

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE _____ PAGE _____ OF _____ PAGES

2. AMENDMENT/MODIFICATION NO.		3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. <i>(If applicable)</i>
6. ISSUED BY	CODE	7. ADMINISTERED BY <i>(If other than Item 6)</i>		CODE

8. NAME AND ADDRESS OF CONTRACTOR <i>(No., street, county, State and ZIP Code)</i>	(X)	9A. AMENDMENT OF SOLICIATION NO.
		9B. DATED <i>(SEE ITEM 11)</i>
		10A. MODIFICATION OF CONTRACT/ORDER NO.
		10B. DATED <i>(SEE ITEM 11)</i>
CODE	FACILITY CODE	

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers is extended, is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:
 (a) By completing items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment your desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)***13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.**

CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: <i>(Specify authority)</i> THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES <i>(such as changes in paying office, appropriation date, etc.)</i> SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER <i>(Specify type of modification and authority)</i>

E. IMPORTANT: Contractor is not, is required to sign this document and return _____ copies to the issuing office.14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER <i>(Type or print)</i>		16A. NAME AND TITLE OF CONTRACTING OFFICER <i>(Type or print)</i>	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
<i>(Signature of person authorized to sign)</i>		<i>(Signature of Contracting Officer)</i>	

Item 14. Continued.

CHANGES TO BID OPENING DATE

1. Standard Form 1442, First Page, Item No. 13.A.- In the second line, change the bid opening date from "22 May 2003" to "3 June 2003, 2 p.m."

CHANGES TO BIDDING SCHEDULE

2. Bidding Schedule: Replace the Bidding Schedule, pages 00010-3 through 00010-7, with the accompanying new Bidding Schedule, bearing the notation "ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-03-B-0003."

CHANGES TO BIDDING REQUIREMENTS AND CONTRACT FORMS

3. Section 00100: Replace this Section with the accompanying new Section 00100 LOCAL INSTRUCTION, bearing the notation "ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-03-B-0003." The change occurs on page 00100-7, Clause 52.214-31 FACSIMILE BIDS (DEC 1989).

CHANGES TO THE SPECIFICATIONS

4. Replacement Sections:

a. Replace the following sections with the accompanying new sections of the same number and title, bearing the notation "ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-03-B-0003.":

01421	BASIC STORM WATER POLLUTION PREVENTION PLAN
08120	BLAST RESISTANT ALUMINUM DOORS AND FRAMES

b. Section 01320, PROJECT SCHEDULE: Replace this Section with the accompanying new section 01322 PROJECT SCHEDULE bearing the notation "ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-03-B-0003."

5. New Documents: At the end of this Division 13, add the accompanying Asbestos and Lead Abatement Document and Surveys, the first page bearing the title "ASBESTOS ABATEMENT" and the notation "ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-03-B-0003".

CHANGES TO THE DRAWINGS

6. Replacement Drawings.- Replace the drawings listed below with the attached new drawings(s) of the same number, bearing the notation "AM #0003":

dchv1030.cal	Seq 011	V-103	SITE DEMOLITION PLAN (BUILDING)
dchc1040.cal	Seq 016	C-104	SITE GRADING, DRAINAGE & EROSION CONTROL PLAN (PARKING-BASE CONTRACT)
dchc1050.cal	Seq 017	C-105	SITE PHASING PLAN
dchc105a.cal	Seq 017A	C-105A	SITE PHASING & EROSION CONTROL PLAN – PHASE 1 THRU 4
dchc1070.cal	Seq 019	C-107	SITE GRADING & DRAINAGE PLAN (PARKING – OPTION 1)
dchc5040.cal	Seq 023B	C-504	SITE DETAILS

dcha6120.cal	Seq 085	A-612	DOOR SCHEDULE
dchq2020.cal	Seq 096	Q-202	EQUIPMENT ELEVATIONS
dchs100.cal	Seq 114	S-100	FUEL TANK REMOVAL AND RETAINING PIER PLAN
dchs101.cal	Seq 115	S-101	FOUNDATION AND DRILLED PIER PLAN
dchs102.cal	Seq 116	S-102	FIRST FLOOR FRAMING PLAN
dche601.cal	Seq 197	E-601	ELECTRICAL SCHEMATICS

END OF AMENDMENT

LOCAL INSTRUCTION

PROJECT INFORMATION

- a. For technical information regarding plans and specifications contact Fort Worth District Office, Corps of Engineers, Fort Worth, Texas, telephone, 817/886-1677, Peter Matar.
- b. For information regarding bidding procedures or bonds, contact Vernon Vann via telephone 817/886-1049; via email vernon.d.vann@swf02.usace.armymil; or visit Room 2A19, 819 Taylor Street, Fort Worth, Texas. Collect calls not accepted.
- c. Bids will be publicly opened, at the time and date stated in the solicitation, in Room 2A20, 819 Taylor Street, Fort Worth, Texas.
- d. Hand Carried Bids: Hand carried bids prior to 30 minutes before bid opening must be deposited in the "Bid Depository," Room 2A19, 819 Taylor Street, Fort Worth, Texas. Hand carried bids within 30 minutes of the stated bid opening time should be taken to the Bid Opening Room, Room 2A20, prior to the time stated for bid opening.

GENERAL NOTICES

- a. Bidders must provide full, accurate, and complete information as required by this solicitation and its attachments. The penalty for making false statements in bids is prescribed in 18 USC 1001. (FAR 52.214-4)
- b. The Affirmative Action Requirement of the Equal Opportunity Clause may apply to any contract resulting from this IFB.

FACSIMILE BIDS

The fax number listed in the provision 52.214-31, Facsimile Bids, is available for use by all bidders and offerors on a "first come, first served" basis and is, therefore, subject to heavy use for long periods of time. Accordingly, bidders are cautioned that "last minute" bids may be received late due to heavy message traffic. The government assumes no responsibility for such late bids.

BID GUARANTEE

Reference the provision 52.228-1, Bid Guarantee. Facsimile Bonds are not acceptable.

BIDDER'S QUALIFICATIONS

Pursuant to FAR 9.1, before a bid is considered for award, the bidder will be requested by the Government to submit a statement regarding his previous experience in performing comparable work, his business and technical organization, financial resources, and plant available to be used in performing the work.

NOTICE REGARDING POTENTIAL EMPLOYMENT ON MILITARY INSTALLATION

If the work called for by this request for proposal is located on a military installation, offerors should check with post/base security to determine if potential employees will be allowed on the base/post to seek employment.

SMALL BUSINESS SUBCONTRACTING PLAN

- a. This notice applies to Large Businesses only.
- b. Reference FAR 52.219-9, SMALL BUSINESS SUBCONTRACTING PLAN. The bidder/offeror shall take into consideration only those subcontracts that he/she will award when preparing the subcontracting plan required by the FAR.
- c. The Contracting Officer will NOT make award under this solicitation without an APPROVED subcontracting plan.
- d. To be approved, the plan must contain at a minimum, the eleven elements set forth in FAR 52.219-9, paragraph (d). Pursuant to AFARS 19.705-4(d), your plan will be reviewed and scored in accordance with AFARS Appendix DD to ensure it clearly represents your firm's ability to carry out the terms and conditions set forth in the contract clauses. AFARS Appendix DD (pages 199 - 205) may be accessed via the Internet at http://acqnet.saalt.army.mil/library/AFAR/AFARS_OCTOBER_2001.pdf.
- e. Subcontracting Plan Floors. These are the minimum percentages of subcontracted dollars that will be approved. The current floors for Fiscal Year 2003 are as follows:

Small Business	57.2%
Small Disadvantages Business	8.9%
Women-Owned Small Business	8.1%
Service-Disabled Veteran-Owned Small Business	3.0%
HUBZONE small Business	3.0%
Reporting by Large Business	100%

- f. Current copies of Standard Form 294 and 295 can be found at [http://contacts.gsa.gov/webforms.nsf/\(formslist\)?openform&count=1000&category=Standard+Forms&expandview](http://contacts.gsa.gov/webforms.nsf/(formslist)?openform&count=1000&category=Standard+Forms&expandview).
- g. Contractors may post subcontracting opportunities at the Small Business Administration's SubNet: <http://web.sba.gov/subnet/index.cfm>.

AMENDMENTS TO THIS INVITATION FOR BIDS (IFB)

Pursuant to FAR 14.208, the right is reserved, as the interest of the Government may require, to revise or amend the specifications or drawings or both prior to the date set for receipt of bids. Such revisions and amendments, if any, will be announced by an amendment or amendments to this solicitation. If revisions and amendments are of a nature, which requires material changes in quantities or bid prices or both, the date set for opening of bids may be postponed by such number of days, as in the opinion of the issuing officer, will enable bidders to revise their bids. In such cases, the amendment will include an announcement of the new date for opening of bids.

All amendments to this solicitation will be made through the use of the Internet. No additional media (CD ROMS, Floppy Disks, Faxes, or paper) will be provided unless the Government determines that it is necessary. Contractors may view/download this solicitation and all amendments from the Internet after solicitation issuance at the following Internet address: <https://ebs.swf.usace.army.mil/ebs/AdvertisedSolicitations.asp>. All offerors are required to check the Ft. Worth District Contracting Division website daily to be notified of any changes to this solicitation.

ESTIMATED CONSTRUCTION COST

The estimated cost of the proposed construction is between \$10,000,000 and \$25,000,000.

SPECIAL NOTICE CONCERNING INDIVIDUAL SURETIES

The Security interest, including pledged assets as set forth in the contract clause 52.228-11, PLEDGES OF ASSETS, and executed Standard Form 28 entitled "AFFIDAVIT OF INDIVIDUAL SURETY" shall be furnished with the bond. Failure to provide with the bid bond a pledge of assets (security interest) in accordance with FAR 28.203-1 will result in rejection of a bid that is bonded by individual sureties.

NOTIFICATION OF UNSUCCESSFUL BIDDERS

- a. Federal Acquisition Regulation (FAR) Subpart 14.409-1, Award of Unclassified Contracts, requires that the contracting officer notify each unsuccessful bidder in writing or electronically within three days after contract award.
- b. This provision serves as your notice that the Ft. Worth District will post all contract award information for this solicitation electronically on the Fort Worth District Contracting Division Home Page located at <https://ebs.swf.usace.army.mil/ebs/AdvertisedSolicitations.asp>. All bidders are required to review this page daily after bid opening for award information. We will not issue unsuccessful bidder letters in writing.

PARTNERING

In order to accomplish this contract, the government is encouraging the formation of a cohesive partnership with the contractor and its subcontractors. This partnership would strive to draw on the strengths of each organization in an effort to achieve a quality project done right the first time, within budget, and on schedule. This partnership would be bilateral in make-up and participation would be totally voluntary. Any cost associated with effectuating this partnership will be agreed to by both parties and will be shared equally with no change in contract price.

PRINCIPAL CONTRACTING OFFICER

The Contracting Officer who signs this contract will be the Principal Contracting Officer for this contract. However, any Contracting Officer assigned to the Fort Worth District, contracting within his or her authority, may take formal action on this contract when a contract action needs to be taken and the Principal Contracting Officer is unavailable.

PERFORMANCE OF WORK BY CONTRACTOR

The successful bidder/offeror must furnish the Contracting Officer within 20 days after award the following a description of the work which he intends to perform with his own organization (e.g., earthwork, paving, brickwork, or roofing), the percentage of the total work this represents, and the estimated cost thereof.

**FAR PROVISIONS
CLAUSES INCORPORATED BY FULL TEXT**

52.204-6 DATA UNIVERSAL NUMBERING SYSTEM (DUNS) NUMBER (JUN 1999)

(a) Contractor identification is essential for complying with statutory contract reporting requirements. Therefore, the offeror is requested to enter, in the block with its name and address on the Standard Form 33 or similar document, the annotation "DUNS" followed by the DUNS number which identifies the offeror's name and address exactly as stated in the offer.

(b) If the offeror does not have a DUNS number, it should contact Dun and Bradstreet directly to obtain one. A DUNS number will be provided immediately by telephone at no charge to the offeror. For information on obtaining a DUNS number, the offeror, if located within the United States, should call Dun and Bradstreet at 1-800-333-0505. The offeror should be prepared to provide the following information:

- (1) Company name.
- (2) Company address.
- (3) Company telephone number.
- (4) Line of business.
- (5) Chief executive officer/key manager.
- (6) Date the company was started.
- (7) Number of people employed by the company.
- (8) Company affiliation.

(c) Offerors located outside the United States may obtain the location and phone number of the local Dun and Bradstreet Information Services office from the Internet Home Page at <http://www.customerservice@dnb.com/>. If an offeror is unable to locate a local service center, it may send an e-mail to Dun and Bradstreet at globalinfo@dnb.com.

(End of provision)

252.204-7001 COMMERCIAL AND GOVERNMENT ENTITY (CAGE) CODE REPORTING (AUG 1999)

(a) The offeror is requested to enter its CAGE code on its offer in the block with its name and address. The CAGE code entered must be for that name and address. Enter "CAGE" before the number.

(b) If the offeror does not have a CAGE code, it may ask the Contracting Officer to request one from the Defense Logistics Information Service (DLIS). The Contracting Officer will--

- (1) Ask the Contractor to complete section B of a DD Form 2051, Request for Assignment of a Commercial and Government Entity (CAGE) Code;
- (2) Complete section A and forward the form to DLIS; and
- (3) Notify the Contractor of its assigned CAGE code.

(c) Do not delay submission of the offer pending receipt of a CAGE code.

(End of provision)

52.211-2 AVAILABILITY OF SPECIFICATIONS LISTED IN THE DOD INDEX OF SPECIFICATIONS AND STANDARDS (DODISS) AND DESCRIPTIONS LISTED IN THE ACQUISITION MANAGEMENT SYSTEMS AND DATA REQUIREMENTS CONTROL LIST, DOD 5010.12-L (DEC 1999)

Copies of specifications, standards, and data item descriptions cited in this solicitation may be obtained--

(a) From the ASSIST database via the Internet at <http://assist.daps.mil/>; or

(b) By submitting a request to the--Department of Defense Single Stock Point (DoDSSP), Building 4, Section D, 700 Robbins Avenue, Philadelphia, PA 19111-5094, Telephone (215) 697-2667/2179, Facsimile (215) 697-1462.

(End of provision)

52.211-14 NOTICE OF PRIORITY RATING FOR NATIONAL DEFENSE USE (SEP 1990)

Any contract awarded as a result of this solicitation will be [] DX rated order; [X] DO rated order certified for national defense use under the Defense Priorities and Allocations System (DPAS) (15 CFR 700), and the Contractor will be required to follow all of the requirements of this regulation.

(End of clause)

52.214-1 SOLICITATION DEFINITIONS--SEALED BIDDING (JUL 1987)

"Government" means United States Government.

"Offer" means "bid" in sealed bidding.

"Solicitation" means an invitation for bids in sealed bidding.

(End of provision)

52.214-3 AMENDMENTS TO INVITATIONS FOR BIDS (DEC 1989)

(a) If this solicitation is amended, then all terms and conditions which are not modified remain unchanged.

(b) Bidders shall acknowledge receipt of any amendment to this solicitation (1) by signing and returning the amendment, (2) by identifying the amendment number and date in the space provided for this purpose on the form for submitting a bid, (3) by letter or telegram, or (4) by facsimile, if facsimile bids are authorized in the solicitation. The Government must receive the acknowledgment by the time and at the place specified for receipt of bids.

(End of provision)

52.214-4 FALSE STATEMENTS IN BIDS (APR 1984)

Bidders must provide full, accurate, and complete information as required by this solicitation and its attachments. The penalty for making false statements in bids is prescribed in 18 U.S.C. 1001.

(End of provision)

52.214-5 SUBMISSION OF BIDS (MAR 1997)

(a) Bids and bid modifications shall be submitted in sealed envelopes or packages (unless submitted by electronic means) (1) addressed to the office specified in the solicitation, and (2) showing the time and date specified for receipt, the solicitation number, and the name and address of the bidder.

(b) Bidders using commercial carrier services shall ensure that the bid is addressed and marked on the outermost envelope or wrapper as prescribed in subparagraphs (a)(1) and (2) of this provision when delivered to the office specified in the solicitation.

(c) Telegraphic bids will not be considered unless authorized by the solicitation; however, bids may be modified or withdrawn by written or telegraphic notice.

(d) Facsimile bids, modifications, or withdrawals, will not be considered unless authorized by the solicitation.

(e) Bids submitted by electronic commerce shall be considered only if the electronic commerce method was specifically stipulated or permitted by the solicitation.

52.214-6 EXPLANATION TO PROSPECTIVE BIDDERS (APR 1984)

Any prospective bidder desiring an explanation or interpretation of the solicitation, drawings, specifications, etc., must request it in writing soon enough to allow a reply to reach all prospective bidders before the submission of their bids. Oral explanations or instructions given before the award of a contract will not be binding. Any information given a prospective bidder concerning a solicitation will be furnished promptly to all other prospective bidders as an amendment to the solicitation, if that information is necessary in submitting bids or if the lack of it would be prejudicial to other prospective bidders.

(End of provision)

52.214-7 LATE SUBMISSIONS, MODIFICATIONS, AND WITHDRAWALS OF BIDS (NOV 1999)

(a) Bidders are responsible for submitting bids, and any modifications or withdrawals, so as to reach the Government office designated in the invitation for bids (IFB) by the time specified in the IFB. If no time is specified in the IFB, the time for receipt is 4:30 p.m., local time, for the designated Government office on the date that bids are due.

(b)(1) Any bid, modification, or withdrawal received at the Government office designated in the IFB after the exact time specified for receipt of bids is "late" and will not be considered unless it is received before award is made, the Contracting Officer determines that accepting the late bid would not unduly delay the acquisition; and--

(i) If it was transmitted through an electronic commerce method authorized by the IFB, it was received at the initial point of entry to the Government infrastructure not later than 5:00 p.m. one working day prior to the date specified for receipt of bids; or

(ii) There is acceptable evidence to establish that it was received at the Government installation designated for receipt of bids and was under the Government's control prior to the time set for receipt of bids.

(2) However, a late modification of an otherwise successful bid that makes its terms more favorable to the Government, will be considered at any time it is received and may be accepted.

(c) Acceptable evidence to establish the time of receipt at the Government installation includes the time/date stamp of that installation on the bid wrapper, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Government personnel.

(d) If an emergency or unanticipated event interrupts normal Government processes so that bids cannot be received at the Government office designated for receipt of bids by the exact time specified in the IFB and urgent Government requirements preclude amendment of the IFB, the time specified for receipt of bids will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal Government processes resume.

(e) Bids may be withdrawn by written notice received at any time before the exact time set for receipt of bids. If the IFB authorizes facsimile bids, bids may be withdrawn via facsimile received at any time before the exact time set for receipt of bids, subject to the conditions specified in the provision at 52.214-31, Facsimile Bids. A bid may be withdrawn in person by a bidder or its authorized representative if, before the exact time set for receipt of bids, the identity of the person requesting withdrawal is established and the person signs a receipt for the bid.

(End of provision)

52.214-18 PREPARATION OF BIDS--CONSTRUCTION (APR 1984)

(a) Bids must be (1) submitted on the forms furnished by the Government or on copies of those forms, and (2) manually signed. The person signing a bid must initial each erasure or change appearing on any bid form.

(b) The bid form may require bidders to submit bid prices for one or more items on various bases, including--

(1) Lump sum bidding;

(2) Alternate prices;

(3) Units of construction; or

(4) Any combination of subparagraphs (1) through (3) above.

(c) If the solicitation requires bidding on all items, failure to do so will disqualify the bid. If bidding on all items is not required, bidders should insert the words "no bid" in the space provided for any item on which no price is submitted.

(d) Alternate bids will not be considered unless this solicitation authorizes their submission.

(End of provision)

52.214-19 CONTRACT AWARD--SEALED BIDDING--CONSTRUCTION (AUG 1996)

(a) The Government will evaluate bids in response to this solicitation without discussions and will award a contract to the responsible bidder whose bid, conforming to the solicitation, will be most advantageous to the Government, considering only price and the price-related factors specified elsewhere in the solicitation.

(b) The Government may reject any or all bids, and waive informalities or minor irregularities in bids received.

(c) The Government may accept any item or combination of items, unless doing so is precluded by a restrictive limitation in the solicitation or the bid.

(d) The Government may reject a bid as nonresponsive if the prices bid are materially unbalanced between line items or subline items. A bid is materially unbalanced when it is based on prices significantly less than cost for some work and prices which are significantly overstated in relation to cost for other work, and if there is a reasonable doubt that the bid will result in the lowest overall cost to the Government even though it may be the low evaluated bid, or if it is so unbalanced as to be tantamount to allowing an advance payment.

(End of provision)

52.214-31 FACSIMILE BIDS (DEC 1989)

(a) Definition. "Facsimile bid," as used in this solicitation, means a bid, modification of a bid, or withdrawal of a bid that is transmitted to and received by the Government via electronic equipment that communicates and reproduces both printed and hand-written material.

(b) Bidders may submit facsimile bids as responses to this solicitation. These responses must arrive at the place and by the time, specified in the solicitation.

(c) Facsimile bids that fail to furnish required representations or information or that reject any of the terms, conditions, and provisions of the solicitation may be excluded from consideration.

(d) Facsimile bids must contain the required signatures.

(e) The Government reserves the right to make award solely on the facsimile bid. However, if requested to do so by the Contracting Officer, the apparently successful bidder agrees to promptly submit the complete original signed bid.

(f) Facsimile receiving data and compatibility characteristics are as follows:

(1) Telephone number of receiving facsimile equipment: (817) **886-6408 (AM#3)**.

(2) Compatibility characteristics of receiving facsimile equipment (e.g., make and model number, receiving speed, communications protocol): Digital Facsimile Transceiver; Make: Lanier; Model: 2230; Compatibility: CCITT Group 2 and 3; Communications: Half Duplex.

(g) If the bidder chooses to transmit a facsimile bid, the Government will not be responsible for any failure attributable to the transmission or receipt of the facsimile bid including, but not limited to, the following:

(1) Receipt of garbled or incomplete bid.

(2) Availability or condition of the receiving facsimile equipment.

(3) Incompatibility between the sending and receiving equipment.

(4) Delay in transmission or receipt of bid.

(5) Failure of the bidder to properly identify the bid.

(6) Illegibility of bid.

(7) Security of bid data.

(End of clause)

52.214-34 SUBMISSION OF OFFERS IN THE ENGLISH LANGUAGE (APR 1991)

Offers submitted in response to this solicitation shall be in the English language. Offers received in other than English shall be rejected.

(End of provision)

52.214-35 SUBMISSION OF OFFERS IN U.S. CURRENCY (APR 1991)

Offers submitted in response to this solicitation shall be in terms of U.S. dollars. Offers received in other than U.S. dollars shall be rejected.

(End of provision)

52.232-38 Submission of Electronic Funds Transfer Information with Offer (May 1999)

The offeror shall provide, with its offer, the following information that is required to make payment by electronic funds transfer (EFT) under any contract that results from this solicitation. This submission satisfies the requirement to provide EFT information under paragraphs (b)(1) and (j) of the clause at 52.232-34, Payment by Electronic Funds Transfer--Other than Central Contractor Registration.

- (1) The solicitation number (or other procurement identification number).
- (2) The offeror's name and remittance address, as stated in the offer.
- (3) The signature (manual or electronic, as appropriate), title, and telephone number of the offeror's official authorized to provide this information.
- (4) The name, address, and 9-digit Routing Transit Number of the offeror's financial agent.
- (5) The offeror's account number and the type of account (checking, savings, or lockbox).
- (6) If applicable, the Fedwire Transfer System telegraphic abbreviation of the offeror's financial agent.
- (7) If applicable, the offeror shall also provide the name, address, telegraphic abbreviation, and 9-digit Routing Transit Number of the correspondent financial institution receiving the wire transfer payment if the offeror's financial agent is not directly on-line to the Fedwire and, therefore, not the receiver of the wire transfer payment.

(End of provision)

52.233-2 SERVICE OF PROTEST (AUG 1996)

(a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from:

Chief, Contracting Division
U.S. Army Engineer District, Fort Worth
819 Taylor Street, Room 2A19
Fort Worth, TX 76102-0300

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

(End of provision)

52.236-27 SITE VISIT (CONSTRUCTION) (FEB 1995)

- (a) The clauses at 52.236-2, Differing Site Conditions, and 52.236-3, Site Investigations and Conditions Affecting the Work, will be included in any contract awarded as a result of this solicitation. Accordingly,

- offerors or quoters are urged and expected to inspect the site where the work will be performed.
- (b) At the present time there is no plan to hold an organized site visit for this project. The site location is reflected in the drawings and interested parties may secure entry onto the base at the pass office. The site location is in an open area easily viewed from the street. Should any interested party incur any difficulty with entry onto the base for the purpose of viewing this project site you may contact the following person during the weekdays between 0830 and 1500 hours.

Name: Mr. Frank Meleton, Project Engineer
Address: U.S. Army Engineer District, Fort Worth
Attn: CESWF-AO-C
P.O. Box 757
Killeen, TX 76540-0757
Telephone: 254-532-3047, Ext 5204
(End of Provision)

End of Section 00100

SECTION 01322

PROJECT SCHEDULE
05/2003

PART 1 GENERAL

1.1 SCOPE

This section covers requirements for project schedules (Contractor Prepared Network Analysis System (NAS), complete).

1.2 GENERAL

The progress chart to be prepared by the Contractor pursuant to the CONTRACT CLAUSE titled "Schedule For Construction Contracts" shall consist of a network analysis system (NAS) as described below. The scheduling of construction is the responsibility of the Contractor and contractor management personnel shall actively participate in development of the network logic diagram so that intended sequences and procedures are clearly understood. The Contractor shall provide the NAS in either Arrow Diagram Method (ADM) or Precedence (PDM) format. The network diagram required for each submission of the NAS shall depict the order and interdependence of activities and the method by which the work is to be accomplished.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Network Diagram; GA-RE

Reports; GA-RE

PART 2 PRODUCTS

2.1 NETWORK ANALYSIS SYSTEM

2.1.1 Preliminary Network Diagram

The Contractor shall submit within 10 calendar days of the NOTICE-TO-PROCEED a preliminary NAS schedule covering the first 90 days of operation. The preliminary schedule shall be used for payment not to exceed 60 days after notice to proceed.

2.1.2 Initial Detailed NAS Network Diagram

The initial NAS shall be submitted within 40 calendar days after notice to proceed. It shall provide (1) a reasonable sequence of activities which represent work through the entire project and (2) a reasonable level of

activity detail. Duration ranges for work activities shall generally be between three and twenty-two workdays. The schedule interval shall extend from notice to proceed through the contract duration specified in SPECIAL CLAUSE titled "Commencement, Prosecution, and Completion of Work" to contract completion date. Completion of the last activity in the schedule shall be constrained by the contract completion date such that if the projected finish of the last activity falls after the contract completion, then the float calculation shall reflect negative float. Interim milestone dates specified shall be so constrained also. Progress payments will be withheld until the Contractor submits an approvable schedule. Since it is understood that the Contractor's logic and duration may change between the issuance of the Preliminary NAS and the Initial Detailed NAS, the Contracting Officer shall require a complete and comprehensive accounting of all modifications made to the Preliminary NAS to produce the Initial, Detailed NAS.

2.1.2.1 Format of the Initial Detailed NAS

a. Activity Identifier

The field known as the activity number or activity ID shall consist of numeric or alpha/numeric entries. Each major building, area or feature of the work shall have blocks of numbers set aside to identify each such feature. These numbers shall generally be ascending with procurement having the lower number sets, with ascending sets of numeric identifiers being applied to activities in the schedule by area, feature or building. Skip numbering shall be used in minimum increments off tens. The smallest set of numeric activity identifiers shall be used, with no spaces, left zero fills or other symbols to be used. The purpose of this requirement is to provide for simple, ascending activity numbers which will facilitate the computerized review and on-going use of the NAS database. The use of CSI codes, special account codes, identifiers or other matrices which the Contractor may wish to use, or which are otherwise required herein, shall be input using data code fields other than the activity number/activity ID field.

b. Building, Area or Feature Codes

At least one alpha/numeric field in the scheduling software shall be used to provide a simple and clear identification of the building, area or feature which is represented by the activity.

c. Artificial Schedule Constraints

The NAS shall contain no set dates other than those shown in the Contract. The Contractor shall review with the Contracting Officer's Representative each proposed set date which the Contractor which the Contractor proposes to include in the NAS and shall receive explicit approval for each closed date used in the NAS. The use of artificial float constraints such as "Zero Free Float" or "Zero Total Float" options are generally prohibited. The use of such features may be considered if fully justified by the Contractor and explicitly approved by the Contracting Officer's Representative prior to its use in the NAS.

d. Other Software Options

If the Contractor utilizes a scheduling software system which provides updating options such as "Retained Logic" and "Progress Override" the Contractor shall use the "Retained Logic" option for all updates to the

NAS. If the Contractor desires to modify the approved NAS logic to correct out of-sequence work, the Contractor shall make a request in writing to the Contracting Officer defining the desired modification(s). No unilateral modifications shall be made by the Contractor to the approved NAS.

e. Resources

The Contractor shall include in the NAS all major trades and equipment items required to construct the Project. The trades and major equipment items shall be identified by a unique code and the quantity of the resources shall be input into the scheduling software's "resource" fields. Each Work activity shall have the planned resources identified as described above by specific trade type and/or equipment type. The resource file library and code listing shall be submitted by the Contractor with the Initial, Detailed NAS, along with resource usage curves for each, individual resource code, shown by early and late usage as produced by the scheduling software database.

f. Negative Lags

Negative lags shall not be used in the Contractor's NAS. If the Contractor using PDM scheduling chooses to show-overlapping duration between related activities, start-to-start and finish-to-finish relationships shall be used, with appropriate and justifiable lags. If ADM is used by the Contractor, dummies shall have duration of zero.

g. Dangles

The only "dangling" activities in the network shall be the beginning activity such as "notice of award" or "notice to proceed" and the ending activity such as "contract complete." A start and/or end "dangle" is defined as an activity whose start is restrained only by the start date of the project or subproject, and/or whose finish is restrained only by the end date of the overall project or subproject.

h. Anticipated Weather

The Contractor's "holiday" or "non-work day" file in the scheduling database shall have the anticipated lost weather days as listed herein input as non work days for each month of the calendar. This anticipated weather impact calendar should only be applied to activities which are subject to weather related delays.

2.1.3 Network Diagram

The diagram shall show a continuous activity flow from left to right. The diagrams shall be 36x48, minimum size unless explicitly modified by the Contracting Officer. The diagrams shall be legible, shall have activities "grouped" or "banded" by Project area, building or feature, and shall contain the following information:

- a. Activity number
- b. Activity description
- c. Duration in workdays
- e. Total float in workdays
- f. Logic ties
- h. Clearly marked critical path (s)
- i. "Banded" or "grouping" identification on each sheet
- j. Composed and/or milestone dates

k. Scale of sufficiently large scale to render a legible diagram Dates shall be shown on the diagram for start of the project, any milestones required by the contract, and contract completion. The critical path shall be clearly identified. Submittal, review, procurement, fabrication, delivery, installation, start-up, and testing of special or long lead-time materials and equipment shall be included in the NAS diagram. Government and other agency activities shall be shown. These include but are not limited to: notice to proceed, approvals, inspections, and utility tie in for phasing requirements.

2.1.4 Reports

The Contractor shall submit a reproducible and two copies of the network diagram at the initial and quarterly updates and three copies of the specified reports at the initial and every monthly update throughout the life of the project. The format of the reports shall contain: Activity Number(s), Activity description, Original Duration, Remaining Duration, Early Start date, Late Start date, Early Finish date, Late Finish date, and Total Float. The three report formats are listed below.

2.1.4.1 Logic Report

This report shall list all activities sorted according to activity number. Activities shall be printed in ascending order of activity number. Any standard report which lists all activities including restraints in this manner is acceptable. This report shall include the detail information related stated above and shall include and display the preceding and succeeding activities.

2.1.4.2 Criticality Report

This report shall list all activities sorted in ascending order of total float. Activities which have equal values of total float shall be listed in ascending order of Early Starts.

2.1.4.3 Cost of Earned Value Report

Cost and/or Earned Value reports shall contain Estimated Earned Value, Percent Complete (based on cost), and Earnings to Date. This report shall compile Contractor's total earned value on the project from the Notice to Proceed until the most recent monthly progress meeting based on agreed progress between the Contractor and the Contracting Officer. Provided that the Contractor has submitted a complete schedule update, this report shall serve as the basis for determining Contractor payment. When the Bidding Schedule includes bid item(s), activities shall be grouped by bid item and then sorted by activity number(s). This report shall subtotal all activities in a bid item and provide a bid item percent complete and then total all bid items to provide a total project percent complete.

2.1.4.4 Summary Network Diagram

A summary Bar Chart Network shall be submitted monthly. The summary bar chart shall be limited to 150 activities.

2.2 MONTHLY MEETINGS

A monthly meeting shall be conducted on site attended by the Contractor's project manager and appropriate Contracting Officer's representatives. During this meeting the Contractor shall describe, on an activity by

activity basis, all proposed revisions and adjustments to the NAS required to reflect the current status of the project. The Contracting Officer's representative shall approve activity progress, proposed revisions and adjustments, and the use of any optional calculations. The following shall be addressed:

a. Actual Start and Finish Dates

The actual start and actual finish dates for all activities in progress or completed as appropriate.

b. Estimated Remaining Duration

The estimated remaining duration for each activity in progress. Progress calculations must be based on remaining duration for each activity and be in an approved calculation mode. The Estimated Remaining Duration shall not be tie-to the Earned Value.

c. Earned Value

The earned value for each activity started but not completed. Payment shall be based on cost of completed activities plus cost to date of in progress activities.

d. Logic Changes

All logic changes pertaining to change orders, on which a Notice to Proceed has been issued, Contractor proposed changes in activity sequence or duration, and corrections to schedule logic to avoid out of sequence progress. All logic changes shall be submitted for approval prior to their insertion into the approved NAS.

2.3 UPDATE OF NAS

Following the monthly progress meeting, a complete update of the NAS based on the approved progress, revisions, and adjustments agreed upon at the meeting shall be computed and submitted not later than 5 working days after the meeting. This update shall be subject to approval of the accurate entry of information agreed upon at the meeting. Actual starts and finishes, remaining duration, or percent complete shall not be automatically updated by default dates contained in many CPM scheduling software systems, except that early start for an activity which could start prior to the update. Activities which have posted progress without predecessor activities being completed shall be allowed only on a case by case approval of the Contracting Officer's representative who may require logic changes to correct all such out of sequence progress. No unilateral modifications shall be made to the approved NAS without the explicit approval of the Contracting Officer.

2.4 NARRATIVE REPORT

A narrative report shall be provided with each update of the NAS. This report shall include (1) a description of activities and progress along the four most critical paths, (2) a description of a current and anticipated problem areas or delaying factors and their impact, and (3) an explanation of the corrective actions taken. Only modifications that have been authorized and approved by the Contracting Officer shall be included in the schedule sub-mission. The narrative report shall specifically reference, on an activity by activity basis all changes made since the previous period

and relate each change to documented, approved schedule changes. This report, along with the progress update above, shall provide the basis for the Contractor's progress payment request, and the Contractor shall be entitled to progress payments determined from the currently approved NAS update. If the Contractor fails or refuses to furnish the information and NAS data which, in the sole judgment of the Contracting officer, is necessary for verifying the Contractor's progress, the Contractor shall be deemed not to have provided a progress payment estimate and progress payment will not be made.

2.5 TIME IMPACT "FRAGNET" ANALYSIS

Within twenty calendar days from the notice to proceed of a change, or from the start of the impact of a mutually recognized changed condition, whichever event occurs first, the Contractor shall submit a detailed Time Impact "fragnet" analysis to the Contracting Officer. The Time Impact "fragnet" will clearly demonstrate all activities associated with the changed condition, including estimated durations, costs, resources and proposed tie-in points of the "fragnet" into the approved NAS. Should the Contractor fail to submit the "fragnet" analysis within the expired time period as specified above, it shall be mutually agreed between the Contractor and the Contracting officer that the changed condition has no time impact. The foregoing shall not be construed to limit the Contracting Officer's authority to issue unilateral modifications to the Contract as provided for herein.

