BID DOCUMENTS COVER SHEET

CONTRACT DOCUMENTS

FOR

C-1059 MEN’S LOCKER ROOM
BOILER REPLACEMENT PROJECT

AT

CONTRA COSTA COLLEGE

2600 Mission Bell Drive, San Pablo, California 94806

CONTRA COSTA COMMUNITY COLLEGE DISTRICT

Engineer:

Newcomb|Anderson|McCormick

201 Mission Street, Suite 2000, San Francisco, CA 94105

May 27, 2015
### SECTION 00010

#### TABLE OF CONTENTS

**SPECIFICATIONS**

**DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS**

<table>
<thead>
<tr>
<th>SECTION</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>00001</td>
<td>TITLE PAGE</td>
</tr>
<tr>
<td>00010</td>
<td>TABLE OF CONTENTS</td>
</tr>
<tr>
<td>00100</td>
<td>NOTICE INVITING BIDS</td>
</tr>
<tr>
<td>00210</td>
<td>INFORMATION AVAILABLE TO BIDDERS</td>
</tr>
<tr>
<td>00300</td>
<td>BID PROPOSAL FORM</td>
</tr>
<tr>
<td>00450</td>
<td>CERTIFICATION OF SITE VISIT</td>
</tr>
<tr>
<td>00500</td>
<td>PAYMENT AND PERFORMANCE BOND FORMS</td>
</tr>
<tr>
<td>00510</td>
<td>NOTICE OF AWARD</td>
</tr>
<tr>
<td>00600</td>
<td>CONSTRUCTION AGREEMENT</td>
</tr>
<tr>
<td>00650</td>
<td>NOTICE TO PROCEED</td>
</tr>
<tr>
<td>00800</td>
<td>SUPPLEMENTARY GENERAL CONDITIONS</td>
</tr>
</tbody>
</table>

**DIVISION 01 – GENERAL REQUIREMENTS**

<table>
<thead>
<tr>
<th>SECTION</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>01010</td>
<td>NONE. SEE SECTION 00800, Above</td>
</tr>
</tbody>
</table>

**TECHNICAL SPECIFICATIONS**

**DIVISION 02 – EXISTING CONDITIONS**

<table>
<thead>
<tr>
<th>SECTION</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>02 08 00</td>
<td>ASBESTOS ABATEMENT AND DISPOSAL</td>
</tr>
<tr>
<td>02 83 00</td>
<td>LEAD-CONTAINING PAINT REMOVAL AND LEAD-RELATED CONSTRUCTION</td>
</tr>
</tbody>
</table>

**DIVISION 23 – HEATING, VENTILATING AND AIR CONDITIONING (HVAC)**

<table>
<thead>
<tr>
<th>SECTION</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>23 52 00</td>
<td>BOILER AND RELATED EQUIPMENT</td>
</tr>
</tbody>
</table>

**DRAWINGS – FROM PRIOR WORK DATED, MAY 10, 1988 (REFERENCE ONLY)**

<table>
<thead>
<tr>
<th>A-0</th>
<th>TITLE SHEET</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-2</td>
<td>ELECTRICAL PLAN AND DETAILS</td>
</tr>
<tr>
<td>M-1</td>
<td>LEGENDS, SCHEDULES, AND ABBREVIATIONS</td>
</tr>
<tr>
<td>M-2</td>
<td>MECHANICAL HVAC REHABILITATION</td>
</tr>
<tr>
<td>M-3</td>
<td>MECHANICAL DETAILS AND CONTROL DIAGRAMS</td>
</tr>
<tr>
<td>P-1</td>
<td>PLUMBING PLANS</td>
</tr>
<tr>
<td>P-2</td>
<td>PLUMBING DETAILS</td>
</tr>
</tbody>
</table>

**END OF SECTION**
SECTION 00100
NOTICE INVITING BIDS
(INFORMAL BIDS)

C-1059 MEN’S LOCKER ROOM BOILER REPLACEMENT
CONTRA COSTA COLLEGE
2600 Mission Bell Drive, San Pablo, California 94806

SCOPE OF WORK: Work includes, but is not limited to:

Provide design and construction services to:

- Remove the existing boiler, pumps, heat exchanger and associated piping as necessary to install new system. Work includes abatement, as described in Division 2 of the Specifications.
- All structural and seismic attachments and calculations by a licensed California Structural Engineer.
- Provide and install new boiler, pumps, heat exchanger, piping, electrical and control connections for a fully functional boiler system Section 23 52 00 Boiler and Related Equipment.

Important Information:

Mandatory Pre-Bid Meeting & Job Walk:
JUNE 2, 2015 @ 1:30 PM
Location:
Contra Costa College, Building and Grounds Department Office
2600 Mission Bell Drive, San Pablo, California 94806

Contractor’s License Requirement: California - B – General Contractor or C-4 - Boiler, Hot Water Heating and Steam Fitting Contractor

Cost Estimate (Range): $100K to $145K

BID OPENING: JUNE 16, 2015 @ 2:00 PM
Location:
Lobby, CCCC District Office
500 Court St, Martinez, CA 94553

This project is a public works project and is subject to prevailing wage rate laws. A copy of the prevailing rates of wages is on file with the Contracts & Purchasing Office of the Contra Costa Community College District. Said rates of wages will be included in the contract for the work.

Attention is directed to Section 4100 through 4113 of the Public Contract Code concerning Subcontractors, with emphasis on Section 4104, known as the “Subletting and Subcontracting Fair Practices Act, effective July 1, 2014.

Attention is directed to Labor Code Section 1725.5 regarding Department of Industrial Relations (DIR) contractor registration process including registration criteria and implementation of DIR registration requirements. Labor Code Section 1771.7 establishes contractor’s obligation to submit Certified Pay Roll (CPR) to the Department of Labor and Standards Enforcement (DLSE) and public works monitoring and
enforcement. Labor Code Section 1773.3 requires the District to submit a PWC-100 to DIR for all public works contract awarded effective January 1, 2015.

**Site Visit Certification** shall be authorized by the representative of the District and shall be submitted with the bid. Failure to submit all of the above may cause your bid to be non-responsive and disqualified for contract award.

All questions related to this project are to be directed in writing, no later than JUNE 5, 2015, for any addenda to be issued by Jovan Esprit, Contracts Manager, Contra Costa Community College District, Email: jesprit@4cd.edu.

The successful bidder will be required to furnish a labor and material bond in an amount equal to one hundred percent (100%) of the contract price and a faithful performance bond in an amount equal to one hundred percent (100%) of the contract price, said bonds to be secured from a surety company acceptable to the Contra Costa Community College District and authorized to execute such surety in the State of California.

Certificates of Liability Insurance with proper endorsements shall be required for the successful bidder.

The contract time is 60 Calendar Days between the Notice to Proceed date and the contract Substantial Completion date. Liquidated Damages shall be set for Three Hundred Dollars ($300.00) for each calendar day the Work is delayed beyond the contract Substantial Completion date. The Contra Costa Community College District reserves the right to reject any and all bids and/or waive any informality or irregularity in any bid received. No bidder may withdraw their Bid for a period of fifteen (15) days after the date set for opening thereof.

**END OF SECTION**
SECTION 00210
INFORMATION AVAILABLE TO BIDDERS

PART 1 - REPORT AND INFORMATION

1.1 Existance of reports, record drawings, and utility surveys: Contra Costa Community College District, its consultants, and prior contractors may have collected documents providing a general description of the site and conditions of the work. These documents may consist of geotechnical reports for and around the site, record drawings, utility drawings, and information regarding underground utilities. These reports, documents and other information are not part of the Contract Documents and do not show new work to be constructed, rather, they show existing conditions that Contractor may have to address as part of its construction planning.

1.2 Available Documentation: The following existing documentation has been made available for uploading via the District’s web site:

A. Existing Men’s Locker Room Boiler Drawings

1.3 Contractor shall acknowledge and accept that the documents are not a part of the Contract Documents and are made available to bidders for reference only. The District and its representatives are not responsible for any and all discrepancies between the documents and the existing and actual as-built conditions, and do not guarantee the accuracy of the documents.

1.4 The District and Architect assume no responsibility for the completeness or accuracy of the documents or the records compiled there from and the interpretations made from the documents. There is no express or implied guarantee that the conditions indicated in the documents are representative of those existing throughout the building and/or site Conditions differing substantially from those indicated may be encountered.

END OF SECTION 00210
SECTION 00300
BID PROPOSAL FORM (INFORMAL BIDS)

C-1059 MEN'S LOCKER ROOM
BOILER REPLACEMENT
CONTRA COSTA COLLEGE
2600 Mission Bell Drive, San Pablo, California 94806

BID DATE: TUESDAY, JUNE 16, 2015, prior to 2:00 PM

===================================================================================================

INSTRUCTIONS TO BIDDERS:
• Please send your BID Proposal in one of these methods:
  a) Email: jesprit@4cd.edu; b) Fax: 925-370-7512; c) Drop off at District Office
• Don't forget to include a Bid Bond for 10% of the Bid amount; (copy attached to Bid Proposal
   is accepted, original by mail to follow); and signed Certification of Site Visit;
• Bid results shall be sent to you via email message and posted at the District Website;
• For clarification, please call: Jovan Esprit, 925-229-6959 or jesprit@4cd.edu

===================================================================================================

Attention is directed to Labor Code Section 1725.5 regarding Department of Industrial Relations (DIR)
contractor registration process; registration criteria and implementation of DIR registration
requirements. Labor Code Section 1771.7 establishes contractor’s obligation to submit Certified Payroll
(CPR) to the Department of Labor and Standards Enforcement (DLSE) and public works monitoring and
enforcement. Labor Code Section 1773.3 requires the District to submit a PWC-100 to DIR for all public
works contract awarded effective January 1, 2015.

1. INTRODUCTION
   A. The Bidder proposes to perform the Work for the Contract Sum and within the proposed time,
      based upon an examination of the Job Site and Specifications.
   B. The Bidder certifies this proposal is submitted in good faith.
   C. The signed copy of the Certification of Visit to the Site shall be attached to the Proposal Form.
   D. The Bidder shall attach a Bid Security for ten percent (10%) of the Bid Amount in the form of
      Bid Bond, or Certified Check payable to the District.

   Please Note: PCC 20651 (b); In the event, the successful bidder fails to provide the required Payment
   and Performance bonds, the Bid Security shall be forfeited in favor of the District and Contractor shall
   not be entitled for contract award.

2. BID AMOUNT
   For labor, materials, insurances, bonds, fixtures, equipment, tools, transportation, services, sales
   taxes and other costs necessary to complete the public project in accordance with Specifications,
   for a stipulated Contract Sum in the amount of:

Quote for the BASE BID Scope of Work:___________________________________________________________ $________________________

(Write amount of Base Bid)
Base Bid ALLOWANCE:

SEVENTHOUSAND FIVE HUNDRED DOLLARS AND NO CENTS $7,500.00

TOTAL BASE BID PLUS ALLOWANCE $________________________

3. ADDENDUM (if applicable): #1 Received Date: __________; #2 Received Date: __________;

4. SUBCONTRACTORS LIST (If Any)

Attention is directed to Section 4100 through 4113 of the Public Contract Code concerning Subcontractors, with emphasis on Section 4104, known as the “Subletting and Subcontracting Fair Practices Act, effective July 1, 2014.

<table>
<thead>
<tr>
<th>Type of Work</th>
<th>Subcontractor’s Name</th>
<th>Address/Phone</th>
<th>Business License # &amp; DIR Registration #</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>____________________</td>
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<tr>
<td>(2)</td>
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<td>(3)</td>
<td>____________________</td>
<td>______________</td>
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4. COMPLETION TIME

A. For establishing the Date of Substantial Completion, the contract time shall be 60 calendar days after date of Notice to Proceed.
B. Final Completion shall be 30 calendar days after the date of Substantial Completion.
C. Prior to the Notice to Proceed issued by the District, the Contractor shall provide a CPM construction schedule, prepared in Microsoft Project format, utilizing the entire time allowed to complete the project. Schedule shall be subject to District's approval.

5. ACCEPTANCE AND AWARD

The District reserves the right to waive minor irregularities or reject all bids; or negotiate changes before or after execution of the Contract. This Bid shall remain open and shall not be withdrawn for a period of 10 days after Bid Opening date.

If written notice of acceptance of this Bid is mailed or delivered to the Bidder within 10 days after the date set for the receipt of this Bid, or other time before it is withdrawn, the Bidder shall execute and deliver to the District a Contract prepared by District with the required Surety Bonds and Certificates of Insurance, within 10 days after personal delivery or deposit in the mail of the notification of acceptance.
Notice of acceptance or request for additional information may be addressed to the Bidder at the address provided.

The undersigned hereby certifies under penalty of perjury under the laws of the State of California that all the information submitted by the bidder in connection with this proposal and all the representations herein made are true and correct.

_____________________________________________ CSLB License No.: _____________ Exp: ________
Firm Name

_____________________________________________ DIR Registration No.: ______________________
Address

_____________________________________________ Phone: _________________________________

_____________________________________________ Email: _________________________________

Authorized Signature                  Print Name                  Date
The Governing Board of the
Contra Costa Community College District
500 Court Street
Martinez, California  94553

Gentlemen/Ladies:

I visited the **C-1059 Men’s Locker Room Boiler Replacement** project site,

on  

to inspect the proposed work, which would be turned over to me in its present condition, with a representative of the Contra Costa Community College District in order to acquaint myself with the proposed work so that I might fully understand the facilities, difficulties, and restrictions attending the execution of the work under the contract, and acknowledge I had the opportunity to check the Record Drawing as-built drawings and/or previous Contract Documents, site conditions and Bid Documents with the authorized representative of the District.

**Owner Representative:**

Project Manager – CCC Facilities  

or  

Construction Manager  

**Bidder:**

Name of Firm or Company  

Authorized Signatory  

Address  

Phone Number  Fax Number

**NOTE:** Any bidder who fails to return this CERTIFICATION, fully executed, including signature of company representative AND a Contra Costa Community College District representative, with the proposal form, may have their bid rejected as non-responsive.

END OF SECTION
SECTION 00500
PAYMENT BOND
(CALIFORNIA PUBLIC WORK)

KNOW ALL MEN BY THESE PRESENTS:

THAT WHEREAS, the Contra Costa Community College District (sometimes referred to hereinafter as “Obligee”) has awarded to ______________________________________ (hereinafter designated as the “Principal” or “Contractor”), an agreement for the work described as follows: ______________________________________ (hereinafter referred to as the “Public Work”); and

WHEREAS, said Contractor is required to furnish a bond in connection with said Contract, and pursuant to California Civil Code Section 9550;

NOW, THEREFORE, We, ______________________________________, the undersigned Contractor, as Principal; and ______________________________________, a corporation organized and existing under the laws of the State of ________________, and duly authorized to transact business under the laws of the State of California, as Surety, are held and firmly bound unto the Contra Costa Community College District and to any and all persons, companies, or corporations entitled by law to file stop notices under California Civil Code Section 9100, or any person, company, or corporation entitled to make a claim on this bond, in the sum of ______________________ Dollars ($______________), said sum being not less than one hundred percent (100%) of the total amount payable by said Obligee under the terms of said Contract, for which payment will and truly to be made, we bind ourselves, our heirs, executors and administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if said Principal, its heirs, executors, administrators, successors, or assigns, or subcontractor, shall fail to pay any person or persons named in Civil Code Section 9100; or fail to pay for any materials, provisions, or other supplies, used in, upon, for, or about the performance of the work contracted to be done, or for any work or labor thereon of any kind, or for amounts due under the Unemployment Insurance Code, with respect to work or labor thereon of any kind; or shall fail to deduct, withhold, and pay over to the Employment Development Department, any amounts required to be deducted, withheld, and paid over by Unemployment Insurance Code Section 13020 with respect to work and labor thereon of any kind, then said Surety will pay for the same, in an amount not exceeding the amount herein above set forth, and in the event suit is brought upon this bond, also will pay such reasonable attorneys’ fees as shall be fixed by the court, awarded and taxed as provided in California Civil Code Sections 9550 et seq.

This bond shall inure to the benefit of any person named in Civil Code Section 9100 giving such person or his/her assigns a right of action in any suit brought upon this bond.

It is further stipulated and agreed that the Surety of this bond shall not be exonerated or released from the obligation of the bond by any change, extension of time for performance, addition, alteration or modification in, to, or of any contract, plans, or specifications, or agreement

Contra Costa Community College District
Contra Costa College
C-1059 Men’s Locker Room Boiler Replacement
pertaining or relating to any scheme or work of improvement herein above described; or pertaining or relating to the furnishing of labor, materials, or equipment therefor; nor by any change or modification of any terms of payment or extension of time for payment pertaining or relating to any scheme or work of improvement herein above described; nor by any rescission or attempted rescission of the contract, agreement or bond; nor by any conditions precedent or subsequent in the bond attempting to limit the right of recovery of claimants otherwise entitled to recover under any such contract or agreement or under the bond; nor by any fraud practiced by any person other than the claimant seeking to recover on the bond; and that this bond be construed most strongly against the Surety and in favor of all persons for whose benefit such bond is given; and under no circumstances shall the Surety be released from liability to those for whose benefit such bond has been given, by reason of any breach of contract between the Obligee and the Contractor or on the part of any obligee named in such bond; that the sole condition of recovery shall be that the claimant is a person described in California Civil Code Sections 9100, and who has not been paid the full amount of his or her claim; and that the Surety does hereby waive notice of any such change, extension of time, addition, alteration or modification herein mentioned.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this __________ day of __________, 20__.

PRINCIPAL/CONTRACTOR:

______________________________

By: ____________________________

SURETY:

______________________________

By: ____________________________

Attorney-in-Fact
IMPORTANT:  THIS IS A REQUIRED FORM.

Surety companies executing bonds must possess a certificate of authority from the California Insurance Commissioner authorizing them to write surety insurance defined in California Insurance Code Section 105, and if the work or project is financed, in whole or in part, with federal, grant or loan funds, Surety’s name must also appear on the Treasury Department’s most current list (Circular 570 as amended).

Any claims under this bond may be addressed to:

(Name and Address of Surety)  (Name and Address of agent or representative for service for service of process in California)

_________________________________________  ____________________________________________

_________________________________________  ____________________________________________

Telephone: _____________________________  Telephone: _____________________________

STATE OF CALIFORNIA  )
COUNTY OF   ) ss.

On ___________________________ before me, __________________________________________,
(insert name and title of the officer)
a Notary Public in and for said State, personally appeared
_________________________________________, who proved to me on the basis of satisfactory evidence to
be the person(s) whose name(s) is/are subscribed to the within instrument as the Attorney-in-Fact
of the _____________________ (Surety) and acknowledged to me that he/she/they subscribed
the name of the _____________________ (Surety) thereto and his own name as Attorney-in-
Fact on the executed instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the
foregoing paragraph is true and correct.

WITNESS my hand and official seal.

_________________________________________  (SEAL)
Notary Public in and for said State

Commission expires: ___________________________

NOTE:  A copy of the power-of-attorney to local representatives of the bonding company
must be attached hereto.
CONTRACT PERFORMANCE BOND  
(CALIFORNIA PUBLIC WORK)

KNOW ALL MEN BY THESE PRESENTS:

THAT WHEREAS, Contra Costa Community College District (sometimes referred to hereinafter as “Obligee”) has awarded to ___________________________ (hereinafter designated as the “Principal” or “Contractor”), an agreement for the work described as follows: ___________________________ (hereinafter referred to as the “Public Work”); and

WHEREAS, the work to be performed by the Contractor is more particularly set forth in that certain contract for said Public Work dated ______________ ________________, (hereinafter referred to as the “Contract”), which Contract is incorporated herein by this reference; and

WHEREAS, the Contractor is required by said Contract to perform the terms thereof and to provide a bond both for the performance and guaranty thereof.

NOW, THEREFORE, we, ________________, the undersigned Contractor, as Principal, and ________________, a corporation organized and existing under the laws of the State of ________________, and duly authorized to transact business under the laws of the State of California, as Surety, are held and firmly bound unto the Contra Costa Community College District in the sum of ___________________________ Dollars ($_______________), said sum being not less than one hundred percent (100%) of the total amount payable by said Obligee under the terms of said Contract, for which amount well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT, if the bounded Contractor, his or her heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions, and agreements in said Contract and any alteration thereof made as therein provided, on his or her part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their intent and meaning; and shall faithfully fulfill guarantees of all materials and workmanship; and indemnify, defend and save harmless the Obligee, its officers and agents, as stipulated in said Contract, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect.

