clearwell
Process Units Out-of-Service for this Task: None	Shutdown Duration: None
Task Description:	Relocate 8" Potable Water Line. Provide temporary provisions if needed.
Constraints:	<ul style="list-style-type: none"> • Relocation must be performed and completed before excavation and/or installation of shoring designed by Contractor begins. • Work to be performed and completed within an 8-hour day not to include a weekend or holiday.
OWNER Role & Tasks:	Isolate potable water line during relocation if needed.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Coordinate with Owner prior to commencing the work. • Provide and deploy trench safety equipment as needed prior to entering trench. • Dewater if necessary. • Relocate 8" PW line. • Make new connections. • Pressure test new line. • Chlorinate, test, and provide analytical services to properly disinfect line (follow COA Pipe Disinfection Plan)
ENGINEER Role & Tasks:	Review and confirm disinfection procedures and analytical results demonstrate adequate disinfection.

Construction Sequencing Plan (CSP) 3.15: Relocate 16" Non-Potable Water Line	
Related CSPs:	Location: Southside Clearwell
Process Units Out-of-Service for this Task: None	Shutdown Duration: None
Task Description:	Relocate 16" Non-Potable Water Line and reconnect to 8" Non-Potable Water Line. Provide temporary provisions if needed.
Constraints:	<ul style="list-style-type: none"> • Relocation must be performed and completed before excavation and/or installation of shoring designed by Contractor begins. • Work to be performed and completed within an 8-hour day not to include a weekend or holiday.
OWNER Role & Tasks:	Isolate non-potable water line during relocation if needed.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Coordinate with Owner prior to commencing the work. • Dewater if needed. • Relocate 16" NPW line and reconnect to 8" NPW line.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 3.16: Relocate 1.5" Air Lines

Related CSPs: 3.07, 3.08	Location: South of Filter Complex
Process Units Out-of-Service for this Task:	Shutdown Duration:
Task Description: Remove and relocate two existing 1.5" Air lines and provide permanent provisions for continued use.	
Constraints: Coordinate work with other yard piping relocations.	
OWNER Role & Tasks: Shut off air lines during relocation.	
CONTRACTOR Role & Tasks: <ul style="list-style-type: none"> • Coordinate with Owner prior to commencing the work. • Remove existing lines and relocate. • Reconnect to existing lines. 	
ENGINEER Role & Tasks:	

4.00 Blower Building – Construction Sequencing Plan (CSP) Overview

Related CSPs: 4.01	Location: South of Filter Complex
Task Description: Construct Blower Building.	
Constraints:	
<ul style="list-style-type: none"> • Southside Clearwell construction must be complete before work commences. • The 51st Street WRI tank must be full prior to any shutdown. • Plant Polymer System must be in place and operational for work during the summer (May 1 – October 31) 	
OWNER Role & Tasks:	
Coordinate necessary shutdowns.	
CONTRACTOR Role & Tasks:	
<ul style="list-style-type: none"> • Coordinate with Owner prior to commencing work. • Construct Blower Building. • Install air piping and blowers. • Connect air piping to filter gallery. 	
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 4.01: Air Blowers and Piping

Related CSPs: 4.00, 8.01, 8.03	Location: Blower Building
Process Units Out-of-Service for this Task: None	Shutdown Duration: None
Task Description: Install blowers and air piping in the Blower Building. Make connections from Blower Building to Filter Gallery.	
Constraints:	<ul style="list-style-type: none"> • The new blowers must be verified to be on-site by the inspector prior to beginning the installation. • FB1-MCC-01A and FB1-MCC-01B shall be installed and energized in order for blower to be operational. • Filter SCADA system network shall be installed, tested and commissioned prior to testing the blowers. • Filter master control panel shall be installed. • Plant SCADA system shall be configured for filter and blower control and monitoring. • All associated piping and valves must be properly coated and dried for this CSP to be considered complete.
OWNER Role & Tasks: None	
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Coordinate with Owner prior to commencing the work. • Install blowers: BL-001, BL-002 • Construct opening through filter gallery roof. • Install pipe, supports, and make connections. • Performance test blowers and leak test air piping.
ENGINEER Role & Tasks:	

5.00 Filter Gallery – Construction Sequencing Plan (CSP) Overview

Related CSPs: 5.01 through 5.08	Location: Filter Buildings 1 & 2
Task Description: Complete work in the Filter Gallery.	
Constraints:	<ul style="list-style-type: none"> • The Northwest Clearwell must be complete and operational before work commences. • The 51st Street WRI tank must be full prior to any shutdown. • Plant Polymer System must be in place and operational for work during the summer (May 1 – October 31)
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Coordinate necessary shutdowns. • Witness the filter control system FAT test.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Coordinate with Owner prior to commencing work. • Replace Influent header BFVs • Demo and replace air piping • Replace Backwash Supply header BFVs, flow meter, and piping • Replace backwash pumps • Replace NPW pumps and replace piping • Install and commission electrical distribution equipment • Install and commission filter control system
ENGINEER Role & Tasks:	<ul style="list-style-type: none"> • Witness the filter control system FAT test. • Witness the filter control system SAT test.

Construction Sequencing Plan (CSP) 5.01: Replace Intermediate 54" Filter Influent Header BFV (BFV-045)

Related CSPs: 5.02, 5.03	Location: Filter Buildings 1 & 2
Process Units Out-of-Service for this Task: All Filters	Shutdown Duration: 2 days (maximum)
Task Description: Replace Intermediate 54" Butterfly Valve (BFV-045) in Filter Influent Header Piping.	
Constraints:	<ul style="list-style-type: none"> • The new BFV must be verified to be on-site by the inspector prior to beginning this installation. • Work must be performed during the Summer (May 1 – October 31) • All associated piping and valves must be properly coated and dried for this CSP to be considered complete.
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Coordinate filter shutdown. • Close existing West and Southeast 54" Filter Influent BFVs: BFV-005 and BFV-084. • Drain 54" line.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Protect adjacent piping, pipe supports, structures, etc. • Remove existing Intermediate 54" Filter Influent BFV and install new BFV: BFV-045 • Test new BFV-045.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 5.02: Replace Southeast 54" Filter Influent Header BFV (BFV-005)

Related CSPs: 5.01, 5.03	Location: Filter Buildings 1 & 2
Process Units Out-of-Service for this Task: a) All Filters b) Filters 1-4 c) All Filters	Shutdown Duration: a) 2 days (maximum) b) 1 Month (maximum) c) 2 days (maximum)
Task Description: Replace Southeast 54" Butterfly Valve (BFV-005) in Filter Influent Header Piping.	
Constraints:	<ul style="list-style-type: none"> • The new BFV must be verified to be on-site by the inspector prior to beginning this installation. • Work must be performed during the summer (May 1 – October 31). • All Filters can be shut down for a maximum of 2 days during the summer. • Filters 1-4 can be shut down for a maximum of 1 month during the summer. • All associated piping and valves must be properly coated and dried for this CSP to be considered complete.
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Coordinate filter shutdown. • Drain 54" line.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Protect adjacent piping, pipe supports, structures, etc. • During a full filter shutdown remove existing Southeast 54" Filter Influent BFV: BFV-005 • If necessary, prevent flow from the south side of the opening of the removed valve and close the intermediate BFV (BFV-045) in order to shutdown Filters 1-4. Bring Filters 5-10 back online while preparing to install the new BFV. • Install new Southeast 54" Filter Influent BFV during a full filter shutdown. • Test new BFV-005.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 5.03: Replace West 54" Filter Influent Header BFV

Related CSPs: 5.01, 5.02	Location: Filter Buildings 1 & 2
Process Units Out-of-Service for this Task: (1) All Filters (2) Filters 5-10	Shutdown Duration: (1) 2 days (maximum) (2) 2 days (maximum)
Task Description:	Replace West 54" Butterfly Valve (BFV-084) in Filter Influent Header Piping. To isolate the flow to this valve, a temporary plug must be installed in the 66" Filter Influent at the Northwest Junction Box and the Intermediate 54" Butterfly Valve must be closed.
Constraints:	<ul style="list-style-type: none"> • The new BFV must be verified to be on-site by the inspector prior to beginning this installation. • Filter shutdowns must occur during the summer (May 1 – October 31). • All associated piping and valves must be properly coated and dried for this CSP to be considered complete.
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Coordinate filter shutdowns. • Close intermediate 54" BFV-045 between Filter Buildings 1 and 2. • Drain 54" line.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Protect adjacent piping, pipe supports, structures, etc. • Shutdown all Filters and install temporary plug in 66" Filter Influent. • Bring Filters 1 – 4 back online before replacing the West 54" BFV. • Remove existing 54" Filter Influent BFV-084 and install new BFV-084. • Test BFV-084. • Remove temporary plug and bring all Filters back online.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 5.04: Demolish Existing Air Scour Piping

Related CSPs: 5.05	Location: Filter Building 2
Process Units Out-of-Service for this Task: Filters 5-10	Shutdown Duration: 1 Week (maximum during winter) 1 Month (maximum during summer)
Task Description: Demolish existing air scour piping. Filters 5-10 can be taken offline one at a time to complete this task.	
Constraints:	<ul style="list-style-type: none"> • Work must be performed prior to installation of new air scour piping. • Filters 5-10 must be shut down when demolishing connections to filter gullets. • No more than 5 Filters can be taken out of service at one time. • Up to 5 Filters can be shut down for 1 Week during winter (November 1 – April 30). • Up to 5 Filters can be shut down for 1 Month during summer (May 1 – October 31).
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Coordinate Filter shutdown. • Drain Filter(s) to be worked on and take them out of service.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Protect adjacent piping, structures, etc. • Demolish existing air scour piping, including connections to filter gullets, and associated pipe supports.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 5.05: Install New Air Scour Header Piping

Related CSPs: 5.04	Location: Filter Buildings 1 and 2
Process Units Out-of-Service for this Task: Filters 5-10	Shutdown Duration: 1 Week (maximum during winter) 1 Month (maximum during summer)
Task Description: Install new air scour header piping throughout filter gallery and new air scour piping connection to Filters 5-10.	
Constraints:	<ul style="list-style-type: none"> • Work must be performed after demolition of existing air scour piping and surface wash piping. • Filters 5-10 must be shut down when making connection to filter gullet. • No more than 5 Filters can be taken out of service at one time. • Up to 5 Filters can be shut down for 1 Week during winter (November 1 – April 30). • Up to 5 Filters can be shut down for 1 Month during summer (May 1 – October 31). • All associated piping and valves must be properly coated and dried for this CSP to be considered complete.
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Coordinate Filter shutdown. • Drain Filter(s) to be worked on and take them out of service.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Install new air scour header throughout filter gallery. • Protect adjacent piping, structures, etc. • Connect new air scour piping to existing air scour piping in filter gullet. Connection to be made at the existing wall between the filter gallery and the gullet. • Test air piping.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 5.06: Backwash Supply Header BFVs & Flow Meter

Related CSPs:	Location: Filter Building 1
Process Units Out-of-Service for this Task: Backwash Pumps, All Filters	Shutdown Duration: 3 days (maximum)
Task Description:	Replace Butterfly Valves and Flow Meter in Backwash Supply header. Filters to remain online with no backwashing for a maximum of 24 hours before entering full-filter shutdown for 48 hours.
Constraints:	<ul style="list-style-type: none"> • The backwash pumps must be off and Filters cannot be backwashed during this installation. • Perform this work in conjunction with a 2 day full-filter shutdown during the summer (May 1 – October 31). • This task must be complete prior to any of the individual filters being rehabilitated. • The new BFVs and flow meter must be verified to be on-site by the inspector prior to beginning this installation. • All associated piping and valves must be properly coated and dried for this CSP to be considered complete.
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Prepare Filters to not be backwashed for 24 hours before full-filter shutdown. • Ensure no filter is being backwashed during this installation. • Close the Backwash pump discharge BFVs and all of the Backwash Supply BFVs associated with each filter: BFV-011, -022, 046, -030, -032, -040, -042, -049, -050, -061, -062, -073, -074. • Lockout/Tagout BFV electric actuators. • Drain the Backwash Supply header. • Coordinate Filter shutdown.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Protect adjacent piping, pipe supports, structures, etc. • Remove existing 24" BFV on the Backwash Supply header and install new BFV: BFV-026 • Remove existing venturi meter and install new mag meter: FE-110 • Remove existing 30" BFV on the Backwash Supply header and install new BFV: BFV-046 • Leak test BFVs and flow meter. Test BFVs for operation.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 5.07: Backwash Pumps

Related CSPs: 5.06, 8.04	Location: Filter Building 1
Process Units Out-of-Service for this Task: None	Shutdown Duration: None
Task Description: Replace Backwash pumps.	
Constraints:	<ul style="list-style-type: none"> • The vacuum prime system must be replaced before work begins. • The backwash pump must be replaced one at a time. The pump not being replaced should be used to backwash the filters during this task. • At least one of the backwash pumps must be replaced prior to any of the individual filters being rehabilitated. • The new pumps must be verified to be on-site by the inspector prior to beginning this installation. • Installation to WRI-MCC-1R and WRI-MCC-1L must be complete before work begins. • All associated piping and valves must be properly coated and dried for this CSP to be considered complete.
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Close the Backwash pump suction and discharge BFV's: BFV-008 &-011 or BFV -017 & -022 • Lockout/Tagout backwash pump to be replaced. • Lockout/Tagout pump discharge BFV electric actuator.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Replace vacuum prime system in kind. • Ensure the electrical service is ready prior to replacing the pumps. • Protect adjacent piping, pipe supports, structures, etc. • Demolish existing pump and piping to be replaced, including NPW stuffing box flush and vacuum prime lines. • Replace backwash pumps one at a time: BWP-001, -002 and install associated new piping. • Leak and performance test pumps.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 5.08: Demolish 12" Non-Potable Water Suction Piping and Supports	
Related CSPs: 3.01, 5.09	Location: Northeast Clearwell, Filter Effluent Conduit
Process Units Out-of-Service for this Task: Effluent Conduit, Northeast & Existing Clearwells, All Filters	Shutdown Duration: 2 Days (maximum)
Task Description:	Demolish and remove 12" Non-Potable Water suction piping and concrete pipe supports in the Filter Effluent Conduit, Northeast Clearwell, and Existing Clearwell.
Constraints:	<ul style="list-style-type: none"> • Must be completed during the summer (May 1 – October 31). • All Filters must be shut down during work.
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Coordinate shutdown. • Drain lines and clearwell.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Remove 12" suction piping up to Existing Clearwell wall and plug wall penetrations. • Core drill new holes through Existing Clearwell wall and make connections. • Install new suction piping up to valves. • Clean 12" and 36" sump pumps.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 5.09: Install New 12" Non-Potable Water Suction Piping	
Related CSPs: 5.08	Location: Northeast Clearwell, Filter Effluent Conduit
Process Units Out-of-Service for this Task: Effluent Conduit, Northeast & Existing Clearwells, All Filters	Shutdown Duration: 3 days (Max)
Task Description:	Install new 12" Non-Potable Water suction piping in the Existing Clearwell. Work within Existing Clearwell can be completed during a Partial Filter Bypass with the South Temporary Bulkhead installed and Odd Filters out of service.
Constraints:	<ul style="list-style-type: none"> • Must be done during the summer (May 1 – October 31). • Even Filters may remain online for 24 hours before a 48-Hour Full Filter Shutdown. • North Temporary Bulkhead must be installed for Even Filters to remain online for first 24 hours. • Must be completed before construction of Permanent Bulkhead. • Must be completed prior to NPW pump replacement. • All associated piping and valves must be properly coated and dried for this CSP to be considered complete.
OWNER Role & Tasks:	Coordinate shutdowns.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Core drill new holes through Existing Clearwell wall and make connections. • Construct the new concrete supports. • Install new suction piping up to valves.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 5.10: Non-Potable Water System

Related CSPs: 5.08, 5.09	Location: Filter Building 1
Process Units Out-of-Service for this Task: Existing Clearwell, Odd Filters	Shutdown Duration: 1 Week (Max)
Task Description: Replace Non-Potable Water piping and pumps. The Existing Clearwell must be shut down and drained for piping connections in clearwell wall.	
Constraints:	<ul style="list-style-type: none"> • Piping and valves upstream of pump and downstream of pressure sustaining valve at the existing clearwell wall should be installed during an existing clearwell shutdown. • Odd Filters must be off line during existing clearwell shutdown. • All associated piping and valves must be properly coated and dried for this CSP to be considered complete.
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Coordinate Filter and Clearwell shutdown. • Drain existing clearwell. • Lockout/Tagout NPW pumps.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Ensure the NPW system is isolated prior to replacing and installing piping in Filter Gallery. • Demolish old piping, pumps, and instrumentation. • Install new pumps, piping, and instrumentation. • Test pumps, piping, and instrumentation.
ENGINEER Role & Tasks:	

6.00 Filters 1-4 – Construction Sequencing Plan (CSP) Overview

Related CSPs: 6.01 through 6.07, 8.00, 9.00	Location: Filter Building 1
Task Description: Complete work on Filters 1-4.	
Constraints:	<ul style="list-style-type: none"> • 54” Filter Influent Butterfly Valves, the electrically actuated 30” Backwash Supply Header Butterfly Valve, and at least one of the Backwash Pumps must be replaced before work commences. • Blowers must be operational before work commences. • Filter master control panel must be installed and plant SCADA system shall be configured for filter control and monitoring. • Up to two filters can be worked on at one time. • Work on Filters 1 & 3 should be completed first, followed by work on Filters 2 & 4. • The 51st Street WRI tank must be full prior to any shutdown. • Plant Polymer System must be in place and operational for work during the summer (May 1 – October 31)
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Coordinate necessary shutdowns. • Drain Filters. • Lockout/Tagout electric actuated BFVs.
CONTRACTOR Role & Tasks:	<p>Work Includes:</p> <ul style="list-style-type: none"> • Demolishing Filter components including existing control consoles. • Installing new air scour piping and underdrains. • Replacing Filter valves, valve actuators, flow meters, instrumentation, and piping. • Replacing Backwash Supply and Drain Butterfly Valves. • Increasing Filter wall height. • Replacing troughs and adding new media. • Replacing filter control consoles. Test and commission automatic filter control.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 6.01: Demolish Filters 1 – 4

Related CSPs: 6.00	Location: Filter Building 1
Process Units Out-of-Service for this Task: Filters 1-4	Shutdown Duration:
Task Description: Remove media and demolish existing troughs and underdrains.	
Constraints:	<ul style="list-style-type: none"> • Only two Filters to be out of service at a time. • Must be performed prior to installation of air scour piping in filter gullet.
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Coordinate Filter Shutdown. • Shut BFVs on Filter Influent, Filter Effluent, and Backwash Supply lines. • Lockout/Tagout electric actuated BFVs and other associated valves. • Drain Filters.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Provide and implement confined space entry procedures as needed prior to entry. • Provide and implement fall protection as needed. • Remove existing media. • Stage adequate number of roll-offs or dump trucks to contain and transport spent media. • Demo existing air scour piping, surface wash piping, troughs and underdrains.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 6.02: New Air Scour Piping Connections to Filters 1 – 4	
Related CSPs: 6.01	Location: Filter Building 1
Process Units Out-of-Service for this Task: All Odd Filters / All Even Filters	Shutdown Duration: 1 Month (maximum during summer) 1 Week (maximum during winter)
Task Description: Install air scour piping in Filters 1 – 4.	
Constraints:	<ul style="list-style-type: none"> • Odd Filters must be shut down for work on Filters 1 and 3 and Even Filters must be shut down for work on Filters 2 and 4. • North Temporary Bulkhead must be installed for Even Filter shutdown. • Odd/Even Filters can be shut down for a maximum of 1 Month during summer (May 1 – October 31) • Odd/Even Filters can be shut down for a maximum of 1 Week during winter (November 1 – April 30) • Must be completed after demolition of existing media and underdrains. • Must be completed prior to installation of new underdrains. • All associated piping and valves must be properly coated and dried for this CSP to be considered complete.
OWNER Role & Tasks:	Coordinate Filter shutdowns.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Drain Filters, effluent conduit, and necessary clearwells and take them out of service. • Protect adjacent piping, pipe supports, structures, etc. • Make connection of new air scour piping through the filter gallery wall and effluent conduit, and install piping in the filter gullet. • Test air piping.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 6.03: Install New Underdrains and Media

Related CSPs: 6.00 – 6.02	Location: Filter Building 1
Process Units Out-of-Service for this Task: Filters 1 & 3, Filters 2 & 4	Shutdown Duration:
Task Description: Install new underdrains and media in Filters 1-4.	
Constraints:	<ul style="list-style-type: none"> • Work to be performed after installation of air scour piping in filter gullet. • Work to be coordinated with trough installation. • Testing cannot be performed until blowers are tested and fully operational and air piping to filters is installed. • New media to be staged onsite, but no longer than 1 week in temporary storage.
OWNER Role & Tasks:	Coordinate Filter shutdown.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Install new filter underdrain per manufacturer's instructions. • Perform initial tests on new filter underdrain system. • Sample and analyze media to verify conformance to requirements. • Install new media inside filter box. • Perform final tests on new filter underdrain system.
ENGINEER Role & Tasks:	Review and confirm media analytical results demonstrate compliance with specifications.

Construction Sequencing Plan (CSP) 6.04: Replace Filter Influent BFVs, Effluent Meters and Effluent Piping for Filters 1 – 4

Related CSPs: 6.05	Location: Filter Building 1
Process Units Out-of-Service for this Task: Filters 1-4	Shutdown Duration: 1 Month (maximum during summer) 1 Week (maximum during winter)[p
Task Description:	Replace Butterfly Valves in Filter influent piping, effluent flow meters, and effluent piping prior to the effluent BFV associated with Filters 1-4.
Constraints:	<ul style="list-style-type: none"> The new BFVs and flow meters must be verified to be on-site by the inspector prior to beginning this installation. Tasks described in this CSP must be done separately for each filter, during the time period when that filter is already out of service for other construction. All associated piping and valves must be properly coated and dried for this CSP to be considered complete.
OWNER Role & Tasks:	<ul style="list-style-type: none"> Coordinate shutdown of Filters 1-4 Drain Filter Shut the two 54" BFVs on the Filter Influent header: BFV-045 and BFV-084 Shut all Filter Effluent BFVs associated with Filters 1-4: BFV-024, -025, -035, -036 Lockout/Tagout electric actuated BFVs.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> Protect adjacent piping, pipe supports, structures, etc. Remove existing 36" Filter Influent BFVs and install new BFVs: BFV-029, -031, -039, -041 Remove existing venturi meters and piping on the Filter Effluent and replace with new piping and magnetic flow meters: FE-001, -002, -003, -004 Test piping, valves, and flow meters.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 6.05: Replace Filter Effluent BFVs and Piping	
Related CSPs: 6.04	Location: Filter Buildings 1 & 2
Process Units Out-of-Service for this Task: Odd Filters/Even Filters	Shutdown Duration: 1 Month (maximum during summer) 1 Week (maximum during winter)
Task Description: Replace Filter effluent butterfly valves.	
Constraints:	<ul style="list-style-type: none"> • The new BFVs must be verified to be on-site by the inspector prior to beginning this installation. • When replacing Effluent BFV on any odd filter, all odd filters must be shut down. When replacing Effluent BFV on any even filter, all even filters must be shut down. • North Temporary Bulkhead must be installed when even filters are shut down. • All associated piping and valves must be properly coated and dried for this CSP to be considered complete.
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Coordinate Filter shutdowns. • Lockout/Tagout electric actuated BFVs.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Drain filter and necessary portions of effluent conduit and clearwells and take them out of service. • Protect adjacent piping, pipe supports, structures, etc. • Remove existing Filter Effluent BFVs. • Install new 20" Filter Effluent BFVs: BFV-024, -025, -035, -036 • Install new associated piping and accessories. • Test valves and piping.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 6.06: Replace Backwash Supply BFVs

Related CSPs: 6.07	Location: Filter Building 1
Process Units Out-of-Service for this Task: Filters 1-4, Backwash pumps	Shutdown Duration: 1 Day (maximum per Filter)
Task Description: Replace Backwash Supply Butterfly Valves for Filters 1-4.	
Constraints:	<ul style="list-style-type: none"> • Tasks described in this CSP must be done separately for each filter, during the time period when that filter is already out of service for other construction. • The backwash pumps must be off and no filter can be backwashed during this installation. • The new BFVs must be verified to be on-site by the inspector prior to beginning this installation. • All associated piping and valves must be properly coated and dried for this CSP to be considered complete.
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Ensure no filter is being backwashed during this installation. • Shut the 30" BFV on the Backwash Supply header: BFV-026. • Shut the Filter Influent BFV associated with each filter: BFV-029, -031, -039, -041. • Shut Filter Effluent BFVs: BFV—024, -025, -035, -036 • Drain filters and backwash supply line. • Lockout/Tagout electric actuated BFVs and other associated valves.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Protect adjacent piping, pipe supports, structures, etc. • Remove existing 30" Backwash Supply BFV and install new BFV: BFV-030, -032, -040, -042
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 6.07: Replace Backwash Drain BFVs

Related CSPs: 6.06	Location: Filter Building 1
Process Units Out-of-Service for this Task: Filters 1-4	Shutdown Duration: 1 Day (maximum per Filter)
Task Description: Replace Backwash Drain BFVs for Filters 1-4.	
Constraints:	<ul style="list-style-type: none"> • Tasks described in this CSP must be done during the time period when each filter is already out of service for other construction. • The new BFV's must be verified to be on-site by the inspector prior to beginning this installation. • All associated piping and valves must be properly coated and dried for this CSP to be considered complete.
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Shut Filter Influent BFV associated with each filter: BFV-029, -031, -039, -041. • Shut Filter Effluent BFVs: BFV—024, -025, -035, -036 • Lockout/Tagout electric actuated BFVs.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Protect adjacent piping, pipe supports, structures, etc. • Remove existing 36" Backwash Drain BFV and install new BFV: BFV-033, -034, -043, -044.
ENGINEER Role & Tasks:	

7.00 Filters 5-10 – Construction Sequencing Plan (CSP) Overview

Related CSPs: 7.01 through 7.04, 8.00	Location: Filter Building 2
Task Description: Complete work on Filters 5-10.	
Constraints: <ul style="list-style-type: none"> • Filters 1-4 must be completed and operational before work commences. • The 51st Street WRI tank must be full prior to any shutdown. • Plant Polymer System must be in place and operational for work during the summer (May 1 – October 31) 	
OWNER Role & Tasks: Coordinate necessary shutdowns.	
CONTRACTOR Role & Tasks: <p>Work Includes:</p> <ul style="list-style-type: none"> • Replacing Filter valves, valve actuators, flow meters, instrumentation, and piping • Replacing Backwash Supply and Drain butterfly valves • Replacing troughs and adding new media • Replacing filter control consoles • Test and commission automatic filter control. 	
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 7.01: Replace Filter Influent BFVs, Effluent Meters and Effluent Piping for Filters 5 – 10

Related CSPs: 7.02	Location: Filter Building 2
Process Units Out-of-Service for this Task: Filters 5-10	Shutdown Duration: 1 Month (maximum during summer) 1 Week (maximum during winter)
Task Description:	Replace Butterfly Valves in Filter influent piping, effluent flow meters, and effluent piping prior to the effluent BFV associated with Filters 5-10.
Constraints:	<ul style="list-style-type: none"> The new BFVs and flow meters must be verified to be on-site by the inspector prior to beginning this installation. Tasks described in this CSP must be done separately for each filter, during the time period when that filter is already out of service for other construction. All associated piping and valves must be properly coated and dried for this CSP to be considered complete.
OWNER Role & Tasks:	<ul style="list-style-type: none"> Drain Filter(s). Coordinate shutdown of Filters 5-10. Shut the two 54" BFV's on the Filter Influent header: BFV-045 and BFV-084 Shut all Filter Effluent BFV's associated with Filters 5-10: BFV-047, -048, -059, -060, -071, -072 Lockout/Tagout electric actuated BFVs.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> Protect adjacent piping, pipe supports, structures, etc. Remove existing 36" Filter Influent BFV's and install new BFV's: BFV-051, -052, -063, -064, -075, -076 Remove existing venturi meters and piping on the Filter Effluent and replace with new piping and magnetic flow meters: FE-005, -006, -007, -008, -009, -010
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 7.02: Replace Filter Effluent BFVs and Piping

Related CSPs: 7.01	Location: Filter Buildings 1 & 2
Process Units Out-of-Service for this Task: Odd Filters/Even Filters	Shutdown Duration: 1 Month (maximum during summer) 1 Week (maximum during winter)
Task Description: Replace Filter effluent butterfly valves.	
Constraints:	<ul style="list-style-type: none"> • The new BFVs must be verified to be on-site by the inspector prior to beginning this installation. • When replacing Effluent BFV on any odd filter, all odd filters must be shut down. When replacing Effluent BFV on any even filter, all even filters must be shut down. • North Temporary Bulkhead must be installed when even filters are shut down. • All associated piping and valves must be properly coated and dried for this CSP to be considered complete.
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Drain filter and necessary portions of effluent conduit and clearwells and take them out of service. • Lockout/Tagout electric actuated BFVs. • Coordinate Filter shutdowns.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Protect adjacent piping, pipe supports, structures, etc. • Remove existing Filter Effluent BFV's. • Install new 20" Filter Effluent BFV's: BFV-047, -048, -059, -060, -071, -072. • Install new associated piping and accessories. • Test BFVs and piping.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 7.03: Replace Backwash Supply BFVs and Piping for Filter 5 – 10

Related CSPs:	Location: Filter Building 2
Process Units Out-of-Service for this Task: Filters 5 – 10	Shutdown Duration: 1 Month (maximum during summer) 1 Week (maximum during winter)
Task Description: Replace Butterfly Valves in Backwash Supply and Backwash Drain Piping associated with Filter 5 – 10.	
Constraints:	<ul style="list-style-type: none"> • Tasks described in this CSP must be done separately for each filter, during the time period when that filter is already out of service for other construction. • The backwash pumps must be off and Filters 5-10 cannot be backwashed during this installation. • The new BFV's must be verified to be on-site by the inspector prior to beginning this installation. • All associated piping and valves must be properly coated and dried for this CSP to be considered complete.
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Ensure that none of Filters 5-10 are being backwashed during this installation. • Drain Filter(s). • Shut the 30" BFV on the Backwash Supply header: BFV-046. • Shut Filter Influent BFVs: BFV-051, -052, -063, -064, -075, -076. • Shut Filter Effluent BFVs: BFV-047, -048, -059, -060, -071, -072. • Lockout/Tagout electric actuated BFVs.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Protect adjacent piping, pipe supports, structures, etc. • Remove existing 30" Backwash Supply BFVs and install new BFV: BFV-049, -050, -061, -062, -073, -074 • Remove and replace 30" Backwash Supply couplings and piping. • Test BFVs and piping.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 7.04: Replace Backwash Drain BFVs for Filter 5 – 10

Related CSPs:	Location: Filter Building 2
Process Units Out-of-Service for this Task: Filters 5-10	Shutdown Duration: 1 Week (maximum during winter) 1 Month (maximum during summer)
Task Description: Replace Butterfly Valves in Backwash Drain Piping associated with Filter 5 – 10.	
Constraints:	<ul style="list-style-type: none"> • Tasks described in this CSP must be done separately for each filter, during the time period when that filter is already out of service for other construction. • The new BFV's must be verified to be on-site by the inspector prior to beginning this installation. • All associated piping and valves must be properly coated and dried for this CSP to be considered complete.
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Shut Filter Influent BFVs: BFV-051, -052, -063, -064, -075, -076 • Shut Filter Effluent BFVs: BFV-047, -048, -059, -060, -071, -072 • Lockout/Tagout electric actuated BFVs.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Protect adjacent piping, pipe supports, structures, etc. • Remove existing 30" Backwash Drain BFVs and install new BFV: BFV-057, -058, -069, -070, -082, -083. • Test BFVs and piping.
ENGINEER Role & Tasks:	

8.00 Electrical Systems – Construction Sequencing Plan (CSP) Overview

Related CSPs: 8.01-8.04	Location: Filter Building 1, Filter Building 2, WRI Building
Task Description:	Complete work on electrical distribution system.
Constraints:	<ul style="list-style-type: none"> • Installation of temporary electrical services • Demolition of existing electrical gear • Demolition of installation of backwash pumps
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Coordinate switching events • Coordinate process system operation with off-line equipment
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Coordinate with Owner prior to commencing work. • Disconnect and remove existing related conduit/wire. • Disconnect and remove existing MCC. • Furnish and install proposed conduit/wire. • Furnish and install proposed equipment.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 8.01: Filter Building Electrical (Part 1)

Related CSPs:	Location: Filter Buildings 1 and 2
Process Units Out-of-Service for this Task: None	Duration: 44 Weeks
Task Description:	<ul style="list-style-type: none"> • Demolition of MCC-FCC2 and associated conduit/wire. • Installation of proposed FB1-MCC-01B, FB1-MCC-NPW, FB2-ATS-PDP2, FB2-PDP-001, FB2-PDP-002, FB1-ATS-NPW2, FB2-ATS-PDP1 and related conduit/wire
Constraints:	<ul style="list-style-type: none"> • Installation of temporary electrical service FB2-PDP-TEMP1A to related loads must be complete prior to commencement of demolition activity.
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Coordinate switching events • Coordinate process system operation with off-line equipment. • Lockout/Tagout MCC to be demolished.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Coordinate with Owner prior to commencing work. • Provide and deploy electric protective gear when opening and working in MCCs. • Disconnect and remove existing related conduit/wire. • Disconnect and remove existing MCC. • Furnish and install proposed conduit/wire. • Furnish and install proposed equipment. • Test new electrical equipment and conductors.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 8.02: WRI-MCC-1R

Related CSPs:	Location: WRI Building, Filter Buildings 1 and 2
Process Units Out-of-Service for this Task: None	Duration: 28 Weeks
Task Description:	<ul style="list-style-type: none"> • Installation of proposed additions to WRI-MCC-1R and associated conduit/wire. • Installation of site duct bank system associated with branch circuiting conduit serving both proposed 5kV backwash pumps.
Constraints:	<ul style="list-style-type: none"> • Installation of temporary electrical service to related loads must be complete prior to commencement of modification activity. • Demolition of existing backwash pump FB1-BWP-002 and associated conduit/wire must be complete before work commences. • Installation of proposed backwash pump FB1-BWP-002 must be complete before work commences.
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Coordinate switching events • Coordinate process system operation with off-line equipment. • Lockout/Tagout of related electrical equipment.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Coordinate with Owner prior to commencing work. • Provide and deploy electric protective gear when opening and working in MCCs. • Furnish and install proposed conduit/wire. • Furnish and install proposed equipment. • Test new electrical equipment and conductors.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 8.03: Filter Building Electrical (Part 2)

Related CSPs:	Location: Filter Building 1 and 2
Process Units Out-of-Service for this Task:	Duration: 16 weeks
Task Description:	<ul style="list-style-type: none"> • Demolition of MCC-FCC1 and associated conduit/wire. • Installation of proposed “FB1-MCC-01A” and related conduit/wire. • Installation of proposed “FB1-ATS-MCCNPW1”. • Demolition of temporary electrical service equipment and associated conduit/wire.
Constraints:	<ul style="list-style-type: none"> • Installation of proposed “FB1-MCC-01B”, “FB1-MCC-NPW”, “FB1-ATS-NPW2”, FB2-PDP-001, FB2-PDP-002 and related conduit/wire must be complete prior to commencement of demolition activity.
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Coordinate switching events. • Coordinate process system operation with off-line equipment. • Lockout/Tagout electric MCC-FCC1.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Coordinate with Owner prior to commencing work. • Provide and deploy electric protective gear when opening and working in MCCs. • Disconnect and remove existing related conduit/wire. • Disconnect and remove existing equipment. • Furnish and install proposed conduit/wire. • Furnish and install proposed equipment. • Test new electrical equipment and conductors.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 8.04: WRI-MCC-1L

Related CSPs:	Location: WRI Building, Filter Buildings 1 and 2
Process Units Out-of-Service for this Task:	Duration: 8 Weeks
Task Description:	<ul style="list-style-type: none"> • Installation of proposed additions to WRI-MCC-1L and associated conduit/wire.
Constraints:	<ul style="list-style-type: none"> • Installation of proposed additions to WRI-MCC-1R and associated conduit/wire. • Demolition of MCC-FCC1 and associated conduit/wire • Demolition of existing backwash pump BWP-001 and associated conduit/wire • Installation of proposed backwash pump BWP-001
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Coordinate switching events • Coordinate process system operation with off-line equipment. • Lockout/Tagout related electric equipment.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Coordinate with Owner prior to commencing work. • Provide and deploy electric protective gear when opening and working in MCCs. • Furnish and install proposed conduit/wire. • Furnish and install proposed equipment. • Test new electrical equipment and conductors.
ENGINEER Role & Tasks:	

Construction Sequencing Plan (CSP) 9.00: Filter Control System

Related CSPs: 6.00 & 7.00	Location: Filter Building No.1 & 2
Process Units Out of Service for this Task: Filters 1-10 at various stages	Duration: See CSP 6.00 & 7.00
Task Description: Replace existing filter control consoles with new filter consoles and master filter control panel.	
Constraints:	<ul style="list-style-type: none"> • The complete filter control system shall pass the Factory Acceptance Test prior to shipping to the job site. • The master filter control panel shall be installed and operational prior to the blowers being tested and the first new filter console to be tested. • Filter instrumentation and console replacement shall be coordinated with filter rehabilitation activities. • Plant SCADA system shall be programmed and configured prior to work on the filters.
OWNER Role & Tasks:	<ul style="list-style-type: none"> • Attend and participate in the filter control workshops.
CONTRACTOR Role & Tasks:	<ul style="list-style-type: none"> • Schedule and hold filter control I&C workshops per specifications. • Ensure that at least one backwash pump can be controlled by the master filter control panel. • Ensure that backwash blowers can be controlled by the master filter control panel. • Install and test all valve actuators and instrumentation devices associated with the filter control system. • Provide all conduit, cable, and wire terminations necessary for each filter backwash.
ENGINEER Role & Tasks:	<ul style="list-style-type: none"> • Attend and participate in the filter control workshops.

DEFINITIONS

General: Basic Contract definitions are included in the General Conditions, Section 00700 included herein.

Approved: The term approved, when used in conjunction with the Owner's Representative's action on the CONTRACTOR'S submittals, applications, and requests, is limited to the Owner's Representative's duties and responsibilities as stated in the Conditions of the Contract. A stamp reading "No Exceptions Taken" shall have the same intent as "Approved".

Furnish: The term furnish means supply and deliver to the Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

Indicated: The term indicated refers to graphic representations, notes, or schedules on the Drawings, or other paragraphs or schedules in the Specifications, and similar requirements in the Contract Documents. Terms such as shown, noted, scheduled, and specified are used to help the reader locate the reference. There is no limitation on location.

Install: The term install describes operations at the Project site including the actual unloading, unpacking, assembly, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

Installer: An Installer is the CONTRACTOR or another entity engaged by the CONTRACTOR, either as an employee, subcontractor, or contractor of lower tier, to perform a particular construction activity, including installation, erection, application, and similar operations. Installers are required to be experienced in operations they are engaged to perform.

Project Site: The space available to the CONTRACTOR for performing construction activities either exclusively or in conjunction with others performing other work as part of the Project. The extent of the Project site is shown on the Drawings and may or may not be identical with the description of the land on which the Project is to be built.

Provide: The term provide means to furnish and install, complete and ready for the intended use.

Regulations: The term regulations includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.

Trades: Using terms such as carpentry is not intended to imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as carpenter. It also does not imply that requirements specified apply exclusively to trades persons of the corresponding generic name.

INDUSTRY STANDARDS

Applicability of Standards: Except where the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

Publication Dates: Comply with the standards in effect as of the date of the Contract Documents.

Conflicting Requirements: Where compliance with two or more standards is specified and where the standards may establish different or conflicting requirements for minimum quantities or quality levels, refer to the Owner's Representative for a decision before proceeding.

Copies of Standards: Each entity engaged in construction on the Project is required to be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

Abbreviations and Names: Trade association names, titles of general standards, and names and titles of government agencies are frequently abbreviated. Where such acronyms or abbreviations are used in the

Specifications or other Contract Documents, they mean the recognized name of the trade association, standards-generating organization, authority having jurisdiction, or other entity applicable to the context of the text provision. Refer to the "Encyclopedia of Associations," published by Gale Research Co., available in most libraries.

AA	Aluminum Association
AABC	Associated Air Balance Council
AAMA	American Architectural Manufacturer's Association
AAN	American Association of Nurserymen.
AASHTO	American Association of State Highway and Transportation Officials.
AATCC	American Association of Textile Chemists and Colorists
ACI	American Concrete Institute
ACIL	American Council of Independent Laboratories
ACPA	American Concrete Pipe Association
ADC	Air Diffusion Council
AFBMA	Anti-Friction Bearing Manufacturers Association
AGA	American Gas Association
AGC	Associated General Contractors of America
AGMA	American Gear Manufacturers Association
AHA	American Hardboard Association
AHAM	Association of Home Appliance Manufacturers
AI	Asphalt Institute
AIA	American Institute of Architects
AIHA	American Industrial Hygiene Association
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction.
ALCA	Associated Landscape Contractors of America
ALI	Associated Laboratories, Inc.
ALSC	American Lumber Standards Committee
AMCA	Air Movement and Control Association
ANSI	American National Standards Institute.
AOAC	Association of Official Analytical Chemists

AOSA	Association of Official Seed Analysts
APA	American Plywood Association
API	American Petroleum Institute.
AREA	American Railroad Engineers Association
ARI	Air Conditioning and Refrigeration Institute
ARMA	Asphalt Roofing Manufacturers Association
ASA	Acoustical Society of America
ASA	American Standards Association.
ASC	Adhesive and Sealant Council
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating & Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASPE	American Society of Plumbing Engineers
ASSE	American Society of Sanitary Engineering
ASTM	American Society for Testing and Materials.
AWCMA	American Window Covering Manufacturers Association
AWG	American Wire Gage
AWI	Architectural Woodwork Institute
AWPA	American Wood Preservers Association
AWPB	American Wood Preservers Bureau
AWPI	American Wood Preservers Institute
AWS	American Welding Society
AWWA	American Water Works Association
BHMA	Builders Hardware Manufacturers Association
BIA	Brick Institute of America
BIFMA	Business and Institutional Furniture Manufacturers Association
CAGI	Compressed Air and Gas Institute
CAUS	Color Association of the United States
CBM	Certified Ballast Manufacturers
CCC	Carpet Cushion Council

CDA	Copper Development Association
CE	Corps of Engineers
CFR	Code of Federal Regulations
CGA	Compressed Gas Association
CISCA	Ceiling and Interior Systems Construction Association
CISPI	Cast Iron Soil Pipe Institute
CPSC	Consumer Product Safety Commission
CRI	Carpet and Rug Institute
CRSI	Concrete Reinforcing Steel Institute
CS	Commercial Standard of NBS (U.S. Dept. of Commerce)
CTI	Ceramic Tile Institute
DFPA	Douglas Fir Plywood Association
DHI	Door and Hardware Institute
DLPA	Decorative Laminate Products Association
DOC	U.S. Department of Commerce
DOT	Department of Transportation
ECSA	Exchange Carriers Standards Association
EIA	Electronic Industries Association
EIMA	Exterior Insulation Manufacturers Association
EJMA	Expansion Joint Manufacturers Association
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FCC	Federal Communications Commission
FGMA	Flat Glass Marketing Association
FHA	Federal Housing Administration
FM	Factory Mutual Research Organization
FS	Federal Specifications
FSC	Forest Stewardship Council
FTI	Facing Tile Institute
GA	Gypsum Association
GSA	General Services Administration

HEI	Heat Exchange Institute
HI	Hydronics Institute
H.I.	Hydraulic Institute
HMA	Hardwood Manufacturers Association
HPMA	Hardwood Plywood Manufacturers Association
IBD	Institute of Business Designers
ICEA	Insulated Cable Engineers Association, Inc.
IEEE	Institute of Electrical and Electronic Engineers, Inc.
IESNA	Illuminating Engineering Society of North American
IGCC	Insulating Glass Certification Council
ILI	Indiana Limestone Institute of America
IMSA	International Municipal Signal Association
IRI	Industrial Risk Insurers
ISA	Instrument Society of America
ITE	Institute of Transportation Engineers
LEED™	Leadership in Energy and Environmental Design
LIA	Lead Industries Association, Inc.
LPI	Lightning Protection Institute
MBMA	Metal Building Manufacturer's Association
MCAA	Mechanical Contractors Association of America
MFMA	Maple Flooring Manufacturers' Association
MIA	Marble Institute of America
ML/SFA	Metal Lath/Steel Framing Association
MSS	Manufacturers Standardization Society of the Valve and Fittings Industry
MUTCD	Texas Department of Transportation Manual on Uniform Traffic Control Devices
NAAMM	National Association of Architectural Metal Manufacturers
NAIMA	North American Insulation Manufacturers Association
NAPA	National Asphalt Pavement Association
NBFU	National Board of Fire Underwriters

NBGQA	National Building Granite Quarries Association
NBS	National Bureau of Standards (U.S. Dept. of Commerce)
NCMA	National Concrete Masonry Association
NCRPM	National Council on Radiation Protection and Measurements
NCSPA	National Corrugated Steel Pipe Association
NEC	National Electrical Code (Published by NFPA)
NECA	National Electrical Contractors Association
NEII	National Elevator Industry, Inc.
NEMA	National Electrical Manufacturers Association
NETA	International Electrical Testing Association
N.F.P.A.	National Forest Products Association
NFPA	National Fire Protection Association
NHLA	National Hardwood Lumber Association
NIST	National Institute of Standards and Technology
NLGA	National Lumber Grades Authority
NOFMA	National Oak Flooring Manufacturers Association
NPA	National Particleboard Association
NPCA	National Paint and Coatings Association
NRCA	National Roofing Contractors Association
NWMA	National Woodwork Manufacturers Association
OSHA	Occupational Safety and Health Administration
PCA	Portland Cement Association
PCI	Precast/Prestressed Concrete Institute
PDI	Plumbing and Drainage Institute
PE	Professional Engineer
REA	Rural Electrification Administration
RFCI	Resilient Floor Covering Institute
RMA	Rubber Manufacturing Association
RPLS	Registered Professional Land Surveyor
SDI	Steel Deck Institute
S.D.I.	Steel Door Institute

SFPA	Southern Forest Products Association
SGCC	Safety Glazing Certification Council
SIGMA	Sealed Insulating Glass Manufacturers Association
SJI	Steel Joist Institute
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SPIB	Southern Pine Inspection Bureau
SPRI	Single Ply Roofing Institute
SSPC	Steel Structures Painting Council
SSPMA	Sump and Sewage Pump Manufacturers Association
SWI	Steel Window Institute
SWPA	Submersible Wastewater Pump Association
TCA	Tile Council of America
TEX TEST	TxDOT Laboratory Test
TIMA	Thermal Insulation Manufacturers Association
TPI	Truss Plate Institute
TxDOT	Texas Department of Transportation
UL	Underwriters Laboratory, Inc.
USDA	U. S. Department of Agriculture
USGBC	U. S. Green Building Council
USPS	U. S. Postal Service
WCLIB	West Coast Lumber Inspection Bureau
WCMA	Wallcovering Manufacturers Association
WIC	Woodwork Institute of California
WLPDIA	Western Lath, Plaster, Drywall Industries Association
WRI	Wire Reinforcement Institute
WSC	Water Systems Council
WSFI	Wood and Synthetic Flooring Institute
WWPA	Western Wood Products Association
W.W.P.A.	Woven Wire Products Association

END

The Storm Water Pollution Prevention Plan for this project is attached.



WALNUT CREEK WWTP STORMWATER POLLUTION PREVENTION PLAN

January 8, 2014



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1.0 Project Description

a. Project Name

Walnut Creek Wastewater Treatment Plant (WWTP) Tertiary Filter Rehabilitation Project

b. Site Address

7113 FM 969, Austin, TX 78724

c. Coordinates

30°16'48" N and 97°39'07" W

d. Owner

Austin Water Utility (AWU), Austin, Texas

e. Nature of construction activity

The construction at the Walnut Creek WWTP Tertiary Filter Rehabilitation project will be focused in two primary locations: 1) At the western side of the plant where a new sodium bisulfite system will be installed and 2) In and around Filter Building 1 and 2. The sodium bisulfite work will be minimal, consisting of the construction of an approximate 12' X 14' concrete pad with a canopy and a small diameter feed line to a feed point directly west of the pad area. The work around Filter Building 1 and 2 that will fall under this storm water pollution prevention plan (SWP3) will consist of the construction of two new clearwells: the Southside Clearwell at the southeast corner of Filter Building 1 and the Northwest Clearwell at the west end of Filter Building 2, some minor yard piping work around the new clearwells, and re-vegetation activities around the outer perimeter of the filter walls. All other work associated with this project will be internal to existing structures.

f. Potential sources of Pollutants

Table 1-1	
Pollutant	Source
Sediment	Excavation of soil.
Sediment Tracking	Trucks entering and leaving the construction site.
Dust	From construction activities.
Solid Waste	From construction activities.
Petroleum Hydrocarbons	From contractor vehicle fueling and servicing activities.

- i. Sediment: Construction activities related to the construction of the sodium bisulfite system and piping, the Southside and Northwest Clearwells, the new yard piping, and the revegetation efforts will likely be a source of sediment.

- ii. Sediment tracking: Construction vehicles exiting the plant are a likely source of sediment tracking. The areas where construction vehicles will be operating over soil and grass will be minimal, as the extent of disturbed soil will be small.
- iii. Dust: Dust caused by wind blowing over exposed sediment is a potential source of pollutants.
- iv. Solid waste: Solid waste from construction activities will be a potential source of pollutants. The contractor will be responsible for properly disposing of solid waste and preventing this being a source of pollutants.
- v. Petroleum hydrocarbons: Gasoline, fuel, or hydraulic fluid storage. Drips and spills during fueling or transfer into construction equipment.

g. Project Construction Schedule

The contractor's construction schedule shall be included in Appendix A of this document. Generally the project will be constructed between the following dates:

- i. Project Start Date: April 2014
- ii. Project End Date: April 2016

h. Total Number of Acres of Entire Property

303.9 acres

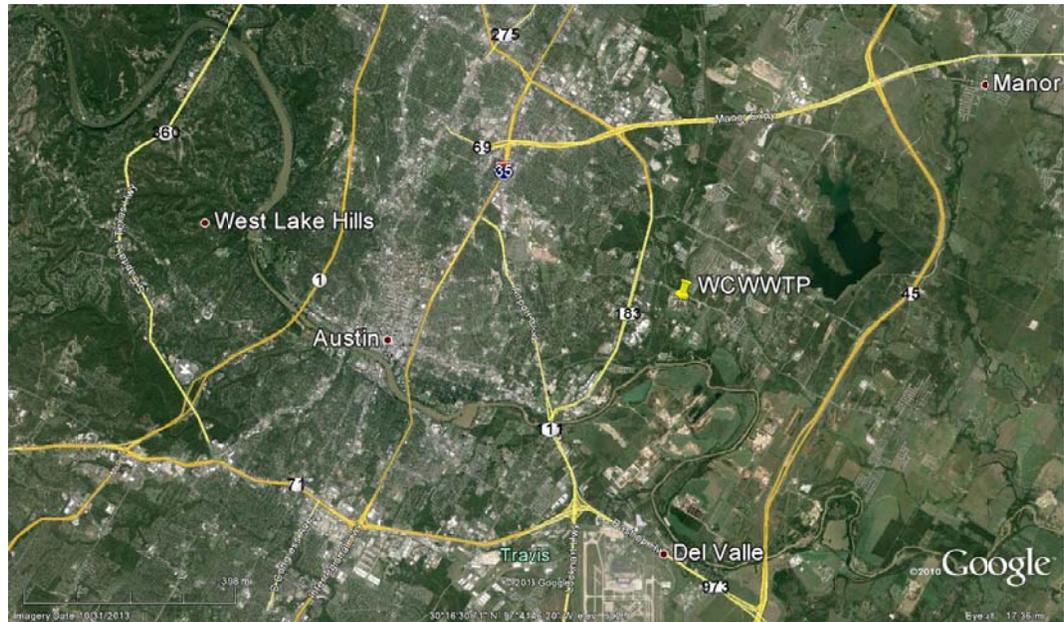
i. Total Number of Acres of Disturbance

3 acres

j. On-site soil characteristics

A geotechnical investigation was performed for the Walnut Creek WWTP Project. Five borings were obtained around Filter Building 1 and 2. All five borings encountered fill material general from zero to 15 feet. The fill material, as described in the Geotechnical Data Report (HVJ, 2013), is comprised of dark brown to brown, stiff to hard, Lean Clay (CL) and Clayey Sand (SC) with sand and gravel in different proportions. Alluvium was encountered below this fill layer from 15 to 50 feet. This alluvium consists primarily of a cohesive stratum over a stratum of granular, non-cohesive soil.

k. Location Map



l. Detailed Maps

Detailed maps showing the following are located in Appendix B.