2.6 EXTENSION OF CONTRACT COMPLETION DATE

In the event the Contractor requests an extension of the contract completion date for any other contractual reason, he shall furnish such justification as the Contracting Officer may deem necessary for a determination of the Contractor's right to an extension of time under the provisions of the contract. In such event, the schedule revisions must clearly display that the Contractor has used in full all available float time for the work involved with the request. Actual delays that are found to be caused by the Contractor's own actions or lack of action, and which result in the extension of the projected contract completion date, shall not be cause for extension of the contract completion date. The Contracting Officer may find cause to extend the contract completion date under the contract in the absence of a request by the Contractor when, in the Contracting Officer's judgment, it is equitable.

2.7 EXTENSIONS OF TIME

Total Float is defined as the difference in time between the early start date and the late start date, or the difference between the early finish date and the late finish date. Total Float available in the schedule at any time shall not be considered as for exclusive use by either the Contractor or the Government. Extensions of time for performance of work required under CONTRACT CLAUSES titled, "Changes," "Differing Site Conditions," "Default (Fixed Price Construction)," or "Suspension of Work" will be granted only to the extent that equitable time adjustments for affected activities exceed the total float along their paths.

2.8 DATA DISC

A data disc shall be provided as required by paragraph: Scheduling System Data Exchange Format. The automated scheduling system utilized by the Contractor shall be capable of providing all requirements of this

specification. As many data disk(s) as required in paragraph: Scheduling System Data Exchange Format shall be provided with the Preliminary Schedule, Initial schedule, Monthly Updates, and all NAS revisions or requests for revision.

2.9 SCHEDULING SYSTEM DATA EXCHANGE FORMAT

2.9.1 Application of This Provision

The data exchange format provides a platform for exchanging scheduling and planning data between various software systems. The Data Exchange Format shall allow project management systems to share information with other programs, e.g. Resident Management System (RMS). Scheduling information shall be transferred from the Contractor's project management system to the Government as described in this section.

2.9.2 Electronic Data Exchange File Required for All Schedule Submissions

2.9.2.1 Schedule Data

The Contractor shall provide schedule data in the Data Exchange Format for each Preliminary, Initial, Monthly NAS Updates, and requests for time extensions or change proposals. The Contractor's failure to provide schedule data in the exact format described herein shall result in disapproval of the entire schedule submission.

2.9.2.2 Transfer of Schedule Data

The entire set of schedule data shall be transferred at every exchange of scheduling data. Thus, for updates to existing projects, the data exchange file shall contain all activities that have not started or are already complete as well as those activities in progress.

2.9.3 Data Transfer Responsibility

The Contractor shall be responsible for Electronic Data Exchange File data that may have been lost or destroyed during transit between the Contractor and the Contracting Officer. If Electronic Data Exchange File data is damaged during transit, then the Contractor shall provide the Contracting Officer with new Electronic Data Exchange File within two (2) working days of notification by the Contracting Officer.

2.9.4 Data Consistency Responsibility

The Contractor shall be responsible for the consistency between the Electronic Data Exchange File and printed reports which accompany schedule submissions. If Electronic Data Exchange File and printed reports which accompany schedule submission differs, in any way, from the printed schedule reports or standard activity coding, then the Contracting Officer shall disapprove the entire schedule submission. The Contractor shall provide the Contracting Officer with a completely revised, and consistent, schedule submission within 24 hours of notification of inconsistency by the Contracting Officer.

2.9.5 Creating the Electronic Data Exchange File

The Contractor shall have the option of creating the electronic data exchange file by one of the three following methods.

2.9.5.1 Commercially Available Software

The Contractor shall be required to secure software that meets this requirement. Many commercially available scheduling systems support the standard data exchange format. Under this option the Contractor shall produce his own data translation software. This software shall take the information provided by the Contractor's scheduling system and reformat the data into the Data Exchange Format.

2.9.5.2 Interface Program

Under this option the Contractor shall produce his own data translation software. This software shall take the information provided by the Contractor's scheduling system and reformat the data into the Data Exchange Format.

2.9.5.3 Manual Methods

Under this option the Contractor shall manually reformat his scheduling system report files or create all necessary data by manually entering all data into the Data Exchange Format.

2.9.6 File Transfer Medium

All required data shall be submitted on 3 1/2" 5.25 diskettes), formatted to hold 1.44 MB of data, under the MS-DOS version 5.0 (or higher) operating system. Higher data densities and other operating systems may be approved by the Contracting Officer if compatible with the Government's computing capability.

2.9.7 File Type and Format

The data file shall consist of a 132 character, fixed format, "ASCII" file. Text shall be left justified and numbers shall be right justified in each field. Data records must conform, exactly, to the sequence column position, maximum length, mandatory values, and field definitions described below to comply with this standard data exchange format. Unless specifically stated, all numbers shall be whole numbers. All data columns shall be separated by a single blank column.

2.9.8 Electronic Data Exchange File Name

The Contractor shall insure that each file has a name related to either the schedule data date, project name, or contract number. No two Electronic Data Exchange Files shall have the same name through out the life of this contract. The Contractor shall submit his file naming convention to the Contracting Officer for approval. In the event that the Contractor's naming convention is disapproved, the Contracting Officer shall direct the contract to provide files under a unique file naming convention.

2.9.9 Disc Label

The Contractor shall affix a permanent exterior label to each diskette submitted. The label shall contain the type of schedule (Preliminary Initial, Update, or Change), full project number, project name, project location, data date, name and telephone number of the Contractor's scheduler, and the MS-DOS version used to format the diskette.

2.9.10 Standard Activity Coding Dictionary

The Contractor shall submit, with the initial schedule submission, a consistent coding scheme that shall be used throughout the project for the Activity Codes shown in paragraph: Activity Records of this section. The coding scheme submitted shall demonstrate that each code shall only represent one type of information through the duration of the contract. Incomplete coding of activities or an incomplete coding scheme shall be sufficient for disapproval of the schedule.

2.10 DATA EXCHANGE FILE FORMAT ORGANIZATION

The Data Exchange File Format shall consist of the following records provided in the exact sequence shown below:

- Paragraph Record
- Reference Description Remarks
- Volume Record First Record on Every Data Disk
- Project ID Record Second Record
- Calendar Record(s) Minimum of One Record Required
- Holiday Record(s) Optional Record
- Activity Record(s) Mandatory Record
- Precedence Records Mandatory for Precedence Method
- Unit Cost Record(s) Optional for Unit Cost Projection
- Progress Record(s) Mandatory for Updates
- File End Record Last Record of Data File

2.10.1 Record Descriptions

2.10.1.1 Volume Record

The Volume Record shall be used to control the transfer of data that may not fit on a single disk. The first record in every disk used to store the data exchange file shall contain the Volume Record. The Volume Record shall sequentially identify the number of the data transfer disk(s). The Volume Record shall have the following format:

Column Max Required.

Description	Position Len.	Value	Type	Just
RECORD IDENTIFIER	1- 4	4	VOLM	Fixed
DISK NUMBER	6- 7	2	Number	Right

a. The RECORD IDENTIFIER is the first four characters of this record. The required value for this field shall be "VOLM".

b. The DISK NUMBER field shall identify the number of the data disk used to store the data exchange information. If all data may be contained on a single disk, this field shall contain the value of "1". If more disks are required, then the second designated with a "3", and so on. Identification of the last data disk shall not be accomplished with the Volume Record. Identification of the last data disk is accomplished in the PROJECT END RECORD (see paragraph: File End Record).

2.10.1.2 Project ID Record

The Project ID Record is the second record of the file and shall contain project information in the following format:

Column	Max. Required				
Description	Position	Len.	Value	Type	Just
RECORD IDENTIFIER	1- 4		4	PROJ	Fixed
DATA DATE	6- 12		7 -	ddmmmyy	See(2)
PROJECT IDENTIFIER	14- 17		4 -	Alpha	Left
PROJECT NAME	19- 66		48 -	Alpha	Left
CONTRACTOR NAME	68- 103		36 -	Alpha	Left
ARROW OR PRECEDENCE	105		1	A,P	Fixed
CONTRACT NUMBER	107- 112		6 -	Alpha	Left
PROJECT START	114- 120		7 -	ddmmmyy	Filled
PROJECT END	122- 128		7	ddmmmyy	Filled

a. The RECORD IDENTIFIER is the first four characters of this record. The required value for this field shall be "PROJ". This record shall contain the general project information and indicates which scheduling method shall be used.

b. The DATA DATE is the date of the schedule calculation. The abbreviation "ddmmmyy" refers to a date format that shall translate a date into two numbers for the day, three letters for the month, and two numbers for the year. For example, March 1, 1999 shall be translated into 01MAR99. This same convention for date formats shall be used throughout the entire data format. To insure that dates are translated consistently, the following abbreviations shall be used for the three character month code:

Abbreviation	Month
JAN	January
FEB	February
MAR	March
APR	April
MAY	May
JUN	June
JUL	July
AUG	August
SEP	September
OCT	October
NOV	November
DEC	December

c. The PROJECT IDENTIFIER is the maximum of four-character abbreviation for the schedule. These four characters shall be used to uniquely identify the project and specific update as agreed upon by the Contractor and Contracting Officer. When utilizing scheduling software these four characters shall be used to select the project. Software manufacturers' shall verify that data importing programs do not automatically overwrite other schedules with the same PROJECT IDENTIFIER.

d. The PROJECT NAME field shall contain the name and location of the project edited to fit the space provided. The data appearing here shall appear on scheduling software reports. The abbreviation "Alpha" used throughout paragraph six, RECORD DESCRIPTIONS, refers to an Alphanumeric" field value.

e. The CONTRACTOR NAME field shall contain the Construction

Contractor's name edited to fit the space provided.

f. The ARROW OR PRECEDENCE field shall indicate which method shall be used for calculation of the schedule. The value "A" shall signify the Arrow Diagramming Technique. The value "P" shall signify the Precedence Diagramming Technique. The ACTIVITY IDENTIFICATION field of the Activity Record shall be interpreted differently depending on the value of this field (see paragraph 2.10.1.6 b). The Precedence Record shall be required if the value of this field is "P" (see paragraph 2.10.1.6).

g. THE CONTRACT NUMBER field shall directly identify the contract for the project. For example, a complete Government construction contract number, "DACA41-98-C-0001" shall be entered into this field as "980001".

h. The PROJECT START shall contain the date that the project will start or has started. On Government construction projects, this date is the date that the construction Contractor acknowledges the Notice to Proceed.

i. The PROJECT END shall contain the data that the contract must complete on or prior to. On Government construction projects, this date is the PROJECT START plus the contract period, typically expressed in a specific number of calendar days.

2.10.1.3 Calendar Record

The Calendar Record(s) shall follow the Project Identifier Record in every data file. A minimum of one Calendar Record shall be required for all data exchange activity files. The format for the Calendar Record shall be as follows:

Column Max Required.

Description	Position	Len.	Value	Type	Just.
RECORD IDENTIFIER	1-4		4	CLDR	Fixed
CALENDAR CODE	6-6		1 -	Alpha.	Filled
WORKDAYS	8-14		7	SMTWTFS	See (3)
CALENDAR DESCRIPTION	16-45		30	Alpha.	Left

a. The RECORD IDENTIFIER shall always begin with "CLDR" to identify it as a Calendar Record. Each Calendar Record used shall have this identification in the first four columns.

b. The CALENDAR CODE shall be used in the activity records to signify that this calendar is associated with the activity.

c. The WORKDAYS field shall contain the work week pattern selected with "Y" for Yes, and "N" for No. The first character shall be Sunday and the last character Saturday. An example of a typical five-(5) day workweek would be NYYYYN. A seven-(7) day workweek would be YYYYYY.

d. The CALENDAR DESCRIPTION shall be used to briefly explain the calendar used. optional Holiday Record(s) shall follow the Calendar record(s). The Holiday Record shall be used to designate specific non-work days for a specific Calendar. More than one Holiday Record may be used for a particular calendar. If used, the following format shall be followed:

Column Max. Required.

Description	Position	Len.	Value	Type	Just.
RECORD IDENTIFIER	1-	4	4	HOLI	Fixed
CALENDAR CODE	6-	6	1 -	Alpha.	Filled
HOLIDAY DATE	8-	14	7 -	ddmmmyy	Filled
HOLIDAY DATE	16-	22	7 -	ddmmmyy	Filled
HOLIDAY DATE	24-	30	7 -	ddmmmyy	Filled
HOLIDAY DATE	32-	38	7 -	ddmmmyy	Filled
HOLIDAY DATE	40-	46	7 -	ddmmmyy	Filled
HOLIDAY DATE	48-	54	7 -	ddmmmyy	Filled
HOLIDAY DATE	56-	62	7 -	ddmmmyy	Filled
HOLIDAY DATE	64-	70	7 -	ddmmmyy	Filled
HOLIDAY DATE	72-	78	7 -	ddmmmyy	Filled
HOLIDAY DATE	80-	86	7 -	ddmmmyy	Filled
HOLIDAY DATE	88-	94	7 -	ddmmmyy	Filled
HOLIDAY DATE	96-	102	7 -	ddmmmyy	Filled
HOLIDAY DATE	104-	110	7 -	ddmmmyy	Filled
HOLIDAY DATE	112-	118	7 -	ddmmmyy	Filled
HOLIDAY DATE	120-	126	7 -	ddmmmyy	Filled

a. The RECORD IDENTIFIER shall always begin with "HOLI" and shall signify an Optional Holiday Calendar is to be used.

b. The CALENDAR CODE indicates which work week calendar the holidays shall be applied to. More than one HOLI record may be used for a given CALENDAR CODE.

c. The HOLIDAY DATE is to be used for each date to be designated as a non-work day.

2.10.1.4 Activity Records

Activity Records shall follow any Holiday Record(s). If there are no Holiday Record(s), then the Activity Records shall follow the Calendar Record(s). There shall be one Activity Record for every activity in the network. Each activity shall have one record in the following format:

Column Max. Required.

Description	Position	Len.	Value	Type	Just.
RECORD IDENTIFIER	1-	4	4	ACTV	Fixed
ACTIVITY IDENTIFICATION	6-	15	10	See(2)	
ACTIVITY DESCRIPTION	17-	46	30	Alpha.	Left
ACTIVITY DURATION	48-	50	3	Integer	Right
CONSTRAINT DATE	52-	58	7	ddmmmyy	Filled
CONSTRAINT TYPE	60-	61	2	See (7)	
CALENDAR CODE	63-	63	1	Alpha.	Filled
HAMMOCK CODE	65-	65	1	Y.blank	Fixed
WORKERS PER DAY	67-	69	3	Integer	Right
RESPONSIBILITY CODE	71-	74	4	Alpha.	Left
WORK AREA CODE	76-	79	4	Alpha.	Left
MOD OR CLAIM NUMBER	81-	86	6	Alpha.	Left
BID ITEM	88-	93	6	Alpha.	Left
PHASE OF WORK	95-	96	2	Alpha.	Left
CATEGORY OF WORK	98-	98	1	Alpha.	Filled
FEATURE OF WORK	100-	129	30	Alpha.	Left

a. The RECORD IDENTIFIER for each activity description record must

begin with the four-character "ACTV" code. This field shall be used for both the Arrow Diagram Method (ADM) and Precedence Diagram Method (PDM) (see paragraph: Activity Records).

b. The ACTIVITY IDENTIFICATION consists of coding that differs, depending on whether the ADM or PDM method was selected in the Project Record (see paragraph: Project ID Record). If the ADM method was selected, then the field shall be interpreted as two right justified fields of five (5) integers each. If the PDM method was selected, the field shall be interpreted as one (1) right-justified field of ten (10) integers or alpha/numeric characters. The maximum activity number allowed under this arrangement is 99999 for ADM and 9999999999 for the PDM method.

c. The ACTIVITY DESCRIPTION shall be a maximum of 30 characters. Descriptions must be limited to the space provided.

d. The ACTIVITY DURATION contains the estimated duration for the activity on the schedule. The duration shall be based upon the workweek designated by the activity's related calendar.

e. The CONSTRAINT DATE field shall be used to identify a date that the scheduling system may use to modify float calculations. If there is a date in this field, then there must be a valid entry in the CONSTRAINT TYPE field. The CONSTRAINT DATE shall be the same as, or later than, the PROJECT START DATE. The CONSTRAINT DATE shall be the same as, or earlier than, the PROJECT END DATE.

f. The CONSTRAINT TYPE field shall be used to identify the way that the scheduling system shall use the CONSTRAINT DATE to modify schedule float calculations. If there is a value in this field, then there must be a valid entry in the CONSTRAINT DATE TYPE. Other types may be available from specific software manufacturers. Code Definition ES The CONSTRAINT DATE shall replace an activity's early start date, if the early start date is prior to the CONSTRAINT DATE. LF The CONSTRAINT DATE shall replace an activity's late finish date, if the late finish date is after the CONSTRAINT DATE.

g. The CALENDAR CODE, as previously explained, relates this activity to an appropriate workweek calendar. The ACTIVITY DURATION must be based on the valid workweek referenced by this CALENDAR CODE field.

h. The HAMMOCK CODE indicates that a particular activity does not have its own independent duration, but takes its start dates from the start date of the preceding activity (or node) and takes its finish dates from the finish dates of its succeeding activity (or node). If the value of the HAMMOCK ACTIVITY field is "Y", then the activity is a HAMMOCK ACTIVITY.

i. The WORKERS PER DAY. This field may contain the average number of workers expected to work on the activity each day the activity is in progress. The total duration times the average number of workers per day shall equal the Contractor's estimate of the total man days of work required to perform the activity.

j. The RESPONSIBILITY CODE shall identify the Subcontractor or major trade involved with completing the work for the activity.

k. The WORK AREA CODE shall identify the location of the

activity within the project.

l. The MOD OR CLAIM NUMBER CODE. This code shall be use to uniquely identify activities that are changed on a construction contract modification, or activities that justify any claimed time extensions.

m. The BID ITEM field shall designate the bid item number associated with the activity. The values of all the various activities shall sum to the amount stated in the Contract Bid Item Schedule.

n. The PHASE OF CONSTRUCTION shall designate phase to which an activity is connected. This field shall used for submittals, procurement, fabrication, site work or building or areas within a building, etc.

o. The CATEGORY OF WORK shall be from the following list:

CODE	DESCRIPTION
A	Architectural
C	Civil
E	Electrical
F	Fire Extinguish
H	Hazardous/Toxic
M	Mechanical
P	Plumbing
R	Roofing
S	Structural
T	Safety
X	Administrative

p. The FEATURE OF WORK shall match those in the Resident Management system that is to be used on this project. See the attached RMS data Sheets listing some examples of the features of work.

2.10.1.5 Precedence Record

The Precedence Record(s) shall follow the Activity Records if a Precedence Type Schedule (PDM) is identified in the ARROW OR PRECEDENCE field of the Project Record (see paragraph: Project ID Record). The Precedence Record has the following format:

Column	Max. Required.	Description	Position	Len.	Value	Type	Just.
		RECORD IDENTIFIER	1-	4	4	PRED	Fixed
		ACTIVITY IDENTIFICATION	6-	15	10 -	Integer	See (b)
		PRECEDING ACTIVITY	17-	26	10 -	Integer	
		PREDECESSOR TYPE	28-	28	1	S,F,C	Filled
		LAG DURATION	30-	33	4 -	Integer	Right

a. The RECORD IDENTIFIER shall begin with the four characters "PRED" in the first four columns of the record.

b. The ACTIVITY IDENTIFICATION identifies the activity whose predecessor shall be specified in this record. Refer to the Activity Record for further explanation on this field (see subparagraph Activity Records, Note b.).

c. The PREDECESSOR ACTIVITY number is the number of an activity that

precedes the activity noted in the ACTIVITY IDENTIFICATION field.

d. The PREDECESSOR TYPE field indicates the type of relationship that exists between the chosen pair of activities. The PREDECESSOR TYPE field must, as minimum, contain one of the codes listed below. Other types of activity relations may be supported from specific software vendors.

Code	Definition
S	Start-to-Start relationship
F	Finish-to-Finish relationship
C	Finish-to-Start relationship

e. The LAG DURATION field contains the number of day's delay between the preceding and current activity.

2.10.1.6 Unit Cost Record

The Unit Cost Record shall follow all Precedence Records. If the schedule utilizes the Arrow Diagram Method, then the Unit Cost Record shall follow any Activity Records. The fields for this record shall take the following format:

Column Max. Required.

Description	Position Len.	Value	Type	Just.
RECORD IDENTIFIER	1-4	4	UNIT	Fixed
ACTIVITY IDENTIFICATION	6-15	10 -	Integer	See (b)
TOTAL QTY	17-29	13 -	8.4	Right
COST PER UNIT	31-43	13 -	8.4	Right
QTY TO DATE	45-57	13 -	8.4	Right
UNIT OF MEASURE	59-61	3 -	Alpha.	Left

a. The RECORD IDENTIFIER shall be identified with the four characters "UNIT" placed in the first four columns of the record.

b. The ACTIVITY IDENTIFICATION for each activity shall match the format described in the activity record (see subparagraph Activity Records, Note b.).

c. The TOTAL QTY is the total amount of this type of material to be used in this activity. This number consists of eight digits, one decimal point, and four more digits. An example of a number in this format is 11111111.1111". If decimal places are not needed, this field shall still contain a ".0000" in columns 25, 26, 27, 28 and 29.

d. The COST PER UNIT is the cost, in dollars and cents, for each unit to be used in this activity. This number consists of eight digits, one decimal point, and four more digits. An example of a number in this format is "1111111.1111". If decimal places are not needed, this field shall still contain an ".0000" in columns 38, 39, 41, 42 and 43.

e. The QTY TO DATE is the quantity of material installed in this activity up to the data date. This number consists of eight digits, one decimal point, and four more digits. An example of a number in this format is "1111111.1111". If decimal places are not needed, this field shall still contain a ".0000" in columns 53, 54, 55, 56, and 57.

f. The UNIT OF MEASURE is an abbreviation that may be used to describe the units being measured for this activity.

2.10.1.7 Progress Record

Progress Record(s) shall follow all Unit Cost Record(s). If there are no Unit Cost Record(s), then the Progress Record(s) shall follow all Precedence Records. If the schedule utilizes the Arrow Diagram Method, then the Progress Record shall follow any Activity Records. One Record shall exist for each activity in-progress or completed. The fields for this Record shall take the following format:

Column Max. Required.

Description	Position	Len.	Value	Type	Just.
RECORD IDENTIFIER	1- 4		4	PROG	Fixed
ACTIVITY IDENTIFICATION	6- 15		10 -	Integer	See (2)
ACTUAL START DATE	17- 23		7 -	ddmmmyy	Full
ACTUAL FINISH DATE	25- 31		7 -	ddmmmyy	Full
REMAINING DURATION	33- 35		3 -	Integer	Right
ACTIVITY COST	37- 48		12 -	9.2	Right
COST TO DATE	50- 61		12 -	9.2	Right
STORED MATERIAL	63- 74		12 -	9.2	Right
EARLY START DATE	75- 82		7 -	ddmmmyy	
EARLY FINISH DATE	84- 90		7 -	ddmmmyy	
LATE START DATE	92- 98		7 -	ddmmmyy	
LATE FINISH DATE	100-106		7 -	ddmmmyy	
FLOAT SIGN	108-108		1 +,-	Fixed	
TOTAL FLOAT	110-112		3 -	Integer	Right

a. The RECORD IDENTIFIER shall begin with the four characters "PROG" in the first four columns of the record.

b. The ACTIVITY IDENTIFICATION for each activity for which progress has been posted, shall match the format described in the Activity Record (see subparagraph Activity Records, Note b).

c. The ACTUAL START DATE is required for all in-progress activities. The ACTUAL START DATE shall be the same as, or later than, the PROJECT START DATE contained in the Project Record. The ACTUAL START DATE shall also be the same as, or prior to, the DATA DATE contained in the Project Record.

d. An ACTUAL FINISH DATE is required for all completed activities. If the REMAINING DURATION of an activity is zero, then there must be an ACTUAL FINISH DATE. The ACTUAL FINISH DATE must be the same as, or later than the PROJECT START date contained in the Project Record. The ACTUAL FINISH DATE must also be the same as, or prior to the DATA DATE contained in the Project Record.

e. REMAINING DURATION is required for all in-progress activities. Activities completed, based on time, shall have a zero (0) REMAINING DURATION

f. Cost Progress is contained in the field COST TO DATE. If there is an ACTUAL START DATE, then there must also be some value for COST TO DATE. The COST TO DATE shall not be tied to REMAINING DURATION. For example, if the REMAINING DURATION is "0", the COST TO DATE may only be 95 percent of the ACTIVITY COST. This difference may be used to reflect 5

percent retainage for punch list items.

2.10.1.8 File End Record

The File End Record shall be used to identify that the data file is completed. This record shall be the last record of the entire data file. The File End Record shall have the following format:

Column Max. Required.

Description	Position	Len.	Value	Type	Just.
RECORD IDENTIFIER	1-	3	3	END	Fixed

a. The RECORD IDENTIFIER for the File End Record shall be "End". No data contained in the data exchange file that occurs after this record is found shall be used.

PART 3 EXECUTION

3.1 TRANSFER OF SCHEDULE DATA INTO RESIDENT MANAGEMENT SYSTEM

The Contractor shall also be responsible for the downloading and uploading of the schedule data into the Resident Management System (RMS) that will be used on the subject Contract prior to the RMS databases being transfer to the Government as part of the monthly and final payment requests.

-- End of Section --

SECTION 01421

BASIC STORM WATER POLLUTION PREVENTION PLAN
05/2003

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

CODE OF FEDERAL REGULATIONS (CFR)

- | | |
|------------|---|
| 40 CFR 110 | Protection of Environment: Subchapter D--WATER PROGRAMS, Discharge of Oil |
| 40 CFR 122 | EPA Administered Permit Programs: The National Pollutant Discharge Elimination System |
| 40 CFR 123 | State Program Requirements: The National Pollutant Discharge Elimination System |

FEDERAL REGISTER (FR)

- | | |
|-----------|---|
| 63 FR 128 | (6 July 1998) Water pollution; discharge of pollutants (NPDES): Storm water discharges--Construction activity; general permits, 36490-36519 |
|-----------|---|

1.2 SUMMARY

This Section provides a Basic Storm Water Pollution Prevention Plan (SWPPP) that meets the Texas Pollutant Discharge Elimination System (TPDES) General Permit. Both the Government and the Contractor meets the definition of operator for the construction activities. The Government has control over the construction plans and specifications. The Contractor has day-to-day control of field activities to ensure compliance with storm water construction permit. The Government or environmental project designer will prepare a Basic SWPPP. The Contractor shall prepare a field and operation specific SWPPP by meeting requirements in the TPDES General Permit, this section, and the approved Contractor's SWPPP. Permit office, forms, and regulations can be accessed at the following web sites:

[//www.state.tx.us/permitting/water_perm/wwperm/tpdestorm](http://www.state.tx.us/permitting/water_perm/wwperm/tpdestorm) (for large or small site)

The SWPPP shall include both the narrative and drawings. The SWPPP narrative shall describe at least the following: description of project and construction activities, potential pollutants and sources, pollution control measures (both structural and non-structural), best management practices (BMP), schedule or sequence of major construction activities, temporary and permanent stabilization methods utilized at disturbed areas,

requirements for notifications (i.e. NOI, NOT, MS4), and necessary attachments to implement SWPPP at the job site. The SWPPP site plans shall include project location vicinity map, facility layout, site features and grading, surface water flow direction, locations and types of structural storm water control devices, legend and site direction indicating north arrow, and construction detail of each structural control device. The SWPPP prepared by the Contractor shall be submitted to the Government for approval prior to submittal of NOI to the regulatory agency. There is no separate payment for work required in this section.

1.2.1 Editable Copy

An editable version of this Section is located on the Contract award CD-ROM disk. It is in the Corps of Engineers' SpecsIntact software format.

1.3 PROJECT IDENTIFICATION

PROJECT TITLE:Darnall Army Community Hospital Additions and Alterations

LOCATION:Fort Hood, Texas

1.4 PROJECT DESCRIPTION

The scope of this project includes construction of new buildings, storm sewer, sanitary sewer, parking lots, access drives, sidewalks, lighting, communication system, HVAC and control systems.. In addition, this project shall include demolition of building interior at the hospital. The total project area of the new construction site includes approximately 3.4 acres.

1.5 Bid Options

There are Bid Options for this project. They are:

Option 1: Paving of Parking Surface

1.6 STANDARD INDUSTRIAL CLASSIFICATION (SIC)

1623 - Water, Sewer, Pipeline, and Communications and Power Line Construction

1771 - Concrete Work (includes asphalt, i.e. access drives and parking lots, culvert construction)

1794 - Excavation Work (include trenching and earth moving

8062 - General Medical and Surgical Hospitals

1.7 LOCATION

The new facility project site is within the boundary of Fort Hood and is in

Coryell County, Texas. The project site is bounded by Darnall Loop and 58th Street. The new facility project center is located approximately at N 31 degrees 09 minutes 00 seconds latitude, W 47 degrees 48 minutes 00 seconds longitude.

1.8 RECEIVING WATERS

The storm runoff from the new facility site flows east into existing storm drain, then flows north to a ditch then east to South Nolan Creek which discharges into Leon River that ultimately flows into the Brazos River.

PART 2 SITE DESCRIPTION

2.1 EXISTING CONDITIONS

The site generally slopes from west to east with an average slope of 2 percent. There are currently existing underground storm drainage facilities near the new facility site. Estimated existing runoff coefficients vary from 0.8 to 0.9. Ten-year storm frequency and 10 minutes duration with 6.3 inches per hour intensity was used for the design of the storm drainage system.

2.2 FUTURE CONDITIONS

Grades at the new facility site will not change significantly and slopes roughly about 2 percent from west to east. Completed facility site drainage will flow into an existing underground drainage system. The grades surrounding the building are approximately 2 percent. The new project site will have a building, access roads, service drives, , landscaping and turfing. Estimated future runoff coefficients vary from 0.8 to 0.9.

2.3 CONSTRUCTION PHASING

Major Construction Activities At New Facility Site

- A. Limits of clearing and removals are delineated on the drawings.
- B. Grading and drainage during construction are controlled by erosion control measures and directed to the existing storm drainage system. Drainage after construction is controlled by sheet flow, curb diversion, and new underground drains to the existing storm system or by sheet flow.
- C. Construction flatwork is part of the construction sequence. Phasing is as follows:
 - 1. Construct new parking and perform internal demolition.
 - 2. Relocate MRI.
 - 3. Construct new building and entry.
 - 4. Complete paving.
- D. Site stabilization during construction is provided in the form of silt fences, inlet protection (including temporary sediment basins) and construction entrances.

The Contractor shall establish storm water control structures prior to conducting any site disturbing activities. Then subsequent construction activities includes clearing, grubbing, grading, constructing site drainage devices and utilities, foundation, and paving. The Contractor shall maintain temporary and permanent site stabilization at each portion of site in accordance with Section 3.0 EROSION AND SEDIMENT CONTROLS. Storm water control structures shall not be removed after final stabilization and approval of the COR. Final stabilization is established at the disturbed site when a vegetative cover with a density of 70% of the native undisturbed area. It is a Federal and state requirement that the Contractor shall record date of these major construction site activities and dates of stabilization (see paragraph ATTACHMENTS). Construction of this project will start tentatively on July 03 and will be completed on January 05.

2.4 SOILS DATA

The following soil information is obtained from the geotechnical report prepared by the U.S. Army Corps of Engineers (USACE). There were 24 test holes drilled at the project site in December 2001 by the Corps of Engineers, Fort Worth District to obtain subsurface soil conditions and soil or rock sample for analysis. Fort Hood lies within the Central Texas section of the Great Plains physiographic province. The topographic features of the area are those of a dissected plateau characterized by buttes and mesas. The uppermost primary stratum underlying Fort Hood is the Walnut Formation of the Comanche Series, Cretaceous age. The Walnut Formation is composed of gray-black, calcareous clay shales alternating with beds of chalky, nodular limestone and shell conglomerates. The overburden soils within the area vary from a few millimeters to greater than 9 meters in thickness, and consists of clays of low to high plasticity, clayey gravels, and/or clay choked limestone nodules. The subsurface stratigraphy consists of clay overburden features and deeper formations of marl/shale and limestone primary material. The clay overburden features are of low to high plasticity (CL and CH) and vary in thickness from knife-edge to approximately 1.58 meters. The marl/shale layer extends to depths ranging from more than one (1) to less than five (5) feet. The weathered limestone primary materials extend from more than four (4) to less than eight (8) feet. The soil type is generally well drained; however, permeability is moderately slow. Runoff is medium to rapid. Static water levels observed after a 24-hour period is approximately ranged from 1 to 3 feet along the proposed access road. At other test holes, the static water levels are around 5 feet.

2.5 DRAWINGS

Sheet G-103 PROJECT LOCATION AND VICINITY PLAN
Sheet C-104 SITE GRADING, DRAINAGE, AND EROSION CONTROL PLAN (PARKING - BASE CONTRACT)
Sheet C-105 SITE PHASING AND EROSION CONTROL PLAN - PHASE 1-4
Sheet C-105A SITE PHASING AND EROSION CONTROL PLAN - PHASE 5
Sheet C-107 SITE PHASING AND EROSION CONTROL PLAN - OPTION 1
Sheet C-504 SOIL EROSION AND SEDIMENT CONTROL DETAILS

PART 3 EROSION AND SEDIMENT CONTROLS

3.1 TEMPORARY STABILIZATION

When construction activities cease for periods longer than 14 days, when there are contract delays in turfing operation and a quick cover is required to prevent erosion, or when seasonal conditions preclude immediate permanent stabilization measures, the Contractor shall provide temporary soil stabilization. The disturbed areas eligible for temporary stabilization consists of all unpaved, graded, and disturbed portions of the site and no further field work is scheduled beyond 14 days. However, if the earth disturbing activities will be resumed in 21 days, temporary stabilization measures are not required to be initiated. Temporary stabilization is discussed in Section 01356 STORM WATER POLLUTION PREVENTION MEASURES. Temporary stabilization measures when construction activities is temporary ceased shall be seeding. Reference specification section 02921 SEEDING .

3.2 PERMANENT STABILIZATION

Permanent stabilization on disturbed, unpaved, and graded areas shall be initiated no more than 14 days after construction activities have ceased permanently. Final or permanent stabilization shall be in accordance with specification sections 02300 EARTHWORK, 02919 SEEDING, 02922 SODDING, 02930 EXTERIOR PLANTING, and 02935 EXTERIOR PLANT MATERIAL MAINTENANCE.

3.3 SEDIMENT BASIN

The runoff from the site does not drain to a common collection point; therefore, a temporary sediment basin is not required.

3.4 STRUCTURAL CONTROLS

3.4.1 Silt Fence

Silt Fence is used for construction site perimeter control. Silt Fence shall not be used in stream or swale. Sediment at 1/3 height of the fence shall be removed. The Contractor shall verify field conditions, inspect integrity, remove accumulated silt, and maintain silt fence.

3.4.2 Stabilized Construction Ingress/Egress

The Contractor shall establish, inspect, and maintain the stabilized construction ingress/egress at the juncture between the unpaved new access road and the existing paved roadway. The Contractor shall determine locations for stabilized construction entrance/egress on the Contractor's field and operation specific SWPPP. The stabilized construction entrance/egress shall be away from waterways. The minimum width and depth of entrance is 15 feet and 20 feet, respectively for sites 1 acre or larger. For sites over 10 acres, the minimum width and depth of entrance is 25 feet and 50 feet, respectively. If possible, small entrance shall be incorporated into small lot construction.

3.4.3 Contractor Staging, Parking, Material Storage, Borrow and Disposal Areas Protection Device

The Contractor shall establish storm water control structures around the staging, parking, material stockpiled areas, borrow and disposal areas. A graveled stabilized area or sediment log is acceptable. The Contractor's SWPPP shall show these locations on the vicinity map and/or site drawings and identify the applicable storm water control devices. The Contractor shall inspect and maintain the control structures at these locations.