The Surety, for value received, hereby stipulates and agrees that it shall not be exonerated or released from the obligation of this bond (either by total exoneration or pro tanto) by any change, extension of time, alteration in or addition to the terms of the contract or to the work to be performed there under or the specifications accompanying the same, nor by any change or modification to any terms of payment or extension of time for any payment pertaining or relating to any scheme of work of improvement under the contract. Surety also stipulates and agrees that it shall not be exonerated or released from the obligation of this bond (either by total exoneration or pro tanto) by any overpayment or underpayment by the Obligee that is based upon estimates approved by the Architect. The Surety stipulates and agrees that none of the aforementioned
changes, modifications, alterations, additions, extension of time or actions shall in any way affect its obligation on this bond, and it does hereby waive notice of any such changes, modifications, alterations, additions or extension of time to the terms of the contract, or to the work, or the specifications as well notice of any other actions that result in the foregoing.

Whenever Principal shall be, and is declared by the Obligee to be, in default under the Contract, the Surety shall promptly either remedy the default, or shall promptly complete the Contract through its agents or independent contractors, subject to acceptance and approval of such agents or independent contractors by Obligee as hereinafter set forth, in accordance with its terms and conditions and to pay and perform all obligations of Principal under the Contract, including, without limitation, all obligations with respect to warranties, guarantees and the payment of liquidated damages; or, at Obligee’s sole discretion and election, Surety shall obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by Obligee of the lowest responsible bidder, arrange for a contract between such bidder and the Obligee and make available as Work progresses (even though there should be a default or succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the “balance of the Contract price” (as hereinafter defined), and to pay and perform all obligations of Principal under the Contract, including, without limitation, all obligations with respect to warranties, guarantees and the payment of liquidated damages. The term “balance of the Contract price,” as used in this paragraph, shall mean the total amount payable to Principal by the Obligee under the Contract and any modifications thereto, less the amount previously paid by the Obligee to the Principal, less any withholdings by the Obligee allowed under the Contract.

Surety expressly agrees that the Obligee may reject any agent or contractor which may be proposed by Surety in fulfillment of its obligations in the event of default by the Principal. Unless otherwise agreed by Obligee, in its sole discretion, Surety shall not utilize Principal in completing the Contract nor shall Surety accept a bid from Principal for completion of the work in the event of default by the Principal.

No final settlement between the Obligee and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

The Contractor and Surety shall remain responsible and liable for all patent and latent defects that arise out of or are related to the Contractor’s failure and/or inability to properly complete the Public Work as required by the Contract and the Contract Documents. The obligation of the Surety hereunder shall continue so long as any obligation of the Contractor remains.

Contractor and Surety agree that if the Obligee is required to engage the services of an attorney in connection with enforcement of the bond, Contractor and Surety shall pay Obligee’s reasonable attorneys’ fees incurred, with or without suit, in addition to the above sum.

In the event suit is brought upon this bond by the Obligee and judgment is recovered, the Surety shall pay all costs incurred by the Obligee in such suit, including reasonable attorneys’ fees to be fixed by the Court.
IN WITNESS WHEREOF, we have hereunto set our hands and seals this ____ day of ____________, 20____.

PRINCIPAL/CONTRACTOR:

__________________________________________

By: _______________________________________

SURETY:

__________________________________________

By: _______________________________________

Attorney-in-Fact

The rate of premium on this bond is ______________________________ per thousand.

The total amount of premium charged: $_________________________ (This must be filled in by a corporate surety).

IMPORTANT: THIS IS A REQUIRED FORM.

Surety companies executing bonds must possess a certificate of authority from the California Insurance Commissioner authorizing them to write surety insurance defined in California Insurance Code Section 105, and if the work or project is financed, in whole or in part, with federal, grant or loan funds, Surety’s name must also appear on the Treasury Department’s most current list (Circular 570 as amended).

Any claims under this bond may be addressed to:

(Name and Address of Surety)                 (Name and Address of agent or representative for service for service of process in California)

__________________________________________

__________________________________________

Telephone: _______________________________   Telephone: _______________________________

Contra Costa Community College District
Contra Costa College
C-1059 Men’s Locker Room Boiler Replacement
STATE OF CALIFORNIA  
) ss.
COUNTY OF 

On __________________________ before me, ______________________________________ (insert name and title of the officer)

On __________________________, before me, _________________________, a Notary Public in and for said State, personally appeared ________________ __________________, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument as the Attorney-in-Fact of the _____________________ (Surety) and acknowledged to me that he/she/they subscribed the name of the _____________________ (Surety) thereto and his own name as Attorney-in-Fact on the executed instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

______________________________  (SEAL)
Notary Public in and for said State

Commission expires:________________________

NOTE: A copy of the power-of-attorney to local representatives of the bonding company must be attached hereto.
SECTION 00510

NOTICE OF AWARD

DATE: _____________________

TO: _______________________________________________________

ADDRESS: ____________________________________________

PROJECT: ____________________________________________

The Contract Sum of your contract is ________________________________ Dollars, ($__________________).

You must comply with the following conditions within ten (10) calendar days of the date of this Notice of Award, that is, by ________________.

1. You must deliver to the District two fully executed counterparts of Section 00600, “Construction Agreement.”

2. You must deliver to the District the “Contract Performance Bond,” and “Payment Bond,” executed by you and your surety, which are included in Section 00500.

3. You must deliver to District the insurance certificates required in Section 00600, Construction Agreement.

4. You must deliver to District a CPM Schedule, prepared utilizing Microsoft Project: one hard copy and one copy in Microsoft Project format.

Failure to comply with these conditions within the time specified will entitle District to consider your bid abandoned, to annul this Notice of Award, and to declare your Bid Security forfeited. Within ten (10) calendar days after you comply with these conditions, the District will return to you one fully signed counterpart of the Construction Agreement.

Contra Costa Community College District

By: _________________________________

Title: _________________________________

END OF DOCUMENT
1. **SPECIAL TERMS.** These special terms are incorporated below by reference.

   (§1.1) **Parties:**
   - **(Public Agency)** CONTRA COSTA COMMUNITY COLLEGE DISTRICT
     - 500 Court St, Martinez, CA 94553
   - **(Contractor)** NAME

   (§1.2) **Effective Date:**

   (§1.3) **The Work:**

   (§1.4) **Completion Time:** 60 Calendar Days from the Notice to Proceed to Substantial Completion, and 30 Calendar Days from Substantial Completion to Final Completion (Remaining Work).

   (§1.5.1) **Liquidated Damages, Substantial Completion:** $300 per Calendar Day beyond the Contract Substantial Completion Date.

   (§1.5.2) **Liquidated Damages, Remaining Work/Final Completion:** $100/ per Calendar Day Remaining Work is delayed beyond the Contract Final Completion Date.

   (§1.6) **Public Agency’s Agent:** CONTRA COSTA COMMUNITY COLLEGE DISTRICT (The District)

   (§1.7) **Contract Price:** THOUSAND, HUNDRED DOLLARS and NO CENTS ($000,000.00)

2. **SCOPE OF WORK**

   See Section 00800, Supplementary General Conditions, Article 1.1.

3. **WORK CONTRACT, CHANGES**

   (a) By their signatures below, effective on the above date, these parties promise and agree as set forth in this Agreement, incorporating by these references labor and materials contained in Section 2, Scope of Work.

   (b) Contractor shall, at Contractor’s own cost and expense, and in a workmanlike manner, fully and faithfully perform and complete the work; and will furnish all materials, labor, services, equipment, and transportation necessary, convenient and proper in order fairly to perform the requirements of this contract, all strictly in accordance with the Scope of Work in Section 2 above, and the Public Agency’s plans, drawings and specifications, and with Supplementary General Conditions, if any.

   (c) The work can be changed only with Public Agency’s prior written order specifying such change and its cost agreed to by the parties; and the Public Agency shall never have to pay more than specified in Section 7 without such an order.
4. **TIME: NOTICE TO PROCEED**

Contractor shall start this work as directed in Section 1.4 Completion Time above or as directed by the Notice to Proceed, if any, and shall complete it as specified in Section 1.4, Completion Time.

5. **LIQUIDATED DAMAGES**

If the Contractor fails to complete this contract and this work within the time fixed therefore, allowance being made for contingencies as provided herein, he becomes liable to the Public Agency for all its loss and damage therefrom; and because, from the nature of the case, it is and will be impracticable and extremely difficult to ascertain and fix the Public Agency’s actual damage from any delay in performance hereof, it is agreed that Contractor will pay as liquidated damages to the Public Agency the reasonable sum specified in Section 1, the result of the parties’ reasonable endeavor to estimate fair average compensation therefore, for each calendar day’s delay in finishing said work; and if the same be not paid, Public Agency may, in addition to its other remedies, deduct the same from any money due or to become due Contractor under this contract. If the Public Agency for any cause authorizes or contributes to a delay, suspension of work or extension of time, its duration shall be added to the time allowed for completion, but it shall not be deemed a waiver nor be used to defeat any right of the Agency to damages for non-completion or delay hereunder. Pursuant to Government Code Section 4215, the Contractor shall not be assessed liquidated damages for delay in completion of the work, when such delay was caused by the failure of the Public Agency or the owner of a utility to provide for removal or relocation of existing utility facilities.

6. **INTEGRATED DOCUMENTS**

The plans, drawings and specifications or special provisions of the Public Agency’s call for bids, and Contractor’s accepted bid for this work are hereby incorporated into this contract; and they are intended to cooperate, so that anything exhibited in the plans or drawings and not mentioned in the specifications or special provisions, or vice versa, is to be executed as if exhibited, mentioned and set forth in both, to the true intent and meaning thereof when taken all together; and differences of opinion concerning these shall be finally determined by the Public Agency.

7. **PAYMENT**

(a) For strict and literal fulfillment of these promises and conditions, and full compensation for all this work, the Public Agency shall pay the Contractor the sum specified in Section 1, except that in unit price contracts the payment shall be for finished quantities at unit bid prices.

(b) On or about the first day of each calendar month, the Contractor shall submit to the Public Agency a verified application for payment, supported by a statement showing all materials actually installed during the preceding month, the labor expended thereon, and the cost thereof; whereupon, after checking, the Public Agency shall issue to Contractor a certificate for the amount determined to be due, minus five (5%) percent thereof, but not until defective work and materials have been removed, replaced and made good. Payment of the approved amount will be made to the Contractor within 30 calendar days from the date the Public Agency approves in writing the Contractor’s application for payment.

8. **PAYMENTS WITHHELD**

(a) The Public Agency or its agent may withhold any payment, or because of later discovered evidence nullify all or any certificate for payment, to such extent and period of time only as may be necessary to protect the Public Agency from loss because of:

(1) Defective work not remedied, or work not completed, or

(2) Claims filed or reasonable evidence indicating probable filing, or

(3) Failure to properly pay subcontractors or for material or labor, or

(4) Reasonable doubt that the work can be completed for the balance then unpaid, or

(5) Damage to another contractor, or
(6) Damage to the Public Agency, other than damage due to delays.

(b) The Public Agency shall use reasonable diligence to discover and report to the Contractor, as the work progresses, the materials and labor which are not satisfactory to it, so as to avoid unnecessary trouble or cost to the Contractor in making good any defective work or parts.

(c) Thirty-five (35) calendar days after Public Agency files its notice of completion of the entire work, it shall issue a certificate to the Contractor and pay the balance of the contract price after deducting all amounts withheld under this contract, provided the Contractor shows that all claims for labor and materials have been paid, no claims have been presented to the Public Agency based on acts or omissions of the Contractor, and no liens or withhold notices have been filed against the work or site, and provided there are not reasonable indications of defective or missing work or of late-recorded notices of liens or claims against Contractor.

9. **INSURANCE**

Before the commencement of the Work, the Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in California as admitted carriers, or a District approved equal, with a financial rating of at least A status as rated in the most recent edition of Best’s Insurance Reports or as amended by the Supplementary General Conditions, such insurance as will protect the Public Agency from claims set forth below, which may arise out of or result from the Contractor’s operations under the Contract and for which the Contractor may be legally liable, whether such operations are by the Contractor, by a Subcontractor, by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable.

(a) Claims for damages because of bodily injury, sickness, disease, or death of any person District would require indemnification and coverage for employee claim;
(b) Claims for damages insured by usual personal injury liability coverage, which are sustained by a person as a result of an offense directly or indirectly related to employment of such person by the Contractor or by another person;
(c) Claims for damages because of injury or destruction of tangible property, including loss of use resulting therefrom, arising from operations under the Contract Documents;
(d) Claims for damages because of bodily injury, death of a person, or property damage arising out of the ownership, maintenance, or use of a motor vehicle, all mobile equipment, and vehicles moving under their own power and engaged in the Work;
(e) Claims involving contractual liability applicable to the Contractor’s obligations under the Contract Documents, including liability assumed by and the indemnity and defense obligations of the Contractor and the Subcontractors; and
(f) Claims involving Completed Operations, Independent Contractors’ coverage, and Broad Form property damage, without any exclusions for collapse, explosion, demolition, underground coverage, and excavating. (XCU)
(g) Claims involving sudden or accidental discharge of contaminants or pollutants.

**Additional Insured Endorsement Requirement:** The Contractor shall name, on any policy of insurance, the District, Architect, Inspector, the State of California, their officers, employees, agents and independent contractors as Additional Insured. Subcontractors shall name the Contractor, the District, Architect, Inspector, the State of California, their officers, employees, agents and independent contractors as Additional Insured. The Additional Insured Endorsement included on all such insurance policies shall state that coverage is afforded the additional insured with respect to claims arising out of operations performed by or on behalf of the insured. If the Additional Insured, have other insurance which is applicable to the loss, such other insurance shall be on an excess or contingent basis. The insurance provided by the Contractor must be designated in the policy as primary to any insurance obtained by the Public Agency. The amount of the insurer’s liability shall not be reduced by the existence of such other insurance.
**Specific Insurance Requirement:** Contractor shall take out and maintain and shall require all subcontractors, if any, whether primary or secondary, to take out and maintain:

(a) Comprehensive General Liability Insurance with an aggregate of not less than $2,000,000.00; Per occurrence, $1,000,000.00

(b) Automotive (any auto) where operated in amounts $1,000,000.00

(c) Workers’ Compensation Insurance: $1,000,000.00; Contractor is aware of and complies with Labor Code Section 3700 and the Worker’s Compensation Law.

10. **BONDS**

(Not Required for Public Projects below $25,000; Civil Code 9550; Public Contract Code 7103.)

**Bond Requirements:** Prior to commencing any portion of the Work, the Contractor shall furnish separate payment and performance bonds for its portion of the Work which shall cover 100% faithful performance of and payment of all obligations arising under the Contract Documents and/or guaranteeing the payment in full of all claims for labor performed and materials supplied for the Work. All bonds shall be provided by a corporate surety authorized and admitted to transact business in California as sureties.

To the extent, if any, that the Contract Price is increased in accordance with the Contract Documents, the Contractor shall, upon request of the Public Agency, cause the amount of the bonds to be increased accordingly and shall promptly deliver satisfactory evidence of such increase to the Public Agency. To the extent available, the bonds shall further provide that no change or alteration of the Contract Documents (including, without limitation, an increase in the Contract Price, as referred to above), extensions of time, or modifications of the time, terms, or conditions of payment to the Contractor will release the surety. If the Contractor fails to furnish the required bonds, the Public Agency may terminate the Contract for cause.

On signing this contract, Contractor shall deliver to Public Agency for approval good and sufficient bonds with sureties, in amount(s), specified in the specifications or special provisions, guaranteeing faithful performance of this contract and payment for all labor and materials hereunder.

11. **FAILURE TO PERFORM**

If the Contractor at any time refuses or neglects, without fault of the Public Agency or its agent(s), to supply sufficient materials or workers to complete this agreement and work as provided herein, for a period of ten days or more after written notice thereof by the Public Agency, the Public Agency may furnish same and deduct the reasonable expenses thereof from the contract price.

12. **LAWS APPLY: General**

Both parties recognize the applicability of various federal, state and local laws and regulations, especially Chapter 1 of Part 7 of the California Labor Code (beginning with Section 1720, and including Sections 1735, 1777.5, 1777.6, forbidding discrimination) and intend that this agreement complies therewith. The parties specifically stipulate that the relevant penalties and forfeitures provided in the Labor Code, especially in Sections 1775, 17776, and 1813, concerning prevailing wages and hours, shall apply to this agreement as though fully stipulated herein.

13. **REGISTRATION WITH DEPARTMENT OF INDUSTRIAL RELATIONS**

Contractor shall be registered pursuant to Section 1725.5 of the California Labor Code to be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any public work contract that is subject to the requirements of Section 1725.5. For the purposes of this requirement, "contractor" includes a subcontractor as defined by Labor Code Section 1722.1.
The requirement to list only registered contractors and subcontractors on bids becomes effective on March 1, 2015. The requirement to only use registered contractors and subcontractors on public works projects applies to all projects awarded on or after April 1, 2015.

14. **SUBCONTRACTORS**

Public Contract Code Sections 4100-4113 are incorporated herein.

15. **WAGE RATES**

(a) Pursuant to Labor Code Section 1773, the Director of the Department of Industrial Relations has ascertained the general prevailing rates of wages per diem, and for holiday and overtime work, in the locality in which this work is to be performed, for each craft, specified in the call for bids for this work and are on file with the Public Agency, and are hereby incorporated herein.

(b) This schedule of wages is based on a working day of eight (8) hours unless otherwise specified; and the daily rate is the hourly rate multiplied by the number of hours constituting the working day. When less than that number of hours are worked, the daily wage rate is proportionately reduced, but the hourly rate remains as stated.

(c) The Contractor, and all subcontractors, must pay at least these rates to all persons on this work, including all travel, subsistence, and fringe benefit payments provided for by applicable collective bargaining agreements. All skilled labor not listed above must be paid at least the wage scale established by collective bargaining agreement for such labor in the locality where such work is being performed. If it becomes necessary for the Contractor or any subcontractor to employ any person in a craft, classification or type of work (except executive, supervisory, administrative, clerical or other non-manual workers as such) for which no minimum wage rate is specified, the contractor shall immediately notify the Public Agency which shall promptly determine the prevailing wage rate therefore and furnish the Contractor with the minimum rate based thereon, which shall apply from the time of the initial employment of the person affected and during the continuance of such employment.

16. **HOURS OF LABOR**

Eight hours of labor in one calendar day constitutes a legal day’s work, and no worker employed at any time on this work by the Contractor or by any subcontractor shall be required or permitted to work longer thereon except as provided in Labor Code Sections 1810-1815.

17. **APPRENTICES**

Properly indentured apprentices may be employed on this work in accordance with Labor Code Sections 1777.5 and 1777.6, forbidding discrimination.

18. **SUBMISSION OF CERTIFIED PAYROLL RECORDS**

Contractors and subcontractors on all public works projects will be required to submit certified payroll records (CPRs) to the Labor Commissioner unless excused from this requirement. This requirement will be phased in as follows:

(a) Applies immediately to public works projects that have already been under CMU monitoring, i.e. contractors on ongoing projects that have been submitting CPRs to the CMU will continue doing so.

(b) Will apply to any new projects awarded on or after April 1, 2015.

(c) May apply to other projects as determined by Labor Commissioner.

(d) Will apply to all public works projects, new or ongoing, on and after January 1, 2016.
19. PREFERENCE FOR MATERIALS

The Public Agency desires to promote the industries and economy of Contra Costa County, and the Contractor therefore promises to use the products, workers, laborers and mechanics of this County in every case where the price, fitness and quality are equal.

20. ASSIGNMENT

This agreement binds the heirs, successors, assigns, and representatives of the Contractor; but Contractor cannot assign it in whole or in part, nor any monies due or to become due under it, without the prior written consent of the Public Agency and the Contractor’s surety or sureties, unless they have waived notice of assignment.

21. NO WAIVER BY PUBLIC AGENCY

Inspection of the work and/or materials, or approval of work and/or materials inspected, or statement by any officer, agent or employee of the Public Agency indicating the work or any part thereof complies with the requirements of this contract, or acceptance of the whole or any part of said work and/or materials, or payments therefore, or any combination of these acts, shall not relieve the Contractor of Contractor’s obligation to fulfill this contract as prescribed; nor shall the Public Agency be thereby stopped from bringing any action for damages or enforcement arising from the failure to comply with any of the terms and conditions hereof.

22. HOLD HARMLESS AND INDEMNITY

(a) Contractor promises to and shall hold harmless and indemnify from the liabilities as defined in this section.

(b) The indemnities benefited and protected by this promise are the Public Agency and its elective and appointive boards, commissions, officers, agents and employees.

(c) The liabilities protected against are any liability or claim for damage of any kind allegedly suffered, incurred or threatened because of actions defined below, including personal injury, death, property damage, inverse condemnation, or any combination of these, regardless of whether or not such liability, claim or damage was unforeseeable at any time before the Public Agency approved the improvement plan or accepted the improvements as completed, and including the defense of any suit(s) or action(s) at law or equity concerning these.