- i. Drainage patterns;
- ii. Areas where disturbance will occur;
- iii. Location of major structural controls either planned or in place;
- iv. Locations where temporary or permanent stabilization practices are expected to be used;
- v. Locations of construction support activities, including off-site activities, that are authorized under the permittee's NOI, including material, waste, borrow, fill or equipment storage areas;
- vi. Surface waters;
- vii. Location where storm water discharges from the site directly to a surface water body or municipal separate storm sewer system; and
- viii. Vehicle wash areas.

m. Other Activities Supporting Construction

There will be no other construction support activities, such as asphalt and concrete plants, authorized under the permittee's NOI.

n. Name of receiving waters

Walnut Creek bounds the Walnut Creek WWTP to the west and flows to the Colorado River bounding the plant to the south. The plant treated effluent discharges directly

into the Colorado River. There will be no direct discharges to either Walnut Creek or the Colorado River.

o. TPDES General Permit (TXR150000)

A copy of the TPDES General Permit (TXR150000) is included in Appendix C.

p. Notice of Intent (NOI) and Notice of Termination (NOT)

The contractor will be required to complete and submit a notice of intent (NOI) prior to start of construction. The contractor will also be required to revise, as necessary, the notice of intent. Upon completion of construction the contractor will be required to submit a notice of termination (NOT).

2.0 Best Management Practices (BMPs)

a. Erosion and Sedimentation Controls

i. Temporary Controls

The contractor will install temporary controls as indicated in the construction documents. Temporary controls will primarily consist of silt fence, silt socks and inlet protection. Silt fence, silt socks and inlet protection will be per City of Austin specifications and details.

ii. Permanent Controls

Permanent controls are not anticipated during construction activities for the Walnut Creek WWTP Tertiary Filter Rehabilitation Project.

iii. Other Controls

Other erosion and sedimentation controls are not anticipated during construction activities related to this project.

b. Storm Water Management

Storm water controls other than temporary silt fence, silt socks and inlet protection will not be required for this project. There are no areas greater than 10 acres that are contributing to a single discharge point.

c. Other Pollution Prevention Controls

i. Waste Disposal

ii. State/Local Waste Disposal, Sanitary Sewer and Septic System Regulations

iii. Pollution Sources Other Than Construction

d. Approved State or Local Plans

State and local regulatory requirements have been reviewed and there are no other known state or local regulations for sediment and erosion site plans or permits in the project area.

e. Maintenance and Inspections

The contractor will be required to regularly inspect all erosion and sedimentation control measures installed for this project. Inspections should occur every 14 calendar days and after storm events with rainfall in excess of 0.5 inches. An alternative to this scheduled is for the contractor to inspect controls every seven days, regardless if a rain event has occurred or not. The day for these inspections to occur will be documented and followed. The contractor will maintain, replace or add additional controls, as required, to prevent sediment from leaving the area of construction.

f. Special Conditions, Management Practices, and Other Non-Numeric Limitations

There are no other special conditions, management practices or other non-numerical limitations that apply to this project.

g. SWPPP Signatory Requirements and Certification

The contractor will be the primary permittee responsible for the implementation of this SWPPP. The City of Austin will be the co-permittee.



APPENDIX A
CONSTRUCTION SCHEDULE
(TO BE PROVIDED BY CONTRACTOR)



APPENDIX B
DETAILED EROSION/SEDIMENTATION DRAWINGS
(TO BE PROVIDED BY CONTRACTOR)



APPENDIX C
TPDES (TXR150000) PERMIT
(TO BE PROVIDED BY CONTRACTOR)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Documents related to this section will include the construction drawings and general provisions of the Contract, including the General Conditions, Section 00700, Supplemental General Conditions, Section 00810, and other Division 1 requirements.

1.2 SUMMARY

- A. This section describes the preconstruction conference and other Project related meetings which may be held on a routine schedule throughout the duration of the Project.
- B. The CONTRACTOR, or his authorized representative(s), shall attend all Project related meetings as indicated herein. The CONTRACTOR's representatives, as a minimum, shall include his Project Manager and Superintendent. Other CONTRACTOR's representatives may attend Project related meetings; however, there shall be a maximum of four (4) CONTRACTOR's representatives at any one meeting unless the ENGINEER/ARCHITECT approves a larger number.
- C. The CONTRACTOR shall provide all pertinent reports, copies of reports, etc., for each meeting as may be required by this or other sections of the Contract.

1.3 PARTNERING WORKSHOP

- A. To complete this work most beneficially for all parties, the Owner desires to form a Partnering Team among the Owner, Engineer/Architect, Contractor, and Subcontractor(s). This relationship will draw on the strength of all parties to identify and achieve mutual goals. The objectives are effective and efficient contract performance, intended to achieve completion within budget, on schedule, and in accordance with the drawings and specifications.
- B. The Owner will schedule a Partnering Workshop independent of or in conjunction with the Preconstruction Conference, to facilitate the project objectives. The partnering relationship will be multilateral in makeup and participation will be totally voluntary.

1.4 PRECONSTRUCTION CONFERENCE

- A. Attendees

A preconstruction conference shall be held as soon after the award and execution of the Contract as possible and before any Work at the site is started. The conference will be held at a location selected by the Owner's Project Manager. The Owner's Project Manager shall prepare and distribute the meeting agenda, preside over the conference, and may distribute meeting minutes. The conference shall be attended by:

1. CONTRACTOR's Project Manager.
2. CONTRACTOR's Superintendent.
3. Any Subcontractors' and/or Suppliers' representatives whom the CONTRACTOR may desire to invite or whom the ENGINEER/ARCHITECT or OWNER may request to attend.
4. ENGINEER/ARCHITECT's representative.
5. OWNER's Project Manager.
6. OWNER's REPRESENTATIVE

7. OWNER's Sponsor Department Representative.
8. Representative from the City of Austin, Transportation Department if a traffic management plan is required.
9. Representative from the City of Austin, Watershed Protection and Development Review Department, Environmental Inspection Division, if site erosion / sedimentation controls are required.
10. Representative from the City of Austin, Transportation Department if utility coordination has occurred through the Austin Utility Location and Coordination Committee.
11. Representative from the City of Austin, Contract Management Department, Contract Administration Division, to discuss wage.
12. Representative from the City of Austin, Small and Minority Business Resources Department to discuss M/WBE compliance.

B. Meeting topics

The topics to be discussed may include, but will not be limited to, the following items:

1. Introduction of persons attending the meeting.
2. General project description, including length of contract and liquidated damages.
3. Key personnel associated with the construction (may include, but is not limited to the following):
 - CONTRACTOR's Project Manager
 - CONTRACTOR's Superintendent
 - OWNER's Project Manager
 - ENGINEER/ARCHITECT's representative
 - OWNER's Sponsor Department Representative.
 - Representatives of the various utilities.
4. Lines of communication and chains of command.
5. Wage and personnel records and reporting requirements.
6. Subcontractors and suppliers.
7. Submittal review and approval procedure. Submittals may include, but are not limited to the following:
 - Letter stating the name and qualifications of the CONTRACTOR's Superintendent
 - Letter(s) from the Subcontractor(s) listing their salaried specialists
 - If applicable, a letter designating the Registered Professional Land Surveyor
 - If applicable, a letter designating the Safety Representative (for general project safety) and the "Competent Person" for excavation safety
 - Excavation Safety Systems Plan
 - Schedule of Values
 - Schedule for submittals
 - Shop drawings
 - Construction schedule (The schedule shall indicate the phases of work in which subcontractors will be participating. Subcontractors shall be indicated by name.)
 - Payroll reports
 - Substitution of subcontractors
 - Non-use of asbestos materials affidavit

- Appropriate safety training certificates for workers that will initially be on site
 - Documentation for all workers initially on site who are governed by a prevailing wage classification as described in Section 00830.
 - Construction Equipment Emissions Reduction Plan
8. Job and traffic safety.
 9. Permits.
 10. Utility coordination report.
 11. Notification of property owners and other affected by the project
 12. Job meetings.
 13. Use of the site for construction, storage, staging, etc., and interrelationship with other contracts.
 14. Equal opportunity requirements.
 15. Laboratory testing of material requirements.
 16. Inventory of materials stored on site provisions.
 17. Progress estimate and payment procedure.
 18. Posting of signs.
 19. Project safety.
 20. Prompt payment procedure.
 21. Review of contract - addenda, supplementary general conditions, special provisions, special specifications, and other unique project items.
 22. Other

1.5 JOB MEETINGS

A. General

Job meetings shall be held as deemed necessary by the ENGINEER/ARCHITECT or OWNER or as requested by the CONTRACTOR throughout the duration of the Project. The meetings shall be held at a location selected by or approved by the Owner's Representative. The OWNER's REPRESENTATIVE or CONTRACTOR, as agreed to, shall preside over the meeting and issue meeting minutes.

B. Attendees

Job meetings will be attended by the following:

1. CONTRACTOR's Project Manager, when requested to attend.
2. CONTRACTOR's Construction Superintendent.
3. Any subcontractors' and/or suppliers' representatives whom the CONTRACTOR may desire to invite or whom the ENGINEER/ARCHITECT or OWNER requests to attend.
4. OWNER's REPRESENTATIVE
5. ENGINEER/ARCHITECT's representative(s), if needed or required.
6. OWNER's PROJECT MANAGER, if needed or required
7. OWNER's Sponsor Department representative(s), if needed or required.

C. Meeting topics

The topics will include, but not necessarily be limited to, the following subjects:

1. Review of previous meetings' notes and update of pertinent information and Project status.
2. Identification and discussion of new job related construction problems. Such discussion will be toward resolving identified problems.
3. Review work accomplished to date and establish proposed construction activities for the upcoming week(s).
4. Discuss the status of or need for change orders.
5. Check of required bonds and insurance certificates (including Workers' Compensation Insurance verification for CONTRACTOR's, Subcontractor's, and Sub-Subcontractor's employees as stated in Section 00700, General Conditions, 5.2 Workers' Compensation).
6. Status of pay requests.
7. Work in progress.
8. Review and update construction schedule.
9. Review of submittals schedule and status of submittals.
10. Status of SMBR Compliance Plan.
11. Status of Safety Training certificates for all new workers on project.
12. Other.

1.6 OTHER MEETINGS

Other meetings shall be held from time to time as may be requested by the CONTRACTOR, the ENGINEER/ARCHITECT, or the OWNER. The time and place of the meetings shall be as mutually agreed upon. The attendance at the meetings shall be as requested by the party requesting the meeting.

END

Section 01300

SUBMITTALS

1. SHOP DRAWINGS AND ENGINEERING DATA.

1.01. General. Shop Drawings and engineering data (submittals) covering all equipment and all fabricated components and building materials which will become a permanent part of the Work under this Contract shall be submitted to Engineer for review, as required. Submittals shall verify compliance with the Contract Documents, and shall include drawings and descriptive information in sufficient detail to show the kind, size, arrangement, and the operation of component materials and devices; the external connections, anchorages, and supports required; the performance characteristics; and dimensions needed for installation and correlation with other materials and equipment.

Each submittal shall cover items from only one section of the specification unless the item consists of components from several sources. Contractor shall submit a complete initial submittal including all components. When an item consists of components from several sources, Contractor's initial submittal shall be complete including all components.

All submittals, regardless of origin, shall be approved by Contractor and clearly identified with the name and number of this Contract, Contractor's name, and references to applicable specification paragraphs and Contract Drawings. Each copy of all submittals, regardless of origin, shall be stamped or affixed with an approval statement of Contractor. Each submittal shall indicate the intended use of the item in the Work. When catalog pages are submitted, applicable items shall be clearly identified and inapplicable data crossed out. The current revision, issue number, and date shall be indicated on all drawings and other descriptive data.

Contractor shall be solely responsible for the completeness of each submittal. Contractor's stamp or affixed approval statement of a submittal, per Figure 1-01300, is a representation to Owner and Engineer that Contractor accepts sole responsibility for determining and verifying all quantities, dimensions, field construction criteria, materials, catalog numbers, and similar data, and that Contractor has reviewed and coordinated each submittal with the requirements of the Work and the Contract Documents.

All deviations from the Contract Documents shall be identified as deviations on each submittal and shall be tabulated in Contractor's letter of transmittal using Figure 2-01300. Such submittals shall, as pertinent to the deviation, indicate

essential details of all changes proposed by Contractor (including modifications to other facilities that may be a result of the deviation) and all required piping and wiring diagrams.

The Contractor shall submit shop drawings electronically. Submittals made by any method will be returned without review.

For electronic submittals, drawings and the necessary data shall be submitted electronically to Engineer as specified below. Submittal documents shall be in black and white unless color is required for the review of the submittal. All electronic files shall be in Portable Document Format (PDF) as generated by Adobe Acrobat Professional Version 7.0 or higher or Bluebeam Revu. The PDF file(s) shall be fully indexed using the Table of Contents, searchable with thumbnails generated. PDF images must be at a readable resolution. For most documents, they should be scanned or generated at 300 dots per inch (dpi). Optical Character Recognition (OCR) capture must be performed on these images so that text can be searched, selected and copied from the generated PDF file. The PDF documents shall have a bookmark created in the navigation frame for each major entry ("Section" or "Chapter") in the Table of Contents. Thumbnails shall be generated for each page or graphic in the PDF file.

The opening view for each PDF document shall be as follows:

Initial View: Bookmarks and Page

Magnification: Fit In Window

The file shall open to the Contractor's transmittal letter, with bookmarks to the left. The first bookmark shall be linked to the Table of Contents.

PDF document properties shall include the submittal number for the document title and the Contractor's name for the author.

Electronic submittal file sizes shall be limited to 10 MB. When multiple files are required for a submittal the least number of files possible shall be created.

The contractor shall post submittals and retrieve the Engineer's submittal review comments through the Engineer's project website accessible through the Internet. Instruction on procedures for posting and retrieving submittals will be provided after award of the Contract. Contractor shall assign a single submittal coordinator to act as the point of contact for all submittal transmittals.

Facsimiles (fax) will not be acceptable. Engineer will not accept submittals from anyone but Contractor. Submittals shall be consecutively numbered in direct sequence of submittal and without division by subcontracts or trades.

1.02. Engineer's Review of Submittals. Engineer's review of submittals covers only general conformity to the Drawings and Specifications, external connections, and dimensions that affect the layout; it does not indicate thorough review of all dimensions, quantities, and details of the material, equipment, device, or item covered. Engineer's review shall not relieve Contractor of sole responsibility for errors, omissions, or deviations in the drawings and data, nor of Contractor's sole responsibility for compliance with the Contract Documents.

Engineer's submittal review period shall be 14 consecutive calendar days and shall commence on the first calendar day following receipt of the submittal or resubmittal in Engineer's office.

Engineer will provide a review status for each submittal, as follows:

1. "Reviewed": the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents. Final payment depends on that compliance.
2. "Reviewed with Comments": the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents. Final payment depends on that compliance.
3. "Revise and Resubmit" or "Rejected": do not proceed with Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal according to the notations and resubmit without delay. Repeat if necessary to obtain different action mark.
 - a. Do not use, or allow others to use, submittals marked "Revise and Resubmit" or "Rejected" at the Project Site or elsewhere where Work is in progress.
4. Other Action: Where a submittal is for information, or for record purposes, or for special processing, or for other activity, the E/A will return the submittal marked "Record Copy", "Action Not Required" or "No Action Taken."

When the drawings and data are returned with review status "Rejected" or "Revise and Resubmit", the corrections shall be made as instructed by Engineer. ***The corrected drawings and data shall be resubmitted through the project website.*** Resubmittals by facsimile or e-mail will not be accepted. When the drawings and data are returned with review status "Reviewed with Comments",

"Reviewed", "Record Copy", "Action Not Required", or "No Action Taken" no additional copies need be furnished unless specifically requested by Engineer.

1.03. Resubmittal of Drawings and Data. Contractor shall accept full responsibility for the completeness of each resubmittal. Contractor shall verify that all corrected data and additional information previously requested by Engineer are provided on the resubmittal.

When corrected copies are resubmitted, Contractor shall direct specific attention to all revisions in writing and shall list separately any revisions made other than those called for by Engineer on previous submittals. Requirements specified for initial submittals shall also apply to resubmittals. Resubmittals shall bear the number of the first submittal followed by a letter (A, B, etc.) or a unique identification that indicates the initial submittal and correct sequence of each resubmittal.

If more than one resubmittal is required because of failure of Contractor to provide all previously requested corrected data or additional information, Contractor shall reimburse Owner for the charges of Engineer for review of the additional resubmittals. This does not include initial submittal data such as shop tests and field tests that are submitted after initial submittal.

Resubmittals shall be made within 30 days of the date of the letter returning the material to be modified or corrected, unless within 14 days Contractor submits an acceptable request for an extension of the stipulated time period, listing the reasons the resubmittal cannot be completed within that time.

The need for more than one resubmittal, or any other delay in obtaining Engineer's review of submittals, will not entitle Contractor to extension of the Contract Times unless delay of the Work is the direct result of a change in the Work authorized by a Change Order or failure of Engineer to review and return any submittal to Contractor within the specified review period.

1.04. Color Selection. Contractor shall submit samples of colors and finishes for all accepted products before Engineer will coordinate the selection of colors and finishes with Owner. Engineer will prepare a schedule of finishes that includes the colors and finishes selected for both manufactured products and for surfaces to be field painted or finished and will furnish this schedule to Contractor within 60 days after the date of acceptance of the last color or finish sample.

2. OPERATION AND MAINTENANCE DATA AND MANUALS. Adequate operation and maintenance information shall be supplied for all equipment requiring maintenance or other attention.

2.01. Description of Requirements.

A. General

- a. When required by individual Specification Sections or requested by OWNER, submit Operation and Maintenance (O&M) data, which is specifically applicable to the scope of work and is a complete and concise depiction of the provided equipment or product. Data containing extraneous information that has to be sorted through to find applicable instructions will not be accepted. Present information in sufficient detail to clearly explain user O&M requirements at the system, equipment, and component level. Include an index preceding each submittal.
- b. Package Content: For each product, system, or piece of equipment requiring submission of O&M data, submit the package required in the individual Specification Section.
- c. Furnish four (4) draft Operations and Maintenance Manuals explaining the proper installation, operation, and maintenance for each piece of equipment supplied. Draft O&M Manuals will be reviewed by the ENGINEER for compliance with this Section. One (1) draft O&M Manual will be returned to CONTRACTOR noted with a review status as described above.
- d. CONTRACTOR to check and approve O&M Manuals for compliance with requirements of CONTRACT and will so certify by placing CONTRACTOR stamp of approval on each manual prior to submitting to ENGINEER. Any manual submitted without CONTRACTOR's stamp will not be reviewed and will be promptly returned for proper submission. OWNER may assess CONTRACTOR a charge for reviews of same items in excess of three (3) times.
- e. After all O&M Manuals are in acceptable form, CONTRACTOR to furnish to the ENGINEER eight (8) bound hard copies and (8) compact disk-read only memory (CD-ROM) copies, complete sets of Operation and Maintenance Manuals consisting of printed material previously accepted by the ENGINEER for this purpose. Manuals are to be bound in a heavy duty; fabric

reinforced fiberboard, three post, and expandable binder with a maximum binding width of 5". Three-ring vinyl reinforced binders will not be acceptable. Each binder to have an index outlining all information in the set of volumes.

- f. Retainage will not be released until the Operation and Maintenance Manuals have been submitted and approved by the ENGINEER.

B. Format

- a. Provide each manual with a project cover sheet identifying – OWNER, facility name, facility address, manual volume number, number of volumes in the set, and date.
- b. Divide manual/s into sections paralleling the Equipment Class and sequence as the technical specifications; include additional and/or other specific section/s where designated and/or required.
- c. Within each manual, provide a Table of Contents for that manual. If more than one manual is necessary for a Class of Equipment, place a complete Table of Contents for that Class of Equipment within each manual of that Class.
- d. Sections shall be separated with tabbed index sheets to correlate with the Table of Contents of the manual. The front of each section shall have a cover sheet indicating the equipment sections, provide a legible copy of all vendor supplied drawings for each piece of equipment in a separate binder and include as a drawing volume in the O&M Manual/s set.
- e. Furnish each volume with a complete index for all volumes in the set. The index is to indicate the volume and section for each piece of equipment.
- f. All diagrams, drawings, and illustrations shall be of original quality, reproducible by the dry copy method.
- g. Materials in manuals to be suitable for photographic reproduction. Where copies of identical material are included, clarity and quality of copies to be equal to the original, square to the page. Faxed copies will not be accepted.
- h. Manual/Binder to be 8.5 X 11 inches. Drawings shall be 11 X 17 inches folded to 8.5 X 11 inches size for inclusion in 8.5 x11

inches manual. If 8.5 X 11 inches or 11 X 17 inches drawing is not practical, drawing/s may be folded accordingly and inserted into an envelope/tab provided in the appropriate section of the manual binder. Manual/s to be three post, hard cover, and heavy duty binders with information printed on the front cover of each binder as well as the binder backing. Paper shall be white 20-pound minimum. Each binder shall have an index outlining all information in the set of volumes. Binder size not to exceed four inches (4") thickness; as required, utilize multiple volumes of binders, numbered accordingly.

C. Types of Information Required in O&M Data Packages

1. Each manual shall be specific to this CONTRACT. All non-applicable information shall be neatly crossed out, and the applicable information shall be color highlighted or otherwise indicated in a manner to prevent confusion of those utilizing the manuals. The O&M Manual/s shall contain complete information on all mechanical, electrical, instrumentation and control equipment and/or system/s furnished and installed including, but not limited to, the following:

a. Title Page/Cover Sheet

1) Identification of equipment covered by the manual by providing CONTRACT name, CIP NO., and equipment name and position tag number. These names and tag numbers will be provided to the CONTRACTOR by OWNER Representative.

2) Name of responsible principal, address, telephone number, and area of responsibility of:

a) CONTRACTOR

b) Subcontractor or installer

c) Product manufacturer

d) Nearest service center or maintenance CONTRACTOR, as appropriate

e) Nearest source of supply for parts, materials, supplies, or replacement products.

f) Neatly typewritten Title Page/Cover Sheet to include:

- I. Table of Contents
- II. Table of Contents
- III. Bill of Materials
- IV. Equipment Data Sheets
- V. System and Component Description
- VI. Installation Instructions
- VII. Operation Procedures
- VIII. Maintenance Schedule
- IX. Maintenance Summary Form
- X. Troubleshooting Guide
- XI. Spare Parts, Part Identification, and Drawings
- XII. Technical Data
- XIII. Warranties, Bonds, and Service Contracts
- XIV. Appendices
- XV. Video of O&M training

b. Bill of Material

- 1) Detailing the model, rating and size of each specific component used in the installation. Provide a list of equipment used in the installation. List shall detail the tag name used in the installation, model number, ratings, serial numbers of all pumps, motors, electrical apparatus and instrumentation, and enough information to purchase a replacement.

c. Equipment Data Sheets

- 1) An equipment data sheet shall be prepared for each piece of equipment or product covered by the manual.
- 2) Each data sheet shall list the actual equipment nameplate data, process name, and equipment position tag number of

an individual product, date of installation, and all data given on the manufacturer's equipment nameplate for that product. When the product consists of separate component; e.g., pump, coupling, and motor; the data sheet shall have separate sections for each component. When a nameplate is not supplied by the manufacturer, design data for the product shall be given.

- 3) The appropriate model/size/item shall be highlighted on all equipment data sheets submittals.

d. System and Component Description

- 1) A brief description of the system that the product is a part of, to include all other applicable components of the system.
- 2) A brief description of the relationship between the system components and how they function as a unit.
- 3) Process flow diagram with system/equipment highlighted, as applicable.

e. Installation Instructions

- 1) Manufacturer's instructions for installation of the product, to include all applicable specifications, figures, and drawings.

f. Operation Procedures

- 1) Provide written instructions (with control diagrams and other applicable information).
- 2) Applicable start-up and break-in procedures as recommended by the manufacturer, including manual and automatic mod procedures.
- 3) Normal operational procedures.
- 4) System/equipment regulating and control procedures.
- 5) Normal shutdown procedures.
- 6) Seasonal operating instructions.
- 7) Emergency start-up and shut-down procedures.

8) Special operation instructions.

g. Maintenance Schedule

1) All maintenance tasks required or suggested by the manufacturer shall be listed in schedule form to include a description of the task, frequency at which the task is to be done, and other applicable information, such as type of lubricant required, amount of lubricant required or specified test/measurement limits.

h. Maintenance Summary Form

1) All Operations and Maintenance Manuals are to include a Maintenance Summary Form in the format and style of the example form attached to this Section as 01300-F4 Attachment A. Manuals will not be accepted for review without this form. The Maintenance Summary Form is to be a typed document prepared by the equipment manufacturer specifically for the equipment furnished. Title and subheadings are to be as shown on 01300-F4 Attachment A – they are not to be modified. If a subheading is not applicable to the specific piece of equipment, it is to be noted by the words “Not Applicable” after the heading. Additional notes and comments may be added to the end of the form at the manufacturer’s discretion.

2) Format

a) Size: 8½" × 11" (portrait orientation only).

b) Margins: Top - 1", Left - 0.75", Right - 0.75", Bottom - 0.75".

c) Font:

I. Title: Arial - 16 point - bold.

II. Title: Arial - 16 point - bold.

III. Subheadings: Arial - 12 point - bold.

IV. Text: Arial - 12 point - regular.

V. Tables: As shown in 01300-F4 Attachment A - minimum text size Arial - 10 point - regular.

d) Specific Instructions

- I. Equipment Item: Include generic name for equipment along with service and specification reference.
- II. Manufacturer: List manufacturer's physical address for shipping and receiving and mailing address (if different from physical address). Include telephone number and facsimile telephone number.
- III. Equipment Identification Number(s): Provide list of equipment serial numbers cross-referenced to equipment tag numbers in tabular form. When multiple items are provided, list each item separately.
- IV. Total Weight: Note the assembled weight of the equipment.
- V. Nameplate Data: Reproduce the nameplate data exactly as it appears on the equipment. For driven equipment, include the driver nameplate data.
- VI. Manufacturer's Local Representative: Provide the name, address, and phone numbers of the local representative.
- VII. Safety precautions. List personnel hazards and equipment or product safety precautions for all operating conditions.
- VIII. Environmental Conditions: Include a list of environmental conditions (temperature, humidity, and other relevant data) for each product or piece of equipment under which it is best suited to operate.
- IX. Testing Equipment and Special Tool Information: Include information on test equipment required to perform specified tests and on special tools needed for the operation, maintenance, and repair of components.
- X. Maintenance Requirements
 - i. Maintenance Operation: List briefly each maintenance operation required to maintain

warranty in effect and refer to specific information in manufacturer's standard maintenance manual.

- ii. Preventative Maintenance: Preventative Maintenance Plan and Schedule to include manufacturer's schedule for routine preventative maintenance and inspections required to ensure proper and economical operation and to minimize corrective maintenance and repair. Provide manufacturer's projection of preventative maintenance man-hours on an annual basis.
- iii. Recommended calibration instructions and frequency. Instructions shall provide detailed description of the procedure to calibrate the unit.
- iv. Complete disassembly, repair, and reassemble procedures in proper step sequence.
- v. Manufacture specification for alignment, clearances, tolerances, and adjustments where applicable.
- vi. Corrective Maintenance Man-Hours: Include manufacturer's projection of corrective maintenance man-hours. Corrective maintenance that requires participation of the equipment manufacturer to be identified and tabulated separately.
- vii. Applicable labeled section and exploded assembly drawings, and other drawings, figures and sketches as required for clarity of instructions.
- viii. Refer by symbol to lubricant list.

XI. Lubricant List: List each recommended lubricant by symbol, noting generic type of lubricant, and a minimum of two manufacturers. The recommended lubrication products shall include a specific cross reference to an equivalent Exxon (Mobil) product.

XII. CONTRACTOR's Work Order: Identify CONTRACTOR's Work order number.

XIII. Closest Service Technician: Identify the closest, factory trained, and authorized, service technician by name, address and telephone number. Include pager number if applicable.

XIV. Closest Parts and Service Center: List closest factory authorized parts and service center, the physical address for shipping and receiving and mailing address (if different from physical address). Include telephone number and facsimile telephone number.

i. Troubleshooting Guides and Diagnostic Techniques

1) Include step-by-step procedures to promptly isolate the cause of typical malfunctions. Describe clearly why the checkout is performed and what conditions are to be sought. Identify tests or inspections and test equipment required to determine whether parts and equipment may be reused or requires replacement. Emergency shutdown and troubleshooting guide. Provide information to shut down and startup the equipment under emergency conditions.

j. Spare Parts, Part Identification, and Drawings

1) Spare Parts and Supply Lists: Include lists of spare parts and supplies required for maintenance and repair to ensure continued service or operation without unreasonable delays.

2) Parts Identification: Provide identification and coverage for all parts of each component and accessory of the end items subject to replacement. Include special hardware requirements, such as requirement to use high-strength bolts and nuts. Identify parts by make, model, serial number, and source of supply to allow reordering without any further identification required. Provide clear and legible illustrations, drawings, and exploded views to enable easy identification of the items. When illustrations and separate listing to show the index, reference, or key number which will cross-reference the illustrated part to be the listed part. Parts shown in the listings to be grouped by components.

a) Manufacturer's Standard Commercial Practice (MSCP): The parts data may cover more than one model or series of equipment, components, attachments, or accessories,

such as a master parts catalog, in accordance with the manufacturer's standard commercial practice.

- b) Other than Manufacturer's Standard Commercial Practice (MSCP): Final assembly manufacturer may add a cross-reference to implement components' assemblies and parts requirements when implementation in manual form varies significantly from the style, format, and method of manufacturer's standard commercial practice. Use the format in the following example:

Final Assembly Manufacturer's Alphanumeric Sequence	Actual Manufacturer's Name and MSCP	Actual Manufacturer Part No.
100001	John Doe & Co. 00000	2000002

k. Technical Data

- 1) Detailed description of the function of each principal component in the system. Provide a written description of the individual components function in the overall operation outlined above.
 - 2) Test procedures and factory test results if required. Provide a copy of all factory tests performed and a copy of the test results, and performance curves, where applicable.
 - 3) Manufacturer's Certified Pump Curves and field pump tests data and pump curves.
 - 4) Documentation of field functional tests and performance test described in the specifications. Include the test results and calibration reports of all equipment.
- l. Warranties, Warranty/Asset Management Tracking Form, Affidavits of Installation, and Service Contracts

- m. Prime Contractor will remain single point of contact after final completion for all warranty work.
- n. Warranty Information: List and explain the various warranties and include the servicing and technical precautions prescribed by the manufacturers or CONTRACT documents to keep warranties in force.
- o. The CONTRACTOR shall complete and submit the Asset Management Tracking Form included at the end of this Section. Asset management tag numbers along with warranty information shall be tracked using the form provided and submitted with the required affidavits at the completion of the project. The excel file of the form included will be provided to the CONTRACTOR upon request. The electronic file as well as hard copies shall be provided to the OWNER as required by the Specifications.
- p. This Asset Management Tracking Form list must be broken down in sufficient detail and approved by OWNER: Sheet to be provided any time that a warranty period is initiated per CONTRACT DOCUMENTS. Provide data for all tagged equipment and components.
- q. The OWNER will provide asset tags for equipment and the CONTRACTOR will be responsible for affixing the tags on the equipment. The CONTRACTOR shall not affix asset management tags until OWNER has accepted the installation.

1) Supplemental Documentation

a) General

- I. Manufacturer's original printed and maintenance instructions for couplings, belt drives, chain drives, or other means of equipment connection, to include applicable tolerances and specifications.
- II. Manufacturer's original printed operation and maintenance instructions for appurtenances such as solenoid valves, or hydraulic cylinder operators that are a supplied or integral part of the system or product.

III. Calibration data sheet including set points. Include all calibration data sheets, as outlined in Calibration and Testing Section.

b) Submission of Operation and Maintenance Manuals is applicable to but not limited to the following:

2.02. Submittals.

- A. No CD-ROM version of manuals shall be submitted prior to the approved final version of the manuals.
- B. Only one (1) copy of the manual shall be written and submitted on a CD. Multiple copies of the manual submitted on one (1) CD will not be accepted.
- C. Manuals shall be electronically transcribed matching the title, content, details, page number and sequence of the hard copy versions of the manuals.
- D. Each CD or copy of the manual shall contain the latest version of Acrobat Reader software, which will allow the OWNER to access and read CD regardless of user's software. The CONTRACTOR can readily download software from the Internet.
- E. CONTRACTOR shall also provide a CD video (DVD) of all O&M training sessions as part of the O&M submittals.
- F. All drawings, cross-sectional view drawings, wiring diagram drawings, connection detail drawings, physical layout and detail drawings, elevations, etc., shall be developed electronically using AutoCAD® Release 14 software (or latest AutoCAD® Release).
- G. All Bill of Material sheets and/or tables indicating product data, quantities, physical location and reference, catalog number, reference, wiring diagram drawing number reference, cost, and any other field entered in the bill of materials sheet and/or any other spreadsheets and/or any other table and/or listings of references, etc., shall all be electronically developed and submitted in a database format, using the latest version of Microsoft® Access software. This applies to all summary sheets, material listings, etc., to be submitted for this Project. Submittals shall include hard-copies and an electronic version developed in Microsoft® Access. Electronic version shall be submitted on CD-ROM and loaded to project FTP site.

- H. AutoCAD® drawings shall be developed in full adherence to the formats and drawing standards defined in the AWU CADD Manual. A copy of the manual may be obtained from the City of Austin Water & Wastewater Utility. Any drawing that is developed or customized for this project by CONTRACTOR, Subcontractor, Supplier or Manufacturer shall be developed in or converted to AutoCAD format and shall be submitted in both electronic AutoCAD format and hard copy with the O&M Manual and loaded to project FTP site.
- I. All Operation and Maintenance - Maintenance Instruction Manuals, catalog sheets, product and component data sheets, and factory and on-site (field) test reports/data shall be submitted in bound hard-copies and electronic copies. Electronic copies shall be in Adobe Acrobat® (*.pdf files) latest edition and in the source software, where possible, including MS Word, Excel, Access, or AutoCAD. Other documents not prepared using these software packages shall be submitted in Adobe Acrobat® (*.pdf files) latest edition, and shall be submitted on CD-ROM and loaded to project FTP site.
- J. Binders and File Organization of the Electronic Copies: Clearly label each CD-ROM copy of the electronic version of the O&M Manuals. The CD-ROM volume numbers, organization of the electronic files contained within, and labeling formats shall match and be identical to those of the hard-copies. Additionally, in each electronic volume (a CD-ROM), a navigation tool shall be installed that shall guide and navigate the user to open and/or close a desired section and/or subsection (within each volume) simply by clicking on the section/subsection name and number. Install a hard copy of the table of contents in the case (enclosure) of each CD-ROM and CD-ROM copies. All labels and tables of contents shall be neatly typed and labeled. Handwritten labels and/or tables of contents will not be accepted. Organize each set (a complete series) of O&M electronic copies in a CD-ROM hard-plastic case with locking and hinged cover. Install a neatly typed label on each case that shall provide all the information required to be listed on the cover of the O&M Manuals by these Specifications. This cover information should be repeated on the binder spine so that it is easy to read when all binders are stacked on a shelf.
- K. It is the sole responsibility of the CONTRACTOR to ensure that all data submitted by the equipment supplier has been properly translated and incorporated onto the CD-ROM copies of the manuals. All hard and CD-ROM copies of the manuals shall match. All discrepancies and deviations between the hard and CD-ROM copies of the manuals shall be corrected at the cost of the CONTRACTOR, unless OWNER's Representative has provided written approval of the deviation.

L. Submittal Schedule

Manuals shall be submitted according to the following schedule:

- a. The preliminary copies of manuals shall be submitted following approval of the shop drawings, and no later than the on-site delivery for each piece of equipment.
- b. The Final Operations & Maintenance Manuals will be the source documents for all manufacturer training, when specified, and subsequently for all check-out or start-up activities.

2.03. Asset Management Data. Contractor shall coordinate with Engineer and Owner to submit asset management data for the assets installed within this contract which are identified throughout the Special Specifications, including but not limited to Equipment, Piping and Valves, Instruments and Controls, and Electrical. The asset management data shall be submitted on the form 01300-F3.

3. PREPARATION AND SUBMITTAL OF CONSTRUCTION RECORD DRAWINGS

The Owner's Representative and the Contractor's Superintendent will each maintain a set of bluelines noting any changes in ink during construction of the Project. The Owner's Representative and the Contractor's Superintendent will compare bluelines at least weekly (at a time mutually acceptable to both) to exchange information and compare notes to ensure all items installed and changes are documented. The following is a recommended minimum of items to be noted:

1. Notes should be sufficiently clear to allow a draftsman to easily make the necessary changes without the need for field checks and interpretation.
2. One complete set of Construction Record bluelines will be submitted prior to the final pay request and forwarded to the Owner.
3. Type, name and model numbers of all valves (with # of turns to open/close), air release valves, drain and fire hydrants noted at locations installed.

4. Installed locations of all assignments, appurtenances and elevations which differ from those indicated on the Drawings.
5. Pipe manufacturer type and classification noted in sufficient detail to determine location and extent of each type or classification installed.
6. Modification to any standard or special details noted.
7. Location and description of pipe closures.
8. Thrust blocking locations and restrained pipe lengths, approximate dimensions and quantities noted.
9. Location, type and quantity of all addition and deletions.
10. Changes in grade.

The above list is not intended to be complete. Any information noted which could be used for future maintenance, location and construction projects is encouraged to be noted on the blue lines.

4. TECHNICAL SUBMITTALS REQUIRED

Technical submittals required include, but are not limited to, the following list. This list is provided as an aid to the Contractor, but is not intended to be all inclusive. The Contractor shall refer to the Technical Specifications for additional requirements.

<u>Specification</u>	<u>Type of Submittal</u>
104S – Removing Portland Cement Concrete	Removal and deposition plan
110S – Street Excavation	Removal and deposition plan
110S – Excavation	Removal and deposition plan
130S - Borrow	Material Data
206S - Asphalt Stabilized Base	Material Data
201S – Subgrade Preparation	Material Data, Test Results
210S - Flexible Base	Material Data, Test Results
230S – Rolling (Flat Wheel)	Equipment Data
232S – Rolling (Pneumatic Tire)	Equipment Data
236S – Proof Rolling	Equipment Data

<u>Specification</u>	<u>Type of Submittal</u>
340S - Hot Mix Asphaltic Concrete	Material Data, Mix Designs, Test Results
341S – Paving Fabric	Material Data, Test Results
360S - Concrete Pavement	Material Data, Mix Designs, Test Results
401S – Structural Excavation and Backfill	Material Data, Mix Designs, Test Results
402S - Controlled Low Strength Material	Material Data, Mix Designs, Test Results
403S - Concrete for Structures	Material Data, Mix Designs, Test Results
406S – Reinforcing Steel	Product Data
407S – Fibrous Concrete	Product Data
410S – Concrete Structures	Material Data, Mix Designs, Test Results
430S – P.C. Concrete Curb and Gutter	Material Data, Mix Designs
432S – Portland Cement Concrete Sidewalks	Material Data, Mix Designs
433S – P.C. Concrete Driveways	Material Data, Mix Designs
470S – Curb Cuts for Sidewalk Ramps and Driveways	Equipment Data
503S - Frames, Grates, Rings and Covers	Product Data
504S - Adjusting Structures	Material Data
505S – Concrete Encasement and Encasement Pipe	Material Data, Mix Designs
506S - Manholes	Material Data, Product Data
507S - Bulkheads	Material Data
509S - Excavation Safety Systems	Excavation Safety Systems Plan, Calculations
510 - Pipe	Material Data, Product Data
511S - Valves	Product Data
601S – Salvaging and Placing Topsoil	Material Data, Test Results
602S – Sodding for Erosion Control	Material Data
604S – Seeding for Erosion Control	Material Data
605S – Soil Retention Blanket	Material Data
609S – Native Grassland Seeding and Planting for Erosion Control	Material Data
642S – Silt Fence	Material Data, Test Results
802S – Project Signs	Product Data
803S – Barricades, Signs, and Traffic Handling	Product Data, Test Results
824S – Traffic Signs	Product Data, Test Results

<u>Specification</u>	<u>Type of Submittal</u>
02202 – Trenching and Backfilling	Product Data, Protective System Design Certificate, Test Results
02704 – Pipeline Pressure and Leakage Testing	Test Schedule, Procedure, and Results
04200 - Masonry	Product Data, Mix Designs
04210 – Cast Stone	Product Data, Mix Designs, Test Results
05120 – Structural Steel for Blower Building	Product Data, Test Results
05310 – Steel Deck for Blower Building	Product Data
05520 – Handrailing, Guardrailing, and Ladders	Product Data
05550 – Anchorage in Concrete and Masonry	Product Data
05990 – Structural and Miscellaneous Metals	Product Data
06100 – Rough Carpentry	Product Data
06600 – Fiberglass Reinforced Plastic Fabrications	Product Data
07200 – Thermal Insulation	Product Data
07532 – Single-ply Roofing, Fully Adhered	Product Data
07600 – Sheet Metal	Product Data
07700 – Roof Specialties and Accessories	Product Data
07900 – Joint Sealants	Product Data
08110 – Steel Doors and Frames	Product Data
08115 – Fiberglass Reinforced Plastic Doors and Frames	Product Data
08305 – Floor Access Doors and Hatches	Product Data
08331 – Overhead Coiling Aluminum Doors	Product Data, O&M Manual
08700 – Finish Hardware	Product Data, Schedule
08800 – Glass and Glazing	Product Data
09510 – Suspended Acoustical Ceilings	Product Data
09660 – Resilient Flooring	Product Data
09810 – Polyurethane Coating for Steel Pipe	Product Data, Test Results
09880 – Corrosion Protection Lining Systems	Product Data
09920 – Architectural Painting	Product Data, Coating System Data Sheets
09940 – Protective Coatings	Product Data, Coating System Data Sheets
10200 - Louvers	Product Data

<u>Specification</u>	<u>Type of Submittal</u>
10990 – Miscellaneous Specialties	Product Data
11065 – Common Control Panel Requirements for Equipment	Product Data, Test Results, O&M Manual
11110 – Horizontal Split Case Centrifugal Pumps	Product Data, Test Results, O&M Manual
11115 – Horizontal End Suction Centrifugal Pumps	Product Data, Test Results, O&M Manual
11465 – Filter Control System	Product Data, Test Results, O&M Manual
11610 – Multistage Centrifugal Blowers	Product Data, Test Results, O&M Manual
11640 – Vacuum Pump System	Product Data, Test Results, O&M Manual
11727 – Liquid Chemical Feed Systems	Product Data, Test Results, O&M Manual
13122 – Metal Building Systems	Product Data
13125 – Modular Buildings	Product Data
13220 – Filter Underdrains and Media	Product Data, Test Results, O&M Manual
14475 – Boom Lifts	Product Data, O&M Manual
14621 – Monorail Chain Hoists	Product Data, Test Results, O&M Manual
15020 – Miscellaneous Piping and Accessories Installation	Product Data, Cleaning Procedures
15053 – Common Work Results for HVAC Equipment	Product Data
15059 – Hangers and Supports for HVAC Piping and Equipment	Product Data
15060 – Miscellaneous Piping and Pipe Accessories	Product Data
15061 – Ductile Iron Pipe	Product Data, Deflection Measurement Procedure
15062 – Steel Pipe	Product Data
15064 – Stainless Steel Pipe and Alloy Pipe, Tubing, and Accessories	Product Data
15065 – Miscellaneous Steel Pipe, Tubing, and Accessories	Product Data
15067 – Miscellaneous Plastic Pipe, Tubing, and Accessories	Product Data
15070 – Copper Tubing and Accessories	Product Data
15077 – Identification for HVAC Piping and Equipment	Product Data
15083 – HVAC Insulation	Product Data, Test Reports

<u>Specification</u>	<u>Type of Submittal</u>
15091 – Miscellaneous Ball Valve	Product Data
15092 – Industrial Butterfly Valves	Product Data, O&M Manual
15093 – Check Valves	Product Data, O&M Manual
15096 – Globe Valves	Product Data
15099 – Pressure Regulating Valves	Product Data, O&M Manual
15101 – AWWA Butterfly Valves	Product Data, O&M Manual
15102 – Eccentric Plug Valves	Product Data, O&M Manual
15103 – AWWA Ball Valves	Product Data
15112 – Cast-Iron Slide Gates	Product Data
15114 – Open-Channel Metal Slide Gates and Weir Gates	Product Data Product Data
15130 – Pressure Gauges	Product Data
15140 – Pipe Supports	Product Data
15170 – Electrical Motor, Induction, 600 Volts and Below	Product Data, O&M Manual
15175 – Electrical Motor, Induction, 5 KV	Product Data, O&M Manual
15180 – Valve and Gate Actuators	Product Data, O&M Manual
15183 – Refrigerant Piping	Product Data, O&M Manual
15250 – Mechanical Insulation	Product Data
15410 – Common Work Results for Planning	Product Data
15495 – Automatic Straining Equipment	Product Data, O&M Manual
15499 – Seal Water Stations	Product Data
15530 – Air Handlers	Product Data, O&M Manual
15671 – Condensing Units	Product Data, O&M Manual
15815 – Metal Ducts	Product Data
15820 – Duct Accessories	Product Data, O&M Manual
15838 – Power Ventilators	Product Data, O&M Manual
15855 – Diffusers, Registers, and Grillers	Product Data
15885 – Vent Roof Hoods	Product Data
15950 – Testing, Adjusting, and Balancing	Test Results
15990 – Commissioning of HVAC	Product Data
16041 – 5KV Motor Control Centers Modifications	Product Data, Test Results, O&M Manual
16120 – 480 Volt Motor Control Centers	Product Data, Test Results, O&M Manual
16150 – Raceways, Fittings, and Supports	Product Data
16182 – Medium Voltage Cables	Product Data, Test Results, O&M Manual
16200 – Wiring (600 Volts and Below)	Product Data, O&M Manual
16250 – Boxes and Cabinets	Product Data, O&M Manual
16300 – Wiring Devices	Product Data, O&M Manual
16350 - Lighting	Product Data, O&M Manual

<u>Specification</u>	<u>Type of Submittal</u>
16444 – Combination Motor Starters	Product Data, Test Results, O&M Manual
16450 – 600 Volts and Below Dry Type Transformers	Product Data, Test Results, O&M Manual
16500 - Panelboards	Product Data, Test Results, O&M Manual
16524 – 480 Volt Automatic Transfer Switches	Product Data, Test Results, O&M Manual
16550 - Grounding	Product Data, Test Results, O&M Manual
16600 – Disconnect Switches and Enclosures	Product Data, Test Results, O&M Manual
16800 – Electrical Calibration, Testing and Settings	Product Data, Test Results

End of Section

(Contractor's Letterhead)

SUBMITTAL IDENTIFICATION & CONTRACTOR'S APPROVAL STATEMENT

DATE: _____ COPIES _____ DRAWING SHEET NO. _____

Description submittal contents: _____

Location: _____

Manufacturer _____

Subcontractor or Supplier (Optional) _____

REMARKS: _____

CONTRACTOR'S APPROVAL

(_____ Construction Company _____) has reviewed and coordinated the submitted documentation and verifies that the equipment and material meet the requirements of the Work and the Contract Documents. We accept sole responsibility for determining and verifying all quantities, dimensions, field construction criteria, materials, catalog numbers, and similar data contained in the submittal as required by the Contract Documents.

Deviations: None Yes (See attached Figure 2-01300 for written description)

Asbestos Certification: Contractor certifies that submittal conforms to Section 00680 certifying the non-use of asbestos containing materials or any other material defined as containing asbestos, as stipulated.

Yes No (See attached Figure 2-01300 for written description)

Approved By: _____ Date: _____

Note: This approval does not release subcontractor / vendor from the contractual responsibilities.

Black & Veatch
Project No. _____ Phase _____
Contract No. _____
Project Description: _____

OPERATIONS AND MAINTENANCE DATA

ATTACHMENT A

MAINTENANCE SUMMARY FORM

- 1. **EQUIPMENT ITEM:**
- 2. **MANUFACTURER INFORMATION:**
- 3. **EQUIPMENT IDENTIFICATION NUMBER(S):**

<i>Equipment Tag Number</i>	<i>Equipment Serial Number</i>	<i>Driver Number</i>	<i>Serial</i>

- 4. **TOTAL WEIGHT:**
- 5. **NAMEPLATE DATA (HP, Voltage, Speed, etc.):**
- 6. **MANUFACTURER'S LOCAL REPRESENTATIVE:**
- 7. **MAINTENANCE REQUIREMENTS:**

<i>Maintenance Operation</i>	1. Frequency	<i>Lubricant</i> (if applicable)	<i>Comments</i>

- 8. **LUBRICANT LIST:**

- 9. **SPARE PARTS:**

<i>Part Description</i>	<i>Quantity</i>	<i>Part Number</i>

- 10. **CONTRACTOR'S JOB ORDER:**
- 11. **CLOSEST SERVICE TECHNICIAN:**
- 12. **CLOSEST PARTS AND SERVICE CENTER**

Division 1 General Requirements
SUSTAINABLE CONSTRUCTION REQUIREMENTS
 Section 01352

Building Project – LEED® Certification not Being Pursued

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A.** Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section. The requirements may or may not include reference to sustainability/LEED.

Language in each section provides detailed guidelines to inform the Contractor of appropriate performance requirements for specific materials and products. All LEED/sustainable design materials, products, and methods must meet the specifications as written unless otherwise approved by the Architect.

Related Sections include the following Division 1 Sections:

1. Section 01300 Submittals.
2. Section 01505 Construction and Demolition Waste Management
3. Section 01510 Construction Indoor Air Quality Management Plan
4. Section 01650 Facility Startup/Commissioning
5. Section 01820 Demonstration and Training

1.2 SUMMARY

- A.** This Section includes general requirements and procedures for compliance with certain Sustainable Construction requirements.
1. Some Sustainability requirements are dependent on material selections and may not be specifically identified as sustainability requirements. Compliance with requirements may be used as one criterion to evaluate substitution requests.
 2. Additional Sustainability Construction requirements are dependent on Architect's design and other aspects of the Project that are not part of the Work of the Contract.
- B.** Related Sections: The contents of this Section are related to all Sections of these Specifications. Language in each section provides detailed guidelines to inform the Contractor of appropriate performance requirements for specific materials and products. All sustainable design materials, products, and methods must meet the specifications as written unless otherwise approved by the Architect.
- C.** Green Seal: standards for commercial adhesives and cleaning products; www.greenseal.org

1.3 DEFINITIONS

- A. Certificates of Chain-of-Custody:** Certificates signed by manufacturers certifying that wood used to make products was obtained from forests certified by an FSC-accredited certification body to comply with FSC 1.2, "Principles and Criteria." Certificates shall include evidence that mill is certified for chain-of-custody by an FSC-accredited certification body.