3.4.4 New and Existing Inlet Protection Device

Sediment Log or gravel filter bags with gravel (size 3 to 5 inch diameter) shall be placed along side with concrete block to prevent sediment from entering new curb and surface inlets at the paved areas, and at existing surface or curb inlet downstream from the disturbed site.

3.4.5 Diversion or Earth Dike

Diversion Dike shall be placed parallel to existing contours for perimeter control by diverting run-on water away from disturbed area. The dike height shall be at least 1 foot greater than the flow depth for the 10-year storm event. Dike side slopes shall be less than 3 to 1 (0.33 percent grade).

PART 4 STORM WATER MANAGEMENT AND CONTROLS

4.1 RUNOFF COMPUTATIONS

The storm drainage design is based on a 10-year storm frequency and 10 -minutes duration with 6.3 inch per hour rainfall intensity.

4.2 SITE CONDITIONS

The existing site contains approximately two-thirds asphalt and concrete paved parking areas and one-third undeveloped turf area. Estimated existing runoff coefficients vary from 0.8 to 0.9. Future site contains approximately 0.8 building and paved areas and 0.2 turf areas. Estimated future runoff coefficients vary from 0.8 to 0.9. Roof drains will be collected underground and tied into the new storm drain system.

4.3 PERMANENT EROSION CONTROL STRUCTURES AND STORM WATER TREATMENT UNIT

Permanent drainage structures include concrete curbs and gutters, storm drainage system, concrete pavement, asphalt pavement, turfing, and pipe culvert, will provide erosion control after completion of construction.

4.4 OUTLET PROTECTION OR OUTFALL VELOCITY DISSIPATION DEVICE

Not required. Connection is to existing storm drain system.

PART 5 BEST MANAGEMENT PRACTICES (BMP)

The Contractor (and the subcontractors) shall be responsible for eliminating pollutants in storm runoff from the project site. The Contractor (and subcontractors) shall be responsible for installing and maintaining BMP to minimize storm water pollution. The Contractor operation specific SWPPP shall, as a minimum, identify BMP on Construction Practices (Dewatering Operations, Paving Operations, Structure Construction and Painting); Material Management (Material Delivery and Storage, Material Use, Spill Prevention and Control), Waste Management (Solid Waste Management, Hazardous Waste Management, Contaminated Soil Management, Concrete Waste, Sanitary/Septic Waste Management), Vehicle and Equipment Management (Vehicle and Equipment Cleaning, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance), Dust Control for Various Site Conditions (Non-Traffic Disturbed Areas, Disturbed Areas Subject to Traffic, Material Stock Pile Stabilization, Clearing/Excavation, Demolition, Truck Traffic on Unpaved Road, Mud/Dirt Carry-Out), and

Contractor Training (Employee and Subcontractor Training).

5.1 CONSTRUCTION PRACTICES

Dewatering Operations: The Contractor (and subcontractor) shall prevent discharge of sediment by methods of sediment control, containment, and disposal. In project areas suspected of potential toxic or petroleum products contamination, the water shall be tested to determine method of disposal.

Paving Operations: The Contractor (and subcontractor) shall avoid discharge of pollutants to storm drains by avoiding paving in wet weather or anticipation of such event, storing material in covered containers, covering and berming storage areas, establish control structures, cover on-site storm grates, and worker and subcontractor training.

Structure Construction and Painting: The Contractor (and subcontractor) shall prevent pollutants in storm runoff by covering, or berming material storage areas, keeping job site clean and orderly, using safer alternate products, stabilizing adjacent disturbed areas, storing material in secondary containment, protecting on-site storm drain, establish control structures, and training of workers and subcontractor.

Solid Waste Materials: Trash and uncontaminated construction debris shall be placed in appropriate covered waste containers. Waste containers shall be emptied regularly; they shall not be allowed to overflow. The disposal area of excavated material from project construction shall not be utilized for waste disposal. Routine janitorial service shall be provided for all construction buildings and surrounding grounds. No construction waste materials, including concrete, shall be buried or otherwise disposed of on-site. The Contractor shall brief all on site personnel on good housing keeping and waste minimization.

5.2 MATERIAL MANAGEMENT

Material Delivery and Storage Practice: The Contractor (and subcontractor) shall prevent or reduce discharge of pollutants to storm water by minimizing and on-site storage of hazardous and toxic (HT) materials, storing HT in clearly labeled, corrosion-resistant containers with secondary containment at designated and COR-approved area, conducting frequent inspection, keeping current inventory of construction materials on site, training of workers and subcontractor. The storage of reactive, ignitable or flammable liquids shall comply with applicable fire codes of the project area. The Contractor shall contact the local Fire Marshal to review site materials, quantities, and proposed storage area to determine specific requirements.

Material Use and Inventory: The Contractor (and subcontractor) shall use less hazardous, alternate or environmental friendly material, if possible. The Contractor shall have (1) a list of construction material used on site, (2) the material associated potential pollutants, and (3) method of storage and containment in the Contractor operation specific SWPPP. The Material Safety Data Sheet for each construction material on-site shall be in the Contractor's field and operation activity specific SWPPP and will be available on request by regulator agency visitors, safety officers, or COR.

The following materials are commonly on-site, pesticides and herbicides, fertilizers, detergents, concrete material, petroleum-based products, fertilizers, tar, asphalt, steel reinforcing bars, other hazardous chemicals such as acid, lime, solvents, curing compounds, sealants, paints,

glues, fertilizers, steel reinforcing bars, etc.

Spill Prevention and Control: The Contractor (and subcontractor) shall store HT material in covered containers and inside a fenced area, place readily accessible spill clean-up materials, have protocol for stop work immediately, notification, clean-up, labeling, storage and packaging, transportation, disposal, record-keeping, closure activities, and provide training to workers and subcontractor for response to spills.

5.3 WASTE MANAGEMENT

Solid Waste: Solid waste materials (i.e. excess fresh concrete, grout, mortar or uncontaminated debris) shall be placed in covered containers, and recycled, if possible. Trees and shrubs from site clearing shall be used as mulching material, if possible. Packaging materials such as wood, plastic, and paper shall be recycled to the maximum extent possible and not be disposed of in a landfill. The Contractor shall designate waste containers for segregating waste (domestic, metal, aluminum or plastic). Dry paint cans shall be recycled. The Contractor shall designate waste disposal area, have routine janitorial service for all structures and surrounding grounds, and have routine schedule to service waste containers.

The disposal area of excavated material from project construction shall not be utilized for waste disposal. Personnel on the job site shall be briefed on minimizing disposal to landfill by waste segregation and recycling.

Hazardous and Toxic Waste: All excess on-site material such as paints, solvents, petroleum products (fuel, oil, and grease), herbicides, pesticides, acids for cleaning masonry, concrete curing compounds, sealants, paint strippers, wastes from oil-based paint, and glues could become HT waste. Containers of excess material shall be labeled and managed according to the labels and as recommended by the product manufacturers. If no instruction is provided, the Contractor shall turn in contained waste to the installation DRMO, the local household hazardous waste drop-off, or recycling program.

Buildings to be demolished under this Contract shall require removal of the following regulated materials: mercury fluorescent lights, PCB or TCB/DEPH ballasts, items containing ozone depleting chemicals, mercury bulb thermostats, items containing lead-based paint or pipe joints, asbestos-containing building material. Asbestos-containing materials shall be handled and disposed of in accordance with Section 13280 ASBESTOS ABATEMENT prior to building demolition. Lead hazard control activities shall be performed in accordance with Section 13281 LEAD HAZARD CONTROL ACTIVITIES. Other regulated materials shall be removed and managed in accordance with Section 13284 REMOVAL, RECYCLING, AND DISPOSAL OF REGULATED MATERIAL.

Contaminated Soil: If suspicious of soil contamination during soil moving activities, the Contractor (and subcontractor) shall stop work, notify COR, and establish containment to prevent soil transport or runoff from that location. For removal of contaminated soil, a WORK PLAN shall be prepared for COR approval prior to handling and management of the material. The WORK PLAN shall at least include the following: containment, sampling & analyses, notification to regulatory agencies, transportation, worker safety, training & environmental monitoring, disposal, and documentation and record-keeping.

Construction and Concrete Waste: Construction waste or surplus materials,

demolition building debris, scrap metal, rubber, plastic, glass, concrete, and masonry products shall be segregated and recycled to minimize landfill disposal. No construction waste shall be buried or disposed of on-site. Concrete waste shall be controlled and minimized by appropriate storage methods for dry and wet materials, and controlling amount of concrete and cement mixed on site. Sweepings from exposed aggregate concrete shall be collected and returned to aggregate stockpile and they shall not be washed into streets or storm drains. Washout of concrete truck shall be at a designated location that is (1) at least 50 feet from storm drains, open ditches, or water bodies, and (2) surrounded by a containment berm with a temporary pit or sediment trap for containment and settling of washout. Settled solids and set concrete from the pit or trap shall be removed and disposed of properly. Sediment shall be removed and disposed of in accordance with local regulations, and water from the pit or trap shall be pumped to a sanitary sewer with written approval from the COR.

Sanitary/Septic Waste: On-site sanitary facilities shall be established at a convenient location. Facility location, design, maintenance, and waste collection practices shall be approved by COR and are in accordance with local regulations. The Contractor (and subcontractor) shall have a routine schedule for waste pump out by a licensed hauler. Septic waste treatment system shall have a pre-construction permit from the local health regulating agency and have contract service with a licensed company. Temporary sanitary facilities discharging to sanitary sewer system shall be approved by the operator of the system and properly connected to avoid illicit discharges. Wastewater from water-based paint shall not be discharged as sanitary waste.

Building Exterior Cleaning or High-pressure Wash: Storm drains shall be protected by approved storm water control device. Wash onto dirt area, spade in, settle solids in pit, collect (mop up) and discharge to sanitary sewer (with approval from sewer operator). If the exterior paint contains lead exceeding the levels stated in the Consumer Safety Standard, mercury or mildewcide, the wash water shall be collected and disposed of as HT waste.

Street/Pavement Cleaning: Water used for this activity shall be minimized and sediment basin shall be used to contain wastewater. At completion of construction, the silt shall be removed and disposed of in accordance with applicable regulations, and water from the basin shall be pumped to a sanitary sewer with written approval from the COR.

5.4 VEHICLE AND EQUIPMENT MANAGEMENT

Off-site Vehicle Tracking and Dust Control: The Contractor is required to keep vehicles from tracking soils from the project, borrow, and disposal sites. Temporary parking area(s) to be used 30 calendar days or more for the Contractor's equipment or personal vehicles shall be a stabilized gravel area with storm water control device. The temporary parking areas shall be removed by the Contractor upon project completion and restored to the satisfaction of the COR. Sprinkling, chemical treatment, light bituminous treatment, or similar methods shall be used for dust control; see Sections 01355 ENVIRONMENTAL PROTECTION and 01561 DUST CONTROL. Materials to be transported by truck or other equipment that promote fugitive particle emissions shall be covered and/or sprayed. Use of sprinkling shall be controlled to prevent runoff.

Vehicle and Equipment Cleaning: Washing shall be performed off site at a commercial washing facility that has an oil/water separator as

pre-treatment prior to sanitary sewer connection. If washing must occur on site, the wash area shall have written approval from the COR. The on-site wash area shall be bermed from contact with storm drainage system, and detergent shall be bio-degradable. Wastewater shall drain into a lined sediment basin constructed by the Contractor. After project completion, the Contractor shall clean the basin, test and dispose of sediment, in accordance with applicable regulations and to the satisfaction of the COR. Steam cleaning is prohibited on site because it generates significant pollutant concentrations.

Vehicle and Equipment Fueling: Fueling shall be off-site. If fueling must occur on-site, a written approval shall be obtained from COR. If fueling is allowed by the COR, it shall be at a designated area, at least 50 feet away from drainage courses. Fueling operations shall avoid topping of fuel tank, avoid mobile fueling of mobile construction equipment. Fueling locations shall use secondary containment such as drip pan or drop cloth to catch spill or leak, have a stockpile of cleanup material, and absorbent material for immediate clean-up of small spills. A permit shall be obtained from state or local regulatory agency for all on-site fuel storage tanks. In case of spill, avoid hosing down or burial of spilled fuel. The fuel containers shall meet the industrial standard, labeled and stored in accordance with applicable Federal, state, and local codes.

Vehicle and Equipment Maintenance: Outdoor vehicle or equipment maintenance is a significant potential source of storm water pollution. Activities include engine repair, changing fluids, etc. shall be prohibited on job site.

Vehicle and Equipment Parking: All vehicle or equipment parked on-site shall have drip pan or drip cloth to catch spill or leak. Vehicle or equipment (the Contractor and the subcontractor) shall regularly inspect for leaks and schedule routine maintenance to reduce the potential for leaks.

5.5 EMPLOYEE AND SUBCONTRACTOR TRAINING

The Contractor is responsible to provide training for all workers (including the subcontractor) on the job site. The objectives in training are to provide a clear concept of activities or problems that generate pollutants to storm water, identify solutions (BMPs), promote ownership of the problems and solutions, and integrate feedback into training and BMP implementation. A certificate shall be signed by all trained personnel.

5.6 STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

The complete edited section is the Basic SWPPP and the Contractor shall revise it to a field and operation specific SWPPP. The SWPPP shall be retained at the job site at all times and readily available to inspector in case of site inspection conducted by the regulating agency. The Construction Site Notice shall indicate the location of SWPPP. The SWPPP shall be completed before filing for NOI. It shall be implemented prior to start of soil disturbing activities. It shall be updated, as necessary, to reflect changing site conditions, BMP practices, new operations or areas of responsibility. The SWPPP REVISION RECORD shall be an attachment to the SWPPP.

5.7 SPILL CONTROL AND REPORTING

In case of spill of hazardous, toxic, and radiological waste (HTRW), the Contractor shall stop work, contain spill, notify the COR and Safety Office, and execute spill control per the SPILL CONTROL PLAN as required in specification SECTION 01355 ENVIRONMENTAL PROTECTION. Spill containment, notification, clean-up, restoration, reporting, record-keeping, etc. shall be in accordance with 40 CFR 110, other applicable Federal, state, and local regulations, and to the satisfaction of the COR.

PART 6 TIMING OF CONTROLS AND ACTIVITIES.

The Contractor shall (1) sequence soil disturbing activities to preserve existing vegetation, (2) minimize area of disturbance, (3) establish storm water control devices, (4) do not disturb an area until it is necessary to proceed with fieldwork, (5) stabilize disturbed areas as soon as practicable, (6) delay construction of infiltration measures until the end of project when upstream drainage areas are stabilized and established, (7) maintain storm water control devices until stabilized disturbed areas have achieved final stabilization. Final stabilization depicts soil disturbing activities at the site have been completed and a uniform (e.g. evenly distributed, without large bare areas) perennial vegetative cover with a density of 70 percent of all native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or equivalent permanent stabilization measures (such as use of rip rap, gabions, or geotextiles) have been employed.

The Contractor's field and operation specific SWPPP shall (1) sequence major construction activities, (2) discuss erosion and sediment control measures, and (3) sequence temporary or permanent stabilization.

- Install silt fences or straw bale dike around perimeter & down slope of construction site.
- Construct stabilized construction entrances.
- Install controls around contractor staging, stockpiled storage, parking, borrow, and disposal area.
- Clearing and Grubbing
- Install inlet protections at all existing storm grates (i.e. curb inlets surface inlets, manholes, etc.)
- Regulated Material Abatement from structures to be demolished
- Demolition of structures
- Grading
- Implement Temporary Stabilization on graded areas that have no scheduled fieldwork beyond 14 days
- Construct permanent storm water management structures
- Trenching and excavation for utilities, trenching and excavation
- Cover all excavated or other soil stockpiles with soil retention blankets at the end of each work day and at the threat of precipitation.
- Install inlet protections at all new storm grates (i.e. curb inlets surface inlets, manholes, etc.)
- Backfill the utility trenches in a timely manner to minimize erosion.
- Flatwork.
- Implement permanent stabilization.
- Routinely inspect and maintain erosion and sediment structural control structures; evaluate BMP & revise SWPPP for change conditions or field activities; assess and certify non-storm water discharges; maintain field records and training logs.

Remove all controls when the project area has achieved final stabilized and all construction is completed and accepted by the Contracting Officer, after site work completion and prior to project acceptance perform I & M of storm control conducted monthly.

PART 7 COMPLIANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS

In compliance with the National Environmental Policy Act of 1969, as amended, the Record of Environmental Consideration (REC) dated 12-May-02 has been prepared for this proposed action. Findings include discussions on environmental compliance issues. In compliance with Clean Water Act, Section 402, the Contractor and the subcontractor shall conform with all applicable NPDES, and TPDES General Permit. In addition, the Contractor (including the subcontractor shall comply with applicable requirements and implement the Storm Water Pollution Prevention Plan and BMP measures prior to commencing soil disturbing activities.

PART 8 MAINTENANCE AND INSPECTION PROCEDURES

The Contractor shall designate a Storm Water Inspector on-site to perform SWPPP quality control. All BMP and control structures shall be inspected at least once every seven (7) days and within twenty-four (24) hours following any storm producing 0.5 inch or more of rainfall. The Contractor Designated SWPPP Inspector shall have a basic knowledge of the engineering principles in reducing pollutants in storm water, past experience and thoroughly understand the requirements of the Storm Water Discharge Construction Permit, BMP, Government contractual, and SWPPP requirements, worker training, storm control device inspection and maintenance, SWPPP revision, documentation and record-keeping.

Inspection of erosion and soil loss from the outfall and perimeter of the site. Temporary erosion control measures shall be inspected for bare spots and washouts. Discharge points shall be inspected for signs of erosion or sediment. Locations where vehicles enter and leave the site shall be checked for signs of off-site sediment tracking, including erosion control structure at contractor staging, material borrow, disposal, and stockpiled areas. The Contractor shall continually review the Best Management Practices (BMP) and effectiveness of SWPPP program. All deficiencies shall be corrected and recorded in the INSPECTION AND MAINTENANCE REPORT and a current copy shall be provided to the COR. Corrections to these problems shall be implemented within seven (7) calendar days. After final stabilization has been achieved, the Contractor shall inspect the site once a month until final inspection and project acceptance by the COR.

PART 9 LIST OF ON-SITE MATERIALS AND OTHER POLLUTANT SOURCES

The Contractor brought onto the job site the following construction material: [____], and the following waste [____] is anticipated. The BMP to reduce pollutants in storm runoff includes [_____].

PART 10 PROHIBITION ON NON-STORM WATER DISCHARGES

In accordance with the Federal Register, Volume 63, No.128, July 6, 1998 Notices, non-storm water discharge is prohibited during construction of the project, except for a list of non-storm water discharges. The following list of non-storm water discharges from active construction site is allowed and is developed based on the above guideline.

- fire fighting activities,
- fire hydrants flushings,
- vehicle wash waters which do not contain detergent or leaked fluids
- dust control runoff to minimize off-site tracking of vehicles,
- potable water sources including waterline flushings,

- routine external building wash down which does not use detergents and the exterior paint that does not contain mercury, lead, cadmium, and mildewcides,
- pavement wash waters where spills or leaks do not contain hazardous, toxic, radiological material or detergent,
- air conditioning condensate,
- uncontaminated spring or ground water,
- foundation and footing drains which do not contain contaminated process materials such as solvents

The Contractor designated SWPPP Inspector shall perform routine inspection and record findings in the NON-STORM WATER DISCHARGE ASSESSMENT AND CERTIFICATION.

PART 11 CONTRACTOR COMPLIANCE

11.1 SWPPP AND NOTICE OF INTENT (NOI)

The Contractor shall use this section to prepare a field and operation activity specific SWPPP that includes both narrative and drawings (preferable size 11" by 17") and also in electronic format compatible with the contract requirements. The Contractor SWPPP (both narrative and revised drawings) shall be submitted for review and approval. The Contractor's SWPPP shall, as a minimum, include the following: (1) each area of construction, describe each physical location & LATITUDE and LONGITUDE of each area; (2) the project start and completion dates; (3) sequence of construction activities and pollution control measures; (4) Best Management Practices (BMP); 5) list of on-site construction materials, methods of storage, & pollution control measures; (6) each construction area runoff coefficient; (7) revise SWPPP drawings depict storm control devices (i.e. perimeter, down grade, inlet & outfall controls, site stabilized entrance/exit, Contractor staging & parking, stockpiled, borrow, and disposal areas), limit of clearing and grubbing, haul route, surface water flow direction arrows, site direction arrow, and legend; (9) name and qualification of a Designated SWPPP Inspector to inspect, maintain/repair erosion control structures, record findings and subsequent actions, evaluate BMP and revise SWPPP, assess non-storm or monitor concrete/asphalt plant discharges; (10) record start/stop dates for temporary/permanent ceasing of major construction activities (clearing & grubbing; grading, trenching & excavation; dirt moving, etc.); start dates of temporary and permanent stabilization; repair dates for control structures; release dates of reportable quantities (RQ) for oil and hazardous substances per 40 CFR Parts 110, 117 and 302; repair date of control device; (11) Contractor on-site training to workers; (12) SWPPP revision date for changed site conditions, operation, and BMP; (13) prepare a NOI for the Contractor (who is responsible for day-to-day operation) and submit it at least 2 days prior to commencing work; (14) prepare a separate NOI for the Government's signatory because the Government is an operator who has control over construction plans and specifications, and the Government is responsible for the initial NOI fee. The mailing addresses for NOI submittal are:

TEXAS

Mailing Address:

Texas Commission On Environmental Quality (TCEQ)
Storm Water & General Permits Team; MC-228
P.O. Box 13087
Austin, TX 78711-3087
(Use for regular and certified mail)

NOI Payment Address (by regular U.S. Mail):

Texas Commission on Environmental Quality (TCEQ)
Financial Administration Division
Cashier's Office, MC-214
P.O. Box 13088
Austin, TX 78711-3088

NOI Payment Physical Address:

Texas Commission on Environmental Quality (TCEQ)
Financial Administration Division
Cashier's Office, MC-214
12100 Park 35 Circle
Austin, TX 78753
(Use for overnight express carrier deliveries (U.S. Post
Office Express Mail, fed ex, UPS, etc.)

The Contractor shall provide SWPPP (including the revised Storm Water Control Plans) and all necessary attachment for approval.

The TPDES permit form is posted on a web site at
<http://www.tnrcc.state.tx.us/permitting/waterperm/wvperm/tpdestorm>.

11.1.1 On-Site Construction Document And Record-Keeping

A copy of each of the following shall be maintained at the project site at all times: Contractor revised SWPPP and all attachments, TPDES General Permit, Project Site Notice, and Certification of Storm Water Pollution Prevention Plan.

The Contractor shall post a Site Notice near the main entrance of each construction access point. The Site Notice shall have the following information: a copy of NOI that has an authorization number issued by TCEQ (for each co-permittee, the Government and the Contractor), a brief project description, name and telephone number of an operator's representative (for each Contractor & the Government), and the location of SWPPP.

All records pertaining to TPDES permit shall be maintained for a minimum of three (3) years from the date that a NOT is submitted.

11.1.2 TPDES General Permit Fees And Fines For Non-Compliance

The Contractor is responsible for all fees pertaining to the storm water construction permit for both the Contractor and the Government (including applicable annual water quality or monitoring fees, if applicable). Any fines levied by regulatory agencies regarding non-compliance with TPDES regulations or the requirements of this Section shall be paid by the Contractor.

11.2 NOTICE OF TERMINATION (NOT)

No later than 30 working days after completion of final stabilization and approval by the COR, the Contractor shall prepare copies of the Notice of Termination (NOT) separately, for the Contractor and the Government. The contractor shall provide the filled out Government NOT to the COR for a signature from an authorized person, and then submit it to Texas Commission on Environmental Quality (TCEQ). A copy of the Government NOT and the Contractor NOT shall be provided to the COR.

11.3 NOTIFICATION TO MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4)

A copy of each NOI & NOT (for large construction site), a copy of NOC (Notice of Change is required when relevant information of the initial NOI needs changes), a copy of Construction Site Notice (applicable for small construction site) shall be sent to MS4. For some projects, there is a possibility of more than one MS4. The Contractor shall notify all MS4 within the project site.

The MS4, person of contact (POC), mailing address, and phone for this project is:

III Corps & Fort Hood
Attn: AFZF-PW-ENV (Riki Young)
Fort Hood TX 76544-5028
Telephone: 254-387-8712

PART 12 ATTACHMENTS

The Contractor shall provide the following attachments in the Contractor field and operation activity specific SWPPP. The list of attachments shall include CONSTRUCTION SITE NOTICE, CONTRACTOR NOTICE OF INTENT (NOI), GOVERNMENT NOTICE OF INTENT (NOI), CONTRACTOR NOTICE OF TERMINATION (NOT), GOVERNMENT NOTICE OF TERMINATION (NOT), CONTRACTOR STORM WATER CONTROL INSPECTION AND MAINTENANCE REPORT, TRAINED CONTRACTOR PERSONNEL LOG, OPERATOR (CONTRACTOR/ SUBCONTRACTOR) CERTIFICATION OF COMPLIANCE FOR TPDES, RECORD OF SWPPP REVISION, RECORD OF MAJOR CONSTRUCTION ACTIVITIES (Grading, Temporary/ Permanent Ceasing/Resuming Construction, stabilization) CONTRACTOR DESIGNATED SITE SWPPP INSPECTOR, CONTRACTOR CERTIFICATION FOR SWPPP, SCHEDULE OF SITE RESPONSIBLE PARTIES FOR POLLUTION PREVENTION MEASURES, NON-STORM WATER DISCHARGE ASSESSMENT AND CERTIFICATION, AUTHORIZED SIGNATORY.

The Basic SWPPP shall include attachment of TPDES General Permit, the Government NOI.

13.1 INSPECTION AND MAINTENANCE REPORT

STORMWATER POLLUTION PREVENTION PLAN
INSPECTION AND MAINTENANCE REPORT

(NOTE: Add or delete as necessary to depict the type of erosion or sediment control structures to be used at the construction site.)

INSPECTOR: _____ DATE: _____

PROJECT NAME: _____

SITE
CONDITIONS: _____

REASON FOR INSPECTION: WEEKLY 1/2 INCH RAIN (circle one)

DAYS SINCE LAST RAINFALL: _____ AMOUNT OF LAST RAINFALL: _____ INCHES

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibilities of fine and imprisonment for knowing violations."

INSPECTOR: _____ DATE: _____
(signature)

STABILIZATION MEASURES

STORMWATER POLLUTION PREVENTION PLAN
INSPECTION AND MAINTENANCE REPORT

AREA	DATE SINCE LAST DISTURBANCE	DATE OF NEXT DISTURBANCE	STABILIZED (YES/NO?)	STABILIZED WITH	CONDITION
------	-----------------------------------	--------------------------------	-------------------------	--------------------	-----------

STABILIZATION REQUIRED:

TO BE PERFORMED BY: _____ ON or BEFORE: _____

STORMWATER POLLUTION PREVENTION PLAN
INSPECTION AND MAINTENANCE REPORT

OTHER CONTROLS - STABILIZED CONSTRUCTION ENTRANCE

IS MUCH SEDIMENT TRACKED ONTO THE ROAD?	ARE DUST AND SEDIMENT CONTROL MEASURES WORKING?	DOES ALL TRAFFIC USE THE STABILIZED ENTRANCE TO THE SITE?	ARE ASSOCIATED DRAINAGE STRUCTURES WORKING?
---	--	--	--

MAINTENANCE REQUIRED FOR CONSTRUCTION ENTRANCE:

TO PERFORMED BY: _____ ON OR
BEFORE: _____

OTHER CONTROLS - DEVELOP SITE SPECIFIC TABLES AS NEEDED

FOR ALL STABILIZATION MEASURES, STRUCTURAL, AND NON-STRUCTURAL CONTROLS
CHANGES/CORRECTIONS REQUIRED IN POLLUTION PREVENTION PLAN:

REASONS FOR CHANGES:

INSPECTOR'S SIGNATURE: _____ DATE: _____

STORMWATER POLLUTION PREVENTION PLAN
INSPECTION AND MAINTENANCE REPORT

MAINTENANCE REQUIRED FOR STORM GRATES:

TO BE PERFORMED BY: _____ ON OR
BEFORE: _____

STRUCTURAL CONTROLS - SILT FENCE(S)

FROM	TO	IS THE BOTTOM OF THE FABRIC STILL BURIED?	IS THE FABRIC IN GOOD CONDITION?	HOW DEEP IS THE SEDIMENT?
<hr/>				

MAINTENANCE REQUIRED FOR THE SILT FENCE (S):

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

STORMWATER POLLUTION PREVENTION PLAN
INSPECTION AND MAINTENANCE REPORT

STRUCTURAL CONTROLS - SEDIMENT LOG (S)

FROM	TO	IS SEDIMENT LOG STABILIZED?	IS THERE EVIDENCE OF WASH-OUT OR OVERTOPPING?
------	----	-----------------------------	---

MAINTENANCE REQUIRED FOR THE SEDIMENT LOG(S):

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

13.2 CONTRACTOR /SUBCONTRACTOR CERTIFICATION

CONTRACTOR /SUBCONTRACTOR CERTIFICATION
FOR
DARNALL ARMY COMMUNITY HOSPITAL
ADDITIONS AND ALTERATIONS (PN 053431)
FORT HOOD, TEXAS

Name of Contractor /Subcontractor:_____

Address:_____

Telephone Number:_____

Type of Service to be Provided:_____

Certification Statement:

"I certify under the penalty of law that I understand the terms and conditions of the general National Pollutant Discharge Elimination Systems (NPDES) permit that authorize the storm water discharge associated with the industrial activity from the construction site identified as apart of this certification."

Name:_____ Date:_____

Title:_____

-- End of Section --



TPDES General Permit
NO. TXR150000

This is a new general permit issued pursuant to Section 26.040 of the Texas Water Code and Section 402 of the Clean Water Act.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P.O. BOX 13087
Austin, TX 78711-3087

GENERAL PERMIT TO DISCHARGE WASTE

under provisions of
Section 402 of the Clean Water Act
and Chapter 26 of the Texas Water Code

Construction sites located in the state of Texas

may discharge to surface water in the state

only according to effluent limitations, monitoring requirements and other conditions set forth in this permit, as well as the rules of the Texas Commission on Environmental Quality (TCEQ), the laws of the State of Texas, and other orders of the TCEQ. The issuance of this general permit does not grant to the permittee the right to use private or public property for conveyance of storm water and certain non-storm water discharges along the discharge route. This includes property belonging to but not limited to any individual, partnership, corporation or other entity. Neither does this permit authorize any invasion of personal rights nor any violation of federal, state, or local laws or regulations. It is the responsibility of the permittee to acquire property rights as may be necessary to use the discharge route.

This permit and the authorization contained herein shall expire at midnight five years after the date of issuance.

ISSUED AND EFFECTIVE DATE: MAR 05 2003



For the Commission

**TCEQ General Permit Number TXR150000 Relating To Discharges
From Construction Activities**

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Part I. Definitions

Best Management Practices - (BMPs) Schedules of activities, prohibitions of practices, maintenance procedures, structural controls, local ordinances, and other management practices to prevent or reduce the discharge of pollutants. BMPs also include treatment requirements, operating procedures, and practices to control construction site runoff, spills or leaks, waste disposal, or drainage from raw material storage areas.

Commencement of Construction - The exposure of soils resulting from activities such as clearing, grading, and excavating.

Common Plan of Development - A construction activity that is completed in separate stages, separate phases, or in combination with other construction activities. A common plan of development is identified by the documentation for the construction project that identifies the scope of the project, and may include plats, blueprints, marketing plans, contracts, building permits, a public notice or hearing, zoning requests, or other similar documentation and activities.

Facility or Activity - Any TPDES “point source” or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the TPDES program.

Final Stabilization - A construction site status where either of the following conditions are met:

- (a) All soil disturbing activities at the site have been completed and a uniform (e.g, evenly distributed, without large bare areas) perennial vegetative cover with a density of 70% of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.
- (b) For individual lots in a residential construction site by either:
 - (1) the homebuilder completing final stabilization as specified in condition (a) above; or
 - (2) the homebuilder establishing temporary stabilization for an individual lot prior to the time of transfer of the ownership of the home to the buyer and after informing the homeowner of the need for, and benefits of, final stabilization.
- (c) For construction activities on land used for agricultural purposes (e.g. pipelines across crop or range land), final stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural use. Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to a surface water and areas which are not being returned to their preconstruction agricultural use must meet the final stabilization conditions of condition (a) above.

Large Construction Activity - Construction activities including clearing, grading, and excavating that result in land disturbance of equal to or greater than five (5) acres of land. Large construction activity also includes the disturbance of less than five (5) acres of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than five (5) acres of land. Large construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, and original purpose of a ditch, channel, or other similar storm water conveyance. Large construction activity does not include the routine grading of existing dirt roads, asphalt overlays of existing roads, the routine clearing of existing right-of-ways, and similar maintenance activities.

Municipal Separate Storm Sewer System (MS4) - A separate storm sewer system owned or operated by a state, city, town, county, district, association, or other public body (created by or pursuant to state law) having jurisdiction over the disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under state law such as a sewer district, flood control or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization.

Notice of Intent (NOI) - A written submission to the executive director from an applicant requesting coverage under a general permit.

Notice of Termination (NOT) - A written submission to the executive director from a permittee authorized under a general permit requesting termination of coverage.

Operator - The person or persons associated with a large or small construction activity that meets either of the following two criteria:

- (a) the person or persons have operational control over construction plans and specifications to the extent necessary to meet the requirements and conditions of this general permit; or
- (b) the person or persons have day-to-day operational control of those activities at a construction site which are necessary to ensure compliance with a storm water pollution prevention plan for the site or other permit conditions (e.g. they are authorized to direct workers at a site to carry out activities required by the Storm Water Pollution Prevention Plan or comply with other permit conditions).

Permittee - An operator authorized under this general permit. The authorization may be gained through submission of a notice of intent, by waiver, or by meeting the requirements for automatic coverage to discharge storm water runoff and certain non-storm water discharges.

Point Source - Any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are, or may be, discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.

Pollutant - (from the Texas Water Code, Chapter 26) Dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, filter backwash, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into any surface water in the state. The term "pollutant" does not include tail water or runoff water from irrigation or rainwater runoff from cultivated or uncultivated rangeland, pastureland, and farmland.

Pollution - (from the Texas Water Code, Chapter 26) The alteration of the physical, thermal, chemical, or biological quality of, or the contamination of, any surface water in the state that renders the water harmful, detrimental, or injurious to humans, animal life, vegetation, or property or to public health, safety, or welfare, or impairs the usefulness or the public enjoyment of the water for any lawful or reasonable purpose.

Runoff Coefficient - The fraction of total rainfall that will appear at the conveyance as runoff.

Separate Storm Sewer System - A conveyance or system of conveyances (including roads with drainage systems, streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains), designed or used for collecting or conveying storm water; that is not a combined sewer, and that is not part of a publicly owned treatment works (POTW).

Small Construction Activity - Construction activities including clearing, grading, and excavating that result in land disturbance of equal to or greater than one (1) acre and less than five (5) acres of land. Small construction activity also includes the disturbance of less than one (1) acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than one (1) and less than five (5) acres of land. Small construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, and original purpose of a ditch, channel, or other similar storm water conveyance. Small construction activity does not include the routine grading of existing dirt roads, asphalt overlays of existing roads, the routine clearing of existing right-of-ways, and similar maintenance activities.

Storm Water - Storm water runoff, snow melt runoff, and surface runoff and drainage.

Storm Water Associated with Construction Activity - Storm water runoff from a construction activity where soil disturbing activities (including clearing, grading, excavating) result in the disturbance of one (1) or more acres of total land area, or are part of a larger common plan of development or sale that will result in disturbance of one (1) or more acres of total land area.

Structural Control (or Practice) - A pollution prevention practice that requires the construction of a device, or the use of a device, to capture or prevent pollution in storm water runoff. Structural controls and practices may include but are not limited to: silt fences, earthen dikes, drainage swales, sediment traps, check dams, subsurface drains, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and temporary or permanent sediment basins.