(d) The actions causing liability are any act or omission (negligent or non-negligent) in connection with the matters covered by this contract and attributable to the contractor, subcontractor(s), or any officer(s), agent(s), or employee(s) of one or more of them.

(e) Non-conditions: The promise and agreement in this section is not conditioned or dependent on whether or not any indemnities has prepared, supplied, or approved any plan(s), drawing(s), specifications(s) or special provision(s) in connection with this work, has insurance or other indemnification covering any of these matters, or that the alleged damage resulted partly from any negligent or willful misconduct of any Indemnities.

23. EXCAVATION

Contractor shall comply with the provisions of Labor Code Section 6705, if applicable, by submitting to Public Agency a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during trench excavation.

24. GOVERNMENT CODE SECTION 10532

Contractor shall be subject to the examination and audit of the Auditor General for a period of three years after final payment under the contract.
25. **WARRANTY**

The Contractor warrants to the Public Agency that materials and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contractor Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work shall conform to the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The Contractor’s warranty excludes remedy for damage or defect caused by abuse, modifications not executed by the Contractor improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage.

26. **CONSEQUENTIAL DAMAGES**

The Contractor and Public Agency waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes:

(a) Damages incurred by the Public Agency for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

(b) Damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

(c) This mutual waiver is applicable, without limitation, to all consequential damages due to either party’s termination. Nothing contained in this subparagraph shall be deemed to preclude an award of liquidated direct damages, when applicable, in accordance with the requirements of the Contract Documents.

27. **HAZARDOUS MATERIALS**

(a) If reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos, lead or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Public Agency in writing.

(b) The Public Agency shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to verify that it has been rendered harmless. The Public Agency shall furnish in writing to the Contractor the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written notification from the Public Agency and Contractor. The Contract Time shall be extended appropriately.

28. **SAFETY:**

(a) **Safety Programs.** The Contractor shall be solely responsible for initiating, maintaining and supervising all safety programs required by applicable law, ordinance, regulation or governmental orders in connection with the performance of the Contract, or otherwise required by the type or nature of the Work. The Contractor’s safety program shall include all actions and programs necessary for compliance with California or federally statutorily mandated workplace safety programs, including without limitation, compliance with the California Drug Free Workplace Act of 1990 (California Government Code §§8350 et seq.). Without limiting or relieving the Contractor of its obligations hereunder, the Contractor shall require that its
Subcontractors similarly initiate and maintain all appropriate or required safety programs. Prior to commencement of Work, the Contractor shall meet with the campus Buildings and Grounds Manager, Project Manager, and Construction Manager to review Contractor’s safety precautions and implementation of safety programs during the Work.

(b) **Safety Precautions.** The Contractor shall be solely responsible for initiating and maintaining reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to: (i) employees on the Work and other persons who may be affected thereby; (ii) the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor’s Subcontractors or Sub-subcontractors; and (iii) other property or items at the site of the Work, or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction. The Contractor shall take adequate precautions and measures to protect existing roads, sidewalks, curbs, pavement, utilities, adjoining property and improvements thereon (including without limitation, protection from settlement or loss of lateral support) and to avoid damage thereto. Without adjustment of the Contract Price or the Contract Time, the Contractor shall repair, replace or restore any damage or destruction of the foregoing items as a result of performance or installation of the Work.

(c) **Safety Signs, Barricades.** The Contractor shall erect and maintain, as required by existing conditions and conditions resulting from performance of the Contract, reasonable safeguards for safety and protection of property and persons, including, without limitation, posting danger signs and other warnings against hazards, promulgating safety regulations and notifying Districts and users of adjacent sites and utilities.

(d) **Safety Notices.** The Contractor shall give or post all notices required by applicable law and comply with applicable laws, ordinances, rules, regulations and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

(e) **Safety Coordinator.** The Contractor shall designate a responsible member of the Contractor’s organization at the Site whose duty shall be the prevention of accidents and the implementation and maintenance safety precautions and programs. This person shall be the Contractor’s superintendent unless otherwise designated by the Contractor in writing to the Project Inspector and the Architect.
29. **SIGNATURES AND ACKNOWLEDGEMENT**

**Public Agency:**

By: ________________________________

Assistant Secretary, Governing Board
DAVID S. WETMORE, Director of Purchasing & Contracts

**Note to Contractor:** (1) Execute acknowledgment form below, and (2) if a corporation, affix Corporate Seal.

**Contractor** hereby also acknowledging awareness of and compliance with Labor Code S1861 concerning Worker’s Compensation Law.

**Contractor:**

By: ________________________________ (CORPORATE SEAL)

[Designate Official Capacity – NAME]  

__________________________
Print NAME and TITLE

License Number___________________ Federal ID Number___________________

**NOTARY PUBLIC**

________________________________________________________________________
STATE OF CALIFORNIA
) ss.
COUNTY OF CONTRA COSTA
)

On ______________, before me, ___________________________, Notary Public,

personally appeared ____________________________, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing is true and correct.

Witness my hand and official seal.

__________________________

Notary Public

[SEAL]
SECTION 00650
NOTICE TO PROCEED

Date: __________________________

TO: ____________________________________________________________

ADDRESS: ______________________________________________________

PROJECT: _______________________________________________________

You are notified that the Contract Time under the above contract will commence to run on _________________. By that date, you are to start performing your obligations under the Contract Documents. In accordance with Section 00600, Construction Agreement, the date of Substantial Completion is ________________________, and the date for Final Completion is ________________________.

CONTRA COSTA COMMUNITY COLLEGE DISTRICT

By: ________________________________
   Ray Pyle

Title: Chief Facilities Planner

END OF SECTION 00650
SECTION 00800
SUPPLEMENTARY GENERAL CONDITIONS

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. Provide all design services, labor, materials and equipment to disconnect (including domestic hot water, heating hot water, feedwater, gas, drains, electrical, controls, and flue, connections) and remove the existing boiler and supply and install a new boiler and heat exchanger. A new connection to existing heating hot water, domestic hot water, and feedwater piping; gas and flue connections; and connection to the existing line voltage and controls is required. A new heat exchanger for the existing hot water tank is included in this scope. The existing domestic hot water tank has been found to be in good condition and will remain in service. Start-up and balance of the new systems is also included in the scope of work. Hot water piping shall be insulated in accordance with applicable codes and in compliance with Title 24 California Code of Regulations.

B. No structural modifications, modifications to fire alarm systems, or changes to Americans with Disabilities Act accessibility are authorized under the contract and work associated with this specification without prior approval by the District. All work shall be in accordance with Title 24 California Code of Regulations.

C. An allowance is included in the Base Bid to cover any unforeseen additional code-required work, repairs to existing equipment, and/or hazardous material abatement within the boiler or above the ceiling. See Specification Section 00300, Bid Proposal Form. The allowance will be used only upon the approval by the District, and by a fully-executed change order between the District and Contractor.

1.2 REFERENCES

A. The publications listed below form a part of this specification by reference.

1. Current California Occupational Safety and Health Act Regulations
2. Current California Occupational Safety and Health Construction Safety Orders
3. This work will be contracted using the District’s Short Form Construction Agreement; See Section 00600.

1.3 SUBMITTALS

A. Provide submittals in the format, and as described below:

1. Equipment Submittals shall be submitted electronically to the District within 7 (seven) calendar days from the Notice to Proceed. All remaining submittals shall be submitted within 14 (fourteen) calendar days from the Notice to Proceed.
2. Submit three (3) original (not less than 8-1/2" x 11", nor more than 30" x 42") wet-signed, and one (1) color PDF file for submittals that require shop drawings, unless otherwise directed by District.

3. Submittals that require local and State agency approval, shall conform with this Specification and the requirements of the local or State agency.

4. District will review and provide a response to submittals within 7 (seven) calendar days. Submittals that include design documents prepared by a licensed California Engineer will be submitted for the District’s records. Any District review and response to the Contractor’s design documents by a licensed California Engineer will be for format and general compliance only. Contractor and Contractor’s licensed California Engineer are responsible for compliance with all applicable State of California codes, laws and regulations applicable to this project.

B. Provide submittals for all equipment listed in the technical specifications.

C. The Schedule of Values shall be submitted to the District within 7 (seven) calendar days from the Notice to Proceed. The Schedule of Values shall be broken down by the following minimum categories:

1. Mobilization (maximum 5% of contract price)
2. Submittals
3. Demolition
   a. Lead paint hazardous material abatement.
   b. Selective demolition
4. Mechanical
   a. Boiler and associated equipment
   b. Pumps
   c. Flue
   d. Controls
5. Electrical
6. Plumbing
7. Final Clean
8. O&M and Warranties
9. As-built Drawings

The District will only pay for Work installed at the Site, with the exception of approved submittals, but not to exceed a combined total of $7,500.

D. CPM construction schedule shall be submitted within 3 work days from the Contract Award date. District and Contractor shall meet and review the schedule. The Notice to Proceed will not be issued until the District accepts the schedule, or accepts it with conditional changes. Below are the minimum activity types that shall be included in the schedule:

1. Contractor Submittals
2. Submittal Reviews by District
3. Procurement and Fabrication
4. Construction activities corresponding to the Schedule of Values
5. Substantial Completion Milestone
6. Project closeout activities.
7. Final Completion Milestone

E. Submittals are for review of conformance with the requirements of the contract. Contractor is responsible to provide a fully functioning boiler system meeting the requirements listed in Specification Section 23 52 00, and elsewhere.

PART 2 - PRODUCTS

2.1 MATERIALS
A. Contractor Provided Materials: The Contractor provided materials shall include any associated equipment and appurtenances required for performing the contract properly and in accordance with the equipment manufacturer's literature.
B. All materials shall be new, unless otherwise authorized or specified in the scope of work of this specification.

PART 3 - EXECUTION AND RELATED REQUIREMENTS

3.1 GENERAL
A. Work Restrictions: In order to minimize disruption to the facilities served by the boiler, all work on Site requiring shut down of the boiler shall be performed between August 3, 2015, and August 8, 2015 (allocate Saturday the 8th as a work day included in bid). Temporary shut down during any other time shall be during off hours and requires 48-hour notice.
B. Scheduling and Coordination: Before commencing work on a specific area, the Contractor shall confirm that all requirements have been met pertaining to scheduling of the work. The Contractor shall further determine that all required notices have been given.
C. Scheduling and Sequence of Work: The work shall be prosecuted in such a manner as to cause the least interference with the normal functions of the campus activity. Certain areas will be vacated for period of time as necessary for the Contractor to perform certain work; however, the Building may be occupied during the course of the work. Prior to beginning any work, the Contractor shall meet with the District and the Contractor’s schedule shall be approved as noted in Article 1.3D above.
D. Interruption of Utilities Services: Interruptions shall be kept to a minimum, and shall be at such times and duration as approved ahead of time by the District. No interruption shall occur unless scheduled with the District, and approved in advance as to time and duration of such interruption.
E. Material, equipment, tools and workmen shall be scheduled and delivered to the Site in a timely manner to avoid delay in the work. Materials provided shall be inspected by the
Contractor to make certain they are in compliance with the specifications and are free from defects and damage.

F. Workmanship: Skilled personnel shall execute in a careful, neat, and proficient manner and in compliance with accepted trade practices for all work. All work shall be executed in accordance with Cal/OSHA standards and safety orders. And all work on this contract shall comply with all Local, State, and Federal Environmental Laws.

G. Incidental Work: Minor incidental materials and work not specifically mentioned herein, but necessary for the proper completion of the specified work, shall be provided without additional cost to the District.

H. Administrative Forms: District shall provide forms for use by Contractor.

3.2 EXISTING CONDITIONS & DRAWINGS

A. Drawings dated May 10, 1988 listed below are available for download from the District Website:

1. A-0 Title Sheet
2. E-2 Electrical Plan and Details
3. M-1 Legends, Schedules, and Abbreviations
4. M-2 Mechanical HVAC Rehabilitation
5. M-3 Mechanical Details and Control Diagrams
6. P-1 Plumbing Plans
7. P-2 Plumbing Details

3.3 FIELD VERIFICATION AND MEASUREMENTS

A. If any existing conditions related to the installation of the new Boiler system are observed during the mandatory Site visit that are not addressed in the bid documents, submit an RFI by the date listed in the Notice Inviting Bids for the District’s review and response.

B. Measurements: Before fabrication, obtain necessary field measurements and verify for conformance.

C. Contractor shall inspect all lines in/out of boiler and ensure there are no broken lines and that all lines have code-compliant shut-off valves.

3.4 WORK BY CALIFORNIA LICENSED ENGINEER

A. Field verify code compliance of existing field conditions and modifications required to install new system.

1. Contractor’s California-Licensed Engineer shall evaluate and confirm if existing space in Men’s Locker Room is code compliant to accommodate new equipment (e.g. clearance, equipment setbacks, ventilation, etc.).

2. Contractor’s Engineer to confirm existing connections in boiler room are properly sized for supply of gas, water & electrical to new equipment.
B. Within two weeks of Notice to Proceed, submit stamped Mechanical, Electrical, and Plumbing drawings along with any required structural calculations for mounting and support of equipment, piping, ductwork and conduit.

C. Drawings to include all work necessary for a complete and functioning code compliant installation conforming to the requirements included in Section 23 52 00, and elsewhere.

D. It is assumed that the new Boiler and associated equipment can be installed in the existing space without any changes to the overall dimensions of the room. See as-built drawings referenced in Part 3.2 for existing conditions. Contractor is required to confirm all Site information in the field.

1. If the code-required setback can’t be achieved, Contractor shall submit proposed design solution by a Licensed California Engineer to District for review and approval, prior to Contractor submission to DSA.

2. Note that modifications to existing structure, fire systems, or ADA changes, if necessary, will require DSA approval. Contractor will be granted a non-compensable time extension for the duration it takes to obtain DSA approval. A change order will be negotiated for added design and construction costs. No work on Site can commence until such time it is determined by the Contractor’s California Licensed Engineer that no DSA review is required. If review is required by DSA, no work on Site is allowed until DSA approval is obtained and the new start date on Site has been approved by the District.

3.5 SITE WORK

A. Existing Work: Protect existing work which is to remain in place, be reused, or remain the property of the District. Repair items that are to remain and are damaged during performance of the work to their original condition, or replace with new.

B. Dust and Debris Control: Prevent the spread of dust and debris to occupied portions of the Building and nearby areas, and avoid the creation of a nuisance or hazard in the surrounding area. Waste and debris resulting from the Work being performed shall be cleaned up daily. Promptly remove, and legally dispose of all debris to an offsite location.

C. Hazmat Work:

1. Contractor shall abate lead paint on floor and any impacted piping. See RGA Environmental report dated April 16, 2015 and Specification Section 02 83 00.

2. The piping in the boiler room has tested negative for asbestos; however, pipe insulation above the ceiling contains asbestos. It is not anticipated that piping above the ceiling will need to be disturbed. Refer to RGA report and Specification Section 02 08 00.

3. Boiler is assumed to have internal asbestos containing material. See Item “E” below, Disposal of Equipment and Materials.

D. Unforeseen Repairs: Should deteriorated materials of a major nature be uncovered in the course of the work, or suspected hazardous materials discovered, Contractor shall notify the
District immediately. Repairs, if any, shall be made as directed in writing, and an adjustment will be made in the contract price in accordance with the terms of the Contract.

E. Disposal of Equipment and Materials: Contractor is responsible for removal and disposal of all old equipment, and related construction debris. The existing boiler is suspected of containing asbestos. Contractor shall allocate 2 work days for asbestos testing and results. If existing Boiler does contain asbestos, Contractor will be directed to remove and properly dispose of asbestos-containing material. Boiler shall be removed to an off-site location for abatement work, if any, to avoid any impact to Work at the Site.

3.6 PROJECT CLOSEOUT REQUIREMENTS (After Substantial Completion & Before Final Completion)

A. Refer to Section 23 52 00 Boiler and Related Equipment for O&M and As-Built requirements.

B. Provide final clean-up of Site prior to Final Completion.

C. Warranty

1. The Contractor warrants to the District that material and equipment furnished under the Contract will be of the highest quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform with the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. Contractor’s warranty and guaranty to District includes, but is not limited to the following representations:

   a. In addition to any other warranties and guaranties provided elsewhere, Contractor shall, and hereby does, warrant all Work after the Certificate of Substantial Completion date issued by District and shall repair or replace any or all such work, together with any other work, which may be displaced in so doing that may prove defective in workmanship or materials within a one (1) year period from date of completion as defined in Public Contract Code Section 7107(c) without expense whatsoever to District, ordinary wear and tear, unusual abuse or neglect excepted. District will give notice of observed defects with reasonable promptness. Contractor shall notify District upon completion of repairs.

   b. In the event of failure of Contractor to comply with above mentioned conditions within one week after being notified in writing, District is hereby authorized to proceed to have defects repaired and made good at expense of Contractor who hereby agrees to pay costs and charges therefore immediately on demand.

   c. If, in the opinion of the District, defective Work creates a dangerous condition or requires immediate correction or attention to prevent further loss to the District, the District will attempt to give the notice required by this Article. If the Contractor cannot be contacted or does not comply with the District’s requirements for correction within a reasonable time as determined by the District, the District may, notwithstanding the provisions of this article,
proceed to make such correction or attention which shall be charged against Contractor. Such action by the District will not relieve the Contractor of the guarantee provided in this Article or elsewhere in this Contract.

d. This Article does not in any way limit the guarantee on any items for which a longer warranty or guaranty is specified or on any items for which a manufacturer gives a guarantee for a longer period. Contractor shall furnish District all appropriate guaranty or warranty certificates upon completion of the project.

2. Format - All Warranties/Guaranties and shall include:
   a. Contractor, subcontractor, and equipment supplier shall provide Warranties and Guaranties on their original company letterhead with original signature.
   b. Contractor shall provide original Warranties and Guaranties. Photo copies, fax and e-mail copies are not acceptable.

3. Preparation
   a. Contractor shall obtain warranties and guaranties, executed in duplicate by each applicable and/or responsible subcontractor(s), supplier(s), and manufacturer(s), within fifteen (15) days after Certificate of Substantial Completion date of the applicable Work. Except for items put into use with District’s permission, Contractor shall leave date of beginning of time of warranty or guaranty blank until the date of completion is determined by District.
   b. Contractor’s Response to Construction Warranty and Guaranty Service Requirements: Following oral or written notification by the District, respond to construction warranty and guaranty service requirements within 24 hours, or earlier in case of emergency.

4. Warranty and/or Guaranty Tags.

At the time of installation of mechanical equipment or other major system elements, tag each warranted or guaranteed item with a durable, oil and water resistant tag approved by the District. Attached each tag with a copper wire and spray with a silicone waterproof coating. The date of Substantial Completion and the Contractor Authorized signature must remain blank until the date the District makes a determination of Substantial Completion. Show the following information on the tag:
WARRANTY/GUARANTY INFORMATION – [insert project number and name on actual tag]

a. Type of product/material______________________________________________________

b. Model number_______________________________________________________________

c. Serial number_______________________________________________________________

d. Contract number____________________________________________________________

e. Warranty/Guaranty period _____ (months) from___________ to______________________

f. Inspector’s signature__________________________________________________________

g. Construction Contractor_____________________________________________________

Address___________________________________________________________

Telephone number____________________________________________________________

h. Warranty or Guaranty contact__________________________________________________

Address___________________________________________________________

Telephone number____________________________________________________________

i. WARNING - PROJECT PERSONNEL TO PERFORM ONLY OPERATIONAL MAINTENANCE DURING THE WARRANTY PERIOD.

3.7 TIME OF COMPLETION

A. See Section 00300, Bid Proposal Form for specific requirements to complete the Work. Time requirements are also included in Section 00600, Construction Agreement.

B. Substantial Completion: The date on which the Work or designated portion thereof, as certified by the District and Architect, is sufficiently complete, in accordance with the Contract Documents, so the District may occupy or utilize the Work or designated portion thereof for the use for which it is intended.

C. Remaining Work after Substantial Completion: If the Architect or District determines that the work required by the Contract is Substantially Complete during any inspection conducted pursuant to this Agreement, the Contractor shall be notified of that determination and the District shall determine if there is Remaining Work. A list of Remaining Work shall be issued only by the District or the Architect and only after the District has certified Substantial Completion. The District or Architect shall give the Contractor the necessary instructions for correction or completion of the Remaining Work, and the Contractor shall immediately comply with and execute such instructions within the Contract Time. Upon completion of the Remaining Work, another inspection shall be made that shall constitute the Final Inspection, provided the Remaining Work has been completed to the satisfaction of the District. If the remaining work has been completed to the satisfaction of the District, the District shall make the final acceptance and notify the Contractor in writing of this acceptance as of the date of Final Inspection.