- B. LEED™:** Leadership in Energy & Environmental Design. This is not a requirement of this project. Included for information only.
- C. Rapidly Renewable Materials:** Materials made from agricultural products that are typically harvested within a ten-year or shorter cycle. Rapidly renewable materials include products made from bamboo, cotton, flax, jute, straw, sunflower seed hulls, vegetable oils, or wool.
- D. Regionally Manufactured Materials:** Materials that are manufactured within a radius of 500 miles (800 km) from the Project location. Manufacturing refers to the final assembly of components into the building product that is installed at the Project site.
- E. Regionally Extracted, Harvested, or Recovered Materials:** Materials that are extracted, harvested or recovered and manufactured within a radius of 500 miles (800 km) from the Project site.
- F. Recycled Content:** The percentage by weight of constituents that have been recovered or otherwise diverted from the solid waste stream, either during the manufacturing process (pre-consumer), or after consumer use (post-consumer).
1. Spills and scraps from the original manufacturing process that are combined with other constituents after a minimal amount of reprocessing for use in further production of the same product are not recycled materials.
 2. Discarded materials from one manufacturing process that are used as constituents in another manufacturing process are pre-consumer recycled materials.
- G. Albedo:** The ratio of the amount of light reflected from a material to the amount of light shone on the material ranging from 0 (black) to 1 (white). As defined by the USGBC, a high albedo material has a reflectance of at least .3. Albedo is also known as solar reflectance or reflectivity.
- H. Composite agrifiber product:** A board or sheet product that uses an agricultural waste product (such as straw from wheat, oats, rice, and rye) as its fiber source instead of wood.
- I. Embodied energy:** The total energy that a product may be said to "contain," including all energy used in growing, extracting, and manufacturing it and the energy used to transport it to the point of use. The embodied energy of a structure or system includes the embodied energy of its components plus the energy used in construction. In some cases, a material designed for energy conservation may have more energy invested in making it than it can save throughout most of its lifetime.
- J. Formaldehyde:** A colorless, pungent smelling gas used as an adhesive component in many glues (especially those used to make composite and laminated wood products), and as an additive in paint and other products. As a monomer, formaldehyde can cause respiratory problems, cancer, or chemical sensitivity even at very low exposure levels (National Institute for Occupational Safety and Health (NIOSH) exposure threshold level is one part per million (ppm). See urea formaldehyde below.
- K. Heat island effect:** When warmer temperatures (from 6 - 10°F) are experienced in urban landscapes as a result of solar energy retention on constructed surfaces. Principle surfaces that contribute to heat island effect include streets, sidewalks, parking lots, and buildings. Also called "Urban Heat Island Effect."
- L. Impervious surfaces:** Surfaces that promote runoff of precipitation volumes instead of infiltration into the subsurface. The imperviousness or degree of runoff potential can be estimated for different surface materials.

- M. In-factory VOC Flushout:** Curing and ventilating materials after manufacture in order to reduce overall VOC levels before shipping to project site.
- N. Indoor Air Quality:** The character of air inside a building that affects the health and well being of building occupants. According to the U.S. Environmental Protection Agency and National Institute of Occupational Safety and Health, the definition of good indoor air quality includes (1) introduction and distribution of adequate ventilation air; (2) control of airborne contaminants; and (3) maintenance of acceptable temperature and relative humidity. According to ASHRAE Standard 62-1999, acceptable indoor air quality is defined as "air in which there are no known contaminants at harmful concentrations as determined by cognizant authorities and with which a substantial majority (80 percent or more) of the people exposed do not express dissatisfaction."
- O. Indoor Environmental Quality:** The overall character of the indoor environment that affects the health and well being of building occupants and is achieved through prevention, planning, and control of systems.
- P. Life cycle:** The consecutive, interlinked stages of a product, beginning with raw materials acquisition and manufacture and continuing with its fabrication, manufacture, construction, and use, and concluding with any of a variety of recovery, recycling, or waste management options.
- Q. Life cycle cost (LCC) of material:** The costs accruing throughout the service life of a material. Life-cycle costs address the capital costs involved in production, maintenance, and disposal, and can also include other environmentally related capital costs and societal costs.
- R. Local/regional materials:** Materials that are extracted, harvested or recovered, as well as manufactured within a 500-mile radius of the project site. See definition for manufactured below.
- S. Manufactured:** Refers to the final assembly of components into the building product before it is furnished and installed by tradesman (Reference: LEEDTM Materials & Resources)
- T. Material Safety Data Sheets (MSDS):** Occupational Safety and Health Administration (OSHA) required documents supplied by manufacturers of potentially hazardous products. MSDS contain information regarding potentially significant air-borne contaminants, precautions, steps for inspection, health effects, odor description, volatility, expected contaminants from combustion, reactivity, and procedures for cleanup.
- U. MERV:** The Minimum Efficiency Reporting Value for filtration media as determined by the ANSI/ASHRAE 52.2-1999.
- V. Off-gas/out-gas:** A process of evaporation or chemical decomposition through which vapors are released from materials. Carpeting, furniture, building materials, and wet-applied products (like paints, adhesives, and caulks) typically off-gas chemical compounds that are unpleasant to breathe and may be hazardous to installer and occupant health.
- W. Post-consumer recycled content:** The percentage (by weight) of a reclaimed waste material contained in a product. A reclaimed waste material (e.g., newspaper, magazines, beverage containers, etc.) has already served a purpose to a consumer and has been diverted or separated from waste stream for recycling.
- X. Pre-Consumer Recycled Content:** Previously referred to as Post-industrial recycled content. The percentage (by weight) of a waste material obtained from industrial processes which are contained in a product.

- Y. Recycled material:** A material that would otherwise be destined for landfill disposal but is diverted or separated from the waste stream, reintroduced as material feedstock, and processed into marketed end products.
- Z. Reused Material:** Any item that is salvaged or reused without significant reprocessing as in a recycling process.
- AA. Source reduction:** Minimization of waste at the start of a process or activity so that there is a reduced amount of waste to recycle or dispose. Also called precycling.
- BB. Sustainable:** The condition of being able to "meet the needs of present generations without compromising those needs for future generations". Achieving a balance among extraction and renewal and environmental inputs and outputs, so as to cause no overall net environmental burden or deficit. To be truly sustainable, a human community must not decrease biodiversity, must not consume resources faster than they are renewed, must recycle and reuse virtually all materials, and must rely primarily on resources of its own region.
- CC. Urea formaldehyde:** An adhesive resin polymer produced by reacting urea with formaldehyde (a VOC and a potential carcinogen). It is the least stable formaldehyde resin, emitting formaldehyde monomers for months or even years after manufacture. Generally used as a binder for interior composite wood products. See also formaldehyde and VOC.
- DD. Visible Transmittance (Tvis):** The ratio of total transmitted light to total incident light. In other words, the amount of light passing through a glazing surface divided by the amount of light striking the glazing surface. A higher Tvis value indicates that a greater percentage of incident light is passing through the glazing.
- EE. Volatile Organic Compound (VOC):** A large family of chemicals based on carbon and hydrogen structures that vaporize at room temperature. VOCs are one type of indoor air contaminant. They are found in many indoor sources including common building products and materials. Although thousands have been identified in indoor air, only a few are well understood and regulated. VOCs are considered unhealthful to humans - some individual VOCs are known or suspected human carcinogens or irritants to the eyes, nose, and mucous membranes. When released, VOCs can contribute to the formation of ground level ozone and smog. Formaldehyde and toluene are two examples of VOCs commonly found in building materials.
- FF. Xeriscape:** Quality landscaping that conserves water and protects the environment through its employment of seven principles: planning and design; soil analysis; appropriate plant selection; practical turf areas; efficient irrigation; use of mulches; and appropriate maintenance.

1.4 SUSTAINABILITY OBJECTIVES/GOALS

The City of Austin is committed to sustainability and expects the Project to reflect this commitment. The specific Sustainable (Design & Construction) goals for this project include:

1. Protection of the environment.
2. Limiting construction site area and disturbance of natural habitat and protection of trees and vegetation.
3. Reduction of waste created by construction activity.
4. Increasing the use of materials and products with recycled content.
5. Reliable systems.
6. Energy-efficient systems.
7. Chemically safe building materials and pest management.
8. Building materials that use less energy and create less pollution in manufacture, delivery, installation, renovation, and demolition.

9. Occupant health through good indoor air quality, thermal comfort, day-lighting, views, access to the outdoors, and ergonomic work areas.

1.5 SUBMITTALS

- A. **General:** Submit additional Sustainability submittal requirements included in other sections of the Specifications. Provide completed Sustainable Construction Submittal Form with all submittals. Appendix A.
- B. **Sustainability submittals** are in addition to other submittals. If submitted item is identical to that submitted to comply with other requirements, submit duplicate copies as a separate submittal to verify compliance with indicated requirements.
- C. **Project Materials Cost Data:** Provide statement indicating total cost for building materials used for Project. Include statement indicating total cost of mechanical and electrical components. Include breakout of costs for Divisions 2 -10 including overhead transport and taxes and for the following categories of items:
 1. Wood-based construction materials
- D. **Sustainable Construction Action Plans:** Provide preliminary submittals within 14 calendar days of date established for the Notice to Proceed indicating how the following requirements will be met.
 1. Construction & Demolition Waste Management Plan complying with Division 1 Section 01505 "Construction Waste Management."
 2. List of proposed salvaged and refurbished materials.
 - a. Identify each material that will be salvaged or refurbished, its source, and cost.
 3. List of proposed materials with recycled content. Indicate cost, post consumer recycled content, and pre-consumer recycled content for each product having recycled content.
 4. List of proposed regionally manufactured materials and regionally extracted, harvested, or recovered materials.
 - a. Identify each regionally manufactured material, its source, and cost.
 - b. Identify each regionally extracted, harvested or recovered material, its source, and cost.
 5. List of proposed certified wood products.
 - a. Indicate each product containing certified wood, its source, and cost.
 - b. Include statement indicating total cost for wood-based materials used for Project, including non-rented temporary construction.
 6. Construction Indoor Air Quality (IAQ) Management Plan complying with Division 1 Section 01510 "Construction Indoor Air Quality (IAQ) Management."
- E. **Sustainable Construction Progress Reports:** Concurrent with each Application for Payment, submit reports comparing actual construction and purchasing activities with Action Plans for the following:
 1. Waste reduction progress reports complying with Division 1 Section 01505 "Construction & Demolition Waste Management and Disposal."
 2. Salvaged and refurbished materials.

F. Sustainability Documentation Submittals:

1. Product Data for roofing materials indicating Energy Star compliance.
2. Data for interior and exterior lighting fixtures that stop direct beam illumination from leaving the building site.
3. Product Data for plumbing fixtures indicating water consumption.
4. Product Data for new HVAC equipment indicating absence of CFC refrigerants. Phase-out plan to replace CFC refrigerants in HVAC/R systems with CFC free refrigerants within the Construction Period.
5. Product Data for new HVAC equipment indicating absence of HCFC refrigerants, and for clean-agent fire-extinguishing systems indicating absence of HCFC and Halon.
6. Comply with Division 1 Section 01505 "Construction Waste Management."
7. Receipts for salvaged and refurbished materials used for Project, indicating sources and costs for salvaged and refurbished materials.
8. Product Data and certification letter indicating percentages by weight of post-consumer and pre-consumer recycled content for products having recycled content. Include statement indicating costs for each product having recycled content.
9. Product Data indicating location of material manufacturer for regionally manufactured materials.
 - a. Include statement indicating cost and distance from manufacturer to Project for each regionally manufactured material.
 - b. Include statement indicating cost and distance from point of extraction, harvest, or recovery to Project for each raw material used in regionally manufactured materials.
10. Product Data for rapidly renewable materials.
 - a. Include statement indicating costs for each rapidly renewable material.
11. Documentation of wood veneer and lumber product/material qualifications:
 - a. Forest Stewardship Council chain-of-custody certificates documenting source of wood building components and each point of purchase from forest from which the material was harvested to incorporation into the Project.
 - b. Certification of compliance with the Forest Stewardship Council "Principals and Criteria" for forest management.
 - c. Submit vendor/supplier invoices for each certified wood product containing product name, vendor name, product cost, certified wood percentage, Forest Stewardship Council chain-of-custody certification numbers on a line-item basis. An example of this documentation can be found at the end of this section.
12. Construction indoor air quality management plan.
 - a. Product Data for temporary filtration media.
 - b. Product Data for filtration media used during occupancy.
13. Product Data and material safety data sheets (MSDSs) for adhesives and sealants used on the interior of the building indicating all adhesives and sealants used and stating that they meet the noted requirements and indicating maximum volatile

organic compound (VOC). Indicate VOC content in g/L calculated according to 40 CFR 59, Subpart D (EPA method 24). The VOC content of adhesives and sealants used must be less than the current VOC content limits of South Coast Air Quality Management District (SCAQMD) Rule #1168, and all sealants used as fillers must meet or exceed the requirements of the Bay Area Air Quality Management District Regulation 8, Rule 51.

- 14.** Product Data and material safety data sheets (MSDSs) for paints and coatings used on the interior of the building indicating chemical composition and VOC content of each product used. Indicate VOC content in g/L calculated according to 40 CFR 59, Subpart D (EPA method 24). VOC emissions from paints and coatings must not exceed the VOC and chemical component limits of Green Seal's Standard GS-11 requirements. List all interior paints and coatings used in the building that are addressed by Green Seal Standard GS-11, GS 03 or South Coast Air Quality Management District (SCAQMD) Rule 1113 and document that they comply with the current VOC and chemical component limits of the standard. Include a summary table comparing credit requirements and actual VOC levels for each product.
- 15.** Product Data for carpet products indicating VOC content of each product used. Carpet systems must meet or exceed the requirements of the Carpet and Rug Institute's Green Label Indoor Air Quality Test Program. Product data for carpet cushion indicating it meets the requirements of the Carpet and Rug Institute's Green Label Program. Product data for all carpet adhesive indicating VOC content in grams/Liter. Carpet adhesive shall have no more than 50 g/L VOC content.
- 16.** Product Data for composite wood and agrifiber products indicating that products contain no urea-formaldehyde resin.
 - a. Provide cut sheets of bonding agents for each composite wood and agrifiber, bonding agent and laminating adhesive product used in the project and documentation that no added urea formaldehyde resins are used in these products.

1.6 QUALITY ASSURANCE

- A.** Sustainability Coordinator: Engage a responsible person on the construction team who is familiar with Sustainable practices and procedures. The Coordinator may also serve as the Waste Management coordinator.

PART 2 – PRODUCTS

2.1 SALVAGED AND REFURBISHED MATERIALS

- A.** Provide salvaged and refurbished materials for a minimum of 5 percent of building materials by cost. The following materials may be salvaged or refurbished materials:
 - 1.** Refer to Special Specification Section 02050 Demolition and Salvage

2.2 RECYCLED CONTENT OF MATERIALS

- A.** Provide building materials with recycled content for a minimum of 10% of the total value of the project, such that the sum of post-consumer recycled content plus one-half of the post-industrial is 10% of content of the materials in the project.
 - 1.** The cost of post-consumer recycled content of an item shall be determined by dividing the weight of post-consumer recycled content in the item by the total weight of the item and multiplying by the cost of the item.

2. The cost of post consumer recycled content plus one-half of pre-consumer recycled content of an item shall be determined by dividing the weight of post-consumer recycled content plus one-half of pre-consumer recycled content in the item by the total weight of the item and multiplying by the cost of the item.
3. Do not include furniture, plumbing, mechanical and electrical components in the calculation.
4. Recycled content of materials shall be defined according to the Federal Trade Commission's "Guide for the Use of Environmental Marketing Claims," 16 CFR 260.7(e).

2.3 REGIONAL MATERIALS

- A. Provide regionally manufactured materials with a goal of achieving 10 percent of building materials (by cost).

2.4 CERTIFIED WOOD

- A. Provide a minimum of 50 percent by cost of wood-based materials that are produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "Principles and Criteria for Forest Stewardship."
 1. Wood-based materials include but are not limited to the following materials when made from made wood, engineered wood products, or wood-based panel products:
 - a. Rough carpentry.
 - b. Miscellaneous carpentry.
 - c. Heavy timber construction.
 - d. Wood decking.
 - e. Metal-plate-connected wood trusses.
 - f. Structural glued-laminated timber.
 - g. Finish carpentry.
 - h. Architectural woodwork.
 - i. Wood paneling.
 - j. Wood veneer wall covering.
 - k. Wood flooring.
 - l. Wood lockers.
 - m. Wood cabinets.
 - n. Furniture.
 - o. Non-rented temporary construction, including bracing, concrete formwork, pedestrian barriers, and temporary protection.

2.5 LOW-EMITTING MATERIALS

- A. For interior applications use adhesives and sealants that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA method 24):
 1. Wood Glues: 30 g/L.
 2. Metal to Metal Adhesives: 30 g/L.
 3. Adhesives for Porous Materials (Except Wood): 50 g/L.
 4. Sub-floor Adhesives: 50 g/L.
 5. Plastic Foam Adhesives: 50 g/L.
 6. Carpet Adhesives: 50 g/L.
 7. Carpet Pad Adhesives: 50 g/L.
 8. Vinyl Composition Tile (VCT) and Asphalt Tile Adhesives: 50 g/L.
 9. Cove Base Adhesives: 50 g/L.
 10. Gypsum Board and Panel Adhesives: 50 g/L.
 11. Rubber Floor Adhesives: 60 g/L.

12. Ceramic Tile Adhesives: 65 g/L.
13. Multipurpose Construction Adhesives: 70 g/L.
14. Fiberglass Adhesives: 80 g/L.
15. Structural Glazing Adhesives: 100 g/L.
16. Wood Flooring Adhesive: 100 g/L.
17. Contact Adhesive: 80 g/L.
18. Plastic Cement Welding Compounds: 250 g/L.
19. ABS Welding Compounds: 325 g/L.
20. CPVC Welding Compounds: 490 g/L.
21. PVC Welding Compounds: 510 g/L.
22. Adhesive Primer for Plastic: 550 g/L.
23. Sheet applied Rubber Lining Adhesive: 850g/L
24. Aerosol Adhesive, General Purpose Mist spray: 65% by weight
25. Aerosol Adhesive, General Purpose Web spray: 55% by weight
26. Special Purpose Aerosol Adhesive, (All types): 70% by weight
27. Structural Wood Member Adhesive: 140 g/L.
28. Special Purpose Contact Adhesive (contact adhesive that is used to bond melamine covered board, metal, rubber or wood veneer 1/16 inch or less in thickness to any surface): 250g/L.
29. Top and Trim Adhesive: 250g/L.
30. Architectural Sealants: 250g/L.
31. Non-membrane Roof Sealants: 450g/L.
32. Single Ply Roof Membrane Sealants: 450g/L
33. Sealant Primers for Nonporous Substrates: 250 g/L.
34. Sealant Primers for Porous Substrates: 775 g/L.
35. Modified Bituminous Sealant Primers: 500g/L
36. Other Sealant Primers: 750g/L

B. For interior (inside the weatherproofing system) applications use paints and coatings that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA method 24) and the following chemical restrictions:

1. Flat Paints and Coatings: VOC not more than 50 g/L.
2. Non-Flat Paints and Coatings: VOC not more than 150 g/L.
3. Anti-Corrosive/Anti-rust Coatings: VOC not more than 250 g/L.
4. Floor Coatings: VOC not more than 100 g/L.
5. Clear Wood Finishes: Do not exceed the VOC content limits established in the South Coast Air Quality Management District (SCAQMD) Rule 1113 January 1, 2004 including:
 - a. Clear Wood Finishes: Varnishes VOC not more than 350 g/L, Lacquers 550g/L.
 - b. Sanding Sealers: VOC not more than 275 g/L.
 - c. Waterproofing Sealers: VOC not more than 250 g/L.
 - d. Varnishes and Sanding Sealers: VOC not more than 350 g/L.
 - e. Shellac: clear VOC 730g/L, pigmented 550g/L
 - f. Stains: VOC not more than 250 g/L.
6. Aromatic Compounds: Paints and coatings shall not contain more than 1.0 percent by weight total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).
7. 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.

- C. Composite wood and agrifiber products used on the interior of the building (defined as inside of the weatherproofing system) shall contain no added urea-formaldehyde resins. Laminating adhesives and bonding agents used to fabricate on-site and shop-applied composite wood and agrifiber assemblies bonding agent shall contain no added urea formaldehyde resin.

PART 3 – EXECUTION

3.1 SITE DISTURBANCE

- A. Special Site Practices:
 - 1. Construction Activity Pollution Prevention: Comply with City of Austin standard requirements.
 - 2. Protect and restore natural vegetation per division 1 Sections and plans, and restrict construction activity only to defined site limits per plans.

3.2 CONSTRUCTION WASTE MANAGEMENT

- A. Comply with Division 1 Section 01505 "Construction Waste Management."

3.3 CONSTRUCTION INDOOR AIR QUALITY MANAGEMENT

- A. Comply with Division 1 Section 01510 "Construction Indoor Air Quality Management."
- B. Comply with SMACNA IAQ Guideline for Occupied Buildings under Construction.

3.4 COMMISSIONING

- A. Comply with Division 1 Section "Facility Start-up/Commissioning."

3.5 REFRIGERANT AND CLEAN-AGENT FIRE-EXTINGUISHING-AGENT REMOVAL

- A. Remove CFC-based refrigerants from existing HVAC and refrigeration equipment indicated to remain and replace with refrigerants that are not CFC based. Replace or adjust existing equipment to accommodate new refrigerant as described in Division 15 Sections.

- B.** Remove HCFC-based refrigerants from existing HVAC and refrigeration equipment indicated to remain and replace with refrigerants that are not HCFC based. Replace or adjust equipment to accommodate new refrigerant. Remove clean-agent fire-extinguishing agents that contain HCFCs or halons, and replace with agent that does not contain HCFCs or halons.
 - 1.** Refer to Division 15 Sections for additional requirements.
 - 2.** Refer to Division 13 Section "Clean-Agent Extinguishing Systems" for additional requirements.

APPENDIX A: Sustainable Construction Submittal Form (This form can be obtained in electronic format from the City Project Manager)

SECTION 01352.2 APPENDIX A

PROJECT NAME: _____

REQUIRED FOR ALL SUBMITTALS

Sustainable Construction Submittal Information

SUBMITTALS CAN NOT BE APPROVED UNTIL RECEIPT OF THIS COMPLETED FORM.

1. General Information: PROVIDE FOR ALL MATERIALS

This information is used exclusively for sustainability records. All answers must be provided and supporting documentation must accompany this form.

Product/Material: _____ CSI Code(s): _____

Vendor/Sub: _____ Submittal #: _____

Contact name: _____ Phone: _____

Manufacturer: _____ Does the product/material meet the Project Specification requirements?
 YES OR NO ?

Cost Information: PROVIDE FOR ALL MATERIALS IN DIVS. 2 - 10 ONLY
 Each material/product must have a separate spreadsheet.

Provide the "materials cost" for each product/material. The material cost is the cost paid to guarantee the material in final assembly form excluding installation costs (labor & equipment). Overhead, transportation, and taxes shall be included in materials costs.

Material Cost: \$ _____ OR Unit Cost: \$ _____ per _____ unit
 # of units installed: _____

2. Recycled Content - FOR MATERIALS IN DIVS. 2 - 10 ONLY

* If the product is NOT an assembly of various components:

* What percentage of the product is post-consumer? _____ %
 post-consumer = product went through consumer stream as another product

* What is the source of this information? (Submittal, cost sheet, product brochure, letter from mfg., etc) _____

* What percentage of the product is pre-consumer / post-industrial? _____ %
 pre-consumer/post-industrial = product is by-product from a manufacturing process

* What is the source of this information? (Submittal, cost sheet, product brochure, letter from mfg., etc) _____

* If the product is an assembly of various components, fill in the table below.

Assembly: (List Product)	Weight (lbs)	Recycled Content (%)	% By Weight	Recycled Content Source	Company Providing Components
Components					

3. Regional Materials - FOR MATERIALS IN DIVS. 2 - 10 ONLY

* Was the product extracted, recovered, harvested, and manufactured within 500 miles of the project site? _____

* Provide the name and street address of the manufacturing facility. _____

* What is the distance of the manufacturing facility from the job site? _____ miles

* Provide the name and street address of the extraction or harvesting site or facility. _____

SECTION 01352.2 APPENDIX A

PROJECT NAME: _____ REQUIRED FOR ALL SUBMITTALS
 Sustainable Construction Submittal Information SUBMITTALS CAN NOT BE APPROVED UNTIL RECEIPT OF THIS COMPLETED FORM.

* What is the distance of the extraction or harvesting site from the project site? _____ miles

* Use table below for assemblies that have multiple sources for the same material:

Materials:	Extraction Site location (address):	Distance in miles	Manufacturing location (address):	Distance in miles

4. Low Emitting Materials

FOR PAINTS, COATINGS, STAINS, ADHESIVES, SEALANTS, CAULK, FIRESTOPPING, OR ANYTHING FROM A BUCKET, TUBE OR AEROSOL CAN (Inside the weatherproofing system and applied on-site only)

* Does it meet the VOC requirements listed in the Specifications (shown in grams/Liter)?
 If yes, provide manufacturer's data sheet with VOC content clearly shown. _____ grams/Liter

FOR CARPET OR CARPET TILE AND CARPET CUSHION

* For carpet, does it meet Green Label Plus certification? _____ Yes or No
 If yes, provide manufacturer's data sheet stating Green Label Plus certification has been met.

* For cushion, does it meet Green Label Plus certification? _____ Yes or No
 If yes, provide manufacturer's data sheet stating Green Label Plus certification has been met.

FOR COMPOSITE WOOD AND AGRIFIBER PRODUCTS (particleboard, MDF, plywood, wheatboard, strawboard, panel substrates and door cores) (Inside the weatherproofing system and applied on-site only)

* Does it meet requirement of containing no added urea-formaldehyde resins? _____ Yes or No
 If yes, provide manufacturer's data sheet stating no added urea-formaldehyde resins are contained in material/product.

LAMINATING ADHESIVES USED TO FABRICATE ON-SITE AND SHOP-APPLIED COMPOSITE WOOD AND AGRIFIBER ASSEMBLIES

* Does the adhesive meet the requirement of containing no added urea-formaldehyde resins? _____ Yes or No
 If yes, provide manufacturer's data sheet stating no added urea-formaldehyde resins are contained in adhesive.

5. Rapidly Renewable Material

INCLUDES MATERIALS SUCH AS: BAMBOO, CORK, COTTON, LINOLEUM, WOOL AND WHEAT

What percentage, if any, does the manufacturing process use any rapidly renewable materials _____ %

Wood Product Type	Cost	Percentage of product by weight	Manufacturer/Vendor

6. Certified Wood

INCLUDES WOOD PRODUCTS SUCH AS: FRAMING, FLOORS, DOORS AND FINISHES

What percentage, if any, of the wood based materials are FSC Certified? _____ %

Product Name	Cost	Percentage of product by weight	FSC Chain of Custody Number	Manufacturer/Vendor

END SECTION 01352.2

Division 1 General Requirements
CONSTRUCTION EQUIPMENT EMISSIONS REDUCTION PLAN
Section 01353

1. GENERAL

1.1. RELATED DOCUMENTS

- A. This Section applies to Drawings and all provisions of Contract.

1.2. SUMMARY – CONSTRUCTION EQUIPMENT EMISSIONS PLAN

- A. The OWNER, as part of the Council Resolution No. 20100211-019, has decided to take steps to reduce emissions associated with construction process including Nitrogen Oxides (NO_x), particulate matter and greenhouse gas. Construction activity is a source of large quantities of particulate matter and ozone forming Nitrogen Oxides that adversely affect the health of our community and the natural environment.
- B. The CONTRACTOR shall employ practices and take actions that reduce emissions from NO_x, particulate matter (black soot) and greenhouse gases resulting from activities associated with new construction and demolition Projects.
- C. The CONTRACTOR shall maximize the use of equipment and vehicles with advanced emission controls in support of the City's goals, utilizing equipment that meets defined EPA emissions standards.

1.3. DEFINITIONS

- A. "Construction Equipment" means equipment powered by an internal combustion engine and used for performing or otherwise advancing the Work on the Project, other than motor vehicles intended for use on public highways and registered pursuant to Section 502.002 of the Texas Transportation Code.
- B. The list of applicable Construction Equipment includes, but is not limited to excavators, backhoes, loaders, bulldozers, graders, rock saws, generators, and other similar equipment.
- C. "EPA" means the United States Environmental Protection Agency.
- D. "Low-Use Equipment" means any piece of construction equipment which is used for less than ten (10) hours per week on site for a single construction contract.
- E. "Greenhouse Gases" are emissions that absorb and emit radiation within the atmosphere. Greenhouse Gases can be one or a combination of, these gases: carbon dioxide, methane, nitrous oxide and three groups of fluorinated gases (sulfur hexafluoride, hydro fluorocarbons, and perfluorocarbons)

1.4. REQUIREMENTS – Not Used

1.5. SUBMITTALS

A. CONSTRUCTION EQUIPMENT EMISSIONS REDUCTION PLAN:

1. The CONTRACTOR agrees to prepare a draft Emissions Reduction Plan (referred to as PLAN) prior to start of construction. This PLAN shall include an inventory report

containing identifying data for each piece of equipment to be used on the worksite and shall include the following:

- Vehicle/Equipment: Make & Model Year
 - Vehicle/Equipment: Engine Make & Model Year
 - Vehicle/Equipment: Fuel Type
 - Vehicle/Equipment: Expected gallons or hours used for project duration
- a) The OWNER will provide Emissions Reduction Toolkit to help the CONTRACTOR in preparation of the PLAN and inventory.
2. The CONTRACTOR shall develop a list of strategies to be used in this Project in order to reduce emissions from NO_x, particulate matter and greenhouse gas (CO₂ equivalent). Once prepared, the agreed upon strategies shall be incorporated into the PLAN. The PLAN will then be signed by the CONTRACTOR and made ready for implementation. Implementation progress will be reviewed once a month in regularly scheduled project progress meetings. The PLAN may be modified during construction if changes are made to the Project, but adjustments shall be approved by the OWNER prior to implementation.
3. This PLAN may be used by the Owner's Representative or Inspector to conduct site inspections and/or verify compliance with specification elements.
4. If additional equipment is brought on-site after construction begins, the Contractor shall provide this same inventory information to the Owner's Representative for the new equipment on or before the day it begins work on-site. All additional equipment shall conform to the PLAN.
5. Reports shall be provided for all equipment used on-site.

B. EQUIPMENT EMISSIONS CLOSEOUT DOCUMENTATION:

1. Submit the following prior to final payment:
- a) Record of changes made to the original PLAN and reasons.
 - b) Provide a summary and documentation of strategies used and estimated reductions in fuel & emissions.
 - c) Provide documentation of amount and % of alternative fuel used.

2. PRODUCTS

Not used

3. EXECUTION

3.1. GENERAL

- A. Implement the submitted PLAN. Provide personnel, documentation, equipment, signage, transportation, and other items as required to implement the PLAN during the entire duration of the Contract.

3.2. EQUIPMENT EMISSIONS PLAN IMPLEMENTATION

- A. Plan Coordinator (Could be same as superintendent): Designate an on-site person responsible for instructing workers on the Owner's intent to reduce emissions, overseeing implementation and documenting results of the PLAN for the Project.

- B. Plan Review: Review the PLAN in monthly progress meeting and include comments in the meeting notes.
- C. Instruction: Provide on-site instructions to all subcontractors of emissions reduction methods to be used by all parties for the appropriate activities of the Project.
- D. Discuss Owner's goals and requirements at the following meetings:
 - 1. Pre-bid conference.
 - 2. Pre-construction conference.
 - 3. Progress meetings (monthly).

3.3 EQUIPMENT EMISSIONS REDUCTION TOOLKIT

- A. Equipment Emissions Reduction Toolkit available at:
 - 1. Website: (<http://austintexas.gov/department/capital-improvement-program>)
 - 2. City of Austin Public Works Department, Project Management Division, One Texas Center, Suite 900
 - 3. Construction Job Site Office (after contract award)
- B. Equipment Emissions Reduction Toolkit consists of:
 - 1. A list of Construction Equipment Emissions Reduction Strategies
 - 2. EPA fuel savings calculator by idling reductions
 - 3. Posting of Anti-idling signs
 - 4. Memorandum of Agreement by Local Area Governments
 - 5. Equipment Inventory Form

3.4 A LIST OF EQUIPMENT EMISSIONS REDUCTION STRATEGIES

The following are suggested emissions reduction strategies and references. As per the specification section 01353, 1.5 Submittals, the CONTRACTOR shall develop a list of strategies to be used in this Project at the start of construction.

C-1 Anti-Idling Strategies:

- 1. Implement and enforce anti-idling practices for all equipment and vehicles on and adjacent to the site and associated with the project. City will provide a construction site sign and stickers for vehicles and equipment. (<http://www.engineoff.org/>)
- 2. Limit all idling of project associated vehicles and equipment operations to five (5) minutes unless the idling is applicable to one or more of the following exceptions:
 - a) Idling is being used for emergency response purposes;
 - b) Idling is necessary for component of mechanical operation, maintenance, or diagnostic purposes; or
 - c) Idling is for the health or safety of the equipment operator.
- 3. Provide education to all staff, vendors and subcontractors about emissions hazards and anti-idling practices and encourage use of EPA calculator for fuel savings.

4. To the extent possible, do not stop or idle haulage trucks directly under tree limbs and foliage overhanging the street along the haul route. Further avoid such damage from truck exhaust by means of exhaust diversion devices to redirect or diffuse exhaust from being directed in a concentrated manner to tree limbs and foliage.
5. Avoid vehicle loitering or queuing outside or inside the gates of the work area to minimize degradation of localized air quality.

([http://data.capcog.org/air-quality/engineoff/AntiIdlingBrochure\(2\).pdf](http://data.capcog.org/air-quality/engineoff/AntiIdlingBrochure(2).pdf))

(<http://data.capcog.org/air-quality/engineoff/template-1/HowtoOrderSign.html>)

(<http://data.capcog.org/air-quality/engineoff/smartwaycalculator.xls>)

(<http://austintexas.gov/airquality/>)

C-2 Alternative Fuels:

6. Utilize **alternative fuels** including, Texas LED Compliant B20 (or higher) biodiesel, Compressed Natural Gas (CNG), propane and electric. (Refer to EPA Energy Policy Act for full list).
7. Avoid unnecessary fuel use by providing on-site fuelling for alternate fuels.

(<http://www.tceq.texas.gov/airquality/mobilesource/txled/cleandiesel.html>)

(<http://www.eere.energy.gov/cleancities>)

(<http://lonestarcfa.org>)

C-3 Vehicle/Equipment Improvements:

8. Eliminate use of vehicles in tier 0 and 1 categories per EPA and rent or purchase tier 2 and 3 or (4) compliant vehicles.
9. It is recommended that CONTRACTOR takes advantage of the **Texas Emission Reduction Plan (TERP)** grant incentives to upgrade (replace or repower) vehicles with retrofitted emission reduction technologies.
(<http://www.tceq.texas.gov/airquality/terp/index.html>) or (www.terpgrants.com)
10. Utilize **battery powered and/or solar powered equipment** where available. This strategy can be combined with anti-idling strategies by using this technology for sign boards. (evtransportal.org/dieselengineidlerreduction.pdf)

C-4 Maintenance Program:

11. Establish a preventative **maintenance program** addressing issues including but not limited to, fuel use, air emissions, tire pressure, smoke from exhaust and noise.
12. Make all efforts to **prevent oil/fuel spillage** on to site surfaces.

C-5 Resource Management:

13. Utilize equipment companies that are located closest to the construction site.
14. Store equipment on site during construction use or arrange for closest overnight storage including **temporary use of the Right of Way** if possible.

15. To the extent possible, CONTRACTOR shall maximize use of **local and regional materials** to reduce transportation emissions.
16. CONTRACTOR shall maximize **salvage and reuse** of appropriate on-site materials. (<http://www.usgbc.org/ShowFile.aspx?DocumentID=1095>)
17. To the greatest extent possible, stage equipment and vehicles away from, and minimize operation near, sensitive receptors including, but not limited to, operable windows, fresh air intakes, hospitals, schools, licensed day care facilities, residences and areas where people congregate.

END

Division 1 General Requirements
CONSTRUCTION PHOTOGRAPHY & VIDEOS
Section 01380

1. GENERAL

CONTRACTOR shall be responsible for the production of pre-construction, construction progress and post-construction photographs as provided herein. Owner's Representative may also designate additional subjects for photographs in addition to the general guidelines identified below.

2. QUALITY

All photographs must be produced by a competent photographer and shall be digital (6 Mega-Pixel) date-stamped color photography of commercial quality. All CONTRACTOR-generated photographs must be stored in a .jpeg file format. Each photograph shall be submitted in duplicate as two 3x5 prints with no more than 3 photos per page of professional quality enclosed in clear plastic sleeve within 3 tab folders. The prints shall be accompanied by digital date-stamped photographs in CD format or other format acceptable to the City. Each print shall be marked with the name and CIP ID number for the Contract, name of CONTRACTOR, description and location of view and identity of photographer.

Each photograph submittal must include a Photo Log that includes the name and CIP ID number of Contract, name of CONTRACTOR, the name of the photographer and company, photograph number, the date of the photograph and the filename that the camera assigns to the photo (e.g. MVC-001.jpg). In addition, appropriate descriptive information to properly identify the location of view must be entered into the Photo Log that includes a project drawing or sketch to assist in maintaining a concise project record (e.g. location of MH 5 - Line A or Sta. 2+00 - Line A or location of Sedimentation Basin 5, sludge pump A).

3. VIEWS AND QUANTITIES

3.1 PRE-CONSTRUCTION PHOTOGRAPHS

INFRASTRUCTURE FACILITIES (i.e. TREATMENT PLANTS, PUMP STATIONS, LIFT STATIONS, RESERVOIRS, ETC) OR BUILDING PROJECTS

All pre-construction photographs must be submitted prior to the CONTRACTOR or Subcontractor beginning any Work that may cause site disturbance and shall be submitted with the initial CONTRACTOR'S Pay Application. As a minimum, Pre-construction photographs must be taken of the following views:

- The entire construction site area (full width and length)
- All curb lines showing all pre-existing curb damage not called for replacement within the Work and shall include major cracks
- All driveways, steps, and curbs and curb ramps (both sides of street adjoining the project site)
- Fence and gate conditions
- Trees, ornamental shrubs, plantings/planter boxes and evidence of irrigation features

- Views of structures, both inside and adjacent to the project site and easements in areas where CONTRACTOR will be working within five (5) feet of said structure
- Other views as requested by the OWNER

3.2. CONSTRUCTION PROGRESS PHOTOGRAPHS.

INFRASTRUCTURE FACILITIES (i.e. TREATMENT PLANTS, PUMP STATIONS, LIFT STATIONS, RESERVOIRS, ETC) OR BUILDING PROJECTS

Construction Progress photos must be taken at least twice per month.

One set of Construction progress photographs, as the work progresses, of the same views taken during pre-construction photography must be taken during the progress of the Work.

One set of the progress photos must be taken to depict the work accomplished during the month that includes:

- Work not yet covered up
- When MEP or building inspections are scheduled
- The beginning of installation of major items of equipment
- After installation of major items of equipment
- Other significant construction activities.

Both sets of photos shall be submitted monthly with the CONTRACTOR'S monthly progress payment application.

3.3 POST CONSTRUCTION PHOTOGRAPHS

Post-construction photographs must be taken of the same views taken during pre-construction photography to fully document the completed project. Post-construction photographs must be taken after cleanup and site restoration, and must be submitted with the final payment.

3.4 ADDITIONAL ASSET PHOTOGRAPHS

INFRASTRUCTURE FACILITIES (I.E. TREATMENT PLANTS, PUMP STATIONS, LIFT STATIONS, RESERVOIRS, ETC)

Additional asset photographs shall be taken to show, identify and locate AWU's assets as they are being installed as part of the work. The quantity of asset photos required is determined by the number of asset items added to AWU's Computerized Maintenance Management System (CMMS) data base as part of the construction of this project. A specific complete list of assets to be installed within this contract is identified in the Submittals Section of the Contract (Section 01300).

Each asset photograph shall be submitted in duplicate as two 3x5 prints with no more than 3 photos per page of professional quality enclosed in clear plastic sleeve within 3 ring folders. The prints shall be accompanied by digital date-stamped photographs in CD format or other format acceptable to the City.

Each print of the asset shall be marked with the following information:

- The CIP ID number for the Contract
- Name of CONTRACTOR

- AWU's CMMS asset number
- The date of installation of the asset
- Location of asset (i.e. Sta. number, or State Plane Coordinate number, or other suitable information identifying where the asset was installed)

Each asset photograph must be included in an Asset Management Photo Log that indicates the AWU CMMS asset number, the CIP ID number of Contract, name of CONTRACTOR, the date of the photograph and the filename that the camera assigns to the photo (e.g. MVC-001.jpg).

End

Section 01400

QUALITY CONTROL

1. TESTING SERVICES. Testing services shall be provided in accordance with Paragraph 13.3 of the General Conditions. All tests to determine compliance with the Contract Documents shall be performed by an independent commercial testing firm acceptable to Engineer and/or Authority Having Jurisdiction excluding testing as specified to be conducted directly by Contractor. The testing firm's laboratory shall be staffed with experienced technicians, properly equipped and fully qualified to perform the tests in accordance with the specified standards.

Testing services provided by Owner are for the sole benefit of Owner and/or as required by the governing building code; however, test results shall be available to Contractor. Testing necessary to satisfy Contractor's internal quality control procedures shall be the sole responsibility of Contractor.

1.01. Testing Services Provided by Contractor. Unless otherwise specified, Contractor shall provide all testing services in connection with the following:

Any Work or part thereof specifically to be inspected, tested or approved by an employee or representative of an Authority Having Jurisdiction. Contractor shall assume full responsibility for arranging and obtaining such inspections, tests or approvals. Contractor shall pay all costs associated for these activities and shall provide the required certificates of inspection or approval.

Any inspections, tests or approvals required for Owner or Engineer acceptance of materials or equipment to be incorporated in the Work. This includes any items required for acceptance of materials, concrete mix designs or equipment submitted for approval prior to Contractor's purchase for incorporation in the Work.

Testing, adjusting and balancing of mechanical, electrical and other equipment and systems as specified to be incorporated into the Work. This includes services required by manufacturers of equipment or other products such as concrete repair products, pipe, coatings, linings and roof membranes furnished under the Contract Documents.

Tightness testing of containment structures and pressure or leakage testing of piping as specified.

Any Work (or part thereof) required by the Contract Documents to be approved by Owner, Engineer or other designated individual or entity. Contractor shall assume full responsibility for arranging and obtaining such approvals, pay all costs in connection therewith and submit to Engineer the required certificates of approval.

Excluding those conducted directly by an Authority Having Jurisdiction or expressly specified to be conducted directly by Contractor, inspections and tests shall be performed by independent inspectors, approved agencies or other qualified individuals or entities acceptable to Owner and Engineer.

1.02. Transmittal of Test Reports. Written reports of tests and engineering data furnished by Contractor for Engineer's review of materials and equipment proposed to be used in the Work shall be submitted as specified for Shop Drawings.

2. OFFSITE INSPECTION. Inspection of materials or equipment during the production, manufacturing, or fabricating process, or before shipment, will be performed by Engineer or an independent testing firm or Approved Agency acceptable to Engineer and Authority Having Jurisdiction as specified in the materials and equipment sections.

Except as otherwise specified in other sections, Contractor shall give appropriate written notice to Engineer not less than 10 days before offsite inspection services are required, and shall provide for the producer, manufacturer, or fabricator to furnish safe access and proper facilities and to cooperate with inspecting personnel in the performance of their duties.

The inspection organization will submit a written report to Engineer, with a copy to Contractor, at least once each week or as directed by the Statement of Special Inspections as applicable.

3. MANUFACTURER'S FIELD SERVICES. Manufacturer's field services shall be as specified herein except as specifically specified in the respective equipment sections.

3.01. Services Furnished Under This Contract. An experienced, competent, and authorized representative of the manufacturer of each item of equipment for which field services are indicated in the respective equipment section or in the equipment schedule section shall visit the Site of the Work and inspect, check, adjust if necessary, and approve the equipment installation. In each case, the manufacturer's representative shall be present when the equipment is placed in operation. The manufacturer's representative shall revisit the jobsite as often as

necessary until all trouble is corrected and the equipment installation and operation are satisfactory in the opinion of Engineer.

Each manufacturer's representative shall furnish to Owner, through Engineer, a written report certifying that the equipment has been properly installed and lubricated; is in accurate alignment; is free from any undue stress imposed by connecting piping or anchor bolts; and has been operated under full load conditions and that it operated satisfactorily.

All costs for these services shall be included in the Contract Price.

End of Section

PART 1 - GENERAL

1.1 Related Documents:

Drawings and general provisions of Contract, including General Conditions, Section 00700, and Supplemental General Conditions, Section 00810, and Division 1 requirements.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 Office at the Work Site

During the performance of this Contract, CONTRACTOR shall maintain a suitable office at or near the site of the Work which shall be the headquarters of his superintendent. Any communication given to the superintendent or delivered to CONTRACTOR's office at the site of the Work in his absence shall be deemed to have been delivered to CONTRACTOR.

In addition, CONTRACTOR shall provide a suitable field office with at least 200 square feet of floor space, either adjacent to, or partitioned off from, his office at the site for use by Owner's Representative. The office shall be provided with outside entrance door with a substantial lock, glazed windows suitable for light and ventilation, and adequate heating, air conditioning, and lighting facilities. CONTRACTOR shall pay all electricity and heating bills and shall provide telephone services with a telephone as specified hereinafter. The office shall be furnished with a desk, two four-drawer filing cabinets, a table, two chairs, a plan rack, and a locker for storage of surveying instruments. The doors on the locker shall be equipped for padlocking. The general arrangement of the office and facilities provided shall be acceptable to Owner's Representative.

3.2 Water for Construction

All water required for and in connection with the Work to be performed shall be furnished by and at the expense of the CONTRACTOR through meters installed on hydrants, except for water used in the "disinfection of potable water lines" process per Specification 510.3(29). All water used in the disinfection process shall not be metered, but rather shall be measured by calculation. Such water use does not require a meter, but a double-check valve assembly is required when connecting to a fire hydrant or a City main. CONTRACTOR shall submit a written plan for the disinfection process for review and approval by OWNER prior to commencing Work. The written plan shall include the CONTRACTOR's plan for final flushing and discharge of chlorinated water, and shall specify the quantities of potable water that will be required for the procedure and dosage plan proposed by the CONTRACTOR. Water used in the disinfection process shall be supplied by the OWNER through hydrants or connection through a City main at no charge to the CONTRACTOR for the initial disinfection procedure up to the quantities agreed to in the written plan for the disinfection process. Should the initial disinfection procedure fail to produce acceptable bacteriological sample test results, the cost of water at standard rates used for subsequent disinfection procedures shall be the responsibility of the CONTRACTOR with quantities determined through calculations.

For all water required for and in connection with the Work to be performed other than for the disinfection process, water and meters will be available from OWNER at standard rates. All costs for obtaining a water meter shall be the responsibility of the CONTRACTOR. The CONTRACTOR shall contact the Austin Water Utility and arrange to pick up the meter. CONTRACTOR shall install a double-check valve assembly on the fire hydrant between the hydrant and the meter, to prevent backflow in the event of pressure failure. CONTRACTOR

shall supply all necessary tools, hose and pipe, and shall make necessary arrangements for securing and transporting such water and shall take water in such a manner, and at such times, that will not produce a harmful drain or decrease of pressure in the OWNER's water system. It shall be the CONTRACTOR's responsibility to make arrangements with the Austin Water Utility for the metering and reporting of the amount of water used. Water shall not be used in a wasteful manner. Standard hydrant wrenches shall be used for opening and closing of fire hydrants. In no case shall pipe wrenches be used for this purpose. Temporary lines shall be removed when no longer required.

"If applicable, after the installation of the City of Austin's water meter(s) for the Project, the CONTRACTOR has the option to utilize the water available from this service at the CONTRACTOR's expense. An adjustment to the Contract amount will be made by Change Order at the end of the Project for the costs incurred by the City of Austin for the water."

3.3 Telephone Service

CONTRACTOR shall make all necessary arrangements and pay all installation charges for telephone lines in his offices at the site and shall provide all telephone instruments. The telephone service shall be available to the Owner's Representative for toll free calls.

3.4 Sanitary Facilities

CONTRACTOR shall furnish temporary sanitary facilities at the site, as provided herein, for the needs of all construction workers and others performing Work or furnishing services on the Project.

Sanitary facilities shall be of reasonable capacity, properly maintained throughout the construction period, and obscured from public view to the greatest practical extent. If toilets of the chemically treated type are used, at least one toilet shall be furnished for each 20 employees. CONTRACTOR shall enforce the use of such sanitary facilities by all personnel at the site.

3.5 Protection of Public and Private Property

CONTRACTOR shall protect, shore, brace, support and maintain all underground pipes, conduits, drains, and other underground construction uncovered or otherwise affected by the CONTRACTOR's operations. All pavement, surfacing, driveways, curbs, walks, buildings, utility poles, guy wires, fences, and other surface structures affected by construction operations, together with all sod and shrubs in yards, parkways, and medians, shall be restored to their original condition, whether within or outside the easement/right-of-way. All replacements shall be made with new materials.

CONTRACTOR shall be responsible for all damage to streets, roads, curbs, sidewalks, highways, shoulders, ditches, embankments, culverts, bridges, or other public or private property, which may be caused by transporting equipment, materials, or men to or from the Work, whether by him or his Subcontractors. CONTRACTOR shall make satisfactory and acceptable arrangements with the owner of, or the agency having jurisdiction over, the damaged property concerning its repair or replacement or payment of costs incurred in connection with the damage.

All fire hydrants and water control valves shall be kept free from obstruction and available for use at all times.

3.6 Tree and Plant Protection

All trees and other vegetation which must be removed to perform the Work shall be removed and disposed of by the CONTRACTOR; however, no trees or cultured plants shall be unnecessarily removed unless their removal is indicated on the Drawings. All trees and plants not removed shall be protected against injury from construction operations.

No tree shall be removed outside of permanent easement(s), except where authorized by the E/A. Whenever practicable, CONTRACTOR shall tunnel beneath trees in yards and

parking lots when on or near the line of trenching operations. Hand excavations shall be employed as necessary to prevent injury to trees. Care shall be taken with exposed roots, unearthed during construction, so that roots do not dehydrate causing tree damage.

Trees considered by the E/A to have any significant effect on construction operations are indicated on the Drawings and those which are to be preserved are so indicated.

CONTRACTOR shall take extra measures to protect trees designated to be preserved, using methods shown on the Drawings and as specified in Standard Specification Item No. 610S "Preservation of Trees and other Vegetation".

3.7 Security

CONTRACTOR shall be responsible for protection of the site, and all Work, materials, equipment, and existing facilities hereon, against vandals and other unauthorized persons.

No claim shall be made against OWNER by reason of any act of an employee or trespasser, and CONTRACTOR shall make good all damage to the OWNER's property resulting from CONTRACTOR's failure to provide security measures as specified.

Security measures shall be at least equal to those usually provided by OWNER to protect existing facilities during normal operations, and shall also include such additional security fencing, barricades, lighting, and other measures as required to protect the site. When required, the CONTRACTOR shall provide a security plan to the OWNER for review as to appropriateness of the security measures proposed.

3.8 Access Roads

CONTRACTOR shall establish and maintain temporary access roads to various parts of the site as required to complete the Project. Such roads shall be available for the use of all others performing Work or furnishing services in connection with the Project.

3.9 Parking

CONTRACTOR shall provide and maintain suitable parking areas for the use of all construction workers and others performing Work or furnishing services in connection with the Project, as required, to avoid any need for parking personal vehicles where they may interfere with public traffic, the OWNER's operations, or construction activities.

3.10 Dust Control

Dust Control during construction of this Project shall conform to Standard Specifications Item No. 220S, "Sprinkling for Dust Control". No direct payment will be made for dust control. Dust Control shall be considered subsidiary work relating to various Bid items of the Contract.

3.11 Temporary Drainage Provisions

CONTRACTOR shall be responsible for providing for the drainage of stormwater and such water as may be applied or discharged on the site in performance of the Work. CONTRACTOR shall obtain E/A approval for temporary drainage facilities which will handle, carry through, or divert around his Work all drainage flow, including storm flow and flows created by construction activity, to prevent silting of waterways or flooding damage to the property and adjacent property.

3.12 Erosion Control

CONTRACTOR shall prevent erosion of soil on the site and adjacent property resulting from his construction activities. Effective measures shall be initiated prior to the commencement of clearing, grading, excavation, or other operations which will disturb the natural protection.

CONTRACTOR shall use controls found in "Environmental Criteria Manual" or developed from successful techniques elsewhere as approved by E/A. Siltation and/or sedimentation

controls shall include dams, berms, and dikes as recommended in the "Environmental Criteria Manual".

3.13 Pollution Control

CONTRACTOR shall prevent the pollution of drains and watercourses by sanitary wastes, sediment, debris and the substances resulting from construction activities. No sanitary wastes will be permitted to enter any drain or watercourse. No sediment, debris or other substance will be permitted to enter sanitary sewers and reasonable measures shall be taken by CONTRACTOR to prevent such materials from entering any drain or watercourse.

CONTRACTOR shall observe the rules and regulations of the State of Texas and agencies of the U.S. Government prohibiting the pollution of any lake, stream, river, or wetland by the dumping of any refuse, rubbish, dredge material, or debris therein.

CONTRACTOR is specifically cautioned that disposal of materials into any water of the State must conform to the requirements of the Texas Commission on Environmental Quality (TCEQ), and any applicable permit from the U.S. Army Corps of Engineers.