Surface Water in the State - Lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, wetlands, marshes, inlets, canals, the Gulf of Mexico inside the territorial limits

of the state (from the mean high water mark (MHW) out 10.36 miles into the Gulf), and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, navigable or nonnavigable, and including the beds and banks of all water-courses and bodies of surface water, that are wholly or partially inside or bordering the state or subject to the jurisdiction of the state; except that waters in treatment systems which are authorized by state or federal law, regulation, or permit, and which are created for the purpose of waste treatment are not considered to be water in the state.

Temporary Stabilization - A condition where exposed soils or disturbed areas are provided a protective cover, which may include temporary seeding, geotextiles, mulches, and other techniques to reduce or eliminate erosion until either final stabilization can be achieved or until further construction activities take place.

Waters of the United States - (from title 40, part 122, section 2 of the Code of Federal Regulations) Waters of the United States or waters of the U.S. means:

- (a) all waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- (b) all interstate waters, including interstate wetlands;
- (c) all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds that the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
 - (1) which are or could be used by interstate or foreign travelers for recreational or other purposes;
 - (2) from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
 - (3) which are used or could be used for industrial purposes by industries in interstate commerce;
- (d) all impoundments of waters otherwise defined as waters of the United States under this definition;
- (e) tributaries of waters identified in paragraphs (a) through (d) of this definition;
- (f) the territorial sea; and
- (g) wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR § 423.11(m) which also meet the criteria of this definition) are not waters of the United States. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

Part II. Permit Applicability and Coverage

Section A. Discharges Eligible for Authorization

1. Storm Water Associated with Construction Activity

Discharges of storm water runoff from small and large construction activities may be authorized under this general permit.

2. Discharges of Storm Water Associated with Construction Support Activities

Discharges of storm water runoff from construction support activities, including concrete batch plants, asphalt batch plants, equipment staging areas, material storage yards, material borrow areas, and excavated material disposal areas may be authorized under this general permit provided:

- (a) the activity is located within a 1-mile distance from the boundary of the permitted construction site and directly supports the construction activity;
- (b) the storm water pollution prevention plan is developed according to the provisions of this general permit and includes appropriate controls and measures to reduce erosion and discharge of pollutants in storm water runoff from the supporting industrial activity site; and
- (c) the industrial activity either does not operate beyond the completion date of the construction activity or obtains separate TPDES authorization for discharges.

3. Non-storm Water Discharges

The following non-storm water discharges from sites authorized under this general permit are also eligible for authorization under this general permit:

- (a) discharges from fire fighting activities;

- (b) fire hydrant flushings;
- (c) vehicle, external building, and pavement wash water where detergents and soaps are not used and where spills or leaks of toxic or hazardous materials have not occurred (unless spilled materials have been removed; and if local state, or federal regulations are applicable, the materials are removed according to those regulations), and where the purpose is to remove mud, dirt, an dust;
- (d) water used to control dust;
- (e) potable water sources including waterline flushings;
- (f) air conditioning condensate;
- (g) uncontaminated ground water or spring water, including foundation or footing drains where flows are not contaminated with industrial materials such as solvents.

4. Other Permitted Discharges

Any discharge authorized under a separate NPDES, TPDES, or TCEQ permit may be combined with discharges authorized by this permit.

Section B. Limitations on Permit Coverage

1. Post Construction Discharges.

Discharges that occur after construction activities have been completed, and after the construction site and any supporting activity site have undergone final stabilization, are not eligible for coverage under this general permit. Discharges originating from the sites are not authorized under this general permit following the submission of the notice of termination (NOT) for the construction activity.

2. Prohibition of Non-Storm Water Discharges

Except as provided in Part II. A.2., A3., and A4., all discharges authorized by this general permit must be composed entirely of storm water associated with construction activity.

3. Compliance With Water Quality Standards

Discharges to surface water in the state that would cause or contribute to a violation of water quality standards or that would fail to protect and maintain existing designated uses are not eligible for coverage under this general permit. The executive director may require an application for an individual permit or alternative

general permit (see Part II.G.3) to authorize discharges to surface water in the state from any activity that is determined to cause a violation of water quality standards or is found to cause, or contribute to, the loss of a designated use. The executive director may also require an application for an individual permit considering factors described in Part II. G.2.

4. Discharges to Water Quality-Impaired Receiving Waters.

New sources or new discharges of the constituents of concern to impaired waters are not authorized by this permit unless otherwise allowable under 30 TAC Chapter 305 and applicable state law. Impaired waters are those that do not meet applicable water quality standards and are listed on the EPA approved Clean Water Act Section 303(d) list. Constituents of concern are those for which the water body is listed as impaired.

Discharges of the constituents of concern to impaired water bodies for which there is a total maximum daily load (TMDL) implementation plan are not eligible for this permit unless they are consistent with the approved TMDL and the implementation plan. Permittees must incorporate the limitations, conditions, and requirements applicable to their discharges, including monitoring frequency and reporting required by TCEQ rules, into their storm water pollution prevention plan in order to be eligible for coverage under this general permit.

5. Discharges to the Edwards Aquifer Recharge Zone

Discharges cannot be authorized by this general permit where prohibited by 30 Texas Administrative Code (TAC) Chapter 213 (relating to Edwards Aquifer).

- (a) For new discharges located within the Edwards Aquifer Recharge Zone, or within that area upstream from the recharge zone and defined as the Contributing Zone, operators must meet all applicable requirements of, and operate according to, 30 TAC Chapter 213 (Edwards Aquifer Rule) in addition to the provisions and requirements of this general permit.
- (b) For existing discharges, the requirements of the agency-approved Water Pollution Abatement Plan under the Edwards Aquifer Rules are in addition to the requirements of this general permit. BMPs and maintenance schedules for structural storm water controls, for example, may be required as a provision of the rule. All applicable requirements of the Edwards Aquifer Rule for reductions of suspended solids in storm water runoff are in addition to the requirements in this general permit for this pollutant. For discharges from large construction activities located on the Edwards Aquifer contributing zone, applicants must also submit a copy of the NOI to the appropriate TCEQ regional office.”

Counties:

Comal, Bexar, Medina, Uvalde,
and Kinney

Williamson, Travis, and Hays

Contact:

TCEQ
Water Program Manager
San Antonio Regional Office
14250 Judson Rd.
San Antonio, Texas
(210) 490-3096

TCEQ
Water Program Manager
Austin Regional Office
1921 Cedar Bend Dr., Ste. 150
Austin, Texas
(512) 339-2929.

6. Discharges to Specific Watersheds and Water Quality Areas

Discharges otherwise eligible for coverage cannot be authorized by this general permit where prohibited by 30 TAC Chapter 311 (relating to Watershed Protection) for water quality areas and watersheds.

7. Protection of Streams and Watersheds by Other Governmental Entities

This general permit does not limit the authority or ability of federal, other state, or local governmental entities from placing additional or more stringent requirements on construction activities or discharges from construction activities. For example, this permit does not limit the authority of a home-rule municipality provided by Section 401.002 of the Texas Local Government Code.

8. Indian Country Lands

Storm water runoff from construction activities occurring on Indian Country lands are not under the authority of the TCEQ and are not eligible for coverage under this general permit. If discharges of storm water require authorization under federal National Pollutant Discharge Elimination System (NPDES) regulations, authority for these discharges must be obtained from the U.S. Environmental Protection Agency (EPA).

9. Oil and Gas Production

Storm water runoff from construction activities associated with the exploration, development, or production of oil or gas or geothermal resources, including transportation of crude oil or natural gas by pipeline, are not under the authority of the TCEQ and are not eligible for coverage under this general permit. If discharges

of storm water require authorization under federal NPDES regulations, authority for these discharges must be obtained from the EPA.

10. Storm Water Discharges from Agricultural Activities

Storm water discharges from agricultural activities that are not point source discharges of storm water are not subject to TPDES permit requirements. These activities may include clearing and cultivating ground for crops, construction of fences to contain livestock, construction of stock ponds, and other similar agricultural activities.

Section C. Deadlines for Obtaining Authorization to Discharge

1. Large Construction Activities

- (a) New Construction - Discharges from sites where the commencement of construction occurs on or after the issuance date of this general permit must be authorized, either under this general permit or a separate TPDES permit, prior to the commencement of those construction activities.
- (b) Ongoing Construction - Operators of large construction activities continuing to operate after the issuance date of this permit, and authorized under NPDES general permit TXR100000 (issued July 6, 1998, FR 36490), must submit an NOI to obtain authorization under this general permit within 90 days of the issuance date of this general permit. During this interim period, as a requirement of this TPDES permit, the operator must continue to meet the conditions and requirements of the federal NPDES permit. If the construction activity is completed prior to this 90-day deadline, and the site would otherwise qualify for termination of coverage under that federal NPDES permit, the operator must notify the executive director of the TCEQ in writing within 30 days of that condition.

2. Small Construction Activities

- (a) New Construction - Discharges from sites where the commencement of construction occurs on or after the issuance date of this general permit must be authorized, either under this general permit or a separate TPDES permit, prior to the commencement of those construction activities.
- (b) Ongoing Construction - Discharges from ongoing small construction activities that commenced prior to March 10, 2003, and that would not meet the conditions to qualify for termination of this permit as described in Part II.E. of this general permit, must be authorized, either under this general permit or a separate TPDES permit, prior to March 10, 2003.

Section D. Obtaining Authorization to Discharge

1. Small construction activities are determined to occur during periods of low potential for erosion, and operators of these sites may be automatically authorized under this general permit and not required to develop a storm water pollution prevention plan or submit a notice of intent (NOI), provided:
 - (a) the construction activity occurs in a county listed in Appendix A;
 - (b) the construction activity is initiated and completed, including either final or temporary stabilization of all disturbed areas, within the time frame identified in Appendix A for the location of the construction site;
 - (c) all temporary stabilization is adequately maintained to effectively reduce or prohibit erosion, final stabilization activities have been initiated and a condition, of final stabilization is completed no later than 30 days following the end date of the time frame identified in Appendix A for the location of the construction site;
 - (d) the permittee signs a completed construction site notice (Attachment 1 of this general permit), including the certification statement;
 - (e) a signed copy of the construction site notice is posted at the construction site in a location where it is readily available for viewing by the general public, local, state, and federal authorities prior to commencing construction activities, and maintained in that location until completion of the construction activity;
 - (f) a copy of the signed and certified construction site notice is provided to the operator of any municipal separate storm sewer system receiving the discharge at least two days prior to commencement of construction activities; and
 - (g) any supporting concrete batch plant or asphalt batch plant is separately authorized for discharges of storm water runoff or other non-storm water discharges under an individual TPDES permit, another TPDES general permit or under an individual TCEQ permit where storm water and non-storm water is disposed of by evaporation or irrigation (discharges are adjacent to water in the state).
2. Operators of small construction activities not described in Part II.D.1. above may be automatically authorized under this general permit, and operators of these sites are not required to submit an NOI provided they:
 - (a) develop a SWP3 according to the provisions of this general permit, that covers either the entire site or all portions of the site for which the applicant

is the operator, and implement that plan prior to commencing construction activities;

- (b) sign a completed construction site notice (Attachment 2 of this general permit);
 - (c) post a signed copy of the construction site notice at the construction site in a location where it is readily available for viewing by the general public, local, state, and federal authorities, prior to commencing construction activities, and maintain the notice in that location until completion of the construction activity; and
 - (d) provide a copy of the signed and certified construction site notice to the operator of any municipal separate storm sewer system receiving the discharge at least two days prior to commencement of construction activities.
3. Operators of all other construction activities that qualify for coverage under this general permit must:
- (a) develop a SWP3 according to the provisions of this general permit, that covers either the entire site or all portions of the site for which the applicant is the operator, and implement that plan prior to commencing construction activities;
 - (b) submit a Notice of Intent (NOI), using a form provided by the executive director, at least 2 days prior to commencing construction activities; or
 - (c) if the operator changes, or an additional operator is added after the initial NOI is submitted, the new operator must submit an NOI at least two (2) days before assuming operational control;
 - (d) post a copy of the NOI at the construction site in a location where it is readily available for viewing prior to commencing construction activities, and maintain the notice in that location until completion of the construction activity;
 - (e) provide a copy of the signed NOI to the operator of any municipal separate storm sewer system receiving the discharge, at least two (2) days prior to commencing construction activities; and
 - (f) implement the SWP3 prior to beginning construction activities.

4. Effective Date of Coverage

- (a) Operators of construction activities described in either Part II. D.1. or D.2. are authorized immediately following compliance with the conditions of Part II. D.1. or D.2. that are applicable to the construction activity.
- (b) Operators of all other construction activities eligible for coverage under this general permit, unless otherwise notified by the executive director, are provisionally authorized two (2) days from the date that a completed NOI is postmarked for delivery to the TCEQ. If electronic submission of the NOI is provided, and unless otherwise notified by the executive director, operators are provisionally authorized 24 hours following confirmation of receipt of the NOI by the TCEQ. Authorization is non-provisional when the executive director finds the NOI is administratively complete and an authorization number is issued for the activity.
- (c) Operators are not prohibited from submitting late NOIs or posting late notices to obtain authorization under this general permit. The TCEQ reserves the right to take appropriate enforcement actions for any unpermitted activities that may have occurred between the time construction commenced and authorization is obtained.

5. Notice of Change (NOC) Letter

If the operator becomes aware that it failed to submit any relevant facts, or submitted incorrect information in an NOI, the correct information must be provided to the executive director in a NOC letter within 14 days after discovery. If relevant information provided in the NOI changes, a NOC letter must be submitted within 14 days of the change. A copy of the NOC must be provided to the operator of any MS4 receiving the discharge.

6. Signatory Requirement for NOI Forms, Notice of Termination (NOT) Forms, NOC Letters, and Construction Site Notices

NOI forms, NOT forms, NOC letters, and Construction Site Notices must be signed according to 30 TAC § 305.44 (relating to Application for Permit).

7. Contents of the NOI

The NOI form shall require, at a minimum, the following information:

- (a) the name, address, and telephone number of the operator filing the NOI for permit coverage;
- (b) the name (or other identifier), address, county, and latitude/longitude of the construction project or site;

- (c) number of acres that will be disturbed (estimated to the largest whole number);
- (d) whether the project or site is located on Indian Country lands;
- (e) confirmation that a SWP3 has been developed and that the SWP3 will be compliant with any applicable local sediment and erosion control plans; and
- (f) name of the receiving water(s).

Section E. Application to Terminate Coverage

Each operator that has submitted an NOI for authorization under this general permit must apply to terminate that authorization following the conditions described in this section of the general permit. Authorization must be terminated by submitting a Notice of Termination (NOT) on a form supplied by the executive director. Authorization to discharge under this permit terminates at midnight on the day the NOT is postmarked for delivery to the TCEQ. If electronic submission of the NOT is provided, authorization to discharge under this permit terminates immediately following confirmation of receipt of the NOT by the TCEQ. Compliance with the conditions and requirements of this permit is required until an NOT is submitted.

1. Notice of Termination Required

The NOT must be submitted to TCEQ, and a copy of the NOT provided to the operator of any MS4 receiving the discharge, within thirty (30) days, after:

- (a) final stabilization has been achieved on all portions of the site that is the responsibility of the permittee; or
- (b) another permitted operator has assumed control over all areas of the site that have not been finally stabilized; and
- (c) all silt fences and other temporary erosion controls have either been removed, scheduled for removal as defined in the SWP3, or transferred to a new operator if the new operator has sought permit coverage. Erosion controls that are designed to remain in place for an indefinite period, such as mulches and fiber mats, are not required to be removed or scheduled for removal.

2. Minimum Contents of the NOT

The NOT form shall require, at a minimum, the following information:

- (a) if authorization was granted following submission of a NOI, the permittees site-specific TPDES general permit number for the construction site;

- (b) an indication of whether the construction activity is completed or if the permittee is simply no longer an operator at the site;
- (c) the name, address and telephone number of the permittee submitting the NOT;
- (d) the name (or other identifier), address, county, and latitude/longitude of the construction project or site; and
- (e) a signed certification that either all storm water discharges requiring authorization under this general permit will no longer occur, or that the applicant to terminate coverage is no longer the operator of the facility or construction site, and that all temporary structural erosion controls have either been removed, will be removed on a schedule defined in the SWP3, or transferred to a new operator if the new operator has applied for permit coverage. Erosion controls that are designed to remain in place for an indefinite period, such as mulches and fiber mats, are not required to be removed or scheduled for removal.

Section F. Waivers from Coverage

The executive director may waive the otherwise applicable requirements of this general permit for storm water discharges from small construction activities under the terms and conditions described in this section.

1. Waiver Applicability and Coverage

Operators of small construction activities may apply for and receive a waiver from the requirements to obtain authorization under this general permit where:

- (a) the calculated rainfall erosivity R factor for the entire period of the construction project is less than five (5);
- (b) the operator submits a signed waiver certification form, supplied by the executive director, certifying that the construction activity will commence and be completed within a period when the value of the calculated rainfall erosivity R factor is less than five (5); and
- (c) the waiver certification form is submitted to the TCEQ at least two (2) days before construction activity begins.

2. Effective Date of Waiver

Operators of small construction activities are provisionally waived from the otherwise applicable requirements of this general permit two (2) days from the date that a completed waiver certification form is postmarked for delivery to TCEQ.

3. Activities Extending Beyond the Waiver Period

If a construction activity extends beyond the approved waiver period due to circumstances beyond the control of the operator, the operator must either:

- (a) recalculate the rainfall erosivity factor R factor using the original start date and a new projected ending date, and if the R factor is still under five (5), submit a new waiver certification form at least two (2) days before the end of the original waiver period; or
- (b) obtain authorization under this general permit according to the requirements delineated in either Part II.D.2. or Part II.D.3. at least two (2) days before the end of the approved waiver period.

Section G. Alternative TPDES Permit Coverage

1. Individual Permit Alternative

Any discharge eligible for coverage under this general permit may alternatively be authorized under an individual TPDES permit according to 30 TAC Chapter 305 (relating to Consolidated Permits). Applications for individual permit coverage should be submitted at least three hundred and thirty (330) days prior to commencement of construction activities to ensure timely issuance.

2. Individual Permit Required

The executive director may suspend an authorization or NOI in accordance with the procedures set forth in 30 TAC Chapter 205, including the requirement that the executive director provide written notice to the permittee. The executive director may require an operator of a construction site, otherwise eligible for authorization under this general permit, to apply for an individual TPDES permit because of:

- (a) the conditions of an approved TMDL or TMDL implementation plan;
- (b) the activity is determined to cause a violation of water quality standards or is found to cause, or contribute to, the loss of a designated use of surface water in the state: and
- (c) any other considerations defined in 30 TAC Chapter 205 would include the provision at 30 TAC § 205.4(c)(3)(D), which allows TCEQ to deny authorization under the general permit and require an individual permit if a discharger “has been determined by the executive director to have been out of compliance with any rule, order, or permit of the commission, including non-payment of fees assessed by the executive director.”

3. Any discharge eligible for authorization under this general permit may alternatively be authorized under a separate, applicable general permit according to 30 TAC Chapter 205 (relating to General Permits for Waste Discharges).

Section H. Permit Expiration

This general permit shall be issued for a term not to exceed five (5) years. Following public notice and comment, as provided by 30 TAC § 205.3 (relating to Public Notice, Public Meetings, and Public Comment), the commission may amend, revoke, cancel, or renew this general permit. If the TCEQ publishes a notice of its intent to renew or amend this general permit before the expiration date, the permit will remain in effect for existing, authorized, discharges until the commission takes final action on the permit. Upon issuance of a renewed or amended permit, permittees may be required to submit an NOI within 90 days following the effective date of the renewed or amended permit, unless that permit provides for an alternative method for obtaining authorization.

In the event that the general permit is not renewed, discharges that are authorized under the general permit must obtain either a TPDES individual permit or coverage under an alternative general permit.

Part III. Storm Water Pollution Prevention Plans (SWP3)

Storm water pollution prevention plans must be prepared for storm water discharges that will reach Waters of the United States, including discharges to MS4 systems and privately owned separate storm sewer systems that drain to Waters of the United States, to identify and address potential sources of pollution that are reasonably expected to affect the quality of discharges from the construction site, including off-site material storage areas, overburden and stockpiles of dirt, borrow areas, equipment staging areas, vehicle repair areas, fueling areas, etc., used solely by the permitted project. The SWP3 must describe and ensure the implementation of practices that will be used to reduce the pollutants in storm water discharges associated with construction activity at the construction site and assure compliance with the terms and conditions of this permit.

Individual operators at a site may develop separate SWP3s that cover only their portion of the project provided reference is made to the other operators at the site. Where there is more than one SWP3 for a site, permittees must coordinate to ensure that BMPs and controls are consistent, and do not negate or impair the effectiveness of each other. Regardless of whether a single comprehensive SWP3 is developed, or separate SWP3s are developed for each operator, it is the responsibility of each operator to ensure that compliance with the terms and conditions of this general permit is met in the areas of the construction site where that operator has operational control over construction plans and specifications or day-to-day operational control.

Section A. Shared SWP3 Development

For more effective coordination of BMPs and opportunities for cost sharing, a cooperative effort by the different operators at a site is encouraged. Operators must independently submit an NOI and obtain authorization, but may work together to prepare and implement a single comprehensive SWP3 for the entire construction site.

1. The SWP3 must clearly list the name and, for large construction activities, the general permit authorization numbers, for each operator that participates in the shared SWP3. Until the TCEQ responds to receipt of the NOI with a general permit authorization number, the SWP3 must specify the date that the NOI was submitted to TCEQ by each operator. Each participant in the shared plan must also sign the SWP3.
2. The SWP3 must clearly indicate which operator is responsible for satisfying each shared requirement of the SWP3. If the responsibility for satisfying a requirement is not described in the plan, then each permittee is entirely responsible for meeting the requirement within the boundaries of the construction site where they perform construction activities. The SWP3 must clearly describe responsibilities for meeting each requirement in shared or common areas.

Section B. Responsibilities of Operators

1. Operators with Control Over Construction Plans and Specifications

All operators with operational control over construction plans and specifications to the extent necessary to meet the requirements and conditions of this general permit must:

- (a) ensure the project specifications allow or provide that adequate BMPs may be developed to meet the requirements of Part III of this general permit;
- (b) ensure that the SWP3 indicates the areas of the project where they have operational control over project specifications (including the ability to make modifications in specifications);
- (c) ensure all other operators affected by modifications in project specifications are notified in a timely manner such that those operators may modify best management practices as are necessary to remain compliant with the conditions of this general permit; and
- (d) ensure that the SWP3 for portions of the project where they are operators indicates the name and TPDES permit numbers for permittees with the day-to-day operational control over those activities necessary to ensure compliance with the SWP3 and other permit conditions. In the case that responsible parties have not been identified, the permittee with operational control over project specifications must be considered to be the responsible party until such time as the authority is transferred to another party and the plan is updated.

2. Operators with Day-to-Day Operational Control

Operators with day-to-day operational control of those activities at a project that are necessary to ensure compliance with a SWP3 and other permit conditions must:

- (a) ensure that the SWP3 for portions of the project where they are operators meets the requirements of this general permit;
- (b) ensure that the SWP3 identifies the parties responsible for implementation of best management practices described in the plan;
- (c) ensure that the SWP3 indicates areas of the project where they have operational control over day-to-day activities;
- (d) ensure that the SWP3 indicates, for areas where they have operational control over day-to-day activities, the name and TPDES permit number of the parties with operational control over project specifications (including the ability to make modifications in specifications).

Section C. Deadlines for SWP3 Preparation and Compliance

1. The SWP3 must be:

- (a) completed prior to obtaining authorization under this general permit;
- (b) implemented prior to commencing construction activities that result in soil disturbance;
- (c) updated as necessary to reflect the changing conditions of new operators, new areas of responsibility, and changes in best management practices; and
- (d) prepared so that it provides for compliance with the terms and conditions of this general permit.

Section D. Plan Review and Making Plans Available

- 1. The SWP3 must be retained on-site at the construction site or, if the site is inactive or does not have an on-site location to store the plan, a notice must be posted describing the location of the SWP3. The SWP3 must be made readily available at the time of an on-site inspection to: the executive director; a federal, state, or local agency approving sediment and erosion plans, grading plans, or storm water management plans; local government officials; and the operator of a municipal separate storm sewer receiving discharges from the site.
- 2. Operators of a large construction activity obtaining authorization to discharge through submission of a NOI must post a notice near the main entrance of the

construction site. If the construction project is a linear construction project (e.g. pipeline, highway, etc.), the notice must be placed in a publicly accessible location near where construction is actively underway. Notice for these linear sites may be relocated, as necessary, along the length of the project. The notice must be readily available for viewing by the general public, local, state, and federal authorities, and contain the following information:

- (a) the TPDES general permit number for the project (or a copy of the NOI that was submitted to the TCEQ if a permit number has not yet been assigned);
 - (b) the name and telephone number of a representative for the operator;
 - (c) a brief description of the project; and
 - (d) the location of the SWP3.
3. This permit does not provide the general public with any right to trespass on a construction site for any reason, including inspection of a site; nor does this permit require that permittees allow members of the general public access to a construction site.

Section E. Keeping Plans Current

The permittee must revise or update the storm water pollution prevention plan whenever:

- 1. there is a change in design, construction, operation, or maintenance that has a significant effect on the discharge of pollutants and that has not been previously addressed in the SWP3; or
- 2. results of inspections or investigations by site operators, operators of a municipal separate storm sewer system receiving the discharge, authorized TCEQ personnel, or a federal, state or local agency approving sediment and erosion plans indicate the SWP3 is proving ineffective in eliminating or significantly minimizing pollutants in discharges authorized under this general permit.

Section F. Contents of SWP3

The SWP3 must include, at a minimum, the information described in this section.

- 1. A site description, or project description must be developed to include:
 - (a) a description of the nature of the construction activity, potential pollutants and sources;
 - (b) a description of the intended schedule or sequence of major activities that will disturb soils for major portions of the site;

- (c) the total number of acres of the entire property and the total number of acres where construction activities will occur, including off-site material storage areas, overburden and stockpiles of dirt, and borrow areas;
 - (d) data describing the soil or the quality of any discharge from the site;
 - (e) a map showing the general location of the site (e.g. a portion of a city or county map);
 - (f) a detailed site map (or maps) indicating the following:
 - (i) drainage patterns and approximate slopes anticipated after major grading activities;
 - (ii) areas where soil disturbance will occur;
 - (iii) locations of all major structural controls either planned or in place;
 - (iv) locations where stabilization practices are expected to be used;
 - (v) locations of off-site material, waste, borrow, fill, or equipment storage areas;
 - (vi) surface waters (including wetlands) either adjacent or in close proximity; and
 - (vii) locations where storm water discharges from the site directly to a surface water body.
 - (g) the location and description of asphalt plants and concrete plants providing support to the construction site and authorized under this general permit;
 - (h) the name of receiving waters at or near the site that will be disturbed or that will receive discharges from disturbed areas of the project; and
 - (i) a copy of this TPDES general permit.
2. The SWP3 must describe the best management practices that will be used to minimize pollution in runoff. The description must identify the general timing or sequence for implementation. At a minimum, the description must include the following components:
- (a) Erosion and Sediment Controls
 - (i) Erosion and sediment controls must be designed to retain sediment on-site to the extent practicable with consideration for local

topography, soil type, and rainfall. Controls must also be designed and utilized to reduce the offsite transport of suspended sediments and other pollutants if it is necessary to pump or channel standing water from the site.

- (ii) Control measures must be properly selected, installed, and maintained according to the manufacturer's or designer's specifications. If periodic inspections or other information indicates a control has been used incorrectly, or that the control is performing inadequately, the operator must replace or modify the control as soon as practicable after discovery that the control has been used incorrectly, is performing inadequately, or is damaged.
- (iii) Sediment must be removed from sediment traps and sedimentation ponds no later than the time that design capacity has been reduced by 50%.
- (iv) If sediment escapes the site, accumulations must be removed at a frequency to minimize further negative effects, and whenever feasible, prior to the next rain event.
- (v) Controls must be developed to limit, to the extent practicable, offsite transport of litter, construction debris, and construction materials.

(b) Stabilization Practices

The SWP3 must include a description of interim and permanent stabilization practices for the site, including a schedule of when the practices will be implemented. Site plans should ensure that existing vegetation is preserved where it is possible.

- (i) Stabilization practices may include but are not limited to: establishment of temporary vegetation, establishment of permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of existing trees and vegetation, and other similar measures.
- (ii) The following records must be maintained and either attached to or referenced in the SWP3, and made readily available upon request to the parties in Part III.D.1 of this general permit:
 - (a) the dates when major grading activities occur;
 - (b) the dates when construction activities temporarily or permanently cease on a portion of the site; and

- (c) the dates when stabilization measures are initiated.
- (iii) Stabilization measures must be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and except as provided in (a) through (c) below, must be initiated no more than fourteen (14) days after the construction activity in that portion of the site has temporarily or permanently ceased.
 - (a) Where the initiation of stabilization measures by the 14th day after construction activity temporarily or permanently ceased is precluded by snow cover or frozen ground conditions, stabilization measures must be initiated as soon as practicable.
 - (b) Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within twenty-one (21) days, temporary stabilization measures do not have to be initiated on that portion of site.
 - (c) In arid areas (areas with an average rainfall of 0 to 10 inches), semiarid areas (areas with an average annual rainfall of 10 to 20 inches), and areas experiencing droughts where the initiation of stabilization measures by the 14th day after construction activity has temporarily or permanently ceased is precluded by seasonably arid conditions, stabilization measures must be initiated as soon as practicable.

3. Structural Control Practices

The SWP3 must include a description of any structural control practices used to divert flows away from exposed soils, to limit the contact of runoff with disturbed areas, or to lessen the off-site transport of eroded soils.

- (a) Sediment basins are required, where feasible for common drainage locations that serve an area with ten (10) or more acres disturbed at one time, a temporary (or permanent) sediment basin that provides storage for a calculated volume of runoff from a 2-year, 24-hour storm from each disturbed acre drained, or equivalent control measures, shall be provided where attainable until final stabilization of the site. Where rainfall data is not available or a calculation cannot be performed, a temporary (or permanent) sediment basin providing 3,600 cubic feet of storage per acre drained is required where attainable until final stabilization of the site. When calculating the volume of runoff from a 2-year, 24-hour storm event, it is not required to include the flows from offsite areas and flow from onsite areas that are either undisturbed or have already undergone final stabilization, if

these flows are diverted around both the disturbed areas of the site and the sediment basin. In determining whether installing a sediment basin is feasible, the permittee may consider factors such as site soils, slope, available area on site, public safety, precipitation patterns, site geometry, site vegetation, infiltration capacity, geotechnical factors, depth to groundwater and other similar considerations. Where sediment basins are not feasible, equivalent control measures, which may include a series of smaller sediment basins, must be used. At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries (and for those side slope boundaries deemed appropriate as dictated by individual site conditions) of the construction area.

- (b) Sediment traps and sediment basins may also be used to control solids in storm water runoff for drainage locations serving less than ten (10) acres. At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries (and for those side slope boundaries deemed appropriate as dictated by individual site conditions) of the construction. Alternatively, a sediment basin that provides storage for a calculated volume of runoff from a 2-year, 24-hour storm from each disturbed acre drained, or equivalent control measures, may be provided or where rainfall data is not available or a calculation cannot be performed, a temporary (or permanent) sediment basin providing 3,600 cubic feet of storage per acre drained may be provided.

4. Permanent Storm Water Controls

A description of any measures that will be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed must be included in the SWP3. Permittees are only responsible for the installation and maintenance of storm water management measures prior to final stabilization of the site or prior to submission of an NOT.

5. Other Controls

- (a) Off-site vehicle tracking of sediments and the generation of dust must be minimized.
- (b) The SWP3 must include a description of construction and waste materials expected to be stored on-site and a description of controls to reduce pollutants from these materials.
- (c) The SWP3 must include a description of pollutant sources from areas other than construction (including storm water discharges from dedicated asphalt plants and dedicated concrete plants), and a description of controls and measures that will be implemented at those sites to minimize pollutant discharges.

- (d) Velocity dissipation devices shall be placed at discharge locations and along the length of any outfall channel to provide a non-erosive flow velocity from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected.

6. Approved State and Local Plans

- (a) Permittees must ensure the SWP3 is consistent with requirements specified in applicable sediment and erosion site plans or site permits, or storm water management site plans or site permits approved by federal, state, or local officials.
- (b) SWP3s must be updated as necessary to remain consistent with any changes applicable to protecting surface water resources in sediment erosion site plans or site permits, or storm water management site plans or site permits approved by state or local official for which the permittee receives written notice.

7. Maintenance

All erosion and sediment control measures and other protective measures identified in the SWP3 must be maintained in effective operating condition. If through inspections the permittee determines that BMPs are not operating effectively, maintenance must be performed before the next anticipated storm event or as necessary to maintain the continued effectiveness of storm water controls. If maintenance prior to the next anticipated storm event is impracticable, maintenance must be scheduled and accomplished as soon as practicable. Erosion and sediment controls that have been intentionally disabled, run-over, removed, or otherwise rendered ineffective must be replaced or corrected immediately upon discovery.

8. Inspections of Controls

In the event of flooding or other uncontrollable situations which prohibit access to the inspection sites, inspections must be conducted as soon as access is practicable

- (a) Personnel provided by the permittee and familiar with the SWP3 must inspect disturbed areas of the construction site that have not been finally stabilized, areas used for storage of materials that are exposed to precipitation, and structural controls for evidence of, or the potential for, pollutants entering the drainage system. Sediment and erosion control measures identified in the SWP3 must be inspected to ensure that they are operating correctly. Locations where vehicles enter or exit the site must be inspected for evidence of off-site sediment tracking. Inspections must be conducted at least once every fourteen (14) calendar days and within twenty four (24) hours of the end of a storm event of 0.5 inches or greater.

Where sites have been finally or temporarily stabilized, where runoff is unlikely due to winter conditions (e.g. site is covered with snow, ice, or frozen ground exists), or during seasonal arid periods in arid areas (areas with an average annual rainfall of 0 to 10 inches) and semi-arid areas (areas with an average annual rainfall of 10 to 20 inches), inspections must be conducted at least once every month.

As an alternative to the above-described inspection schedule of once every fourteen (14) calendar days and within twenty four (24) hours of a storm event of 0.5 inches or greater, the SWP3 may be developed to require that these inspections will occur at least once every seven (7) calendar days. If this alternative schedule is developed, the inspection must occur on a specifically defined day, regardless of whether or not there has been a rainfall event since the previous inspection.

- (b) Utility line installation, pipeline construction, and other examples of long, narrow, linear construction activities may provide inspection personnel with limited access to the areas described in Part III.F.8.(a) above. Inspection of these areas could require that vehicles compromise temporarily or even permanently stabilized areas, cause additional disturbance of soils, and increase the potential for erosion. In these circumstances, controls must be inspected at least once every fourteen (14) calendar days and within twenty four (24) hours of the end of a storm event of 0.5 inches, but representative inspections may be performed. For representative inspections, personnel must inspect controls along the construction site for 0.25 mile above and below each access point where a roadway, undisturbed right-of-way, or other similar feature intersects the construction site and allows access to the areas described in Part III.F.8.(a) above. The conditions of the controls along each inspected 0.25 mile segment may be considered as representative of the condition of controls along that reach extending from the end of the 0.25 mile segment to either the end of the next 0.25 mile inspected segment, or to the end of the project, whichever occurs first.

As an alternative to the above-described inspection schedule of once every fourteen (14) calendar days and within twenty four (24) hours of a storm event of 0.5 inches or greater, the SWP3 may be developed to require that these inspections will occur at least once every seven (7) calendar days. If this alternative schedule is developed, the inspection must occur on a specifically defined day, regardless of whether or not there has been a rainfall event since the previous inspection.

- (c) The SWP3 must be modified based on the results of inspections, as necessary, to better control pollutants in runoff. Revisions to the SWP3 must be completed within seven (7) calendar days following the inspection. If existing BMPs are modified or if additional BMPs are necessary, an implementation schedule must be described in the SWP3 and wherever

possible those changes implemented before the next storm event. If implementation before the next anticipated storm event is impracticable, these changes must be implemented as soon as practicable.