D. Final Completion: The date when all Work for the total project has been completed in accordance with the terms of the Contract Documents and has been inspected following completion of Work identified in the Punch list Inspection and accepted by the Architect and the District. Final Completion is also sometimes referred to as Final Acceptance.
SECTION 02 08 00
ASBESTOS ABATEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
   A. The General Conditions and Division I General Requirements shall be included in
      and made part of this Section.
   B. Examine all other Sections of the Specifications for requirements therein affecting
      the work of this Section of the Specifications.

1.2 COMPLIANCE AND INTENT
   A. The Contractor is responsible for repair, to the satisfaction of the District, of surfaces
      not scheduled for demolition that become damaged as a result of the work. All
      unscheduled repair work shall be at no increase to contract price.
   B. Contractor shall coordinate removal with all site requirements related to protection of
      existing finishes. Water and encapsulants used during abatement work must not
      migrate beyond established regulated work area barriers. All protection work must
      be completed prior to the start of abatement work.
   C. This project deals with abatement of asbestos-containing materials (ACMs). It is
      necessary for the Contractor to coordinate all abatement work with the project
      drawings and specifications. During all work, provide monitoring and worker
      protective equipment in accordance with the California Occupational Safety and
      Health Administration (Cal-OSHA) and as required by this specification. Where there
      is conflict, the most stringent requirement shall apply.
   D. The work covered by this specification includes the handling, removal, and proper
      disposal of ACMs. All hazardous materials shall be removed and disposed of
      according to all federal, state and local regulations. The Contractor shall determine if
      additional hazardous materials will be impacted by the scope of the abatement work.
      The cleanup of any incidental asbestos found in areas undergoing abatement of
      asbestos that become separated from the building during the dismantling process
      are part of the work.
   E. The abatement workers shall have received Cal-OSHA accredited training and be
      certified for asbestos abatement work.
   F. Furnish all labor, materials, facilities, equipment, services, employee training,
      medical monitoring, permits and agreements necessary to perform the work required
      for asbestos abatement in accordance with this specification.
   G. Comply with all federal, state, and local regulations pertaining to asbestos removal,
      storage, transportation and disposal; employee heath and safety; Contractor
      certifications; and all licenses, permits, and training.
H. Work on the premises shall be confined to areas designated in the Contract Documents. Materials and equipment shall be stored within areas designated by the District. Should additional space be required, the Contractor shall request permission for additional space and shall adequately safeguard occupants from associated health and safety hazards.

I. Perform all work specified herein with competent persons trained, knowledgeable and qualified in state-of-the-art techniques relating to asbestos abatement, handling, and the subsequent cleaning of contaminated areas.

J. During removal activities, the Contractor shall protect against contamination of soil, water, plant life, sensitive building finishes, adjacent building areas, and shall ensure that there is no airborne release of dusts. The District may collect air samples in the building and in adjacent areas to evaluate the Contractor’s performance. Evidence of settled dust or airborne levels of contaminants above background will require the implementation of additional controls at no increase to contract price.

K. It is the Contractor’s responsibility to determine the quantities of ACMs that will require removal prior to commencement of the project. The Contractor shall conduct a site visit to determine exact locations of materials that will require abatement. This section provides appropriate protocols for handling and disposal of ACMs. All ACMs shall be removed according to the procedures outlined in this specification. If additional suspect ACMs are discovered during the course of the abatement work, immediately notify the District and/or the District’s Environmental Consultant.

L. The work of this section shall be performed by an entity that holds a current, valid asbestos handling license issued by the California State Contractor’s Licensing Board (SCLB) and a current valid Certificate of Registration for Asbestos-Related Work issued by the California Department of Industrial Relations-Division of Occupational Safety and Health (Cal-OSHA), unless other specified. Display copies of CSLB license and Cal-OSHA Registration in a visible place at the job-site.

M. ACMs removed during the abatement activities shall be disposed of in an approved manner complying with all applicable federal, state, and local regulations. Appropriate waste manifests or letters of salvage shall be furnished to the District thereby limiting the District's liability for improperly salvaged items. Materials are conveyed to the Contractor “as is,” without any warranty, expressed or implied, including but not limited to, any warranty to marketability or fitness for a particular purpose, or any purpose. The District or the District’s Environmental Consultant shall approve the non-ACM hazardous waste disposal site(s) prior to disposal for materials that may be disposed of in that manner.

N. All interior asbestos abatement work shall be conducted using a negative pressure enclosure and three stage decontamination units unless otherwise specified.
1.3 DEFINITIONS

A. The following definitions pertain to work of this section.

1. Abatement: Process of controlling fiber release from ACMs including encapsulation, enclosure, controlled renovation procedures, removal, clean-up and disposal.

2. ACM: Asbestos-containing material

3. Aggressive Sampling: Air sampling either during or following the agitation of the air.


5. Airlock: A system for permitting ingress and egress with minimum air movement between a contaminated area and uncontaminated areas. Typically consists of two curtained or gasketed doorways separated by a distance of at least six feet such that one passes through one doorway into the airlock, allowing the doorway to close off the opening. This airlock must be maintained in uncontaminated condition at all times.

6. Ambient Air Quality: The quality of air (in terms of airborne fiber content) that is present in a given space.

7. Area Monitoring: Sampling of airborne asbestos fiber concentrations within the work area and outside the work area. Sampling shall represent airborne concentrations that may reach the breathing zone.

8. Asbestos Fibers: Refers to asbestos fibers having an aspect ratio of 3:1, and those fibers longer than five (5) microns.

9. Asbestos Permissible Exposure Limit (PEL): A level of airborne fibers specified by OSHA as an occupational exposure standard for asbestos. This level represents the 8-hour time-weighted average of 0.1 fibers per cubic centimeter of air as measured by Phase Contrast Microscopy (PCM) analytical method.

10. Asbestos-Containing Material (ACM): Those manufactured products and construction materials including structural and mechanical building materials, as well as packings and gaskets that contain more than one percent (1.0%) asbestos by weight.

11. Asbestos: Asbestos includes asbestiform varieties of serpentinite (chrysotile), riebeckite (crocidolite), cummingtonite-gunerite (amosite), anthophylite, tremolite, and actinolite. For the purposes of determining worker respiratory protection, both the asbestiform and non-asbestiform of the above minerals, and any chemically treated or altered materials shall be considered as asbestos.

12. Authorized Visitor: Designated employees or consultants for the District and representatives of any federal, state or local regulatory or other agency having jurisdiction over the project.

13. Baseline: Refers to the background levels of asbestos monitored before abatement.
14. Breathing Zone: A hemisphere forward of the shoulders and head with a radius of approximately six to nine inches.

15. Breach: A rift or gap in the critical or secondary barriers that allow egress of air from the containment to outside, or vice versa.

16. Bridging Encapsulant: An encapsulant that forms a discrete layer on the surface of an in-situ asbestos matrix.


18. Chain-of-Custody: A legal concept involving documentation of the physical possession of a sample(s) from the moment it is collected, transported, analyzed, and ultimately stored in an archive.

19. Change Rooms: Refers to the two chambers in the decontamination area used to change into and out of protective clothing.

20. Certified Industrial Hygienist (CIH): A person certified by the American Board of Industrial Hygiene.

21. Clean Room: An uncontaminated area or room that is part of the worker decontamination enclosure system, with provisions for storage of workers’ street clothes and protective equipment.

22. Clearance Level: Clearance level for samples analyzed by PCM will be less than 0.01 fibers per cubic centimeter of air and for TEM will be less than 70 structures per square millimeter (<70 s/mm²). Samples may be collected by aggressive or non-aggressive sampling methods and the minimum air volume shall be 1,200 liters.

23. Competent Person: One who is capable of identifying existing and predictable hazards and who has the authority to take prompt corrective measures to eliminate them.

24. Critical Barrier: A unit of temporary construction that provides the only separation between asbestos work area and an adjacent potential occupied space. This includes the decontamination unit, perimeter walls, ceilings, penetrations and any temporary critical barriers between the work area and the uncontaminated environment.

25. CSLB: Contractors State Licensing Board

26. Decontamination Area: Area which is constructed to provide the means for workers to store clothing, equipment and other articles, and to properly remove contamination upon concluding work activities that result in exposure to these hazardous materials.

27. DOP: Dioctylphthalate, the challenge aerosol used to perform on-site leak testing of HEPA filtration equipment.

28. DOT: Federal Department of Transportation.

29. DOSH: Division of Occupational Safety & Health (see also Cal-OSHA)

30. Decontamination Unit: Refers to system of airlocks used to decontaminate personnel, waste bags, equipment, etc. when exiting the work area. A decontamination unit shall be set up for each containment area.
31. Demolition: The wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility.

32. Disposal Bag: Minimum six (6) mil thick leak-tight plastic bags used for transporting asbestos waste from a work area to disposal or shipping container. Each disposal bag must have required labels according to Title 8 CCR 1529 (Cal-OSHA asbestos rule), 5194 (HAZCOM). RACM waste must be additionally labeled according to 49 CFR 171-179 (USDOT), and 40 CFR 61 Subpart M (NESHAP). Hazardous waste disposal bags must be labeled with generator’s name, address, site location, generator number, and the following information:

CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
AVOID BREATHING AIRBORNE ASBESTOS
RQ WASTE ASBESTOS, 9 NA 2212 PG III
(Class 9 placard)
HAZARDOUS WASTE
STATE AND FEDERAL LAW
PROHIBITS IMPROPER DISPOSAL
IF FOUND, CONTACT THE NEAREST
POLICE OR PUBLIC SAFETY
AUTHORITY OR THE CALIFORNIA
DEPARTMENT OF TOXIC SUBSTANCES CONTROL

33. District: Contra Costa Community College District

34. District's Environmental Consultant: Environmental Consulting firm and its representatives retained to provide compliance oversight and monitoring for the Contractor’s asbestos abatement work activities.

35. Encapsulant: A liquid material that can be applied to ACMs that controls the possible release of asbestos fibers from the material either by creating a membrane over the surface (bridging) or by penetrating into the material and binding its components together (penetrating encapsulant).

36. Encapsulation: A specified procedure necessary to coat ACMs or asbestos contaminated surfaces with an encapsulant to control the possible release of asbestos fibers into the ambient air.

37. Enclosure: The construction of an airtight, impermeable, permanent barrier surrounding the ACM to prevent the release of asbestos fibers into the air.

38. Equipment Decontamination Enclosure System: A decontamination enclosure system for materials and equipment, typically in a designated area of the work area, and including a washroom, a holding area, and an uncontaminated area.

39. Equipment Room: A contaminated area or room that is part of the worker decontamination enclosure system, with provisions for storage of contaminated clothing and equipment. The equipment room shall be kept clean from asbestos-containing debris at all times.
40. Excursion Limit: A California Code of Regulations (Title 8 CCR 1529) requirement that ensures no employee exposed to airborne concentrations of asbestos in excess of 1.0 fibers per cubic centimeter of air as averaged over a sampling period of thirty (30) minutes.

41. Filter: A media component used in respirators to remove solid or liquid particles from the inspired air.

42. Fixed Object: A unit of equipment or furniture in the work area that cannot be removed from the work area.

43. Friable Asbestos-Containing Material: Material that contains more than 1.0% asbestos by weight, and that can be crumbled, pulverized or reduced to powder by hand pressure when dry.

44. Foreman: An individual who typically fulfills the duties of “competent person” as defined by Title 8 CCR 1529. This individual must supply documentation of a passing grade in a Cal-OSHA accredited course in Asbestos Contractor/Supervisor training. The foreman must be on-site during all abatement work.

45. Glove Bag: A polyethylene bag with two inward projecting long sleeve gloves, designed to enclose an object from which an ACM is to be removed. Bags shall be seamless at the bottom, have a minimum thickness of 6 mil, and shall be labeled appropriately.

46. Glove Bag Technique: A method for removing ACM from heating, ventilation and air conditioning (HVAC) ducts, piping runs, valves, joints, elbows, and other non-planar surfaces. The glove bag is constructed and installed in such a manner that it surrounds the object or material to be removed and contains all asbestos fibers released during the process. Secondary containment shall be provided for all glove bag work unless otherwise noted.

47. Gross or Full Abatement: Designated rooms, spaces, or areas of the project that have been totally sealed, contained in polyethylene, equipped with decontamination enclosure systems, and placed under negative pressure.

48. HEPA: High Efficiency Particulate Air filter capable of filtering out airborne particulate 0.3 microns or greater in diameter at 99.97 percent efficiency.

49. Manifest: The document authorized by both Federal and State authorities for tracking the movement of ACMs.

50. Movable Object: A unit of equipment or furniture in the work area that can be removed from the work area (e.g., smoke detectors, lights, etc.)

51. 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.

52. Negative Pressure: Air pressure lower than surrounding areas, generally caused by exhausting air from a sealed space (work area).

54. NIOSH: National Institute for Occupational Safety and Health: Sets test standards, analytical methods, and certifies performance of various respirator designs (research institute within Federal OSHA).

55. NIST: National Institute of Standards and Technology: Administers the NVLAP Program.

56. NOA – Naturally Occurring Asbestos. Found in soil, fill and concrete.

57. NVLAP: National Voluntary Laboratory Accreditation Program – evaluates and certifies laboratories doing PLM and TEM analyses.

58. Passive Sampling: Refers to air sampling with no air agitation.

59. Permissible Exposure Limits (PEL): A level of airborne fibers specified by OSHA as an occupational exposure standard for asbestos. This level represents the 8-hour time-weighted average of 0.1 fibers per cubic centimeter of air and 30 minute excursion limit of 1.0 fibers per cubic centimeter of air as measured by Phase Contrast Microscopy (PCM) analytical method.

60. Phase Contrast Microscopy (PCM): Technique using a light microscope equipped to provide enhanced contrast between the fibers and the background. Filters are cleared with a chemical solution and viewed through the microscope at a magnification of approximately 400X. This method does not distinguish between fiber types and only counts those fibers longer than 5 microns and wider than approximately 0.25 microns. Because of these limitations, fiber counts by PCM typically provide only an index of the total concentration of airborne asbestos in the environment monitored.

61. Polarized Light Microscopy (PLM): An optical microscope technique used to identify asbestos content and distinguish between different types of asbestos fibers by their shape and unique optical properties.

62. Powered Air Purifying Respirator (PAPR): A full facepiece respirator that has the breathing air powered to the wearer after it has been purified through a filter.

63. 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.

64. Remodel: Replacement or improvement of an existing building or portion thereof where exposure to airborne asbestos may result. Remodel includes, but is not limited to, installation of materials, demolition, cutting, patching, and removal of building materials.

65. Respirator: A device designed to protect the wearer from the inhalation of harmful atmospheres.

66. Shower Room: A room between the clean room and the equipment room in the work decontamination enclosure system. This room contains hot and cold or warm running water and soap suitably arranged for complete showering during decontamination. The shower room comprises an airlock between contaminated and clean areas.
67. **Surfactant**: A chemical wetting agent added to water to improve penetration, this reducing the quantity of water required for a given operation or area.

68. **Transmission Electron Microscopy (TEM)**: Asbestos structure analysis for a specified volume of air. TEM is a technique that focuses an electron beam onto a thin sample. As the beams transmits through certain areas of the sample, an image resulting from varying densities of the sample is projected onto a fluorescent screen. TEM is the state-of-the-art analytical method for identifying asbestos fibers collected in air samples in non-industrial settings. TEM microscopes equipped with selected area electron diffraction (SAED) capabilities also can provide information on the crystal structure of an individual particle.

69. **TSI – Thermal Systems Insulation**

70. **Visible Emissions**: Any emission containing particulate material that is visually detectable without the aid of instruments. This does not include condensed uncombined water vapor.

71. **Visual Inspection**: A visual inspection by District’s Environmental Consultant, of the work area under adequate lighting to ensure that the work area is free of visible PCB material, debris, and dust.

72. **Washroom**: A room between the work area and the holding area in the equipment decontamination enclosure system equipped with water for decontamination of equipment and sealed waste containers. The washroom or shower room comprises one airlock.

73. **Water Filtration**: Refers to water filtration to as small a particulate size as technically feasible, but not more than 5 microns.

74. **Wet Cleaning**: The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, HEPA vacuuming, or other cleaning utensils dampened with amended water and afterward thoroughly decontaminated or disposed of as asbestos contaminated waste.

75. **Work Area**: The area where asbestos removal is performed and that is defined or isolated to prevent the spread of asbestos fibers, dust or debris, and entry by unauthorized personnel. Work area is a regulated area as defined by Title 8 CCR 1529.

1.4 **SCOPE OF WORK**

A. Provide the removal of ACMs as specified in this section. Reference all other sections of the Specifications and other documents included in the contract documents for information and requirements that affect the work of this Section.

B. Table 1 attached includes the ACMs that may require removal and/or will be disturbed by the boiler replacement work. The Contractor is responsible for field verifying quantities of ACMs to be abated and/or disturbed.

C. The following materials shall be disposed of as regulated asbestos-containing material (RACM): hard packed pipe and fitting insulation.
1.5 REFERENCES

The publications listed below form a part of this specification by reference. The publications are referred to in the text by basic designation only. If there is a conflict between any of the listed regulations or standards, then the most stringent or restrictive shall apply.

A. American National Standards Institute (ANSI) and American Society for Testing and Materials (ASTM)
   2. ANSI Z87.1, 2003, Occupational and Educational Eye and Face Protection
   3. ANSI Z88.2 1992, Respiratory Protection
   4. ANSI Z89.1, 1986, Requirements for Protective Headgear for Industrial Workers
   5. ANSI Z41, 1999, Personal Protection – Protective Footwear
   6. ANSI Z88.6, 1984, Respiratory Protection – Respiratory Use Physical Qualifications for Personnel
   9. ASTM D 1331, Solutions of Surface-Active Agents
   10. ASTM D 2794, 1993 Resistance of Coatings to the Effects of Rapid Deformation (Impact)
   15. ASTM E849, 1986 Safety and Health Requirement Relating to Occupational Exposure to Asbestos

B. California Assembly Bills (CAB)
   1. CAB 040, Yearly Registration of Contractors

C. California Code of Regulations (CCR)
   1. Title 8 CCR 5208, General Industry – Asbestos
   2. CCR CARS, Carcinogen and Asbestos Registration Sections 340-344.53, 341.6 Amended, and 341.9 Amended Through 341.14
   3. CCR ESO, Electrical Safety Orders, Chapter 4, Subchapter 5
4. CCR 1523, Illumination
5. CCR 1529, Asbestos in the Construction Industry
6. CCR 1531, Construction Respiratory Protective Equipment
7. CCR 3203, Injury and Illness Prevention Program
8. CCR 3204, Access to Employee Exposure and Medical Records
9. CCR 3220, Emergency Action Plan
10. CCR 3221, Fire Prevention Plan
11. CCR 5144, Respiratory Protection Equipment Standard
12. CCR 5194, Hazard Communication Standard
13. CCR 6003, Accident Prevention Signs
14. Title 22, Division 4, Minimum Standards for Management of Hazardous and Extremely Hazardous Waste

D. California Health Services (CHS) Titles 22 and 23, California Administrative Code Disposal Requirements
   1. CHS 25123, Section 25123
   2. CHS 25124, Section 25124
   3. CHS 25143, Section 25143
   4. CHS 25163, Section 25163
   5. CHS 66508, Section 66508
   6. CHS 66510, Section 66510
   7. CHS DIV 4, Division 4, Commencing with Section 66000, "Disposal"

E. California Health and Safety Code (CHSC)
   1. CHSC 20, Division 20, Commencing with Section 24200

F. California Labor Code (CLC)
   1. CLC DIVISION 5, Part 1, commencing with 6300

G. California Propositions (CP)
   1. CP 65, Proposition 65

H. California State Board of Equalization (CSBE)
   1. CSBE ETU, Excise Tax Unit

I. California State License Board (CSLB)
   1. CSLB CBPC, California Business and Professional Code Sections 7058.5 and 7058.7, "Certification"

J. Code of Federal Regulations (CFR)
   1. 29 CFR 1910.134, Respiratory Protection
   2. 29 CFR 1910.141, Sanitation
   3. 29 CFR 1910.145, Accident Prevention Signs and Tags
4. 29 CFR 1926.21, Safety Training and Education
5. 29 CFR 1926.55, Gases, Vapors, Fumes, Dusts, and Mists
6. 29 CFR 1926.65, Hazardous Waste Operations and Emergency Response
7. 29 CFR 1926.59, Hazard Communication
8. 29 CFR 1910.1000, Air Contaminants
9. 29 CFR 1926.1101, Asbestos
11. 40 CFR 61-SUBPART M, National Emission Standard for Asbestos
13. 40 CFR 745, Lead; Requirements for Lead-Based Paint Activities
14. 40 CFR 763, Asbestos Containing Material in Schools

K. State and Local Regulations
   1. Regulation 11, Rule 2, Bay Area Air Quality Management District (BAAQMD)

L. Underwriters Laboratories, Inc. (UL)
   1. UL 586-96, 1996 Test Performance of High-Efficiency Particulate Air Filter Units

1.6 SUBMITTALS PRIOR TO START OF WORK

A. The reviews by the District or District’s Environmental Consultant are intended to be only for general conformance with the requirements. The District or District’s Environmental Consultant assumes no responsibility for permits, licenses, notices, materials and methods, equipment or temporary construction required to execute the work described in this Section of the Specification or in other Sections of the Specification or in other documents included in the contract documents.