3.14 Noise Control

CONTRACTOR shall comply with the City of Austin's Noise Ordinance. CONTRACTOR shall take reasonable measures to avoid unnecessary noise. Such measures shall be appropriate for the normal ambient sound level in the area during working hours. All construction machinery and vehicles shall be equipped with practical sound-muffling devices, and operated in a manner to cause the least noise consistent with efficient performance of the Work.

3.15 CIP Sign

CONTRACTOR shall erect install and maintain CIP signs as specified. Signs shall be constructed in accordance with City Standard Specification Item No. 802S "Project Signs," as indicated on the Drawings.

3.16 Fences

All existing fences affected by the Work shall be maintained by the CONTRACTOR until completion of the Work. Fences which interfere with construction operations shall not be relocated or dismantled until written permission is obtained from the owner of the fence, and the period the fence may be left relocated or dismantled has been agreed upon. Where fences must be maintained across any construction easement, adequate gates shall be installed. Gates shall be kept closed and locked at all times when not in use.

Upon completion of the Work across any tract of land, CONTRACTOR shall restore all fences to preconstruction, or to a better, condition and to their preconstruction location.

3.17 Mail Boxes

CONTRACTOR shall remove, reset temporarily, and relocate permanently all mail boxes that are within construction site limits conforming to requirements of United States Postal Service. Mailboxes shall not be laid on the ground, but shall be temporarily reset the same day as removed. Payment for removing and resetting of mail boxes will not be paid for directly, but will be considered subsidiary to the various Bid items. Any damage to mail boxes or posts shall be the responsibility of the CONTRACTOR.

3.18 Emergency Facilities

Free access shall be maintained at all times to fire lanes and emergency and utility control facilities such as fire hydrants, fire alarm boxes, police call boxes, and utility valves, manholes, junction boxes, etc. In the event that it is necessary to make one of these facilities temporarily inaccessible, CONTRACTOR shall obtain approval of such action and schedule of Work from the OWNER. CONTRACTOR shall also provide at least 24 hours prior notice to the Fire Department, Police Department, and City Department governing the

affected utility. The same Department(s) shall be promptly notified by the CONTRACTOR when such facilities are placed back in unobstructed service.

3.19 Notification of Owners

Unless otherwise indicated, the OWNER will notify property owners abutting the right-of-way of impending construction. The CONTRACTOR shall exercise diplomacy and tact with individual property owners.

3.20 Maintenance of Traffic

CONTRACTOR shall conduct his Work to interfere as little as possible with public travel, whether vehicular or pedestrian. Whenever it is necessary to cross, obstruct, or close roads, driveways, and walks whether public or private, the CONTRACTOR shall provide and maintain suitable safe bridges, detours or other temporary measures to accommodate public and private travel, and shall provide reasonable notice to owners of private drives before interfering with them. Such maintenance of traffic will not be required when CONTRACTOR has obtained written permission from the owner and the tenant of the private property, or from the authority having jurisdiction over public property involved, to obstruct traffic at the designated point. A copy of the initial written permission shall be provided to the Owner's Representative.

Safety and conveyance of traffic shall be regarded as prime importance. Unless otherwise directed, all portions of streets associated with this Project shall be kept open and provided a dust free, smooth and comfortable ride to traffic. It shall be the responsibility of the CONTRACTOR to ensure that two-way traffic may safely bypass the construction site and that access is provided to abutting private property. In making open cut street crossings, the CONTRACTOR shall not block more than one-half of the street at one time without approval of the OWNER. Whenever possible, CONTRACTOR shall widen the shoulder on the opposite side to facilitate traffic control. Temporary surfacing shall be provided as necessary on shoulders.

Prior to beginning Work, CONTRACTOR shall designate, in writing, a competent person who will be responsible and available on the Project site, or in the immediate area, to ensure compliance with the traffic control plan. CONTRACTOR shall provide documentation to demonstrate the sufficient training in Traffic Control for his competent person. Owner will designate a qualified person to observe implementation and who will have authority to assure compliance with the traffic control plan.

The CONTRACTOR shall perform the necessary cleanup and finishing immediately after all or a portion of the Work is completed. When the Work includes paving operations, the entire site shall be kept clean to facilitate placement of required traffic control devices. Temporary and permanent striping lay-out shall be approved by the Transportation Department prior to placement, when included in the Work.

1. Detours

Where indicated on the traffic control plan CONTRACTOR shall erect and maintain detours around construction activities. Should CONTRACTOR desire to propose a detour, not already included in the traffic control plan, it shall be his responsibility to prepare a revised traffic control plan showing the detour, and obtain approval of the revised traffic control plan from the Transportation Department, prior to implementation of the detour. The Transportation Department has final authority as to the acceptability of any proposed revisions to the traffic control plan. The CONTRACTOR shall bear all costs for revising the traffic control plan and for maintaining the proposed detour.

2. Barricades and lights

CONTRACTOR shall place and maintain in good condition, standard barricades at each end of the Project and at other locations where traffic is rerouted or blocked from using regular traffic lanes. Barricades and warning signs shall be in accordance with the Texas Manual on

Uniform Traffic Control Devices (MUTCD) and City of Austin Standard Specification Item No. 803S, "Barricades, Signs and Traffic Handling". Signs, barricades, and warning devices informing the public of construction features will be placed and maintained by the CONTRACTOR, who shall be solely responsible for their maintenance. The decision to use a particular device at a particular location as indicated in the traffic control plan or as determined by the CONTRACTOR, shall be the sole responsibility of the CONTRACTOR.

All open trenches and other excavations shall have suitable barricades, signs, and lights to provide adequate protection to the public. Obstructions, such as material piles and equipment shall be provided with similar warning signs and lights.

All barricades and obstructions shall be illuminated with warning lights from sunset to sunrise. Material storage and conduct of the Work on, or along side, public streets and highways shall cause a minimum obstruction and inconvenience of the traveling public.

3.21 Required Job Site Postings and Notices

CONTRACTOR shall post the following postings and notices in English and Spanish at one or more conspicuous locations on the job site. In the case of Projects with multiple sites, the notices and postings must be displayed at each site. In the case of Projects that do not have a job shack or other temporary facility on the site, CONTRACTOR shall post all notices on a temporary bulletin board. Other special conditions are noted below.

Required for all Projects	
<i>Poster</i>	Available at:
Baseline Schedule for Project identifying when all subcontractors will be used	N/A (as required under Section 00700, paragraph 2.4.2.1.)
Wage Rates as required under Section 00830.	Section 00830BC and/or Section 008300HH
City of Austin Wage Contact posters	Provided at Pre-Construction meeting (English and Spanish)
City of Austin Equal Employment Opportunity posters	http://austintexas.gov/department/wage-compliance (English and Spanish)
Texas Commission on Environmental Quality "Construction Site Notice" form, if applicable, as required or the required TPDES information	http://www.tceq.state.tx.us/assets/public/permitting/waterquality/attachments/stormwater/txr152d2.pdf (Option 1 – as required under Section 00810, 6.7.4.2) N/A (Option 2 – as required under Section 00810, 2.6.7.4.3)
OSHA poster "Job Safety and Health: It's the Law"	http://www.osha.gov/Publications/osa3165.pdf (English) http://www.osha.gov/Publications/osa3167.pdf (Spanish)
City of Austin Rest Break Ordinance Signs	http://austintexas.gov/department/wage-compliance (English and Spanish) As required to be posted in English and Spanish under Ordinance No. 20100729-047
Texas Payday Law Poster	http://www.twc.state.tx.us/ui/lablaw/ll10.pdf (English) http://www.twc.state.tx.us/ui/lablaw/ll10s.pdf (Spanish)
Texas Workers Compensation notice that the employer does or does not carry Workers Compensation insurance	Does <u>not</u> carry Workers Compensation Insurance: http://www.tdi.state.tx.us/forms/dwc/notice5.pdf (English) http://www.tdi.state.tx.us/forms/dwc/notice5s.pdf (Spanish) Does carry Workers Compensation Insurance:

	http://www.tdi.state.tx.us/forms/dwc/notice6.pdf (English) http://www.tdi.state.tx.us/forms/dwc/notice6s.pdf (Spanish)
TWC Employer's Notification of the Ombudsman Program to Employees	http://www.oiec.state.tx.us/documents/Employer_Notice_of_O.pdf (both versions)
DOL – The Uniformed Services Employment and Reemployment Rights Act (USERRA)	http://www.dol.gov/vets/programs/userra/USERRA_Private.pdf
EEOC Equal Employment Act and the Americans with Disabilities Act (ADA)	http://www.dol.gov/ofccp/regs/compliance/posters/pdf/eeopost.pdf (English) http://www.dol.gov/ofccp/regs/compliance/posters/pdf/eeosp.pdf (Spanish)
Fair Labor Standards Act (FLSA) Minimum Wage Poster	http://www.dol.gov/whd/regs/compliance/posters/flsa.htm (English) http://www.dol.gov/whd/regs/compliance/posters/flspan.htm (Spanish)
If applicable: Employee Rights for Workers with Disabilities/Special Minimum Wage Poster – Employment Standards	http://www.dol.gov/whd/regs/compliance/posters/disabc.pdf http://www.dol.gov/whd/regs/compliance/posters/disabspanc3p.pdf
"Your Rights Under the Family and Medical Leave Act (FLMA)"	http://www.dol.gov/whd/regs/compliance/posters/fmlaen.pdf (English) http://www.dol.gov/whd/regs/compliance/posters/fmlasp.pdf (Spanish)
Title VI Rights Poster	http://austintexas.gov/department/wage-compliance
Additional Postings Required for Federally Funded Projects	
"Employee Rights Under the Davis-Bacon Act"	http://www.dol.gov/whd/regs/compliance/posters/fedprojc.pdf (English) http://www.dol.gov/whd/regs/compliance/posters/davispan.pdf (Spanish)
Applies to USDOT/FHWA funded projects: "Notice of False Statements Concerning Highway Projects"	http://www.mdt.mt.gov/publications/docs/forms/dbe/eeo_board/false_statements.pdf (as required in Section 00810A Standard Federal-Aid Assurances)
Applies to USDOT/FHWA funded projects: "Contractors EEO Policy"	N/A (as required in Section 00810A Standard Federal-Aid Assurances)

END

Division 1 General Requirements
CONSTRUCTION AND DEMOLITION WASTE
MANAGEMENT
Section 01505

Non-Building Projects – Water/Wastewater and Street Reconstruction

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

1. Division 01 Section 01200 "Project Meetings"
2. Division 01 Section 01500 "Temporary Facilities"
3. Division 01 Section 1901 thru 1938 "Hazardous Materials"
4. Division 02 Section 02050 "Demolition and Salvage"
5. Division 01 Section 01352 "Sustainable Construction Requirements"

1.2 SUMMARY

- A.** The Owner has established that the Project shall minimize the creation of construction and demolition waste on the Project site and shall recycle and/or salvage non-hazardous construction, demolition, and land clearing debris to divert waste from Landfills. See 1.5 Waste Management Goals.
1. All profits resulting from salvaging and recycling shall go to the Contractor.
 2. Where there is little cost difference between recycling/salvaging and land-filling of items, the Contractor is directed to recycle/salvage.
- B.** Hazardous materials are an exception to this Section. Comply with applicable requirements of Local, State and Federal regulations.
- C.** This Section includes administrative and procedural requirements for recycling, salvaging and disposing of non-hazardous demolition and construction waste

1.3 REFERENCES

- A.** The standards listed below form a part of this Section to extent referenced. Standards are referred to in the text by basic reference only.
1. Sustainable Building Sourcebook – Austin Energy Green Building: www.austinenergy.com/Energy%20Efficiency/Programs/Green%20Building/Sourcebook/constructionWasteManagement.htm
 2. Resource Exchange Network for Eliminating Waste (RENEW), TCEQ (MC-112), Biannual catalog lists materials available and wanted; serves Texas and surrounding states; lists are posted on the Internet: <http://www.tceq.state.tx.us/assistance/P2Recycle/renew/renew.html>
 3. Recycle Texas Online, A service of the Texas Commission on Environmental Quality. Contains information on about 1000 businesses and local governments handling materials from Texas. Organizations' information is self-reported and listings are free of charge. www.tceq.state.tx.us/assistance/P2Recycle/rtol/rtol.html

1.4 DEFINITIONS

- A.** Chemical Waste: Includes petroleum products, bituminous materials, salts, acids, alkalis, herbicides, pesticides, organic chemicals, and inorganic wastes.
- B.** Clean: Untreated, unpainted, not contaminated with oils, solvents, caulk, or other materials.
- C.** Disposal: Acceptance of solid wastes at legally permitted and operating facility for the purposes of land-filling.
- D.** Diversion: Avoidance of demolition and construction waste sent for disposal to landfill or incineration. Diversion does not include using materials for landfill, alternate daily cover on landfills, or materials used as fuel in waste-to-energy processes.
- E.** Hazardous Waste: Byproducts of society that can pose a substantial or potential hazard to human health or the environment when improperly managed, and possessing at least 1 of 4 of the following characteristics, or appearing on a special Environmental Protection Agency (EPA) list.
 - 1.** Ignitability.
 - 2.** Corrosivity.
 - 3.** Reactivity.
 - 4.** Toxicity.
- F.** Landfill: Authorized land waste disposal site that is located to minimize waste pollution from runoff and leaching.
- G.** Recycling: The process of sorting, cleansing, treating, and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- H.** Return: To give back reusable items or unused products to vendors for credit.
- I.** Reuse: A strategy to return materials to active use in the same or a related capacity.
- J.** Salvage: To remove a waste material from the Project site to another site for resale or reuse by others.
- K.** Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become a waste.
- L.** Toxic: Poisonous to living beings either immediately or after a long period of exposure.
- M.** Trash: Any product or material unable to be reused, returned, recycled, or salvaged.
- N.** Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes all materials removed from the Project site to be land-filled, recycled, or salvaged for reuse. Pallets, containers, packaging and packing materials in which construction products are delivered to the Project site are considered waste materials.

1.5 WASTE MANAGEMENT GOALS

- A.** The Owner has established that as much as is economically feasible of the "waste" materials produced as a result of the Work, shall be employed, salvaged, reused, or recycled in order to minimize the impact of construction and demolition waste on landfills and reducing disposal costs.
- B.** Contractor shall employ and encourage practices that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.

- C. Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, State and local, pertaining to legal disposal of all construction waste materials.
- D. Contractor shall recycle and divert materials for secondary uses whenever economically feasible.
- E. Acceptable methods of diversion include:
 - Recycling, reuse and salvage
 - Donation to nonprofit organizations
 - Removal from jobsite by staff or subcontractors for use (not disposal)
 - Return to supplier
 - Sale to organizations or individuals
- F. The Contractor shall develop a Construction and Demolition Waste Management Plan of non-hazardous construction and demolition waste. The plan shall identify the materials to be diverted from disposal and define the materials to be separated on-site or off-site. Calculations can be done by weight or volume, but must be consistent throughout.

1.6 SUBMITTALS

- A. **Waste Management Plan:** A Project-specific plan for the collection, transportation, and disposal of the waste generated at the construction site, shall be submitted for approval within 14 calendar days after notice to proceed, or prior to any waste removal, whichever occurs first. The approved Plan shall be distributed to all subcontractors and the owner and will not relieve the Contractor's responsibility for compliance with applicable environmental regulations.

An example template is included as "Appendix A" to this section.

- 1. The Waste Management Plan shall include the following:

- a. Identify each type of waste material produced as a result of the Work on the Project Site.
- b. Identify each type and quantity of demolished and waste material intended to be recycled, salvaged or reused.
- c. Identify material separation requirements.
- e. Identify location of temporary on-Site storage for recycled and reused materials.
- f. Identify final destination means of transportation for each recycled and reused material.
- h. Identify the name/phone number of the Contractor's on-site coordinator of the Waste Management Plan.
- i. Indicate permit or license and the location of the municipal solid waste landfills and other disposal area(s) to be used.
- j. List of materials that cannot be recycled or reused.

- B. **Construction Waste Management Closeout Documentation:** Submit the following upon the completion of The Work and prior to final payment:
 - a. A Summary of Solid Waste Disposal and Diversion (refer example template "Appendix B") prepared and maintained through Project duration, demonstrating that 100% of all non-hazardous construction wastes were recycled, salvaged or disposed of properly and includes as a minimum the following information:

1. Dates
 2. Materials Description and Quantity
 3. Indicate whether recycled, salvaged, reused or sent to landfill for disposal.
 4. Destination or Name and location of accepting facility.
- b. Copies of all receipts, manifests, weight tickets, and other documentation that identify all materials recycled, salvaged, land-filled or incinerated.

PART 2 - PRODUCTS

Not used

PART 3 – EXECUTION

3.1 GENERAL

- A.** Implement the Waste Management Plan as approved by the City of Austin Project Manager. Provide handling, containers, storage, signage, transportation, and other items as required to implement Waste Management Plan during the entire duration of the Contract.
- B.** Satisfy the requirements outlined in Subsection 1.5, Waste Management Goals.

3.2 WASTE MANAGEMENT PLAN IMPLEMENTATION

- A.** Plan Coordinator: Designate an on-site party (or parties) responsible for instructing workers, overseeing implementation and documenting results of the Waste Management Plan for the Project.
- B.** Plan Distribution: Provide copies of the Waste Management Plan to the Contractor's superintendent, each Subcontractor, the Owner, and the Engineer.
- C.** Meetings: Include Construction Waste Management in progress meetings to maintain the Plan for achieving the owners waste management goals:
- D.** Carefully order materials to avoid over supply.
- E.** Protect materials from contamination during handling, storage and transport to meet the requirements of the accepting facilities.
- F.** Assign and label a specific area to facilitate separation of materials for potential recycling, salvage, reuse, return and disposal. This area shall be kept neat and clean and clearly marked in order to avoid contamination of materials.

3.3 RECYCLING REQUIREMENTS

- A.** Materials: In general the contractor is encouraged to recycle the following types of construction waste materials generated during the course of this project, that are not salvaged or reused:
- a. Asphalt concrete pavement.
 - b. Concrete materials.
 - c. Metals, including the following.
 - i. Banding straps.
 - ii. Reinforcing steel.
 - iii. Iron.
 - iv. Steel pipe.
 - v. Galvanized steel pipe.

- d. Clean dimensional lumber.
 - e. Wood crates and pallets.
 - f. Glass and glass containers.
 - g. Plastics.
 - h. Electrical wiring.
 - i. Cardboard, paper, and packaging.
 - j. Beverage containers.
- B. Methods:** The following recycling methods, or a combination of, may be used.
1. On-site separation: Each material to be recycled shall be separated at the Project site and delivered to the recycling markets or directly from the Project site.
 - a. If on-site separation method is used, designate a specific area or areas to facilitate separation of materials for potential reuse, salvage, recycling, and return.
 - b. Maintain recycling and waste bin areas neat and clean and clearly marked, both in Spanish and in English, in order to avoid co-mingling of materials.
 - c. Protect materials from contamination.
 2. Off-site separation: Materials to be recycled are delivered unsorted from the Project site to a materials recovery facility or transfer station where recyclable materials are separated from other waste.
 - a. Contractor shall verify that the entity responsible for the off-site separation has a market for all materials required to be recycled from the Project site.
 - b. The same Submittals procedures shall apply.
 - c. Protect materials from contamination.

3.4 REUSE

- A.** Contractor is encouraged to reuse as many demolished and waste materials as possible.
- B.** Reuse of waste materials includes the following:
- a. Salvaging materials scheduled for disposal.
 - b. Off-Site storage of waste materials for future reuse by Contractor on other projects.
 - c. Returning unused and reusable materials, packaging and pallets, to vendor.
 - d. Assemble designated reuse items in a single location safe from damage, for review and approval by the owner's representative.

3.5 SALVAGE

- A.** Salvage Guidelines:
1. The contractor is encouraged to salvage as many items as deemed economically possible, considering reduction of land filling fees and possible use by others.
 2. Assemble potentially salvageable items in one area and donate or sell to the public after review by the City of Austin Project Manager.
 3. All proceeds from the sale of salvaged items shall go to the contractor.

Appendix A. Sample Construction Waste Management Plan

Construction Waste Management Plan

Project:
Contractor:
Date:
Contact:
Phone:
Prepared by:

Diversion Goal: Recycle, reuse and/or salvage as much land-clearing and construction waste as is economically feasible.

I. Coordination and Training

- a. Name of Contractor's representative responsible for CWM implementation & coordination.
- b. Describe method(s) of waste recycling management – on-site and/or off-site.
- c. Describe how Contractor's staff and subcontractors will be informed regarding proper recycling and separation procedures
- d. Describe and/or show on an attached site map where the temporary waste material storage area(s) will be located, and how will contamination of separated waste materials will be prevented?

II. Waste Minimization

- a. What waste minimization techniques will be employed during the construction phase?

- b. Which employees and / or subcontractors will be involved with each technique?

III. Construction Waste Analysis (including site / land-clearing materials, as applicable)

- a. **Diverted Materials:** For each material anticipated to be reused or recycled (diverted from the landfill), provide information to complete the table below. (Note: Whenever possible, attempt to use or donate construction waste materials rather than recycling.)

Material or Item	Storage Method (roll-off, bin, area, on pallet, etc.)	Quantity estimate (no., linear ft., square ft., etc.)	Proposed Recipient

Add rows (or paper pages) as required

- b. **Landfill:** For construction phase trash and materials / items that will not be diverted, complete the following table:

Quantity estimate (weight or volume)	Number and size of roll offs anticipated	Proposed landfill site

Division 1 General Requirements
CONSTRUCTION INDOOR AIR QUALITY
MANAGEMENT PLAN
Section 01510

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes requirements for construction indoor air quality, including:
 - 1. Construction Indoor Air Quality Management Purpose
 - 2. Construction Indoor Air Quality Procedures
 - 3. Construction Indoor Air Quality Submittals
- B. This section includes references to the following external documents:
 - 1. "IAQ Guidelines for Occupied Buildings Under Construction", Sheet Metal and Air Conditioning Contractors' National Association (SMACNA), www.smacna.org, (703) 803-2980.
 - 2. "ANSI/AHSRAE 52.2-1999: Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size", American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), www.ashrae.org, (800) 527-4723.

1.3 PURPOSE

- A. The intent of Construction IAQ (Indoor Air Quality) management is to reduce indoor air quality problems resulting from the construction process in order to help sustain the health and well-being of construction workers and building occupants.

1.4 PROCEDURES

- A. The Contractor shall make every effort to reduce pollutants throughout the construction process in order to achieve compliance with IAQ testing maximum concentrations discussed below. The most significant method for achieving success is through source control, that is:
 - 1. Install products and materials that are low- or zero-VOC, do not contain added formaldehyde, and are free of particulates
 - 2. Request in-factory flush-out from manufacturers wherever possible, to flush out pollutants before products arrive at the site
- B. The Contractor shall adopt an IAQ management plan to protect the HVAC system during construction, control pollutant sources, and interrupt contamination pathways.
- C. Contractor shall sequence the installation of materials to avoid contamination of absorptive materials such as insulation, carpeting, ceiling tile, and gypsum wallboard.

- D. Temporary HVAC units (independent of permanent ductwork and distribution systems) are recommended as the optimal method for achieving the Construction IAQ requirements. This allows permanent HVAC equipment to be fully protected. If contractor is utilizing permanent HVAC equipment for fresh air, heating, or cooling during construction, all air intakes shall be protected from incoming construction debris. Contractor shall use filtration media in all permanent air handling equipment during construction, and replace this media immediately before occupancy.
 - 1. Regularly occupied spaces: Filtration media during and after construction shall have a Minimum Efficiency Reporting Value (MERV) of 13 as determined by ANSI/ASHRAE 52.2-1999. Obtain a diagram from MEP Engineer indicating location of all regularly occupied spaces.
 - 2. All other spaces: Filtration media during and after construction shall have a Minimum Efficiency Reporting Value (MERV) of 8 as determined by ANSI/ASHRAE 52.2-1999.
- E. The Contractor shall employ Green Housekeeping methods wherever practicable.
 - 1. Use non-toxic cleaners per Green Seal: <http://www.greenseal.org/>
 - 2. Conserve energy by shutting off lights and HVAC in all areas except those currently being cleaned.

1.5 SUBMITTALS

- A. With first Application for Payment, the General Contractor is to submit a draft Construction IAQ Management Plan. Architect will return plan with revisions or approval, to be resubmitted as many times as necessary for Architect's final approval. The plan shall be divided into 6 parts, addressing each of the following topics per "IAQ Guidelines for Occupied Buildings Under Construction", Sheet Metal and Air Conditioning Contractors' National Association (SMACNA); <http://www.smacna.org/> ; (703) 803-2980. The plan shall also include requirements described in "Procedures" above.
 - 1. HVAC protection
 - 2. Source Control
 - 3. Pathway Interruption
 - 4. Housekeeping
 - 5. Filter Maintenance Schedule
 - 6. Scheduling
- B. With subsequent Applications for Payment, the General Contractor is to submit documentation of IAQ procedures as follows:
 - 1. Provide cut sheets of filtration media used during construction with MERV values highlighted (per ANSI/ASHRAE 52.2-1999). Fresh clean filters must be installed immediately prior to occupancy.
 - 2. During construction, take photographs of Construction IAQ Management procedures, such as protection of ducts, physical barriers protecting areas under construction, and the sequencing of installation for absorptive materials.

END

PART 1 - GENERAL

1.1 Related Documents:

Drawings and general provisions of Contract, including General Conditions, Section 00700, and Supplemental General Conditions, Section 00810, and Division 1 requirements.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 General

CONTRACTOR shall maintain reasonable local vehicular and pedestrian dust free traffic, including use of driveways, to proceed safely with minimum inconvenience, except during actual construction operations. CONTRACTOR provided flaggers shall assist traffic when a street is operating under a single lane. Two-way traffic shall be maintained at all other times unless otherwise authorized by Owner.

CONTRACTOR shall provide, at the work zone location during temporary traffic control installation, a designated Competent Traffic Control Person to ensure compliance with the traffic control plans and the provisions of the Contract. Training Certificates for the designated Competent Person shall be provided with submittals at the Precon. Training certificates for competent persons shall be good for four (4) years from the date of training. After such time the competent person must show that additional training or re-certification has been completed to maintain competent person status.

CONTRACTOR shall maintain a smooth and safe ride for traffic by placing steel plates with Asphaltic concrete berms, temporary fill or bridging and temporary surfacing with cold or hot-mix Asphaltic concrete paving in accordance with applicable City Standards.

Sidewalks shall not be obstructed, except by special permission of Owner or E/A. Access to private dwelling and to commercial establishments shall be provided at all times.

CONTRACTOR shall plan and execute his operations in a manner that will cause a minimum interference with traffic. The CONTRACTOR shall place and maintain in good condition, standard barricades at each end of the Project and at other locations where traffic is rerouted or blocked from using regular traffic lanes. Barricades and warning signs shall be in accordance with Texas Manual on Uniform Traffic Control Devices (MUTCD) and the City of Austin Transportation Criteria Manual.

Signs, barricades and warning devices informing public of construction features shall be placed and maintained by the CONTRACTOR who shall be solely responsible for their maintenance.

Unless otherwise specified elsewhere in Division 1, neither explosives nor blasting shall be permitted on this Project.

3.2 Traffic Control

3.2.1 It shall be the sole responsibility of the CONTRACTOR to furnish, install, maintain and remove barricades, detour signs, warning signs, lights and all regulatory traffic control devices of the size and type specified, at locations indicated, or as directed or approved by the OWNER in accordance with the Texas Manual on Uniform Traffic Control Devices, (MUTCD), Part VI, Traffic Control for Street and Highway Construction and Maintenance Operations and the City of Austin Transportation

Criteria Manual. Upon phase completion, the Contractor shall immediately revise the temporary traffic devices to reflect the next phase or if the project is complete remove them from the public right of way.

- 3.2.2 Throughout the life of the Contract, all existing roads and Traffic Control devices included in the Work shall be maintained by the CONTRACTOR to a condition, in the opinion of the OWNER, which is equal to or better than that which existed when Work commenced. Maintenance of existing roads and devices shall take priority over all other Work items and shall be subject to a seven-day-a-week, 24-hours-per-day time frame. The CONTRACTOR shall provide a smooth and safe riding surface for all vehicles along the route of this Project. This could include, but not be limited to, small cars, motorcycles, mopeds and bicycles. If the condition of the street surface deteriorates, for any reason, CONTRACTOR shall take necessary steps to insure immediate restoration.
- 3.2.3 During construction of streets, drainage, and utility projects, if conditions of existing street surface require maintenance to upgrade from their state when the Work began, a separate pay item may be included in Bid. Otherwise, maintenance work will not be paid for directly but will be considered subsidiary to various Bid items of this Contract.
- 3.2.4 In the event that CONTRACTOR fails, in opinion of OWNER, to maintain a smooth surface for public comfort, fails to provide ingress and egress to private property, and/or does not provide and maintain proper traffic control devices, OWNER may provide these services and deduct any cost thereof, including overtime and administrative expenses, from all estimates thereafter due the CONTRACTOR. Such action by the OWNER shall not relieve the CONTRACTOR of his liability to protect the public at construction site. Owner may also assess an investigation fee, as established by separate Fee Ordinance, for violations resulting in more than one deficiency report issued to Contractor.
- 3.2.5 A permit must be obtained from Texas Department of Transportation (TxDOT), prior to Work being performed on state highway routes passing through the City.
- 3.2.6 CONTRACTOR shall notify the Owner's Representative, Police Department, Fire Department, EMS, and Right of Way Management Division at least seven Calendar Days in advance of beginning proposed Work, with intention to close or partially block any street or any part thereof, or of any construction affecting free flow of traffic. The CONTRACTOR shall plan and adequately provide barricades and warning devices. The same parties shall be notified when normal traffic flow is restored.
- 3.2.7 Should the CONTRACTOR, in his operations, reduce an existing two-way roadway to less than 20 feet in width, CONTRACTOR shall provide a route through or around the narrowed area as approved by Owner or E/A.
- 3.2.8 The CONTRACTOR's Flaggers shall be required any time it is necessary for the CONTRACTOR's equipment to move into or across an open traffic lane, or at other such times as directed by the Owner's Representative. A flagger shall be utilized to aid exit of hauling equipment from open traffic lanes to the Work area, and entry of hauling equipment from Work area to open traffic lanes. Flaggers shall be dressed and conduct operations in accordance with Texas Manual on Uniform Traffic Control Devices and the Transportation Criteria Manual. Flagging operations shall be the sole responsibility of the CONTRACTOR.
- 3.2.9 The CONTRACTOR and Subcontractors shall confine their activities to the immediate area of the construction site and provide the following:
 - a. Appropriate temporary fences, barricades, and/or Metal Beam Guard Fence if required, for site work involving excavation, utility extensions, remote

construction work or other circumstances involving safety of public or protection of the work in progress.

- b. Warning lights at open trenches, excavations, etc., during hours from dusk to dawn each day. Protection of structures, utilities, sidewalks, pavements, and other facilities immediately adjacent to excavations, from damages caused by settlement, lateral movement, undermining, washout and other hazards.

3.3 Spoil Disposal

CONTRACTOR may make other arrangements for spoil disposal subject to E/A evaluation of the CONTRACTOR-supplied proof that the Owner(s) of the proposed site(s) has a valid fill permit issued by the appropriate governmental agency. Finally, the CONTRACTOR shall submit a haul route plan including a map of the proposed route(s) for the E/A and Owner's approval.

3.4 Restoration

3.4.1 In order to minimize environmental and potential flood impacts, the sum of the amount of trench opened in advance of the completed line and the amount of trench left unfilled at any time shall be restricted to one (1) full block or 300 linear feet, whichever is less.

3.4.2 Restoration shall be an on-going process during construction operations and shall immediately precede completion of construction of each successive section of the line, which shall not exceed 1,200 linear feet without approval of the E/A.

3.5 Street Markers and Traffic Control Signs

It shall be responsibility of the CONTRACTOR to remove, preserve and reset, as required, Street Marker and Traffic Control Signs that are within construction limits to the line and heights as described in Texas Manual on Uniform Traffic Control Devices before any sidewalks or street excavation is begun. Signs shall not be laid on the ground. No payment will be made for this work but shall be considered subsidiary to the various Bid items. Traffic Sign Activity Section of the Transportation Department (457-4850) shall be notified a minimum of five Working Days prior to completion of the Project so that signs may be checked for damage. Any damage to signs or posts shall be paid for by the CONTRACTOR.

3.6 Burning Permit

Open burning within City limits will not be allowed. Trench burning shall require a permit from the Fire Marshal. Burning permits outside City limits shall be obtained from the appropriate authority.

The CONTRACTOR shall secure and pay for all burning permits.

3.7 Driveways

Unless otherwise indicated, the approach grade of existing driveways shall be modified as indicated and as directed by the Owner's Representative. The OWNER will contact property owners whose driveways require grade modification beyond street right-of-way and the OWNER will obtain their concurrence for approach grade modification. Within the right-of-way, all driveways shall be replaced with concrete driveways. Outside the right-of-way, when approach grade modifications are required, flexible base shall be placed by the CONTRACTOR to resurface existing dirt or gravel driveways; asphalt and concrete drives shall be replaced in kind by the CONTRACTOR. Excavation, Flexible Base, Portland Cement Concrete and Asphaltic Concrete, used for driveways as prescribed above shall not be measured for payment but shall be considered subsidiary to various Bid items in the Contract unless payment is included as a separate Contract pay item.

3.8 Removal or Relocation of Fences and Sprinkler Systems

Removal or relocation of privately owned fences and sprinkler systems not specified in Bid, and within public right-of-way is the primary responsibility of the property owner. OWNER will cause property owners to be aware of any known conflicts and encourage them to make desired adjustments in advance of construction. In the event the property owner does not, or will not, make adjustments necessary for construction of improvements to be made under this Contract, CONTRACTOR, after receiving written approval from the OWNER, shall remove those portions that interfere with the Work, as follows:

- 3.8.1 Fences shall be disassembled, by hand, into hand manageable sizes and placed on the private property.
- 3.8.2 For sprinkler systems, the CONTRACTOR, after assuring that electrical and/or mechanical controls are disconnected, shall remove sprinkler heads, valves, controls, and any other miscellaneous items, including distribution pipe, or wire, saw cut from the system. The CONTRACTOR shall present these materials to the property owner. Where piping is cut, the pipe shall be permanently capped or plugged, unless otherwise directed by the OWNER.

Work for removal or relocation of fences and sprinkler systems shall not be paid for directly but shall be subsidiary to the various Bid items.

End

Section 01610

GENERAL EQUIPMENT STIPULATIONS

1. SCOPE. When an equipment specification section in this Contract references this section, the equipment shall conform to the general stipulations set forth in this section, except as otherwise specified in other sections.

2. COORDINATION. Contractor shall coordinate all details of the equipment with other related parts of the Work, including verification that all structures, piping, wiring, and equipment components are compatible. Contractor shall be responsible for all structural and other alterations in the Work required to accommodate equipment differing in dimensions or other characteristics from that contemplated in the Drawings or Specifications.

3. MANUFACTURER'S EXPERIENCE. Unless specifically named in the Specifications, a manufacturer shall have furnished equipment of the type and size specified which has been in successful operation for not less than the past 5 years.

4. WORKMANSHIP AND MATERIALS. Contractor shall guarantee all equipment against faulty or inadequate design, improper assembly or erection, defective workmanship or materials, and leakage, breakage, or other failure. Materials shall be suitable for service conditions.

All equipment shall be designed, fabricated, and assembled in accordance with recognized and acceptable engineering and shop practice. Individual parts shall be manufactured to standard sizes and thicknesses so that repair parts, furnished at any time, can be installed in the field. Like parts of duplicate units shall be interchangeable. Equipment shall not have been in service at any time prior to delivery, except as required by tests.

Except where otherwise specified, structural and miscellaneous fabricated steel used in equipment shall conform to AISC standards. All structural members shall be designed for shock or vibratory loads. Unless otherwise specified, all steel which will be submerged, all or in part, during normal operation of the equipment shall be at least 1/4 inch [6.3 mm] thick. When dissimilar metal components are used, consideration shall be given to prevention of galvanic corrosion.

5. LUBRICATION. Equipment shall be adequately lubricated by systems which require attention no more frequently than weekly during continuous operation. Lubrication systems shall not require attention during startup or shutdown and shall not waste lubricants.

Lubricants of the types recommended by the equipment manufacturer shall be provided in sufficient quantities to fill all lubricant reservoirs and to replace all consumption during testing, startup, and operation prior to acceptance of equipment by Owner. Lubricants for equipment where the lubricants may come in contact with water before or during a potable water treatment process or with potable water, shall be food grade lubricants. This includes lubricants for equipment not normally in contact with water, but where accidental leakage of the lubricants may contaminate the water.

Lubrication facilities shall be convenient and accessible. Oil drains and fill openings shall be easily accessible from the normal operating area or platform. Drains shall allow for convenient collection of waste oil in containers from the normal operating area or platform without removing the unit from its normal installed position.

6. ELEVATION. The elevation of the site shall be as indicated in the Meteorological and Seismic Design Criteria section. All equipment furnished shall be designed to meet stipulated conditions and to operate satisfactorily at the specified elevation.

7. ELECTRIC MOTORS. Unless otherwise specified, motors furnished with equipment shall meet the requirements specified in Common Motor Requirements for Process Equipment section or specified in specific equipment sections.

8. DRIVE UNITS. The nominal input horsepower [kW] rating of each gear or speed reducer shall be at least equal to the nameplate horsepower [kW] of the drive motor. Drive units shall be designed for 24 hour continuous service.

8.01. Gearmotors. The use of gearmotors sharing an integral housing or cutgears into the motor output shaft, or that require removal of lubricant from the gear reducer to change out the motor will not be acceptable.

8.02. Gear Reducers. Each gear reducer shall be a totally enclosed unit with oil or grease lubricated, rolling element, antifriction bearings throughout.

Unless superseded by individual specification requirements each helical, spiral bevel, combination bevel-helical, and worm gear reducers shall have a service factor of at least 1.50 based on the nameplate horsepower [kilowatts] of the drive motor. Cycloidal gear reducers shall have a service factor of at least 2.0 based on the nameplate horsepower [kW] of the drive motor. Shaft-mounted and flange-mounted gear reducers shall be rated AGMA Class III. Helical gear reducers shall have a gear strength rating to catalog rating of 1.5. Each gear

reducer shall be designed and manufactured in compliance with applicable most current AGMA standards, except the L₁₀ bearing life shall be 200, 000 hours.

The thermal horsepower [kW] rating of each unit shall equal or exceed the nameplate horsepower [kW] of the drive motor. During continuous operation, the maximum sump oil temperature shall not rise more than 100°F [38°C] above the ambient air temperature in the vicinity of the unit and shall not exceed 200°F [93°C].

Each grease lubricated bearing shall be installed in a bearing housing designed to facilitate periodic regreasing of the bearing by means of a manually operated grease gun. Each bearing housing shall be designed to evenly distribute new grease, to properly dispose of old grease, and to prevent overgreasing of the bearing. The use of permanently sealed, grease lubricated bearings will not be acceptable in large sized reducers. In small reducers, similar to basin equipment, permanently sealed grease lubricated bearings rated L₁₀ 200,000 hour life may be provided at the manufacturer's option. An internal or external oil pump and appurtenances shall be provided if required to properly lubricate oil lubricated bearings. A dipstick or a sight glass arranged to permit visual inspection of lubricant level shall be provided on each unit.

Gear reducers which require the removal of parts or the periodic disassembly of the unit for cleaning and manual regreasing of bearings will not be acceptable.

Certification shall be furnished by the gear reducer manufacturer indicating that the intended application of each unit has been reviewed in detail by the manufacturer and that the unit provided is fully compatible with the conditions of installation and service.

8.03. Adjustable Speed Drives. Each mechanical adjustable speed drive shall have a service factor of at least 1.75 at maximum speed based on the nameplate horsepower [kilowatts] of the drive motor. A spare belt shall be provided with each adjustable speed drive unit employing a belt for speed change. Unless specifically permitted by the detailed equipment specifications, bracket type mounting will not be acceptable for variable speed drives.

8.04. V-Belt Drives. Each V-belt drive shall include a sliding base or other suitable tension adjustment. V-belt drives shall have a service factor of at least 1.75 at maximum speed based on the nameplate horsepower [kilowatts] of the drive motor.

9. SAFETY GUARDS. All belt or chain drives, fan blades, couplings, and other moving or rotating parts shall be covered on all sides by a safety guard. Safety guards shall be fabricated from 16 USS gage [1.52 mm] thick or thicker

galvanized, aluminum-clad sheet steel, or stainless sheet steel or from 1/2 inch [12.7 mm] mesh galvanized expanded metal, or pultrusion molded UV resistant materials. Each safety guard shall be reinforced or shaped to provide suitable strength to prevent vibration and deflection and shall comply with OSHA. Each guard shall be designed for easy installation and removal. All necessary supports and accessories shall be provided for each guard. Supports and accessories, including bolts, shall be galvanized. All safety guards in outdoor locations shall be designed to prevent the entrance of rain and dripping water.

10. ANCHOR BOLTS. Equipment suppliers shall furnish suitable anchor bolts for each item of equipment. Anchor bolts, together with templates or setting drawings, shall be delivered sufficiently early to permit setting the anchor bolts when the structural concrete is placed. Anchor bolt materials shall comply with the Anchorage in Concrete and Masonry section, and sleeves shall be provided as indicated on the drawings. Unless otherwise specified, anchor bolts shall be at least 3/4 inch [19 mm] in diameter.

Unless otherwise indicated or specified, anchor bolts for items of equipment mounted on baseplates shall be long enough to permit 1-1/2 inches [38 mm] of grout beneath the baseplate and to provide adequate anchorage into structural concrete.

11. EQUIPMENT BASES. Unless otherwise indicated or specified, all equipment shall be installed on concrete bases at least 6 inches [150 mm] high. Cast iron or welded steel baseplates shall be provided for pumps, compressors, and other equipment. Each unit and its drive assembly shall be supported on a single baseplate of neat design. Baseplates shall have pads for anchoring all components, and adequate grout holes. Baseplates for pumps shall have a means for collecting leakage and a threaded drain connection. Baseplates shall be anchored to the concrete base with suitable anchor bolts and the space beneath filled with grout as specified in the Grouting section.

12. SPECIAL TOOLS AND ACCESSORIES. Equipment requiring periodic repair and adjustment shall be furnished complete with all special tools, instruments, and accessories required for proper maintenance. Equipment requiring special devices for lifting or handling shall be furnished complete with those devices.

13. SHOP PAINTING. All iron and steel surfaces of the equipment shall be protected with suitable protective coatings applied in the shop. Surfaces of the equipment that will be inaccessible after assembly shall be protected for the life of the equipment. Coatings shall be suitable for the environment where the equipment is installed. Exposed surfaces shall be finished, thoroughly cleaned, and filled as necessary to provide a smooth, uniform base for painting. Electric

motors, speed reducers, starters, and other self-contained or enclosed components shall be shop primed or finished with an epoxy or polyurethane enamel or universal type primer suitable for top coating in the field with a universal primer and aliphatic polyurethane system.

Surfaces to be coated after installation shall be prepared for painting as recommended by the paint manufacturer for the intended service, and then shop painted with one or more coats of a universal primer.

Machined, polished, and nonferrous surfaces which are not to be painted shall be coated with rust-preventive compound as recommended by the equipment manufacturer.

14. PREPARATION FOR SHIPMENT. Equipment shall be prepared for shipment as specified in the Product Delivery Requirements section.

15. STORAGE. Handling and storage of equipment shall be as specified in the Product Storage and Handling Requirements section.

16. INSTALLATION AND OPERATION. Installation and operation shall be as specified in respective equipment sections and the Startup Requirements section.

17. OBSERVATION OF PERFORMANCE TESTS. Where the Specifications require the presence of Engineer, initial tests shall be observed or witnessed by Engineer. Owner shall be reimbursed by Contractor for all costs of subsequent visits by Engineer to witness or observe incomplete tests, retesting, or subsequent tests.

18. PROGRAMMING SOFTWARE. Programming software shall be provided for any equipment which includes a programmable logic controller (PLC) or other digital controller that is user-programmable. The software shall be suitable for loading and running on a laptop personal computer operating with a Windows-based operating system. A copy of the manufacturer's original operating logic program shall be provided for use in maintaining and troubleshooting the equipment. Where multiple pieces of equipment, from the same or different vendors, use the same programming software, only one copy of the software need be provided.

End of Section

Section 01611

METEOROLOGICAL AND SEISMIC DESIGN CRITERIA

1. SCOPE. Buildings shall be designed in accordance with this section. In the event of conflict with requirements in other sections, the more stringent criteria shall be followed.
2. DESIGN CRITERIA. Buildings including anchorage of such items, shall be designed in accordance with the following criteria.

General Design Data:

Building code and references	IBC 2012, ASCE 7-10 "Minimum Design Loads for Buildings and Other Structures", AISC 360 "Specification for Structural Steel Buildings", AISC 341 "Seismic Provisions for Structural Steel Buildings"
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Wind Design Data:

Basic wind speed, V (mph)	120
Exposure category	C
Risk Category	III
Building enclosure classification	Enclosed

Snow Design Data:

Ground snow load, P_g (psf)	5
Importance factor (snow loads), I	1.10

Seismic Design Data

Mapped MCE short period spectral response acceleration, S_s	0.082
Mapped MCE one second period spectral response acceleration, S_1	0.033

Design short period spectral response acceleration, S_{DS}	0.088
Design one second period spectral response acceleration, S_{D1}	0.053
Risk Category	
Importance factor, I	1.25
Seismic Design Category	A

3. WIND ANCHORAGE. Equipment that is to be located outdoors shall have anchor bolts designed for the effects of wind forces, as determined in accordance with ASCE 7, Chapters 26-31. Design of anchorage shall also be in accordance with ACI 318 Appendix D, ACI 530, and anchor manufacturer's research reports, as applicable. Shop drawings shall include full anchor bolt details, and shall be sealed by a professional engineer licensed in the state of the project. Calculations shall be furnished when requested by Engineer.

4. SEISMIC DESIGN.

4-1. General. Structural systems for buildings and other structures shall provide continuous load paths, with adequate strength and stiffness to transfer all seismic forces from the point of application to the point of final resistance per the requirements of ASCE 7-10, Section 1.4.

4-2. Pre-Engineered Buildings. Pre-engineered buildings shall have sufficient strength and ductility to resist the specified seismic effects defined for buildings and shall meet all of the design, proportioning, detailing, inspection, and quality assurance provisions of the specified building code.

"W" for buildings shall include the total dead load, the total operating weight of permanent equipment and the effective contents of vessels, and applicable portions of other loads, as required by the specified building code.

End of Section

Section 01612

PRODUCT DELIVERY REQUIREMENTS

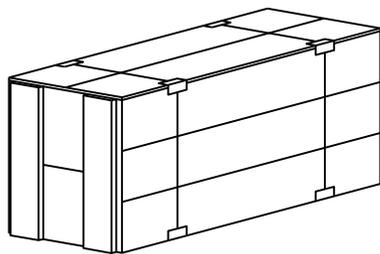
1. SCOPE. This section covers packaging and shipping of materials and equipment.
2. PREPARATION FOR SHIPMENT. All equipment shall be suitably packaged to facilitate handling and to protect against damage during transit and storage. All equipment shall be boxed, crated, or otherwise completely enclosed and protected during shipment, handling, and storage. All equipment shall be protected from exposure to the elements and shall be kept dry at all times.

Painted and coated surfaces shall be protected against impact, abrasion, discoloration, and other damage. Painted and coated surfaces which are damaged prior to acceptance of equipment shall be repainted to the satisfaction of Engineer.

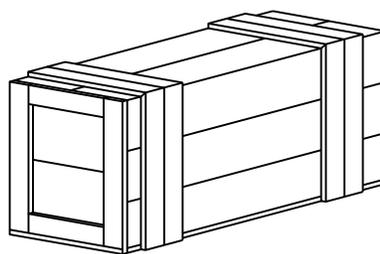
Grease and lubricating oil shall be applied to all bearings and similar items.

3. SHIPPING. Before shipping each item of equipment shall be tagged or marked as identified in the delivery schedule or on the Shop Drawings. Complete packing lists and bills of material shall be included with each shipment. See Figure 1 and Figure 2 of this section for additional packing and marking instructions.

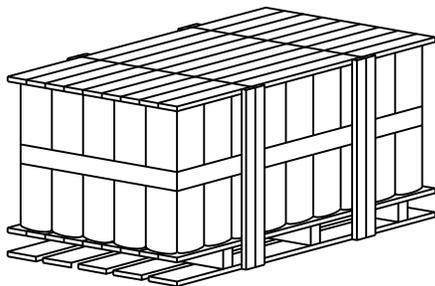
End of Section



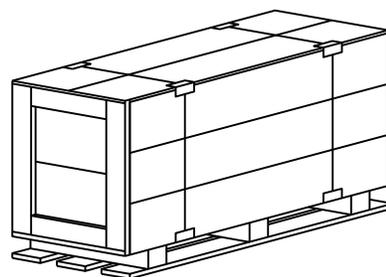
STYLE 4



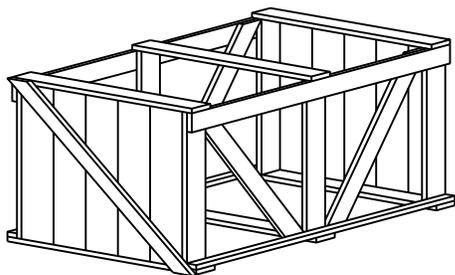
STYLE 2
(BANDED)



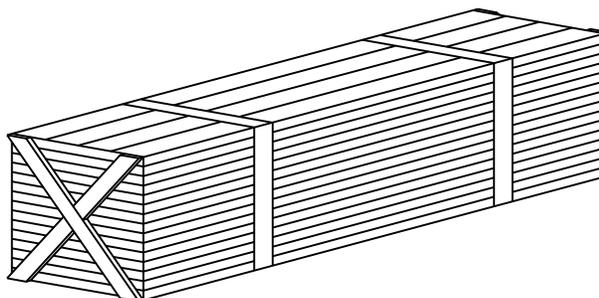
STYLE X



STYLE 2
(PALLETIZED)



OPEN CRATE



STRAPPING 1 3/8" (35 mm)
SPACED ON 24" (600 mm) CTRS.
WITH CORNER PLATES.

EXPORT SHIPMENT PACKING INSTRUCTIONS

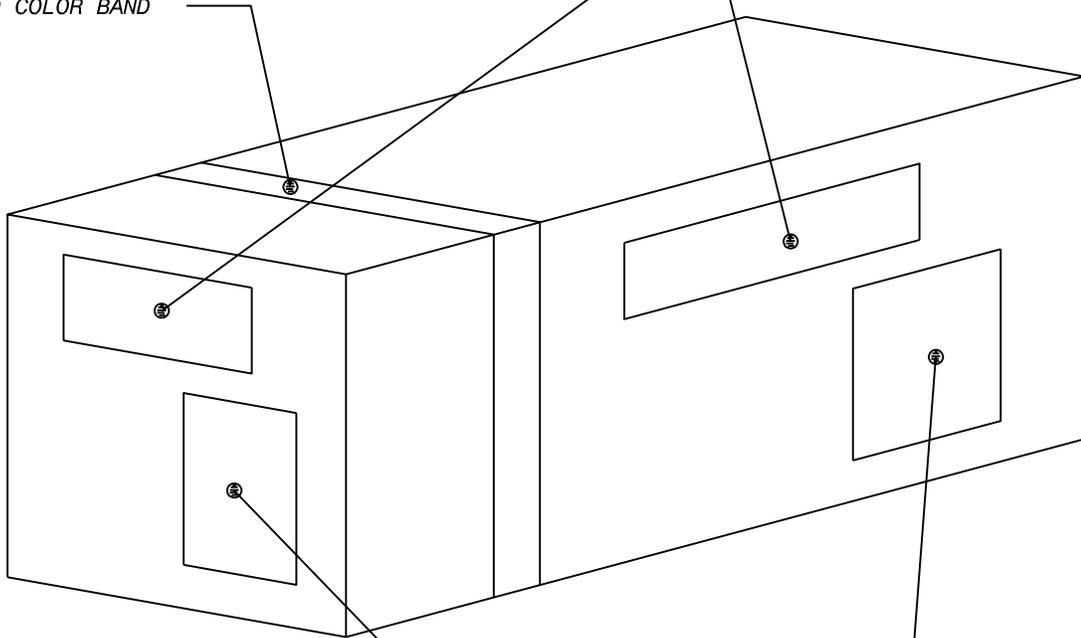
BLACK & VEATCH

PRODUCT DELIVERY
REQUIREMENTS

FIG 1-01612

POINT OF SHIPMENT: _____
 POINT OF DESTINATION,
 CONSIGNED TO: _____
 (CONTRACTOR)

50 mm COLOR BAND



ORDER NO
 BOX _____ OF _____
 GROSS _____ LBS. _____ KG
 TARE _____ LBS. _____ KG
 NET _____ LBS. _____ KG
 (LENGTH) x (WIDTH) x (HEIGHT)
 _____ CU. FT. _____ CU. m.
 MADE IN _____

MARKING INSTRUCTIONS

Section 01614

PRODUCT STORAGE AND HANDLING REQUIREMENTS

1. SCOPE. This section covers delivery, storage, and handling of materials and equipment.
2. DELIVERY. Contractor shall bear the responsibility for delivery of equipment, spare parts, special tools, and materials to the site and shall comply with the requirements specified herein and shall provide required information concerning the shipment and delivery of the materials specified in this Contract. These requirements also apply to any subsuppliers making direct shipments to the Site.