- (d) A report summarizing the scope of the inspection, names and qualifications of personnel making the inspection, the dates of the inspection, and major observations relating to the implementation of the SWP3 must be made and retained as part of the SWP3. Major observations should include: The locations of discharges of sediment or other pollutants from the site; locations of BMPs that need to be maintained; locations of BMPs that failed to operate as designed or proved inadequate for a particular location; and locations where additional BMPs are needed.

Actions taken as a result of inspections must be described within, and retained as a part of, the SWP3. Reports must identify any incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report must contain a certification that the facility or site is in compliance with the SWP3 and this permit. The report must be signed by the person and in the manner required by 30 TAC § 305.128 (relating to Signatories to Reports)

- 9. The SWP3 must identify and ensure the implementation of appropriate pollution prevention measures for all eligible non-storm water components of the discharge.

Part IV. Numeric Effluent Limitations

Section A. Limitations

All discharges of storm water runoff from concrete batch plants that qualify for coverage, and that are authorized to discharge storm water under the provisions of this general permit must be monitored at the following monitoring frequency and comply with the following numeric effluent limitations:

<u>Parameter</u>	<u>Limitations</u> <u>Daily Maximum</u>	<u>Monitoring</u> <u>Frequency</u>
Total Suspended Solids	65 mg/l	1/Year*
Oil and Grease	15 mg/l	1/Year*
pH	between 6 and 9 standard units	1/Year*

* If discharge occurs.

Section B. Reporting Requirements

Results of monitoring for determining compliance with numeric effluent limitations must be recorded on a discharge monitoring report (DMR). The DMR must either be an original EPA No. 3320-1 form (Attachment 3 of this general permit), a duplicate of the form, or as otherwise provided by the executive director. Monitoring must be conducted prior to December 31st for each annual

monitoring period. A copy of the DMR must either be retained at the facility or shall be made readily available for review by authorized TCEQ personnel upon request, by March 31st following the end of each annual monitoring period. If the results indicate the violation of one or more of these numeric limitations, the permittee must also submit the DMR to the TCEQ's Information Resources Center (MC 212) by March 31st of each annual monitoring period.

Part V. Retention of Records

The permittee must retain the following records for a minimum period of three (3) years from the date that a NOT is submitted as required by Part II.D. For activities that are not required to submit an NOT, records shall be retained for a minimum period of three (3) years from the date that either: final stabilization has been achieved on all portions of the site that is the responsibility of the permittee; or another permitted operator has assumed control according to over all areas of the site that have not been finally stabilized. Records include:

1. A copy of the SWP3 plan.
2. All reports and actions required by this permit, including a copy of the construction site notice.
3. All data used to complete the NOI, if an NOI is required for coverage under this general permit.

Part VI. Standard Permit Conditions

1. The permittee has a duty to comply with all permit conditions. Failure to comply with any permit condition is a violation of the permit and statutes under which it was issued, and is grounds for enforcement action, for terminating coverage under this general permit, or for requiring a discharger to apply for and obtain an individual TPDES permit.
2. Authorization under this general permit may be suspended or revoked for cause. Filing a notice of planned changes or anticipated non-compliance by the permittee does not stay any permit condition. The permittee must furnish to the executive director, upon request and within a reasonable time, any information necessary for the executive director to determine whether cause exists for revoking, suspending, or terminating authorization under this permit. Additionally, the permittee must provide to the executive director, upon request, copies of all records that the permittee is required to maintain as a condition of this general permit.
3. It is not a defense for a discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity to maintain compliance with the permit conditions.
4. Inspection and entry shall be allowed under Texas Water Code Chapters 26-28, Health and Safety Code §§ 361.032-361.033 and 361.037, and 40 Code of Federal Regulations (CFR) §122.41(i). The statement in Texas Water Code § 26.014 that commission entry of a facility shall occur according to an establishment's rules and regulations concerning safety, internal security, and fire protection is not grounds for denial or restriction of entry to any part of the

facility or site, but merely describes the commission's duty to observe appropriate rules and regulations during an inspection.

5. The discharger is subject to administrative, civil, and criminal penalties, as applicable, under Texas Water Code §§ 26.136, 26.212, and 26.213 for violations including but not limited to the following:
 - a. negligently or knowingly violating CWA, §§ 301, 302, 306, 307, 308, 318, or 405, or any condition or limitation implementing any sections in a permit issued under CWA, § 402, or any requirement imposed in a pretreatment program approved under CWA, §§ 402(a)(3) or 402(b)(8);
 - b. knowingly making any false statement, representation, or certification in any record or other document submitted or required to be maintained under a permit, including monitoring reports or reports of compliance or noncompliance.
6. All reports and other information requested by the executive director must be signed by the person and in the manner required by 30 TAC § 305.128 (relating to Signatories to Reports).
7. Authorization under this general permit does not convey property or water rights of any sort and does not grant any exclusive privilege.

Part VII. Fees

Section A. Application Fees

An application fee of \$100 must be submitted with each NOI for coverage of a large construction activity. A fee is not required for submission of an NOT or NOC letter.

Section B. Water Quality Fees

Large construction activities authorized under this general permit must pay an annual Water Quality Fee of \$100 under Texas Water Code 26.0291 and according to TAC Chapter 205 (relating to General Permits for Waste Discharges).

Appendix A.
Periods of Low Erosion Potential by County

<u>Start Date - End Date</u>	<u>Start Date - End Date</u>	<u>Start Date - End Date</u>
Dec. 15 - Feb. 14	Nov. 15 - Apr. 30	Nov. 15 - Jan. 14 or Feb. 1 - Mar. 30
Archer	Andrews	Crockett
Baylor	Armstrong	Dickens
Brown	Borden	Kent
Callahan	Brewster	Motley
Childress	Briscoe	Val Verde
Coke	Carson	
Coleman	Castro	<u>Start Date - End Date</u>
Concho	Crane	Nov. 1 - Apr. 14 or Nov. 15 - Apr. 30
Cottle	Crosby	Dallam
Dimmit	Dawson	Hockley
Eastland	Deaf Smith	Lamb
Edwards	Ector	Parmer
Fisher	Floyd	Ward
Foard	Gaines	
Hardeman	Garza	<u>Start Date - End Date</u>
Haskell	Glasscock	Nov. 1 - Apr. 30 or Nov. 15 - May. 14
Irion	Hale	Bailey
Jones	Hansford	Cochran
Kerr	Hartley	Jeff Davis
Kimble	Howard	Loving
King	Hutchinson	Presidio
Kinney	Lubbock	Reeves
Knox	Lynn	Winkler
Mason	Martin	Yoakum
Maverick	Midland	
McCulloch	Mitchell	<u>Start Date - End Date</u>
Menard	Moore	Nov. 1 - May. 14
Nolan	Oldham	Culberson
Real	Pecos	Hudspeth
Runnels	Potter	
Schleicher	Randall	<u>Start Date - End Date</u>
Shackelford	Reagan	Jan. 1 - Jul. 14 or May. 15 - Jul. 31 or
Stephens	Scurry	Jun. 1 - Aug. 14 or Jun. 15 - Sept. 14 or
Stonewall	Sherman	Jul. 1 - Oct. 14 or Jul. 15 - Oct. 31 or
Sutton	Sterling	Aug. 1 - Apr. 30 or Aug. 15 - May. 14 or
Taylor	Swisher	Sept. 1 - May. 30 or Oct. 1 - Jun. 14 or
Throckmorton	Terrell	Nov. 1 - Jun. 30 or Nov. 15 - Jul. 14
Tom Green	Terry	El Paso
Uvalde	Upton	
Wichita		<u>Start Date - End Date</u>
Wilbarger	<u>Start Date - End Date</u>	Jan. 1 - Mar. 30 or Dec. 1 - Feb. 28
Young	Feb. 1 - Mar. 30	Collingsworth Wheeler
Zavala	Hall	Donley
		Gray
		Hemphill
		Lipscomb
		Ochiltree
		Roberts



CONSTRUCTION SITE NOTICE

FOR THE
Texas Commission on Environmental Quality (TCEQ)
Storm Water Program
TPDES GENERAL PERMIT TXR150000

The following information is posted in compliance with **Part II.D.1.** of the TCEQ General Permit Number TXR150000 for discharges of storm water runoff from construction sites. Additional information regarding the TCEQ storm water permit program may be found on the internet at:

www.tnrcc.state.tx.us/permitting/waterperm/wwperm/tpdestorm

Contact Name and Phone Number:	
Project Description: (Physical address or description of the site's location, estimated start date and projected end date, or date that disturbed soils will be stabilized)	

For Construction Sites Authorized Under Part II.D.1. the following certification must be completed:

I _____ (Typed or Printed Name Person Completing This Certification) certify under penalty of law that I have read and understand the eligibility requirements for claiming an authorization by waiver under Part II.D.1. of TPDES General Permit TXR150000 and agree to comply with the terms of this permit. Construction activities at this site shall occur within a time period listed in Appendix A of the TPDES general permit for this county, that period beginning on _____ and ending on _____. I understand that if construction activities continue past this period, all storm water runoff must be authorized under a separate provision of this general permit. A copy of this signed notice is supplied to the operator of the MS4 if discharges enter an MS4 system. I am aware there are significant penalties for providing false information or for conducting unauthorized discharges, including the possibility of fine and imprisonment for knowing violations.

 Signature and Title

 Date



CONSTRUCTION SITE NOTICE

FOR THE
 Texas Commission on Environmental Quality (TCEQ)
 Storm Water Program
TPDES GENERAL PERMIT TXR150000

The following information is posted in compliance with **Part II.D.2.** of the TCEQ General Permit Number TXR150000 for discharges of storm water runoff from construction sites. Additional information regarding the TCEQ storm water permit program may be found on the internet at:

www.tnrcc.state.tx.us/permitting/waterperm/wwperm/tpdestorm

Contact Name and Phone Number:	
Project Description: ((Physical address or description of the site's location, estimated start date and projected end date, or date that disturbed soils will be stabilized))	
Location of Storm Water Pollution Prevention Plan :	

For Construction Sites Authorized Under Part II.D.2. (Obtaining Authorization to Discharge) the following certification must be completed:

I _____ (Typed or Printed Name Person Completing This Certification) certify under penalty of law that I have read and understand the eligibility requirements for claiming an authorization under Part II.D.2. of TPDES General Permit TXR150000 and agree to comply with the terms of this permit. A storm water pollution prevention plan has been developed and implemented according to permit requirements. A copy of this signed notice is supplied to the operator of the MS4 if discharges enter an MS4 system. I am aware there are significant penalties for providing false information or for conducting unauthorized discharges, including the possibility of fine and imprisonment for knowing violations.

 Signature and Title

 Date

CONCRETE BATCH FACILITIES

STW/ TXR15_____ / CO

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

NOTE: Enter your permit number in the underlined space in the upper right hand corner of this page. Example: STW/TXR15 00123/ CO

NAME

DISCHARGE MONITORING REPORT (DMR)

ADDRESS

(2-16)	(17-19)
PERMIT NUMBER	DISCHARGE NUMBER

Mail to: TCEQ (MC 212)
P.O. Box 13087
Austin, TX 78711-3087

FACILITY LOCATION

MONITORING PERIOD					
YEAR	MO	DAY	YEAR	MO	DAY
	01	01		12	31
(20-21)	(22-23)	(24-25)	(26-27)	(28-29)	(30-31)

PARAMETER (32-37)	SAMPLE MEASUREMENT / REQUIREMENT	(3 Card Only) QUANTITY OR LOADING (46-53) (54-61)			(4 Card Only) QUALITY OR CONCENTRATION (38-45) (46-53) (54-61)			NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM			
Total Suspended Solids	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****				
	SAMPLE REQUIREMENT	*****	*****	*****	*****	*****	65 Daily Max	mg/l	1/Year	Grab
Oil & Grease	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****				
	SAMPLE REQUIREMENT	*****	*****	*****	*****	*****	15 Daily Max	mg/l	1/Year	Grab
pH	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****				
	SAMPLE REQUIREMENT	*****	*****	*****	*****	*****	6.0 - 9.0 Range	S.U.	1/Year	Grab
	SAMPLE MEASUREMENT									
	SAMPLE REQUIREMENT									

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED, BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION. THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.	TELEPHONE	DATE				
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

SECTION 08120

BLAST RESISTANT ALUMINUM DOORS AND FRAMES

09/99

AMENDMENT NO. 0003

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

ALUMINUM ASSOCIATION (AA)

AA 45 (1980) Aluminum Finishes

AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA)

AAMA 603.8 (1992; Addendum 1993) Pigmented Organic Coatings on Extruded Aluminum

AAMA 605.2 (1992; Addendum 1995) High Performance Organic Coatings on Architectural Extrusions and Panels

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 36/A 36M (1997; Rev. A) Carbon Structural Steel

ASTM B 209M (1995) Aluminum and Aluminum-Alloy Sheet and Plate (Metric)

ASTM B 209 (1996) Aluminum and Aluminum-Alloy Sheet and Plate

ASTM B 221M (1996) Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric)

ASTM B 221 (1996) Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes

ASTM E 283 (1991) Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen

ASTM E 331 (1996) Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference

1.2 PERFORMANCE REQUIREMENTS

1.2.1 Structural

Shapes and thicknesses of framing members shall be sufficient to withstand a design wind load of not less than 30 pounds per square foot of supported area with a deflection of not more than 1/175 times the length of the member and a safety factor of not less than 1.65. Provide glazing beads, moldings, and trim of not less than 0.050 inch nominal thickness.

1.2.2 Air Infiltration

When tested in accordance with ASTM E 283, air infiltration shall not exceed 0.06 cubic feet per minute per square foot of fixed area at a test pressure of 6.24 pounds per square foot (50 mile per hour wind).

1.2.3 Water Penetration

When tested in accordance with ASTM E 331, there shall be no water penetration at a pressure of 8 pounds per square foot of fixed area.

1.3 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures."

SD-02 Shop Drawings

- Doors and frames; G
- Transoms; G
- Adjoining sidelight; G
- Adjoining window wall; G
- Provisions for Glazing
- Door Operator

Show elevations of each door type, transom, adjoining sidelight and adjoining window wall, size of doors and frames, metal gages, details of door and frame construction, methods of anchorage, glazing details, weatherstripping, provisions for and location of hardware and door operator system, and details of installation.

SD-06 Test Reports

- Source quality control

SD-08 Manufacturer's Instructions

- Doors and frames

Submit detail specifications and instructions for installation, adjustments, cleaning, and maintenance.

1.4 DELIVERY, STORAGE, AND HANDLING

Inspect materials delivered to the site for damage. Unload and store with minimum handling. Provide storage space in dry location with adequate ventilation, free from dust or water, and easily accessible for inspection and handling. Stack materials on nonabsorptive strips or wood platforms. Do not cover doors and frames with tarps, polyethylene film, or similar coverings. Protect finished surfaces during shipping and handling using manufacturer's standard method, except that no coatings or lacquers shall be applied to surfaces to which calking and glazing compounds must adhere.

PART 2 PRODUCTS

2.1 DOORS AND FRAMES

Swing-type aluminum doors and frames of size, design, and location indicated. Provide doors complete with frames, framing members, subframes, transoms, adjoining sidelights, adjoining window wall, trim, and accessories.

2.2 MATERIALS

2.2.1 Anchors

Stainless steel or steel with hot-dipped galvanized finish.

2.2.2 Weatherstripping

Continuous wool pile, silicone treated, or type recommended by door manufacturer.

2.2.3 Aluminum Alloy for Doors and Frames

ASTM B 221, Alloy 6063-T5 for extrusions. ASTM B 209, alloy and temper best suited for aluminum sheets and strips.

2.2.4 Fasteners

Hard aluminum or stainless steel.

2.2.5 Structural Steel

ASTM A 36/A 36M.

2.2.6 Aluminum Paint

Type as recommended by aluminum door manufacturer.

2.3 FABRICATION

2.3.1 Aluminum Frames

Extruded aluminum shapes with contours approximately as indicated. Provide removable glass stops and glazing beads for frames accommodating fixed glass. Use countersunk stainless steel Phillips screws for exposed fastenings, and space not more than 12 inches o.c. Mill joints in frame members to a hairline fit, reinforce, and secure mechanically.

2.3.2 Aluminum Doors

Of type, size, and design indicated and not less than 1 3/4 inches thick. Minimum wall thickness, 0.125 inch, except beads and trim, 0.050 inch. Door sizes shown are nominal and shall include standard clearances as follows: 0.093 inch at hinge and lock stiles, 0.125 inch between meeting stiles, 0.125 inch at top rails, 0.187 inch between bottom and threshold, and 0.687 inch between bottom and floor. Bevel single-acting doors 0.063 or 0.125 inch at lock, hinge, and meeting stile edges. Double-acting doors shall have rounded edges at hinge stile, lock stile, and meeting stile edges.

2.3.2.1 Full Glazed Stile and Rail Doors

Doors shall have medium stiles and rails as indicated. Fabricate from extruded aluminum hollow seamless tubes or from a combination of open-shaped members interlocked or welded together. Fasten top and bottom rail together by means of welding or by 3/8 or 1/2 inch diameter cadmium-plated tensioned steel tie rods. Provide an adjustable mechanism of jack screws or other methods in the top rail to allow for minor clearance adjustments after installation.

2.3.3 Welding and Fastening

Where possible, locate welds on unexposed surfaces. Dress welds on exposed surfaces smoothly. Select welding rods, filler wire, and flux to produce a uniform texture and color in finished work. Remove flux and spatter from surfaces immediately after welding. Exposed screws or bolts will be permitted only in inconspicuous locations, and shall have countersunk heads. Weld concealed reinforcements for hardware in place.

2.3.4 Weatherstripping

Provide on stiles and rails of exterior doors. Fit into slots which are integral with doors or frames. Weatherstripping shall be replaceable without special tools, and adjustable at meeting rails of pairs of doors. Installation shall allow doors to swing freely and close positively. Air leakage of a single leaf weatherstripped door shall not exceed 1.25 cubic feet per minute of air per square foot of door area when tested in accordance with ASTM E 283.

2.3.5 Anchors

On the backs of subframes, provide anchors of the sizes and shapes indicated for securing subframes to adjacent construction. Anchor transom bars at ends and mullions at head and sill. Where indicated, reinforce vertical mullions with structural steel members of sufficient length to extend up to the overhead structural slab or framing and secure thereto. Reinforce and anchor freestanding door frames to floor construction as indicated on approved shop drawings and in accordance with manufacturer's recommendation. Place anchors near top and bottom of each jamb and at intermediate points not more than 25 inches apart.

2.3.6 Provisions for Hardware

(AM#3) Cut, reinforce, drill, and tap doors and frames at the factory to receive template hardware. Provide doors to receive surface-applied hardware, except push plates, kick plates, and mop plates, with reinforcing only; drill and tap in the field. Provide hardware reinforcements of stainless steel or steel with hot-dipped galvanized finish, and secure with stainless steel screws. Provide reinforcement in core of doors as required to receive locks, door closers, and other hardware. Hardware for aluminum doors, except the core for the lock set, shall be provided by the aluminum door manufacturer, and shall be the manufacturer's premium hardware. The core for the lock set is provided by hardware supplier. The aluminum door manufacturer shall provide all hardware necessary for complete operation of the doors as described on the drawings. The aluminum door manufacturer shall provide shop drawings/templates for all hardware attached to their doors.

2.3.7 Provisions for Glazing

Provide extruded aluminum snap-in glazing beads on interior side of doors. Provide extruded aluminum, theft-proof, snap-in glazing beads or fixed glazing beads on exterior or security side of doors. Glazing beads shall have vinyl insert glazing gaskets. Design glazing beads to receive glass of thickness indicated or specified. Glazing is specified in Section 08810, "Glass and Glazing."

The glazing shall have a minimum frame bite of 3/8-inch for structural glazed window systems and 1-inch for window systems that are not structurally glazed. Design frame connections to surrounding walls to resist a combined ultimate loading consisting of a tension force of 200-lbs/in and a shear force of 75 lbs/in.

2.3.7.1 Sealant, Gaskets, and Beads

Sealant, gaskets, and beads shall be continuous around the perimeter of the glass

2.3.7.2 Fasteners

Provide flathead, cross-recessed type, exposed head screws and bolts with standard threads for use on windows, trim, and accessories. Screw heads shall finish flush with adjoining surfaces. Self-tapping sheet-metal screws are not acceptable for material more than 1/16 inch thick.

2.3.8 Door Operator

Electro-mechanical swing door operator with microprocessor control box, concealed top arm, and bottom pivot. Finish: Clear Anodized. "Astro-Swing" as manufactured by Dor-O-Matic; Harwood Heights, IL; or approved equal.

2.3.9 Finishes

Provide exposed aluminum surfaces with factory finish of anodic coating.

2.3.9.1 Anodic Coating

Clean exposed aluminum surfaces and provide an anodized finish conforming to AA 45. Finish shall be clear (natural), designation AA-M10-C22-A41, Architectural Class I 0.7 mil or thicker) .

2.4 SOURCE QUALITY CONTROL

2.4.1 Window Assembly Structural Test

2.4.1.1 Test Sample Number

At least two sample window assemblies for each type of window provided shall be tested, under an increasing uniform static load. Number of samples, beyond two, is left up to the vendor. However, it is noted that the acceptance criteria encourages a larger number of test samples.

2.4.1.2 Test Procedure

Test windows (glass panes and support frame) shall be identical in type,

size, sealant, gasket or bead and construction to those furnished by the window manufacturer. The frame assembly in the test setup shall be secured by boundary conditions that simulate the adjoining walls of the structure for intended installation. The simulation securing boundary conditions shall be verified and attested by an attending Professional Engineer. Using either a vacuum or a liquid-filled bladder, an increasing uniform load shall be applied to the entire window assembly (glass and frame) until failure occurs in either the glass or frame. Failure shall be defined as either breaking of glass or loss of frame resistance. The failure load, r_f , shall be recorded to three significant figures. The load should be applied at a rate of 0.5 ru per minute where ru is the static design resistance:

<u>Glass Size</u>	<u>Static Design Resistance</u>
[____x____] inch	[____] psi

2.4.1.3 Acceptance Criteria

The static load capacity (r_s) of a glass pane for the specified acceptance test procedure is:

$$r_s = 0.876 r_u \tag{1}$$

The window assembly (frame and glass) is considered acceptable when the arithmetic mean of all the samples tested, r - such that:

$$r- =$$

where: r_s = static load capacity of the glass pane for certification testing

s = sample standard deviation

A = acceptance coefficient (Table 1)

- a. Arithmetic mean/standard deviation: For n test samples, r - is defined as:

$$r- = \text{sum from } i = 1 \text{ thru } n \text{ for } r_{fi} \text{ divided by } n \tag{3}$$

where r_{fi} is the recorded failure load of the i th test sample.

The sample standard deviation, s , is defined as:

$$s = \text{the square root of the quantity of the sum from } i = 1 \text{ thru } n \text{ for } (r_{fi} - r-)^2 \text{ divided by } (n - 1) \tag{4}$$

The minimum value of the sample standard deviation, s , permitted to be employed in Equation (2) is:

$$s = 0.145 r_s \tag{5}$$

This assures a sample standard deviation no better than observed for the general population of tempered glass.

- b. Additional sampled determination: The following equation can be used by tester to determine if additional test samples are justified. If:

$$r- \leq r_s + sB \tag{6}$$

then with 90% confidence, the design will not prove to be adequate with additional tests. Obtain rejection coefficient, B, from Table 1.

Table 1. Statistical Acceptance and Rejection Coefficients

Number of Window Assemblies <u>n</u>	Acceptance Coefficient <u>A</u>	Rejection Coefficient <u>B</u>
2	4.14	.546
3	3.05	.871
4	2.78	1.14
5	2.65	1.27
6	2.56	1.36
7	2.50	1.42
8	2.46	1.48
9	2.42	1.49
10	2.39	1.52
11	2.37	1.54
12	2.35	1.57
13	2.33	1.58
14	2.32	1.60
15	2.31	1.61
16	2.30	1.62
17	2.28	1.64
18	2.27	1.65
19	2.27	1.65
20	2.26	1.66
21	2.25	1.67
22	2.24	1.68
23	2.24	1.68
24	2.23	1.69
25	2.22	1.70
30	2.19	1.72
40	2.17	1.75
50	2.14	1.77

PART 3 EXECUTION

3.1 INSTALLATION

Plumb, square, level, and align frames and framing members to receive doors , transoms , adjoining sidelights , and , adjoining window walls. Anchor frames to adjacent construction as indicated and in accordance with manufacturer's printed instructions. Anchor bottom of each frame to rough floor construction with 3/32 inch thick stainless steel angle clips secured to back of each jamb and to floor construction; use stainless steel bolts and expansion rivets for fastening clip anchors. Seal metal-to-metal joints between framing members as specified in Section 07920N, "Joint Sealants." Hang doors to produce clearances specified in paragraph entitled "Aluminum Doors," of this section. After erection and glazing, adjust doors and hardware to operate properly.

3.2 PROTECTION FROM DISSIMILAR MATERIALS

3.2.1 Dissimilar Metals

Where aluminum surfaces come in contact with metals other than stainless steel, zinc, or small areas of white bronze, protect from direct contact by one or a combination of the following methods:

- a. Paint the dissimilar metal with one coat of heavy-bodied bituminous paint.
- b. Apply a good quality elastomeric sealant between the aluminum and the dissimilar metal.
- c. Paint the dissimilar metal with one coat of primer and one coat of aluminum paint.
- d. Use a nonabsorptive tape or gasket in permanently dry locations.

3.2.2 Drainage from Dissimilar Metals

In locations where drainage from dissimilar metals has direct contact with aluminum, provide protective paint, to prevent aluminum discoloration.

3.2.3 Masonry and Concrete

Provide aluminum surfaces in contact with mortar, concrete, or other masonry materials with one coat of heavy-bodied bituminous paint.

3.2.4 Wood or Other Absorptive Materials

Provide aluminum surfaces in contact with absorptive materials subject to frequent moisture, and aluminum surfaces in contact with treated wood, with two coats of aluminum paint or one coat of heavy-bodied bituminous paint. In lieu of painting the aluminum, the Contractor shall have the option of painting the wood or other absorptive surface with two coats of aluminum paint and sealing the joints with elastomeric sealant.

3.3 CLEANING

Upon completion of installation, clean door and frame surfaces in accordance with door manufacturer's recommended procedure. Do not use abrasive, caustic, or acid cleaning agents.

3.4 PROTECTION

Protect doors and frames from damage and from contamination by other materials such as cement mortar. Prior to completion and acceptance of the work, restore damaged doors and frames to original condition, or replace with new ones.

-- End of Section --

Department of the Army
Fort Worth District, Corps of Engineers



FY03 DARNALL HOSPITAL
ADDITION/ALTERATION
FORT HOOD, TEXAS



NO. DACA 63-00-D-0001

ASBESTOS ABATEMENT

March 6, 2003

101 So. Spring Street ■ Little Rock, Arkansas

CROMWELL
ARCHITECTS ENGINEERS

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SECTION 13280A

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SECTION 13280A

ASBESTOS ABATEMENT
11/01

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

- | | |
|------------|---|
| ANSI Z87.1 | (1989; Errata; Z87.1a) Occupational and Educational Eye and Face Protection |
| ANSI Z88.2 | (1992) Respiratory Protection |
| ANSI Z9.2 | (1979; R 1991) Fundamentals Governing the Design and Operation of Local Exhaust Systems |

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- | | |
|-------------|--|
| ASTM C 732 | (1995) Aging Effects of Artificial Weathering on Latex Sealants |
| ASTM D 1331 | (1989; R 1995) Surface and Interfacial Tension of Solutions of Surface-Active Agents |
| ASTM D 2794 | (1993; R 1999e1) Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact) |
| ASTM D 4397 | (1996) Polyethylene Sheeting for Construction, Industrial, and Agricultural Applications |
| ASTM D 522 | (1993a) Mandrel Bend Test of Attached Organic Coatings |
| ASTM E 119 | (2000) Fire Tests of Building Construction and Materials |
| ASTM E 1368 | (2000) Visual Inspection of Asbestos Abatement Projects |
| ASTM E 736 | (1992) Cohesion/Adhesion of Sprayed Fire-Resistive Materials Applied to Structural Members |
| ASTM E 84 | (2000a) Surface Burning Characteristics of Building Materials |

ASTM E 96	(2000) Water Vapor Transmission of Materials
COMPRESSED GAS ASSOCIATION (CGA)	
CGA G-7	(1990) Compressed Air for Human Respiration
CGA G-7.1	(1997) Commodity Specification for Air
NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)	
NFPA 701	(1999) Methods of Fire Tests for Flame-Resistant Textiles and Films
NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)	
NIOSH Pub No. 84-100	(1984; Supple 1985, 1987, 1988 & 1990) NIOSH Manual of Analytical Methods
U.S. ARMY CORPS OF ENGINEERS (USACE)	
EM 385-1-1	(1996) U.S. Army Corps of Engineers Safety and Health Requirements Manual
U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)	
EPA 340/1-90/018	(1990) Asbestos/NESHAP Regulated Asbestos Containing Materials Guidance
EPA 340/1-90/019	(1990) Asbestos/NESHAP Adequately Wet Guidance
EPA 560/5-85-024	(1985) Guidance for Controlling Asbestos-Containing Materials in Buildings
U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)	
29 CFR 1910	Occupational Safety and Health Standards
29 CFR 1926	Safety and Health Regulations for Construction
40 CFR 61	National Emission Standards for Hazardous Air Pollutants
40 CFR 763	Asbestos
42 CFR 84	Approval of Respiratory Protective Devices
49 CFR 107	Hazardous Materials Program Procedures
49 CFR 171	General Information, Regulations, and Definitions
49 CFR 172	Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements

49 CFR 173

Shippers - General Requirements for
Shipments and Packagings

UNDERWRITERS LABORATORIES (UL)

UL 586

(1996; Rev thru Aug 1999) High-Efficiency,
Particulate, Air Filter Units

1.2 DEFINITIONS

- a. Adequately Wet: A term defined in 40 CFR 61, Subpart M, and EPA 340/1-90/019 meaning to sufficiently mix or penetrate with liquid to prevent the release of particulate. If visible emissions are observed coming from asbestos-containing material (ACM), then that material has not been adequately wetted. However, the absence of visible emissions is not sufficient evidence of being adequately wetted.
- b. Aggressive Method: Removal or disturbance of building material by sanding, abrading, grinding, or other method that breaks, crumbles, or disintegrates intact asbestos-containing material (ACM).
- c. Amended Water: Water containing a wetting agent or surfactant with a surface tension of at least 29 dynes per square centimeter when tested in accordance with ASTM D 1331.
- d. Asbestos: Asbestos includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos, and any of these minerals that have been chemically treated and/or altered.
- e. Asbestos-Containing Material (ACM): Any materials containing more than one percent asbestos.
- f. Asbestos Fiber: A particulate form of asbestos, 5 micrometers or longer, with a length-to-width ratio of at least 3 to 1.
- g. Authorized Person: Any person authorized by the Contractor and required by work duties to be present in the regulated areas.
- h. Building Inspector: Individual who inspects buildings for asbestos and has EPA Model Accreditation Plan (MAP) "Building Inspector" training; accreditation required by 40 CFR 763, Subpart E, Appendix C.
- i. Certified Industrial Hygienist (CIH): An Industrial Hygienist certified in the practice of industrial hygiene by the American Board of Industrial Hygiene.
- j. Class I Asbestos Work: Activities defined by OSHA involving the removal of thermal system insulation (TSI) and surfacing ACM.
- k. Class II Asbestos Work: Activities defined by OSHA involving the removal of ACM which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos - containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastic. Certain

"incidental" roofing materials such as mastic, flashing and cements when they are still intact are excluded from Class II asbestos work. Removal of small amounts of these materials which would fit into a glovebag may be classified as a Class III job.

- l. Class III Asbestos Work: Activities defined by OSHA that involve repair and maintenance operations, where ACM, including TSI and surfacing ACM, is likely to be disturbed. Operations may include drilling, abrading, cutting a hole, cable pulling, crawling through tunnels or attics and spaces above the ceiling, where asbestos is actively disturbed or asbestos-containing debris is actively disturbed.
- m. Class IV Asbestos Work: Maintenance and custodial construction activities during which employees contact but do not disturb ACM and activities to clean-up dust, waste and debris resulting from Class I, II, and III activities. This may include dusting surfaces where ACM waste and debris and accompanying dust exists and cleaning up loose ACM debris from TSI or surfacing ACM following construction.
- n. Clean room: An uncontaminated room having facilities for the storage of employees' street clothing and uncontaminated materials and equipment.
- o. Competent Person: In addition to the definition in 29 CFR 1926, Section .32(f), a person who is capable of identifying existing asbestos hazards as defined in 29 CFR 1926, Section 1101, selecting the appropriate control strategy, has the authority to take prompt corrective measures to eliminate them and has EPA Model Accreditation Plan (MAP) "Contractor/Supervisor" training; accreditation required by 40 CFR 763, Subpart E, Appendix C.
- p. Contractor/Supervisor: Individual who supervises asbestos abatement work and has EPA Model Accreditation Plan "Contractor/Supervisor" training; accreditation required by 40 CFR 763, Subpart E, Appendix C.
- q. Critical Barrier: One or more layers of plastic sealed over all openings into a regulated area or any other similarly placed physical barrier sufficient to prevent airborne asbestos in a regulated area from migrating to an adjacent area.
- r. Decontamination Area: An enclosed area adjacent and connected to the regulated area and consisting of an equipment room, shower area, and clean room, which is used for the decontamination of workers, materials, and equipment that are contaminated with asbestos.
- s. Demolition: The wrecking or taking out of any load-supporting structural member and any related razing, removing, or stripping of asbestos products.
- t. Disposal Bag: A 6 mil thick, leak-tight plastic bag, pre-labeled in accordance with 29 CFR 1926, Section 1101, used for transporting asbestos waste from containment to disposal site.
- u. Disturbance: Activities that disrupt the matrix of ACM, crumble or pulverize ACM, or generate visible debris from ACM.

Disturbance includes cutting away small amounts of ACM, no greater than the amount which can be contained in 1 standard sized glovebag or waste bag, not larger than 60 inches in length and width in order to access a building component.

- v. Equipment Room or Area: An area adjacent to the regulated area used for the decontamination of employees and their equipment.
- w. Employee Exposure: That exposure to airborne asbestos that would occur if the employee were not using respiratory protective equipment.
- x. Fiber: A fibrous particulate, 5 micrometers or longer, with a length to width ratio of at least 3 to 1.
- y. Friable ACM: A term defined in 40 CFR 61, Subpart M and EPA 340/1-90/018 meaning any material which contains more than 1 percent asbestos, as determined using the method specified in 40 CFR 763, Subpart E, Appendix A, Section 1, Polarized Light Microscopy (PLM), that when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent, as determined by a method other than point counting by PLM, the asbestos content is verified by point counting using PLM.
- z. Glovebag: Not more than a 60 by 60 inch impervious plastic bag-like enclosure affixed around an asbestos-containing material, with glove-like appendages through which material and tools may be handled.
- aa. High-Efficiency Particulate Air (HEPA) Filter: A filter capable of trapping and retaining at least 99.97 percent of all mono-dispersed particles of 0.3 micrometers in diameter.
- bb. Homogeneous Area: An area of surfacing material or thermal system insulation that is uniform in color and texture.
- cc. Industrial Hygienist: A professional qualified by education, training, and experience to anticipate, recognize, evaluate, and develop controls for occupational health hazards.
- dd. Intact: ACM which has not crumbled, been pulverized, or otherwise deteriorated so that the asbestos is no longer likely to be bound with its matrix. Removal of "intact" asphaltic, resinous, cementitious products does not render the ACM non-intact simply by being separated into smaller pieces.
- ee. Model Accreditation Plan (MAP): USEPA training accreditation requirements for persons who work with asbestos as specified in 40 CFR 763, Subpart E, Appendix C.
- ff. Modification: A changed or altered procedure, material or component of a control system, which replaces a procedure, material or component of a required system.
- gg. Negative Exposure Assessment: A demonstration by the Contractor to show that employee exposure during an operation is expected to be consistently below the OSHA Permissible Exposure Limits (PELs).