B. Before commencing work involving the abatement or disturbance of asbestos, submit the following for review by the District or District’s Environmental Consultant.
   1. Provide a detailed asbestos abatement work plan that follows Attachment A – Asbestos Abatement Work Plan Outline.
   2. Provide an asbestos site safety plan prior to project initiation. The site safety plan shall deal with, at a minimum: site safety and health hazards; fiber release incidents; control of water leakage or discharge within and/or from the work area; medical emergency; asbestos handling procedures; fall protection; electrical safety; Contractor’s internal administrative and inspection procedures; earthquakes and/or fire emergency procedures; protocol for responding to complaints or questions from interested parties; 24-hour emergency telephone numbers for company officers with authority to respond to emergencies.
   3. Competent Person (as defined by Title 8 CCR 1529): Demonstrate education and specialized training with successful completion of examination of a Cal-OSHA accredited asbestos training course.
4. Workers: Demonstrate education and specialized training with successful completion of a Cal-OSHA accredited asbestos training course. All site workers shall submit proof of current Class I training.

5. Submit current certificates (less than 11 months) signed by each employee and trainer that the employee has received proper training in the handling of materials that contain asbestos. Include documentation showing that the worker understands the following: health implications and risks involved (including the illnesses possible from exposure to airborne asbestos fibers), the use and limits of the respiratory equipment to be used, and the results of monitoring of airborne quantities of asbestos concerning health and respiratory equipment.

6. Proof of Respirator Fit Testing: Provide proof of respirator fit testing. Fit testing records must be less than eleven (11) months old and document testing on the type of respiratory protective equipment used for this project. Fit testing records must be signed by the Competent Person.

7. Foreman Training: Submit evidence that the foreman to be used on the job fulfills the qualifications detailed in this specification and has experience in similar jobs.

8. Medical Examinations: Submit evidence signed by a physician that each employee used on the job has received an appropriate medical examination as detailed in Title 8 CCR 1529. The submitted document must be less than eleven (11) months old.

9. Written Notification to Fire and Police Departments: Provide documentation showing notification to local fire and police departments of the abatement three (3) days before commencement.

10. Rental Equipment: When rental equipment is to be used in the abatement areas or to transport hazardous waste, the Contractor shall provide written notification regarding intended use of the rental equipment to the rental agency before use, with copies to the District’s Environmental Consultant.

11. Certificates of Compliance: Submit manufacturer’s certification that vacuums, ventilation equipment, and other equipment required to contain airborne asbestos fibers conform to ANSI Z9.2. Submit results of onsite DOP testing of all HEPA-filtered ventilation equipment.

12. Submit uniform hazardous waste manifests prepared, signed and dated by an agent of the landfill. The manifest must certify the amount of hazardous materials delivered to the landfill. The manifest must be provided to the District or District's Environmental Consultant within ten working days after delivery.

13. Satisfactory proof that written notification and subsequent updates have been provided to the Bay Area Air Quality Management District (BAAQMD), in accordance with Regulation 11, Rule 2, Cal-OSHA, and Title 40 CFR Part 61 Subparts A&M, National Emission Standards for hazardous Air Pollutant, U.S. EPA.

14. Licenses: Submit copies of state and local licenses, evidence of Cal-OSHA registration and permits necessary to carry out the work of this contract.
15. Notification of Other Contractors: If other contractors are working at the job site, before beginning any work the Contractor must inform all other contractors in writing regarding the location, nature, and requirements of the work areas.

16. Material Safety Data Sheets/Specification Sheets: The Contractor shall submit Material Safety Data and Specification Sheets for all chemicals, encapsulants, etc. to be used for this project.

1.7 SUBMITTALS AT THE COMPLETION OF THE PROJECT

A. Upon completion of on-site work, Contractor shall provide a detailed project summary that will include each of the items listed below. The project Summary shall be submitted and approved by the District prior to acceptance of final pay request and shall include the following:

1. Copies of the Security and Safety Logs showing names of persons entering the workspace. The logs shall include date and time of entry and exit, supervisor’s record of any accident (detailed description of accident).

2. Chain of custody documentation and laboratory reports for all analyses performed.

3. Emergency evacuations and any other safety or health incident.

4. Submit uniform hazardous and non-hazardous waste manifests prepared, signed and dated by an agent of the landfill. The manifest must certify the amount of hazardous materials delivered to the landfill. The manifest must be provided to the District or District’s Environmental Consultant within ten working days after delivery.

5. Personal air sample results.

6. Pressure differential data readings for each differential recording device on the site.

7. Project Summary:
   a. Abatement contractor’s name and address, certification number (CSLB), registration number (DOSH) and Tax ID number.
   b. Hazardous waste hauler certifications (DHS, DOT).
   c. Name, address and registration number of hazardous waste hauler.
   d. Laboratory performing analyses (NVLAP).
   e. Contract number and name of project.
   f. Specific inventory (including locations and approximate quantities) of the hazardous materials which were removed or handled.
   g. Number of employees working on the project.
   h. Dates of commencement and completion of on-site work.
   i. Work method employed (i.e., glove bag, mini-containment, full containment with negative air and decontamination enclosure system, etc.)
   j. Name, location, telephone number and EPA registration of waste disposal site(s) used.
   k. DOP testing results.
1.8 CONTRACTOR MONITORING

A. The District or District’s Environmental Consultant reserves the right to perform air sampling in selected areas during the course of the project. District or District’s Environmental Consultant reserves the right to stop work within in an area if in the course of performing monitoring, the District or District’s Environmental Consultant observes instances of substantial non-conformance with the this Section or other Sections of the Specification presenting health hazards to workers, the general public or the surrounding areas. Work shall not resume until the corrective measures have been enforced. Instances of substantial non-conformance shall include, but not be limited to, the following:

1. Activities or misconduct imperiling worker’s safety and health.
2. Airborne fiber concentrations as measured by PCM outside of the containment area exceeding background or 0.01f/cc (fibers per cubic centimeter), whichever is greater. Airborne concentrations as measured by TEM outside of the containment area exceeding background or 70 s/mm² (structures per millimeter squared), whichever is greater.
3. Loss of negative pressurization for more than two minutes.
4. Breaches in containment resulting in potential release of asbestos to non-work areas.

B. The District’s Environmental Consultant may perform air sampling inside and outside the hazardous materials work area during all phases of the work. The Contractor shall cooperate fully with the District’s Environmental Consultant and ensure the cooperation of his workers during collection of air samples and work area inspections.

C. When visual inspections or air monitoring are specified, the Contractor shall notify the District or District’s Environmental Consultant in writing 24 hours in advance of the day and time when the Contractor will be ready for such inspections or monitoring. Such requests shall be initiated by the Contractor’s Competent Person or Foreman indicating that the work area has been previously inspected and is ready for inspection/testing.

D. Air monitoring generated by the District or District’s Environmental Consultant shall not be used by the Contractor to represent compliance with regulatory agency requirements for monitoring of workers exposure to airborne asbestos, nor shall any other activity on the part of the District or District’s Environmental Consultant be construed to meet the Contractor’s compliance with applicable health and safety regulations.

PART 2 - PRODUCTS

2.1 SIGNS AND LABELS:

A. Provide labeling in accordance with State and Federal EPA requirements. Provide the required signs, labels, warnings, placards or posted instructions for containers used to transport hazardous material to the landfill.
B. Location of Caution Signs and Labels: Provide bilingual caution signs at all approaches to work areas in languages used by the Contractor’s employees. Locate signs at such a distance that personnel may read the sign and take the necessary protective steps required before entering the area. Provide labels and affix to all asbestos-containing materials, scrap, waste, debris, and other products contaminated with hazardous materials.

C. Warning Sign Format: Vertical format conforming to Title 8 CCR 1529:

```
DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA
```

D. Warning Label Format: Provide labels that comply with Title 8 CCR 1529 of sufficient size to be clearly legible, displaying the following legend:

2.2 ENCAPSULANTS

A. Encapsulants shall be U.L. Listed, in full-scale E-119 fire test.

B. Average depth of penetration shall meet manufacturer’s recommendations.

C. Dry mil thickness of bridging encapsulating systems (if used) shall be as indicated in the specific treatment instructions included in this specification, and as recommended by the manufacturer.

D. Performance Requirements: Classification - penetrating encapsulant; spray applied and brushable. Product shall be tested and listed by EPA and possess the following characteristics:


2. Fire classification - UL Class A approved in the specific or similar assembly to its intended application.

3. Product shall be tested and rated non-toxic and non-irritating under the Federal Hazardous Substances Control Act and contain no methylene chloride.

4. Material shall be tinted sufficiently to provide a readable contrast to background color to which it is applied.

2.3 PLASTIC SHEETING:

A. Use fire-retardant (FR) polyethylene (poly) film.

1. Thickness - 6-mil, minimum, NO EXCEPTIONS.

2. Flame Resistance/Flame Spread Rate <25.

3. Conforms to NFPA #701 and Tested in accordance with ASTM E-84.
2.4 TAPE, ADHESIVE, SEALANTS:
   A. Tape, 2” or wider, shall be capable of sealing joints of adjacent sheet of polyethylene and shall attach polyethylene sheet to finished or unfinished surfaces or similar materials. Tape shall be capable of adhering under dry and wet conditions, including use of amended water. Taping to critical or sensitive surfaces shall be completed using preservation sealing tape.
   B. Spray adhesive for sealing polyethylene to polyethylene shall contain no methylene chloride or methyl chloroform (1,1,1-trichloroethane) compounds.
   C. Fire resistant sealants shall be compatible with concrete, metals, wood, etc. Sealant shall prevent fire, smoke, water and toxic fumes from penetrating. Sealant shall have a flame spread, smoke and fuel contribution of zero, and shall be ASTM and UL rated for 3 hours for standard method of fire test for fire stop systems.

2.5 MANOMETER MEASUREMENTS:
   A. Where interior work areas are required, each shall have a minimum differential pressure of 0.025 inches water gauge at all times. Fluctuations below 0.025 inches of water column are unacceptable and may require temporary cessation of work until conditions are corrected.
   B. Negative pressure will be checked a minimum of four times per day by a person familiar with the operation. Each check shall be documented with a time and date notation and the initials of the person performing the check. A copy of the data shall be submitted daily to the District or District’s Environmental Consultant.
   C. Differential air pressure systems shall be in accordance with Appendix J of EPA’s “Guidance for Controlling Asbestos-Containing Materials in Buildings, EPA 560/5-85-024. The instrument shall be connected to an audible alarm that will activate at a pressure differential of -0.025 inches water gauge air pressure.

2.6 VACUUM EQUIPMENT:
   A. All vacuum equipment used in the work area shall use HEPA filtration systems and be of the wet-dry type. The Contractor shall provide on-site independent DOP testing to document the effectiveness of the vacuum units. The test results shall be signed by the individual performing the testing. Repeat DOP testing every thirty (30) days after initial testing. Provide documentation to the District or District’s Environmental Consultant with 24 hours of DOP testing.

2.7 LOCAL EXHAUST SYSTEM:
   A. Where containments are required, sufficient High Efficiency Particulate Absolute (HEPA) ventilation units shall be used to maintain the negative pressure in each interior work area at 0.025 inches of water column and a minimum of four (4) air changes per hour.
   B. The ventilation system shall remain in operation 24 hours a day until the work area has passed the specified clearance criteria. HEPA filtered air which is exhausted to
maintain negative pressure shall be exhausted from the building at locations approved by the District or District’s Environmental Consultant. Exhausted air shall not be near or adjacent to other building intake vents or louvers or at entrances to buildings. Other HEPA units shall operate within the enclosure to circulate air and control fiber counts.

C. The Contractor shall provide on-site independent DOP testing to document the effectiveness of the air filtration units. The test results shall be signed by the individual performing the testing. Repeat testing if the unit or the air filtration units have been repaired or replaced. Repeat DOP testing after thirty (30) days after initial testing. Provide documentation to the District or District’s Environmental Consultant with 24 hours of DOP testing.

2.8 RESERVE EQUIPMENT:

A. Contractor shall have the following equipment on site: one reserve, functioning and DOP-tested HEPA Filter Vacuum Cleaning Unit, one reserve and DOP-tested HEPA area filtration unit for every two containments. Contractor shall also have sufficient polyethylene (poly), respirators, protective equipment, tape, tools, decontamination enclosure systems for each work area.

B. Provide authorized visitors requiring access to the work area with suitable protective clothing, headgear, eye protection, as described in this specification, whenever the visitor must enter the work area. The Contractor shall have available and maintain at all times a minimum of three (3) suits and other suitable protective equipment for this purpose. All protective equipment shall be new and for the exclusive use of visitors.

C. The Contractor shall document that each visitor has been trained and fit-tested prior to entering an abatement area.

2.9 SCAFFOLDING:

A. Scaffolding, as required to do the specified work, shall meet all applicable safety regulations and DOSH standards. A non-skid surface shall be furnished on all scaffold surfaces subject to foot traffic. Contractor must comply with District’s and General Contractor’s Fall Protection Requirements. Scaffolding shall be adequately protected to prevent contamination of planking and framing.

2.10 TRANSPORTATION EQUIPMENT:

A. Transportation equipment, as required, shall be lockable and suitable for loading, temporary storage, transit and unloading of contaminated waste without exposure to persons or property. Any vehicle used to transport asbestos waste shall be properly registered with all applicable controlling agencies.

2.11 CONNECTIONS TO WATER SUPPLY:

A. Contractor shall assure that all connections to the site's water system shall include backflow protection. Valves shall be temperature and pressure rated for operation of the temperatures and pressures encountered. After 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 shall not damage existing finishes or equipment.

B. Employ heavy-duty abrasion-resistant hoses with a pressure rating greater than the maximum pressure of the water distribution system in each work area. Provide fittings as required to allow for connection to existing wall hydrants or spouts.

2.12 WATER HEATER:

A. The hot water supply must be adequate to allow for 15 minutes of continuous usage while maintaining a water temperature of 85°F. At minimum provide UL rated 40-gallon electric water heater to supply hot water for the decontamination unit shower. Provide 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 24 inch X 24 inch X 6 inch deep pan, made of 19 gauge galvanized steel with handles. Drip pan shall be securely fastened to the water heater with bailing wire or similar material. Wiring of the water heater shall comply with NEMA, NEC and UL standards.

2.13 OTHER TOOLS AND EQUIPMENT:

A. The Contractor shall provide other suitable tools for the stripping, removal and disposal activities.

B. Prohibited Equipment: The following equipment is prohibited from use on this project unless accepted in writing by the District or District’s Environmental Consultant:

1. High or low pressure water blasting equipment for hosing of work areas.
2. Bead blasting or other uncontained abrasive blasting methods.
3. Vacuum-powered removal or collection equipment located outside the asbestos work area, such as a “Vacu-Loader”.
4. Gasoline, propane, diesel or other fuel powered equipment inside the building, unless previously approved in writing by the District or District’s Environmental Consultant.
5. Equipment that creates excessive noise or vibration that would affect the safety of the building or generate complaints from neighboring building occupants. No equipment shall exceed an A-weighted sound level of 85 dB as measured at 3 ft. from the radiating source without written permission of the District or District’s Environmental Consultant.
7. Flammable solvents with a flash point below 140 degrees F or materials containing ethylene glycol ether, methylene chloride, ethyl chloroform (1,1,1-trichloroethane), or other hazardous substances.
8. Non-fire retardant polyethylene sheeting.
9. Polyurethane spray foam for application in fire-rated assemblies, including but not limited to penetrations into stairwells, mechanical rooms, electrical closets, rated floor-to-floor assemblies, etc.
PART 3 - EXECUTION

3.1 INITIAL AREA ISOLATION

A. The District or District’s Environmental Consultant reserves the right to inspect and approve all containment setups before any abatement is undertaken.

B. If a containment area is breached (failure of polyethylene seals, visible dust emission, fiber counts above background level, etc.), the Contractor shall take immediate action to control the breach and clean the area to the satisfaction of the District or District’s Environmental Consultant.

C. If sample results indicate that conditions have exceeded the baseline or clearance criteria, as determined by the District or District’s Environmental Consultant, all work shall cease. Work shall not recommence until the condition(s) causing the increase have been corrected.

D. Verify that all electrical power, gas, sewage, water, phone lines, fire life safety lines and sprinkler systems to the work area have been shut down and disconnected so that there is no possibility of reactivation and electrical shock.

E. Provide all connections for temporary utilities in the work area needed throughout abatement. Temporary electrical power shall be according to OSHA and the National Electrical Code for Wet Environments.

F. Contractor shall conform to the District’s lockout requirements, and secure the work area at all times. Area entrances and exits shall be secured by the Contractor throughout the abatement phase. Unauthorized visitors are strictly prohibited. Only the Contractor, District or District’s designative representatives are permitted at the job site. Contractor shall ensure that all doors, gates, windows, and potential entrances to the work areas and the designated waste location areas are secured and locked at the end of each workday.

G. Contractor shall store all materials, equipment, and supplies for the project inside the building or in areas designated by the District and in accordance with District’s requirements.

H. Provide signs around the perimeter of all the interior works areas according to EPA and Cal-OSHA.

I. Contractor shall provide temporary sanitary services of adequate capacity to handle the maximum estimated crew size plus an additional twenty percent. Contractor shall maintain the temporary facilities throughout the duration of the project.

J. The Contractor shall be responsible for identifying all HVAC components (if applicable) that lead into or out of the work areas. All components shall be disconnected and sealed airtight for the duration of the abatement work. All openings shall be sealed with two (2) layers of 6 mil polyethylene secured with duct tape, as applicable.
K. Pre-clean the work area and fixed objects in the work area using HEPA filtered vacuums and/or wet cleaning methods. Protect fixed objects with protective barriers (as appropriate) and cover with 6 mil poly sealed with tape.

3.2 CONTAINMENT SET-UP PROCEDURES

A. Contractor shall construct a full negative pressure containment with 3 stage decontamination chamber for the removal of asbestos-containing interior materials including but not limited to thermal system insulation. Install critical barriers consisting of one layer of 6-mil poly on windows and doors. Cover floor and wall surfaces with 6-mil poly sealed with tape (as appropriate). The work area(s) shall be placed under negative pressure as outlined in this specification throughout the abatement work period.

B. To permit the inspector to view the majority of the work area, the Contractor shall provide easily accessible viewing ports from the clean space into each abatement area. Viewing ports must be a minimum of 2’ x 2’, clear-see-through plastic with no scratches, tape or glue marks.

C. Pressure differential data instruments are required to monitor the pressure differential in the work area.

D. A three-chambered decontamination unit shall be required during the abatement work conducted in full containment. The unit shall be located immediately outside the contained area. A pre-fabricated unit is acceptable. Chambers shall be arranged as follows: (1) a clean/change room shall be the first chamber entered from outside the work area, (2) a shower shall be located between the clean/change room and the dirty/change room, and (3) a dirty/change room shall be the last chamber before entering the work area.

1. The clean/change room of the worker decontamination unit shall be of sufficient size to accommodate the work crew and their belongings. It shall include a respirator storage area and be fully equipped with reserve equipment and materials such as clean suits, towels, soap, tape, and respirator filters.

2. Worker decontamination unit walls shall be a minimum of two layers of 6-mil fire retardant poly and floors shall be constructed with a minimum of three layers of fire retardant poly. All entry and exit doorways shall consist of at least two sheets of overlapping, fire resistant poly. At no time shall the flapped doors be taped open in order to expedite material or personnel load-out.

E. All water from the shower and bag wash area shall be filtered to the technically feasible limit but not more than five (5) microns before disposal. In addition, the Contractor shall comply with all current local, state and federal codes relating to waste water release. All water connections must be verified leak for leaks and turned-off at the conclusion of each shift. All shower water shall be drained from the shower pan at the end of each shift.

F. Contractor shall construct an equipment decontamination enclosure system consisting of a washroom, holding area and clean room separated by airlocks.
G. Approved fire extinguishers (Class ABC, multi-purpose, dry chemical type, rated: 4A; 60BC) shall be readily available to workers (maximum travel distance of 50 feet) inside and adjacent to work area(s). Personnel and emergency exits shall be clearly indicated on the inside of the containment area. The emergency exit plan shall be approved by the District’s Environmental Consultant prior to the set up of any work areas.