Contractor shall, either directly or through contractual arrangements with others, accept responsibility for the safe handling and protection of the equipment and materials furnished under this Contract before and after receipt at the port of entry. Acceptance of the equipment shall be made after it is installed, tested, placed in operation and found to comply with all the specified requirements.

All items shall be checked against packing lists immediately on delivery to the site for damage and for shortages. Damage and shortages shall be remedied with the minimum of delay.

Delivery of portions of the equipment in several individual shipments shall be subject to review of Engineer before shipment. When permitted, all such partial shipments shall be plainly marked to identify, to permit easy accumulation, and to facilitate eventual installation.

3. STORAGE. Upon delivery, all equipment and materials shall immediately be stored and protected until installed in the Work.

Stacked items shall be suitably protected from damage by spacers or load distributing supports that are safely arranged. No metalwork (miscellaneous steel shapes and reinforcing steel) shall be stored directly on the ground. Masonry products shall be handled and stored in a manner to hold breakage, chipping, cracking, and spalling to a minimum. Cement, lime, and similar products shall be stored off the ground on pallets and shall be covered and kept completely dry at all times. Pipe, fittings, and valves may be stored out of doors, but must be placed on wooden blocking. PVC pipe, geomembranes, plastic liner, and other plastic materials shall be stored off the ground on pallets and protected from direct sunlight.

Pumps, motors, electrical equipment, and all equipment with antifriction or sleeve bearings shall be stored in weathertight structures maintained at a temperature

above 60°F [16°C]. Electrical equipment, controls, and insulation shall be protected against moisture and water damage. All space heaters furnished in equipment shall be connected and operated continuously.

Equipment having moving parts, such as gears, bearings, and seals, shall be stored fully lubricated with oil, grease, etc., unless otherwise instructed by the manufacturer. Manufacturer's storage instructions shall be carefully followed by Contractor.

When required by the equipment manufacturer, moving parts shall be rotated a minimum of twice a month to ensure proper lubrication and to avoid metal to metal "welding". Upon installation of the equipment, Contractor shall, at the discretion of Engineer, start the equipment at one-half load for an adequate period of time to ensure that the equipment does not deteriorate from lack of use.

When required by the equipment manufacturer, lubricants shall be changed upon completion of installation and as frequently as required thereafter during the period between installation and acceptance. New lubricants shall be put into the equipment by Contractor at the time of acceptance.

Equipment and materials shall not show any pitting, rust, decay, or other deleterious effects of storage when installed in the Work.

In addition to the protection specified for prolonged storage, the packaging of spare units and spare parts shall be for export packing and shall be suitable for long-term storage in a damp location. Each spare item shall be packed separately and shall be completely identified on the outside of the container.

4. HANDLING. Stored items shall be laid out to facilitate their retrieval for use in the Work. Care shall be taken when removing the equipment for use to ensure the precise piece of equipment is removed and that it is handled in a manner that does not damage the equipment.

During handling, carbon steel constructed material including chains, straps, and forks on lifting equipment shall not directly contact any equipment or material constructed of stainless steel. It shall be the Contractor's responsibility to correct any carbon steel contamination of stainless steel.

End of Section

Section 01615

EQUIPMENT AND VALVE IDENTIFICATION

PART 1 – GENERAL

1-1. SCOPE. This section covers the furnishing and installation of nameplates and tags for identification of equipment, valves, panels, and instruments.

1-2. GENERAL. Except as otherwise specified in equipment, valve, and instrumentation sections, nameplates and tags shall be as specified herein. Nameplates or tags shall be provided for all equipment, valves, operator interfaces, control and electrical panels, cabinets, instruments, and instrument racks that have been named and/or tagged on the Drawings.

1-3. SUBMITTALS. Drawings and data shall be submitted in accordance with the requirements of the Submittals Procedures section for each type of tag provided including materials, colors, sizes, letter sizes, and installation instructions.

PART 2 - PRODUCTS

2-1. EQUIPMENT NUMBER PLATES. All equipment tagged on the drawings, except for submerged equipment shall be provided with number plates bearing the equipment tag number identified on the Drawings. Number plates shall be bevelled, 1/8th inch [3 mm] thick laminated black phenolic plastic engraving stock with white core. Lettering on number plates shall be capitalized block letters $\frac{3}{4}$ inch [20 mm] high. Number plate height shall be twice the letter height. Number plate length shall be as needed, with suitable margins all around. Lettering shall be placed in one row where practicable; however, where necessary due to excessive length, lettering shall be placed on more than one row and centered.

Number plates shall be attached with stainless steel panhead screws, rivets, or drive screws.

When a number plate cannot be installed due to the physical size, space, or mounting surface geometry of the equipment, the Contractor shall provide a 12 gauge [2 mm] stainless steel tag with engraved or imprinted equipment tag number. Lettering on tags shall be $\frac{1}{4}$ inch [6.5 mm] high. Tags shall be rectangular with smooth edges, and shall be fastened to the equipment with stainless steel mechanical fasteners or with a stainless steel chain.

2-2. EQUIPMENT INFORMATION PLATES. Equipment shall be provided with engraved or stamped equipment information plates securely affixed with mechanical fasteners to the equipment in an accessible and visible location. Equipment information plates shall be in addition to the number plates specified. Equipment information plates shall indicate the manufacturer's name, address, product name, catalog number, serial number, capacity, operating and power characteristics, labels of tested compliances, and any other pertinent design data. Equipment information plates listing the distributing agent only will not be acceptable.

2-3. VALVE AND GATE TAGS.

2-3.01. Temporary Tags. Each valve and gate with an identifying number indicated on the Drawings or listed in the valve or gate schedule, shall be tagged or marked in the factory with the identifying number.

2-3.02. Permanent Tags. All valves and gates, except buried or submerged valves, that have been assigned a number on the Drawings or in the valve or gate schedule, shall be provided with a permanent number plate. Tags shall be permanently attached to valves and gates with stainless steel mechanical fasteners or with stainless steel chains. Numerals shall be $\frac{3}{4}$ inch [20 mm] high and shall be black baked enamel on an anodized aluminum plate.

All buried valves shall be tagged with a brass plate cast into a 6-inch by 6 inch [150 mm by 150 mm] concrete pad at grade next to the valve box. The valve number shall be engraved in the brass plate with lettering and numerals at least 1 inch [25 mm] high.

2-4. PANEL NAMEPLATES. Nameplates shall be provided on the face of each panel and cabinet. Panel identification nameplates shall be mounted at the top of the panel shall include the panel descriptive name and tag number as indicated on the Drawings, in two or three lines of text. Lettering shall be $\frac{3}{4}$ inch [20 mm] high.

Nameplates for devices mounted on or in the panel shall be inscribed with the text as indicated on the Drawings. Where nameplate information is not indicated on the Drawings, inscriptions shall be in accordance with information in the supplier's submittal drawings as guided by information in the relevant specification section. Panel device nameplates shall have engraved letters $\frac{3}{16}$ inch [5 mm] high.

Nameplate material and size shall be as specified above for equipment number plates. Nameplates shall be secured to the panel with stainless steel panhead screws.

2-5. INSTRUMENT TAGS.

2-5.01. Temporary Tags. Where instruments are not provided with permanent tags furnished from the factory, instruments shall be tagged or marked in the factory with the instrument tag number indicated on the Drawings.

2-5.02. Permanent Tags. Instruments shall be tagged with the instrument tag number indicated on the Drawings. Tags shall be 12 gauge [2 mm] stainless steel with engraved or imprinted symbols. Lettering on tags shall be ¼ inch [6.5 mm] high. Tags shall be rectangular with smooth edges, and shall be fastened to the instrument with stainless steel mechanical fasteners or with a stainless steel chain.

PART 3 – EXECUTION

Not used.

End of Section

Section 01620

EQUIPMENT SCHEDULE

1. SCOPE. This section consists of an equipment schedule for items for which a basic level of manufacturer's field services or operation and maintenance manuals are required, but not covered in other sections. When other sections indicate that manufacturer's field services and operation and maintenance manuals are required, the requirements shall be as specified in the other sections.

Specific requirements for manufacturer's field services are covered in the Quality Control section and the equipment specifications.

Specific requirements for operation and maintenance manuals are covered in the Submittals Procedures section and the equipment specifications.

2. SCHEDULE. Manufacturer's field services, including equipment installation checks and training, and operation and maintenance manuals shall be provided for the items of equipment indicated in the following schedule:

Spec Section	Type of Equipment	Mfr's. Field Services	O&M Manual	Training Days	Warranty Period
11110	Horizontal Split Case Centrifugal Pumps	X	X	2 sessions, with 4 hours classroom and 4 hours hands-on	1 Year
11115	Horizontal End Suction Centrifugal Pumps	X	X	2 sessions, with 4 hours classroom and 4 hours hands-on	1 Year
11465	Filter Control System	X	X	7	5 Years

11610	Multistage Centrifugal Blowers	X	X	2 sessions, with 4 hours classroom and 8 hours hands-on	1 Year
11640	Liquid Ring Vacuum Pump	X	X	1	1 Year
13220	Filter Underdrains and Media	X	X	2	1 Year
14621	Monorail Chain Hoists	X	X	4 hours hands-on	1 Year
15092	Industrial Butterfly Valves	X	X	1	1 Year
15093	Check Valves	X	X	1	1 Year
15099	Pressure Regulating Valves	X	X	1	1 Year
15101	AWWA Butterfly Valves	X	X		1 Year
15103	AWWA Ball Valves	X	X		1 Year
15113	Fabricated Steel and Aluminum Slide Gates	X	X	1	1 Year
15114	Open Channel Metal Slide Gates and Weir Gates	X	X	1	1 Year
15495	Strainer	X	X	1	1 Year
15530 – 15855	Heating, Ventilation and Air Conditioning	See Spec.	See Spec.	See Spec.	See Spec.
16041 - 16800	Electrical Equipment	See Spec.	See Spec.	See Spec.	See Spec.

End of Section

Section 01630

PIPELINE SCHEDULE

1. SCOPE. This section consists of a schedule of 4 inch [100 mm] and larger pipelines indicating the type of pipe to be used. Pipe materials, installation, testing, and disinfection, when specified, are covered in other sections.

Piping smaller than 4 inches [100 mm] is covered in the various miscellaneous piping sections. Piping for plumbing, heating and air conditioning systems is covered in other sections. Piping to be furnished with equipment is covered in the applicable equipment section.

2. ALTERNATIVE PIPE TYPES. Where more than one type of pipe is indicated in the schedule, the type of pipe material to be installed may be selected by Contractor. The details on the drawings cover only one type of pipe for each line. If a different material is selected by Contractor, all details of connections, jointing, wall fittings, support, anchorage, and harnesses shall be modified as necessary to produce an equivalent design acceptable to Engineer.

3. WALL FITTINGS. A wall pipe or sleeve will be required for all pipe passing through concrete or masonry block walls. Wall fittings and sleeves shall be as indicated on the drawings and as specified in the applicable piping section.

4. SCHEDULE INDEX. Pipe material abbreviations and their applicable specification section number are as indicated:

<u>Abbreviation</u>	<u>Pipe Material</u>	<u>Section No.</u>
CS	Miscellaneous steel pipe	15065
DIP	Ductile iron pipe	510
SP	Steel pipe	15062
SS	Stainless steel pipe	15064

5. SCHEDULE. Pipe materials shall conform to Schedule 01630-S01. All pipelines indicated on the drawings and all pipelines required for proper operation of the equipment furnished shall be provided whether listed in the schedule or not.

End of Section

Schedule 01630-S01

Pipeline Schedule

1.000	General			
1.010	Specification Section 01630			
2.000	Requirements			
Size		Service	Location	Material
in.	mm			
54		Filter Influent	Exposed	SP
36		Filter Influent	Exposed	SP
36		Backwash Drain	Exposed	SP
30		Backwash Supply	Exposed	SP
20-30		Filter Effluent	Exposed	SP
66		Filter Effluent	Buried	SP
72		Filter Effluent	Buried	SP
48		Filter Effluent	Buried	SP
4-16		Non Potable Water	Exposed	DIP
8		Potable Water	Buried	DIP
16		Non Potable Water	Buried	DIP
8-12		Clearwell Drain Line	Buried	DIP
16		Hoist Access	Buried	DIP
12-14		Filter Air Scour	Exposed	SS

End of Schedule

Section 01650

FACILITY STARTUP/COMMISSIONING

1. SCOPE. This section includes the requirements for startup and testing all items of equipment and systems that form a part of this Contract. The purpose of this section is to define the requirements for bringing individual equipment, systems, and facilities online and for proving proper operation and performance of that Work. Contractor is required to develop, submit, and maintain detailed plans, including designation of management and staff, for these activities as specified herein. Additional requirements such as disinfection and training are specified in other sections.

The startup, testing, and commissioning services referenced or specified herein include the following:

Startup and Testing
Startup checks
Functional testing
Functional acceptance testing

1.01. Definitions. Startup and Testing is the transitional phase between completion of construction and start of commissioning and includes the following:

- Pre-Startup Activities and Checks - Inspections, tests and other activities necessary to determine that equipment, systems and subsystems have been properly manufactured and installed. Pre-startup activities shall include an audit of all factory testing of equipment and compiling the results for comparison to startup and commissioning testing.
- Functional Testing – Initial limited operation of equipment, to demonstrate capability of installed components to perform their intended functions, respond to controls, and safely interface with external systems, followed by operation of individual systems in manual and automatic mode to test full functionality of individual systems.

2. GENERAL. The Contractor shall be responsible for and furnish all labor, materials, instruments, incidentals, and equipment required for startup, testing, and commissioning. Temporary facilities required to carry out the specified testing, including temporary pipe, pumps, and other appurtenances, shall be furnished and installed, and removed when no longer required for startup, testing, and commissioning. Refer to the Temporary Facilities section for requirements concerning water and power for startup and testing. If required, chemicals required for startup and testing will be provided by the Owner.

Contractor shall give the Owner 45 days notice before chemicals are required except as otherwise specified herein. Wastewater, including treated or test water that cannot be delivered to the system for any reason, shall be disposed of at the expense of the Contractor, in a manner acceptable to the Owner, and in accordance with all laws, regulations, and permits.

Startup and testing shall be conducted during normal working hours during the workweek of Monday through Friday, unless otherwise approved by the Owner. Where continuous long-term testing is required, testing may continue over the weekends and holidays with prior approval from the Owner.

2.01. Constraints. Startup and testing shall be conducted in a manner that does not compromise operation of the existing facilities or the quality of treated products released from the facility. Any startup and testing activities affecting operation of the existing facilities shall be coordinated with the Owner and shall be shown on the Progress Schedule. The Owner will cooperate with the Contractor to the extent possible, but will have sole authority in decisions affecting existing operations.

The minimum constraints for startup and testing include the following:

Refer to Construction Sequencing Section.

3. STARTUP MANAGER, STARTUP TEAM, AND MANUFACTURER'S FIELD SERVICES REPRESENTATIVES. The Contractor shall maintain a dedicated startup team led by a startup manager. The individual to be designated as startup manager shall be identified within 45 days of the Notice to Proceed and will be reviewed by Owner and Engineer. Once accepted, the Contractor shall not change the startup manager throughout the full period of performance of the Work without written permission of the Owner. Once engaged in the Project, the startup manager shall attend regular construction progress meetings. No startup activities shall begin until the startup manager has arrived at the jobsite.

The startup manager shall be on Site full time at least 30 days prior to any field startup and testing activities and shall remain on site until all startup, testing, and commissioning activities are complete.

3.01. Startup Manager. The startup manager shall be a startup and testing expert with a minimum of 5 years of experience starting up equipment and systems of similar type, size, capacity, and complexity to the equipment and systems included in this Project. The startup manager shall have the necessary experience to fully understand all startup requirements, to manage the Contractor's resources providing the startup services, and to prepare all startup documentation, as specified. The startup manager's assigned duties and responsibilities are those specifically related to planning, supervising, and

executing startup activities and shall include, but shall not be limited to the following:

Coordinating all testing and startup activities.

Preparing all startup and field testing plans, documentation, and forms.

Liaising between the Contractor, Engineer, and Owner for all startup and testing activities.

Developing a comprehensive schedule for all startup activities and providing regular schedule updates. The startup and testing schedule shall be incorporated into the Progress Schedule.

Scheduling and leading startup, testing, and commissioning planning meetings.

Conducting coordination meetings during startup, testing, and commissioning at least weekly.

Coordinating manufacturers' services and their certification of proper installation and/or operation of equipment as required by the Specifications.

Overseeing and administering all startup, testing, and commissioning activities, including either direct participation in the activities and/or oversight and monitoring of activities. It shall be the startup manager's responsibility to assure that all tests have been completed in accordance with accepted testing procedures.

Ensuring readiness for and coordinating maintenance, repair, and adjustment of equipment and systems during startup testing, and commissioning.

Conducting or overseeing pre-test checks to ensure readiness for testing. Verify all piping hydrostatic testing and flushing has been completed prior to field testing connected equipment.

Ensuring all testing equipment is in proper working order and has been calibrated to appropriate standards.

Developing safe work policies and procedures including lockout/tagout procedures and personal protective equipment policies, that will be followed during all field startup and testing activities. At a minimum the Contractor shall comply with OSHA and the Owner's established safety

guidelines. It shall be the startup manager's responsibility to assure all safety procedures are followed at all times.

Reviewing and approving all equipment training sessions prior to submission to Engineer, to assure that the training is compliant with the requirements of the Specifications and includes all applicable operation, maintenance, safety, functional, performance, and startup and testing information.

Organizing teams made up of qualified representatives of Suppliers, Subcontractors, and others, as appropriate, to efficiently and expeditiously startup and test the equipment and systems installed and constructed under this Contract. The objective of this program shall be to demonstrate to the Engineer and Owner that the structures, systems, and equipment constructed and installed under this Contract meet all performance requirements and the facility is ready for operation as intended. In addition, the testing program shall produce baseline operating conditions for the Owner to use in a preventive maintenance program.

Ensuring the development and maintenance of records documenting all startup, testing, and commissioning activity. The records shall be organized by major process system into organized files/binders and turned over to the Owner prior to applying for final payment. Testing records shall be accessible to the Engineer and Owner at all times to allow monitoring of the progress.

Ensuring the startup team is equipped and ready to make emergency repairs and adjustments to equipment installed and modified as part of the Project.

Scheduling and conducting a one day workshop with the Owner and Engineer to resolve submittal review comments to the Contractor's startup, testing, and commissioning plan submittal.

Notifying the Owner and all respective equipment manufacturers at least 21 days prior to the date when each equipment system is scheduled for pre-startup activities and checks.

Organize International Electrical Testing Association (NETA) acceptance testing in accordance with the Electrical Equipment Installation section.

3.02. Startup Team. The startup team shall include the startup manager and all staff deemed necessary for successful completion of startup, testing, and commissioning. This will typically include engineers, major equipment vendors, operators, and representatives from the Instrumentation and Control System

Supplier. Additional trade representatives may be included as project requirements dictate.

3.03. Manufacturer's Field Services Representative. The manufacturers shall provide a technically qualified field-service representative for the installation, startup, and testing of equipment furnished, as specified in the equipment sections. The manufacturer shall submit qualifications and experience records for all key personnel to be involved in startup activities.

The manufacturer's field services representative shall be employed full-time in installation, startup, and testing of similar equipment and facilities and work directly for the manufacturer. The representative shall have conducted startup activities similar to those required herein on at least two other projects of similar complexity. The Owner or Engineer shall have the right to reject the manufacturer's field services representative at any time, for immediate replacement by the manufacturer, if the accepted qualifications are not representative of the actual experience or abilities of the representative, as determined by the Owner or Engineer.

4. SUBMITTALS. Contractor shall submit the following information in accordance with the requirements of the Submittals section.

Startup manager's qualifications and past project experience including contact names, addresses and current telephone numbers of owner representatives that can be used to verify the accuracy of the information. Submittal shall be made at the preconstruction conference.

Manufacturers' field services representative's qualifications and past project experience including contact names, addresses and current telephone numbers that can be used to verify the accuracy of the information. Qualification submittals shall be made 3 weeks before the manufacturer's representative is scheduled to be on Site.

Manufacturer's certification of proper installation of all equipment as specified in the equipment sections.

Equipment and system startup, testing, and commissioning plans and schedule in accordance with the requirements of this section. Startup manager shall coordinate with Subcontractors and include their information in the startup and testing plan.

Unless otherwise specified in the equipment sections, preliminary copies of field calibration results. Submittal shall be made prior to the start of each test for associated systems.

Daily logs.

5. STARTUP AND TESTING REQUIREMENTS.

5.01. Startup Checks. Prior to field testing of all equipment, the Contractor shall perform the following:

Inspect and clean equipment, devices, and connected piping so they are free of foreign material.

Lubricate equipment in accordance with manufacturer's instructions.

Turn rotating equipment by hand.

Open and close valves by hand and operate other devices to check for binding, interference, or improper functioning.

Test and commission related electrical system components in accordance with the requirements specified in the Electrical and the Electrical Equipment Installation sections.

Calibrate all instruments associated with the equipment.

Check for proper rotation, adjustment, alignment, balancing, mechanical and electrical connections, and any other conditions that may damage or impair equipment from functioning properly.

Inspect and verify proper anchorage.

Obtain manufacturer's certification of proper installation where specified in the equipment sections.

All equipment shall be confirmed ready to test by the Engineer based on the following:

Acceptance of Contractor's startup and testing plan.

Notification in writing by the startup manager that each piece of equipment or system is ready for testing.

Verification by the Engineer and Owner that all lubricants, tools, maintenance equipment, spare parts and approved equipment operation and maintenance manuals have been furnished as specified.

Cleanliness of equipment, devices, and connected work.

Adequate completion of work adjacent to or interfacing with equipment to be tested.

Confirmation of manufacturer's representative's availability to assist with testing, where specified, and satisfactory fulfillment of all other manufacturers' responsibilities as specified.

Engineer's inspection of all related civil construction, mechanical, and electrical installations.

Confirmation of completion of acceptable testing of all adjacent piping, duct work and other affected Work.

5.02. Functional Testing. All startup checks shall be completed prior to functional testing. Functional testing shall be in accordance with relevant standards and in accordance with instructions of the manufacturers.

Ancillary and/or temporary facilities necessary to recycle, control, or discharge water, air, chemical, or gas from facilities being tested, shall be operational.

Functional testing shall include the functional operation of each piece of equipment. All moving parts of equipment and machinery shall be tested and adjusted so that they move freely and function satisfactorily. Functional testing shall demonstrate correct operation of all hardwired interlocks and controls.

Functional testing of power actuated valves shall include at least 4 full open-close operations. Testing shall demonstrate the maximum number of operations per hour as recommended by the actuator manufacturer without overheating.

Once functional testing of individual pieces of equipment is completed, individual systems functional testing shall commence. Individual system functional testing shall include startup of the complete system of mechanical, electrical, and instrumentation and control equipment as a functional process system. Field inspection prior to startup as specified in the Instrumentation and Control System section, other testing by the Instrumentation and Control System Supplier required to verify readiness for automatic operation of the individual system, shall be completed before commencement of individual system functional testing.

Individual system functional testing shall include operation in manual and automatic modes, startup operation, and shutdown in normal and emergency modes. Individual systems shall be tested over their entire operating range and for sufficient time to demonstrate the intended functionality of each piece of equipment and the system. If any part of a system shows evidence of unsatisfactory or improper operation during the test period, correction or repairs

shall be made and the functional testing shall be repeated until satisfactory results are obtained.

Functional testing of all process and pumping equipment and drive motors, including auxiliary equipment, shall be in accordance with the appropriate and approved test codes, such as those specified by the American Society of Mechanical Engineers, Hydraulic Institute Standards, and IEEE.

Qualified personnel from the electrical and mechanical trades responsible for installation of the equipment, shall be available during functional testing involving electrically operated equipment. Where appropriate, a representative of the Instrumentation and Control System Supplier shall also be available.

Specific requirements for individual system startup are as follows:

Vibration Testing. Field vibration acceptance testing shall be conducted on each Non-Potable Water Pump, each Backwash Pump and each Air Scour Blower to ensure that the equipment meets the vibration limits specified herein. The vibration acceptance testing shall be conducted by an independent testing laboratory retained by the Contractor. The testing laboratory shall provide a certified vibration analysis expert to conduct the testing and shall submit certification credentials. Vibration testing shall be performed after installation, grouting (if required), alignment, and inspection by the manufacturer's field services representative. The manufacturer's field services representative shall certify that the equipment is ready for continuous service prior to vibration testing. The Contractor shall provide written notification to the Owner, Engineer, and equipment manufacturer's representative when the equipment is ready for vibration acceptance testing. The Owner, Engineer, and manufacturer's field services representative shall reserve the right to be present during the tests. Acceptance criteria for the pumps and blowers are specified in their individual sections.

5.03. Functional Acceptance Testing. Once the Contractor's functional testing is complete and associated documentation has been submitted and accepted by the Engineer, the Contractor shall conduct functional acceptance testing of each complete process system, to demonstrate individual systems meet the specified requirements. Acceptance testing shall include the successful demonstration of all operating functions and conditions that are specified for the equipment, system, and controls. The manufacturer's representative shall be on Site during acceptance testing when specified in the equipment specifications.

The Functional Acceptance Testing shall include the following submissions prior to commencement:

Prerequisite checklist, to be acknowledged by the Engineer prior to initiating the test, that demonstrates that all testing and other Work required to be completed prior to the test is complete.

Listing of Owner's personnel necessary to operate the system and conduct any related monitoring of performance.

A listing of Contractor's personnel designated to supervise and direct the Owner's operators as required herein.

Listing of standby personnel, equipment, and materials that will be available if needed during the test period.

Step-by-step procedures for operation of the facility showing how local and remote control of equipment will be demonstrated.

Description of all data and other information to be reported in support of the completed test. Include any blank data logs that may be used for recording results.

Descriptions of all necessary calculations that must be completed to verify the specified results are being achieved, including formulas.

Blank sign-off form for the test acknowledging the Contractor's, Engineer's, Owner's, and the equipment manufacturer's acceptance of the test.

Contractor shall provide Owner and Engineer 14 days notice prior to testing of any individual system.

Individual system acceptance testing shall continue for 48 hours without interruption for each system, and all parts shall operate satisfactorily in all respects under a range of conditions to simulate the full operating range of the equipment or system. If there are multiple parallel components or trains, then the testing duration will be 48 hours for each individual train.

If any part of a system shows evidence of unsatisfactory or improper operation during the testing period, correction or repairs shall be made and the test repeated until the test is successfully completed. Testing interrupted by power failure will not be required to be repeated, but the test shall be continued upon restoration of power and extended to the specified duration at no additional cost to the Owner.

During this testing period the Contractor shall operate all equipment.

6. STARTUP SCHEDULE AND STARTUP AND COMMISSIONING PLANS.

Plans and schedules shall be developed to facilitate coordinated and efficient startup, testing, and commissioning of the Project equipment and systems.

The Contractor shall submit a startup, testing, and commissioning plan and schedule to the Engineer no later than 90 calendar days prior to the commencement of startup and testing. A minimum of 21 days shall be allowed for review by Engineer and Owner. The schedule and plan must be accepted a minimum of 30 days prior to commencement of startup and testing. The schedule and plan shall include sections for startup checks, functional testing, and functional acceptance testing .

Forms for startup and testing shall include identification of equipment or system, startup/test date, nature of startup/test, startup/test objectives, startup/test prerequisites, startup/test results, instruments employed for the startup/test and signature spaces for the Engineer's witness (where applicable) and the Contractor's startup manager.

6.01 Startup Schedule. A startup schedule that provides an overall sequence and duration for all startup, testing and commissioning activities, shall be prepared and maintained. This schedule shall serve as a companion to but shall not be a replacement for the startup plan. The startup schedule described in this section shall be integrated into the overall Progress Schedule and shall be prepared as specified for the Progress Schedule in the Construction Progress Schedule section. The Startup Schedule shall be updated weekly to during the startup, testing, and commissioning period.

6.02. Startup Plan. The Startup Plan shall include the following:

Introduction with a narrative description of the overall testing and startup program. The description shall include all contractual or regulatory treatment requirements to be demonstrated.

A summary of the objectives and approach for startup checks, functional testing, and functional acceptance testing .

List of the instruments, equipment, and systems that will undergo startup and testing with references to the appropriate PIDs, equipment tags/identification numbers, Specification number and standards for testing procedures.

Schedule for startup and field testing for each instrument, piece of equipment (including redundant equipment), and system.

Safety and emergency response plan including a list of emergency and non-emergency contacts (email and phone).

Organization chart for Contractor's startup and testing personnel with assigned responsibilities for each.

Startup and testing record keeping plan.

Plan for reuse and disposal of water/wastewater from startup, testing, commissioning including information on any required regulatory permits/approvals.

Description of temporary facilities that will be provided.

List of chemicals to be provided by the Owner.

Within 7 to 14 days of initial submittal of the startup plan, the Contractor shall schedule a workshop with the Owner and Engineer to present the plan. The Contractor shall submit minutes of the workshop, including action items and a schedule for updating the startup plan, to the Engineer within 3 days of the workshop.

Individual plans for each phase of startup, testing, and commissioning can be assembled as chapters in the startup plan or submitted as individual documents but should be correlated to ensure there is not disagreement between chapters or separate documents.

6.02.01 Startup Checks Plan. The startup checks plan shall be subdivided into plans for each system and major component. Each system/major component plan shall include but not be limited to the following:

Identification of information for each component or piece of equipment to be inspected as part of the system. All applicable tag numbers shall be included.

Specific activities to be completed on each component, piece of equipment, or system as required to demonstrate proper installation and connection.

A tracking checklist of prerequisites for the checks and each step of the checking procedure, including any temporary facilities or utility requirements.

Listing of manufacturer's representative(s) to be on site during the check.

Sign off forms for the Contractor's startup manager.

6.02.02 Functional Testing and Functional Acceptance Testing Plans. The functional testing plan shall include procedures and reporting for functional testing. The functional testing plan shall be subdivided into testing plans for each system. Each system test plan shall include but not be limited to the following:

A narrative description of the purpose and goals of the test for each component, piece of equipment, or system, which should include all activities (including those required by vendors/suppliers) necessary to verify proper equipment and system functionality.

Identification of each component or piece of equipment to be tested as part of the system. All applicable tag numbers shall be included.

Schedule and duration for the tests.

Prerequisites for each test, including any temporary facilities or utility requirements.

Pass/fail criteria for the test.

A checklist for tracking testing progress which includes prerequisites for the test and each step of the testing procedure. The check list shall include specified performance criteria that are to be met.

A description of test apparatus required to conduct the test.

Identification of all temporary facilities and chemicals require during startup.

Listing of manufacturer's representative(s) to be on site during the test.

Certificates of proper installation, as applicable to the test.

Step-by-step detailed procedure of the test. The level of detail shall be sufficient for a witness to be able to follow the steps during the test and be confident that the test is being performed as planned. All steps required to proceed through the test in an orderly manner are considered significant and each of these steps shall be included in the procedure.

Copies of the data recording forms that will be used during the test.

Calculation methodologies to be used to evaluate the data and/or test criteria for the test.

Sample computations or analyses for the test with results in the same format as the final report. This item is intended to demonstrate how data collected will be used to generate final results. A sample shall be included for each type of computation required for the test and analysis of results.

Blank sign-off forms for the test acknowledging the startup manager's, Engineer's, Owner's, and equipment manufacturer's acceptance of the test where applicable.

The functional testing plan shall identify constraints for individual systems start up, and shall include the following:

Refer to individual equipment sections.

7. REPORTS AND RECORDS. Records of all startup and testing shall be compiled by the Contractor and submitted to the Engineer. Prior to being submitted to the Engineer, the startup manager shall certify that the results recorded and the tested systems comply with the Contract requirements. Records shall include all documentation assembled for each piece of equipment or system involved in the startup and testing, including all certifications, forms, and check lists completed during the startup and test, and sign-off forms.

Records of all startup and testing shall be compiled as separate documents for each system tested, and shall be submitted within 48 hours of completion of the startup and testing for each system. Testing samples that require analysis periods greater than 48 hours shall be clearly defined in the startup plan but shall not preclude delivery of the balance of the records within the 48 hour timeframe.

The Contractor shall provide formal reporting and documentation of failures, malfunctions or defects, and repairs made during the startup and/or testing activities. A "System Problem Report" form is included at the end of this section, and shall be used by the Contractor to document problems that arise during these tests and their resolution. Records submitted shall include "System Problem Report" forms completed during testing.

SYSTEM PROBLEM REPORT

Project Name: Walnut Creek WWTP Tertiary Filter Rehabilitation			
Test Name:			
Test Number:			
Problem Type: Hardware Software Documentation Unknown Other			
SYMPTOMS:	Time:	Date:	By:
Description:			
Can problem be reproduced at will? Y / N			
DIAGNOSIS:	Time:	Date:	By:
Description:			
CORRECTION:	Time:	Date:	By:
Description:			
FINAL SIGN OFF	Time:	Date:	By:

End of Section

Section 01820

DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.01 DESCRIPTION. This section contains requirements for training the Owner's personnel in the proper operation and maintenance of the equipment and systems installed under this contract.

1.02 GENERAL. Where indicated in the Equipment Schedule section and as required by the specifications, the manufacturer's representative shall provide on-the-job training of the Owner's personnel. The training sessions shall be conducted by qualified, experienced, factory trained representatives of the various equipment manufacturers. Training shall include instruction in both operation and maintenance of the subject equipment.

1.03 SUBMITTALS. The following information shall be submitted to the Engineer in accordance with the provisions of the Submittals section. The material shall be submitted not less than 4 weeks prior to the provision of training.

1. Contractor shall develop and administer a training log consisting of all training identified in the Contract. Contractor shall submit training log for Engineer/Owner review and approval.
2. Prior to scheduling training, the Contractor shall coordinate the training periods with Owner personnel and manufacturer's representatives, and shall submit a training schedule and agenda for each piece of equipment or system for which training is to be provided. Prior to scheduling training, all satisfactory functional testing must be complete for that piece of equipment or system.
3. Lesson plans, training manuals, handouts, visual aids, and other reference materials for each training session to be conducted by the manufacturer's representatives. Prior to scheduling training, all course materials must be submitted, and approved. Submit written training plan to Owner for review and approval prior to conducting training including the following:
 - a) Equipment included in training session.
 - b) Intended audience.
 - c) Location of training.
 - d) Objectives.

- e) Subjects covered.
 - f) Duration of training on each subject.
 - g) Instructor for each subject.
 - h) Instructional methods to be used.
4. Subject of each training session, identity and provide qualifications of individuals to be conducting the training. Instructors shall be completely knowledgeable in the products, systems, and functions for the equipment provided.

PART 2 – PRODUCTS

2.01 GENERAL. Where specified, the Contractor shall conduct training sessions for the Owner's personnel to instruct staff on the proper operation, care, and maintenance of the equipment and systems installed under this contract. Training shall take place at the site of the work and under the conditions specified in the following paragraphs.

The objective of the training shall be to convey the knowledge needed by Owner operations, maintenance, and engineering staff to safely operate, maintain, and repair the equipment and systems provided under this Contract. Owner's staff who will participate in this training have existing full-time work assignments and this training is an additional assigned work task. Owner's staff regularly shift work schedules, as facilities are operated on an around-the-clock basis. Training shall be focused to the skills and job classifications of the staff attending the classes, e.g., plant manager, water treatment plant operator, maintenance technician, electrician, and engineering. Supporting documentation, such as training aids, agendas, operation and maintenance manuals to assist the instruction learning process and to serve as a source of information to Owner's staff after training, shall be furnished.

Approved operation and maintenance manuals shall be available at least 30 days prior to the date schedule for the individual training session. Contractor is required to document all training in dedicated/organized section/manual in the O&M Manual, including training schedules, agenda, materials, aids, etc., as an addition.

2.02 TRAINING REQUIREMENTS.

1. Instruction Format: The training for operations personnel and for maintenance personnel shall be provided as separate entities. The

training for maintenance personnel shall be further subdivided into trade groups: mechanical maintenance, electrical maintenance, SCADA Support, and instrumentation and controls maintenance.

2. Class Agenda: The agenda shall include a listing of subjects to be presented, time estimated for each subject, list of documentation to be used or furnished to support training, and instructor name. Agendas shall include an allocation of time for Owner staff to ask questions and discuss the subject matter. The Owner may request that particular subjects be emphasized and the agenda shall be adjusted to accommodate these requests. Copies of the agenda shall be distributed to each student at the beginning of each training class.
3. Number of Students: It is estimated that five (5) to ten (10) persons will attend each training class. The actual number of students will be determined by Owner. The Owner will provide an estimated "headcount" one week prior to the class, so that the instructor can furnish the correct number of training aids for participants.
4. Training Location: If necessary and appropriate as determined by the Owner, training shall be conducted at off-Site locations or the actual installed location of the equipment, product, or system.
5. Instructor Qualifications: Instructors shall be completely knowledgeable in the products, systems, and functions for the equipment provided. Sales representatives are not qualified instructors unless they possess the detailed operating and maintenance knowledge required for proper class instruction. If, in the opinion of the Owner, the scheduled training was not provided by an appropriately knowledgeable person, such training shall be rescheduled and repeated with a suitable instructor at no additional cost to the Owner.
6. Training Aids: Each instructor is encouraged to use audio-visual devices, P&IDs, models, charts, and so forth to increase the transfer of knowledge. The organization conducting the training shall furnish all such equipment (televisions, video cassette recorder/player, projectors, screens, easels, etc.), models, and charts for each class. It shall be the responsibility of the organization conducting the training to confirm in advance that the class room will be appropriate for the types of audio visual equipment to be employed.
7. Classroom Documentation: If training is being completed on equipment, systems, or products for which an operations and maintenance manual is required, this operations and maintenance manual shall be complete and be used during the classroom instruction. Supplemental documentation handouts shall be furnished

to support instruction. All written materials shall be identified with the name of the training module, subject matter, date of training, and instructor name.

8. Testing: Test Owner operation and maintenance personnel following the completion of operational and safety training. The purpose of this testing shall be to determine the effectiveness of the training program and to determine the ability of Owner personnel to safely operate and maintain said processes. Testing shall be comprised of multiple choice and true/false questions. Test results for each attendee shall be turned over to the Owner.
9. Safety and Health Training: Furnish safety and health training to Owner personnel that describe the procedures required to safely and healthfully operate and maintain the equipment. Safety and health training shall also include standard procedures for emergency response and safe shutdown of equipment in emergency conditions. Incorporate appropriate OSHA regulations including personal protective equipment and its use and other means of injury and illness prevention such as precautions and engineering controls.
10. Videotaping: The Contractor shall videotape all training sessions and provide a copy for the Owner. Owner reserves the right to videotape, photograph, audio record, and otherwise document any or all training classes. The organization(s) conducting the training and the Contractor shall cooperate with Owner in making such videotapes, photographs, or audio recordings, which shall remain the exclusive property of Owner.
11. Point of Contact: The Contractor shall designate and provide one or more persons to be responsible for coordinating and expediting his/her training duties. The person or persons so designated shall be present at all training coordination meetings with the Owner.

2.03 FORMAT AND CONTENT. Each training session shall include classroom and time at the location of the subject equipment or system. As a minimum, training sessions shall cover the following subjects for each item of equipment or system:

1. Familiarization
 - a. Review catalog, parts lists, drawings, etc, which have been previously provided for the plan files and operation and maintenance manuals.
 - b. Guided inspection of the subject equipment.

- c. Demonstration of the subject equipment and how operation in accordance with the specified requirements.

2. Safety

- a. Review and demonstration of safety procedures and related documentation.
- b. Inspection and discussion of hazardous components of the subject equipment.

3. Operation

- a. Review of subject equipment operations literature and theory of operation.
- b. Overview of equipment operation and function.
- c. Explanation and demonstration of all modes of operation including start up, shut down, normal, and emergency operation, and manual and automatic operation through the plant control system.
- d. Explanation of all hardwired interlocks.
- e. Explanation and demonstration of equipment related valves and their purpose.
- f. Explanation of all equipment related instruments including primary element, instrument indicator, purpose, and interpretation of information.
- g. Check out of Owner's personnel on proper use of the equipment.

4. Preventive maintenance

- a. Review preventative maintenance documentation and discussion of maintenance require at various intervals; e.g. daily, weekly, monthly, annually.
- b. Demonstrate performance of each preventive maintenance task.
- c. Identification of indicators of equipment problems.
- d. Discussion of corrosion protection and lubrication requirements.
- e. Requirements for periodic exercise of equipment and demonstration of equipment exercise where required.
- f. Identification of inspection points and demonstration of inspection covers removal and routine disassembly and assembly of equipment.

5. Corrective Maintenance and Equipment Repair

- a. Discussion of common repairs and identification of special problems.

- b. Explanation and demonstration of equipment inspection and troubleshooting.
- c. Demonstration of calibration procedures.
- d. Demonstration of repair procedures where practical.

6. Parts

- a. Discussion of the parts list and ordering of parts.
- b. Review of spare parts provided with the equipment and identification of other recommended spare part.

7. Local Representatives

- a. Name, address, telephone of local representative.
- b. Review of contact information for providers of routine and emergency repair and operational assistance.

8. Operation and Maintenance Manuals

- a. Review of O&M manual content and organization.
- b. Update O&M material as required.

PART 3 – EXECUTION

Unless specifically indicated otherwise, all training shall be scheduled in accordance with the following general requirements.

1. Training shall not be scheduled until the manufacturer has verified that the equipment is installed and performs properly. Startup services and training services will be required at separate times which will involve separate trips.
2. Coordinate training sessions to prevent overlapping sessions. Arrange sessions so that individual operators and maintenance technicians do not attend more than two (2) sessions per week.
3. Training shall be coordinated in accordance with the Progress Schedule to occur during system installation, startup, and operation. The Owner will approve and confirm class schedules. The Contractor shall schedule training classes at the times requested by the Owner, within the period 7 a.m. to 3 p.m. Monday through Thursday. Classes covering identical material shall be conducted on different days.

4. Number of Classes on Each Subject: A minimum of two (2) classes on identical subject matter shall be conducted unless otherwise indicated. The purpose of having two classes on each subject is to accommodate the attendance of as many Owner personnel working different shifts as possible. The Owner shall have the option, however, of requiring two (2) total classes, but each class shall contain different training material.
5. A maximum of one class per day shall be held on consecutive days unless otherwise approved by the Owner. Multiple classes should be scheduled if the class duration is longer than four (4) hours. Times shall be scheduled at the discretion of the Owner.
6. Each session shall be subdivided into two (2) to four (4)-hour modules, or as appropriate for the subject matter being discussed.
7. Training Sessions: Provide training sessions for equipment/system as specified in the individual equipment specification sections.
8. Length of Training: Each individual training session shall be planned to be completed within no more than four (4) hours, including two (2) fifteen (15)-minute break and a one (1) hour lunch period unless otherwise indicated. Requests for longer sessions must be specifically approved by the OWNER.
9. Training shall be scheduled so that training is performed when equipment is available for operation.

End of Section

ARTICLE 1 - GENERAL

1.1 RELATED DOCUMENTS

The following documents are a part of this section:

All documents in Bidding Requirements, Contract Forms and Conditions of the Contract.

Other sections of Division 1 - General Requirements apply to this section.

1.2 DESCRIPTION AND INTENT OF THE WORK

No asbestos containing material (ACM) shall be brought onto the Project site, and/or incorporated into the Project construction without the written consent of the OWNER. Any asbestos containing material found at any time including after contract completion, to have been brought onto the site or incorporated into the Project construction by the CONTRACTOR, or any Subcontractors, Sub-Subcontractors or Suppliers, shall be removed and disposed of in accordance with the then current governmental regulatory standards.

All costs associated with the inspection, sampling, testing, removal and disposal of ACM as described above shall be paid by the CONTRACTOR.

1.3 DEFINITIONS

ASBESTOS: The asbestiform varieties of serpentine (chrysotile), riebeckite (crocidolite) cummingtonite-grunerite (amosite), anthophyllite, actinolite and tremolite.

ASBESTOS CONTAINING MATERIAL (ACM): Any material containing more than one percent (1%) by weight of asbestos of any type or mixture of types.

ASBESTOS CONTAINING BUILDING MATERIAL (ACBM): Any material used in the construction of, or incorporated into the construction of, any building that contains more than one percent (1%) by weight of asbestos of any type or mixture of types.

MSDS: A material safety data sheet (MSDS) is a form containing data regarding the properties of component substances that comprise a manufactured product. They are a basic hazard communication tool that gives details on chemical and physical dangers, safety procedures, and emergency responses for chemicals.

1.4 QUALITY ASSURANCE

PROHIBITION OF ASBESTOS CONTAINING MATERIALS

The E/A has been instructed to not permit any asbestos containing materials to be specified, requested or approved for use in conjunction with this Project.

The E/A has signed the following:

- A. 01900A Statement of Non-Inclusion of Asbestos Containing Material (E/A, Prior to Design): stating that the Engineer/Architect shall not specify, request or approve any ACM in this Project without prior written approval of OWNER.
- B. 01900B Statement of Non-Inclusion of Asbestos Containing Material (E/A, After Design): stating that the Engineer/Architect has not specified, requested or approved any ACM in this

Project without the prior written approval of the OWNER, and that any ACM allowed in this Project is identified in the Statements.

These Statements are included in the Construction Documents.

ASBESTOS CONTAINING MATERIALS PROHIBITED FROM SITE

No asbestos containing materials will be permitted as part of the Project construction. The following list is intended to be used as a general guide to show which types of materials are suspected to contain asbestos:

- Cement Pipes
- Cement Wallboard
- Cement Siding
- Asphalt Floor Tile
- Vinyl Floor Tile
- Vinyl Sheet Flooring/vinyl wall coverings
- Flooring Backing
- Construction Mastics (floor tile, carpet, ceiling tile, etc.)
- Acoustical Plaster
- Decorative Plaster / stucco
- Textured Paintings/Coatings
- Ceiling Tiles and Lay-in Panels
- Spray-Applied Insulation
- Blown-in Insulation
- Fireproofing Materials
- Taping Compounds (thermal)
- Packing Materials (for wall/floor penetrations)
- High Temperature Gaskets
- Laboratory Gloves
- Fire Blankets
- Fire Curtains
- Elevator Equipment Panels
- Elevator Brake Shoes
- HVAC Duct Insulation
- Boiler Insulation
- Breeching Insulation
- Ductwork Flexible Fabric Connections
- Cooling Towers
- Pipe Insulation (corrugated air-cell, block, etc.)
- Heating and Electrical Ducts
- Electrical Panel Partitions
- Electric Cloth
- Electric Wiring Insulation
- Chalkboards
- Roofing Shingles / tiles / membranes
- Roofing Felt
- Roof Coatings
- Base Flashing
- Thermal Paper Products
- Fire Doors
- Caulking/Putties
- Adhesives / mastics
- Wallboard
- Joint Compounds
- Spackling Compounds
- Laboratory hoods/tabletops
- CMU block fill materials

If any of these suspect materials are specified for use on the Project, and if they do not have specific labelling identifying them as asbestos free, then the CONTRACTOR shall notify the OWNER immediately. Laboratory analysis of the material by an OWNER-approved laboratory shall be performed at CONTRACTOR's expense in order to warrant that the material does not contain asbestos. A copy of the package labelling or results of laboratory testing must be provided to the OWNER prior to inclusion of the specified material during construction. Contractor's construction submittals must include MSDSs for all new materials used in construction of buildings, facilities and infrastructure.

1.5 SUBMITTALS

NON-USE OF ASBESTOS AFFIDAVITS

At the time that the CONTRACTOR signs the Agreement, they shall sign a Non-Use of Asbestos Affidavit (Contractor Prior to Construction), Contract Document 00680. This Affidavit certifies that the CONTRACTOR agrees that they will not allow any asbestos containing materials to be incorporated into the construction of the Project or allow any asbestos containing building materials on the site for which the OWNER has not given prior written approval.

Prior to final payment, the CONTRACTOR will provide to the OWNER a Non-Use of Asbestos Affidavit (Contractor After Construction), Contract Document 00681. This Affidavit certifies that the

CONTRACTOR did not allow asbestos containing materials to be incorporated into the construction or allowed any asbestos containing building materials on the site for which the OWNER of the Project did not give prior written approval.

ASBESTOS CONTAINING MATERIALS: When any asbestos containing materials are used on the Project, provide the following information:

A detailed description of the material containing the asbestos.

The type and percent of asbestos contained in the material.

The quantity of the materials used, including the square footage, or in the case of pipe insulation, the size and linear footage.

A drawing showing the exact location of any asbestos containing materials.

Final payment shall be withheld until the above described Affidavits, submittals and/or information are received and approved.

END

STATEMENT OF NON-INCLUSION OF ASBESTOS CONTAINING MATERIAL

STATE OF TEXAS
COUNTY OF TRAVIS

ENGINEER/ARCHITECT
PRIOR TO DESIGN

"My name is Carlos Chavez, hereinafter known as Authorized Representative.

"I am over the age of 18 years and I have never been convicted of a crime. I am the Engineering Manager of Black & Veatch Corporation hereinafter known as ENGINEER/ARCHITECT.

"I am fully competent to make this statement. I have personal knowledge of the facts set forth below and they are all true and correct.

"WHEREAS ENGINEER/ARCHITECT has been selected to provide designs, to prepare the bid and construction documents, and to assist the City of Austin, Texas, hereinafter known as OWNER, during the construction of Walnut Creek Wastewater Treatment Plant Tertiary Filter Rehabilitation Project, located at 7113 FM 969, Austin, Texas, hereinafter known as Project, and

"WHEREAS asbestos in a dust form is a recognized health hazard, and

"WHEREAS the OWNER desires not to have any asbestos containing materials used or incorporated into the construction of the Project;

"THEREFORE the ENGINEER/ARCHITECT affirms that to the best of its knowledge and belief:

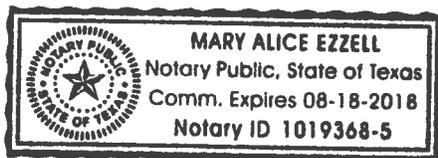
- 1. The ENGINEER/ARCHITECT, any person, firm or organization representing or represented by the ENGINEER/ARCHITECT, shall not knowingly specify, request, or approve for use in conjunction with the Project, any asbestos containing materials or any other materials defined as containing asbestos by any laws, rules or regulations promulgated by the United States Government, the State of Texas or any governmental organization or agency operating under the authority of either of those entities.
2. Realizing that there might be materials required in which a satisfactory non-asbestos containing material cannot be obtained, the ENGINEER/ARCHITECT will do the following before specifying any asbestos containing material:
A. Inform the OWNER's Project Manager for this Project, in writing, of any intent to specify asbestos containing materials.
B. Receive written approval from the City of Austin Project Manager for the specifying of any asbestos containing materials.
C. At the completion of the design phase, and before the OWNER receives any bids for this Project, provide to the Project Manager, in writing, the proposed location of any asbestos containing materials, the type of asbestos they contain, and the percent of asbestos by types.
3. The ENGINEER/ARCHITECT states its understanding that if any asbestos containing materials not approved by the OWNER for inclusion into the Project, are determined, as a result of any inspection and sample analysis performed by an individual(s) and/or firm(s) certified and/or licensed to perform such inspection by the United States Government and/or the State of Texas, to have been knowingly specified, requested and/or approved by the ENGINEER/ARCHITECT for inclusion in the Project, the OWNER shall look to the ENGINEER/ARCHITECT for reimbursement of any and all costs incurred in the removal and/or other abatement of said asbestos containing materials.
4. ENGINEER/ARCHITECT further understands that OWNER shall also look to the ENGINEER/ARCHITECT for any and all damages to OWNER which result from the inability of the OWNER to use any portion or all of the Project due to the incorporation of asbestos containing materials that have been knowingly specified, requested and/or approved by the ENGINEER/ARCHITECT.
5. ENGINEER/ARCHITECT further understands that OWNER will pursue reimbursement of any said cost and compensation for any said damages from the ENGINEER/ARCHITECT by any and every means within OWNER's right and power.