- hh. NESHAP: National Emission Standards for Hazardous Air Pollutants. The USEPA NESHAP regulation for asbestos is at 40 CFR 61, Subpart M.
- ii. Nonfriable ACM: A NESHAP term defined in 40 CFR 61, Subpart M and EPA 340/1-90/018 meaning any material containing more than 1 percent asbestos, as determined using the method specified in 40 CFR 763, Subpart E, Appendix A, Section 1, Polarized Light Microscopy, that, when dry, cannot be crumbled, pulverized or reduced to powder by hand pressure.
- jj. Nonfriable ACM (Category I): A NESHAP term defined in 40 CFR 61, Subpart E and EPA 340/1-90/018 meaning asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than 1 percent asbestos as determined using the method specified in 40 CFR 763, Subpart F, Appendix A, Section 1, Polarized Light Microscopy.
- kk. Nonfriable ACM (Category II): A NESHAP term defined in 40 CFR 61, Subpart E and EPA 340/1-90/018 meaning any material, excluding Category I nonfriable ACM, containing more than 1 percent asbestos, as determined using the methods specified in 40 CFR 763, Subpart F, Appendix A, Section 1, Polarized Light Microscopy, that when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.
- ll. Permissible Exposure Limits (PELs):
 - (1) PEL-Time weighted average(TWA): Concentration of asbestos not in excess of 0.1 fibers per cubic centimeter of air (f/cc) as an 8 hour time weighted average (TWA), as determined by the method prescribed in 29 CFR 1926, Section 1101, Appendix A, or the current version of NIOSH Pub No. 84-100 analytical method 7400.
 - (2) PEL-Excursion Limit: An airborne concentration of asbestos not in excess of 1.0 f/cc of air as averaged over a sampling period of 30 minutes as determined by the method prescribed in 29 CFR 1926, Section 1101, Appendix A, or the current version of NIOSH Pub No. 84-100 analytical method 7400.
- mmm. Regulated Area: An OSHA term defined in 29 CFR 1926, Section 1101 meaning an area established by the Contractor to demarcate areas where Class I, II, and III asbestos work is conducted; also any adjoining area where debris and waste from such asbestos work accumulate; and an area within which airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed, the permissible exposure limit.
- nn. Removal: All operations where ACM is taken out or stripped from structures or substrates, and includes demolition operations.
- oo. Repair: Overhauling, rebuilding, reconstructing, or reconditioning of structures or substrates, including encapsulation or other repair of ACM attached to structures or substrates. If the amount of asbestos so "disturbed" cannot be contained in 1 standard glovebag or waste bag, Class I precautions are required.
- pp. Spills/Emergency Cleanups: Cleanup of sizable amounts of

asbestos waste and debris which has occurred, for example, when water damage occurs in a building, and sizable amounts of ACM are dislodged. A Competent Person evaluates the site and ACM to be handled, and based on the type, condition and extent of the dislodged material, classifies the cleanup as Class I, II, or III.

Only if the material was intact and the cleanup involves mere contact of ACM, rather than disturbance, could there be a Class IV classification.

- qq. Surfacing ACM: Asbestos-containing material which contains more than 1% asbestos and is sprayed-on, troweled-on, or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, or other purposes.
- rr. Thermal system insulation (TSI) ACM: ACM which contains more than 1% asbestos and is applied to pipes, fittings, boilers, breeching, tanks, ducts, or other interior structural components to prevent heat loss or gain or water condensation.
- ss. Transite: A generic name for asbestos cement wallboard and pipe.
- tt. Worker: Individual (not designated as the Competent Person or a supervisor) who performs asbestos work and has completed asbestos worker training required by 29 CFR 1926, Section 1101, to include EPA Model Accreditation Plan (MAP) "Worker" training; accreditation required by 40 CFR 763, Subpart E, Appendix C, if required by the OSHA Class of work to be performed or by the state where the work is to be performed.

1.3 DESCRIPTION OF WORK

The work covered by this section includes the removal of asbestos-containing materials (ACM) which are encountered during demolition and housekeeping activities associated with this project and describes procedures and equipment required to protect workers and occupants of the regulated area from contact with airborne asbestos fibers and ACM dust and debris. Activities include OSHA Class II work operations involving ACM. The work also includes containment, storage, transportation and disposal of the generated ACM wastes. More specific operational procedures shall be detailed in the required Accident Prevention Plan and its subcomponents, the Asbestos Hazard Abatement Plan and Activity Hazard Analyses required in paragraph SAFETY AND HEALTH PROGRAM AND PLANS.

1.3.1 Abatement Work Tasks

The specific ACM to be abated is identified on the detailed plans and project drawings. A summary of work task data elements for each individual ACM abatement work task to include the appropriate RESPONSE ACTION DETAIL SHEET (item to be abated and methods to be used) and SET-UP DETAIL SHEETS (containment techniques to include safety precautions and methods) is included in Table 1, "Individual Work Task Data Elements" at the end of this section.

1.3.2 Unexpected Discovery of Asbestos

For any previously untested building components suspected to contain asbestos and located in areas impacted by the work, the Contractor shall notify the Contracting Officer (CO) who will have the option of ordering up

to 3 bulk samples to be obtained at the Contractor's expense and delivered to a laboratory accredited under the National Institute of Standards and Technology (NIST) "National Voluntary Laboratory Accreditation Program (NVLAP)" and analyzed by PLM at no additional cost to the Government. Any additional components identified as ACM that have been approved by the Contracting Officer for removal shall be removed by the Contractor and will be paid for by an equitable adjustment to the contract price under the CONTRACT CLAUSE titled "changes". Sampling activities undertaken to determine the presence of additional ACM shall be conducted by personnel who have successfully completed the EPA Model Accreditation Plan (MAP) "Building Inspector" training course required by 40 CFR 763, Subpart E, Appendix C.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Respiratory Protection Program; G,

Records of the respirator program.

Cleanup and Disposal; G,

Waste shipment records. Weigh bills and delivery tickets shall be furnished for information only.

Detailed Drawings; G,

Descriptions, detail project drawings, and site layout to include worksite containment area techniques as prescribed on applicable SET-UP DETAIL SHEETS, local exhaust ventilation system locations, decontamination units and load-out units, other temporary waste storage facility, access tunnels, location of temporary utilities (electrical, water, sewer) and boundaries of each regulated area.

Materials and Equipment; G,

Manufacturer's catalog data for all materials and equipment to be used in the work, including brand name, model, capacity, performance characteristics and any other pertinent information. Test results and certificates from the manufacturer of encapsulants substantiating compliance with performance requirements of this specification. Material Safety Data Sheets for all chemicals to be used onsite in the same format as implemented in the Contractor's HAZARD COMMUNICATION PROGRAM. Data shall include, but shall not be limited to, the following items:

- a. High Efficiency Filtered Air (HEPA) local exhaust equipment
- b. Vacuum cleaning equipment

- c. Pressure differential monitor for HEPA local exhaust equipment
- d. Air monitoring equipment
- e. Respirators
- f. Personal protective clothing and equipment
 - (1) Coveralls
 - (2) Underclothing
 - (3) Other work clothing
 - (4) Foot coverings
 - (5) Hard hats
 - (6) Eye protection
 - (7) Other items required and approved by Contractors Designated IH and Competent Person
- g. Glovebag
- h. Duct Tape
- i. Disposal Containers
 - (1) Disposal bags
 - (2) Fiberboard drums
 - (3) Paperboard boxes
- j. Sheet Plastic
 - (1) Polyethylene Sheet - General
 - (2) Polyethylene Sheet - Flame Resistant
 - (3) Polyethylene Sheet - Reinforced
- k. Wetting Agent
 - (1) Amended Water
 - (2) Removal encapsulant
- l. Strippable Coating
- m. Prefabricated Decontamination Unit
- n. Other items
- o. Chemical encapsulant
- p. Chemical encasement materials
- q. Material Safety Data Sheets (for all chemicals proposed)

Qualifications; G,

A written report providing evidence of qualifications for personnel, facilities and equipment assigned to the work.

Training Program; G,

A copy of the written project site-specific training material as

indicated in 29 CFR 1926, Section.1101 that will be used to train onsite employees. The training document shall be signed by the Contractor's Designated IH and Competent Person.

Medical Requirements; G,

Physician's written opinion.

Encapsulants; G,

Certificates stating that encapsulants meet the applicable specified performance requirements.

SD-06 Test Reports

Exposure Assessment and Air Monitoring; G,

Initial exposure assessments, negative exposure assessments, air-monitoring results and documentation.

Local Exhaust Ventilation; G,

Pressure differential recordings.

Licenses, Permits and Notifications; G,

Licenses, permits, and notifications.

SD-07 Certificates

Vacuum, Filtration and Ventilation Equipment; G,

Manufacturer's certifications showing compliance with ANSI Z9.2 for:

- a. Vacuums.
- b. Water filtration equipment.
- c. Ventilation equipment.
- d. Other equipment required to contain airborne asbestos fibers.

1.5 QUALIFICATIONS

1.5.1 Written Qualifications and Organization Report

The Contractor shall furnish a written qualifications and organization report providing evidence of qualifications of the Contractor, Contractor's Project Supervisor, Designated Competent Person, supervisors and workers; Designated IH (person assigned to project and firm name); independent testing laboratory (including name of firm, principal, and analysts who will perform analyses); all subcontractors to be used including disposal transportation and disposal facility firms, subcontractor supervisors, subcontractor workers; and any others assigned to perform asbestos abatement and support activities. The report shall include an organization chart showing the Contractor's staff organization for this project by name and title, chain of command and reporting relationship with all subcontractors. The report shall be signed by the Contractor, the

Contractor's onsite project manager, Designated Competent Person, Designated IH, designated testing laboratory and the principals of all subcontractors to be used. The Contractor shall include the following statement in the report: "By signing this report I certify that the personnel I am responsible for during the course of this project fully understand the contents of 29 CFR 1926, Section 1101, 40 CFR 61, Subpart M, and the federal, state and local requirements specified in paragraph SAFETY AND HEALTH PROGRAM AND PLANS for those asbestos abatement activities that they will be involved in."

1.5.2 Specific Requirements

The Contractor shall designate in writing, personnel meeting the following qualifications:

- a. Designated Competent Person: The name, address, telephone number, and resume of the Contractor's Designated Competent Person shall be provided. Evidence that the full-time Designated Competent Person is qualified in accordance with 29 CFR 1926, Sections .32 and .1101, has EPA Model Accreditation Plan (MAP) "Contractor/Supervisor" training accreditation required by 40 CFR 763, Subpart E, Appendix C, and is experienced in the administration and supervision of asbestos abatement projects, including exposure assessment and monitoring, work practices, abatement methods, protective measures for personnel, setting up and inspecting asbestos abatement work areas, evaluating the integrity of containment barriers, placement and operation of local exhaust systems, ACM generated waste containment and disposal procedures, decontamination units installation and maintenance requirements, site safety and health requirements, notification of other employees onsite, etc. The duties of the Competent Person shall include the following: controlling entry to and exit from the regulated area; supervising any employee exposure monitoring required by 29 CFR 1926, Section 1101; ensuring that all employees working within a regulated area wear the appropriate personal protective equipment (PPE), are trained in the use of appropriate methods of exposure control, and use the hygiene facilities and decontamination procedures specified; and ensuring that engineering controls in use are in proper operating conditions and are functioning properly. The Designated Competent Person shall be responsible for compliance with applicable federal, state and local requirements, the Contractor's Accident Prevention Plan and Asbestos Hazard Abatement Plan. The Designated Competent Person shall provide, and the Contractor shall submit, the "Contractor/Supervisor" course completion certificate and the most recent certificate for required refresher training with the employee "Certificate of Worker Acknowledgment" required by this paragraph. The Contractor shall submit evidence that this person has a minimum of 2 years of on-the-job asbestos abatement experience relevant to OSHA competent person requirements. The Designated Competent Person shall be onsite at all times during the conduct of this project.
- b. Project and Other Supervisors: The Contractor shall provide the name, address, telephone number, and resume of the Project Supervisor and other supervisors who have responsibility to implement the Accident Prevention Plan, including the Asbestos Hazard Abatement Plan and Activity Hazard Analyses, the authority to direct work performed under this contract and verify

compliance, and have EPA Model Accreditation Plan (MAP) "Contractor/Supervisor" training accreditation required by 40 CFR 763, Subpart E, Appendix C. The Project Supervisor and other supervisors shall provide, and the Contractor shall submit, the "Contractor/Supervisor" course completion certificate and the most recent certificate for required refresher training with the employee "Certificate of Worker Acknowledgment" required by this paragraph. The Contractor shall submit evidence that the Project Supervisor has a minimum of 2 years of on-the-job asbestos abatement experience relevant to project supervisor responsibilities and the other supervisors have a minimum of 1 year on-the-job asbestos abatement experience commensurate with the responsibilities they will have on this project.

c. Industrial Hygienist and IH Technicians

The Contractor shall provide the name, address, telephone number, documentation of certification and other specified information for the Certified Industrial Hygienist (CIH) selected to prepare the Contractor's Asbestos Hazard Abatement Plan, prepare and perform any training, direct air monitoring and assist the Contractor's Competent Person in ensuring that safety and health requirements are complied with during asbestos abatement work. The CIH shall be certified by the American Board of Industrial Hygiene (ABIH), have a minimum of 2 years of comprehensive experience in planning and overseeing asbestos abatement activities and have EPA Model Accreditation Plan (MAP) "Contractor/Supervisor" training required by 40 CFR 763 Subpart E, Appendix C. The CIH shall provide the Contractor, and the Contractor shall submit a copy of the training certification for the Asbestos Contractor/Supervisor Course and any required refreshers along with a copy of the CIH's current ABIH certification. The CIH shall be completely independent of the Contractor according to federal, state, or local regulations; that is, shall not be a Contractor's employee or be an employee or principal of a firm in a business relationship with the Contractor negating such independent status. The CIH shall be available for visits to the site on emergencies or as needed by the IH Technician. The Contractor shall submit the names, address, telephone numbers, resumes and air monitoring licenses for the IH Technicians (IHT) who will be performing on site tasks under the direction of the CIH. The IH Technician shall have a minimum 2 years of practical onsite asbestos abatement experience and be have a current Texas Department of Health Air Monitoring Technician License. The IH Technician shall be completely independent of the Contractor and will be on site during the entire abatement project.

d. Asbestos Abatement Workers: Asbestos abatement workers shall meet the requirements contained in 29 CFR 1926, Section 1101, 40 CFR 61, Subpart M, and other applicable federal, state and local requirements. Worker training documentation shall be provided as required on the "Certificate of Workers Acknowledgment" in this paragraph.

e. Worker Training and Certification of Worker Acknowledgment: Training documentation will be required for each employee who will perform OSHA Class I, Class II, Class III, or Class IV asbestos abatement operations. Such documentation shall be submitted on a Contractor generated form titled "Certificate of Workers

Acknowledgment", to be completed for each employee in the same format and containing the same information as the example certificate at the end of this section. Training course completion certificates (initial and most recent update refresher) required by the information checked on the form shall be attached.

- f. Physician: The Contractor shall provide the name, medical qualifications, address, telephone number and resume of the physician who will or has performed the medical examinations and evaluations of the persons who will conduct the asbestos abatement work tasks. The physician shall be currently licensed by the state where the workers will be or have been examined, have expertise in pneumoconiosis and shall be responsible for the determination of medical surveillance protocols and for review of examination/test results performed in compliance with 29 CFR 1926, Section 1101 and paragraph MEDICAL REQUIREMENTS. The physician shall be familiar with the site's hazards and the scope of this project.
- g. First Aid and CPR Trained Persons: The names of at least 2 persons who are currently trained in first aid and CPR by the American Red Cross or other approved agency shall be designated and shall be onsite at all times during site operations. They shall be trained in universal precautions and the use of PPE as described in the Bloodborne Pathogens Standard of 29 CFR 1910, Section .1030 and shall be included in the Contractor's Bloodborne Pathogen Program. These persons may perform other duties but shall be immediately available to render first aid when needed. A copy of each designated person's current valid First Aid and CPR certificate shall be provided.
- h. Independent Testing Laboratory: The Contractor shall provide the name, address and telephone number of the independent testing laboratory selected to perform the sample analyses and report the results. The testing laboratory shall be completely independent from the Contractor as recognized by federal, state or local regulations. Written verification of the following criteria, signed by the testing laboratory principal and the Contractor, shall be submitted:
- (1) Phase contrast microscopy (PCM): The laboratory is fully equipped and proficient in conducting PCM of airborne samples using the methods specified by 29 CFR 1926, Section 1101, OSHA method ID-160, the most current version of NIOSH Pub No. 84-100 Method 7400, and NIOSH Pub No. 84-100 Method 7402, transmission electron microscopy (TEM); the laboratory is currently judged proficient (classified as acceptable) in counting airborne asbestos samples by PCM by successful participation in each of the last 4 rounds in the American Industrial Hygiene Association (AIHA) Proficiency Analytical Testing (PAT) Program; the names of the selected microscopists who will analyze airborne samples by PCM with verified documentation of their proficiency to conduct PCM analyses by being judged proficient in counting samples as current participating analysts in the AIHA PAT Program, and having successfully completed the Asbestos Sampling and Analysis course (NIOSH 582 or equivalent) with a copy of course completion certificate provided; when the PCM analysis is to be conducted onsite, documentation shall be provided certifying that the onsite analyst meets the same requirements.

(2) Polarized light microscopy (PLM): The laboratory is fully equipped and proficient in conducting PLM analyses of suspect ACM bulk samples in accordance with 40 CFR 763, Subpart E, Appendix E; the laboratory is currently accredited by NIST under the NVLAP for bulk asbestos analysis and will use analysts (names shall be provided) with demonstrated proficiency to conduct PLM to include its application to the identification and quantification of asbestos content.

(3) PCM/TEM: The laboratory is fully equipped and each analyst (name shall be provided) possesses demonstrated proficiency in conducting PCM and TEM analysis of airborne samples using NIOSH Pub No. 84-100 Method 7400 PCM and NIOSH Pub No. 84-100 Method 7402 (TEM confirmation of asbestos content of PCM results) from the same filter.

- i. Disposal Facility, Transporter: The Contractor shall provide written evidence that the landfill to be used is approved for asbestos disposal by the USEPA and state and local regulatory agencies. Copies of signed agreements between the Contractor (including subcontractors and transporters) and the asbestos waste disposal facility to accept and dispose of all asbestos containing waste generated during the performance of this contract shall be provided. Qualifications shall be provided for each subcontractor or transporter to be used, indicating previous experience in transport and disposal of asbestos waste to include all required state and local waste hauler requirements for asbestos. The Contractor and transporters shall meet the DOT requirements of 49 CFR 171, 49 CFR 172, and 49 CFR 173 as well as registration requirements of 49 CFR 107 and other applicable state or local requirements. The disposal facility shall meet the requirements of 40 CFR 61, Sections .154 or .155, as required in 40 CFR 61, Section .150(b), and other applicable state or local requirements.

1.5.3 Federal, State or Local Citations on Previous Projects

The Contractor and all subcontractors shall submit a statement, signed by an officer of the company, containing a record of any citations issued by Federal, State or local regulatory agencies relating to asbestos activities (including projects, dates, and resolutions); a list of penalties incurred through non-compliance with asbestos project specifications, including liquidated damages, overruns in scheduled time limitations and resolutions; and situations in which an asbestos-related contract has been terminated (including projects, dates, and reasons for terminations). If there are none, a negative declaration signed by an officer of the company shall be provided.

1.6 REGULATORY REQUIREMENTS

In addition to detailed requirements of this specification, work performed under this contract shall comply with EM 385-1-1, applicable federal, state, and local laws, ordinances, criteria, rules and regulations regarding handling, storing, transporting, and disposing of asbestos waste materials. This includes, but is not limited to, OSHA standards, 29 CFR 1926, especially Section 1101, 40 CFR 61, Subpart M and 40 CFR 763. Matters of interpretation of standards shall be submitted to the

appropriate administrative agency for resolution before starting work. Where the requirements of this specification, applicable laws, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirements shall apply. The Texas state asbestos health protection rules (TDH) and local laws, rules and regulations regarding demolition, removal, encapsulation, construction alteration, repair, maintenance, renovation, spill/emergency cleanup, housekeeping, handling, storing, transporting and disposing of asbestos material apply.

1.7 SAFETY AND HEALTH PROGRAM AND PLANS (TDH)

The Contractor shall develop and submit a written comprehensive site-specific Accident Prevention Plan at least 30 days prior to the preconstruction conference. The Accident Prevention Plan shall address requirements of EM 385-1-1, Appendix A, covering onsite work to be performed by the Contractor and subcontractors. The Accident Prevention Plan shall incorporate an Asbestos Hazard Abatement Plan, and Activity Hazard Analyses as separate appendices into 1 site specific Accident Prevention Plan document. Any portions of the Contractor's overall Safety and Health Program that are referenced in the Accident Prevention Plan, e.g., respirator program, hazard communication program, confined space entry program, etc., shall be included as appendices to the Accident Prevention Plan. The plan shall take into consideration all the individual asbestos abatement work tasks identified in Table 1. The plan shall be prepared, signed (and sealed, including certification number if required), and dated by the Contractor's Designated IH, Competent Person, and Project Supervisor.

1.7.1 Asbestos Hazard Abatement Plan Appendix

The Asbestos Hazard Abatement Plan appendix to the Accident Prevention Plan shall include, but not be limited to, the following:

- a. The personal protective equipment to be used;
- b. The location and description of regulated areas including clean and dirty areas, access tunnels, and decontamination unit (clean room, shower room, equipment room, storage areas such as load-out unit);
- c. Initial exposure assessment in accordance with 29 CFR 1926, Section 1101;
- d. Level of supervision;
- e. Method of notification of other employers at the worksite;
- f. Abatement method to include containment and control procedures;
- g. Interface of trades involved in the construction;
- h. Sequencing of asbestos related work;
- i. Storage and disposal procedures and plan;
- j. Type of wetting agent and asbestos encapsulant to be used;
- k. Location of local exhaust equipment;

- l. Air monitoring methods (personal, environmental and clearance);
- m. Bulk sampling and analytical methods (if required);
- n. A detailed description of the method to be employed in order to control the spread of ACM wastes and airborne fiber concentrations;
- o. Fire and medical emergency response procedures;
- p. The security procedures to be used for all regulated areas.

1.7.2 Activity Hazard Analyses Appendix

Activity Hazard Analyses, for each major phase of work, shall be submitted and updated during the project. The Activity Hazard Analyses format shall be in accordance with EM 385-1-1 (Figure 1-1). The analysis shall define the activities to be performed for a major phase of work, identify the sequence of work, the specific hazards anticipated, and the control measures to be implemented to eliminate or reduce each hazard to an acceptable level. Work shall not proceed on that phase until the Activity Hazard Analyses has been accepted and a preparatory meeting has been conducted by the Contractor to discuss its contents with everyone engaged in the activities, including the onsite Government representatives. The Activity Hazard Analyses shall be continuously reviewed and, when appropriate, modified to address changing site conditions or operations.

1.8 PRECONSTRUCTION CONFERENCE AND ONSITE SAFETY

The Contractor and the Contractor's Designated Competent Person, Project Supervisor, and Designated IH shall meet with the Contracting Officer prior to beginning work at a safety preconstruction conference to discuss the details of the Contractor's submitted Accident Prevention Plan to include the Asbestos Hazard Abatement Plan and Activity Hazard Analyses appendices. Deficiencies in the Accident Prevention Plan will be discussed and the Accident Prevention Plan shall be revised to correct the deficiencies and resubmitted for acceptance. Any changes required in the specification as a result of the Accident Prevention Plan shall be identified specifically in the plan to allow for free discussion and acceptance by the Contracting Officer, prior to the start of work. Onsite work shall not begin until the Accident Prevention Plan has been accepted. A copy of the written Accident Prevention Plan shall be maintained onsite. Changes and modifications to the accepted Accident Prevention Plan shall be made with the knowledge and concurrence of the Designated IH, the Project Supervisor, Designated Competent Person, and the Contracting Officer. Should any unforeseen hazard become evident during the performance of the work, the Designated IH shall bring such hazard to the attention of the Project Supervisor, Designated Competent Person, and the Contracting Officer, both verbally and in writing, for resolution as soon as possible. In the interim, all necessary action shall be taken by the Contractor to restore and maintain safe working conditions in order to safeguard onsite personnel, visitors, the public, and the environment. Once accepted by the Contracting Officer, the Accident Prevention Plan, including the Asbestos Hazard Abatement Plan and Activity Hazard Analyses will be enforced as if an addition to the contract. Disregarding the provisions of this contract or the accepted Accident Prevention Plan will be cause for stopping of work, at the discretion of the Contracting Officer, until the matter has been rectified. .

1.9 SECURITY

Fenced and locked security area shall be provided for each regulated area. A log book shall be kept documenting entry into and out of the regulated area. Entry into regulated areas shall only be by personnel authorized by the Contractor and the Contracting Officer. Personnel authorized to enter regulated areas shall be trained, be medically evaluated, and wear the required personal protective equipment for the specific regulated area to be entered.

1.10 MEDICAL REQUIREMENTS

Medical requirements shall conform to 29 CFR 1926, Section 1101.

1.10.1 Medical Examinations

Before being exposed to airborne asbestos fibers, workers shall be provided with a medical examination as required by 29 CFR 1926, Section 1101 and other pertinent state or local requirements. This requirement shall have been satisfied within the last 12 months. The same medical examination shall be given on an annual basis to employees engaged in an occupation involving asbestos and within 30 calendar days before or after the termination of employment in such occupation. X-ray films of asbestos workers shall be identified to the consulting radiologist and medical record jackets shall be marked with the word "asbestos."

1.10.1.1 Information Provided to the Physician

The Contractor shall provide the following information in writing to the examining physician:

- a. A copy of 29 CFR 1926, Section 1101 and Appendices D, E, G, and I;
- b. A description of the affected employee's duties as they relate to the employee's exposure;
- c. The employee's representative exposure level or anticipated exposure level;
- d. A description of any personal protective and respiratory equipment used or to be used;
- e. Information from previous medical examinations of the affected employee that is not otherwise available to the examining physician.

1.10.1.2 Written Medical Opinion

For each worker, a written medical opinion prepared and signed by a licensed physician indicating the following:

- a. Summary of the results of the examination.
- b. The potential for an existing physiological condition that would place the employee at an increased risk of health impairment from exposure to asbestos.
- c. The ability of the individual to wear personal protective equipment, including respirators, while performing strenuous work tasks under cold and/or heat stress conditions.

- d. A statement that the employee has been informed of the results of the examination, provided with a copy of the results, informed of the increased risk of lung cancer attributable to the combined effect of smoking and asbestos exposure, and informed of any medical condition that may result from asbestos exposure.

1.10.2 Medical and Exposure Records

Complete and accurate records shall be maintained of each employee's medical examinations, medical records, and exposure data, as required by 29 CFR 1910, Section .1910.20 and 29 CFR 1926, Section 1101 for a period of 50 years after termination of employment. Records of the required medical examinations and exposure data shall be made available, for inspection and copying, to the Assistant Secretary of Labor for Occupational Safety and Health (OSHA) or authorized representatives of the employee and an employee's physician upon request of the employee or former employee. A copy of the required medical certification for each employee shall be maintained on file at the worksite for review, as requested by the Contracting Officer or the representatives.

1.11 TRAINING PROGRAM

1.11.1 General Training Requirements

The Contractor shall establish a training program as specified by EPA Model Accreditation Plan (MAP), training requirements at 40 CFR 763, Subpart E, Appendix C, the State of Texas regulation no. 295.62, OSHA requirements at 29 CFR 1926, Section 1101(k)(9), and this specification. Contractor employees shall complete the required training for the type of work they are to perform and such training shall be documented and provided to the Contracting Officer as specified in paragraph QUALIFICATIONS.

1.11.2 Project Specific Training

Prior to commencement of work, each worker shall be instructed by the Contractor's Designated IH and Competent Person in the following project specific training:

- a. The hazards and health effects of the specific types of ACM to be abated;
- b. The content and requirements of the Contractor's Accident Prevention Plan to include the Asbestos Hazard Abatement Plan and Activity Hazard Analyses and site-specific safety and health precautions;
- c. Hazard Communication Program;
- d. Hands-on training for each asbestos abatement technique to be employed;
- e. Heat and/or cold stress monitoring specific to this project;
- f. Air monitoring program and procedures;
- g. Medical surveillance to include medical and exposure record-keeping procedures;
- h. The association of cigarette smoke and asbestos-related disease;

- i. Security procedures;
- j. Specific work practice controls and engineering controls required for each Class of work in accordance with 29 CFR 1926, Section 1101.

1.12 RESPIRATORY PROTECTION PROGRAM

The Contractor's Designated IH shall establish in writing, and implement a respiratory protection program in accordance with 29 CFR 1926, Section 1101, 29 CFR 1910, Section .134, ANSI Z88.2, CGA G-7, CGA G-7.1 and DETAIL SHEET 12. The Contractor's Designated IH shall establish minimum respiratory protection requirements based on measured or anticipated levels of airborne asbestos fiber concentrations encountered during the performance of the asbestos abatement work. The Contractor's respiratory protection program shall include, but not be limited to, the following elements:

- a. The company policy, used for the assignment of individual responsibility, accountability, and implementation of the respiratory protection program.
- b. The standard operating procedures covering the selection and use of respirators. Respiratory selection shall be determined by the hazard to which the worker is exposed.
- c. Medical evaluation of each user to verify that the worker may be assigned to an activity where respiratory protection is required.
- d. Training in the proper use and limitations of respirators.
- e. Respirator fit-testing, i.e., quantitative, qualitative and individual functional fit checks.
- f. Regular cleaning and disinfection of respirators.
- g. Routine inspection of respirators during cleaning and after each use when designated for emergency use.
- h. Storage of respirators in convenient, clean, and sanitary locations.
- i. Surveillance of regulated area conditions and degree of employee exposure (e.g., through air monitoring).
- j. Regular evaluation of the continued effectiveness of the respiratory protection program.
- k. Recognition and procedures for the resolution of special problems as they affect respirator use (e.g., no facial hair that comes between the respirator face piece and face or interferes with valve function; prescription eye wear usage; contact lenses usage; etc.).
- l. Proper training in putting on and removing respirators.

1.12.1 Respiratory Fit Testing

A qualitative or quantitative fit test conforming to 29 CFR 1926, Section 1101, Appendix C shall be conducted by the Contractor's Designated IH for each Contractor worker required to wear a respirator, and for the Contracting Officer and authorized visitors who enter a regulated area where respirators are required to be worn. A respirator fit test shall be performed for each worker wearing a negative-pressure respirator prior to initially wearing a respirator on this project and every 6 months thereafter. The qualitative fit tests may be used only for testing the fit of half-mask respirators where they are permitted to be worn, or of full-facepiece air purifying respirators where they are worn at levels at which half-facepiece air purifying respirators are permitted. If physical changes develop that will affect the fit, a new fit test for the worker shall be performed. Functional fit checks shall be performed by employees each time a respirator is put on and in accordance with the manufacturer's recommendation.

1.12.2 Respirator Selection and Use Requirements

The Contractor shall provide respirators, and ensure that they are used as required by 29 CFR 1926, Section 1101 and in accordance with the manufacturer's recommendations. Respirators shall be jointly approved by the Mine Safety and Health Administration and the National Institute for Occupational Safety and Health (MSHA/NIOSH), or by NIOSH, under the provisions of 42 CFR 84, for use in environments containing airborne asbestos fibers. Personnel who handle ACM, enter regulated areas that require the wearing of a respirator, or who are otherwise carrying out abatement activities that require the wearing of a respirator, shall be provided with approved respirators that are fully protective of the worker at the measured or anticipated airborne asbestos concentration level to be encountered. For air-purifying respirators, the particulate filter portion of the cartridges or canister approved for use in airborne asbestos environments shall be high-efficiency particulate air (HEPA). The initial respirator selection and the decisions regarding the upgrading or downgrading of respirator type shall be made by the Contractor's Designated IH based on the measured or anticipated airborne asbestos fiber concentrations to be encountered. Recommendations made by the Contractor's Designated IH to downgrade respirator type shall be submitted in writing to the Contracting Officer. The Contractor's Designated Competent Person in consultation with the Designated IH, shall have the authority to take immediate action to upgrade or downgrade respiratory type when there is an immediate danger to the health and safety of the wearer. Respirators shall be used in the following circumstances:

- a. During all Class II work where the ACM is not removed in a substantially intact state.
- b. During all Class II and III asbestos jobs where the Contractor does not produce a negative exposure assessment.
- c. During all work where employees are exposed above the PEL-TWA or PEL-Excursion Limit.
- d. In emergencies

1.12.3 Class II Work

The Contractor shall provide an air purifying respirator, other than a disposable respirator, equipped with high-efficiency filters whenever the employee performs Class II asbestos jobs where the Contractor does not

produce a negative exposure assessment .

1.12.4 Sanitation

Employees who wear respirators shall be permitted to leave work areas to wash their faces and respirator facepieces whenever necessary to prevent skin irritation associated with respirator use.

1.13 HAZARD COMMUNICATION PROGRAM

A hazard communication program shall be established and implemented in accordance with 29 CFR 1926, Section .59. Material safety data sheets (MSDSs) shall be provided for all hazardous materials brought onto the worksite. One copy shall be provided to the Contracting Officer and 1 copy shall be included in the Contractor's Hazard Communication Program.

1.14 LICENSES, PERMITS AND NOTIFICATIONS

1.14.1 General Legal Requirements

Necessary licenses, permits and notifications shall be obtained in conjunction with the project's asbestos abatement, transportation and disposal actions and timely notification furnished of such actions as required by federal, state, regional, and local authorities. The Contractor shall notify the state's environmental protection agency responsible for asbestos air emissions and the Contracting Officer in writing, at least 10 days prior to the commencement of work, in accordance with 40 CFR 61, Subpart M, and state and local requirements to include the mandatory "Notification of Demolition and Renovation Record" form and other required notification documents. Notification shall be by Certified Mail, Return Receipt Requested. The Contractor shall furnish copies of the receipts to the Contracting Officer, in writing, prior to the commencement of work. Local fire department shall be notified 3 days before fire-proofing material is removed from a building and the notice shall specify whether or not the material contains asbestos. A copy of the rental company's written acknowledgment and agreement shall be provided as required by paragraph RENTAL EQUIPMENT. For licenses, permits, and notifications that the Contractor is responsible for obtaining, the Contractor shall pay any associated fees or other costs incurred.

1.14.2 Litigation and Notification

The Contractor shall notify the Contracting Officer if any of the following occur:

- a. The Contractor or any of the subcontractors are served with notice of violation of any law, regulation, permit or license which relates to this contract;
- b. Proceedings are commenced which could lead to revocation of related permits or licenses; permits, licenses or other Government authorizations relating to this contract are revoked;
- c. Litigation is commenced which would affect this contract;
- d. The Contractor or any of the subcontractors become aware that their equipment or facilities are not in compliance or may fail to comply in the future with applicable laws or regulations.

1.15 PERSONAL PROTECTIVE EQUIPMENT

Three complete sets of personal protective equipment shall be made available to the Contracting Officer and authorized visitors for entry to the regulated area. Contracting Officer and authorized visitors shall be provided with training equivalent to that provided to Contractor employees in the selection, fitting, and use of the required personal protective equipment and the site safety and health requirements. Contractor workers shall be provided with personal protective clothing and equipment and the Contractor shall ensure that it is worn properly. The Contractor's Designated IH and Designated Competent Person shall select and approve all the required personal protective clothing and equipment to be used.

1.15.1 Respirators

Respirators shall be in accordance with paragraph RESPIRATORY PROTECTION PROGRAM.

1.15.2 Whole Body Protection

Personnel exposed to airborne concentrations of asbestos that exceed the PELs, or for all OSHA Classes of work for which a required negative exposure assessment is not produced, shall be provided with whole body Tyvek type protection and such protection shall be worn properly. The Contractor's Designated IH and Competent Person shall select and approve the whole body protection to be used. The Competent Person shall examine work suits worn by employees at least once per work shift for rips or tears that may occur during performance of work. When rips or tears are detected while an employee is working, the work suit shall be immediately replaced. Disposable whole body protection shall be disposed of as asbestos contaminated waste upon exiting from the regulated area.