3.3 PERSONNEL PROTECTION

A. Informed Workers:
   1. All workers shall be informed of the hazards of ACMs and any other hazardous materials exposure. Workers shall also be instructed in the use and fitting of respirators, protective clothing, decontamination procedures, and all other aspects associated with the abatement work.

B. Personal Hygiene Practices:
   1. The Contractor shall enforce and follow good personal hygiene practices during the abatement of ACMs. These practices will include but not be limited to the following: no eating, drinking, smoking or applying cosmetics in the work area. The Contractor shall provide a clean space, separated from the work area, for these activities.
   2. Workers shall remove street clothes in the clean room and put on a respirator and clean protective clothing before entering the work area. Upon exiting the work area, remove gross contamination from clothing before leaving the work area; proceed to the change room and remove clothing except respirators; proceed to the shower; clean the outside of the respirator with soap and water while showering; remove respirator and thoroughly wash. Following showering, proceed directly to the clean room and dress in street clothes. Do not wear disposable clothing outside the decontamination enclosure system.
   3. If data gathered by the District or District’s Environmental Consultant in areas adjacent to the work areas shows exposure to airborne asbestos or other hazardous materials exceeding Cal-OSHA criteria, that area will become regulated and workers must wear protective clothing and approved respirators and must have a shower facility provided to them.

C. Respirators:
   1. Establish a respiratory protection program as outlined by ANSI and required by Cal-OSHA. Select respirators from those approved by the National Institute for Occupational Safety and Health (NIOSH). Respirators selected must be approved by the Competent Person. Submit program for review a minimum of five (5) working days prior to the commencement of abatement activities.
   2. Provide workers with approved and personally-issued respirators with replaceable filters. Provide sufficient quantity of filters approved by NIOSH for use in asbestos environments so that workers can change filters as required by the manufacturer.
   3. At a minimum, provide each employee with the following respiratory protection for each work phase:
a. Pre-cleaning, containment set-up, and containment removal work: NIOSH-approved, half-face respirators with HEPA cartridges.

b. Asbestos abatement of thermal systems insulation and: full-face powered-air purifying respirators (PAPRs) with HEPA cartridges and organic vapor cartridges (as necessary).

4. At all times, respiratory protection selected shall, at a minimum, meet the requirements of the Table 1 below.

<table>
<thead>
<tr>
<th>Airborne Concentration of Asbestos</th>
<th>Required Respirator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not in excess of 1.0 f/cc (10 X PEL)</td>
<td>Half-mask air purifying respirator other than a disposable respirator, equipped with high efficiency filters</td>
</tr>
<tr>
<td>Not in excess of 5.0 f/cc (50 X PEL)</td>
<td>Full facepiece air purifying respirator equipped with high efficiency filters</td>
</tr>
<tr>
<td>Not in excess of 10 f/cc (1,000 X PEL)</td>
<td>Any powered air purifying respirator equipped with high efficiency filters or any supplied air respirator operated in continuous flow mode</td>
</tr>
<tr>
<td>Not in excess of 100 f/cc (10,000 X PEL)</td>
<td>Full facepiece supplied air respirator operated in pressure demand mode</td>
</tr>
<tr>
<td>Greater than 100 f/cc or unknown concentration</td>
<td>Full facepiece supplied air respirator operated in pressure demand mode, equipped with an auxiliary positive pressure self-contained breathing apparatus</td>
</tr>
</tbody>
</table>

5. Provide Type C continuous flow or pressure-demand, supplied-air respirators if the average airborne concentration of asbestos exceeds 100 times the permissible exposure limit; i.e., 8-hour time-weighted average (TWA) and ceiling limit. Use the respirators presented in Title 8 CCR 1529 that afford adequate protection at such upper concentrations of airborne asbestos. When Type C Respirators are required provide the following:

a. The air supply system shall provide Grade D breathing air that conforms to OSHA and ANSI Commodity Specification for Air.

b. Compressed Air System for Type C Respirators shall be high pressure, with a compressor capable of satisfying the respirator manufacturer's recommendations. The compressed air system shall have compressor failure alarm, high temperature alarm, and a carbon monoxide alarm. It also shall have suitable in-line air purifying absorbent beds and filters to assure Grade D breathing air.

c. Use of Belt: Type C respirators shall be worn with belt to minimize possibility of dislodging face mask when hose is snagged in the work area.

D. Protective Clothing:

1. Provide personnel exposed to asbestos fibers with fire retardant disposable protective whole body clothing, head coverings, gloves, and foot coverings.
Provide appropriate gloves to protect workers hands from exposure to hazardous materials. Make sleeves secure at the wrists and make foot coverings secure at the ankles with tape. Ensure that all personnel entering and leaving the work area follow this procedure. Suits shall be of adequate size to accommodate the largest employee. Foot covers may be part of the coveralls. Non-disposable footwear shall be left in the work area until it is decontaminated or disposed of at the completion of the job.

2. Protective clothing will be worn inside the work area after the area passes pre-abatement inspection and shall remain in use until the area passes final clearance inspection.

E. Eye Protection: Provide safety glasses or goggles to personnel removing or handling asbestos-containing materials and waste.

F. Shower Requirements: Contractor shall assure that all certified employees and visitors use protective equipment and the shower or wash down facility following each entry into the containment area after the start of the asbestos abatement.

G. Emergency Precautions and Procedures:
1. Establish emergency and fire exits from the work area. Display necessary signage at exits and paths to exits with representative visual aids. A diagram of all emergency and fire exits shall be posted in a conspicuous area proximate to the entrance to each work area.

2. The Contractor’s supervisor/competent person shall be trained and certified in first aid and CPR, and be prepared to administer first aid to injured personnel after decontamination. Seriously injured personnel shall be treated immediately or evacuated without delay for decontamination. When an injury occurs, the Contractor shall implement fiber reduction techniques until the injured person has been removed from the work area.

3. In the event of a loss of negative pressure to the work area, work shall stop immediately and entrances to the work area sealed tight. The Contractor shall also institute fiber reduction controls until negative pressure is re-established to acceptable levels.

3.4 ASBESTOS REMOVAL (GROSS REMOVAL TECHNIQUE)

A. The Contractor shall abate all ACMs identified in this specification and/or that require disturbance to complete the boiler replacement work as noted in other specification sections.

B. The Contractor shall continuously apply wetting agent throughout the removal process. The wetting agent shall be applied with a low-pressure fine spray to minimize fiber releases. The materials shall be thoroughly saturated so that there is no detectable fiber release. All ACM shall be immediately packaged in leak-tight containers following removal.

C. Minimize removal activities of ACMs that generate airborne particulate. To the extent feasible, score or cut-out ACMs in sections, wetting along the scoring line continually, and misting the air with an airless sprayer to knock down suspended
particulate. After completion of removal work, surfaces from which asbestos has been removed shall be wet cleaned to remove all visible material and residue.

D. Coordinate extent of removal with the other contract documents. Stabilize remaining ACM pipe insulation to prevent disturbance during installation of replacement insulation. Apply bridging encapsulant at edges of remaining insulation.

E. Wet clean the exterior surfaces of waste containers in the equipment decontamination enclosure system prior to removal from the work area. Ensure that workers do enter from uncontaminated areas into contaminated areas in the equipment decontamination enclosure system. The Contractor shall transport asbestos-containing waste bags to the waste debris box at designated hours approved by the District or District’s Environmental Consultant. RACM shall be packaged in a minimum of two (2) 6-mil polyethylene bags. Bags shall be properly labeled for RACM disposal including site-specific generator labels. Non-friable waste shall be packaged in clear, leaktight containers and properly labeled while stored on-site.

F. Asbestos-containing debris and contaminated water shall be cleaned from the work area at the end of each work shift. The Contractor shall clean the work area using wet methods and HEPA vacuum equipment.

3.5 ASBESTOS REMOVAL (GLOVEBAG TECHNIQUE)

A. Bags commercially manufactured specifically for glovebag enclosure removal of asbestos shall be used. All bags shall be a minimum of 6 mil clear poly, appropriately sized for removal area and task.

B. Maximum temperature of components allowable for glovebag work shall be as specified by glovebag manufacturer. Glovebag procedures shall not be permitted on live steam equipment or any equipment in excess of 150 degrees Fahrenheit.

C. Pre-clean the work area and protect immediate work area by covering floor and nearby equipment with 6 mil poly. Temporarily wrap damage/deteriorated asbestos insulation adjacent to the work with 6 mil poly to prevent further damage or disturbance during removal.

D. Provide two (2) workers for each glovebag operation.

E. Install glovebag around pipe, seal with staples and tape leaving enough sealed space above the pipe to allow access. Secure bag to pipe to support weight of stripped insulation and water (additional support may provided by a ladder).

F. Insert HEPA vacuum nozzle and flexible tubing or wetting agent sprayer into hole location provided and seal airtight with duct tape.

G. Smoke test the glovebag and repair leaks as required.

H. During removal, periodically use HEPA vacuum to compensate for any leaks and wet the inside surfaces of the bag to control fiber release.
I. Cut the insulation sharply for neat sealing of exposed insulation. Leave 4 inches margin at the bag/seal point.

J. After removal and detail cleaning, wash down all surfaces to below the levels where the bag will be sealed, and saturate the waste.

K. Upon completion of the removal work but prior to commencing with encapsulation, the District or District’s Environmental Consultant reserves the right to conduct visual inspections.

L. Seal all substrate surfaces from which asbestos material was removed with an approved encapsulant and lagging cloth as appropriate.

M. Gather tools in a glove hand and pull the glove inside out. Seal the arm with a minimum of six (6) inches of tape and cut through the middle of the tape. Bend and re-tape the ends. Save the “bagged” tools for the next glovebag operation or clean by placing in a pail of water.

N. Collapse the bag with the HEPA vacuum. With the vacuum still applied, seal the bag just above the glove level. Remove the nozzle and tubing. Place a 6 mil waste bag over the glovebag and carefully remove the glove bag from the component and immediately seal it in a labeled waste bag. Check the component for loose waste and vacuum as required.

O. Seal exposed insulation with fiberglass wettable cloth or other approved material while the insulation is damp, unless other removal is planned.

3.6 REGULATED AREA MONITORING

A. Prior to each work shift and continuously throughout the project, each containment and decontamination enclosure system shall be inspected and repaired as needed.

B. Ambient asbestos fiber levels outside each work area shall not exceed 0.01 f/cc (PCM) or 70 s/mm² (TEM) or background whichever is greater. If the asbestos fiber concentrations outside work areas exceed those levels shown above, then abatement must stop and operations be reviewed and modified until the fiber count can be reduced to within the acceptable limits.

3.7 AIR MONITORING

A. The purpose of any air monitoring that may be conducted by the District or District’s Environmental Consultant will be to detect possible release of fibers or dusts (asbestos or lead) emanating from the work areas.

B. All PCM air sample analysis shall comply with NIOSH Method 7400. All TEM analysis shall be consistent with modified-AHERA protocols or NIOSH 7402.

C. The District or District’s Environmental Consultant reserves the right to perform and / or observe final clearance inspection and sampling.
D. The method of analysis for pre-abatement and clearance air samples shall be via Phase Contrast Microscopy (PCM). The method of analysis for in-progress asbestos air samples shall be PCM and TEM at the option of the District or District’s Environmental Consultant.

E. The Contractor shall be responsible for all personal air sampling. These samples shall be taken each shift and for each distinct crew operation, and shall be used to verify adequacy of fiber control and respiratory protection. Personal breathing zone air sampling shall be in accordance with the Cal-OSHA asbestos standard. A minimum of 25% of the workforce shall be monitored during each shift. All sample results shall be available on-site within 24-hours of sample collection. If two consecutive shifts of non-compliant or overloaded samples are noted, the contractor shall hire a CAC/CSST at their own expense to assist in compliance with the specifications.

3.8 CLEARANCE INSPECTIONS

A. The District or District’s Environmental Consultant reserves the right to conduct visual inspections. Contractor shall notify the District or District’s Environmental Consultant when the decontamination process in each containment area is complete. Evidence of debris will require additional clean up by the Contractor. Contractor shall be responsible for re-cleaning all areas found to be deficient.

B. If the District or District’s Environmental Consultant determines that the work area is sufficiently clean, the Contractor may proceed. If the District or District’s Environmental Consultant determines that certain areas require additional cleaning, the Contractor shall re-clean the work area and request a second inspection of the recleaned area. All costs incurred by the District or District’s Environmental Consultant for inspections required after the second inspection will be charged to the Contractor.

C. Once the initial visual is passed, the Contractor shall remove all but the containment critical barriers.

D. Following the visual inspection, the Contractor shall provide a coating of non-diluted encapsulant in the work area. The Contractor shall allow the encapsulant to dry for the period specified by the manufacturer.

E. Asbestos Clearance Testing: Following encapsulation and drying time, the Contractor shall conduct air clearance sampling. Clearance air sampling shall not take place until all encapsulant is dry. The District or District’s Environmental Consultant reserves the right to approve the initiation of clearance sampling.

3.9 ASBESTOS CLEARANCE CRITERIA:

A. The clearance level per containment shall be less than 0.01 fibers per cubic centimeter via phase contrast microscopy (PCM) or less than 70 structures per square millimeter via transmission electron microscopy (TEM). Aggressive air sampling shall be used for clearance purposes. Multiple samples shall be collected in large containment areas.
B. If air samples do not pass the required clearance criteria, the area shall be recleaned and new samples shall be collected by the District or District’s Environmental Consultant. The Contractor shall be responsible for all costs associated with re-sampling and re-analyses. This amount will be deducted by the District from the Contractor’s final payment.

C. The District or District’s Environmental Consultant shall notify the Contractor in writing of acceptable asbestos fiber concentrations. The Contractor shall then remove all the remaining barriers in the work area.

3.10 ASBESTOS DISPOSAL

A. It is the responsibility of the Contractor to determine current waste handling, labeling, transportation and disposal regulations for the work site and for each waste disposal landfill. The Contractor must comply fully with these Specifications, local, state, and federal regulations and provide documentation of the same.

B. Ensure that polyethylene bags are sealed air-tight. All bags shall be wet cleaned prior to removing them from the equipment decontamination enclosure system.

C. Ensure all disposal containers are properly labeled according to 8 CCR 1529, 5194 (HAZCOM), 49 CFR 171-179 (USDOT), 40 CFR 61 Subpart M (NESHAP), and any local regulations and state regulations as required by this specification.

D. Filter all wastewater to the technically feasible limit, but not more than five (5) microns before disposal. Comply with all current local, state and federal codes relating to waste water release.

E. Asbestos-containing waste that is properly labeled and double-bagged may be temporarily stored in areas approved by the District. Areas must be made secure before storing the waste. Waste is not to remain in temporary storage area for longer than four (4) days before final load-out of materials.

F. All friable asbestos waste shall be double-wrapped prior to transport from the site.

G. All vehicles used to transport hazardous waste must be registered with the Department of Toxic Substances Control and Department of Transportation and maintain proper registration and with vehicle at all times.

H. Trucks must have an enclosed cargo area with a storage compartment that is fully lined with a minimum of one (1) layer of 6-mil polyethylene on the walls and two (2) layers on the floor. The driver of the vehicle must stop the vehicle in a safe location at least once during each two hours or one hundred miles of travel whichever is less and inspect the contents of the shipment. At the time of inspection if any form of binding is found to be loose the driver shall immediately take action to remedy the situation for safe transportation.

I. All vehicles and containers used to transport waste are subject to inspection and approval of District prior to departure from site.
J. Contractor shall not throw bags into the truck in a way that may cause the bags to burst open.

K. Contractor shall provide at minimum one (1) day advance notification to the District when signatures are required on manifest(s). The Contractor shall ensure that the Hazardous Waste Manifest is correctly filled out. The Contractor shall give the appropriate copies to the District and shall also instruct the District in writing that they must send the appropriate copy to the Department of Toxic Substances Control.

L. If a debris box is used, the Contractor shall make all necessary arrangement with the District including obtaining all appropriate permits.

M. Contractor is responsible for all coordination with the waste disposal site and with the waste hauling company.

N. Debris box for hazardous waste shall be fully lined with a double layer of polyethylene sheeting and must be locked at all times when unattended.

O. Debris box shall be constructed with minimum 20-gauge steel with no windows or openings other than the door. The door of the container shall have a secure cover on the locking device with access to the lock only at the key-hole. Once the debris box is filled and the manifest is signed, Contractor must transport the debris box off the job site.

P. Disposal shall be in a District approved landfill that meets EPA requirements.
# TABLE I
## ASBESTOS-CONTAINING MATERIALS

<table>
<thead>
<tr>
<th>Material Description</th>
<th>Material Location</th>
<th>Waste Category</th>
<th>Asbestos Type</th>
<th>Estimated Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal System Insulation, Hard Packed Insulation on 4'-6&quot; O.D. Pipe¹</td>
<td>Pipes Associated with Boiler Above Plaster Ceiling</td>
<td>RACM</td>
<td>15% Amosite 10% Chrysotile</td>
<td>Removal as Needed to Facilitate Removal of Existing and Installation of New Boiler</td>
</tr>
<tr>
<td>Thermal System Insulation, Hard Packed Elbows on 4'-6&quot; O.D. Pipe¹</td>
<td>Pipes Associated with Boiler Above Plaster Ceiling</td>
<td>RACM</td>
<td>15% Amosite 10% Chrysotile</td>
<td></td>
</tr>
</tbody>
</table>

CH = Chrysotile, RACM = Regulated asbestos containing material (friable), Cat. I = Non-friable (note ACM must be reclassified as a RACM if rendered friable during removal), Cat. II = Category II Non-friable (note ACM must be reclassified as a RACM if rendered friable during removal), O.D. = Outside Diameter

¹Removal of ACM is not expected unless location of material is in conflict with required work.

END OF SECTION 02080
ATTACHMENT A
ASBESTOS ABATEMENT WORK PLAN OUTLINE

In accordance with the contract documents, the Contractor is required to prepare a written, site-specific Asbestos Abatement Work Plan, and submit to the District for approval prior to start of work. This plan is required for the contractor to meet Cal-OSHA requirements as well as the contract documents, and shall describe work procedures and control methods that will protect the District’s facilities and the environment.

I. Location of Work:
The work to be completed under this work plan will be completed at:
(Building name)
(Location within building)

Previous asbestos inspections or surveys have found that ACMs are present at the following locations:
(List all materials and locations to assure the District and the Contractor are aware of all hazardous materials locations)

II. Description of Work:
Describe the anticipated work scope

III. Schedule:

<table>
<thead>
<tr>
<th>Phase/Task</th>
<th>Anticipated Date(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobilization</td>
<td></td>
</tr>
<tr>
<td>Set-up of work area(s), containments</td>
<td></td>
</tr>
<tr>
<td>Abatement</td>
<td></td>
</tr>
<tr>
<td>Final Cleaning</td>
<td></td>
</tr>
<tr>
<td>Visual Inspection</td>
<td></td>
</tr>
<tr>
<td>Final Clearance (visual and air sampling)</td>
<td></td>
</tr>
<tr>
<td>Teardown</td>
<td></td>
</tr>
<tr>
<td>Demobilization</td>
<td></td>
</tr>
</tbody>
</table>

IV. Equipment and Materials
List all equipment and materials to be used, such as the following:

- HEPA Vacuums
- Negative air filtration units
- Scrapers
- Manometers
- Power saws
- Shower facilities
- Pry bars
- Airless sprayers/compressors
- Cutting shears
- Cleaning detergents
- Other hand tools
- Solvents (must be approved by District)
- Encapsulants/sealants
- Roller/brushes
- Gloves
- Disposable coveralls
- Respiratory protection
- Eye & foot protection
- Fall Protection
- Scaffolds/Ladders
- Gas/Diesel Powered Equipment
V. Crew
List all workers and supervisors with emergency contact names and phone numbers.

Clearly identify the supervisor and competent person who have authority for all safety and health.

VI. Control Measures and Work Practices

Describe in a narrative format specific work procedures, exposure/contamination controls, and engineering controls. This description should include, but not be limited to, the following:

- OSHA Class I, II, III and IV work
- Wet methods
- Negative pressure enclosure
- Glovebag removal
- Respiratory protection
- HEPA vacuums
- Mini-containments
- Solvent removal of mastic
- List other procedures

VII. Respiratory Protection and Protective Clothing/Personal Protective Equipment

List all respiratory protection including types and manufacturers which are anticipated for this project. Identify the phases of the project for which respirators will be required or likely to be required. List all personal protective equipment anticipated to be used on the project.

VIII. Decontamination/Hygiene Facilities

Identify the types and locations of decontamination or hygiene facilities to be used on this project. Specify use of disposable towels, soap, hot and cold water, and other supplies. Specify the required use of the facilities, including use of the facilities prior to eating, drinking, smoking and before leaving the project site. Describe handling or treatment of asbestos-contaminated solid waste and wastewater.