Signature of Authorized Representative: Carlos Chavez

STATE OF TEXAS
COUNTY OF TRAVIS

ON 10th day of June, 2016 personally appeared Carlos Chavez

and been duly sworn by me, subscribed to the foregoing statement and has stated that the facts stated therein are true and correct.



Notary Public, State of Texas Mary Alice Ezzell
Printed Name of Notary Mary Alice Ezzell
My Commission Expires: 8-18-18

01605A.00/110392

CITY OF AUSTIN
STATEMENT OF NON-INCLUSION OF ASBESTOS CONTAINING MATERIAL

STATE OF TEXAS
COUNTY OF TRAVIS

**ENGINEER/ARCHITECT
AFTER DESIGN**

"My name is Carlos Chavez, hereinafter known as Authorized Representative.

"I am over the age of 18 years and I have never been convicted of a crime. I am the Engineering Manager of Black & Veatch Corporation hereinafter known as ENGINEER/ARCHITECT.

"I am fully competent to make this statement. I have personal knowledge of the facts set forth below and they are all true and correct.

"WHEREAS ENGINEER/ARCHITECT has been selected to provide designs, to prepare the bid and construction documents, and to assist the City of Austin, Texas, hereinafter known as OWNER, during the construction of Walnut Creek

Wastewater Treatment Plant Tertiary Filter Rehabilitation Project, located at 7113 FM 969 Austin, Texas, hereinafter known as Project, and

"WHEREAS asbestos in a dust form is a recognized health hazard, and
"WHEREAS the OWNER desires not to have any asbestos containing materials used or incorporated into the construction of the Project;
"THEREFORE the ENGINEER/ARCHITECT affirms that to the best of its knowledge and belief:

1. The ENGINEER/ARCHITECT, any person, firm or organization representing or represented by the ENGINEER/ARCHITECT, shall not knowingly specify, request, or approve for use in conjunction with the Project, any asbestos containing materials or any other materials defined as containing asbestos by any laws, rules or regulations promulgated by the United States Government, the State of Texas or any governmental organization or agency operating under the authority of either of those entities.
2. The only exceptions to the above statement are the following materials that are required because a satisfactory non-asbestos containing material cannot be obtained. The inclusion of these materials has been approved by the OWNER's Project Manager for this Project.

None

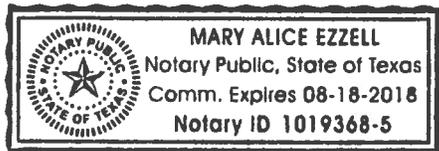
3. The ENGINEER/ARCHITECT states its understanding that if any asbestos containing materials not approved by the OWNER for inclusion into the Project, are determined, as a result of any inspection and sample analysis performed by an individual(s) and/or firm(s) certified and/or licensed to perform such inspection by the United States Government and/or the State of Texas, to have been knowingly specified, requested and/or approved by the ENGINEER/ARCHITECT for inclusion in the Project, the OWNER shall look to the ENGINEER/ARCHITECT for reimbursement of any and all costs incurred in the removal and/or other abatement of said asbestos containing materials.
4. ENGINEER/ARCHITECT further understands that OWNER shall also look to the ENGINEER/ARCHITECT for any and all damages to OWNER which result from the inability of the OWNER to use any portion or all of the Project due to the incorporation of asbestos containing materials that have been knowingly specified, requested and/or approved by the ENGINEER/ARCHITECT.
5. ENGINEER/ARCHITECT further understands that OWNER will pursue reimbursement of any said cost and compensation for any said damages from the ENGINEER/ARCHITECT by any and every means within OWNER's right and power.

Signature of Authorized Representative: Carlos Chavez

STATE OF TEXAS
COUNTY OF TRAVIS

ON 10th of June, 2016 personally appeared Carlos Chavez,

and been duly sworn by me, subscribed to the foregoing statement and has stated that the facts stated therein are true and correct.



Notary Public, State of Texas Mary Alice Ezzell
Printed Name of Notary Mary Alice Ezzell
My Commission Expires: 8-18-18

01605B/110392

SCOPE OF WORK

FOR

**CITY OF AUSTIN
BUILDING SERVICES DEPARTMENT
ASBESTOS, LEAD, AND MOLD MANAGEMENT GROUP**

**Lead Remediation
in Support of
Walnut Creek WWTP Tertiary Filter Rehab Project
FILTER BUILDINGS 1 and 2
GALLERY LEVEL WORK AREAS
7113 FM 969
Austin, Texas**

Terracon Project No.: 96167430

**PROJECT MANAGEMENT
BY
CITY OF AUSTIN
ASBESTOS, LEAD, AND MOLD MANAGEMENT GROUP
BUILDING SERVICES DEPARTMENT
411 CHICON, AUSTIN, TX 78702
(512) 974-7094**

July 27, 2016



**RICHARD IAN HOWES
CERTIFIED LEAD PROJECT DESIGNER
LICENSE NUMBER 2090034
EXPIRES 11-19-17**



Lead (Pb) Based Paint Remediation in Support of

**Walnut Creek WWTP Tertiary Filter Rehab Project
FILTER BUILDINGS 1 and 2
GALLERY LEVEL WORK AREAS
7113 FM 969
Austin, Texas**

For the

**CITY OF AUSTIN
ASBESTOS, LEAD, AND MOLD MANAGEMENT GROUP
BUILDING SERVICES DEPARTMENT**

DIVISION 1 - GENERAL REQUIREMENTS

- 01920 - Summary of Work – Lead (Pb) Containing Materials
- 01921 - Project Coordination – Lead (Pb) Containing Materials
- 01922 - Reference Standards and Definitions– Lead (Pb) Containing Materials
- 01923 - Codes, Regulations, and Standards – Lead (Pb) Containing Materials
- 01924 - Submittals - Lead (Pb) Containing Materials
- 01925 - Test Laboratory Services - Lead (Pb) Containing Materials
- 01926 - Project Clearance - Lead (Pb) Containing Materials
- 01927 - Remediation Facilities and Temporary Controls - Lead (Pb) Containing Materials
- 01928 - Exterior Regulated Areas - Lead (Pb) Containing Materials
- 01931 - Worker Protection - Lead (Pb) Containing Materials
- 01932 - Respiratory Protection - Lead (Pb) Containing Materials
- 01934 - Project Closeout - Lead (Pb) Containing Materials
- 01935 - Project Decontamination - Lead (Pb) Containing Materials

DIVISION 2 - SITE WORK

- 01937 - Remediation of Lead (Pb) Contaminated Soil
- 01938 - Disposal of Waste Materials - Lead (Pb) Containing Materials
- 01947 - Encapsulation of Lead (Pb) Containing Materials
- 01948 - Chemical Stripping of Lead (Pb) Containing Materials

Richard Ian Howes, Project Designer

Certified Lead Abatement Project Designer
Certification Number: 2090034
Expiration Date: 11-19-17

SECTION 01920 - SUMMARY OF WORK – LEAD (PB) CONTAINING MATERIALS

PART 1 – GENERAL: THIS PROJECT IS TO BE CONDUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF TAC 25, SECTION 15, ARTICLE 4477-3A AND 29 CFR 1926.1101.

The location and approximate quantities of lead (Pb) containing paint materials which will ultimately be removed is not provided in these specifications but shall be determined as the project proceeds and various components are removed to facilitate plant/system renovations. The Contractor is responsible to field verify for actual quantities which these plans and specifications represent. No additional compensation will be made to the Contractor(s) for differences between the estimated quantities and the actual quantities unless prior written approval is obtained from the Owner or his representative.

HUD has issued guidelines titled *Guidelines For the Evaluation and Control of Lead-Based Paint Hazard in Housing* (Chapter 7 – Lead-Based Paint Inspection) pursuant to Title X of the Housing and Community Development Act of 1992. The US Environmental Protection Agency (EPA)/HUD action level for lead-based painted surfaces is 5,000 parts per million (ppm) or 0.5% dry weight using the atomic absorption analytical method.

The Occupational Safety and Health Administration (OSHA) considers paint containing any level of lead above the analytical method detection limit a potential hazard which should be communicated to any employees or contractors who may disturb the materials in the course of their assigned work.

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.02 WORK COVERED BY CONTRACT DOCUMENTS

- A. **The Project** consists of Lead (Pb) Containing Paint Remediation to facilitate improvements included in the Walnut Creek WWTP Tertiary Filter Rehab Project and shall involve work as needed in and adjacent to the Filter Building 1 Gallery Level and Filter Building 2 Gallery Level work areas. The removal of the asbestos containing materials is not included as part of the work of this project. If any suspect materials are identified by the Contractor, the Owner must be contacted immediately so analytical analysis of the suspect materials can be completed prior to disturbance of the suspect material(s).

1. **Project Location:** Walnut Creek Wastewater Treatment Plant, Austin, Texas
2. **Owner:** City of Austin
3. **Physical Structure:** Multi-level industrial plant structures and wastewater storage/treatment vessels

- B. Standard City of Austin requirements for construction including but not limited to erosion control, tree protection, utility termination, hydromulching, etc. as indicated in the City of Austin Master Specifications shall apply to this project.
- C. **Salvage of any materials shall not be allowed.**
- D. The Contractor shall adequately staff this project such that it will be completed in the period indicated in the other bidding documents. ***The work hours for this project shall be from 7:00 a.m. to 6:00 pm.*** If the project is not completed within this time frame, the Owner will backcharge the Contractor for any charges incurred by the Owner for additional Owner Representative services required to complete this project.

It is intended that the Contractor, as a minimum, shall use personnel who are properly trained to recognize lead hazards, however State of Texas Certification as Lead Supervisors and/or Lead Workers shall not be required for this project. All Contractor worker and supervisory personnel at the work site shall be properly trained, equipped and possess valid and current training certificates. During all phases of this project, the Contractor project site supervisor shall remain at the project site during all work activities.

The Contractor shall submit the names and resumes (including pertinent project experience) of the properly trained Lead Supervisors to be used to conduct these lead (Pb) related activities. If the supervisor(s) submitted are approved by the Owner, the Contractor shall ensure that at least one of these project supervisors are on site throughout the project including final tear down operations. The Contractor shall not substitute an approved project supervisor without the prior approval of the Owner.

To protect the general public safety, the Contractor shall secure the actual work area throughout the project and provide unrestrained access to the property to the Owner and Owner's Representatives.

The Lead (Pb) Containing Paint Remediation Work consists of the dismantling of any piping, valves and/or equipment required for plant/system improvements and the segregation and recycling of all metal components prior to replacement by others. All metal components incorporated within, attached to, or immediately adjacent to the components/structures designated shall be carefully dismantled with minimal disturbance to the existing paint. Said metal components shall be transported to a recycling facility for disposal.

During a previous study, the existing interior and exterior paint components which are likely to be disturbed have been bulk sampled and analyzed. **Laboratory analysis of the samples collected has resulted in a range from below detection level to 2,900 PPM lead (Pb) by total weight.** One of the coatings sampled traffic yellow on PVC Chlorine Solution Piping) was found to contain paint at levels considered Lead-based Paint by HUD Guidelines. It is understood the Chlorine Solution piping will not be disturbed by the current project. Results of the lead-based paint survey are provided in the Appendix of this Specification.

Upon successful dismantling and segregation of components, and prior to disposal of any debris generated at the site, the Owner's Representative shall conduct sampling of any waste stream components which cannot be recycled for the purpose of characterizing the demolition debris. The samples collected shall be tested utilizing Toxicity Characteristic Leachate Procedures (TCLP) for the RCRA 8 Metals which will confirm the lack of or level of hazardous materials present in the debris that will be disposed of by landfilling. The Owner anticipates the results will allow disposal of the demolition debris as a general construction debris.

The Contractor shall carefully remove designated components by manual demolition. During the demolition activity, the Contractor personnel shall continuously mist the area with water to adequately inhibit any visible emission of dust into the air. Do not allow water to pool on site. Mist only enough to maintain dust mitigation. Precautions shall be taken such that, within the confines of the work area/physical barrier, no water shall leave the area and no free water shall be generated by the work activities.

The following lead (Pb) hazard removal methods are prohibited:

- 1) Open flame burning;
- 2) Chemical stripping with methylene chloride based paint strippers;
- 3) Uncontained abrasive blasting;
- 4) Uncontained power washing;
- 5) Dry sanding or scraping;
- 6) Power sanding without HEPA attachment;
- 7) Sanding of wood after chemical stripping.

If the Owner's Representative notices any debris on the ground as a result of the abatement and dismantling activities, the Contractor shall clean up debris and install additional poly sheeting on the ground in a manner sufficient to catch **all** debris that is generated during the abatement and dismantling activities. All debris generated during the abatement and dismantling activities shall be kept wet, promptly placed in poly lined dumpsters, evaluated by TCLP then removed from the site. The Contractor shall avoid the use of excessive quantities of water. Measurable quantities of water shall be controlled and collected for filtration in order to avoid creating an additional liquid waste stream.

All equipment used on this project shall be free of any visible debris and operational. The Owner's Representative along with the Contractor's designated supervisor shall inspect all equipment prior to it being brought into the work area. If any debris found on the equipment is suspected to be lead (Pb) paint related, the equipment shall be wet wiped and decontaminated. **The decontamination of the equipment shall not take place on the project site.**

- E. The Work** will be constructed under a single prime contract.

1.03 PLAN OF ACTION

Submit a written detailed job-specific plan of the procedures proposed for use in complying with the requirements of this specification. Include in the plan the location, size, layout and details of the work areas and worker decontamination facilities. Include the sequencing of work processes, the interface of trades involved in the performance of work, methods to be used to assure the safety of site occupants and visitors to the site, disposal/recycling plan including location of approved disposal/recycling site, and a detailed description of the methods to be employed to control fugitive dust and debris. In addition, include the method to be employed for the segregation and recycling of metal components, and packaging of lead (Pb) paint, dust and debris.

Describe the methods that will be used to comply with OSHA requirements including submission of exposure monitoring to demonstrate adequacy of respiratory and worker protection equipment selected. **Note: The guideline presented in Section 01932 – Respiratory Protection shall dictate the minimum respiratory protection.**

Prior to commencement of Work, the Owner or Owner's Representative must approve the submitted plan of action.

In summary, a **Written** Plan of Action shall contain, at a minimum, the following:

1. Facilities layout and work area details that illustrate placement of equipment and decontamination facilities
2. Work process sequencing
3. Interface of trades
4. Discussion of control methods that will be implemented to:
 - a. Assure site safety to adjacent occupants; and
 - b. Assure that fugitive dust and debris are controlled
5. Method of dismantling of Lead-containing Paint components and/or substrates
6. Method of packaging of Lead-containing Paint components, substrates, dust, and debris
7. A description of the worker safety program that will be used to ensure compliance with OSHA requirements (29 CFR 1926, Part II)

1.04 EXAMINATION

Prior to commencement of work, examine areas in which work will be performed with the Owner's Representative. If required elsewhere in the Project Documents, prepare a listing of damage to structure, surfaces, and equipment or of surrounding properties, which could be misconstrued as damage resulting from the work. Photograph or videotape existing conditions as necessary to document conditions. Submit to Owner's Representative prior to starting work.

1.05 POTENTIAL LEAD (PB) HAZARD

The disturbance or dislocation of lead-containing painted materials may cause lead (Pb) dust to be released into the atmosphere, thereby, creating a potential health hazard to workers. Apprise all workers, supervisory personnel, subcontractors and consultants who will be at the job site of the seriousness of the hazard and of proper work procedures which must be followed.

Where in the performance of the work, workers, supervisory personnel, subcontractors, or consultants may encounter, disturb, or otherwise function in the immediate vicinity of any identified lead-based paint, take appropriate continuous measures as necessary to protect all individuals from the potential hazard of exposure to lead (Pb) dust. Such measures shall include the procedures and methods described herein, and compliance with regulations and guidelines of applicable federal, state and local agencies.

1.06 STOP WORK

If the Owner or Owner's Representative presents a written or verbal stop work order, or if stop work levels as set forth in the Contract Documents are exceeded, immediately and automatically stop all work. Do not recommence work until authorized in writing by the Owner or Owner's Representative.

1.07 LEAD-BASED/LEAD-CONTAINING PAINTED SURFACES

- A. Lead-based painted surfaces are known to be present at the work-site (Traffic Yellow on PVC Chlorine Solution piping), however it does not appear the work will disturb any of these coatings. Many of the surfaces that are to be disturbed are known to be painted with lead-containing paint are listed below. There may be other surfaces that are also painted with potentially lead-based paint. Components and surfaces not in this list may be included in the Work.
- B. The majority of the painted surfaces contain some quantity of lead (Pb) in the paint. It is the Contractor's responsibility to provide adequate protection for his personnel and conform to all OSHA requirements.
- C. It is the Contractor's responsibility to estimate the quantities of lead-containing paint surfaces to be remediated for this project. The Contractor shall field verify all quantities.
- D. **Lead-Containing Paint (potential OSHA Hazard) has been determined to be present in the following locations:**
 - FB-L01 – The light gray paint material applied to the metal piping and bases of the east end backwash system components were found to contain 1,300 ppm lead. This material was observed to be in good condition.
 - FB-L03 – The dark gray paint material applied to the metal motor housings of the east end induction motors were found to contain 530 ppm lead. This material was observed to be in good condition.

- FB-L04 – The light green paint material applied to the metal vacuuming priming pumps, valves, piping, and high pressure air line was found to contain 190 ppm lead. This material was observed to be in good condition.
- FB-L06 – The light blue paint material applied to the concrete walls in the east section of the Filter Gallery were found to contain 43 ppm lead. This material was observed to be in good condition.
- FB-L07 – The light gray paint material applied to the metal piping and valves of the filter basins was found to contain 2,300 ppm lead. This material was observed to be in good condition.
- FB-L08 – The dark blue paint material applied to the metal effluent valves and handles of the filter basins were found to contain 83 ppm lead. This material was observed to be in good condition.
- FB-09 – The red paint applied to the metal valves, handles, vent pipe handles, and chlorine solution handles of the filter basins were found to contain 76 ppm lead. This material was observed to be in good condition.
- FB-L10 – The dark gray paint material applied to the metal housings of Air Handler Units 1 and 2 were found to contain 1,000 ppm lead. This material was observed to be in good condition.
- FB-L12 – The light yellow paint material applied to the metal vent piping on the west end of the filter basins was found to contain 34 ppm lead. The material was observed to be in good condition.
- FB-13 – The dark blue paint material applied to the metal surface wash piping and non-potable water line was found to contain 2,900 ppm lead. The material was observed to be in good condition.
- FB-14 – The medium gray paint material applied to the vent piping of the east end filter basins was found to contain 2,400 ppm lead. The material was observed to be in good condition.

E. Paint which has been determined to have levels of Lead below the detection level may be present in the following locations:

- FB-L02 – The light purple paint material applied to the metal piping, valves, and bases of the east end FBF Pumps was found to contain <42 ppm lead. This material was observed to be in good condition.

- FB-L11 – The light beige paint material utilized on the metal piping and valves of the overhead filter basins was found to contain <42 ppm lead. The material was observed to be in good condition.

1.08 WORK UNDER OTHER CONTRACTS

- A. **Separate Contract:** The Owner has awarded a separate contract for performance of certain construction operations at the site. There will be only one contract awarded by the Owner for all details of the project.

1.09 WORK SEQUENCE

- A. **The Remediation and Dismantling Work** will be conducted in numerous phases as project schedules dictate.

1.10 CONTRACTOR USE OF PREMISES

- A. **Use of the Site:** Limit use of the premises to work in areas indicated. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated.

1. **Owner Occupancy:** The buildings are currently occupied and plant activities are in progress and shall remain in progress in the general vicinity of all work.
2. **Driveways, Entrances and Surrounding Roadways:** Keep driveways, entrances, and surrounding roadways serving the premises clear and available to the Owner, the Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials unless prior arrangements have been made with the Owner. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
3. Lock automotive type vehicles, such as passenger cars and trucks and other mechanized or motorized construction equipment, when parked and unattended, so as to prevent unauthorized use. Do not leave such vehicles or equipment unattended with the motor running or the ignition key in place or accessible to unauthorized persons.
4. Do not unreasonably encumber the site with materials or equipment. Confine stockpiling of materials and location of storage sheds to the areas indicated. If additional storage is necessary obtain and pay for such storage off site.

B. **Use of the Existing Building(s):**

1. Keep public areas free from accumulation of waste, rubbish or construction debris.

2. No Smoking or open fires will be permitted within the building enclosure or on the premises.
3. **Use of Toilet Room:** Use of existing toilets within the building or surrounding buildings by the Contractor and his personnel, **will not be** permitted. The Contractor shall provide toilet facilities for its personnel use.

1.12 OCCUPANCY REQUIREMENTS

- A. **Full Owner Occupancy:** The Owner **will not occupy** the site and existing buildings during the entire construction period.

1.13 SUBMITTALS

Before the Start of Work: Submit the following to the Owner and Owner's Representative for review. Do not begin work until these Submittals are returned with Owner's Representative's action stamp indicating that the submittal is returned for unrestricted use or final-but-restricted use. **Allow 3 days time for review of submittals.**

- A. **Plan of Action:** Submit as a written report.
- B. **Inspection:** Submit written report on inspection carried out as required by this section. Include copies of all photographs, videotapes, etc.
- C. **Alternative Methods:** Submit, in writing, any alternative methods proposed to accomplish the work of this contract.
- D. **Submit copies of valid and current Lead training certificates for all worker and supervisory personnel at the work site. In addition, copies of the appropriate DOT certifications required for the manifesting and transporting of hazardous materials must be submitted.**

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01920

SECTION 01921 - COORDINATION – LEAD CONTAINING MATERIALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and supervisory requirements necessary for Project coordination including, but not necessarily limited to the following:
 - 1. General project coordination procedures
 - 2. Conservation
 - 3. Coordination Drawings
 - 4. Administrative and supervisory personnel
 - 5. Cleaning and protection
- B. **Related Sections:** The following Sections contain requirements that relate to this Section:
 - 1. Section 01924 - "Submittals" for preparing and submitting the Contractor's Construction Schedule
 - 2. Section 01933 - "Materials and Equipment" for coordinating general installation
 - 3. Section 01934 - "Contract Closeout" for coordinating contract closeout

1.3 COORDINATION

- A. Coordinate lead-related operations included in various sections of these specifications to assure efficient and orderly completion of each part of the Work. Coordinate lead-related operations included under different sections that depend on each other for proper execution of the Work.
 - 1. Schedule construction operations in the sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components to assure maximum accessibility for required maintenance, service, and repair.
 - 3. Make provisions to accommodate items scheduled for later installation.

- B. Where necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.
 - 1. Prepare similar memoranda for the Owner, Owner's Representative and other contractors where coordination of their work is required.
- C. **Administrative Procedures:** Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 - 1. Preparation of schedules
 - 2. Installation and removal of temporary facilities
 - 3. Delivery and processing of submittals
 - 4. Progress meetings
 - 5. Project Close-out activities
- D. **Conservation:** Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

1.4 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

- A. **Supervisor:** Provide a full-time Supervisor who is trained as a Lead (Pb) Abatement Supervisor and experienced in administration and supervision of lead-based paint removal projects including work practices, protective measures for building and personnel, disposal procedures, etc. This person is the Contractor's representative responsible for compliance with all applicable federal, state and local regulations and guidelines; particularly those relating to lead-based paint and hazardous waste.
- B. **Workers:** Provide a sufficient number of workers who are trained as Lead (Pb) Abatement Workers and experienced in lead-based paint removal projects including work practices and protective measures for building and personnel.
- C. **Experience and Training:** The Supervisor shall meet all the requirements as a Competent Person as required by OSHA 29 CFR 1926.62. The Supervisor and Workers must have completed training in Lead Paint Abatement Health and Safety. The course shall meet the requirements of the HUD Guidelines and the EPA Model Accreditation Program for supervisors and workers (40 CFR 745). They must have experience with projects of similar type and size.
- D. ***All workers and supervisory personnel must hold current and valid training certificates.***

1.5 PRE-CONSTRUCTION CONFERENCE

- A.** An initial progress meeting, recognized as "Pre-Construction Conference", will be convened by the Owner prior to start of any work. Meet at project site, or as otherwise directed, with General Superintendent, Owner, Owner's Representative, Project Administrator, and other entities concerned with lead-based paint removal work.
1. **Attendees:** Authorized representatives of the Owner, Owner's Representative, and their consultants; the Contractor and its superintendent; major subcontractors; manufacturers; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work.
 2. 72 hour advance notice will be provided to all participants prior to convening Pre-construction Conference.
 3. This is an organizational meeting, to review responsibilities and personnel assignments, to locate regulated areas and temporary facilities including power, light, water etc.
 4. **Agenda:** Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule
 - b. Critical work sequencing
 - c. Designation of responsible personnel
 - d. Procedures for processing field decisions and Change Orders
 - e. Procedures for processing Applications for Payment
 - f. Distribution of Contract Documents
 - g. Submittal of Product Data
 - h. Preparation of record documents
 - i. Use of the premises
 - j. Parking availability
 - k. Office, work, and storage areas
 - l. Equipment deliveries and priorities
 - m. Safety procedures
 - n. First aid
 - o. Security
 - p. Housekeeping
 - q. Working hours

1.6 PROGRESS MEETINGS

- A. General:** In addition to specific coordination and pre-installation meetings for each element of work, and other regular project meetings held for other purposes, the Owner will hold general progress meetings as required. These meeting will be scheduled, where possible, at time of preparation of payment request.
- B. Attendees:** In addition to representatives of the Owner and Owner's Representative, the Contractor, each subcontractor, supplier, or other entity

concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the work. Require each entity then involved in planning, coordination or performance of work to be properly represented at each meeting.

C. Agenda: Be prepared to discuss the following items at the progress meetings. Review other items of significance that could affect progress.

1. **Contractor's Schedule:** Review progress since the last meeting. Determine where each activity is in relation to the Contractor's Schedule, whether on time or ahead or behind schedule. Determine how tasks behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to insure that current and subsequent activities will be completed within the Contract Time.

2. Review the present and future needs of each entity present, including the following:

- a. Interface requirements
- b. Time
- c. Sequences
- d. Status of submittals
- e. Deliveries
- f. Access
- g. Site utilization
- h. Temporary facilities and services
- i. Hours of work
- j. Hazards and risks
- k. Housekeeping
- l. Quality and work standards
- m. Change Orders
- n. Documentation of information for payment requests

D. Reporting: Revise the Contractor's Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue the revised schedule no later than one (1) day after each meeting. Include a brief summary, in narrative form, of progress since the previous meeting and report.

1.7 DAILY LOG

A. Daily Log: Maintain a daily log documenting the dates and time of but not limited to, the following items:

1. Meetings, purpose, attendees, brief discussion and significant decisions
2. Visitations, authorized and unauthorized
3. Log of personnel, by name, those entering and leaving Work Area
4. Accidents
5. Special or unusual events; i.e. barrier breaching or equipment failures
6. Documentation of Contractor's completion of the following:

- a. Inspection of work area preparation prior to start of removal and daily thereafter
 - b. Removal of any sheet plastic barriers
 - c. Contractor's inspections prior to painting, enclosure or any other operation that will conceal the condition of lead-based painted components or the substrate from which such materials have been removed
 - d. Removal of waste materials from work area
 - e. Decontamination of equipment (list items)
- 7. List of subcontractors at the site
 - 8. Approximate count of personnel at the site
 - 9. High and low temperatures, general weather conditions
 - 10. Stoppages, delays, shortages, losses
 - 11. Meter readings and similar recordings
 - 12. Emergency procedures
 - 13. Orders and requests of governing authorities
 - 14. Change Orders received and/or implemented
 - 15. Services connected, disconnected
 - 16. Equipment or system tests and start-ups
 - 17. Partial Completions, occupancies
 - 18. Substantial Completions authorized
 - 19. Contractors final inspection/final wipe test analysis
- B. Provide two (2) copies of this log to Owner's Representative on a daily basis.
 - C. Submit copies of this log at final closeout of project as a project close out submittal.

1.8 SPECIAL REPORTS

- A. **General:** Except as otherwise indicated, submit special reports directly to Owner within one day of occurrence requiring special report, with copy to Owner's Representative and others affected by occurrence.
- B. **Reporting Unusual Events:** When an event of unusual and significant nature occurs at site, within 24 hours prepare and submit a written special report to the Owner and Owner's Representative listing chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. When such events are known or predictable in advance, advise Owner and Owner's Representative in advance at earliest possible date.
- C. **Reporting Accidents:** Prepare and submit written reports of significant accidents, at site and anywhere else work is in progress. Reports must be submitted to the Owner and Owner's Representative within 24 hours after the accident occurs. Record and document data and actions; comply with industry standards. For this purpose, a significant accident is defined to include events where personal injury is sustained, or property loss of substance is sustained, where the event posed a significant threat of loss or personal injury, or where an OSHA 200 Log is required. A copy of an OSHA 200 Log may be submitted for this purpose.

- D. **Report Discovered Conditions:** When an unusual condition of the building is discovered during the work (e.g. leaks, corrosion), prepare and submit a written special report to the Owner and Owner's Representative within 24 hours of discovery indicating condition discovered.

1.9 CONTINGENCY PLAN

- A. **Contingency Plan:** Prepare a contingency plan for emergencies including fire, accident, power failure, or any other event that may require modification or abridgement of decontamination or work area isolation procedures. Include in plan specific procedures for decontamination or work area isolation. Note that nothing in this specification should impede safe exiting or providing of adequate medical attention in the event of an emergency.
- B. **Post:** At entrance of work area. Telephone numbers and locations of emergency services including but not limited to fire, ambulance, doctor, hospital, police, power company, telephone company.

1.10 NOTIFICATIONS

- A. Notify other entities at the job site of the nature of the lead-based paint removal activities, location of lead-based painted components, requirements relative to lead-based paint set forth in these specifications and applicable regulations.
- B. Notify emergency service agencies including fire, ambulance, police or other agency that may service the abatement work site in case of an emergency. Notification is to include methods of entering work area, emergency entry and exit locations, modifications to fire notification or firefighting equipment, and other information needed by agencies providing emergency services.
- C. **Notifications of Emergency:** Any individual at the job site may notify emergency service agencies if necessary without effect on this contract or the Contract Sum.

1.11 SUBMITTALS

- A. **Before the Start of Work:** Submit the following to the Owner's Representative. No work shall begin until these submittals are returned with Owner's Representative's stamp indicating that the submittal has been received.
 - 1. Contingency Plans: for emergency actions.
 - 2. Telephone Numbers: and location of emergency services.
 - 3. Notifications: sent to other entities at the work site.
 - 4. Notifications: sent to emergency service agencies.
 - 5. Accreditation: Submit evidence in form of training course certificate for the supervisor, foreman and workers as being trained in lead-based paint health and safety in accordance with HUD.
 - 6. Name and address of recycling facility that will be accepting the recyclable waste.

7. Certification/Licensing: Submit evidence, in form of copies, of current and valid Lead training certificates for the supervisor, foreman and all workers.
 8. Staff Names: Submit a list of the Contractor's principal staff assignments, including the Superintendent and other personnel in attendance at the site; identify individuals, their duties and responsibilities; list their addresses and telephone numbers.
- B. Post copies of the list in the Project meeting room, the temporary field office, and each temporary telephone.

PART 2 - PRODUCTS (Not Applicable).

PART 3 - EXECUTION (Not Applicable).

END OF SECTION 01921

SECTION 01922 - REFERENCE STANDARDS AND DEFINITIONS – LEAD CONTAINING MATERIALS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 DEFINITIONS

- A. **General:** Basic Contract definitions are included in the Conditions of the Contract.
- B. **Indicated:** The term indicated refers to graphic representations, notes, or schedules on the Drawings, or other paragraphs or Schedules in the Specifications, and similar requirements in the Contract Documents. Terms such as shown, noted, scheduled, and specified are used to help the reader locate the reference. Location is not limited.
- C. **Directed:** Terms such as directed, requested, authorized, selected, approved, required, and permitted mean directed by the Owner, requested by the Owner, and similar phrases.
- D. **Approved:** The term approved, when used in conjunction with the Owner's action on the Remediation Contractor's submittals, applications, and requests, is limited to the Owner's duties and responsibilities as stated in the Conditions of the Contract.
- E. **Regulations:** The term regulations includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. **Furnish:** The term furnish means supply and deliver to the Project Site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. **Install:** The term install describes operations at the Project Site including the actual unloading, unpacking, assembly, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- H. **Provide:** The term provide means to furnish and install, complete and ready for the intended use.
- I. **Installer:** An installer is the Contractor or another entity engaged by the Contractor, either as an employee, subcontractor, or contractor of lower tier, to perform a particular construction activity, including installation, erection, application, and similar operations. Installers are required to be experienced in the operations they are engaged to perform.

1. **The term experienced**, when used with the term Installer, means having a minimum of 5 previous projects similar in size and scope to this Project, being familiar with the special requirements indicated, and having complied with requirements of the authority having jurisdiction.
- J. Trades:** Using terms such as carpentry does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as carpenter. It also does not imply that requirements specified apply exclusively to trades persons of the corresponding generic name.
- K. Assigning Specialists:** Specialists are recognized experts in operations where required by the specifications. Certain Sections of the Specifications require that specialists who are recognized experts in those operations shall perform specific construction activities. The specialists must be engaged for those activities, and their assignments are requirements over which the Contractor has no option. However, the ultimate responsibility for fulfilling Contract requirements remains with the Contractor.
- L. Project Site:** is the space available to the Contractor for performing construction activities, either exclusively or in conjunction, with others performing other work as part of the Project. The extent of the Project Site is shown on the Drawings and may or may not be identical with the description of the land on which the Project is to be built.
- M. Testing Agencies:** A testing agency is an independent entity engaged to perform specific inspections or tests, either at the Project Site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.
- N. Owner's Representative:** This is the entity described as the "Architect" in AIA Document A201 "General Conditions of the Contract for Construction," or is the entity described as "Engineer" in Engineers Joint Contract Document Committee (EJCDC) Document 1910-8 "Standard General Conditions of the Construction Contract." All references to Architect or Engineer in the Contract Documents in all cases refer to the Owner's Representative. The Owner's Representative will represent the Owner during remediation project. The Owner's Representative will advise and consult with the Owner. The Owner's instructions to the Contractor will be forwarded through the Owner's Representative.
- O. Owner's Representative:** This is the entity described as the "Project Representative" in AIA Document A201 "General Conditions of the Contract for Construction," or is the entity described as "Engineer" in Engineers Joint Contract Document Committee (EJCDC) Document 1910-8 "Standard General Conditions of the Construction Contract." The Owner's Representative is a full time representative of the Owner at the job site.
1. The Owner's Representative has the authority to stop the work upon verbal order if requirements of the Contract Documents are not met, or if in the sole judgement of the Owner's Representative, the Owner, the interests of the Owner, safety of any person or the Owner's property are jeopardized by the work.
- P. Project Manual:** A bound manual consisting of the General Conditions, the

Supplementary Conditions, any Special Conditions and the specification sections.

- Q. Substantial Completion:** The work of this contract is substantially complete when clearance criteria set forth in the Contract Documents are met and the work area may be occupied by the Owner.

1.3 DEFINITIONS RELATIVE TO LEAD BASED PAINT REMEDIATION

- A. Accreditation:** A formal recognition that an organization (e.g. laboratory) is competent to carry out specific tasks or type of tests.
- B. Accredited laboratory:** A laboratory that has been evaluated and given approval to perform a specified measurement or task (such as the National Lead Laboratory Accreditation Program), usually for a specific property or analyze for a specified period of time.
- C. Accredited Training Provider:** means a training provider that meets the standards established by EPA to train risk assessors, inspectors, supervisors, and workers.
- D. Adhesion:** the ability of dry paint or other coating to attach to or remain fixed on a surface without blistering, flaking, cracking, or being removed by tape.
- E. Blank:** A non-exposed sample of the medium used for testing, such as a wipe or filter, which is analyzed like other samples to determine whether: (1) samples are contaminated with lead (Pb) before samples are collected (e.g., at the factory, or at the testing site); and (2) the samples are contaminated after sample collection (e.g., during transportation to the laboratory or in the laboratory).
- F. Breathing Zone:** A hemisphere forward of the shoulders with a radius of approximately 6 to 9 inches around the nose and mouth of the face.
- G. Ceiling Concentration:** The concentration of an airborne substance that shall not be exceeded.
- H. Certified Industrial Hygienist (C.I.H.):** An industrial hygienist certified by the American Board of Industrial Hygiene.
- I. CFR - The Code of Federal Regulations:** The basic component of the Federal Register publication system. The CFR is a codification of the regulations of the various Federal Agencies.
- J. Common Area:** A room or area that is accessible to all tenants in a project (e.g., hallway, boiler room). Generally, any area that is not kept locked.
- K. Competent Person:** An agent of the Remediation Contractor who is a Competent Person as defined by OSHA in 29 CFR 1926.62. This person must be capable of identifying existing and predictable lead (Pb) hazards in the surroundings or working conditions and who has authorization by the Remediation Contractor to take prompt corrective measures to eliminate them.

- L. Detection Limit:** The minimum of a component that a method can reliably measure.
- M. Exposure Monitoring:** The personal air monitoring of an employee's breathing zone to determine the amount of contaminant (e.g. lead (Pb)) to which he/she is exposed.
- N. Federal Register:** A document published daily by the Federal government that contains either proposed or final regulations.
- O. Hazardous Waste:** As defined in RCRA the term "hazardous waste" means a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may:
1. Cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or
 2. Pose a substantial present or potential hazard to human health or the environment when improperly treated stored, transported, or disposed of, or otherwise managed.
 3. As defined in the regulations, a solid waste is hazardous if it meets one of four (4) conditions:
 - a. Exhibits a characteristic of a hazardous waste (40 CFR Sections 261.20 through 262.24).
 - b. Has been listed as hazardous (40 CFR Section 261.31 through 261.33).
 - c. Is a mixture containing a listed hazardous waste and a non-hazardous solid waste (unless the mixture is specifically excluded or no longer exhibits any of the characteristics of hazardous waste).
 - d. Is not excluded from regulation as a hazardous waste.
- P. HEPA - High Efficiency Particulate Air:** A filter capable of filtering out particles of 0.3 microns or greater from a body of air at 99.97% efficiency or greater.
- Q. High Phosphate Detergent:** Detergent which contains at least 5% tri-sodium phosphate (TSP).
- R. Landfill:** A disposal facility or part of a facility where hazardous waste is placed in or on land and which is not a land treatment facility, a surface impoundment, or an injection well.
- S. µg - Micrograms:** The prefix "micro-" means "1/1,000,000 of" (one millionth of). A microgram is 1/1,000,000 of a gram and 1/1,000 of a milligram. A microgram is equal to about 35/1,000,000,000 (thirty-five billionths) of an ounce. 28,400,000 µg are equal to 1 ounce.

- T. Negative Pressure Respirator:** A respirator in which the air pressure inside the respiratory-inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere and negative during inhalation in relation to the air pressure of the outside atmosphere.
- U. Personal Monitoring:** Sampling of the lead (Pb) dust concentrations within the breathing zone of an employee.
- V. Personal Samples (for sampling lead (Pb) dust):** Air samples collected from within the breathing zone of a worker, but outside the respirator. The samples are collected with a personal sampling pump, pulling 1 to 4 liters/minute of air.
- W. Protection Factor:** The ratio of the ambient concentration of an airborne substance to the concentration of the substance inside the respirator at the breathing zone of the wearer. The protection factor is a measure of the degree of protection provided by a respirator to the wearer.
- X. Respirator:** A device designed to protect the wearer from the inhalation of harmful atmospheres.
- Y. Solid Waste:** As defined in RCRA the term "solid waste" means any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under the Clean Water Act, or special nuclear or byproduct material as defined by the Atomic Energy Act of 1954.
- Z. TCLP (Toxicity Characteristic Leaching Procedure):** A test, called the extraction procedure, that is designed to identify wastes likely to leach hazardous concentrations of particular toxic constituents into the ground water as a result of improper management. It is a characteristic of hazardous waste.
- AA. Time Weighted Average (TWA):** The average concentration of a contaminant in air during a specific time period.
- BB. TSP:** Acronym for tri-sodium phosphate.
- CC. ULPA - Ultra Low Particulate Air:** Means a filter capable of filtering out particles of 0.13 microns or greater from a body of air at 99.9995% efficiency or greater.
- DD. Wet Cleaning (Wet Detergent Wash):** The process of eliminating lead (Pb) dust contamination from building surfaces and objects by using cloths, mops, or other cleaning utensils which have been dampened with a solution of water and trisodium phosphate (TSP) or appropriate substitute and afterwards thoroughly decontaminated or disposed of as lead (Pb) contaminated waste.
- EE. Work Area:** The area where lead-based paint abatement or related work is performed which is defined and/or isolated to prevent the spread of lead (Pb) dust, or debris, and entry by unauthorized personnel.

- FF. **Work Practice:** A procedure followed by workers that is intended to minimize exposure to the worker and the environment.

1.4 INDUSTRY STANDARDS

- A. **Applicability of Standards:** Except where the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. **Publication Dates:** Comply with the standards in effect as of the date of the Contract Documents.
- C. **Conflicting Requirements:** Where compliance with two (2) or more standards is specified and where the standards may establish different or conflicting requirements for minimum quantities or quality levels, refer requirements that are different but apparently equal and uncertainties to the Owner or Owner's Representative for a decision before proceeding.
1. **Minimum Quantity or Quality Levels:** The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of the requirements. Refer uncertainties to the Owner or Owner's Representative for a decision before proceeding.
- D. **Copies of Standards:** Each entity engaged in construction on the Project is required to be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
1. Where copies of standards are needed to perform a required construction activity, the Contractor shall obtain copies directly from the publication source.
- E. **Abbreviations and Names:** Trade association names and titles of general standards are frequently abbreviated. Where such acronyms or abbreviations are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards-generating organization, authority having jurisdiction, or other entity applicable to the context of the text provision. Refer to the "Encyclopedia of Associations," published by Gale Research Co., available in most libraries.
- F. **Abbreviations and Names:** Trade association names and titles of general standards are frequently abbreviated. The following acronyms or abbreviations, as referenced in Contract Documents, are defined to mean the associated names. Names and addresses are subject to change and are believed, but not assured, to be accurate and up-to-date as of date of the Contract Documents.

A2LA	American Association for Laboratory Accreditation 656 Quince Orchard Road #300 Gaithersburg, MD 20878	(301) 670-1377
AIA	The American Institute of Architects 1735 New York Ave., NW Washington, DC 20006	(202) 626-7300
AIHA	American Industrial Hygiene Assoc. 2700 Prosperity Avenue, Suite 250 Fairfax, VA 22031-4307	(703) 849-8888
ANSI	American National Standards Institute 11 West 42nd St., 13th Floor New York, NY 10036	(212) 642-4900
ASTM	American Society for Testing and Materials 1916 Race St. Philadelphia, PA 19103-1187	(215) 299-5400
GA	Gypsum Association 810 First St., NE, Suite 510 Washington, DC 20002	(202) 289-5440
IESNA	Illuminating Engineering Society of North America 345 E. 47th St. New York, NY 10017	(212) 705-7926
ML/SFA	Metal Lath/Steel Framing Assoc. (A Division of the National Association of Architectural Metal Manufacturers) 600 S. Federal St., Suite 400 Chicago, IL 60605	(312) 922-6222
NEC	National Electrical Code (from NFPA)	
NEMA	National Electrical Manufacturers Assoc. 2101 L St., NW, Suite 300 Washington, DC 20037	(202) 457-8400
NFPA	National Fire Protection Assoc. One Batterymarch Park P.O. Box 9101 Quincy, MA 02269-9101	(800) 344-3555 (617) 770-3000
NSF	National Sanitation Foundation 3475 Plymouth Rd. P.O. Box 130140 Ann Arbor, MI 48113-0140	(800) 223-2301 (313) 769-8010

PDCA	Painting and Decorating Contractors of America 3913 Old Lee Highway Suite 33-B Fairfax, VA 22030	(703) 359-0826
UL	Underwriters Laboratories 333 Pfingsten Rd. Northbrook, IL 60062	(708) 272-8800

G. Federal Government Agencies: Names and titles of federal government standard or Specification-producing agencies are often abbreviated. The following acronyms or abbreviations referenced in the Contract Documents indicate names of standard- or Specification-producing agencies of the federal government. Names and addresses are subject to change and are believed, but are not assured, to be accurate and up-to-date as of the date of the Contract Documents.

CFR	Code of Federal Regulations (Available from the Government Printing Office) N. Capitol St. between G and H St. NW Washington, DC 20402 (Material is usually first published in the "Federal Register")	(202) 783-3238
CPSC	Consumer Product Safety Commission 5401 Westbard Ave. Bethesda, MD 20207	(800) 638-2772
EPA	Environmental Protection Agency 401 M St., SW Washington, DC 20460	(202) 382-2090
HUD	Department of Housing and Urban Development Office of Lead-Based Paint Abatement and Poisoning Prevention Room B-133 451 7th St. SW, Washington, DC 20410	(202) 755-1805
MSHA	Mine Safety and Health Administration (U.S. Department of Commerce) 4015 Wilson Blvd Arlington, VA 22203	(703) 235-1565
NIOSH	National Institute of Occupational Safety and Health U.S. Dept. of Labor, Room N-3718 200 Constitution Ave, N.W. Washington, D.C. 20210	(800) 35-NIOSH
NIST	National Institute of Standards and Technology (U.S. Department of Commerce) Gaithersburg, MD 20899	(301) 975-2000

OSHA Occupational Safety and Health Administration
(U.S. Department of Labor)
200 Constitution Ave., NW
Washington, DC 20210

(202) 219-6091

1.6 SUBMITTALS

- A. Permits, Licenses, and Certificates:** For the Owner's records, submit copies of permits, valid accreditation and training certificates for all supervisory and worker personnel, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established in conjunction with compliance with standards bearing upon performance of the Work.

END OF SECTION 01922

SECTION 01923 - CODES, REGULATIONS AND STANDARDS – LEAD CONTAINING MATERIALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this section.

1.2 SUMMARY

This section sets forth governmental regulations and industry standards which are included and incorporated herein by reference and made a part of the specification. This section also sets forth those notices and permits which are known to the Owner and which either must be applied for and received, or which must be given to governmental agencies before start of work.

- A. Requirements include adherence to work practices and procedures set forth in applicable codes, regulations, guidelines and standards.
- B. Requirements include obtaining permits, licenses, inspections, releases and similar documentation, as well as payments, statements and similar requirements associated with codes, regulations, and standards.

1.3 CODES AND REGULATIONS

- A. **General Applicability of Codes and Regulations, Guidelines and Standards:** Except to the extent that more explicit or more stringent requirements are written directly into the contract documents, all applicable codes, regulations, guidelines and standards have the same force and effect (and are made a part of the contract documents by reference) as if copied directly into the contract documents, or as if published copies are bound herewith.
- B. **Remediation Contractor Responsibility:** The Remediation Contractor shall assume full responsibility and liability for the compliance with all applicable Federal, State, and local regulations pertaining to work practices, hauling, disposal, and protection of workers, visitors to the site, and persons occupying areas adjacent to the site. The Remediation Contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable Federal, State, and local regulations. The Remediation Contractor shall hold the Owner and Designer harmless for failure to comply with any applicable work, hauling, disposal, safety, health or other regulation on the part of himself, his employees, or his subcontractors.
- C. **Federal Requirements:** those requirements, as amended, which govern lead-based paint abatement work or hauling and disposal of hazardous waste materials include but are not limited to the following:

1. **OSHA:** U.S. Department of Labor, Occupational Safety and Health Administration, (OSHA), including but not limited to:
 - 29 CFR 1910.134** -Respiratory Protection;
 - 29 CFR 1926.20** -General safety and health provisions;
 - 29 CFR 1926.21** -Safety training and education;
 - 29 CFR 1926.23** -First Aid;
 - 29 CFR 1926.24** -Fire Protection;
 - 29 CFR 1926.25** -Housekeeping;
 - 29 CFR 1926.28** -Personal protective equipment;
 - 29 CFR 1926.51(f)** - Washing facilities;
 - 29 CFR 1926.55** -Gases, vapors, fumes, dusts, and mists;
 - 29 CFR 1926.56** -Illumination;
 - 29 CFR 1926.57** -Ventilation;
 - 29 CFR 1926.59** -Hazard Communication Standard;
 - 29 CFR 1926.62** -Lead Construction Standard;
 - 29 CFR 1926.103** -Respiratory protection;
 - 29 CFR 1926.353** -Ventilation: Welding, cutting or heating of metals of toxic significance;
 - 29 CFR 1926.300, 301, 302** -Hand and power tools;
 - 29 CFR 1926.451** -Scaffolding;
 - 29 CFR 1926.500, 502, 503** -Fall Protection;

2. **DOT:** U. S. Department of Transportation, including but not limited to:
 - 49 CFR 171 and 172** -Hazardous Substances

3. **EPA:** U. S. Environmental Protection Agency (EPA), including but not limited to:
 - 40 CFR 260, 261, 262, 263 and 264** Resource Conservation and Recovery Act (RCRA)

**40 CFR 745
(Proposed)**

Lead-Based Paint Activities: Training,
Certification and Work Practice
Requirements

4. HUD: Department of Housing and Urban Development

**24 CFR 35, 905,
941, 965 and 968** Lead-Based Paint Hazard Elimination;
Interim Rule

- D. State Requirements:** those requirements, as amended, which govern lead-based paint abatement work or hauling and disposal of hazardous waste materials include but are not limited to the following:
1. Texas Environmental Lead Reduction, February 19, 1996 amended May 10, 1998
 2. Rules TNRCC 30 TAC 335, Industrial Solid and Municipal Hazardous Waste
- E. Local Requirements:** Abide by all local requirements which govern lead (Pb) remediation work or hauling and disposal of hazardous waste materials.
- F. Building Codes:** Comply with applicable provision of state and/or local building codes that govern any part of the work.
- G. Model Codes:** In the absence of an applicable adopted state or local building code which governs work involved in the lead (Pb) abatement project, comply with the applicable provisions of the BOCA National Codes/1993 published by International Conference for Building Officials or the SBCCI Standard Codes published by Southern Building Code Congress International.

1.4 PERMITS

- A. Permit:** All hazardous waste is to be transported by an entity maintaining a current "Industrial waste hauler permit" as required for transporting of waste materials to a disposal site.
- B. Building Permit:** Secure all necessary building permits as required by state and/or local building codes.

1.5 POSTING AND FILING OF REGULATIONS

- A. Posting and Filing of Regulations:** Post all notices required by applicable federal, state and local regulations. Maintain two (2) copies of applicable federal, state and local regulations and standards. Maintain one copy of each at job site. Keep on file in Remediation Contractor's office one copy of each.

1.6 SUBMITTALS:

- A. Before Start of Work:** Submit each item in this article to the Owner's Representative. No work shall begin until these submittals are returned with Owner's Representative's stamp indicating that the submittal has been received.

1. **Permits, Licenses, and Certificates:** For the Owner's records, submit copies of permits, valid accreditation and training certificates for all supervisory and worker personnel, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established in conjunction with compliance with standards bearing upon performance of the Work including:
 - a. **State and Local Regulations:** Submit copies of codes and regulations applicable to the work.
 - b. **Permits:** Submit copies of current valid permits required by state and local regulations.
 - c. **Certifications/Licenses:** Submit copies of all State and Local licenses and permits necessary to carry out the work of this contract.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION - 01923

SECTION 01924 - SUBMITTALS – LEAD CONTAINING MATERIALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for submittals from the Remediation Contractor to the Owner and Owner's Representative as required for performance of the Work, including;

1. Remediation Contractor's construction schedule
2. Submittal schedule
3. Daily reports
4. Shop Drawings
5. Product Data
6. Samples

- B. **Administrative Submittals:** Refer to other Division 1 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to:

1. Permits
2. Applications for payment
3. Performance and payment bonds
4. Insurance certificates
5. List of Subcontractors

1.3 SUBMITTAL PROCEDURES

- A. **Coordination:** Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that requires sequential activity.

2. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
 - a. The Owner's Representative reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
3. **Processing:** Allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals, including time for resubmittals.
 - a. Allow three (3) days for initial review. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. The Owner's Representative will promptly advise the Remediation Contractor when a submittal being processed must be delayed for coordination.
 - b. If an intermediate submittal is necessary, process the same as the initial submittal.
 - c. Allow one (1) day for reprocessing each submittal.
 - d. No extension of Contract Time will be authorized because of failure to transmit submittals to the Owner's Representative sufficiently in advance of the Work to permit processing.

B. Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.

- a. Project name
- b. Date
- c. Name and address of Owner
- d. Name and address of Owner's Representative
- e. Name and address of Remediation Contractor
- f. Name and address of subcontractor
- g. Name and address of supplier
- h. Name of manufacturer
- i. Number and title of appropriate Specification Section
- j. Drawing number and detail references, as appropriate

C. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from Remediation Contractor to Owner's Representative using a transmittal form. Submittals received from sources other than the Remediation Contractor will be returned without action.

1. On the transmittal, record relevant information and requests for data. On the form, or separate sheet, record deviations from Contract Document requirements, including minor variations and limitations. Include Remediation Contractor's certification that information complies with Contract Document requirements.

1.4 CONTRACTOR'S REMEDIATION SCHEDULE

- A. Provide proposed detailed schedule including work dates, work shift time, number of employees, dates of start and completion including dates of preparation work, removals and final inspection dates.

1.5 SUBMITTAL SCHEDULE

- A. After development and acceptance of the Contractor's remediation schedule, prepare a complete schedule of submittals.
 - 1. Coordinate submittal schedule with the list of subcontracts, schedule of values and the list of products as well as the Contractor's remediation schedule.
 - 2. Prepare the schedule in chronological order and provide the following information:
 - a. Scheduled date for the first submittal
 - b. Related Section number
 - c. Submittal category
 - d. Name of subcontractor
 - e. Description of the part of the Work covered
 - f. Scheduled date for resubmittal
 - g. Scheduled date the Owner's Representative's final release or approval
- B. **Distribution:** Following response to initial submittal, print and distribute copies to the Owner's Representative, Owner, subcontractors, and other parties required to comply with submittal dates indicated. Post copies in the Project meeting room and field office.
 - 1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in remediation activities.
- C. **Schedule Updating:** Revise the schedule after each meeting or activity, where revisions have been recognized or made. Issue the updated schedule concurrently with report of each meeting.

1.6 DAILY REPORTS

- A. Prepare a daily report, recording the following information concerning events at the site; and submit duplicate copies to the Owner's Representative at daily intervals:
 - 1. Log of those entering and leaving Work Area
 - 2. List of subcontractors at the site
 - 3. Approximate count of personnel at the site
 - 4. High and low temperatures, general weather conditions
 - 5. Accidents and unusual events
 - 6. Meetings and significant decisions
 - 7. Stoppages, delays, shortages, losses

8. Meter readings and similar recordings
9. Emergency procedures
10. Orders and requests of governing authorities
11. Change Orders received, implemented
12. Services connected, disconnected
13. Equipment or system tests and start-ups
14. Partial Completions, occupancies
15. Substantial Completions authorized

1.7 SHOP DRAWINGS

- A. Shop Drawings are not required under this contract.

1.8 MISCELLANEOUS SUBMITTALS

- A. **Material Safety Data Sheets:** Acknowledge receipt of material safety data sheets for all materials used during remediation activities.
- B. **Records of Actual Work:** Furnish two (2) copies of records of actual work, one of which will be returned for inclusion in the record documents as specified in Section 01934 – Project Closeout – Lead Containing Material.
- C. **Standards:** Where submittal of a copy of standards is indicated, and except where copies of standards are specified as an integral part of a “Product Data” submittal, submit a single copy of standards for the Owner’s Representative use. Where workmanship, whether at the project site or elsewhere is governed by a standard, furnish additional copies of the standard to fabricators, installers, and others involved in the performance of the work.
- D. **Request for Information:** Where questions arise before or during the work activities, submit a written request to the Owner’s Representative. Allow for at least four (4) hours for review and a response.
- E. **Closeout Submittals:** Refer the Section 01934 – Project Closeout – Lead Containing Materials and to individual sections of these specifications for specific submittal requirements of project closeout information.

1.9 OWNER’S REPRESENTATIVE’S ACTION

- A. Except for submittals for record, information or similar purposes, where action and return is required or requested, the Owner’s Representative will review each submittal, mark to indicate action taken, and return promptly.
 1. Compliance with specified characteristics is the Remediation Contractor’s responsibility.
- B. **Action Stamp:** The Owner’s Representative will stamp each submittal with a uniform, self-explanatory action stamp. The stamp will be appropriately marked, as follows, to indicate the action taken:
 1. **Final Unrestricted Release:** Where submittals are marked "Approved," that part of the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance

will depend upon that compliance.

2. **Final-But-Restricted Release:** When submittals are marked "Approved as Noted," that part of the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance.
3. **Returned for Resubmittal:** When submittal is marked "Not Approved, Revise and Resubmit," do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat if necessary to obtain a different action mark.
 - a. Do not permit submittals marked "Not Approved, Revise and Resubmit" to be used at the Project site, or elsewhere where Work is in progress.
4. **Other Action:** Where a submittal is primarily for information or record purposes, special processing or other activity, the submittal will be returned, marked "Action Not Required".

PART 2 - PRODUCTS (Not Applicable).

PART 3 - EXECUTION (Not Applicable).

SUBMITTAL CHECKLIST

BEFORE START OF WORK

Supplementary Conditions

- Bodily Injury and Property Damage Liability: Certificate of Coverage
- Worker's Compensation Insurance: Certificate of Coverage
- Automobile Liability: Certificate of Coverage
- Performance Bond: Certificate of Coverage
- Labor and Material Bond: Certificate of Coverage

01920 Summary of Work – Lead Containing Materials

- Plan of Action
- Pre-construction Inspection
- Alternate Methods

01921 Coordination – Lead Containing Materials

- Contingency Plans
- Telephone Numbers
- Notification sent to entities at the work site
- Notifications sent to emergency service agencies
- Valid Accreditation: of general superintendent, foreman and workers
- Valid Texas Department of Health Certification/Licensing: of firm, general superintendent, foreman and workers
- Texas Department of Health Notification
- Staff Names
- Name and Address of recycling facility that will be accepting the recyclable waste

01922 Reference Standards and Definitions - Lead Containing Materials

- Refer to Section

01923 Codes, Regulations, and Standards - Lead Containing Materials

- Copy of State Regulations
- Copy of Local Regulations
- Valid Accreditation: of general superintendent, foreman and workers
- Valid Texas Department of Health Certification/Licensing: of firm, general superintendent, foreman and workers
- Permits

01924 Submittals - Lead Containing Materials

- Submittal Schedule
- Contractor's Remediation Schedule

01927 Remediation Facilities and Temporary Controls - Lead Containing Materials

- ___ Scaffolding (including Shop Drawing)
- ___ Hot Water Heaters: Product data
- ___ Decontamination Unit Sub-panel: Product data and Shop drawing
- ___ Ground Fault Circuit Interrupters (GFCI): Product data
- ___ Lamps and Light Fixtures: Product data
- ___ Temporary Heating Units: Product data
- ___ Temporary Cooling Units: Product data and installation instructions
- ___ Self-contained Toilet Units: Product data and name of sub-contractor
- ___ First Aid Supplies: Provide list of contents
- ___ Fire Extinguisher: Product data, location schedule

01929 Work Area Containment - Lead Containing Materials

- ___ Schedule of locked doors
- ___ Polyethylene: Product data (including fire ratings)
- ___ Construction plan
- ___ Lumber (including fire ratings)
- ___ Spray Cement: Product data

01931 Worker Protection - Lead Containing Materials

- ___ Valid Accreditation: of general superintendent, foreman and workers
- ___ Training Program course outline
- ___ Results of Pre-Work Biological monitoring for blood lead (Pb) level and zinc protoporphyrin level
- ___ Certificate of Worker Acknowledgement for each worker and supervisor
- ___ Report of Medical Examination of each worker and supervisor
- ___ Compliance Program in compliance with 1926.62
- ___ Exposure Assessment in compliance with 1926.62
- ___ Notarized Certifications

01932 Respiratory Protection - Lead Containing Materials

- ___ Respiratory Protection Program written manual
- ___ Respirator Product Data
- ___ Historic Sample Data
- ___ Fit Test Documentation

01933 Materials and Equipment - Lead Containing Materials

- ___ Product List Schedule

01936 Removal of Lead Containing Material Substrates

- ___ HEPA Vacuums: Product data
- ___ Wet Detergent Wash
- ___ Material Safety Data Sheet

01938 Disposal of Waste Materials - Lead Containing Materials

- ___ Valid Waste Hauler State License
- ___ Valid Waste Hauler Local License, if applicable
- ___ U.S. EPA Identification Number of Waste Hauler
- ___ Name, address, permit and State License of landfill
- ___ Landfill contact person and telephone number
- ___ EPA Uniform Hazardous Waste Manifest
- ___ EPA Notification of hazardous waste activity
- ___ Forms required by State or Local agencies

PERIODICALLY DURING WORK

01921 Coordination - Lead Containing Materials

- ___ Daily Logs
- ___ Event Reports
- ___ Accident Reports
- ___ Discovered Condition Reports

01924 Submittals - Lead Containing Materials

- ___ Record Documents

01929 Work Area Containment - Lead Containing Materials

- ___ Photograph of existing damage prior to applying coatings.

01931 Worker Protection - Lead Containing Materials

- ___ Updated information on workers

01932 Respiratory Protection - Lead Containing Materials

- ___ Update information on new equipment

01934 Project Closeout - Lead Containing Materials

- ___ Refer to section

01938 Disposal of Waste Material - Lead Containing Materials

- ___ Copies of manifests and disposal site receipts.

PROJECT CLOSEOUT

01921 Coordination - Lead Containing Materials

- ___ Daily Log

01931 Worker Protection - Lead Containing Materials

___ Results of Post-Work Biological monitoring for blood lead (Pb) level and zinc protoporphyrin level

01934 Project Closeout - Lead Containing Materials

___ Record Documents
___ Record Product Data

01935 Project Decontamination - Lead Containing Materials

___ Certificate of Visual Inspection

END OF SECTION 01924

SECTION 01925 - TEST LABORATORY SERVICES – LEAD CONTAINING MATERIALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division - 1 Specification Sections, apply to work of this section.
- B. Surface lead (Pb) dust wipe sampling and soil sampling during work area clearance are described in Section 01926 - Project Clearance.

1.2 DESCRIPTION OF THE WORK

- A. Not in Contract Sum: This section describes work being performed by the Owner or Owner's Representative. This work is not in the Contract Sum.
- B. This section describes air monitoring, soil sampling and surface lead (Pb) dust wipe sampling carried out by the Owner's Representative to verify that the work area and outside environment remains uncontaminated. This section also sets forth baseline levels that the Remediation Contractor must comply with and describes the action required if the levels are exceeded.
- C. Corrective Work triggered by this section is part of the contract sum and is to be performed by the Remediation Contractor at no additional cost to the Owner.
- D. Additional air monitoring required by OSHA and Section 01932 is work of the Remediation Contractor and is not covered in this section.

1.3 ANALYTICAL METHODS:

- A. Atomic Absorption Spectroscopy or Inductively Coupled Plasma Emission Spectroscopy will be used for analysis of:
 - 1. **Air Samples** that will be collected by the Owner's Representative before and during the course of the project to establish area airborne lead (Pb) dust levels.
 - 2. **Soil Samples** shall be collected by the Owner's Representative to establish a baseline lead (Pb) content to assess the existing condition of the area soil before work efforts under this contract are started. The Owner's Representative shall collect soil samples to assess the existing condition of the area soil **after** all work efforts under this contract are completed.
 - 3. **Wipe Samples** The Owner's Representative shall collect lead wipe samples from representative portions of the building floor areas prior to and following completion of component removal/dismantling operations.

1.4 ESTABLISH BASELINE LEAD (PB) CONCENTRATION:

- A. Before start of work the Owner's Representative will secure the following air, dust and soil samples to establish a baseline level.
 - 1. **Air Samples:** One (1) sample outside and down wind of work area.
 - 2. **Soil Samples:** Composite exterior samples; one (1) composite sample consisting of three (3) sub-samples from each exterior work area.
 - 3. **Dust Wipe Samples:** One (1) wipe sample shall be collected from interior floor locations for each 2,500 square feet or portion thereof of building area.

1.5 AIR AND SURFACE LEAD (PB) DUST MONITORING

The purpose of the Owner's air and surface lead (Pb) dust monitoring will be to detect faults in the work area isolation which may cause contamination of the building or exterior with lead (Pb) dust.

- A. Should any of the above occur, cease Hazard Reduction activities. Correct fault in work area isolation or work procedures at no cost to the Owner.

1.6 AIRBORNE LEAD (PB) CONCENTRATIONS DURING REMEDIATION WORK

The Owner may monitor airborne lead (Pb) concentrations inside and outside the work area.

- A. **Inside Work Area:** Maintain lead (Pb) concentrations at lowest possible levels, not to exceed 50-micrograms/cubic meter. If concentrations rise above this, figure revise work procedures to lower lead (Pb) levels.
- B. **Outside Work Area:** Maintain lead (Pb) concentrations at lowest possible levels, not to exceed baseline levels. If concentrations rise above baseline levels, stop hazard reduction work and institute corrective actions, Owner's Representative will determine source of the high reading.

1.7 SOIL LEAD (PB) CONCENTRATIONS

- A. **Outside Work Area:** Maintain lead (Pb) concentrations at lowest possible levels, not to exceed baseline levels. If concentrations rise above baseline levels, institute corrective actions. Owner's Representative will determine source of the high reading.

1.8 CORRECTIVE ACTIONS

- A. If the high reading above is outside work area and was result of failure of work area isolation measures, initiate the following action:
 - 1. Decontaminate affected area in accordance with Section 01935 - Project Decontamination – Lead Containing Materials at no cost to the Owner.

B. If the high reading above is soil outside building and was result of failure of work area isolation measures, initiate the following action:

1. Remediate soil in accordance with Section 01937 – Remediation of Lead Contaminated Soil at no cost to the Owner.

1.10 SCHEDULE OF SAMPLES

From start of work of Section 01929 Work Area Containment – Lead Containing Materials through the work of Section 01935 Project Decontamination – Lead Containing Materials, the Owner shall take the following samples on a daily basis.

Location Sampled	Number of Samples	Type Of Sample	Remarks
Each Exterior Work Area	2	Air	<i>Upwind and Downwind</i>
Each Interior Work Area	2	Air	<i>1 Sample Inside Regulated Work Area and 1 Sample Outside Regulated Work Area</i>

1.11 PERSONAL MONITORING

A. Owner's Representative will not perform air monitoring to meet Remediation Contractor's OSHA requirements for personnel sampling.

1.12 EFFECT ON CONTRACT SUM

A. Complete corrective work with no change in contract sum if high concentrations were caused by Remediation Contractor's activities. The contract sum will be adjusted for additional work caused by high concentrations beyond the Remediation Contractor's control.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION - 01925

SECTION 01926 PROJECT CLEARANCE – LEAD CONTAINING MATERIALS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division -1 Specification Sections, apply to work of this section.
 - 1. **Visual Inspection:** Required as a prerequisite of sampling is set forth in Section 01935 Project Decontamination – Lead Containing Materials.

1.2 DESCRIPTION OF THE WORK

- A. **Not in Contract Sum:** This section describes work being performed by the Owner's Representative. This work is not in the Contract Sum.
- B. This section sets forth required surface lead (Pb) dust concentration in the work area and describes testing procedures the Owner will use to measure these levels.
- C. **Soil Testing:** This section sets forth required soil lead (Pb) content measurements conducted on exterior abatement projects which will be used to:
 - 1. Support pre-and post-abatement comparisons; and
 - 2. Determine if statistically significant changes in soil lead (Pb) content exist following the completion of abatement.

1.3 ANALYTICAL METHODS

- A. **Atomic Absorption Spectroscopy** or Inductively Coupled Plasma Emission Spectroscopy will be used for analysis of:
 - 1. **Air Samples**
 - 2. **Soil Samples**

1.4 VISUAL INSPECTION

- A. Work of this section will not begin until the visual inspection described in Section 01935 Project Decontamination – Lead Containing Materials has been completed and certified by the Owner's Representative.

1.5 CLEARANCE CRITERIA

- A. **Wipe Sampling Clearance:** Remediation is complete when every wipe sample collected is at or below the following levels. If clearance levels are not satisfactory, the remediation is incomplete and additional remediation per the Scope of Work Documents is required at no additional cost to the Owner.
 - 1. **Floors:** 40 parts per million (ppm)

A. Soil Sampling Clearance: Remediation is complete when every sample is at or below the following levels. If clearance levels are not satisfactory, the remediation is incomplete and additional remediation per Section 01937 Remediation of Lead Contaminated Soil is required at no additional cost to the Owner.

1. **Soil:** 400 parts per million (ppm)

1.6. SCHEDULE OF SAMPLES: At the completion of the hazard reduction, the following samples will be collected.

<i>BUILDING</i>	<i>LOCATION</i>	<i>SURFACE</i>	<i>NUMBER OF SAMPLES</i>
<i>Filter Building 1 Gallery Level</i>	<i>Interior</i>	<i>Floors</i>	<i>One (1) sample per level and from each 2,500 square feet of building area with a minimum of two (2) samples</i>
<i>Filter Building 2 Gallery Level</i>	<i>Interior</i>	<i>Floors</i>	<i>One (1) sample per level and from each 2,500 square feet of building area with a minimum of two (2) samples</i>

PART 2 - PRODUCT (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION 01926

SECTION 01927 - REMEDIATION FACILITIES AND TEMPORARY CONTROLS – LEAD CONTAINING MATERIALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF REQUIREMENTS

- A. **General:** Provide temporary connection to existing building utilities or provide temporary facilities as required herein or as necessary to carry out the work.

1.3 SUBMITTALS

- A. **Before the Start of Work:** Submit the following to the Owner's Representative for review. Begin no work until these submittals are returned with Owner's Representative's action stamp indicating that the submittal is returned for unrestricted use or final-but-restricted use.
- B. **Scaffolding:** Submit list of rolling and fixed scaffolding intended for use on the project. Submit sufficient detail to indicate compliance with applicable worker safety regulations or other requirements.
- C. **Hot water heater (if applicable):** Submit manufacturer's name, model number, size in gallons, heating capacity, power requirements.
- D. **Decontamination Unit Sub-panel (if applicable):** Submit product data.
- E. **Ground Fault Circuit Interrupters (GFCI):** Submit product data.
- F. **Temporary Heating Units (if applicable):** Provide product data.
- G. **Temporary Cooling Units (if applicable):** Provide product data and installation instructions.
- H. **Self-contained Toilet Units:** Provide product data and name of sub-contractor used for servicing self contained toilets. Submit method to be used for servicing.
- I. **First Aid Supplies:** Provide list of contents of first aid kit. Submit in form of checklist.
- J. **Fire Extinguishers:** Provide product data. Submit schedule indicating location at job site.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT

- A. **General:** Provide new or used materials and equipment that are undamaged and in serviceable condition. Provide only materials and equipment that are recognized as being suitable for the intended use, by compliance with appropriate standards.

2.2 SCAFFOLDING

- A. Provide all scaffolding, ladders and/or staging, etc. as necessary to accomplish the work of this contract. Scaffolding may be of suspension type; or standing type such as metal tube and coupler, tubular welded frame, pole or outrigger type or cantilever type. The type, erection and use of all scaffolding shall comply with all applicable OSHA provisions.
- B. Equip rungs of all metal ladders, etc. with an abrasive non-slip surface.
- C. Provide a nonskid surface on all scaffold surfaces subject to foot traffic.

2.3 WATER SERVICE

- A. **Temporary Water Service Connection:** All connections to the Owner's water system shall include backflow protection. Valves shall be temperature and pressure rated for operation of the temperatures and pressures encountered. After completion of use, connections and fittings shall be removed without damage or alteration to existing water piping and equipment. Leaking or dripping valves shall be piped to the nearest drain or located over an existing sink or grade where water will not damage existing finishes or equipment.
- B. **Water Hoses:** Employ heavy-duty abrasion-resistant hoses with a pressure rating greater than the maximum pressure of the water distribution system to provide water into each work area and to each Decontamination Unit. Provide fittings as required to allow for connection to existing wall hydrants or spouts, as well as temporary water heating equipment, branch piping, showers, shut-off nozzles and equipment.
- C. **Water Heater:** Provide UL rated 40-gallon electric water heater to supply hot water for the Decontamination Unit shower. Activate from 30-amp circuit breaker located within the Decontamination Unit sub-panel. Provide with relief valve compatible with water heater operation; pipe relief valve down to drip pan on floor with type L copper. Drip pans shall consist of a 12" X 12" X 6" (30 cm x 30 cm x 15 cm) deep pan, made of 19 gauge galvanized steel, with handles. A 3-quart (3 L) kitchen saucepan may be substituted for this purpose. Drip pan shall be securely fastened to the water heater with bailing wire or similar material. Wiring of the water heater shall be in compliance with NEMA, NECA, and UL standards.
- D. **Hot Water:** *may not be secured* from the building hot water system.

2.4 ELECTRICAL SERVICE

- A. **General:** Comply with applicable NEMA, NECA and UL standards and governing regulations for materials and layout of temporary electric service. Provide equipment that is compatible with existing electrical characteristics and available power. If existing power is either incompatible or inadequate for performance of the Work, provide auxiliary generators(s) located outside of the building.
- B. **Temporary Power:** Provide service to Decontamination Unit subpanel with minimum 60 amp, 2-pole circuit breaker or fused disconnect connected to the buildings main distribution panel. Subpanel and disconnect shall be sized and equipped to accommodate all electrical equipment required for completion of the work.
- C. **Voltage Differences:** Provide identification warning signs at power outlets that are other than 110-120 volt power. Provide polarized outlets for plug-in type outlets, to prevent insertion of 110-120 volt plugs into higher voltage outlets. Dry type transformers shall be provided where required to provide voltages necessary for work operations.
- D. **Ground Fault Protection:** Equip all circuits for any purpose entering Work Area with ground fault circuit interrupters (GFCI). Locate GFCI's exterior to Work Area so that all circuits are protected prior to entry to Work Area. Provide circuit breaker type ground fault circuit interrupters (GFCI) equipped with test button and reset switch for all circuits to be used for any purpose in work area, decontamination units, exterior, or as otherwise required by national electrical code, OSHA or other authority. Locate in panel exterior to Work Area.

2.5 ELECTRICAL EQUIPMENT

- A. **Electrical Power Cords:** Use only grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Use single lengths or use waterproof connectors to connect separate lengths of electric cords, if single lengths will not reach areas of work.

2.6 TEMPORARY HEAT

- A. **Heating Units:** Provide temporary heating units that have been tested and labeled by UL, FM or another recognized trade association related to the fuel being consumed. Use steam or hot water radiant heat where available, and where not available use electric resistant fin radiation supplied from a branch circuit with ground fault circuit interrupter.

2.7 TEMPORARY COOLING

- A. **Cooling Units:** Provide temporary cooling units consisting of a fan coil unit inside the work area with a compressor and heat rejection coil outside sufficient to keep the work area temperature below 100 degrees Fahrenheit.

2.8 SELF-CONTAINED TOILETS

- A. **Self-contained Toilet Units:** Provide single-occupant self-contained toilet units of the chemical type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar non-absorbent material.

2.9 FIRST AID

- A. **First Aid Supplies:** Comply with governing regulations and recognized recommendations within the construction industry.

2.10 FIRE EXTINGUISHERS

- A. **Fire Extinguishers:** Provide Type "A" fire extinguishers for temporary offices and similar spaces where there is minimal danger of electrical or grease-oil-flammable liquid fires. In other locations provide type "ABC" dry chemical extinguishers, or a combination of several extinguishers of NFPA recommended types for the exposures in each case.

PART 3 - EXECUTION

3.1 SCAFFOLDING

- A. Require that a Competent Person supervise the erection, movement, and dismantling of scaffolding in accordance with OSHA 29 CFR 1926.451.
- B. During the erection and/or moving of scaffolding, care must be exercised so that the polyethylene floor covering is not damaged.
- C. Clean as necessary debris from non-slip surfaces.
- D. At the completion of remediation work clean all construction aids within the work area, wrap in one layer of 6-mil polyethylene sheet and seal before removal from the work area.

3.2 GENERAL INSTALLATION

- A. **General:** Use qualified tradesmen for installation of temporary services and facilities. Locate temporary services and facilities where they will serve the entire project adequately and result in minimum interference with the performance of the Work.
 - 1. Require that tradesmen accomplishing this work be licensed as required by local authority for the work performed.
- B. Relocate, modify and extend services and facilities as required during the course of work so as to accommodate the entire work of the project.

3.3 WATER SERVICE

- A. **General:** Water connection (without charge) to Owner's existing potable water system is limited to one 3/4" pipe-size connection, and a maximum flow of 10 gpm cold water supply. Install using vacuum breakers or other backflow preventer as required by local authority.
- B. Maintain hose connections and outlet valves in leak-proof condition. Where spillage or leakage might damage finish work below an outlet, provide a drip pan of suitable size to minimize the possibility of water damage. Drain water promptly from pans as it accumulates.

3.4 TEMPORARY POWER - REGULATED AREAS

- A. **General:** Use existing power available in Work Area.
- B. **Circuit Protection:** Protect each tool or extension cord with a ground fault circuit interrupter (GFCI) of proper size. GFCI can be type that plugs into existing duplex outlets. Insure that outlet is properly grounded before installation of GFCI.

3.5 ELECTRICAL SERVICE

- A. **General:** Provide a weatherproof, grounded temporary electric power service and distribution system of sufficient size, capacity, and power characteristics to accommodate performance of work during the construction period. Install temporary lighting adequate to provide sufficient illumination for safe work and traffic conditions in every area of work.
- B. **Lockout:** Lockout all existing power to or through the work area as described below. Unless specifically noted otherwise existing power and lighting circuits to the work area are not to be used. All power and lighting to the Work Area is to be provided from temporary electrical panel described below.
 - 1. Lockout power to work area by switching off all breakers serving power or lighting circuits in work area. Label breakers with tape over breaker with notation "DANGER circuit being worked on". Lock panel and have all keys under control of Remediation Contractor's superintendent or owner's designated representative.
 - 2. Lockout power to circuits running through work area wherever possible by switching off all breakers serving these circuits. Label breakers with tape over breaker with notation "DANGER circuit being worked on". Sign and date danger tag. Lock panel and supply keys to Remediation Contractor, Owner and Designer. If circuits cannot be shut down for any reason, label at 4'-0" on center with tags reading, "DANGER live electric circuit. Electrocutation hazard."
- C. **Temporary Electrical Panel:** Provide temporary electrical panel sized and equipped to accommodate all electrical equipment and lighting required by the work. Connect temporary panel to existing building electrical. Protect with circuit breaker or fused disconnect. Locate temporary panel as directed by Owner or Owner's Representative. Power may be obtained from adjacent apartments if authorized in writing by the Owner.

- D. **Power Distribution System:** Provide circuits of adequate size and proper characteristics for each use. In general run wiring overhead and rise vertically where wiring will be least exposed to damage from construction operations.
- E. **Circuit Protection:** Protect each circuit with a ground fault circuit interrupter (GFCI) of proper size located in the temporary panel. Do not use outlet type GFCI devices.
- F. **Temporary Wiring:** in the work area shall be type UF non-metallic sheathed cable located overhead and exposed for surveillance. Do not wire temporary lighting with plain, exposed (insulated) electrical conductors. Provide liquid tight enclosures or boxes for wiring devices.
- G. **Number of Branch Circuits:** Provide sufficient branch circuits as required by the work. All branch circuits are to originate at temporary electrical panel. At minimum provide the following:
 - 1. For power tools and task lighting, provide one temporary 4-gang outlet in the following locations. Provide a separate 110-120 Volt, 20 Amp circuit for each 4-gang outlet (4 outlets per circuit).
 - a. One outlet in the work area for each 2500 square feet of work area.
 - b. One outlet at each decontamination unit, located in equipment room.
 - 2. 110-120 volt 20 amp branch circuits with 4-gang outlet for Owner's exclusive use while conducting air sampling during the work as follows:
 - a. One in each work area.
 - b. One at clean side of each Decontamination Unit.

3.6 TEMPORARY HEAT

- A. **General:** Provide temporary heat where indicated or needed for performance of the Work.
- B. **Temperature:** Maintain a minimum temperature of 70 degrees F. where finished work has been installed.
- C. **Temperature in shower:** Maintain a minimum temperature of 75 degrees F.
- D. **Temperature:** Maintain a minimum temperature of 70 degrees F. in the Work Area at all times that work is going on. At all other times and at completion of removal work, but before start of reconstruction work, maintain a minimum temperature of 50 degrees F.
- E. **Temperature:** Maintain a minimum temperature of 50 degrees F. in the Work Area at all times during and after removal work.

3.7 TEMPORARY COOLING

- A. **Required Cooling:** Provide units sufficient to supply a temperature of less than 100 degrees F in the work area.

3.8 SANITARY FACILITIES

- A. **Toilets:** Use of the Owner's existing toilet facilities will be not permitted. Provide one self-contained chemical toilet unit in the Work Area for each 30 workers. Facilities shall be maintained throughout the Work. At the end of the job, facilities shall be decontaminated in accordance with these specifications.

3.9 FIRE EXTINGUISHERS

- A. **Fire Extinguishers:** Comply with the applicable recommendations of NFPA Standard 10 "Standard for Portable Fire Extinguishers". Locate the appropriate class of fire extinguishers where they are most convenient and effective for their intended purpose.

3.10 STORAGE FACILITIES

- A. **Storage:** The Remediation Contractor shall provide a temporary construction trailer as a storage area for tools, equipment and supplies. Waste generated during abatement shall be stored in a construction trailer in addition to above.

END OF SECTION - 01927

SECTION 01928 REGULATED AREAS – LEAD CONTAINING MATERIALS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. **Remediation Facilities & Temporary Controls:** Is specified in Section 01927.
- B. **Worker Protection:** is specified in Section 01931.
- C. **Respiratory Protection:** is specified in Section 01932.

1.03 DESCRIPTION OF WORK

- A. Work of this section consists of preparing a Regulated Area for work delineated of the following specification sections:
 - 1. **Section 01947** Removal - Lead Containing Materials
 - 2. **Section 01948** Chemical Stripping of Lead Containing Materials

PART 2 - PRODUCTS

2.01 HEPA Filtered Vacuum Cleaners

2.02 Duct Tape: Provide 2" (51mm) width tape with an adhesive that is formulated to aggressively stick to sheet polyethylene.

2.03 Wet Detergent Wash: Provide detergent or cleaning agent formulated to be effective in removing lead dust. Follow dilution ratio recommended by the manufacturer's instructions.

2.04 Plastic Sheet: A single polyethylene film in the largest sheet size possible to minimize seams 6 mils thick.

2.05 Barricade Fence: Plywood barricade fence, eight (8) feet high constructed such that there is no visibility by the public.

PART 3 - EXECUTION

3.01 SECURING WORK AREA

- A. Secure work area from access by occupants, staff or users of the building and general public. However, the Contractor shall provide access to the Owner and Owner's Representative.

3.02 DEMARCATION OF REGULATED AREA

- A.** Demarcate each exterior Regulated Area with a sheet plastic drop sheet as described below.
- B.** Provide barricade fence with support posts. Provide barrier warning tape at perimeter with the following legend "Caution Lead Hazard - Do not enter work area unless authorized." Barricade fence shall be securely fastened and no closer than twelve feet (12') from the work.

3.03 EXTERIOR ABATEMENT GENERAL PROCEDURES

- A.** The following precautions and procedures have application to the work of this section. Workers must exercise caution to avoid the release of lead (Pb) dust into the air and to contain lead (Pb) dust and debris on drop sheet.
- B.** Before start of work, comply with requirement for Worker Protection in Section 01931 and Respiratory Protection in Section 01932.
- C.** Do not allow eating, drinking, smoking, chewing tobacco or gum, or applying cosmetics in the regulated area.
- D.** Provide barricade fencing and signage. Maintain egress from exits.
- E.** On a daily basis, collect dust and debris by HEPA vacuuming the surface or by wet sweeping. Remaining debris and building structure shall be encapsulated prior to leaving the work site daily.
- F.** On a daily basis and during final cleanup, visually examine the immediate area to ensure that no debris has escaped containment. Wet sweep or rake up any debris found and place in 6-mil disposal bags or in poly-lined dumpsters. Securely store with other waste.
- G.** Suspend work activities during inclement weather; including but not limited to high wind, rain, snow ice, and hail.

3.04 INTERIOR ABATEMENT GENERAL PROCEDURES

- A.** The following precautions and procedures have application to the work of this section. Workers must exercise caution to avoid the release of lead (Pb) dust into the air and to contain lead (Pb) dust and debris on drop sheet.
- B.** Before start of work, comply with requirement for Worker Protection in Section 01931 and Respiratory Protection in Section 01932.
- C.** Do not allow eating, drinking, smoking, chewing tobacco or gum, or applying cosmetics in the regulated area.
- D.** Segregate the work area from other portions of the building with 6-mil polyethylene critical barriers. Provide proper hazard communication signage. Maintain egress from exits.
- E.** On a daily basis, collect dust and debris by HEPA vacuuming the surface or by wet sweeping.

- F.** On a daily basis and during final cleanup, visually examine the immediate area to ensure that no debris has escaped containment. Wet sweep or HEPA vacuum up any debris found and place in 6-mil disposal bags or in poly-lined dumpsters. Securely store with other waste.

- G.** Ensure that HVAC equipment in the building is deactivated and that HVAC return and supply registers are covered prior to the start of any lead-related work..

END OF SECTION - 01928

SECTION 01931 WORKER PROTECTION – LEAD CONTAINING MATERIALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

This section describes the equipment and procedures required for protecting workers against lead (Pb) contamination and other workplace hazards except for respiratory protection. For the purpose of this project, and unless the Remediation Contractor can show an exposure assessment that can show otherwise, the assumed exposure for this project shall be at least $50 \mu\text{g}/\text{m}^3$ - $500 \mu\text{g}/\text{m}^3$. This work corresponds to an OSHA Class I Task and requires specific actions on the part of the Remediation Contractor. The minimum respiratory protection during dismantling and demolition activities will be half face negative pressure respirators equipped with HEPA/organic filters indicated in Section 01932 Respiratory Protection – Lead Containing Materials during all remediation activities. The contractor shall provide information to assure that the above respiratory protection is sufficient in accordance with 29 CFR 1926.1101 negative exposure assessment requirements. In addition, the contractor's personnel shall wear eye protection during all encapsulation and demolition activities.

1.3 STANDARDS

- A. Except to the extent that more stringent requirements are written directly into the Contract Documents, the following regulations and standards have the same force and effect (and are made a part of the Contract Documents by reference) as if copied directly into the Contract Documents, or as if published copies were bound herewith. Where there is a conflict in requirements set forth in these regulations and standards, meet the more stringent requirement.
- B. **OSHA** - U.S. Department of Labor, Occupational Safety and Health Administration, Safety and Health Standards including but not limited to:

The following sections are brought to the Remediation Contractor's attention for convenience. All appropriate OSHA Standards apply to this project.

1. **29 CFR 1910.134** Respiratory Protection;
2. **29 CFR 1926.20** General safety and health provisions;
3. **29 CFR 1926.21** Safety training and education;
4. **29 CFR 1926.23** First Aid;
5. **29 CFR 1926.24** Medical Surveillance and Medical Removal Protection Programs;
6. **29 CFR 1926.25** Housekeeping;

7. **29 CFR 1926.28** Personal protective equipment;
8. **29 CFR 1926.51(f)** Washing facilities;
9. **29 CFR 1926.55-** Gases, vapors, fumes, dusts, and mists;
10. **29 CFR 1926.56** Illumination;
11. **29 CFR 1926.57** Ventilation;
12. **29 CFR 1926.59** Hazard Communication Standard;
13. **29 CFR 1926.62** Lead Construction Standard;
14. **29 CFR 1926.103** Respiratory protection;
15. **29 CFR 1926.353(c)** Ventilation: Welding, cutting or heating of metals of toxic significance;
16. **29 CFR 1926.300, 301, 302** Hand and power tools;
17. **29 CFR 1926.451 500, 501, 502, 503** Scaffolding & Fall Protection.

1.4 RELATED WORK SPECIFIED ELSEWHERE

- A. **Respiratory Protection:** is specified in Section 01932 – Respiratory Protection – Lead Containing Materials.

1.5 COMPETENT PERSON

- A. **Definition:** A "Competent Person" is one who is capable of identifying existing and predictable hazards at the worksite and who has the authority to ensure prompt corrective measures are taken to eliminate them. The competent person has authority to shut down the project in accordance with OSHA 1926.62.
- B. Provide on-site, full time competent person (or persons) to ensure that the worker protection program is effective.

1.6 WORKER TRAINING

- A. **Certification:** Workers and supervisors are not required to hold Texas Department of State Health Services Lead Certificates.
- B. **OSHA-Required Training:** All workers are to be trained in the dangers inherent in handling lead (Pb) and breathing or ingesting lead (Pb) dust and in the proper work procedures and personal and area protective measures prior to the time of initial job assignment and at least annually thereafter. Include but do not limit the topics covered in the course to the following:

1. Content of OSHA lead standard
2. Possible routes of exposure to lead (Pb)
3. Health effects associated with lead (Pb) exposure
4. Medical removal protection program
5. The importance of good personal hygiene
6. Nature of operations that could result in exposure to lead (Pb)
7. The proper use and maintenance of protective clothing and equipment, including respiratory protection
8. The correct use of engineering controls and implementation of good work practices
9. Importance of and instruction in the use of necessary protective controls, practices and procedures to minimize exposure including:
 - a. Engineering controls
 - b. Work Practices
 - c. Respirators
 - d. Housekeeping procedures
 - e. Hygiene facilities
 - f. Protective clothing
 - g. Decontamination procedures
 - h. Emergency procedures
 - i. Waste disposal procedures
10. Purpose, proper use, fitting, instructions, and limitations of respirators as required by 29 CFR 1926.103
11. The specific methods of hazard reduction to be used for the project
12. Requirements of medical monitoring/surveillance program
13. Signs and labels
14. Work practices including hands on or on-the-job training
15. Personal decontamination procedures

16. Health and safety considerations
17. Review of OSHA written compliance program as required by 29 CFR 1926.62
18. Information on the use of chelating agents and the fact that they should not be routinely used to remove lead (Pb) from their bodies except under the direction of a licensed physician
19. The employees' right of access to medical records per 29 CFR 1910.20

C. Acceptable Training Requirements: Acceptable training by a Texas Department of State Health Services Certified training provider for all persons conducting "Lead-related activities" on this project shall include:

1. For workers:

- a. A minimum of 24 hours of EPA training, with a minimum of 8 hours devoted to hands-on training
- b. Instruction in regulatory background; Federal, state and local

2. For supervisors:

- a. A minimum of 32 hours of EPA training, with a minimum of 8 hours devoted to hands-on training
- b. Instruction in legal insurance issues
- c. Development of pre-abatement work plans
- d. Employee information and training
- e. Project management
- f. Contract specifications
- g. Supervisory techniques
- h. Soil, dust and air testing
- i. Clearance standards and testing
- j. Community relations process
- k. Cost estimations
- l. Recordkeeping

1.7 MEDICAL SURVEILLANCE

- A. Provide full medical examinations for all workers performing lead-related activities prior to the start of work and for each worker exposed to lead (Pb) for more than thirty (30) days a year and/or who have blood lead (Pb) levels over 25 micrograms/deciliter. Provide initial medical examinations for each worker exposed to lead (Pb) for more than one (1) day per year. Provide medical examination for any employee who has signs and symptoms of lead (Pb) poisoning or when a worker becomes pregnant.
- B. Medical evaluation to include:
1. A detailed work and medical history
 2. A thorough physical examination
 3. Evaluation of pulmonary status
 4. A blood pressure measurement
 5. A blood sample and analysis that determines blood lead (Pb) levels, hemoglobin and hematocrit, red cell indices, peripheral smear morphology, blood urea nitrogen, serum creatinine and zinc protoporphyrin
 6. A routine urinalysis
 7. Any other laboratory or other test which is recommended by the examining physician
- C. The medical evaluation must be provided prior to the start of the lead (Pb) hazard reduction project or assignment requiring the use of air purifying respirators.
- D. Blood testing (blood lead (Pb) and zinc protoporphyrin) shall be performed prior to Start of Work and at least every two (2) months during the first six (6) months of the project and every two (2) months thereafter. **An additional blood test shall be performed at the completion of the project** or upon termination of employment.

The employer must make available the following:

1. Biological monitoring for blood lead (Pb) level and zinc protoporphyrin level at least every two (2) months during the first six months and every two (2) months thereafter.
2. When an employee's blood lead (Pb) level is at or above 40 µg/dl, biological monitoring at least every two (2) months until two (2) consecutive blood lead (Pb) level results are below 40 µg/dl.
3. Monthly blood lead (Pb) level testing during removal period or any employee medically removed due to an elevated blood lead (Pb) level.
4. When an employee's blood lead (Pb) level meet the criterion for medical removal (at or above 50 µg/dl), follow-up blood testing within two (2) weeks.

1.8 MEDICAL REMOVAL

- A.** Employers must remove employees with lead (Pb) exposure at or above 30-micrograms/cubic meter of air each time:
1. A periodic and follow-up blood sampling test indicates a blood lead (Pb) level at or above 50 µg/dl; and
 2. A final medical determination indicates a detectable medical condition that increases health risks from lead (Pb) exposure.

1.9 COMPLIANCE PROGRAM

- A.** The OSHA Lead in Construction Standard requires the employer to establish and implement a written compliance program prior to the commencement of a job. All employees covered under this standard must implement engineering and work practice controls to reduce and maintain employee exposures to lead (Pb) at or below the Permissible Exposure Limit (PEL). This program must include:
1. Description of activities that produce lead (Pb) exposures.
 2. Description of the specific means that will be employed to reduce exposure, and where engineering controls are used, the plans and studies used to determine the methods selected.
 3. A detailed schedule for implementing the compliance program.
 4. A report of the technology considered in meeting the PEL.
 5. Air monitoring data that documents the source of the lead (Pb) exposure.
 6. Specific work practice procedures which will be employed on the project.
 7. A schedule of administrative controls if these are to be utilized.
 8. A description of all arrangements made on multi-employer work sites to inform affected employers about the lead (Pb) project.

1.10 EXPOSURE ASSESSMENT

- A.** The OSHA Lead in Construction Standard requires employers to implement protective measures before exposure assessment has been completed if they are conducting any one of a number of "lead (Pb) related tasks". These tasks are divided into three different classes. The employer must assume that the worker is exposed to airborne concentrations at least to a certain level of lead (Pb) (depending on the class) until exposure assessment shows otherwise. When the employer has objective data demonstrating that the process, operation or activity does not result in employee exposure to lead (Pb) at or above the action level, the employer may rely upon such data for the initial exposure assessment.

- B. Class 1 Tasks** - Employer must assume exposure of at least $50 \mu\text{g}/\text{m}^3$ - $500 \mu\text{g}/\text{m}^3$ until exposure assessment proves otherwise. Examples include:
1. Manual dismantling of components and/or demolition of structures;
 2. Manual scraping;
 3. Manual sanding;
 4. Using a heat gun;
 5. Power tool paint removal with dust collection systems;
 6. Spray painting with lead-based paint.
- C. Class 2 Tasks** - Employers must assume exposure of at least $500 \mu\text{g}/\text{m}^3$ - $2500 \mu\text{g}/\text{m}^3$ until exposure assessment proves otherwise. Examples include:
1. Using lead (Pb) containing mortar
 2. Burning lead (Pb)
 3. Rivet busting on lead (Pb) paint
 4. Power tool paint removal without dust collection systems
 5. Clean up activities where dry expendable abrasives are used
 6. Abrasive blasting enclosures movement and removal
- D. Class 3 Tasks** - Employer must assume exposure of at least $2,500 \mu\text{g}/\text{m}^3$ until exposure assessment proves otherwise. Examples include:
1. Abrasive blasting
 2. Cutting
 3. Welding
 4. Torch burning
- E.** Prior to the completion of an exposure assessment of the tasks being conducted, the employer should follow the regulations as if the employee was exposed above the PEL. The employee(s) must be notified in writing within 5 days of receipt of the results representing their exposure. Where exposure is above the PEL, employees must be informed of this fact and advised of corrective action to be taken. Monitoring and analysis must have an accuracy (to a confidence level of 95%) of not less than plus or minus 25% for airborne lead (Pb) levels equal to or greater than $30 \mu\text{g}/\text{m}^3$.

- F. Personal protective equipment for each of the tasks above is to include protective work clothing and equipment, change areas, washing facilities, and training. The only difference in protective equipment for the different classes of tasks is respiratory protection which is to be provided in accordance with Section 01932 Respiratory Protection – Lead Containing Materials.

1.11 SUBMITTALS

- A. **Before Start of Work:** Submit the following to the Owner's Representative for review. Do not start work until these submittals are returned with Owner's Representative action stamp indicating that the submittal is returned for unrestricted use.
- B. **Training Certificates:** Submit evidence that all workers and supervisors have been trained and accredited to work with lead.
- C. **Certificate of Worker's Acknowledgement:** Submit an original signed copy of the Certificate of Worker's Acknowledgement found at the end of this section, for each worker who is to be at the job site or enter the Work Area.
- D. **Training Program:** Submit a course outline of the worker and supervisor training courses. Include date and time course was given, name and title of teacher.
- E. **Report from Medical Examination:** Conducted within last 12 months as part of compliance with medical surveillance requirements for each worker who is to enter the Work Area. Submit, at a minimum, for each worker the following:
1. Name and Social Security Number;
 2. Physician's Written Opinion from examining physician including at a minimum the following:
 - a. Whether worker has any detected medical conditions that would place the worker at an increased risk of material health impairment from lead (Pb) exposure.
 - b. Any recommended limitations on the worker or on the use of personal protective equipment such as respirators.
 - c. Results of blood lead (Pb) determinations and any actions taken as a result of recommendations.
 - d. Statement that the worker has been informed by the physician of the results of the medical examination and of any medical conditions that necessitates further medical exam or treatment.
 3. Copy of information that was provided to physician prior to the examination.
 4. Statement that worker is able to wear and use the type of respiratory protection specified for the project, and is able to work safely in an environment capable of producing heat stress in the worker.

5. Compliance Program: Submit program in compliance with 1926.62.
6. Exposure Assessment: Submit assessment in compliance with 1926.62.
7. Notarized Certifications: Submit certification signed by an officer of the contracting firm and notarized that exposure measurements, medical surveillance, and worker training records are being kept as required in this specification.

PART 2 - EQUIPMENT

2.1 PROTECTIVE CLOTHING:

- A. Coveralls:** Provide disposable full-body coveralls and disposable head covers, and require that all workers in the Work Area wear them. Provide a sufficient number for all required changes, for all workers in the Work Area. Dispose of coveralls as clothing waste at the end of each day.
- B. Shoe Covers:** Provide disposable shoe covers and require that all workers in the Work Area wear them. Shoe covers must be replaced each time a worker leaves the work area. Shoe covers are disposed as clothing waste in the equipment section of the Change Room.
- C. Boots:** Provide work boots with non-skid soles, and where required by OSHA, foot protectives, for all workers. Provide boots at no cost to workers. Do not allow boots to be removed from the Work Area for any reason, after being contaminated with lead (Pb) dust. Dispose of boots with clothing waste at the end of the work, or bag and take to next project. Boots that are non-porous may be decontaminated and removed from work area.
- D. Hard Hats:** Provide head protectives (hard hats) as required by OSHA for all workers, and provide 4 spares for use by Owner and Owner's Representative. Require hard hats to be worn at all times that work is in progress that may potentially cause head injury. Provide hard hats of type with plastic strap type suspension. Require hats to remain in the Work Area throughout the work. Thoroughly clean and decontaminate hats before removing them from Work Area at the end of the project.
- E. Goggles and Face Shields:** Provide eye and face protection (goggles or face shields) as required by OSHA for all workers involved in scraping, spraying, stripping or any other activity which may potentially cause eye or face injury. Thoroughly clean and decontaminate goggles or face shields before removing them from Work Area at the end of the project.
- F. Gloves:** Provide work gloves to all workers and require that they be worn at all times in the Work Area. Chemical resistant gloves must be provided when using chemical strippers to remove lead (Pb) based paint. Gloves must be secured to the coveralls using duct tape to protect arms and hands from the chemical strippers. Do not remove gloves from Work Area. Dispose of as clothing waste at the end of the work.

2.2 ADDITIONAL PROTECTIVE EQUIPMENT:

- A. Respirators, disposable coveralls, head covers, and footwear covers shall be provided by the Remediation Contractor for the Owner, Owner's Representative, and other authorized representatives who may inspect the job site.

2.3 DECONTAMINATION FACILITIES

- A. Provide decontamination facilities to be used by all workers.
 - 1. Provide as a minimum, a demarcated area or chamber at the designated exit from the work area where workers can HEPA vacuum their respirators and disposable coveralls prior to removal. Facilities which include soap and water shall be provided in this location for the workers to wash their faces and hands prior to leaving the work area. Filter all water or dispose of in accordance with Section 01938 Disposal of Waste Materials – Lead Containing Materials.
 - 2. If pre-fabricated or site-built shower facilities are provided, supply hot and cold water to shower head which can be controlled from inside shower. Filter all shower water or dispose of in accordance with Section 01938 Disposal of Waste Materials – Lead Containing Materials.
 - 3. Supply a sufficient quantity of soap and towels for the workers and authorized visitors.

2.4 EYEWASH STATION

- A. Where the eyes of employees may be exposed to injurious corrosive materials, suitable facilities for flushing of the eyes shall be provided within the work area for immediate emergency use.

PART 3 - EXECUTION

3.1 GENERAL:

- A. Provide worker protection as required by the most stringent OSHA and/or EPA standards applicable to the work. The following procedures are minimums to be adhered to regardless of lead (Pb) concentration in the Work Area.
- B. Each time Work Area is entered remove street clothes and put on new disposable coverall or (re-use previous coverall if not overly contaminated or torn), new head cover, and a clean respirator with cartridges appropriate for the abatement work to be performed. Reinforce coverall seams and secure gloves to coveralls with duct tape. Proceed to the Work Area.

3.2 DECONTAMINATION PROCEDURES:

- A. Require all workers to adhere to the following personal decontamination procedures whenever they leave the Work Area:
 - 1. **Air Purifying Respirators:** Require that all workers use the following decontamination procedure as a minimum requirement whenever leaving the Work Area with a respirator:

- a. Still wearing respirators, comply with the following procedure. Care must be taken to follow reasonable procedures in removing the respirator and filters to avoid disturbing lead (Pb) dust. The following procedure is required as a minimum:
 - i. HEPA vacuum heavily contaminated protective work clothing.
 - ii. When exiting Work Area, remove foot covers in work area. Remove disposable coveralls and disposable head covers in the Change Room. Remove protective coveralls by carefully rolling down the garment to minimize exposure to lead (Pb) dust.
- b. Remove respirator; cap filter cartridges; and set aside.
- c. Thoroughly wash hands and face with soap and water. If shower facilities are available, proceed to shower and shower completely with soap and water.
- d. Carefully wash face piece of respirator inside and out. Do not remove respiratory cartridges unless wet. If wet, remove respirator cartridges from blower unit and discard.
- e. Thoroughly wash hands with soap and water.

B. Within Work Area:

- 1. Require that workers NOT eat, drink, smoke, chew tobacco or gum, or apply cosmetics in the Work Area. To eat, chew, drink or smoke, workers shall follow the procedure described above before entering the Non-Work Areas of the building or exterior.

3.3 CERTIFICATE OF WORKER'S ACKNOWLEDGEMENT:

- A. Following this section is a Certificate of Worker Training. After each worker has been included in the Remediation Contractor's Respiratory Protection Program, completed the training program and medical examination, secure a fully executed copy of this form.

END OF SECTION - 01931

CERTIFICATE OF WORKER'S ACKNOWLEDGEMENT

PROJECT NAME _____ DATE _____

PROJECT ADDRESS _____

REMEDICATION NAME _____ CONTRACTOR'S NAME _____

WORKING WITH LEAD (PB) CAN BE DANGEROUS. INHALING AND INGESTING LEAD (PB) DUST CAN CAUSE AN INCREASE IN BLOOD LEAD (PB) LEVELS WHICH CAN LEAD TO ADVERSE HEALTH EFFECTS SUCH AS KIDNEY DAMAGE, ELEVATED BLOOD PRESSURE OR INFERTILITY.