1.15.2.1 Coveralls

Disposable-breathable Tyvek type coveralls with a zipper front shall be provided. Sleeves shall be secured at the wrists, and foot coverings secured at the ankles.

1.15.2.2 Underwear

Disposable underwear shall be provided.

1.15.2.3 Work Clothing

An additional coverall shall be provided when the abatement and control method employed does not provide for the exit from the regulated area directly into an attached decontamination unit.

1.15.2.4 Gloves

Gloves shall be provided to protect the hands. Where there is the potential for hand injuries (i.e., scrapes, punctures, cuts, etc.) a suitable glove shall be provided and used.

1.15.2.5 Foot Coverings

Footwear, as required by OSHA and EM 385-1-1, that is appropriate for safety and health hazards in the area shall be worn. Rubber boots shall be used in moist or wet areas. Reusable footwear removed from the regulated

area shall be thoroughly decontaminated or disposed of as ACM waste. Disposable protective foot covering shall be disposed of as ACM waste. If rubber boots are not used, disposable foot covering shall be provided.

1.15.2.6 Head Covering

Hood type disposable head covering shall be provided. In addition, protective head gear (hard hats) shall be provided as required. Hard hats shall only be removed from the regulated area after being thoroughly decontaminated.

1.15.2.7 Protective Eye Wear

Eye protection provided shall be in accordance with ANSI Z87.1.

1.16 HYGIENE FACILITIES AND PRACTICES

The Contractor shall establish a decontamination area for the decontamination of employees, material and equipment. The Contractor shall ensure that employees enter and exit the regulated area through the decontamination area.

1.16.1 Shower Facilities

Shower facilities, when provided, shall comply with 29 CFR 1910, Section .141(d)(3).

1.16.2 3-Stage Decontamination Area

A temporary negative pressure decontamination unit that is adjacent and attached in a leak-tight manner to the regulated area shall be provided as described in SET-UP DETAIL SHEET. The decontamination unit shall have an equipment room and a clean room separated by a shower that complies with 29 CFR 1910, Section .141 (unless the Contractor can demonstrate that such facilities are not feasible). Equipment and surfaces of containers filled with ACM shall be cleaned prior to removing them from the equipment room or area. Surfaces of the equipment room shall be wet wiped 2 times after each shift. Materials used for wet wiping shall be disposed of as asbestos contaminated waste. Two separate lockers shall be provided for each asbestos worker, one in the equipment room and one in the clean room. Hot water service may be secured from the building hot water system provided backflow protection is installed by the Contractor at the point of connection. Should sufficient hot water be unavailable, the Contractor shall provide a minimum 40 gal. electric water heater with minimum recovery rate of 20 gal. per hour and a temperature controller for each showerhead. The Contractor shall provide a minimum of 2 showers.

Instantaneous type in-line water heater may be incorporated at each shower head in lieu of hot water heater, upon approval by the Contracting Officer.

Flow and temperature controls shall be located within the shower and shall be adjustable by the user. The wastewater pump shall be sized for 1.25 times the showerhead flow-rate at a pressure head sufficient to satisfy the filter head loss and discharge line losses. The pump shall supply a minimum 25 gpm flow with 35 ft. of pressure head. Used shower water shall be collected and filtered to remove asbestos contamination. Filters and residue shall be disposed of as asbestos contaminated material, per DETAIL SHEETS 9 and 14. Filtered water shall be discharged to the sanitary system.

Wastewater filters shall be installed in series with the first stage pore size of 20 microns and the second stage pore size of 5 microns. The floor of the decontamination unit's clean room shall be kept dry and clean at all times. Water from the shower shall not be allowed to wet the floor in the

clean room. Surfaces of the clean room and shower shall be wet-wiped 2 times after each shift change with a disinfectant solution. Proper housekeeping and hygiene requirements shall be maintained. Soap and towels shall be provided for showering, washing and drying. Any cloth towels provided shall be disposed of as ACM waste or shall be laundered in accordance with 29 CFR 1926, Section 1101.

1.16.3 Load-Out Unit

A temporary load-out unit that is adjacent and connected to the regulated area and shall be provided as described in DETAIL SHEET . Utilization of prefabricated units shall have prior approval of the Contracting Officer. The load-out unit shall be attached in a leak-tight manner to each regulated area. Surfaces of the load-out unit and access tunnel shall be adequately wet-wiped 2 times after each shift change. Materials used for wet wiping shall be disposed of as asbestos contaminated waste.

1.16.4 Decontamination Area Entry Procedures

The Contractor shall ensure that employees entering the decontamination area through the clean room or clean area:

- a. Remove street clothing in the clean room or clean area and deposit it in lockers.
- b. Put on protective clothing and respiratory protection before leaving the clean room or clean area.
- c. Pass through the equipment room to enter the regulated area.

1.16.5 Decontamination Area Exit Procedures

The Contractor shall ensure that the following procedures are followed:

- a. Before leaving the regulated area, respirators shall be worn while employees remove all gross contamination and debris from their work clothing using a HEPA vacuum.
- b. Employees shall remove their protective clothing in the equipment room and deposit the clothing in labeled impermeable bags or containers for disposal and/or laundering.
- c. Employees shall not remove their respirators in the equipment room.
- d. Employees shall shower prior to entering the clean room. If a shower has not been located between the equipment room and the clean room or the work is performed outdoors, the Contractor shall ensure that employees engaged in Class I asbestos jobs: a) Remove asbestos contamination from their work suits in the equipment room or decontamination area using a HEPA vacuum before proceeding to a shower that is not adjacent to the work area; or b) Remove their contaminated work suits in the equipment room, without cleaning worksuits, and proceed to a shower that is not adjacent to the work area.
- e. After showering, employees shall enter the clean room before changing into street clothes.

1.16.6 Lunch Areas

The Contractor shall provide lunch areas in which the airborne concentrations of asbestos are below 0.01 f/cc.

1.16.7 Smoking

Smoking, if allowed by the Contractor, shall only be permitted in designated areas approved by the Contracting Officer.

1.17 REGULATED AREAS

All Class II, asbestos work shall be conducted within regulated areas. The regulated area shall be demarcated to minimize the number of persons within the area and to protect persons outside the area from exposure to airborne asbestos. Where critical barriers or negative pressure enclosures are used, they shall demarcate the regulated area. Access to regulated areas shall be limited to authorized persons. The Contractor shall control access to regulated areas, ensure that only authorized personnel enter, and verify that Contractor required medical surveillance, training and respiratory protection program requirements are met prior to allowing entrance.

1.18 WARNING SIGNS AND TAPE

Warning signs and tape printed bilingually in English and Spanish shall be provided at the regulated boundaries and entrances to regulated areas. The Contractor shall ensure that all personnel working in areas contiguous to regulated areas comprehend the warning signs. Signs shall be located to allow personnel to read the signs and take the necessary protective steps required before entering the area. Warning signs, as shown and described in DETAIL SHEET 11, shall be in vertical format conforming to 29 CFR 1910 and 29 CFR 1926, Section 1101, a minimum of 20 by 14 inches, and displaying the following legend in the lower panel:

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

Spacing between lines shall be at least equal to the height of the upper of any two lines. Warning tape shall be provided as shown and described on DETAIL SHEET 11. Decontamination unit signage shall be as shown and described on DETAIL SHEET 15.

1.19 WARNING LABELS

Warning labels shall be affixed to all asbestos disposal containers used to contain asbestos materials, scrap, waste debris, and other products contaminated with asbestos. Containers with preprinted warning labels conforming to requirements are acceptable. Warning labels shall be as described in DETAIL SHEET 14, shall conform to 29 CFR 1926, Section 1101 and shall be of sufficient size to be clearly legible displaying the following legend:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

1.20 LOCAL EXHAUST VENTILATION

Local exhaust ventilation units shall conform to ANSI Z9.2 and 29 CFR 1926, Section 1101. Filters on local exhaust system equipment shall conform to ANSI Z9.2 and UL 586. Filter shall be UL labeled.

1.21 TOOLS

Vacuums shall be leak proof to the filter, equipped with HEPA filters, of sufficient capacity and necessary capture velocity at the nozzle or nozzle attachment to efficiently collect, transport and retain the ACM waste material. Power tools shall not be used to remove ACM unless the tool is equipped with effective, integral HEPA filtered exhaust ventilation capture and collection system, or has otherwise been approved for use by the Contracting Officer. Residual asbestos shall be removed from reusable tools prior to storage and reuse. Reusable tools shall be thoroughly decontaminated prior to being removed from regulated areas.

1.22 RENTAL EQUIPMENT

If rental equipment is to be used, written notification shall be provided to the rental agency, concerning the intended use of the equipment, the possibility of asbestos contamination of the equipment and the steps that will be taken to decontaminate such equipment. A written acceptance of the terms of the Contractor's notification shall be obtained from the rental agency.

1.23 AIR MONITORING EQUIPMENT

The Contractor's Designated IH shall approve air monitoring equipment to be used to collect samples. The equipment shall include, but shall not be limited to:

- a. High-volume sampling pumps that can be calibrated and operated at a constant airflow up to 16 liters per minute when equipped with a sampling train of tubing and filter cassette.
- b. Low-volume, battery powered, body-attachable, portable personal pumps that can be calibrated to a constant airflow up to approximately 3.5 liters per minute when equipped with a sampling train of tubing and filter cassette, and a self-contained rechargeable power pack capable of sustaining the calibrated flow rate for a minimum of 10 hours. The pumps shall also be equipped with an automatic flow control unit which shall maintain a constant flow, even as filter resistance increases due to accumulation of fiber and debris on the filter surface.
- c. Single use standard 25 mm diameter cassette, open face, 0.8 micron pore size, mixed cellulose ester membrane filters and cassettes with 50 mm electrically conductive extension cowl, and shrink bands, to be used with low flow pumps in accordance with 29 CFR 1926, Section 1101 for personal air sampling.
- d. Single use standard 25 mm diameter cassette, open face, 0.45 micron pore size, mixed cellulose ester membrane filters and cassettes with 50 mm electrically conductive cowl, and shrink bands, to be used with high flow pumps when conducting environmental area sampling using NIOSH Pub No. 84-100 Methods

7400 and 7402, (and the transmission electric microscopy method specified at 40 CFR 763 if required).

- e. Appropriate plastic tubing to connect the air sampling pump to the selected filter cassette.
- f. A flow calibrator capable of calibration to within plus or minus 2 percent of reading over a temperature range of minus 4 to plus 140 degrees F and traceable to a NIST primary standard.

1.24 EXPENDABLE SUPPLIES

1.24.1 Glovebag

Glovebags shall be provided as described in 29 CFR 1926, Section 1101 and SET-UP DETAIL SHEET 10. The glovebag assembly shall be 6 mil thick plastic, prefabricated and seamless at the bottom with preprinted OSHA warning label.

1.24.2 Duct Tape

Industrial grade duct tape of appropriate widths suitable for bonding sheet plastic and disposal container shall be provided.

1.24.3 Disposal Containers

Leak-tight (defined as solids, liquids, or dust that cannot escape or spill out) disposal containers shall be provided for ACM wastes as required by 29 CFR 1926 Section 1101 and DETAIL SHEETS 9A, 9B, 9C and 14.

1.24.4 Disposal Bags

Leak-tight bags, 6 mil thick, shall be provided for placement of asbestos generated waste as described in DETAIL SHEET 9A.

1.24.5 Fiberboard Drums

Fiberboard drums shall be approved by the designated IH.

1.24.6 Sheet Plastic

Sheet plastic shall be polyethylene of 6 mil minimum thickness and shall be provided in the largest sheet size necessary to minimize seams, as indicated on the project drawings. Film shall be clear and conform to ASTM D 4397, except as specified below:

1.24.6.1 Flame Resistant

Where a potential for fire exists, flame-resistant sheets shall be provided. Film shall be frosted or black and shall conform to the requirements of NFPA 701.

1.24.6.2 Reinforced

Reinforced sheets shall be provided where high skin strength is required, such as where it constitutes the only barrier between the regulated area and the outdoor environment. The sheet stock shall consist of translucent, nylon-reinforced or woven-polyethylene thread laminated between 2 layers of polyethylene film. Film shall meet flame resistant standards of NFPA 701.

1.24.7 Amended Water

Amended water shall meet the requirements of ASTM D 1331.

1.24.8 Mastic Removing Solvent

Mastic removing solvent shall be nonflammable and shall not contain methylene chloride, glycol ether, or halogenated hydrocarbons. Solvents used onsite shall have a flash point greater than 140 degrees F.

1.24.9 Leak-tight Wrapping

Two layers of 6 mil minimum thick polyethylene sheet stock shall be used for the containment of removed asbestos-containing components or materials such as reactor vessels, large tanks, boilers, insulated pipe segments and other materials too large to be placed in disposal bags as described in DETAIL SHEET 9B. Upon placement of the ACM component or material, each layer shall be individually leak-tight sealed with duct tape.

1.24.10 Viewing Inspection Window

Where feasible, a minimum of 1 clear, 1/8 inch thick, acrylic sheet, 18 by 24 inches, shall be installed as a viewing inspection window at eye level on a wall in each containment enclosure. The windows shall be sealed leak-tight with industrial grade duct tape.

1.24.11 Wetting Agents

Removal encapsulant (a penetrating encapsulant) shall be provided when conducting removal abatement activities that require a longer removal time or are subject to rapid evaporation of amended water. The removal encapsulant shall be capable of wetting the ACM and retarding fiber release during disturbance of the ACM greater than or equal to that provided by amended water. Performance requirements for penetrating encapsulants are specified in paragraph ENCAPSULANTS.

1.24.12 Strippable Coating

Strippable coating in aerosol cans shall be used to adhere to surfaces and to be removed cleanly by stripping, at the completion of work. This work shall only be done in well ventilated areas.

1.25 MISCELLANEOUS ITEMS

A sufficient quantity of other items, such as, but not limited to: scrapers, brushes, brooms, staple guns, tarpaulins, shovels, rubber squeegees, dust pans, other tools, scaffolding, staging, enclosed chutes, wooden ladders, lumber necessary for the construction of containments, UL approved temporary electrical equipment, material and cords, ground fault circuit interrupters, water hoses of sufficient length, fire extinguishers, first aid kits, portable toilets, logbooks, log forms, markers with indelible ink, spray paint in bright color to mark areas, project boundary fencing, etc., shall be provided.

PART 2 PRODUCTS

2.1 ENCAPSULANTS

Encapsulants shall conform to USEPA requirements, shall contain no toxic or hazardous substances and no solvent and shall meet the following requirements:

ALL ENCAPSULANTS

Requirement	Test Standard
Flame Spread - 25, Smoke Emission - 50	ASTM E 84
Combustion Toxicity Zero Mortality	Univ. of Pittsburgh Protocol
Life Expectancy, 20 yrs Accelerated Aging Test	ASTM C 732
Permeability, Minimum 0.4 perms	ASTM E 96

Additional Requirements for Bridging Encapsulant

Requirement	Test Standard
Cohesion/Adhesion Test, 50 pounds of force/foot	ASTM E 736
Fire Resistance, Negligible affect on fire resistance rating over 3 hour test (Classified by UL for use over fibrous and cementitious sprayed fireproofing)	ASTM E 119
Impact Resistance, Minimum 43 in-lb (Gardner Impact Test)	ASTM D 2794
Flexibility, no rupture or cracking (Mandrel Bend Test)	ASTM D 522

Additional Requirements for Penetrating Encapsulant

Requirement	Test Standard
Cohesion/Adhesion Test, 50 pounds of force/foot	ASTM E 736
Fire Resistance, Negligible affect on fire resistance rating over 3 hour test(Classified by UL for use over fibrous and cementitious sprayed fireproofing)	ASTM E 119
Impact Resistance, Minimum 43 in-lb (Gardner Impact Test)	ASTM D 2794
Flexibility, no rupture or cracking (Mandrel Bend Test)	ASTM D 522

Additional Requirements for Lockdown Encapsulant

Requirement	Test Standard
Fire Resistance, Negligible affect on fire resistance rating over 3 hour test(Tested with fireproofing over encapsulant applied directly to steel member)	ASTM E 119
Bond Strength, 100 pounds of	ASTM E 736

ALL ENCAPSULANTS

Requirement	Test Standard
force/foot (Tests compatibility with cementitious and fibrous fireproofing)	

2.2 ENCASUREMENT PRODUCTS

Encasement shall consist of primary cellular polymer coat, polymer finish coat, and any other finish coat as approved by the Contracting Officer.

2.3 RECYCLABLE MATERIALS

The Contractor shall comply with EPA requirements in accordance with Section 01670 RECYCLED / RECOVERED MATERIALS.

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

Asbestos abatement work tasks shall be performed as shown on the detailed plans and drawings, as summarized in paragraph DESCRIPTION OF WORK and including Table 1 and the Contractor's Accident Prevention Plan, Asbestos Hazard Abatement Plan, and the Activity Hazard Analyses. The Contractor shall use the engineering controls and work practices required in 29 CFR 1926, Section 1101(g) in all operations regardless of the levels of exposure. Personnel shall wear and utilize protective clothing and equipment as specified. The Contractor shall not permit eating, smoking, drinking, chewing or applying cosmetics in the regulated area. Power to the regulated area shall be locked-out and tagged in accordance with 29 CFR 1910, and temporary electrical service with ground fault circuit interrupters shall be provided as needed. Temporary electrical service shall be disconnected when necessary for wet removal. The Contractor shall stop abatement work in the regulated area immediately when the airborne total fiber concentration: (1) equals or exceeds 0.01 f/cc, or the pre-abatement concentration, whichever is greater, outside the regulated area; or (2) equals or exceeds 1.0 f/cc inside the regulated area. The Contractor shall correct the condition to the satisfaction of the Contracting Officer, including visual inspection and air sampling. Work shall resume only upon notification by the Contracting Officer. Corrective actions shall be documented.

3.2 PROTECTION OF ADJACENT WORK OR AREAS TO REMAIN

Asbestos abatement shall be performed without damage to or contamination of adjacent work or area. Where such work or area is damaged or contaminated, as verified by the Contracting Officer using visual inspection or sample analysis, it shall be restored to its original condition or decontaminated by the Contractor at no expense to the Government, as deemed appropriate by the Contracting Officer. This includes inadvertent spill of dirt, dust or debris in which it is reasonable to conclude that asbestos may exist. When these spills occur, work shall stop in all effected areas immediately and the spill shall be cleaned. When satisfactory visual inspection and air sampling analysis results are obtained and have been evaluated by the Contractor's Designated IH and the Contracting Officer, work shall proceed.

3.3 BUILDING VENTILATION SYSTEM AND CRITICAL BARRIERS

Building ventilating systems supplying air into or returning air out of a regulated area shall be shut down and isolated by lockable switch or other positive means in accordance with 29 CFR 1910, Section.147. Air-tight critical barriers shall be installed on building ventilating openings located inside the regulated area that supply or return air from the building ventilation system or serve to exhaust air from the building. The critical barriers shall consist of air-tight rigid covers for building ventilation supply and exhaust grills where the ventilation system is required to remain in service during abatement . Edges to wall, ceiling and floor surfaces shall be sealed with industrial grade duct tape. Critical barriers shall be installed as shown on drawings and appended SET-UP DETAIL SHEETS.

3.4 PRECLEANING

Surfaces shall be cleaned by adequately wet wiped prior to establishment of containment.

3.5 METHODS OF COMPLIANCE

3.5.1 Mandated Practices

The Contractor shall employ proper handling procedures in accordance with 29 CFR 1926 and 40 CFR 61, Subpart M, and the specified requirements. The specific abatement techniques and items identified shall be detailed in the Contractor's Asbestos Hazard Abatement Plan including, but not limited to, details of construction materials, equipment, and handling procedures. The Contractor shall use the following engineering controls and work practices in all operations, regardless of the levels of exposure:

- a. Vacuum cleaners equipped with HEPA filters to collect debris and dust containing ACM.
- b. Wet methods or wetting agents to control employee exposures during asbestos handling, mixing, removal, cutting, application, and cleanup; except where it can be demonstrated that the use of wet methods is unfeasible due to, for example, the creation of electrical hazards, equipment malfunction, and in roofing.
- c. Prompt clean-up and disposal in leak-tight containers of wastes and debris contaminated with asbestos.
- d. Inspection and repair of polyethylene in work and high traffic areas.
- e. Cleaning of equipment and surfaces of containers filled with ACM prior to removing them from the equipment room or area.

3.5.2 Control Methods

The Contractor shall use the following control methods to comply with the PELs:

- a. Local exhaust ventilation equipped with HEPA filter dust collection systems;
- b. Enclosure or isolation of processes producing asbestos dust;

- c. Ventilation of the regulated area to move contaminated air away from the breathing zone of employees and toward a filtration or collection device equipped with a HEPA filter;
- d. Use of other work practices and engineering controls;
- e. Where the feasible engineering and work practice controls described above are not sufficient to reduce employee exposure to or below the PELs, the Contractor shall use them to reduce employee exposure to the lowest levels attainable by these controls and shall supplement them by the use of respiratory protection that complies with paragraph, RESPIRATORY PROTECTION PROGRAM.

3.5.3 Unacceptable Practices

The following work practices and engineering controls shall not be used for work related to asbestos or for work which disturbs ACM, regardless of measured levels of asbestos exposure or the results of initial exposure assessments:

- a. High-speed abrasive disc saws that are not equipped with point of cut ventilator or enclosures with HEPA filtered exhaust air.
- b. Compressed air used to remove asbestos, or materials containing asbestos, unless the compressed air is used in conjunction with an enclosed ventilation system designed to capture the dust cloud created by the compressed air.
- c. Dry sweeping, shoveling, or other dry clean-up of dust and debris containing ACM.
- d. Employee rotation as a means of reducing employee exposure to asbestos.

3.5.4 Class II Work

In addition to the requirements of paragraphs Mandated Practices and Control Methods, the following engineering controls and work practices shall be used:

- a. A Competent Person shall supervise the work.
- b. For indoor work, critical barriers shall be placed over all openings to the regulated area.
- c. Impermeable dropcloths shall be placed on surfaces beneath all removal activity.

3.5.5 Specific Control Methods for Class II Work

In addition to requirements of paragraph Class II Work, Class II work shall be performed using the following methods:

3.5.5.1 Vinyl and Asphalt Flooring Materials

When removing vinyl and asphalt flooring materials which contain ACM, the Contractor shall use the following practices as shown in RESPONSE ACTION DETAIL. Resilient sheeting shall be removed by adequately wet methods.

Tiles shall be removed intact (if possible). Flooring or its backing shall not be sanded. Scraping of residual adhesive and/or backing shall be performed using wet methods. Mechanical chipping is prohibited unless performed in a negative pressure enclosure. Dry sweeping is prohibited. The Contractor shall use vacuums equipped with HEPA filter, disposable dust bag, and metal floor tool (no brush) to clean floors.

3.5.5.2 Other Class II Jobs

The Contractor shall use the following work practices when performing Class II removal of black mastic ACM: The material shall be thoroughly wetted with amended water prior and during its removal. The material shall be removed in an intact state. Cutting, abrading or breaking the material is prohibited. The ACM removed shall be immediately bagged or wrapped.

3.5.6 Cleaning After Asbestos Removal

After completion of all asbestos removal work, surfaces from which ACM has been removed shall be wet wiped or sponged clean, or cleaned by some equivalent method to remove all visible residue. Run-off water shall be collected and filtered through a dual filtration system. A first filter shall be provided to remove fibers 20 micrometers and larger, and a final filter provided that removes fibers 5 micrometers and larger. After the gross amounts of asbestos have been removed from every surface, remaining visible accumulations of asbestos on floors shall be collected using plastic shovels, rubber squeegees, rubber dustpans, and HEPA vacuum cleaners as appropriate to maintain the integrity of the regulated area. When TSI and surfacing material has been removed, workmen shall use HEPA vacuum cleaners to vacuum every surface. Surfaces or locations which could harbor accumulations or residual asbestos dust shall be checked after vacuuming to verify that no asbestos-containing material remains; and shall be re-vacuumed as necessary to remove the ACM.

3.5.7 Class II Asbestos Work Response Action Detail Sheets

The following Class II Asbestos Work Response Action Detail Sheet is specified on Table 1 for each individual work task to be performed:

- a. Vinyl or Vinyl Asbestos Tile Adhered to Concrete Floor System by Asbestos-Containing Adhesive: See Sheet Section.
- p. Carpeting (Asbestos-Containing or Contaminated): See Sheet 65
- q. Miscellaneous Asbestos-Containing Materials: See Sheet 45

3.6 FINAL CLEANING AND VISUAL INSPECTION

Upon completion of abatement, the regulated area shall be cleaned by collecting, packing, and storing all gross contamination; see SET-UP DETAIL SHEETS 9, 14 and 20. A final cleaning shall be performed using HEPA vacuum and wet cleaning of all exposed surfaces and objects in the regulated area. Upon completion of the cleaning, the Contractor shall conduct a visual pre-inspection of the cleaned area in preparation for a final inspection before final air clearance monitoring and recleaning, as necessary. Upon completion of the final cleaning, the Contractor and the Contracting Officer shall conduct a final visual inspection of the cleaned regulated area in accordance with ASTM E 1368 and document the results on the Final Cleaning and Visual Inspection as specified on the SET-UP DETAIL SHEET 19. If the Contracting Officer rejects the clean regulated area as not meeting

final cleaning requirements, the Contractor shall reclean as necessary and have a follow-on inspection conducted with the Contracting Officer. Recleaning and follow-up reinspection shall be at the Contractor's expense.

3.7 LOCKDOWN

Prior to removal of plastic barriers and after clean-up of gross contamination and final visual inspection, a post removal (lockdown) encapsulant shall be spray applied to ceiling, walls, floors, and other surfaces in the regulated area.

3.8 EXPOSURE ASSESSMENT AND AIR MONITORING

3.8.1 General Requirements For Exposure

Exposure assessment, air monitoring and analysis of airborne concentration of asbestos fibers shall be performed in accordance with 29 CFR 1926, Section 1101, the Contractor's air monitoring plan, and as specified. Personal exposure air monitoring (collected at the breathing zone) that is representative of the exposure of each employee who is assigned to work within a regulated area shall be performed by the Contractor's Designated IH.

Breathing zone samples shall be taken for at least 25 percent of the workers in each shift, or a minimum of 2, whichever is greater. Air monitoring results at the 95 percent confidence level shall be calculated as shown in Table 2 at the end of this section. The Contractor shall provide an onsite independent testing laboratory with qualified analysts and appropriate equipment to conduct sample analyses of air samples using the methods prescribed in 29 CFR 1926, Section 1101, to include NIOSH Pub No. 84-100 Method 7400. Final clearance environmental air monitoring, shall be performed by the Contractor's Designated IH. Environmental and final clearance air monitoring shall be performed using NIOSH Pub No. 84-100 Method 7400 (PCM) with optional confirmation of results by NIOSH Pub No. 84-100 Method 7402 (TEM). For environmental and final clearance, air monitoring shall be conducted at a sufficient velocity and duration to establish the limit of detection of the method used at 0.005 f/cc. Confirmation of asbestos fiber concentrations (asbestos f/cc) from environmental and final clearance samples collected and analyzed by NIOSH Pub No. 84-100 Method 7400 (total f/cc) may be conducted using TEM in accordance with NIOSH Pub No. 84-100 Method 7402. When such confirmation is conducted, it shall be from the same sample filter used for the NIOSH Pub No. 84-100 Method 7400 PCM analysis. For all Contractor required environmental or final clearance air monitoring, confirmation of asbestos fiber concentrations, using NIOSH Pub No. 84-100 Method 7402, shall be at the Contractor's expense. Monitoring may be duplicated by the Government at the discretion of the Contracting Officer. Results of breathing zone samples shall be posted at the job site and made available to the Contracting Officer. The Contractor shall maintain a fiber concentration inside a regulated area less than or equal to 0.1 f/cc expressed as an 8 hour, time-weighted average (TWA) during the conduct of the asbestos abatement. If fiber concentration rises above 0.1 f/cc, work procedures shall be investigated with the Contracting Officer to determine the cause. At the discretion of the Contracting Officer, fiber concentration may exceed 0.1 f/cc but shall not exceed 1.0 f/cc expressed as an 8-hour TWA. The Contractor's workers shall not be exposed to an airborne fiber concentration in excess of 1.0 f/cc, as averaged over a sampling period of 30 minutes. Should either an environmental concentration of 1.0 f/cc expressed as an 8-hour TWA or a personal excursion concentration of 1.0 f/cc expressed as a 30-minute sample occur inside a regulated work area, the Contractor shall stop work immediately, notify the Contracting Officer,

and implement additional engineering controls and work practice controls to reduce airborne fiber levels below prescribed limits in the work area. Work shall not restart until authorized by the Contracting Officer.

3.8.2 Independent Environmental Monitoring

The Government has retained an independent air monitoring firm to perform pre-abatement, during abatement and final clearance air monitoring. The air monitoring contractor has been provided a copy of the contract that includes this abatement work. The abatement contractor will provide the air monitoring contractor with an up-to-date copy of the accepted Asbestos Hazard Abatement Plan, Accident Prevention Plan and pertinent detailed drawings. The air monitoring contractor is required to comply with the abatement contractor's safety and health requirements. The abatement contractor will coordinate all onsite activities with the air monitoring contractor, the COR, and other affected parties as directed by the COR. The abatement contractor will provide the air monitoring contractor with an up-to-date schedule of abatement contractor work activities. The air monitoring contractor will coordinate with the abatement contractor and the COR during the performance Government required air monitoring. The abatement contractor is responsible for performing exposure assessment and personal air monitoring of abatement contractor's work. The air monitoring contractor is responsible for performing these tasks for its employee.

3.8.3 Preabatement Environmental Air Monitoring

Preabatement environmental air monitoring shall be established 1 day prior to the masking and sealing operations for each regulated area to determine background concentrations before abatement work begins. As a minimum, preabatement air samples shall be collected using NIOSH Pub No. 84-100 Method 7400, PCM at these locations: outside the building; inside the building, but outside the regulated area perimeter; and inside each regulated work area. One sample shall be collected for every 2000 square feet of floor space. At least 2 samples shall be collected outside the building: at the exhaust of the HEPA unit; and downwind from the abatement site. The PCM samples shall be analyzed within 24 hours; and if any result in fiber concentration greater than 0.01 f/cc, asbestos fiber concentration shall be confirmed using NIOSH Pub No. 84-100 Method 7402 (TEM).

3.8.4 Environmental Air Monitoring During Abatement

Until an exposure assessment is provided to the Contracting Officer, environmental air monitoring shall be conducted at locations and frequencies that will accurately characterize any evolving airborne asbestos fiber concentrations. The assessment shall demonstrate that the product or material containing asbestos minerals, or the abatement involving such product or material, cannot release airborne asbestos fibers in concentrations exceeding 0.01 f/cc as a TWA under those work conditions having the greatest potential for releasing asbestos. The monitoring shall be at least once per shift at locations including, but not limited to, close to the work inside a regulated area; preabatement sampling locations; outside entrances to a regulated area; close to glovebag operations; representative locations outside of the perimeter of a regulated area; inside clean room; and at the exhaust discharge point of local exhaust system ducted to the outside of a containment (if used). If the sampling outside regulated area shows airborne fiber levels have exceeded background or 0.01 f/cc, whichever is greater, work shall be stopped immediately, and the Contracting Officer notified. The condition causing the increase shall be corrected. Work shall not restart until authorized by the Contracting

Officer.

3.8.5 Final Clearance Air Monitoring

Prior to conducting final clearance air monitoring, the Contractor and the Contracting Officer shall conduct a final visual inspection of the regulated area where asbestos abatement has been completed. The final visual inspection shall be as specified in SET-UP DETAIL SHEET 19. Final clearance air monitoring shall not begin until acceptance of the Contractor's final cleaning by the Contracting Officer. The Contractor's Designated IH shall conduct final clearance air monitoring using aggressive air sampling techniques as defined in EPA 560/5-85-024 or as otherwise required by federal or state requirements. The sampling and analytical method used will be NIOSH Pub No. 84-100 Method 7400 (PCM) and Table 3 with confirmation of results by NIOSH Pub No. 84-100 Method 7402 (TEM).

3.8.5.1 Final Clearance Requirements, NIOSH PCM Method

For PCM sampling and analysis using NIOSH Pub No. 84-100 Method 7400, the fiber concentration inside the abated regulated area, for each airborne sample, shall be less than 0.01 f/cc. The abatement inside the regulated area is considered complete when every PCM final clearance sample is below the clearance limit. If any sample result is greater than 0.01 total f/cc, the asbestos fiber concentration (asbestos f/cc) shall be confirmed from that same filter using NIOSH Pub No. 84-100 Method 7402 (TEM) at Contractor's expense. If any confirmation sample result is greater than 0.01 asbestos f/cc, abatement is incomplete and cleaning shall be repeated.

Upon completion of any required recleaning, resampling with results to meet the above clearance criteria shall be done.

3.8.5.2 Air Clearance Failure

If clearance sampling results fail to meet the final clearance requirements, the Contractor shall pay all costs associated with the required recleaning, resampling, and analysis, until final clearance requirements are met.

3.8.6 Air-Monitoring Results and Documentation

Air sample fiber counting shall be completed and results provided within 24 hours (breathing zone samples), and 72 hours (environmental/clearance monitoring) after completion of a sampling period. The Contracting Officer shall be notified immediately of any airborne levels of asbestos fibers in excess of established requirements. Written sampling results shall be provided within 5 working days of the date of collection. The written results shall be signed by testing laboratory analyst, testing laboratory principal and the Contractor's Designated IH. The air sampling results shall be documented on a Contractor's daily air monitoring log. The daily air monitoring log shall contain the following information for each sample:

- a. Sampling and analytical method used;
- b. Date sample collected;
- c. Sample number;
- d. Sample type: BZ = Breathing Zone (Personal), P = Preabatement, E = Environmental, C = Abatement Clearance;

- e. Location/activity/name where sample collected;
- f. Sampling pump manufacturer, model and serial number, beginning flow rate, end flow rate, average flow rate (L/min);
- g. Calibration date, time, method, location, name of calibrator, signature;
- h. Sample period (start time, stop time, elapsed time (minutes));
- i. Total air volume sampled (liters);
- j. Sample results (f/cc and S/mm square) if EPA methods are required for final clearance;
- k. Laboratory name, location, analytical method, analyst, confidence level. In addition, the printed name and a signature and date block for the Industrial Hygienist who conducted the sampling and for the Industrial Hygienist who reviewed the daily air monitoring log verifying the accuracy of the information.

3.9 CLEARANCE CERTIFICATION

When asbestos abatement is complete, ACM waste is removed from the regulated areas, and final clean-up is completed, the Contracting Officer will certify the areas as safe before allowing the warning signs and boundary warning tape to be removed. After final clean-up and acceptable airborne concentrations are attained, but before the HEPA unit is turned off and the containment removed, the Contractor shall remove all pre-filters on the building HVAC system and provide new pre-filters. The Contractor shall dispose of such filters as asbestos contaminated materials. HVAC, mechanical, and electrical systems shall be re-established in proper working order. The Contractor and the Contracting Officer shall visually inspect all surfaces within the containment for residual material or accumulated debris. The Contractor shall reclean all areas showing dust or residual materials. The Contracting Officer will certify in writing that the area is safe before unrestricted entry is permitted. The Government will have the option to perform monitoring to certify the areas are safe before entry is permitted.

3.10 CLEANUP AND DISPOSAL

3.10.1 Title to ACM Materials

ACM material resulting from abatement work, except as specified otherwise, shall become the property of the Contractor and shall be disposed of as specified and in accordance with applicable federal, state and local regulations.

3.10.2 Collection and Disposal of Asbestos

All ACM waste shall be collected and including contaminated wastewater filters, scrap, debris, bags, containers, equipment, and asbestos contaminated clothing, shall be collected and placed in leak-tight containers such as double plastic bags (see DETAIL SHEET 9A); sealed double wrapped polyethylene sheet (see DETAIL SHEET 9B); sealed fiberboard boxes (see DETAIL SHEET 9C); or other approved containers. Waste within the containers shall be wetted in case the container is breached. Asbestos-containing waste shall be disposed of at an EPA, state and local

approved asbestos landfill off Government property. For temporary storage, sealed impermeable containers shall be stored in an asbestos waste load-out unit or in a storage/transportation conveyance (i.e., dumpster, roll-off waste boxes, etc.) in a manner acceptable to and in an area assigned by the Contracting Officer. Procedure for hauling and disposal shall comply with 40 CFR 61, Subpart M, state, regional, and local standards.