IX. Air Monitoring Data

Identify general worker air monitoring protocols to be followed on this project, including worker category classifications, frequency of monitoring, anticipated laboratory to be used for analysis, pump calibration techniques, etc. Identify the competent person responsible for conducting personal air monitoring and proposed consultant if air sampling requirements are not meet from two consecutive shifts.

X. Containment Diagram

Include a diagram (hand written is acceptable) of the containment(s) showing the containment perimeter in relation to the surrounding areas, locations of negative air machines and exhaust locations, direction of airflow, and decontamination areas.
XI. Waste

Describe how all waste on this project will be packaged, labeled, stored, transported, manifested and disposed

XII. Preparation of Asbestos Abatement Work Plan

Date Prepared and Prepared By (signature, name and title)
SECTION 02 83 00
LEAD-CONTAINING PAINT REMOVAL AND LEAD-RELATED CONSTRUCTION

PART 1 - GENERAL

1.01 SUMMARY OF LEAD-RELATED WORK

A. General. This contract involves removal of paint on the floor of the Men’s Locker Room Boiler Room with detectable quantities of lead (87 parts per million – ppm) and as needed removal of paint on pipes associated with the boiler (140 - 530 ppm). The intent of this work and the required procedures is to minimize lead emissions and contamination resulting from the removal activities and prevent exposure to building occupants, visitors, and employees.

B. Lead-Related Construction Work: The Contractor’s lead-related construction work consists of any work activity or task which results in the coincidental removal or disturbance of paints, surface finishes, or other lead containing materials. The Contractor shall determine and implement applicable OSHA worker protection requirements (8 CCR1532.1) and ensure proper clean-up and disposal of any lead wastes resulting (including water) from all lead-related construction activities including, but not limited to, the following:

1. Removal of paint from floor.
2. Removal of paint from pipes associated with boiler.
3. Demolition of painted pipes associated with boiler.

1.02 REGULATIONS

A. The Contractor shall comply with the requirements of the current issue of the following regulations and guidelines governing lead removal, lead-related construction and disposal and other applicable Federal, State, and Local Government regulations. The regulations listed herein are incorporated by reference.

   a. 29 CFR 1926, Construction Standards
   b. 29 CFR 1926.62, Lead in Construction
   c. 29 CFR 1910.94, Ventilation
   d. 29 CFR 1910.134, Respiratory Protection
   e. 29 CFR 1910.1025, Lead
   f. 29 CFR 1910.1200, Hazard Communication
   g. 29 CFR 1926.55, Gases, Vapors, Fumes, Dusts, and Mists
   h. 29 CFR 1926.57, Ventilation
   i. 40 CFR Part 50.12, Ambient Air Quality Standard for Lead
   j. 40 CFR Parts 260, 261, 262, 263, 264, 265 and 268, Hazardous Waste Management
   k. 49 CFR Parts 172, 173, 178, 179, Hazardous Material Transportation

2. California Code of Regulations:
   a. 8 CCR Division 1, Chapter 4, Subchapter 4, Construction Safety Orders
   b. 8 CCR 1532.1, Lead in Construction
   c. 8 CCR 1537, Welding, Cutting, and Heating of Coated Metals
   d. 8 CCR 5144, Respiratory Protection
e. 26 CCR Division 22, Hazardous Waste


### 1.03 DEFINITIONS

#### A. Definitions specific to the work of this section:

1. **Abatement**: Procedures for control of lead exposures to the Contractor's workers, District Employees, Public and the environment by removal, enclosure, and/or encapsulation of lead-containing paints (LCPs), Lead-Containing Construction Materials (LCCMs), and LCP coated components and proper clean up and disposal of resulting lead contaminated dust, chips, debris, and abatement wastes. Also include procedures for control of lead exposures resulting from welding or other hot work on surfaces with LCPs or residues.

2. **Action Level (AL)**: An exposure of 30 \(\mu g/m^3\) of airborne lead as an 8-hour TWA. When the AL is met or exceeded, certain protective health and safety measures are triggered per 8 CCR1532.1 Lead.

3. **Action Levels for Lead Content**: The levels of lead concentration established for each type of analysis performed, which if the lead concentration equals or exceeds the action levels specified herein, renders the material hazardous.
   
   a. **Action Level for Toxicity Characteristic Leaching Procedure (TCLP)** by EPA 200.7: Action level for TCLP is 5.0 milligrams per liter.
   
   b. **Action Level for Total Threshold Limit Concentration (TTLC)** by EPA 6010: Action level for TTLC is 1,000 milligrams per kilogram.
   
   c. **Action Level for Soluble Threshold Limit Concentration (STLC)** by EPA 200.7: Action level for STLC is 5.0 milligrams per liter.

4. **Air Monitoring**: The process of measuring the lead content of a specified volume of air in a stated period of time.

6. **Area Monitoring**: Sampling of lead concentrations within the lead control area and inside the physical boundaries which is representative of the airborne lead concentrations that may reach the breathing zone of personnel potentially exposed to lead.

7. **Authorized Visitor**: District's Representative, District's Observation Service, or a representative of any regulatory or other agency having jurisdiction over the project.

8. **Change Room and Shower Facilities**: Rooms within the designated boundary around the lead control area equipped with separate storage facilities for clean protective work clothing and equipment and for street clothes which prevent cross-contamination.

9. **Clean Room**: An uncontaminated area or room which is part of the worker decontamination enclosure system, with provisions for storage of workers' street clothes and protective equipment.

10. **Competent Person**: An onsite supervisor who has been formally trained in lead abatement and who is capable of identifying lead hazards, substandard and improper lead abatement
controls, procedures, practices, and conditions and who has sufficient experience and authority to take prompt corrective measures to eliminate them.

11. Decontamination Room: Room for removal of contaminated personal protective equipment (PPE).

12. District’s Representative: Contra Costa Community College District’s On-site Consultant.

13. District’s Observation Service: Contra Costa Community College District’s Environmental Consultant firm and its representatives retained to provide compliance oversight and monitoring at the Contractor's lead-related construction activities and work.

14. Decontamination Room: Room for removal of contaminated personal protective equipment (PPE).

15. DOP Test: Test of a High Efficiency Particulate Absolute filter (HEPA) system to verify that a minimum of 99.97% of all particles 0.3 microns in diameter are captured by the filter system test must be conducted with dioctylphthalate (DOP) test aerosol in accordance with ANSI Z9.2-1979 and Federal Standard 209-B for Class 100 air and as indicated in UL 586.

16. Eight-Hour Time Weighted Average (TWA): Airborne concentrations of lead averaged over an 8-hour workday to which an employee is exposed.

17. Hazardous Waste: Lead paint debris and materials shall be classified as hazardous due to the characteristic of toxicity, as determined by testing in accordance with the California Code of Regulations, Title 22, Division 4, Chapter 30, Article 11. Any substance(s) listed in Article 11 Section 66699 at concentrations greater than their listed Soluble Threshold Limit Concentration (STLC) or Total Threshold Limit Concentration (TTLC) may need to be further characterized by the Toxicity Characteristic Leaching Procedure (TCLP) in accordance with 40 CFR 261 and other tests prior to disposal as a hazardous waste.

18. HEPA Exhaust System: A portable local exhaust system equipped with HEPA filtration and capable of maintaining a constant, low velocity air flow into contained contaminated areas from adjacent uncontaminated areas when used as Differential Pressure Equipment. Also capable of use as local exhaust to control lead fumes generated from hot work.

19. HEPA Filter: A High Efficiency Particulate Absolute (HEPA) filter capable of trapping and retaining 99.97% of lead particles greater than 0.3 microns in diameter.

20. HEPA Vacuum Equipment: High efficiency particulate air (absolute) filtered vacuuming equipment with a filter system capable of collecting and retaining lead dust. Filters shall be certified to be of 99.97% efficiency for retaining particles of 0.3 microns diameter or larger.

21. Intact LCP Components: LCP components removed substantially intact with LCP firmly adhering to the surface. Examples are door, door trim, baseboards, etc., with intact paint. Also referred to as architectural debris with intact paint.

22. Lead-Containing Construction Materials (LCCM): Any construction material: (I) containing lead at analytically detectable levels; or (2) containing paints or other finishes with lead at levels greater than 600 ppm; or (3) consisting of paints containing lead at any level capable of posing an occupational or environmental hazard during any phase or process of the current construction or demolition project. Occupational hazards shall be considered evident...
when airborne exposure levels exceed or are likely to exceed the permissible exposure level (PEL) set by Cal/OSHA. Environmental hazards shall be considered evident when lead surface contamination levels exceed 800 ug/ft² on Work Area surfaces and/or when any of the State or Federal hazardous waste criteria for lead is met or exceeded.

23. Lead-Containing Paint (LCP): Any paint or finish coating with a lead content of 0.06% lead or greater. Cal/OSHA regulation requires assessment of employee exposure for all tasks where lead is present at this level or higher. Note: At lead levels below 0.06% exposure assessments are still required for "Trigger Tasks".

24. Lead Control Area: An enclosed area or structure with full containment to prevent the spread of lead dust, paint chips, or debris of LCP removal operations. The lead control area is isolated by physical boundaries to prevent unauthorized entry of personnel.

25. Lead-Related Waste: Paint chips, vacuum dust, and debris, used cleaning articles, waste water, plastic sheets and other disposable items which were used during the LCP abatement process and as a result are considered lead contaminated waste or assumed hazardous waste pending further characterization.

26. Lead-Impacted Construction: Any construction activity, excluding abatement, which disturbs lead or lead-containing paints or coatings and which may, under specific circumstances, result in worker and or environmental exposure.

27. Lead-Related Construction: Any construction activity or process including but not limited to lead abatement, LCCM (i.e. paint) removal lead-impacted construction, or welding on lead-containing surfaces which may expose workers, building occupants, or the environment to a release of airborne lead or surface lead contamination.

28. Mini-containment or Mini-enclosure: A small temporary enclosure constructed of impervious material (such as plastic sheeting) with at least one airlock to permit ingress and egress. The entire Work Area is contained or enclosed by this system to prevent the escape of contamination outside the Work Area.

29. Permissible Exposure Limit (PEL): An exposure to airborne lead of 50 micrograms of lead per cubic meter of air (50 μg/m³), averaged over an 8-hour workday which is referred to as a time weighted average (TWA). This is the highest level of Lead in air an employee can be permitted to be exposed to in an eight hour work day. For longer work days, the PEL is lowered and can be determined by dividing 400 by the number of hours worked per day. When the PEL is exceeded, the contractor must take action to lower the exposure level and protect the worker per 8 CCR1532.1 Lead.

30. Personal Monitoring: Sampling of lead concentrations within the breathing zone of an employee to determine the 8-hour TWA concentration in accordance with Title 8 CCR 1532.1. Samples shall be representative of the employee’s work tasks. Breathing zone shall be considered an area within a hemisphere, forward of the shoulder, with a radius of 6 to 9 inches and the center at the nose or mouth of an employee.

31. Physical Boundary: Area physically roped or partitioned off around an enclosed lead control area to limit unauthorized entry of personnel. As used in this section, “inside boundary” shall mean the same as “outside lead control area”.

Contra Costa Community College District
Contra Costa College
C-1059 Room Boiler Replacement

Lead-Containing Paint Removal and Lead-Related Construction

Section 02083 – Page 4
32. Qualified Person: The individual identified by the Contractor to be responsible for conducting air sampling, calibration of air sampling pumps, evaluating sampling results, and conducting respirator fit tests.

33. Recognized Training/Educational Institution: University, college, Steel Structures Painting Council, or a professional training organization funded by or meeting U.S. Environmental Protection Agency (EPA) and/or California Department of Public Health (DPH) training accreditation requirements for contractors performing lead-based paint or construction abatement work.

34. Removal: All herein specified procedures necessary to remove and clean-up all LCCM or LCP from the designated areas and to dispose of these materials at an acceptable site in accordance with Federal, State and Local Regulations. Removal of LCP may be by whole painted component or by removing LCP from painted components either onsite or offsite.

35. Trigger Task: Task specifically identified by the CAL/OSHA Lead standard as a potential exposure hazard requiring certain protective measures to be implemented prior to obtaining the results of an initial exposure assessment. Trigger tasks include, but are not limited to, any of the following tasks when materials or paints which contain lead are present and will be disturbed:

   a. Manual demolition
   b. Manual scraping or sanding
   c. Heat gun application
   d. Use of power cleaning tools
   e. Rivet busting
   f. Abrasive blasting
   g. Welding, cutting or torch burning

36. Visually Clean: Free of visible dust, paint chips, dirt, debris, or films removable by vacuuming or wet cleaning methods specified. For outside soil or ground cover areas, visually clean shall mean free of construction or paint debris, chips or dust distinguishable from the initial soil or ground conditions.

37. Washroom: A room or area established outside the Work Area for hand washing at minimum. Where the lead PEL is exceeded, the wash room shall contain a shower facility with hot and cold water and a water filtering system.

38. Wet Cleaning: The process of eliminating lead contamination from building surfaces and objects by using cloths, mops, or other cleaning tools which have been washed with specified detergent solutions and rinsed with clean water.

39. Work Area: A designated and controlled area in which lead abatement actions are undertaken or which may become contaminated as a result of such actions. A Work Area is a controlled area delineated at minimum by barrier tape (or similar means) and signage to restrict access to Authorized Personnel. In some instances, a higher degree of physical isolation and control may be required and specified.

1.04 SUBMITTALS AND NOTICES

A. Requirements are as set forth in the General Conditions and Division 1, for items required to be submitted under this section.
B. Product data shall include manufacturer’s product data, specifications, samples and application instructions and other pertinent information necessary.

C. Project procedure submittal for LCCM removal. Submit the following:

1. Detailed work plan for all lead-related work.

2. Detailed plan for disposal of lead-contaminated wastes generated by this work in accordance with all applicable Federal, State and Local regulations. Each separate waste stream should be addressed including name of waste stream, methods of handling, packaging, labeling, storage, transportation, and disposal or recycling. For materials to be disposed, indicate the classification of the waste (RCRA hazardous, California hazardous, or non-hazardous).

3. Method of transport of hazardous waste including name, address, EPA I.D. number, and telephone number of the transporter and the name, class, address, EPA I.D. number, and telephone number of hazardous waste site(s) to be utilized for disposal of each waste stream.

4. Proposed location, size and type of secured waste storage containers to be used. Include system that will be used for segregating different waste streams.

D. Lead Related Work Personnel Qualification and Protection Submittal. Submit the following:

1. Documentation that all employees engaged in lead-related construction activities or the "Trigger Tasks" have had the appropriate medical examinations specified in Title 8 CCR1532.1 within the prescribed time periods immediately preceding project start-up. It shall be the Contractor's responsibility to secure any and all medical and exposure information releases required for employee records in accordance with regulation. Evidence of medical requirement compliance shall include, but are not necessarily limited to:

   a. Documentation of medical surveillance examination by a licensed medical physician prior to commencement of onsite LCP-related work including baseline blood lead levels performed within the last six (6) months.

   b. Statement by the examining physician that employee is fit to wear a respirator in accordance with 8 CCR 1532.1 within the last twelve (12) months.

2. Documentation that all employees required to wear respirators has passed respirator fit tests within the past twelve (12) and has been assigned individual respirators which fit them.

3. Methods, procedures and plan for monitoring employee airborne lead exposure during lead abatement activities. Methods and procedures, at a minimum, shall comply with requirements outlined in Title 8 CCR 1532.1 Lead.

E. Lead Related Work Daily Submittal - submit the following documentation daily to the District's Observation Service or the District's Representative within 24 hours of initiation:

1. Updated training and medical certifications (as required herein) shall be provided prior to assignment of new personnel and for existing personnel prior to the stated allowable time limits or expiration dates. The allowable intervals since the last medical examination (12 months), blood lead test (6 months), or fit test (12 months), shall not be exceeded.
F. Lead Related Work Close-out Submittal - Submit the following:

1. Provide all waste characterization data, disposal manifests and records as required herein for project closeout.

1.05 DISTRICT'S OBSERVATION SERVICE

A. The District's Observation Service is authorized to provide lead removal and lead-related construction compliance observation and monitoring, testing, and technical oversight services including, but not limited to:

1. Airborne lead monitoring to evaluate the effectiveness of the Contractor's lead dust and fume control work practices, procedures, and dust containment methods. The results from this monitoring shall be used to evaluate the Contractor's personal monitoring data and to evaluate the Contractor's compliance with occupational and environmental regulations.

2. Visual inspections to verify if the Contractor has met the requirements for various phases of the lead related construction process including Work Area preparation, removal, and clean up and decontamination.

3. Wipe sampling for lead contamination to determine if the Contractor has successfully completed clean up and met the lead-related construction project decontamination completion standards.

4. Classify the typical waste streams produced by lead-related construction work according to existing California hazardous waste criteria by laboratory analysis.

B. The cost of the District's Observation Service services will normally be the responsibility of the District except under the following circumstances. The Contractor shall be responsible for the cost of the District's Observation Service for additional services provided when: (1) the Contractor's Work Area fails final clearance inspection and/or testing; or (2) additional workdays or workday hours (overtime) are required by the Contractor; or (3) the Contractor exceeds the allowable number of workdays for work completion; or (4) additional services associated with response to an uncontrolled, unauthorized hazardous materials release to the environment by the Contractor's work or operations.

1.06 CONTRACTOR'S COMPLIANCE AND QUALITY ASSURANCE

A. The Contractor shall have a Competent Person onsite at all times while lead-related construction work is in progress. The Contractor's Competent Person shall communicate and coordinate with the District's Observation Service with regard to work schedule, inspections, daily submittals, and compliance issues.

B. The Contractor's Competent Person shall:

1. Ensure the Contractor's compliance with the plans and specifications.

2. Conduct worker exposure monitoring using a Qualified Person and provide results to the District's Observation Service.
3. Ensure all of the Contractor's lead-related construction workers have current valid medical, blood-lead test, training, and respirator fit testing records where required and provide copies of all new or updated records to the District's Observation Service for approval before assigning the workers to any work within Work Areas.

4. Take timely and appropriate corrective actions to ensure compliance with the lead removal and lead-related construction specifications and to eliminate unsafe, unhealthy, and environmentally unsound work practices regardless of whether or not they are brought to the Contractor's attention by the District's Observation Service.

5. Adhere by the Consultant's initial characterization of waste for proper packaging, labeling, storage, transportation, and disposal of waste. Ensure any additional waste testing required is completed and ensure proper storage, shipping and timely disposal of all hazardous waste.

PART 2 - PRODUCTS

2.01 DISPOSAL CONTAINERS

A. Provide six (6) mil thick polyethylene sheeting, six (6) mil leak-tight polyethylene bags and other impervious containers as required by applicable regulations. All waste shall be labeled as hazardous or potentially hazardous waste unless proven otherwise by appropriate sampling and laboratory analysis.

B. All hazardous waste shipping containers shall meet applicable DOT requirements.

2.02 WARNING SIGNS AND LABELS

A. Caution Signs: To be minimum of 20 x 14 inches and includes phrase “Caution Lead Hazard, Keep Out Unless Authorized” in minimum two-inch high letters. These shall be posted at each approach to each lead or removal Work Area or area where lead-related construction is conducted.

B. CAL/OSHA Lead Warning Posters: "Warning - Lead Work Area, Poison, No Smoking or Eating" shall be posted at the entrance to each Work Area.

C. Labels: Hazardous waste shall be labeled according to Federal, State and Local regulations including, but not limited to, the California Code of Regulations, Title 22, Chapter 30 and the U.S. Department of Transportation 49 CFR Parts 172, 173, 178 and 179.

2.03 PERSONAL PROTECTIVE EQUIPMENT

A. Personal protective equipment shall comply with the requirements of Title 8 CCR 1532.1 Lead.

B. Minimum protective clothing and equipment for lead-related construction work shall consist of fire-retardant, disposable, full-body coveralls, disposable boots, gloves, or equivalent in accordance with ANSI Z41. Sleeves at wrists and cuffs at ankles shall be secure.

C. Eye protection and hard hats shall be available and worn at all times and shall conform to ANSI 87.1 and ANSI 89.1
D. The Contractor shall provide Authorized Visitors with suitable disposable protective clothing, headgear, respirators, and footwear whenever authorized visitors are required to enter the Work Area. Up to an average of ten sets per day of suitable personal protective equipment shall be made available for authorized visitors.

E. All disposable clothing worn during each work shift shall be removed prior to exiting the Work Area.

2.04 RESPIRATORS

A. Provide workers with personally-issued respiratory equipment approved by NIOSH and suitable for the lead exposure level in the Work Area. Where respirators with disposable filters are employed, provide sufficient filter for replacement as required by the worker or applicable regulation. Each respirator shall be cleaned at least daily prior to storage. The following general conditions shall apply to respirator use:

1. All respirators used must be certified by NIOSH and a respirator program shall be established and implemented.

2. Respirators shall be used whenever airborne lead concentrations will exceed, or are likely to exceed, 50 μg/m³, and for any of the Trigger Tasks which have not been demonstrated to be below the PEL by initial monitoring.