Your employer's contract with the Owner for the above project requires that the following are provided at no cost to you: 1) you are supplied with the proper respirator and trained in its use; 2) you are trained in safe work practices and in the use of the equipment found on the job; and 3) you receive a medical examination.

RESPIRATORY PROTECTION: You must have been trained in the proper use of respirators, and informed of the type respirator to be used on the above referenced project. You must be given a copy of the written respiratory protection manual issued by your employer. You must be equipped at no cost with the respirator to be used on the above project.

TRAINING COURSE: You must have been trained in the dangers inherent in handling lead (Pb) and breathing and ingesting lead (Pb) dust and in proper work procedures and personal and area protective measures. The topics covered in the course must have included the following:

- Possible routes of exposure to lead (Pb)
- Health hazards associated with lead (Pb)
- Respiratory protection
- Use of protective equipment
- Work practices including hands on or on-the-job training
- Personal decontamination procedures
- Health and safety considerations

MEDICAL EXAMINATION: You must have had a medical examination within the past 12 months at no cost to you. This examination must have included: health history, physical examination, a blood pressure measurement, pulmonary function test and blood sample and analysis for lead (Pb).

By signing this document you are acknowledging only that the Owner of the building you are about to work in has advised you of your rights to training and protection relative to your employer, the Remediation Contractor.

Signature _____ Social Security No _____

Printed Name _____ Witness _____

CERTIFICADO DE RECONOCIMIENTO PARA LOS TRABAJADORES

NOMBRE DEL PROYECTO _____ FECHA _____

DIRECCION DEL PROYECTO _____

NOMBRE DEL CONTRATISTA _____

TRABAJAR CON PLOMO PUEDE SER PELIGROSO. INHALAR O INGERIR POLVO DE PLOMO PUEDE CAUSAR UN INCREMENTO DEL NIVEL DE PLOMO EN LA SANGRE, LO CUAL PUEDE OCACIONAR EFECTOS ADVERSOS A LA SALUD, TALES COMO DANOS A LOS RINONES, ALTA PRESION SANGUINEA, O INFERTILIDAD.

El contrato del empleador con el Propietario del proyecto arriba mencionado, requiere que: (1) Ud. debe ser proveido con la mascarilla apropiada, y le van a entrenar para usarla; (2) Ud. debe de ser entrenado en las practicas para un trabajo seguro, y en el uso del equipo existente en el trabajo; y (3) Ud. debe recibir un examen medico. Estos elementos le deben de ser proporcionados a Ud. sin ningun costo.

PROTECCION RESPIRATORIA: Ud. debe de ser entrenado para el uso apropiado de mascarillas, y tambien debe de ser informado del tipo de mascarilla a usar en el proyecto arriba mencionado. A Ud. se le debe dar una copia del manual de la mascarilla, entregado por el empleador. Ud. debe de ser proveido, sin ningun costo, de esta mascarilla a usarse en el proyecto arriba mencionado.

CURSO DE ENTRENAMIENTO: Ud. debe de ser entrenado en los riesgos inherentes de manejar, inhalar y respirar el polvo de plomo, y en los procedimientos de trabajo apropiado, asi como en las medidas de proteccion personal y del area de trabajo. Los temas a cubrir en este curso deben de incluir lo siguiente:

- Probables rutas de exposicion de plomo
- Riesgos para la salud relacionados con el plomo
- Proteccion respiratoria
- Uso del equipo de proteccion
- Practica de trabajo, incluyendo el entrenamiento para el trabajo
- Procedimientos para desinfeccion personal
- Consideraciones con respecto a salud y seguridad

EXAMEN MEDICO: Ud debe haber recibido un examen medico sin ningun costo, durante los ultimos 12 meses. Este examen debe de incluir: historia de salud, examen fisico, medicion de la presion sanguinea, examen de la funcion pulmonar, y muestra de sangre para el analisis del contenido de plomo.

Al firmar este documento, Ud. esta reconociendo que el Propietario del edificio para el cual Ud. va a trabajar, le a avisado de sus derechos de proteccion y entrenamiento relativo con su empleador, el Constratista.

Firma _____ No. de Seguro Social _____

Nombre _____ Testigo _____

SECTION 01932 RESPIRATORY PROTECTION - LEAD-CONTAINING PAINT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to work of this section.

1.2 DESCRIPTION OF WORK:

For the purpose of this project, and unless the Remediation Contractor can show an exposure assessment that can show otherwise, the assumed exposure for this project shall be at least 50 $\mu\text{g}/\text{m}^3$ - 500 $\mu\text{g}/\text{m}^3$. This work corresponds to an OSHA Class I Task and requires specific actions on the part of the Remediation Contractor. The minimum respiratory protection during remediation and demolition activities will be half face negative pressure respirators equipped with HEPA/organic filters indicated in Section 01932 Respiratory Protection – Lead Containing Materials during all remediation activities. The contractor shall provide information to assure that the above respiratory protection is sufficient in accordance with 29 CFR 1926.1101 negative exposure assessment requirements. In addition, the contractor's personnel shall wear eye protection during all encapsulation and demolition activities.

- A. Instruct and train each worker involved in lead abatement or lead based paint hazard reduction in proper respiratory use and require that each worker wear a respiratory, properly fitted on the face in the Work Area from the start of any operation which may expose the worker above the permissible exposure limit (PEL) until the Work Area is completely decontaminated. Use respiratory protection as specified for the lead levels encountered in the work place or as required for other toxic or oxygen deficient situations encountered.

1.3 STANDARDS

- A. Except to the extent that more stringent requirements are written directly into the Contract Documents, the following regulations, guidelines and standards have the same force and effect (and are made a part of the Contract Documents by reference) as if copied directly into the Contract Documents, or as if published copies were bound herewith. Where there is a conflict in requirements set forth in these regulations and standards, meet the more stringent requirement.

1. **OSHA** U.S. Department of Labor Occupational Safety and Health Administration, Safety and Health Standards 29 CFR 1910, Section 1000 - Air Contaminants, Section 1926.103, 1910.134 - Respiratory Protection and Section 1926.62 - Lead.
2. **ANSI** American National Standards Institute, American National Standard Practices for Respiratory Protection, ANSI Z88.2-1992.
3. **HUD** U.S. Department of Housing and Urban Development, Lead Based Paint: Interim Guidelines for Hazard Identification

and Abatement in Public and Indian Housing.

4. **NIOSH** National Institute for Occupational Safety and Health, Guide to Respiratory Protection, 1987, 87-116.
5. **MSHA** Mine Safety and Health Administration

1.4 SUBMITTALS

A. Before Start of Work, submit the following to the Owner's Representative for review. Do not begin work until these submittals are returned with the Owner's Representative's action stamp indicating that the submittal is returned for unrestricted use.

1. **Written Respiratory Protection Program:** Submit written respiratory protection program in accordance with the OSHA Respiratory Protection Standard 29 CFR 1926.103, 29 CFR 1910.134 and OSHA Lead Construction Standard 1926.62.
2. **Product Data:** Submit manufacturer's product information for each component used, including NIOSH and MSHA Certifications for each component in an assembly and/or for entire assembly.
3. **Respiratory Protection Schedule:** Submit level of respiratory protection intended for each operation required by the project. Submit this information on the "Respiratory Protection schedule" on the form included at the end of this Section.
4. **Historic Sampling Data:** Submit air sampling data from previous projects to substantiate selection of respiratory protection proposed. Data submitted shall include at least the following for each procedure required by the work
 - a. Date of measurements
 - b. Operation monitored
 - c. Sampling and analytical methods used and evidence of their accuracy
 - d. Number, duration, and results of samples taken
 - e. Workers name, social security number and job classification
 - f. Type of respirator worn by workers
 - g. Type of material
 - h. Control Methods
 - i. Work Practices
 - j. Training and experience level of workers and supervisors

5. **Fit Test Documentation:** Submit fit test documentation for all worker and supervisory personnel.

PART 2 - PRODUCTS

2.1 AIR PURIFYING RESPIRATORS

- A. **Respirator Bodies:** Provide half face or full face type respirators. Equip full face respirators with a nose cup or other anti-fogging device as would be appropriate for use in air temperatures less than 32 degrees Fahrenheit.
- B. **Filter Cartridges:** Provide, at a minimum, HEPA type filters labeled with NIOSH and MSHA Certification for "Radionuclides, Radon Daughters, Dust, Fumes, Mists including Asbestos-Containing Dusts and Mists" and color coded in accordance with ANSI Z88.2 (1992). In addition, a chemical cartridge section (organic vapor/acid gas) may be added, if required, for solvents, strippers, etc., in use. In this case, provide cartridges that have each section of the combination canister labeled with the appropriate color code and NIOSH/MSHA Certification.
- C. **Non-permitted respirators:** Do not use single use, disposable or quarter face respirators.

PART 3 - EXECUTION

3.1 GENERAL

- A. **Respiratory Protection Program:** Comply with ANSI Z88.2 - 1992 "Practices for Respiratory Protection" and OSHA 29 CFR 1910 and 1926.
- B. Require that respiratory protection be used at all times that there is any possibility of airborne lead levels exceeding the permissible exposure level required in OSHA 1926.62.
- C. Require that a respirator be worn by anyone in a Work Area at all times, regardless of activity, during a period that starts with any operation which could cause disturbance of lead based paint or dust, until the area has met the requirements of Section 01935 Project Decontamination – Lead Containing Materials or Section 01926 Project Clearance – Lead Containing Materials.
- D. **Regardless of Airborne Lead Levels or Surface Dust Contamination:** Require that the minimum level of respiratory protection used be negative pressure air purifying respirators with high efficiency filter cartridges.
- E. Do not allow the use of single use, disposable, or quarter-face respirators for any purpose.

3.2 FIT TESTING

- A. **Initial Fitting:** Fit types of respirator to be worn by each individual. Require that an individual use only those respirators for which training and fit testing has been provided. Require that fit testing be repeated semiannually, and at any time a respirator is replaced.

- B. On a Monthly Basis:** Check the fit of each worker's respirator by having irritant smoke blown onto the respirator from a smoke tube.
- C. Upon Each Wearing:** Require that each time an air purifying respirator is put on it be checked for fit with a positive and negative pressure fit check in accordance with 29 CFR 1926.62, Appendix D.

3.3 PERMISSIBLE EXPOSURE LIMIT (PEL)

- A. Permissible Exposure Limit (PEL-TWA)** - 50 micrograms/cubic meter
- B. Action Level (TWA)** - 30 micrograms/cubic meter

3.4 TYPE OF RESPIRATORY PROTECTION REQUIRED

- A.** Respiratory Protection Factors as indicated in paragraph below are for information purposes only. Respiratory protection shall be as described in 3.1(D) above.

3.5 RESPIRATORY PROTECTION FACTOR:

Table I. - Respiratory Protection for Lead Aerosols

A.	Airborne concentration of lead or required respirator {1} condition of use	
1.	Not in excess of 500 µg/M ³	1/2 mask air purifying respirator with high efficiency filters.{2}, {3} 1/2 mask supplied air respirator operated in demand (negative pressure) mode.
2.	Not in excess of 1,250 µg/M ³	Loose fitting hood or helmet powered air purifying respirator with high efficiency filters.{3} Hood or helmet supplied air respirator operated in a continuous flow mode - e.g., type CE abrasive blasting respirators operated in a continuous flow mode.
3.	Not in excess of 2,500 µg/M ³	Full face piece air purifying respirator with high efficiency filters.{3} Tight fitting powered air purifying respirator with high efficiency filters.{3} Full face piece supplied air respirator operated in demand mode. 1/2 mask or full face piece supplied air respirator operated in a continuous flow mode. Full face piece self-contained breathing apparatus (SCBA) operated in demand mode.
4.	Not in excess of 50,000 µg/M ³	1/2 mask supplied air respirator operated in pressure demand or other positive pressure mode.

- | | | |
|----|---|---|
| 5. | Not in excess of 100,000 µg/M ³ | Full face piece supplied air respirator operated in pressure demand or other positive pressure mode - e.g., type CE abrasive blasting respirators operated in a positive pressure mode. |
| 6. | Greater than 100,000 µg/M ³ or unknown concentration | Full face piece SCBA operated in pressure demand or other positive-pressure mode. |

{1} Respirators specified for higher concentrations can be used at lower concentrations of lead.

{2} Full face piece is required if the lead aerosols cause eye or skin irritation at the use concentrations.

{3} A high efficiency particulate filter (HEPA) means a filter that is 99.97 percent efficient against particles of 0.3 micron size or larger.

3.6 AIR PURIFYING RESPIRATORS:

- A. Powered air purifying:** Half or full face mask: Supply a sufficient quantity of high efficiency respirator filters approved for lead so that workers can change filters at any time that flow through the face piece decreases to the level at which the manufacturer recommends filter replacement. Require that regardless of flow, filter cartridges be replaced after 40 hours of use. Require that HEPA elements in filter cartridges be protected from wetting during personal decontamination. Require entire exterior housing of respirator, including blower unit, filter cartridges, hoses, battery pack, face mask, belt, and cords, be washed each time a worker leaves the Work Area. Caution should be used to avoid shorting battery pack during washing. Provide an extra battery pack for each respirator so that one can be charging while one is in use.

END OF SECTION - 01932

SECTION 01934 - PROJECT CLOSEOUT – LEAD CONTAINING MATERIALS

PART 1- GENERAL

1.01 RELATED DOCUMENTS:

Drawings and general provisions of the Contract, and other Division-1 Specification sections, apply to work of this section.

1.02 DESCRIPTION OF REQUIREMENTS:

Definitions: Project closeout is the term used to describe certain collective project requirements indicating completion of the work that are to be fulfilled near the end of the contract time in preparation for final acceptance and occupancy of the work by the Owner, as well as final payment to the Contractor and the normal termination of the contract.

Specific requirements for individual units of work are included in the appropriate sections in Division 1.

Time of closeout is directly related to "Substantial Completion", therefore, the time of closeout may be either single time period for the entire work or a series of time periods for individual elements of the work that have been certified as substantially complete at different dates. This time variation, if any, shall be applicable to the other provisions of this section.

1.03 SUBSTANTIAL COMPLETION:

Inspection Procedures: Upon receipt of Contractor's request for inspection, the Owner's Representative will either proceed with inspection or advise Contractor of unfulfilled prerequisites.

Following initial inspection, Owner's Representative will either prepare the certificate of substantial completion, or will advise Contractor of work which must be performed before the certificate will be issued. The Owner's Representative will repeat the inspection when requested and when assured that the work has been substantially completed.

Results of the completed inspection will form the initial "punch-list" for final acceptance.

1.04 PREREQUISITES TO FINAL ACCEPTANCE:

General: Complete the following before requesting the Owner's Representative's final inspection for clearance of final acceptance, and final payment as required by the general conditions. List known exceptions, if any, in request:

Submit the payment request with final releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.

Submit an updated final statement accounting for final additional changes to the contract sum.

Submit a certified copy of the Owner's Representative's final punch-list of itemized work to be completed or corrected stating that each item has been completed or otherwise resolved for acceptance and has been endorsed and dated by the Owner's Representative and Owner.

Submit evidence of final continuing insurance coverage complying with insurance requirements.

Reinspection Procedure: The Owner's Representative will reinspect the work upon receipt of the Contractor's notice that the work, including punch-list items resulting from earlier inspections, has been completed except for these items whose completion has been delayed because of circumstances that are acceptable to the Owner's Representative.

Upon completion of reinspection, the Owner's Representative will either prepare a certificate of final acceptance or will advise the Contractor of work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.

If necessary, the reinspection procedure will be repeated.

1.05 RECORD DOCUMENT SUBMITTALS:

General: Specific requirements for record documents are indicated in the individual sections of these specifications. Other requirements are indicated in the general conditions. General submittal requirements are indicated in "submittals" sections.

Do not use record documents for construction purposes. Protect from deterioration and loss in a secure fire-resistive location. Provide access to record documents for the Architect/Engineer's reference during normal working hours.

Note related change-order number where applicable.

Record Specifications: Maintain one complete copy of the project manual, including specifications and addenda, and one copy of other written construction documents such as change orders and similar modifications issued in printed form during construction. Mark these documents to show substantial variations in the actual work performed in comparison with the text of the specifications and modifications as issued. Give particular attention to substitutions, selection of options and similar information on work where it is concealed or cannot otherwise be readily discerned at a later date by direct observation. Note related record drawing information and product data where applicable.

Upon completion of the work, submit record specifications to the Owner's Representative for the Owner's records.

Record Sample Submittal: Immediately prior to date or dates of substantial completion, the Contractor will meet at the site with the Owner's Representative and the Owner's Personnel, if desired, to determine which, if any, of the submitted samples that have been maintained by the Contractor during progress of the work are to be transmitted to the Owner for record purposes. Comply with delivery to the Owner's sample storage space.

Miscellaneous Record Submittals: Refer to other sections of these specifications for requirements of miscellaneous record-keeping and submittals in connection with the actual performance of the work. **Evidence of post-project biological medical monitoring of supervisory and worker personnel must be submitted prior to final application for payment.** Immediately prior to the date or dates of substantial completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to the Owner's Representative for the Owner's records.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 FINAL CLEANING:

General: Special cleaning requirements for specific units of work are included in the appropriate sections of Division 1. General cleaning during the regular progress of the work is required by the General Conditions and is included under section "Temporary Facilities".

Removal of Protection: Except as otherwise indicated or requested by the Owner's Representative remove temporary protection devices and facilities which were installed during the course of the work to protect previously completed work during the remainder of the construction period.

Compliance's: Comply with safety standards and governing regulations for cleaning operations. Do not burn waste materials at the site. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile or other harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.

Where extra materials of value remaining after completion of associated work have become the Owner's property, dispose of these to the Owner's best advantage as directed.

END OF SECTION 01934

SECTION 01935 - PROJECT DECONTAMINATION – LEAD CONTAINING MATERIALS

PART 1-GENERAL

1.01 RELATED DOCUMENTS

Drawings and general provisions of Contract, and other Division-1 Specification sections, apply to work of this section.

1.02 DESCRIPTION OF REQUIREMENTS

General: This section applies to areas where any Lead Containing Materials are to be disturbed. Since the renovation activities may cause dust to be generated, the bulk of the work will involve prevention of contamination of the work area.

1.03 RELATED WORK SPECIFIED ELSEWHERE

Work area clearance: Air testing and other requirements that must be met before release of Contractor are specified in Section 01926 - Project Clearance.

PART 2-PRODUCTS (Not Applicable)

PART 3-EXECUTION

3.01 GENERAL

Work of this section: Includes the decontamination of the work area which has been, or may have been contaminated by the elevated lead (Pb) dust levels generated during renovation/dismantling activities.

Work of this section: Includes the cleaning, and decontamination of all surfaces of the work area and all equipment in the work area.

3.02 CLEANING

Cleaning: Carry out cleaning of all surfaces of the work area including items of remaining sheeting, tools, scaffolding and/or staging by use of damp-cleaning and mopping, and/or a High Efficiency Particulate Absolute (HEPA) filtered vacuum. (Note: A HEPA vacuum will fail if used with wet material). Do not perform dry dusting or dry sweeping. Use each surface of a cleaning cloth one time only and then dispose of as contaminated waste. Continue this cleaning until there is no visible debris from removed materials or residue on plastic sheeting or other surfaces.

3.03 VISUAL INSPECTION

After Final Cleaning, the Owner's Representative, a Texas State licensed Lead (Pb) Inspector or his designated representative, along with the Owner, shall perform a complete visual inspection of the entire work area to look for debris from any sources, residue on surfaces, dust or other matter. If any such debris, residue, dust or other matter is found repeat final cleaning and continue decontamination procedure from that point. When the area is visually clean, complete the certification at the end of this section.

Visual inspection is not complete until confirmed in writing, on the verification, by the Owner's Representative.

The visual inspection shall be conducted in accordance with ASTM E1368 as a minimum.

3.04 COMPLETION OF THE WORK

The work is substantially complete upon meeting the work area clearance criteria and fulfilling the following:

Remove all equipment, materials, and debris from the work site.

Dispose of all generated debris and waste material which includes all soil and poly sheeting used as specified in Section 01938 – Disposal of Waste.

The work is finally complete upon meeting the requirements of this section and Section 01926 – Project Clearance, including submission of:

Certificate of Visual Inspection.

Receipts documenting proper disposal/recycling as required by Section 01938 – Disposal of Waste Materials.

3.05 VERIFICATION OF VISUAL INSPECTION

Following this section is a “Verification of Visual Inspection” form, as well as, a “Verification of Final Visual Inspection” form. This document is to be completed by the Contractor and verified by the Owner's Representative. Submit completed document with application for final payment. Final payment will not be made until this verification is executed.

END OF SECTION 01935

VERIFICATION OF VISUAL INSPECTION

In accordance with Section 01935 "Project Decontamination" the Contractor hereby certifies that he has visually inspected the work area (all surfaces including pipes, beams, ledges, walls, ceiling and floor, decontamination unit, sheet plastic, etc.) and has found no dust, debris or residue.

BY: (Signature) _____ (Date)_____

(Print Name) _____

(Print Title) _____

(Print Project Name) _____

(Print Name of Contractor) _____

OWNER'S REPRESENTATIVE VERIFICATION

The Owner's Representative, a Texas State licensed Lead (Pb) Inspector, hereby verifies that he has accompanied the Contractor on his visual inspection and that this inspection has been thorough and to the best of his knowledge and belief, the Contractor's verification above is a true and honest one.

BY: (Signature) _____ (Date)_____

(Print Name) _____

(Print Title) _____

(Print Project Name) _____

(Print Company Affiliation) _____

SECTION 01938 DISPOSAL OF WASTE MATERIALS – LEAD CONTAINING MATERIALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to work of this section.
- B. Section 01923 Codes, Regulations and Standards – Lead Containing Materials describes applicable federal, state and local regulations.

1.2 DESCRIPTION OF THE WORK

- A. This section describes the disposal of lead (Pb) containing or lead (Pb) contaminated waste materials. Disposal includes packaging of all waste materials. Disposal of all non-metal debris shall be accomplished by landfilling. All metal debris, if any, shall be transported to a recycling facility by the Remediation Contractor. Approval by Owner is required prior to all disposal activities.

The Owner requires the amount of hazardous waste generated and disposed of during this project to be minimized.

All metal components, fittings and debris generated shall be recycled rather than disposed of by landfilling.

Disposal of all non-metal debris generated shall be accomplished by landfilling. All lead (Pb) contaminated debris generated shall be kept adequately wet and promptly placed into Department of Transportation (DOT) approved containers. As appropriate and in accordance with the waste classification, the waste containers shall be labeled as "lead (Pb) paint waste" and placarded with Universal Waste labels. The containers shall be securely stored on site until the Owner approves the waste disposal site then to an approved landfill.

1.3 SUBMITTALS

- A. Before Start of Work: Submit the following to the Owner's Representative for review. Do not start work until these submittals are returned with Owner's Representative action stamp indicating that the submittal is returned for unrestricted use.
 - 1. Copy of EPA "uniform hazardous waste manifest" form.
 - 2. Copy of forms required by state or local agencies.
 - 3. Sample of disposal bag and labels to be used.
- B. Submit copies of all manifests and disposal site receipts to Owner's Representative.

PART 2 - PRODUCTS

2.1 Disposal: Provide 6-mil thick leak tight polyethylene bags or wrap components in 6-mil polyethylene sheeting and seal with duct tape. Label with text as follows:

- A. "Label with specific Hazardous Waste Label: "
- B. For wrapped materials, provide stick-on labels.

PART 3 - EXECUTION

3.1 GENERAL

- A. Contact DOT, EPA, state and local authorities to determine lead (Pb) containing material disposal requirements.
- B. Testing of waste will be performed to determine disposal requirements. The Owner's Representative shall verify that all waste has been properly segregated, containerized, and classified into the following categories.
- B. Place all waste generated during the project in 6-mil disposal bags or wrap in 6-mil polyethylene sheeting, store in the designated storage area, enclosed dumpsters or trucks. Separate waste materials into the following categories and label all disposal bags and wrapped packages.

1. **Non-Hazardous Solid Waste:**

- a. *After thorough cleaning, plastic sheeting and duct tape used during abatement*

2. **Potentially Hazardous Solid Waste:** (as determined by testing)

- a. *Paint chips*
- b. *Rags, sponges, mops, HEPA Vacuum filters and contents, respirator cartridges, protective clothing, shower water filter(s) and other materials used during abatement*
- c. *Wood Components*

3. **Painted Metal Components to be Recycled:** (RCRA Exempt Scrap Metal)

- a. *Metal Components and Fasteners, if any.*

4. **Hazardous Liquid Waste:** (as determined by testing)

- a. *Waste Water*
- b. *Chemical Stripper Waste*

- D. Properly store and secure waste at all times. Do not leave debris in the yard or in uncovered or unlocked trucks or dumpsters. Do not incinerate debris or use an unauthorized dumpster. Do not introduce lead (Pb)-contaminated water into storm or sanitary sewers.
- E. All waste shall be handled and disposed of according to local, city, state, and federal regulations. All waste assumed to be hazardous shall be transported off site by City of Austin Solid Waste Services. All other waste shall be transported by the Remediation Contractor.
- F. Do not permit resale or re-use of building components coated with Lead-Based Paint.

3.2 DISPOSAL OF NON-HAZARDOUS SOLID WASTE (As Categorized by Owner's Representative)

- A. Materials are to remain in 6-mil disposal bags or wrapped in polyethylene sheeting. Label all packages. Substrates removed with paint in good condition which is adhered to the substrate may be placed directly in dumpsters then covered.
- B. Transport wastes in covered or enclosed trucks or dumpsters.

3.3 DISPOSAL OF NON-HAZARDOUS LIQUID WASTE (As Categorized by Owner's Representative)

- A. Dispose of liquid waste by pouring into sanitary sewage system if permission is received from publicly owned treatment works facility (POTW). Do not dispose of liquid waste by pouring onto ground or into storm drain. If the liquid waste contains phosphates or other chemicals advise treatment facility of quantity of liquid and that it likely will contain phosphates.
- B. *Properly filtered shower water shall be disposed of as non-hazardous liquid waste. All filters shall be disposed of in accordance with all applicable regulations.*

3.4 DISPOSAL OF HAZARDOUS LIQUID OR SOLID WASTES (As Categorized by Owner's Representative)

- A. Comply with RCRA, DOT, state and local regulations.
- B. Comply with DOT and state regulations for containers. The most stringent regulation shall apply.
- C. All waste is to be hauled by a licensed waste hauler with all required licenses from all state and local authorities with jurisdiction.
- D. Load all waste material into properly labeled disposal bags, polyethylene sheeting, or leak-tight drums. All materials are to be contained in one of the following:
 - 1. One (1) 6-mil layer of sheet polyethylene, duct tape all seams or

- One (1) 6-mil disposal bag; or
 - 2. Two (2) 4-mil disposal bags; or
 - 3. Sealed steel drum with no bag
- E.** Protect interior of truck or dumpster with two (2) layers of 6-mil polyethylene sheeting with all seams sealed with duct tape.
- F.** Carefully load containerized waste in fully enclosed dumpsters, trucks or other appropriate vehicles for transport. Exercise care before and during transport, to insure that no unauthorized persons have access to the material.
- G.** Do not store containerized materials outside of the Work Area. Take containers from the Work Area directly to the designated storage area, sealed truck or dumpster.
- H.** At disposal site, unload containerized waste:
- 1. At a disposal site, sealed plastic bags may be carefully unloaded from the truck. If bags are broken or damaged, return to work site for rebagging. Clean entire truck and contents using procedures set forth in Section 01935 Project Decontamination – Lead Containing Materials.
- I.** Retain all documents from the disposal site.
- J.** At completion of hauling and disposal of each load submit copy of Uniform Hazardous Waste Manifest to Owner's Representative.

3.5 BACKCHARGES

- A.** Where Remediation Contractor fails to fulfill packaging, handling, or disposal requirements as outlined herein, Owner will charge back to Remediation Contractor all costs associated with insuring that hazardous wastes are packaged and segregated in accordance with EPA and DOT regulations.
- B.** Environmental pollution of Owner's property resulting from Remediation Contractor's hazardous waste management activities shall be promptly remediated under Owner direction, to the Owner's sole satisfaction, and at the Remediation Contractor's sole expense.
- C.** Remediation Contractor agrees to either reimburse the Owner, or reduce the Contract amount by change order to cover all costs associated with waste repackaging, waste re-segregation, or pollution remediation efforts.

END OF SECTION 01938

CERTIFICATION OF TRANSPORTING RCRA EXEMPT SCRAP METAL MATERIALS TO A RECYCLING FACILITY.

CONTRACTOR CERTIFICATION

In accordance with Section 01938 – Disposal of Waste Materials – Lead-Containing Materials, the Contractor hereby certifies that the scrap metal building components have been prepared for transportation to the following recycling facility:

Recycling Facility Name: _____

Address: _____

Phone: _____

Facility Contact: _____

by: (Signature) _____ Date _____

(Print Name) _____

OWNER'S REPRESENTATIVE CERTIFICATION

The Owner's Representative hereby certifies that the Contractor has prepared the scrap metal components for transportation to the above referenced recycling facility. The Owner's Representative has witnessed the loading of the components for transport from the job site by the Contractor and to the best of his knowledge and belief, the Contractor's certification above is a true and honest one.

by: (Signature) _____ Date _____

(Print Name) _____

(Print Title) _____

RECYCLING FACILITY

The Recycling Facility Representative hereby certifies receipt (Attach Scale Receipts) of the following scrap metal from the Project Job Site via the Contractor mentioned above.

by: (Signature) _____ Date _____

(Print Name) _____

(Print Title) _____

PROJECT JOB SITE:

Quantity	RCRA Exempt Scrap Metal Material(s):

SECTION 01947 - REMOVAL – LEAD CONTAINING MATERIALS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.
- B. HUD has issued guidelines titled *Guidelines For the Evaluation and Control of Lead-Based Paint Hazard in Housing* (Chapter 7 – Lead-Based Paint Inspection) pursuant to Title X of the Housing and Community Development Act of 1992. The US Environmental Protection Agency (EPA)/HUD action level for lead-based painted surfaces is 5,000 parts per million (ppm) or 0.5% dry weight using the atomic absorption analytical method.
- C. The Occupational Safety and Health Administration (OSHA) considers paint containing any level of lead above the analytical method detection limit a potential hazard which should be communicated to any employees or contractors who may disturb the materials in the course of their assigned work.

1.02 SUMMARY OF WORK:

- A. Work under this section includes the furnishing of all labor, materials, and equipment required to conduct component removal and/or dismantling of the various metal piping, valves, system components and equipment in the plant which are coated with lead-containing paint. The means and methods included would also be appropriate should operations require surface preparation and/or paint stabilization on components which are to remain in service.

The Owner has contracted with Terracon in an effort to determine whether the coatings which will be disturbed during the project contain detectable levels of Lead. Results of the testing are included in the Appendix of this Specification but generally include:

- B. **Lead-Containing Paint (potential OSHA Hazard) has been determined to be present in the following locations:**
 - FB-L01 – The light gray paint material applied to the metal piping and bases of the east end backwash system components were found to contain 1,300 ppm lead. This material was observed to be in good condition.
 - FB-L03 – The dark gray paint material applied to the metal motor housings of the east end induction motors were found to contain 530 ppm lead. This material was observed to be in good condition.
 - FB-L04 – The light green paint material applied to the metal vacuuming priming pumps, valves, piping, and high pressure airline was found to contain 190 ppm lead. This material was observed to be in good condition.

- FB-L06 – The light blue paint material applied to the concrete walls in the east section of the Filter Gallery were found to contain 43 ppm lead. This material was observed to be in good condition.
 - FB-L07 – The light gray paint material applied to the metal piping and valves of the filter basins was found to contain 2,300 ppm lead. This material was observed to be in good condition.
 - FB-L08 – The dark blue paint material applied to the metal effluent valves and handles of the filter basins were found to contain 83 ppm lead. This material was observed to be in good condition.
 - FB-09 – The red paint applied to the metal valves, handles, vent pipe handles, and chlorine solution handles of the filter basins were found to contain 76 ppm lead. This material was observed to be in good condition.
 - FB-L10 – The dark gray paint material applied to the metal housings of Air Handler Units 1 and 2 were found to contain 1,000 ppm lead. This material was observed to be in good condition.
 - FB-L12 – The light yellow paint material applied to the metal vent piping on the west end of the filter basins was found to contain 34 ppm lead. The material was observed to be in good condition.
 - FB-13 – The dark blue paint material applied to the metal surface wash piping and non-potable water line was found to contain 2,900 ppm lead. The material was observed to be in good condition.
 - FB-14 – The medium gray paint material applied to the vent piping of the east end filter basins was found to contain 2,400 ppm lead. The material was observed to be in good condition.
- C. Paint which has been determined to have levels of Lead below the detection level may be present in the following locations:**
- FB-L02 – The light purple paint material applied to the metal piping, valves, and bases of the east end FBF Pumps was found to contain <42 ppm lead. This material was observed to be in good condition.
 - FB-L11 – The light beige paint material utilized on the metal piping and valves of the overhead filter basins was found to contain <42 ppm lead. The material was observed to be in good condition.

1.03 SUBMITTALS:

- A. **Before Start of Work:** Submit the following to the Owner's Representative for review. Do not start work until these submittals are returned with Owner's Representative action stamp indicating that the submittal is returned for unrestricted use.

OSHA Material Safety Data Sheet (MSDS) for solvents, strippers, encapsulants, cleaning solutions, and other chemicals utilized or stored at the jobsite.

Description of removal method(s) and list of removal equipment with manufacturers instructions.

- B. **Product Data:** Submit product data, use instructions, and recommendations from manufacturer's intended for use. Include data substantiating that material complies with requirements of this section. Submit manufacturer's warranties on the durability of the product. Provide material safety data sheets.

1.04 DELIVERY AND STORAGE

- A. Deliver materials to the job site in original, new and unopened packages and containers bearing manufacturer's name and label and following information:

Name and Title of Material
Manufacturer's Name
Manufacturer's Stock Number and Date of Manufacture
Applications Instructions

1.05 JOB CONDITIONS

- A. Conduct removal operations only when environmental conditions in the work area are such that any lead dust produced can be maintained within the work area. Do not conduct exterior Lead Removal operations during periods of high wind or steady rain which might allow lead dust/debris to migrate from the work areas.

1.06 QUALITY ASSURANCE

- A. **Testing:** Test methods, visual inspection protocols and analytical methods to be employed by the Owner's Representative are included in Section 01925 of this Specification.

PART 2 – PRODUCTS

2.01 GENERAL

- A. **Removal Methods and Equipment:** Unless indicated otherwise in this Specification, removal method(s) and equipment specific removal techniques employed for various components (pipes, valves, equipment, etc.) shall be determined by the CONTRACTOR, except for the following prohibited methods:

Dry blasting or dry scraping equipment, without a HEPA vacuum attachment.
Compressed air or other non-airless type equipment.
Chemical strippers that contain methylene chloride.

Hydro-blasting.
Wet Abrasive Blasting
Chemicals with a flash point below 140EF
Heat gun or open flame device.

- B. Disposal Bags:** Provide as a minimum, individual, 6 mil thick, leak-tight, manufactured polyethylene bags.
- C. Polyethylene Wrap:** Provide minimum 6 mil polyethylene sheeting as a wrapping for large sections of rigid waste material.
- D. Disposal Drums:** Provide U.S. Department of Transportation (DOT) approved disposal drums, as applicable for the type of waste generated.
- E. Disposal Labels:** Provide labels that meet regulatory requirements and include the following information, lettered with indelible ink:

OWNER's name; CONTRACTOR's name; Project site address; Description of contents; Date that waste was first put into container; and the following warning:

DANGER
CONTAINS LEAD
AVOID CREATING DUST

F. Liquid Spreadable Encapsulants

Provide demolition encapsulation system consisting of FESI-BOND Paint and CCA Wood Surfaces Stabilizer which is a durable coating that is compatible with the lead-based painted surface.

Available Manufacturer's include but are not limited to:
Forrester Environmental Services, Inc.
78 Racy Way
Meredith, NH 03253
www.fesi.net/bond/paint.htm

PART 3 - EXECUTION

3.01 BEFORE STARTING WORK OF THIS SECTION, COMPLETE THE FOLLOWING:

- A. Section 01910 - Worker Protection – Asbestos/Lead Containing Materials**
- B. Section 01911 - Respiratory Protection - Asbestos/Lead Containing Materials**
- C. Section 01928 - Exterior Regulated Areas – Asbestos/Lead Containing Materials**

3.02 REMOVAL METHODS

Use abatement procedures and equipment that are the most appropriate and will minimize occupational and environmental exposure to lead during and after removal operations.

Use procedures and work methods that will minimize Lead-contaminated waste.

Lead-related activities shall be performed in accordance with the accepted CONTRACTOR'S Remediation Plan as modified and approved following the Pilot Abatement Project.

- A. Component Removal:** Manual dismantling of select sections of piping, valves and equipment which has Lead-containing Paint (LCP) applied shall be the preferred method of work for this project. All work shall be conducted by appropriately trained individuals and employ appropriate levels of PPE. At a minimum, work shall be conducted within a work area which consists of controlled access with proper hazard signage, and 6-mil polyethylene sheeting placed below the work and in any areas where workers conducting component removal will walk, store tools/equipment, and collect removed components prior to transport to the waste storage dumpster/trailer.

Removal of fasteners shall be accomplished by with the appropriate wrenches, breaker bars, and/or pneumatic tools when possible. The use of "nut breaking" equipment shall be acceptable when site conditions prove necessary. Use of gas torches, saws and/or chisels are not considered acceptable methods for fastener removal without chemical removal of any LCP present. These methods are discussed in Section 01948 of this Specification.

Mist work area continuously with water whenever necessary to reduce airborne dust levels. Accumulations of free water, paint chips and/or dust on the polyethylene drop sheets shall be minimized by periodically collecting the debris with a HEPA vacuum or wet rags. The drop sheets shall be cleaned or replaced prior to any crew breaks and at the end of each work shift.

Components and/or substrates that are removed for replacement shall be placed in a polyethylene lined dumpster/trailer and maintained on-site until transferred to an off-site facility for recycling. Care shall be taken to avoid damage to adjacent areas during the removal of the components/substrates to be replaced.

- B. HEPA Vacuum Blasting Removal:** Blasting shall be done on flat and shaped surfaces that are compatible with the available blast heads as provided by the equipment manufacturer. Blast heads shall come into contact with the surfaces being blasted as to provide maximum containment of dust and debris created by the blasting operation.

All Lead-Containing or Lead-Based paint shall be removed down to the bare substrate. In some cases pigment may remain embedded in porous materials, care shall be taken not to damage the substrate with the blasting operation. If pigments cannot be removed without damaging the substrates, the CONTRACTOR shall immediately notify the LEAD PROJECT DESIGNER for further instructions.

Mist work area continuously with water whenever necessary to reduce airborne dust levels.

- C. HEPA Roto Peen Removal:** Roto Peen removal shall be done on flat and shaped surfaces that are compatible with the available heads as provided by the equipment manufacturer. Equipment heads shall come into contact with the surfaces being abated as to provide maximum containment of dust and debris created by the removal operation.

All Lead-Containing or Lead-Based paint shall be removed down to the bare

substrate. In some cases pigment may remain embedded in porous materials, care shall be taken not to damage the substrate with the blasting operation. If pigments cannot be removed without damaging the substrates, the CONTRACTOR shall immediately notify the LEAD PROJECT DESIGNER for further instructions.

Mist work area continuously with water whenever necessary to reduce airborne dust levels.

- D. HEPA Needle Gun Removal:** Needle Gun removal shall be done on appropriate surfaces that area compatible with the available shrouds provided by the equipment manufacturer. Shrouds shall come into contact with the surfaces being abated as to provide maximum containment of dust and debris created by the metal needle operation.

All Lead-Containing or Lead-Based paint shall be removed down to the bare substrate. In some cases that pigment may remain embedded in porous materials, care shall be taken not to damage the substrate with the blasting operation. If pigments cannot be removed without damaging the substrates, the CONTRACTOR shall immediately notify the LEAD PROJECT DESIGNER for further instructions.

Mist work area continuously with water whenever necessary to reduce airborne dust levels.

- E. HEPA Recovery Tool Removal:** HEPA equipped sanders, saws, drills and other tools may be used with specially designed shrouds or containment systems kept in direct contact with the surfaces being worked on and having adequate air flow to permit the system to operate properly.

Mist work area continuously with water whenever necessary to reduce airborne dust levels.

- F. Chemical Stripper Removal:** The paint remover shall be applied in accordance with manufacturer's recommendations, the time the remover must stay on the surface will depend on the number of layers of paint, the type of paint, the temperature and humidity. The remover shall not be allowed to dry out.

Remove the Lead-Containing or Lead-Based paint down to the bare substrate. Neutralization shall be performed in accordance with manufacturer's recommendations. A flash-point of greater than 140 Degrees Fahrenheit is required for any chemical stripper. Follow protective clothing requirements of manufacturer (gloves, eyewear, etc.).

- G. Preparation for Repainting:** Peeling and deteriorated surfaces shall be wet scraped or prepared using HEPA equipped tools prior to application of the approved primer. Loose paint shall be removed back to well adhered paint in good condition. Debris shall be packaged and stored on-site for testing and disposal. Surfaces shall be prepared according to the manufacturer's specifications.

- H. Encapsulation Application:** Apply encapsulation system in accordance with manufacturer's recommendations. Examine existing conditions to determine surface preparation required and compatibility with substrate.

Encapsulation system shall be applied to the substrate in a continuous system to seal the entire surface being coated. Number of coats and coverage rates shall be in accordance with manufacturer's recommendations.

Test the adhesion of the system by using minimum 6" X 6" (152 x 152 mm) area in accordance with HUD Guidelines. The area must pass a visual inspection before applying and performing the patch test to ensure a clean surface and before completing the encapsulation process.

At completion of encapsulation, comply with requirements of Section 01914 - Project Decontamination – Asbestos/Lead Containing Materials.

At completion of work, submit manufacturer's warranty executed by both manufacturer and Contractor.

3.03 LEAD-CONTAINING WASTE MATERIALS

The majority of the components removed as work in this project consist of metal piping, valves, and equipment which shall be recycled rather than disposed of. In producing the work, however, some paint chips/debris, polyethylene sheeting, worker PPE items, and other non-metal waste shall be generated. It is the CONTRACTOR'S responsibility to reduce the waste stream as much as practical and to containerize, have transported and dispose of any waste which cannot be included in the recycling stream.

- A. General:** Waste materials generated during lead-related work, including but not limited to bagged or wrapped waste, waste water, contaminated clothing, polyethylene sheeting, filters, cleaning fluids and materials, etc. shall be bagged, wrapped in polyethylene or placed in disposal drums. CONTRACTOR will use secure DOT-approved containers for waste storage. The CONTRACTOR will be responsible for ensuring proper segregation of waste products.
- B. Bagging:** Evacuate air from disposal bags with a HEPA filtered vacuum cleaner before sealing. Twist neck of bag, bend over and seal with minimum three wraps of duct tape. Clean outside of first bag and move to wash room of material decontamination unit. In wash room, place second bag around first. Evacuate air, twist neck of bag, bend over and seal with minimum of three wraps of duct tape. Clean outside of second bag and move to holding room of material decontamination unit. Attach label to each disposal bag in accordance with regulatory requirements.
- C. Wrapping:** If authorized by the LEAD PROJECT DESIGNER / LEAD INSPECTOR rigid waste material that will not easily fit into disposal bags (panels, boards, pipe, etc.), may be double wrapped as follows:

Tape sharp edges that may perforate wrapping. Wrap manageable quantities of waste material in one layer of 6 mil polyethylene and seal with duct tape. Clean outside of first layer and move bundle to wash room of material decontamination unit. In wash room, wrap second 6 mil layer around first and seal with duct tape. Clean outside of second layer and move bundle to holding room of material decontamination unit. Attach label to each bundle in accordance with regulatory

requirements.

- D. Disposal Drums:** CONTRACTOR will provide waste storage drums which meet United Nations (UN) and the U.S. Department of Transportation standards. Place only one type of waste material in each drum and seal. Clean and label outside of drum, in accordance with 40 CFR Part 262 and 29 CFR Parts 170-178, before transferring to OWNER. Current regulations require United Nations numerical designation be utilized on all labels.

3.04 DISPOSAL

Disposal of Lead-Based Paint Waste is more fully discussed in Section 01938 of this Specification.

- A. General:** The OWNER will be responsible for the TCLP testing and disposal of the lead-related waste.

Do not store uncovered, bagged, wrapped or drummed waste material outside the Work Area in an open, exposed area.

Take labeled, contained waste from the Work Area directly to the area designated by the OWNER.

The CONTRACTOR shall be responsible for clearly marking the provided drums to identify the waste contained within.

END OF SECTION 01947

SECTION 01948 - CHEMICAL STRIPPING OF LEAD CONTAINING MATERIALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

1.2 SUMMARY OF WORK: Work of this section includes removal and disposal of lead-based paint.

- A. There are in some locations Lead-Containing Paint coatings applied to metal piping, equipment and valves which may require torch cutting. In some cases the coatings applied contain no lead (lead levels below detection) and in such situations, these components will require no special handling or treatment. There are however numerous coatings applied to metal piping, equipment and valves which contain detectable levels of lead and under OSHA regulations, prior to conducting any flame cutting or grinding/sanding operations, the work practices to be employed should be evaluated for potential worker impact. It is likely component removal, manual dismantling, and recycling operations would not produce any potential hazard to the workforce.

The Owner has contracted with Terracon in an effort to determine whether the coatings which will be disturbed during the project contain detectable levels of Lead. Results of the testing are included in the Appendix of this Specification but generally include:

Any components which have coatings which contain detectable levels of lead will require on-site paint removal in any areas where flame cutting, grinding or sanding will be necessary. Flame cutting will be utilized only in locations/situations where component dismantling is not possible/practical and shall not be considered the preferred method of removal. Prior to conducting any flame cutting activities, the Contractor will remove all paint from the affected surfaces within three (3) feet of the location where the flame cut(s) are to be made. All components removed shall be included in the metal components collected and packaged for recycling.

- B. **Lead-Containing Paint (potential OSHA Hazard) has been determined to be present in the following locations:**
- FB-L01 – The light gray paint material applied to the metal piping and bases of the east end backwash system components were found to contain 1,300 ppm lead. This material was observed to be in good condition.
 - FB-L03 – The dark gray paint material applied to the metal motor housings of the east end induction motors were found to contain 530 ppm lead. This material was observed to be in good condition.

- FB-L04 – The light green paint material applied to the metal vacuuming priming pumps, valves, piping, and high pressure airline was found to contain 190 ppm lead. This material was observed to be in good condition.
- FB-L06 – The light blue paint material applied to the concrete walls in the east section of the Filter Gallery were found to contain 43 ppm lead. This material was observed to be in good condition.
- FB-L07 – The light gray paint material applied to the metal piping and valves of the filter basins was found to contain 2,300 ppm lead. This material was observed to be in good condition.
- FB-L08 – The dark blue paint material applied to the metal effluent valves and handles of the filter basins were found to contain 83 ppm lead. This material was observed to be in good condition.
- FB-09 – The red paint applied to the metal valves, handles, vent pipe handles, and chlorine solution handles of the filter basins were found to contain 76 ppm lead. This material was observed to be in good condition.
- FB-L10 – The dark gray paint material applied to the metal housings of Air Handler Units 1 and 2 were found to contain 1,000 ppm lead. This material was observed to be in good condition.
- FB-L12 – The light yellow paint material applied to the metal vent piping on the west end of the filter basins was found to contain 34 ppm lead. The material was observed to be in good condition.
- FB-13 – The dark blue paint material applied to the metal surface wash piping and non-potable water line was found to contain 2,900 ppm lead. The material was observed to be in good condition.
- FB-14 – The medium gray paint material applied to the vent piping of the east end filter basins was found to contain 2,400 ppm lead. The material was observed to be in good condition.

C. Paint which has been determined to have levels of Lead below the detection level may be present in the following locations:

- FB-L02 – The light purple paint material applied to the metal piping, valves, and bases of the east end FBF Pumps was found to contain <42 ppm lead. This material was observed to be in good condition.
- FB-L11 – The light beige paint material utilized on the metal piping and valves of the overhead filter basins was found to contain <42 ppm lead. The material was observed to be in good condition.

1.3 GENERAL: prohibited lead hazard removal methods.

- A. Open flame burning;
- B. Chemical stripping with methylene chloride based paint strippers;
- C. Uncontained abrasive blasting;
- D. Uncontained power washing;
- E. Dry sanding or scraping;
- F. Power sanding without HEPA attachment;
- G. Sanding of wood after chemical stripping.

1.4 SUBMITTALS: Before start of work: Submit the following to the Owner's Representative for review. Do not start work until these submittals are returned with Owner's Representative action stamp indicating that the submittal is returned for unrestricted use.

- A. **Chemical Stripping Removers And Neutralizers:** Submit product data, use instructions and recommendations from manufacturer for use intended. Include data substantiating that material complies with requirements.
- B. **Material Safety Data Sheet:** Submit material safety data sheet, or equivalent, in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) for each chemical stripper and neutralizer, include a separate attachment for each sheet indicating the specific worker protective equipment proposed for use with the material indicated.

PART 2 - PRODUCTS

- A. **Chemical Stripping Removers:** Shall contain no methylene chloride products. Chemical removers shall be compatible with, and not harmful to the substrate that they are applied to. The Remediation Contractor shall comply with the manufacturer's recommendations for use of the product supplied.
- B. **Chemical Stripping Agent Neutralizer:** Provide chemical agent neutralizer in accordance with manufacturer's recommendations. Neutralizers shall be compatible with and not harmful to the substrate. Neutralizers shall also be compatible with the stripping agent used.
- C. **Wet Detergent Wash:** Provide detergent or cleaning agent formulated to be effective in removing lead dust. Follow dilution ratio recommended by the manufacturer's instructions.

PART 3 - EXECUTION

3.1 Before starting work of this section, complete the following:

- A. **Section 01927** - Remediation Facilities and Temporary Controls
- B. **Section 01928** - Exterior Regulated Areas
- C. **Section 01929** - Work Area Containment
- D. **Section 01931** - Worker Protection
- E. **Section 01932** - Respiratory Protection

3.2 CHEMICAL LEAD-BASED PAINT REMOVAL ON-SITE:

- A. **Chemical Stripping Agents** and neutralizers shall be applied in accordance with the recommendations of the manufacturer.
- B. **Caustic Stripper Neutralization:** Caustic strippers shall be neutralized in accordance with manufacturer's recommendations. Provide workers with proper protective equipment, including but not limited to; protective clothing (non-paper), chemically resistant gloves, eye protection and respiratory protection with filters selected for the hazards to be encountered.
- C. **Remove Stripper Sludge:** Place lead containing stripper sludge in corrosion-proof containers and place in a secure waste storage area. The surface from which lead-based paint has been removed shall be thoroughly scrubbed, while still damp from the stripper, in accordance with the manufacturer's recommendation. Monitor pH of the neutralizing solution to ensure it has not become neutralized in the process. If the pH exceeds 6.5, or the solution becomes overly soiled, change solution. Solution may be classified as hazardous waste. Place in 55 gallon drums and test in accordance with Section 01938- Disposal of Waste Materials – Lead Containing Materials. The surface shall be tested with litmus paper following this process. If the litmus paper turns pink, the acid has effectively neutralized the alkali. If litmus turns blue continue scrubbing until satisfactory results are achieved.
- D. **Final Cleaning Of Surfaces:** Prepare wet detergent wash. Workers must wear eye shields and chemically resistant gloves when working with this solution. Thoroughly scrub stripped surface to remove as much remaining lead residue as possible. The wash solution may also be hazardous waste, treat in accordance with Section 01938- Disposal of Waste Materials – Lead Containing Materials. Following wet detergent wash, perform a final wash with clear water to remove any traces of detergent. Sponges used in the clean-up process may not be reused and must be placed in double 4 mil or single 6 mil plastic bags, which will be sealed, labeled, and placed in the secure waste storage area. Surfaces must be allowed to dry thoroughly before repainting. A grayish film indicates that significant lead residues remain and the cleaning process must be repeated. If a white powder appears, the surface is Alkaline and requires further neutralization.
- E. **Complete Project Decontamination** Requirements of Section 01935 - Project Decontamination – Lead Containing Materials.

3.3 JOB CONDITIONS

- A. Apply Encapsulating Materials only when environmental conditions in the work area are as required by the manufacturer's instructions.

END OF SECTION 01948