3. Prior to initial monitoring, the level of protection shall follow CAL/OSHA requirements for the specific Trigger Task. Otherwise, the respirators worn shall be selected based on measured or reasonably expected airborne concentrations of lead as follow:

   a. Half-face negative pressure air purifying respirator: up to 500 μg/m³
   b. Powered air purifying respirators: up to 50,000 μg/m³
   c. Type C supplied air respirator full face piece pressure demand mode: up to 50,000 μg/m³

4. Disposable respirators are not acceptable at any time. It is always permissible to upgrade to a more protective type of respirator.

5. During all segments of LCCM removal and clean up activities respirator usage shall be required of all persons within the designated Work Areas at all times regardless of airborne lead concentrations.

B. The Contractor is responsible for determination of airborne lead concentration levels for the Contractor’s personnel and for providing and enforcing use of appropriate personnel respirator protection based upon airborne lead concentrations and this specification.

C. Respirators shall not be removed inside the Work Area. Workers shall proceed to the designated washing area and clean the external surface of the respirator body before removing the respirator.
PART 3 - EXECUTION

3.01 GENERAL

A. Public Warning and Safety Information to be Posted

1. Post signs at all approaches to the lead Work Area entrance to read "Caution Lead Hazard - Keep Out Unless Authorized." In addition, post the CAL/OSHA Lead Hazard Warning Poster at the immediate Work Area entrance.

3.02 GENERAL PREPARATION OF LEAD-RELATED CONSTRUCTION

A. Move all non-fixed objects out of the Work Areas.

B. Pre-clean entire floor area and all horizontal surfaces inside and within five (5) feet of the Work Area using HEPA vacuums and wet methods.

C. Cover all non-moveable objects within five (5) feet of the Work Area with six (6) mil polyethylene sheeting and seal with duct tape.

D. Shut down, lock out, isolate the HVAC systems that supply, exhaust or pass through the lead control area. All heater vents and registers shall be sealed with six (6) mil plastic sheeting and duct tape.

E. Provide, at minimum, 10 foot candle illumination lighting to the Work Area.

F. Install lead caution signage at each approach to the lead-related construction Work Area and lead warning signage just outside each Work Area entry/exit point.

G. When Work Area preparation is complete, notify the District's Environmental Consultant and request an inspection. No work is to proceed in any Work Area until the general Work Area preparation materials, methods, and procedures have been inspected and approved by the District's Environmental Consultant.

3.03 WORKER PROTECTION AND DECONTAMINATION PROCEDURES

A. The Contractor shall use only workers medically-qualified and trained for lead-related work on LCCM surfaces and respirator usage.

1. Medically-qualified shall mean that the worker has had an occupational medical exam for lead exposure and respirator usage within 12 months of abatement start-up.

2. The contents of the exam must be in conformance with Title 8 CCR 1532.1.

3. The Contractor shall ensure that no worker is allowed onsite to perform lead removal or lead-related construction work until the District's Observation Service has received and approved all of the worker's medical, training and fit testing certifications.

4. Each worker and Authorized Visitor shall, upon entering the job site, enter the designated clean change room area and put on full body reusable or disposable coveralls, booties or shoe covers, respirator with HEPA filters, and gloves before entering the Work Area.
5. All tools and equipment shall be decontaminated by HEPA vacuuming and wet wiping prior to being taken out of the Work Area. Tools and equipment with inaccessible internals shall be externally wet-wiped, bagged and sealed prior to being removed from the Work Area.

6. Workers shall not eat, drink, smoke, or chew gum or tobacco at the work site within 20 feet of any Work Area as specified by the District or the District's Observation Service.

3.04 LEAD-RELATED CONSTRUCTION WORK

A. Where the Contractor's work requires removal of lead containing materials, the Contractor shall take the following precautions:

1. Protect workers in conformance with Title 8 CCR1532.1.

3.05 LEAD CONTAMINATION OF BUILDING INTERIOR OR ENVIRONMENT

A. In the event that removed LCCM, dust, or debris is not properly contained within the Work Area and thereby escapes, bypasses or penetrates established barriers, the Contractor shall stop work immediately, notify the District's Observation Service immediately, and commence clean-up and decontamination procedures as described herein or directed by the District's Observation Service.

3.06 WASTE STORAGE, SEGREGATION, AND CHARACTERIZATION

A. The Contractor shall provide for secure onsite temporary storage of LCCM related waste. Waste storage location, equipment, containers and methods are subject to prior approval by the District and the District's Observation Service.

B. All lead-related waste streams and waste categories shall be considered hazardous until proven otherwise through testing by the Contractor. If the Contractor allows different waste streams to become co-mingled, the waste will be classified as hazardous if any single component waste stream is hazardous.

C. Each lead-related waste produced shall be placed in properly segregated, labeled and sealed, impervious containers.

D. All waste containers, bags, and packaged waste shall be stored in a designated, secure, locked waste storage area and be labeled with the following information:

1. Waste Category: Lead
2. Date Accumulated: (Insert Date)
3. Name, address: (Insert Facility Name and Address)
4. Origin of waste: (Insert Waste Stream Name, i.e. Putty Debris, Vacuum Bags)

E. HEPA vacuum and wet-wipe the exterior of all waste containers prior to removing them from the Work Area to the designated storage area.
F. Each category of waste, except components with intact paint, will be tested and characterized by the using one or more of the following testing protocols:

1. CAL/EPA testing protocol: Criteria
   a. Total Threshold Limit Concentration (TTLC): 1,000 ppm lead
   b. Soluble Threshold Limit Concentration (STLC): 5 ppm lead

2. Federal-EPA testing protocol:
   a. Toxicity Characteristic Leaching Procedure (TCLP): 5 ppm lead

G. Based on the testing protocols, any waste greater than or equal to five (5) ppm lead using STLC or TCLP tests or any waste greater than or equal to 1,000 ppm lead using the TTLC test shall be considered a hazardous waste.

H. When the TTLC test result is less than 50 ppm lead, no further testing is required for that waste category sampled unless the waste stream or waste generating process changes. It will be the responsibility of the District’s Observation Service to ensure representative samples are taken by the Contractor from each category of segregated waste.

I. The Contractor shall package, store, handle, transport and dispose of each category of waste generated based on the testing results unless specific written direction is provided by the appropriate regulatory agency and reviewed and approved by the District's Observation Service. In all cases, the landfill shall be subject to approval by the District's Observation Service.

J. Upon verbal request of the District's Observation Service, the Contractor shall provide samples of lead related waste to the District's Observation Service. The Contractor shall provide samples within full view and presence of the District's Observation Service.

K. The cost of any further waste characterization or waste profiling required by the approved landfill will be the responsibility of the Contractor.

L. In the event that the District's Observation Service has determined that waste is not properly segregated, additional waste testing may be conducted of the mixed waste stream. The Contractor shall be responsible for the costs associated with this additional testing.

M. The Contractor shall bear full responsibility for additional costs associated with waste disposal and characterization if waste is not properly segregated as required herein.

3.07 HAZARDOUS WASTE DISPOSAL:

A. Site Storage and Handling:

1. The Contractor shall pay strict attention to the requirements of 40 CFR 262 and 265 and Title 22, Chapter 30 for the onsite handling of lead waste/debris, with special attention given to the time of storage, amount of material stored at any one time, use of proper containers, and personnel training. All waste shall be stored in secure, locked, labeled, sealed impervious containers and not placed on the unprotected ground. All containers shall be shielded adequately to prevent dispersion of the debris by wind or rain and shall be labeled as hazardous waste. Any evidence of improper storage shall be cause for immediate shutdown of the project until a corrective action is taken.
B. Transportation and Disposal of Waste:

1. The Contractor shall arrange to have lead containing debris transported from the site in accordance with the requirements of 40 CFR 263 and 264, and disposed of properly in accordance with 40 CFR 268, GISO 8 CCR Articles 40 and 41, 49 CFR Parts 172, 173, 178, and 179 and Title 22, Chapter 30, Articles 5, 6, 6.5 and 8.

2. The Contractor shall submit to the State and the District's Observation Service the Name, Class, and EPA I.D. Number of the waste disposal site(s) to be used for each waste category which has been determined by testing to exceed the hazardous waste thresholds provided herein.

3. The Contractor shall prepare waste shipping manifests for review by the District. Upon waste or material pickup by the selected waste transporter, manifests shall be signed by the District's Representative and copies retained to verify that all steps of the handling and disposal process have been completed properly.

4. Copies of the landfill weight tickets shall be provided to the District's Observation Service to verify the amount of waste disposed of at that site. The Contractor shall be responsible for all costs associated with transportation and disposal of all wastes generated at the result of this work.

C. No waste characterized as hazardous waste shall be stored onsite for more than 90 days prior to being properly transported for disposal.

D. All equipment, materials, and waste generated on this project must be removed offsite to their proper locations by the Contractor within 14 calendar days from removal and lead-related construction work completion.

3.08 STOP WORK ORDERS

A. The District and/or the District's Observation Service has the authority to stop work if it is determined that conditions or procedures are not in compliance with the specifications and/or applicable regulations; to the extent of potential endangerment of building users, workers, building occupants, District employees, the public or environment. The work stoppage shall remain in effect until conditions have been corrected and corrective measures have been taken to the satisfaction of the District and the District's Observation Service. All standby time and testing costs required to correct the above mentioned problems shall be borne solely at the Contractors expense. Examples of such conditions that might result in a work stoppage include but are not limited to:

1. Uncontrolled visible emissions which escape the established Work Area or breach physical protective barriers within the Work Area; and/or,

2. Ambient airborne levels of lead outside the construction area at more than 5 micrograms per cubic meters of air (µg/m³) of lead averaged over an eight-hour work period or 1.5 µg/m³ for any 24 hour period. Measurements of the ambient airborne lead levels shall be made outside the immediate Work Area and at the nearest occupied areas.

3. Unsecured Waste Storage Area and/or improper containment of lead waste or contamination.
3.09 CLOSEOUT

A. Prior to approval of payment request, the Contractor must provide the following information:

B. Copies of hazardous waste manifest, profile sheets and weight tickets for all hazardous waste and for all non-hazardous waste or waste recycle receipts.

C. All surface damages during the work must be restored to their original condition except those surfaces scheduled for demolition as part of the renovation project.

END OF SECTION
SECTION 23 52 00

BOILER AND RELATED EQUIPMENT

PART 1 — GENERAL

1.1 SUMMARY

A. Work included: Provide (furnish and install) labor, materials, equipment, testing, and start-up.
   1. High Efficiency Condensing Boiler and related equipment.
   2. Completed project will consist of a commissioned and fully operating system capable of supporting all required system loads.

1.2 RELATED SECTIONS

A. Contents of Section 00800, Supplementary General Conditions.

1.3 REFERENCES AND STANDARDS

A. References and Standards as required in this Section and other Sections of the Contract Documents.
   1. California Building Standards Code, Title 24 2013, California Code of Regulations (CCR):
      a. Part 1, Building Standards Administrative Code
      b. Part 2, California Building Code
      c. Part 3, California Electrical Code
      d. Part 4, California Mechanical Code
      e. Part 5, California Plumbing Code
      f. Part 6, California Energy Code
      g. Part 8, California Historical Building Code
      h. Part 9, California Fire Code
      i. Part 12, California Reference Standards Code
   2. General: Reference standards and guidelines include, but are not limited to, the latest adopted editions from:
      a. ADA Americans with Disabilities Act
      b. ANSI American National Standards Institute
      c. APWA American Public Works Association
      d. ASCE American Society of Civil Engineers
      e. ASHRAE Guideline, the Commissioning Process
      f. IEEE Institute of Electrical and Electronics Engineers
      g. IESNA Illuminating Engineering Society of North America
      h. ISO International Organization for Standardization
      i. NEC National Electric Code
      j. NEMA National Electrical Manufacturers Association
1.4 SUBMITTALS

A. Submittals as required in Section 00800, Supplementary General Conditions.
B. Provide documentation indicating compliance with the Bay Area Air Quality Management District (BAAQMD).

1.5 QUALITY ASSURANCE

A. Quality assurance as required below, and by other Sections of the Contract Documents.
   1. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum five years of documented experience.
   2. Installer Qualifications: Company specializing in installing and servicing the products specified in this section, with minimum five years of experience and approved by manufacturer.
   3. Provide documentation indicating compliance with the BAAQMD.
   4. All equipment shall be factory fire tested prior to shipment.
   5. Equipment must meet BAAQMD requirements. Do not bid equipment that does not comply. Installation of equipment not in compliance will result in replacement with a boiler approved by the Engineer at no additional cost to the District. If, in the opinion of the Bidder, any part of bid documents suggest anything other than BAAQMD requirements, submit bid RFI prior to bidding.

1.6 WARRANTY

A. Warranty of materials and workmanship as required by Section 00800 Supplementary General Conditions.
B. The boiler equipment shall have a standard warranty of 18 months from the date of shipment, which shall include a Manufacturer Standard 10 years from shipment non-prorated pressure vessel and HX warranty specifically for condensing operation.

PART 2 — PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers as specified in specific articles below.

2.2 HIGH EFFICIENCY CONDENSING BOILERS

A. Manufacturers:
   1. AERCO BMK 1000 ASME 160 PSI Category IV
   2. Buderus GB312-280
   3. Viessmann Manufacturing Vitrocrossal 200 CM2 Series 311
4. Or equal.
B. A new boiler is required to provide heat to the building through one air makeup unit and two air handling units and to heat the existing domestic hot water tank, which serves 7 sinks, 22 showers, 1 hot tub, and 1 washer. The boiler shall be fully modulating, fully condensing with inverse efficiency. The boiler shall be UL, FM, and CSD-1 listed, with reduced emissions per BAAQMD Regulation 9 Rule 7. The system shall include self-diagnostics, status indication, non-volatile fault memory retention, and a digital control system with 2-way MODBUS communication capabilities. A low water cut-off probe, such as the Safgard Hydrolevel 550 or equal, should be shipped loose for installation in the HWS. A 3.5 to 14 inch W.C. gas supply per UMC with a test port is required. Electrical specifications by Contractor shall list 120V/1/60Hz, with 20A dedicated protected service per UMC. Registered and certified with air quality management district including required appurtenance and boiler specialties for compliance.
C. Performance: AGA certified for minimum of 86 percent efficiency at 160F entering water temperature and 93 percent efficient at 100F entering water temperature at full fire. Unit shall have increased efficiencies at reduced loading and entering water temperatures. Capacities as indicated below in item 2.3.A.2. AHRI certified per ANSI Z 21.3.
D. Factory Test: Provide certified factory performance test and submit results.
E. Boiler Shell/ Tubes: Vertical firetube type with stainless steel tubes and tube sheets. ASME certified, labeled, stamped and designed for 160 psi water. Cast aluminum water tube, ASME certified, labeled, stamped and designed for 92 psi. Boiler mounted on concrete pad and designed to local seismic zone requirements.
F. Condensate Neutralization System: Assembly complete with sacrificial limestone chips.
G. Burner: Variable speed forced draft blower connected to venturi tube modulates fuel and air mixture for minimum of 20:1 turndown and compensate for changes in barometric pressure, temperature and humidity. Burner to be complete with gas-electric ignition, fuel train, flame management panel and required valves. Burner operates with CO emissions of less than 10 ppm at 3 percent excess O2 and operates with NOx emissions of less than 20 ppm at 3 percent excess O2 over entire turndown range. Must meet BAAQMD Reg. 9, Rule 7 requirements.
H. Boiler Trim: Safety valve ASME Section IV approved. Provide temperature and pressure gauge, low water cut-out, manual reset, operating controller, modulating controller and high limit temperature controller.
I. Gas Train: Factory package gas train to include manual shutoff valve, pressure regulating valve, dual safety gas valves, manual test valve, high-low pressure switches, manifold pressure gauge and butterfly gas valve. Gas train meets FM insurance requirements, as well as UL and CSD-1 requirements. Gas pressure available at gas train shall be verified by Contractor.
J. Boiler Controls: Panel mounted microprocessor-based operating controls and safety devices for automatic operation. Controls to include operating controller with display board, control circuit transformer, fusing, electronic flame safeguard control, burner management system, operating status and fault indicators, air switch, relays, terminal strips and blower motor.
variable speed drive. Controller to include remote communications device for boiler management interface. Controller to be CSA listed. Controller to perform following functions:

1. Electronic ignition
2. Burner sequencing and flame supervision with safe start check, pre-purge, direct spark ignition and post purge. Flame rod to prove combustion.
3. Safety shutdown with display of error.
4. Gas pressure supervision, air proving, high air pressure, high limit and frost protection.
5. Display hot water supply temperature set point with ability to reset temperature based on signal from boiler management system.

K. Boiler Management System: Microprocessor based boiler system control. System to be capable of boiler system control according to load, alarm status, rated operating parameters, and hours of operation. Controls will include local touchscreen / readout of key operating parameters and functions.

L. Boiler management system be capable of interfacing with BAS. Interface to share following information:

1. Boiler status
2. Firing rate for each boiler
3. Pump status
4. Supply and return water temperatures
5. Gas Burner: Forced draft for natural gas, adjustable combustion air supply, gas pressure regulator, gas valves, manual shut-off, intermittent spark or glow coil ignition, flame sensing device and automatic 100 percent shut off. Burner includes drawer assembly with flame retention head and diffuser, blower and motor, orifices, gas train, main safety gas valve and low-high pressure gas switches.

M. Flue Venting: UL Listed stainless steel AL29-4C and Polypropylene positive pressure venting materials. Sized and installed per manufacturer's installation in accordance with local mechanical code.

2.3 OTHER RELATED AND REQUIRED EQUIPMENT

A. Below is a detailed list of other related equipment that shall be provided by Contractor

1. (3) New main system pumps
2. (1) DHW Heat Exchanger whose adequate capacity to fulfill the loads and DHW end-uses detailed in Section 2.2 B shall be verified by the Contractor.
3. (1) Communications gateway for building automation system to read and write to the boiler and DHW suitable for BAC Net, shipped loose. Heating controls shall interface with existing HVAC controls (Andover System).
4. (1) Lot Heat Fab Saf-T Vent CI plus UL approved flue materials in accordance with manufacturer instructions per UMC Chapter 8, shipped loose
5. (1) Condensate Neutralizer, shipped loose. Manufacturer shall furnish center of gravity drawing and flooded weight information.
6. (1) Low water cut-off probe

PART 3 — EXECUTION

3.1 INSTALLATION

A. Install in accordance with manufacturer’s instructions.
B. Install boiler and provide connection of natural gas service in accordance with requirements of NFPA 54 and applicable codes. Pipe gas vents to atmosphere.
C. Install boiler on concrete housekeeping base, sized minimum 6 inches larger than boiler base.
D. Provide piping connections and accessories as required.
E. Pipe relief valves to nearest floor drain.
F. Install circulator on boiler.
G. Provide for connection to electrical service.
H. Provide boiler combustion vents and flue. Route through existing flue connections where feasible.
I. Provide all wiring between control panels and devices and unit.
J. Mount thermometer in boiler breeching within 12 inches of flue nozzle.
K. Pipe boiler drains to nearest floor drains.
L. Pipe condensate connections from boiler to neutralization system and from there to nearest floor drain.

3.2 SYSTEM STARTUP

A. Provide the services of manufacturer's field representative for starting and testing unit.
B. After installation and pipe flushing, boil out boilers using chemical and procedure as recommended and supervised by boiler manufacturer.
C. Manufacturer shall provide report verifying that boilers have been inspected, cleaned and factory fire tested.

3.3 CLOSEOUT ACTIVITIES

A. Train operating personnel in operation and maintenance of units.
B. Provide the services of manufacturer's field representative to conduct training.
C. Initial start-up supervision, combustion tuning for site conditions, and instructions of key operator shall be performed by a Manufacturer SST Certified Technician.
D. Provide: As-built drawings - 2 hard copies and a CAD set – 3 DVDs; O&M manuals for all installed equipment and systems – 2 hard copies, 3 DVDs with indexed pdf files.

3.4 BOILER SHUTDOWN

A. Remote switch: Provide 1-inch diameter turn-reset red pushbutton to disconnect power to the boiler burner controls and gas service in room. Install pushbutton under weatherproof clear, impact-resistant flip lid. Provide red phenol label "Emergency Boiler Shutdown" located above
pushbutton. Pushbutton to be mounted by latch side of each boiler room door within interior of boiler room, unless otherwise directed by Engineer. Provide electrical power and low-voltage wiring and raceway for a complete and operable installation. Provide additional relay and wiring to cut power to gas solenoid valves in boiler room not integral to boilers.

END OF SECTION