3.10.3 Weigh Bill and Delivery Tickets

Copies of weigh bills and delivery tickets shall be submitted to the Contracting Officer during the progress of the work. The Contractor shall furnish the Contracting Officer scale tickets for each load of ACM weighed and certified. These tickets shall include tare weight; identification mark for each vehicle weighed; and date, time and location of loading and unloading. Tickets shall be furnished at the point and time individual trucks arrive at the worksite. A master log of all vehicle loading shall be furnished for each day of loading operations. Before the final statement is allowed, the Contractor shall file with the Contracting Officer certified weigh bills and/or certified tickets and manifests of all ACM actually disposed by the Contractor for this contract.

3.10.4 Asbestos Waste Shipment Record

The Contractor shall complete and provide the Contracting Officer final completed copies of the Waste Shipment Record for all shipments of waste material as specified in 40 CFR 61, Subpart M and other required state waste manifest shipment records, within 3 days of delivery to the landfill.

Each Waste Shipment Record shall be signed and dated by the Contractor, the waste transporter and disposal facility operator.

TABLE 1

INDIVIDUAL WORK TASK DATA ELEMENTS - EXAMPLE

Sheet1 of 1

There is a separate data sheet for each individual work task.

1. WORK TASK DESIGNATION NUMBER See Section 1 - Work Task Designation numbers 1 to 17
2. LOCATION OF WORK TASK Darnall Hospital Emergency Room and specifications as noted in work task section. Work Task #1-01901
3. BRIEF DESCRIPTION OF MATERIAL TO BE ABATED: Floor tile, brown/white with black mastic
 - a. Type of Asbestos Chrysotile
 - b. Percent asbestos content FT 4% to 5%, Mastic 10% to 15%, Black Mastic/Tar 15%
4. ABATEMENT TECHNIQUE TO BE USED See section Work Task Designation #1-01901
5. OSHA ASBESTOS CLASS DESIGNATION FOR WORK TASK Class II asbestos activity
6. EPA NESHAP FRIABILITY DESIGNATION FOR WORK TASK
Friable Non-friable Category I X
Non-friable Category II
7. FORM 1A and CONDITION OF ACM: GOOD X FAIR POOR
8. QUANTITY: METERS N/A, SQUARE METERS N/A
- 8a. QUANTITY: LINEAR FT. N/A, SQUARE FT. 5,300 total
9. RESPONSE ACTION DETAIL SHEET NUMBER FOR WORK TASK Section Division 3
10. SET-UP DETAIL SHEET NUMBERS
FOR WORK TASK Section Division 3, _____, _____,
_____, _____, _____, _____.

NOTES:

- (1) Numeric sequence of individual work tasks (1,2,3,4, etc.) for each regulated area. Each category of EPA friability/OSHA class has a separate task.
- (2) Specific location of work (building, floor, area, e.g., Building 1421, 2nd Floor, Rm 201)
- (3) A description of material to be abated (example: horizontal pipe, cement wall panels, tile, stucco, etc.) type of asbestos (chrysotile, amosite, crocidolite, etc.); and % asbestos content.
- (4) Technique to be used: Removal = REM; Encapsulation = ENCAP; Encasement = ENCAS; Enclosure = ENCL; Repair = REP.
- (5) Class designation: Class I, II, III, or IV (OSHA designation).
- (6) Friability of materials: Check the applicable EPA NESHAP friability designation.
- (7) Form: Interior or Exterior Architectural = IA or EA; Mechanical/Electrical = ME.
Condition: Good = G; Fair = F; Poor = P.
- (8) Quantity of ACM for each work task in meters or square meters.
- (8a) Quantity of ACM for each work task in linear feet or square feet.
- (9) Response Action Detail Sheet specifies the material to be abated and the methods to be used. There is only one Response Action Detail Sheet for each abatement task.

TABLE 1

INDIVIDUAL WORK TASK DATA ELEMENTS - EXAMPLE

- (10) Set-up Detail Sheets indicate containment and control methods used in support of the response action (referenced in the selected Response Action Detail Sheet).

TABLE 1

INDIVIDUAL WORK TASK DATA ELEMENTS

Sheet _____ of _____

There is a separate data sheet for each individual work task.

1. WORK TASK DESIGNATION NUMBER _____
2. LOCATION OF WORK TASK _____
3. BRIEF DESCRIPTION OF MATERIAL TO BE ABATED: _____

a. Type of Asbestos _____
b. Percent asbestos content _____%
4. ABATEMENT TECHNIQUE TO BE USED _____
5. OSHA ASBESTOS CLASS DESIGNATION FOR WORK TASK _____
6. EPA NESHAP FRIABILITY DESIGNATION FOR WORK TASK
Friable _____ Non-friable Category I _____
Non-friable Category II _____
7. FORM _____ and CONDITION OF ACM: GOOD _____ FAIR _____ POOR _____
8. QUANTITY: METERS _____, SQUARE METERS _____
- 8a. QUANTITY: LINEAR FT. _____, SQUARE FT. _____
9. RESPONSE ACTION DETAIL SHEET NUMBER FOR WORK TASK _____
10. SET-UP DETAIL SHEET NUMBERS
FOR WORK TASK _____, _____, _____, _____,
_____, _____, _____, _____.

NOTES:

- (1) Numeric sequence of individual work tasks (1,2,3,4, etc.) for each regulated area. Each category of EPA friability/OSHA class has a separate task.
- (2) Specific location of work (building, floor, area, e.g., Building 1421, 2nd Floor, Rm 201)
- (3) A description of material to be abated (example: horizontal pipe, cement wall panels, tile, stucco, etc.) type of asbestos (chrysotile, amosite, crocidolite, etc.); and % asbestos content.
- (4) Technique to be used: Removal = REM; Encapsulation = ENCAP; Encasement = ENCAS; Enclosure = ENCL; Repair = REP.
- (5) Class designation: Class I, II, III, or IV (OSHA designation).
- (6) Friability of materials: Check the applicable EPA NESHAP friability designation.
- (7) Form: Interior or Exterior Architectural = IA or EA; Mechanical/Electrical = ME.
Condition: Good = G; Fair = F; Poor = P.
- (8) Quantity of ACM for each work task in meters or square meters.
- (8a) Quantity of ACM for each work task in linear feet or square feet.
- (9) Response Action Detail Sheet specifies the material to be abated and the methods to be used. There is only one Response Action Detail Sheet for each abatement task.
- (10) Set-up Detail Sheets indicate containment and control methods used in support of the response action (referenced in the selected Response Action Detail Sheet).

TABLE 2

FORMULA FOR CALCULATION OF THE 95 PERCENT CONFIDENCE LEVEL
(Reference: NIOSH 7400)

$$\text{Fibers/cc(01.95 percent CL)} = X + (X) * (1.645) * (CV)$$

Where: $X = ((E)(AC))/((V)(1000))$

$$E = ((F/Nf) - (B/Nb))/Af$$

CV = The precision value; 0.45 shall be used unless the analytical laboratory provides the Contracting Officer with documentation (Round Robin Program participation and results) that the laboratory's precision is better.

AC = Effective collection area of the filter in square millimeters

V = Air volume sampled in liters

E = Fiber density on the filter in fibers per square millimeter

F/Nf = Total fiber count per graticule field

B/Nb = Mean field blank count per graticule field

Af = Graticule field area in square millimeters

$$\text{TWA} = C1/T1 + C2/T2 = Cn/Tn$$

Where: C = Concentration of contaminant

T = Time sampled.

TABLE 3
 NIOSH METHOD 7400
 PCM ENVIRONMENTAL AIR SAMPLING PROTOCOL (NON-PERSONAL)

Sample Location	Minimum No. of Samples	Filter Pore Size (Note 1)	Min. Vol. (Note 2) (Liters)	Sampling Rate (liters/min.)
Inside Abatement Area	0.5/140 Square Meters (Notes 3 & 4)	0.45 microns	3850	2-16
Each Room in 1 Abatement Area Less than 140 Square meters		0.45 microns	3850	2-16
Field Blank	2	0.45 microns	0	0
Laboratory Blank	1	0.45 microns	0	0

Notes:

1. Type of filter is Mixed Cellulose Ester.
2. Ensure detection limit for PCM analysis is established at 0.005 fibers/cc.
3. One sample shall be added for each additional 140 square meters. (The corresponding I-P units are 5/1500 square feet).
4. A minimum of 5 samples are to be taken per abatement area, plus 2 field blanks.

TABLE 4

EPA AHERA METHOD: TEM AIR SAMPLING PROTOCOL

Location Sampled	Minimum No. of Samples	Filter Pore Size	Min. Vol. (Liters)	Sampling Rate (liters/min.)
Inside Abatement Area	5	0.45 microns	1500	2-16
Outside Abatement Area	5	0.45 microns	1500	2-16
Field Blank	2	0.45 microns	0	0
Laboratory Blank	1	0.45 microns	0	0

Notes:

1. Type of filter is Mixed Cellulose Ester.
2. The detection limit for TEM analysis is 70 structures/square mm.

CERTIFICATE OF WORKER'S ACKNOWLEDGMENT

PROJECT NAME _____ CONTRACT NO. _____
PROJECT ADDRESS _____
CONTRACTOR FIRM NAME _____
EMPLOYEE'S NAME _____, _____, _____,
(Print) (Last) (First) (MI)

Social Security Number: _____-_____-_____,

WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBERS HAS BEEN LINKED WITH TYPES OF LUNG DISEASE AND CANCER. IF YOU SMOKE AND INHALE ASBESTOS FIBERS, THE CHANCE THAT YOU WILL DEVELOP LUNG CANCER IS GREATER THAN THAT OF THE NONSMOKING PUBLIC.

Your employer's contract for the above project requires that you be provided and you complete formal asbestos training specific to the type of work you will perform and project specific training; that you be supplied with proper personal protective equipment including a respirator, that you be trained in its use; and that you receive a medical examination to evaluate your physical capacity to perform your assigned work tasks, under the environmental conditions expected, while wearing the required personal protective equipment. These things are to be done at no cost to you. By signing this certification, you are acknowledging that your employer has met these obligations to you. The Contractor's Designated Industrial Hygienist will check the block(s) for the type of formal training you have completed. Review the checked blocks prior to signing this certification.

FORMAL TRAINING:

_____ a. For Competent Persons and Supervisors: I have completed EPA's Model Accreditation Program (MAP) training course, "Contractor/Supervisor", that meets this State's requirements.

_____ b. For Workers:
(2) For OSHA Class II work (where there will be abatement of more than one type of Class II materials, i.e., roofing, siding, floor tile, etc.): I have completed EPA's MAP training course, "Worker", that meets this State's requirements.

_____ (a) I have completed an 8-hour training class on the elements of 29 CFR 1926, Section 1101(k)(9)(viii), in addition to the specific work practices and engineering controls of 29 CFR 1926, Section 1101(g) and hands-on training.

_____ (b) I have completed EPA's MAP training course, "Worker", that meets this State's requirements.

_____ (4) For OSHA Class III work: I have completed at least a 16-hour course consistent with EPA requirements for training of local education agency maintenance and custodial staff at 40 CFR 763, Section .92(a)(2) and the elements of 29 CFR 1926, Section 1101(k)(9)(viii), in addition to the specific work practices and engineering controls at 29 CFR 1926, Section 1101, and hands-on training.

CERTIFICATE OF WORKER'S ACKNOWLEDGMENT

_____ c. Workers, Supervisors and the Designated Competent Person: I have completed annual refresher training as required by EPA's MAP that meets this State's requirements.

PROJECT SPECIFIC TRAINING:

_____ I have been provided and have completed the project specific training required by this Contract. My employer's Designated Industrial Hygienist and Designated Competent Person conducted the training.

RESPIRATORY PROTECTION:

_____ I have been trained in accordance with the criteria in the Contractor's Respiratory Protection program. I have been trained in the dangers of handling and breathing asbestos dust and in the proper work procedures and use and limitations of the respirator(s) I will wear. I have been trained in and will abide by the facial hair and contact lens use policy of my employer.

RESPIRATOR FIT-TEST TRAINING:

_____ I have been trained in the proper selection, fit, use, care, cleaning, maintenance, and storage of the respirator(s) that I will wear. I have been fit-tested in accordance with the criteria in the Contractor's Respiratory Program and have received a satisfactory fit. I have been assigned my individual respirator. I have been taught how to properly perform positive and negative pressure fit-check upon donning negative pressure respirators each time.

MEDICAL EXAMINATION:

_____ I have had a medical examination within the last twelve months which was paid for by my employer. The examination included: health history, pulmonary function tests, and may have included an evaluation of a chest x-ray. A physician made a determination regarding my physical capacity to perform work tasks on the project while wearing personal protective equipment including a respirator. I was personally provided a copy and informed of the results of that examination. My employer's Industrial Hygienist evaluated the medical certification provided by the physician and checked the appropriate blank below. The physician determined that there:

_____ were no limitations to performing the required work tasks.

_____ were identified physical limitations to performing the required work tasks.

Date of the medical examination _____

Employee Signature _____ date _____

Contractor's Industrial

Hygienist Signature _____ date _____

-- End of Section --

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1. WORK TASK DESIGNATIONAL NUMBER

ASBESTOS ABATEMENT SPECIFICATIONS

DARNALL HOSPITAL EMERGENCY ROOM RENOVATION

**PREPARED BY
RABA-KISTNER CONSULTANTS, INC.
8200 CAMERON ROAD, SUITE C-154
Austin, TEXAS 78754-3822
(512) 339-1745
(512) 339-6174 (FAX)**

R-K Project No.: ASF02-282-02

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**ASBESTOS SPECIFICATIONS
DARNALL HOSPITALEMERGENCY ROOM RENOVATION**

DIVISION 1 - GENERAL REQUIREMENTS

Individual work tasks

- 1-01901 Summary of Work - Asbestos Abatement
- 2-01902 Project Coordination - Asbestos Abatement
- 3-01903 Definitions and Standards - Asbestos Abatement
- 4-01904 Codes & Regulations - Asbestos Abatement
- 5-01905 Submittals
- 6-01906 Test Laboratory Services
- 7-01907 Temporary Facilities - Asbestos Abatement
- 8-01908 Temporary Pressure Differential and Air Circulation System
- 9-01909 Temporary Enclosures
- 10-01910 Worker Protection - Asbestos Abatement
- 11-01911 Respiratory Protection
- 12-01912 Decontamination Units
- 13-01913 Project Closeout - Asbestos Abatement
- 14-01914 Project Decontamination
- 15-01915 Work Area Clearance

DIVISION 2 - SITE WORK

- 16-01916 Removal of Asbestos Containing Material
- 17-01917 Disposal of Asbestos Containing Waste Material

DIVISION 3 -- DRAWINGS

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Section 01901
Summary of Work

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including Supplementary General Conditions and other Division-1 Specification Sections, apply to this Section.

1.2 PROJECT DESCRIPTION - SUMMARY OF WORK

- A. This Section includes the following:

The Project consists of Asbestos Abatement at **DARNALL HOSPITAL EMERGENCYROOM RENOVATION**

1. all as shown on the Contract Documents prepared by Raba- Kistner Consultants, Inc.
2. The work on this Project consists of the abatement and disposal of identified asbestos from the following specified areas:

DARNALL HOSPITAL EMERGENCY ROOM RENOVATION

#	Item	Location	Approximate Amount
1	Resilient Floor Tile - 12"x12" floor tile and mastic	Emergency room corridors 103, RA10, and Bldg 2 – Rooms 107Trauma, File room, offices PO 101,102,103, 104, 105, 106, 107.	5250 sf
2	Black mastic on ceiling	Specific locations to be determined once the ceiling tiles and grids are removed	50 st

sf = square feet lf = linear feet

QUANTITIES ARE ESTIMATES ONLY AND MUST BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO PROPOSAL.

The contractor must confine operations to areas within Contract limits established. Portions of the site beyond areas in which operations are established are not to be disturbed. Keep driveways and entrances serving the premises clear, clean and available to the Owner and his employees at all time

Section 01901
Summary of Work

1.3 GENERAL

- A. This project is to be conducted in accordance with the requirements of 25 TAC, section 15, Article 4477-3a and 29 CFR 1926.1101.
1. The location and approximate quantities of asbestos materials provided in these specifications are estimates only and do not include any hidden materials not identified. The Contractor is responsible to field verify for actual quantities which these plans and specifications represent. No additional compensation will be made to the Contractor(s) for differences between the estimated quantities and the actual quantities unless prior written approval is obtained from the Owner or his representative.

B. RELATED DOCUMENTS

Drawings, general provisions of Contract, including General and Supplementary Conditions, and other Division-1 Specification sections, apply to work of this section.

1.4 PROJECT/WORK IDENTIFICATION

- A. 1. General:

Project name is:

DARNALL HOSPITAL EMERGENCY ROOM RENOVATION

2. As shown on contract documents.

The purpose of this specification is the removal of all interior asbestos containing materials prior to building renovations at the DARNALL HOSPITAL EMERGENCY ROOM. The Contractor will complete all abatement work within the building, (including pre-abatement demolition, clearance and demobilization), in 8 workdays starting with the notification date. For each and every calendar day the work or any portion thereof, remains incomplete, after the 8 days, the Contractor will pay, to the owner, the amount of \$2,000.00 per calendar day for delay. The Owner will deduct such amount from any payment due the Contractor.

Section 01901
Summary of Work

B. Briefly and without force and effect upon the contract Documents, the work of the Contract can be summarized as follows:

1. The purpose of this project is to remove and dispose of the following identified asbestos containing materials (ACM's):

- 12"x12" floor tile and mastic
- Black mastic on ceiling

C. The Contractor will remove and dispose of as ACM the above listed material. A summary of the sampling of these items follows:

1.5 ASBESTOS CONTAINING MATERIALS:

A. The following asbestos containing materials require abatement prior to demolition. If any other materials are found, which are suspected of containing asbestos, immediately notify the Owner's Representative. The amounts of ACM listed below are approximate. The Contractor will field verify the quantities.

DESCRIPTION	QUAN.	COMMENTS
Resilient Floor Tile - 12"x12" floor tile and mastic	Approximately 5250 sq. ft.	Full enclosure abatement can be utilized with two layers of 6mil. poly on walls and ceiling, criticals, negative air, wet decontamination unit, wet method, proper PPE and PAPR, in compliance with TAHPR Rules. Double bag and proper disposal. All penetrations shall be sealed. Lock out of all electrical power.
Black Mastic	Approximately 50 sq. ft..	Full enclosure abatement can be utilized with two layers of 6mil. poly on walls and ceiling, criticals, negative air, wet decontamination unit, wet method, proper PPE and PAPR, in compliance with TAHPR Rules. Double bag and proper disposal. All penetrations shall be sealed. Lock out of all electrical power.

QUANTITIES ARE ESTIMATES ONLY AND MUST BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO PROPOSAL.

Section 01901
Summary of Work

- B. Air monitoring will be conducted during the entire abatement process. Personal pumps will also be placed on one of every four workers. All of this activity must be conducted under the supervision of a NESHAP trained individual (TDH License).

The abatement must comply with these Specifications, the Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), State of Texas August, 2000 revisions, and local regulations. Whenever there is a conflict or overlap of the above references, the most stringent provisions are applicable.

- C. The Contractor will inform the Owner and Owner's Representative of any hidden or unidentified conditions that may result in a Change Order or additional cost to the Bid Price of the Contract as soon as they are found. This notice will require written approval by the Owner's Representative prior to accomplishing any additional work.

The Contractor will be required to repair any damage to the facility or equipment of the Owner as the result of the Abatement Project. Any replacement items (paint, wall coverings, panels, etc.) will be of equal quality and color of the damaged items.

1.6 General and Administrative Requirements: Are set forth in the following specification sections:

- a. 01901 Summary of Work
- b. 01902 Project Coordination
- c. 01903 Definitions and Standards
- d. 01904 Codes and Regulations
- e. 01905 Submittals

1.7 Abatement Work:

- A. Requirements are set forth in the following specification sections, listed here according to the sequence of the work:
 - 1. 01904 - Applicable Codes: Sets forth-governmental regulations and industry standards that are included and incorporated herein by reference and made a part of the specification. This section also sets forth those notices and permits that are known to the Owner and either must be applied for and received or which must be given to governmental agencies before start of work.
 - 2. 01906 - Test Laboratory Services: Describes air monitoring by Owner's Representative so that the building beyond the work area will remain uncontaminated. Air monitoring to determine required respiratory protection is the responsibility of the Contractor.
 - 3. 01907 - Temporary Facilities: Sets forth the support facilities needed such as electrical and plumbing connections.

Section 01901

Summary of Work

4. 01908 - Temporary Pressure Differential and Air Circulation System: Sets forth the procedures to set up negative air machines and ventilation of the work area.
5. 01909 – Temporary Enclosures: Sets forth the procedures for set up of temporary enclosures.
6. 01910 - Worker Protection: Describes the equipment and procedures for protecting workers against asbestos contamination and other work place hazards except for respiratory protection.
7. 01911 - Respiratory Protection: Sets forth the procedures and equipment required for adequate protection against inhalation of airborne asbestos fibers.
8. 01914 - Decontamination Units: Explains the setup and operation of the personnel and material decontamination units.

B. Asbestos Removal Work Procedures: Are described in the following specification sections:

1. 01916 - Removal of Asbestos Containing Material
2. 01917 - Disposal of Asbestos Containing Waste Material

6. Decontamination of the Work Area: Is described in the following section:

1. 01914 – Project Decontamination
1. 01915 - Work Area Clearance: Describes the analytical methods used to determine if the work area has been successfully cleaned of contamination.

1.8 PLAN OF ACTION

- A. Submit a detailed plan of the procedures proposed for use in complying with the requirements of this Specification. Include in the plan the location and layout of decontamination areas, the sequencing of asbestos work, the interface of trades involved in the performance of work, methods to be used to assure the safety of building occupants and visitors to the site, disposal plan including location of approved disposal site, and a detailed description of the methods to be employed to control pollution. Expand upon the use of portable HEPA ventilation system, closing out of the area HVAC system, method of removal to prohibit visible emissions in work area, and packaging of removed asbestos debris.

1.9 POTENTIAL ASBESTOS HAZARD

- A. The disturbance or dislocation of asbestos containing materials may cause asbestos fibers to be released into the building's atmosphere, thereby creating a potential health hazard to workmen and building occupants. Apprise all workers, supervisory personnel, subcontractors and consultants who will be at the jobsite of the seriousness of the hazard and of proper work procedures which must be followed.

- B. Where in the performance of the work, workers, supervisory personnel, subcontractors, or consultants may encounter, disturb, or otherwise function in the immediate vicinity of any identified asbestos containing materials, take appropriate continuous measures as necessary to protect the building from the contamination with airborne asbestos. Such measures will include the procedures and methods described herein, and compliance with regulations of applicable federal, state and local agencies.

1.10 CONTRACTOR USE OF PREMISES

- A. General: The Contractor will limit his use of the premises to the work indicated.
 - 1. Use of the Site: Confine operations at the site to the areas permitted under the Contract. Portions of the site beyond areas on which work is indicated are not to be disturbed. Conform to site rules and regulations affecting the work while engaged in project abatement.
 - 2. Do not unreasonably encumber the site with materials or equipment. Confine stockpiling of materials and location of storage to areas indicated at the pre-abatement meeting.
 - 3. Lock automotive type vehicles, such as passenger cars and trucks and other mechanized or motorized construction equipment, when parked and unattended, so as to prevent unauthorized use. Do not leave such vehicles or equipment unattended with the motor running or the ignition key in place or accessible to unauthorized persons.
 - 4. Owner Occupancy: The Owner during the asbestos abatement project(s) will not occupy the facility.

-END OF SECTION

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SECTION 01902

PART 1 - PROJECT COORDINATION

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions apply to work of this section.

1.2 ABATEMENT TIME

- A. The use of insufficient labor or equipment for abatement purposes or inadequate scheduling of materials or equipment will not be allowed as cause for delay. Extension of time or extra cost will not be allowed for failure to complete the project on time due to insufficient labor or equipment.

1.3 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

- A. General Superintendent: Provide a full-time General Superintendent on site who is licensed in accordance with Texas Civil Statutes, Article 4477-3a, Section 295.46 and experienced in administration and supervision of asbestos abatement projects including work practices, protective measures for building and personnel, disposal procedures, etc. This person is the Competent Person as required by OSHA in 29 CFR 1926 for the Contractor and is the Contractor's representative responsible for compliance with all applicable federal, state and local regulations, particularly those relating to asbestos containing materials.
- B. Asbestos Workers: All workers actively involved in the removal of asbestos material will be Registered Asbestos Workers with the State of Texas.

1.4 PRE-CONSTRUCTION CONFERENCE

- A. An initial progress meeting, recognized as the "Pre-Construction Conference", will be convened by the Owner and the Owner's Representative prior to the start of any work. The General Superintendent of the Contractor, Owner's Representative(s), Project Administrator, and other entities concerned with the asbestos abatement work will attend the meeting.

1.5 DAILY LOG

- A. General: Maintain within the Decontamination Unit a Daily Log documenting the dates and time of, but not limited to, the following items:

Personnel, by name, entering and leaving the work area, air monitoring results and any equipment/supplies decontaminated and brought out through the decontamination unit.

1.6 SPECIAL REPORTS

- A. General: Except as otherwise indicated, submit special reports directly to the Owner's Representative or the Owner within one day of occurrence requiring special report, with copy to others affected by occurrence.
- B. Reporting Unusual Events: When an event of unusual and significant nature occurs at site (examples: failure of negative pressure system, rupture of temporary enclosures), prepare and submit a special report listing chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. When such events are known or predictable in advance, advise Owner in advance at earliest possible date.
- C. Reporting Accidents: Prepare and submit reports of significant accidents, at site and anywhere else work is in progress. Record and document data and actions; comply with industry standards. For this purpose, a significant accident is defined to include events where personal injury is sustained, or property loss of substance is sustained, or where the event posed a significant threat of loss or personal injury.

1.7 CONTINGENCY PLAN

- A. Contingency Plan: Prepare a contingency plan for emergencies including fire, accident, power failure, negative air system failure, or any other event that may require modification or abridgement of decontamination or work area isolation procedures. Include in plan specific procedures for decontamination or work area isolation. Note that nothing in this specification should impede safe exiting or providing of adequate medical attention in the event of an emergency.
- B. Post: In clean room of the Personnel Decontamination Unit telephone numbers and locations of emergency services including but not limited to fire, ambulance, doctor, hospital, police, power company, telephone company.

1.8 NOTIFICATIONS

- A. Notify other entities at the job site of the nature of the asbestos abatement activities, location of asbestos containing materials, requirements relative to asbestos set forth in these specifications and applicable regulations.

-END OF SECTION-

SECTION 01903

PART 1 – GENERAL - DEFINITIONS AND STANDARDS

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

1.2 DEFINITIONS

- A. General Explanation: A substantial amount of specification language constitutes definitions for terms found in other contract documents, including the drawings. (Drawings must be recognized as diagrammatic in nature and not completely descriptive of the requirements indicated thereon.) Certain terms used in contract documents are defined in this article. Definitions and explanations of this section are not necessarily either complete or exclusive, but are general for the work to the extent they are not stated more explicitly in another element of contract documents.
 1. General Requirements: The provisions or requirements of Division-1 sections apply to entire work of Contract and, where so indicated, to other elements which are included in projects.
 2. Indicated: The term "Indicated" is a cross-reference to graphic representations, notes or schedules on drawings, to other paragraphs or schedules in the specifications, and to similar requirements in Contract Documents. Where terms such as "shown", "noted", and "scheduled" are used, it is to help locate the reference; no limitation on location is intended except as specifically noted.
 3. Directed, Requested, etc.: Where not otherwise explained, terms such as "directed," "requested," "authorized," "selected," "approved," "required," "accepted," and "permitted" mean "directed by Owner's Representative," "requested by Owner's Representative," and similar phrases. However, no such implied meaning will be interpreted to extend Owner's Representative's responsibility into Contractor's responsibility for construction supervision.
 4. Project Site: The term "project site" is defined as the space available to Contractor for performance of the work, either exclusively or in conjunction with others performing other work as part of the project. The extent of project site is shown on the drawings, and may or may not be identical with the description of land upon which the project is built.
 5. Approve: The term "approved", where used in conjunction with the Owner's Representative's actions on the Contractor's submittals, applications, and requests, is limited to the responsibilities and duties of the Architect stated in supplementary.

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6. Conditions. Such approval will not release the Contractor from responsibility to fulfill Contract Document requirements, unless otherwise provided in the Contract Documents.
7. Regulation: The term "Regulations" includes laws, statutes, ordinances and lawful orders issued by authorities having jurisdiction, as well as rules, conventions and agreements within the construction industry that control performance of the Work, whether they are lawfully imposed by authorities having jurisdiction or not.
8. Furnish: Except as otherwise defined in greater detail, term "furnish" is used to mean supply and deliver to project site, ready for unloading, unpacking, assembly, installation, etc., as applicable in each instance.
9. Install: Except as otherwise defined in greater detail, term "install" is used to describe operations at project site including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing protecting, cleaning and similar operations, as applicable in each instance.
10. Provide except as otherwise defined in greater detail, term "provide" means furnish and install, complete and ready for intended use, as applicable in each instance.
11. Installer: The term "installer" is defined as the entity (person or firm) engaged by Contractor, or its sub-contractor or sub-subcontractor for performance of a particular unit of work at project site, including installation, erection, application and similar required operations. It is a general requirement that such entities (Installers) be expert in operations they are engaged to perform.
12. Testing Laboratory: The term "testing laboratory" is defined as an independent entity engaged to perform specific inspections or tests of the work, either at project site or elsewhere; and to report and (if required) interpret results of those inspections or tests.
13. Owner's Representative: Is the entity described as the Consultant and/or Architect. All references to Consultant or Architect in the contract documents will in all cases refer to the Owner's Representative. This Representative will represent the Owner during abatement until final payment is due.
14. Project Administrator: Is the entity described as the "Project Representative" or "Engineer". The Project Administrator is a full-time representative of the Owner at the jobsite with the authority to stop the work upon verbal order if requirements of the Contract Documents are not met, or if in the sole judgment of the Project Administrator, Owner's Representative, the interest of the Owner, safety of any person or the Owner's property are jeopardized by the work.
15. General Superintendent: Is the Contractor's representative at the work site. This person will generally be the competent person required by OSHA in 29 CFR 1926.

1.3 DEFINITIONS RELATIVE TO ASBESTOS ABATEMENT

A. This Section includes the following:

1. Accredited or Accreditation (when referring to a person or laboratory): A person or laboratory accredited in accordance with Section 206 of Title II of the Toxic Substances Control Act (TSCA).
2. Aerosol: A system consisting of particles, solid or liquid, suspended in air.
3. Air Cell: Insulation normally used on pipes and duct work that is comprised of corrugated cardboard which is frequently comprised of asbestos combined with cellulose or refractory binders.
4. Air Monitoring: The process of measuring the fiber content of a specific volume of air.
5. Amended Water: Water to which a surfactant has been added.
6. Asbestos: The asbestiform varieties of serpentinite (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite, anthophyllite, and actinolite-tremolite. For purposes of determining respiratory and worker protection both the asbestiform and non-asbestiform varieties of the above minerals and any of these materials that have been chemically treated and/or altered will be considered as asbestos.
7. Asbestos-Containing Material (ACM): Any material containing more than 1% by weight of asbestos of any type or mixture of types.
8. Asbestos Containing Building Material (ACBM): Surfacing ACM, thermal system insulation ACM, or miscellaneous ACM that is found in or on the interior structural members or other parts of a building.
9. Asbestos-Containing Waste Material: Any material that is or is suspected of being or any material contaminated with an asbestos-containing material that is to be removed from a work area for disposal.
10. Asbestos Debris: Pieces of ACBM that can be identified by color, texture, or composition, or means dust, if the dust is determined by an accredited inspector to be ACM.
11. Authorized Visitor: The Owner's Representative, testing lab personnel, the Architect/Engineer or a representative of any federal, state and local regulatory or other agency having authority over the project.
12. Barrier: Any surface that seals off the work area to inhibit the movement of

fibers.

13. Breathing Zone: A hemisphere forward of the shoulders with a radius of approximately 6 to 9 inches.
14. Ceiling Concentration: The concentration of an airborne asbestos substance that will not be exceeded.
15. Certified Industrial Hygienist (C.I.H.): An industrial hygienist certified in Comprehensive Practice by the American Board of Industrial Hygiene.
16. Demolition: The wrecking or taking out of any building component, system, finish or assembly of a facility together with any related handling operations.
17. Disposal Bag: True 6-mil thick leak-tight plastic bags used for transporting asbestos waste from work and to disposal site. Each is labeled as follows:

DANGER
Contains Asbestos Fibers
Avoid Creating Dust
Cancer and Lung Disease Hazard

AND

CAUTION
Contains Asbestos Fibers
Avoid Opening or Breaking Container
Breathing Asbestos Is Hazardous To Your Health

AND

Project Building Name
Location
Date
Building Owner Name

18. Encapsulant: A material that surrounds or embeds asbestos fibers in an adhesive matrix, to prevent release of fibers.
19. Bridging encapsulant: An encapsulant that forms a discrete layer on the surface of an in situ asbestos matrix.
20. Penetrating encapsulant: An encapsulant that is absorbed by the in situ asbestos

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matrix without leaving a discrete surface layer.

21. Removal encapsulant: A penetrating encapsulant specifically designed for removal of asbestos-containing materials rather than for in situ encapsulation.
22. Encapsulation: Treatment of asbestos-containing materials, with an encapsulant.
23. Enclosure: The construction of an airtight, impermeable, permanent barrier around asbestos-containing material to control the release of asbestos fibers into the air.
24. Filter: A media component used in respirators to remove solid or liquid particles from the inspired air.
25. Friable Asbestos 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.
26. Glovebag: A sack (typically constructed of 6-mil transparent polyethylene or polyvinylchloride plastic) with two inward projecting long-sleeve gloves, which are designed to enclose an object from which an asbestos-containing material is to be removed.
27. HEPA Filter: A High Efficiency Particulate Absolute (HEPA) filter capable of trapping and retaining 99.97% of asbestos fibers greater than 0.3 microns in length.
28. HEPA Filter Vacuum Collection Equipment (or vacuum cleaner): High efficiency particulate air (absolute) filtered vacuum collection equipment with a filter system capable of collecting and retaining asbestos fibers. Filters should be of 99.97% efficiency for retaining fibers of 0.3 microns or larger.
29. High-Efficiency Filter: A filter which removes from air 99.97% or more of monodisperse dioctyl phthalate (DOP) particles having a mean particle diameter of 0.3 micrometer.
30. 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.
31. Negative Pressure Ventilation System: A pressure differential and ventilation system.
32. Negative Pressure: Air pressure lower than surrounding areas, generally caused by exhausting air from a sealed space (work area).
33. Personal Monitoring: Sampling of the asbestos fiber concentrations within the

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breathing zone of an employee.

34. 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.
35. Repair: Returning damaged ACBM to an undamaged condition or to an intact state to prevent fiber release.
36. Respirator: A device designed to protect the wearer from the inhalation of harmful atmospheres.
37. Surfactant: A chemical wetting agent added to water to improve penetration, thus reducing the quantity of water required for a given operation or area.
38. Time Weighted Average (TWA): The average concentration of a contaminant in air during a specific time period.
39. Visible Emissions: Any emissions containing particulate asbestos material that are visually detectable without the aid of instruments. This does not include condensed uncombined water vapor.
40. Wet Cleaning: The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning utensils which have been dampened with amended water or diluted removal encapsulant and afterwards thoroughly decontaminated or disposed of as asbestos contaminated waste.
41. Work Area: The area where asbestos related work or removal operations are performed which is defined and/or isolated to prevent the spread of asbestos dust, fibers or debris, and entry by unauthorized personnel. Work area is a Regulated Area as defined by 29 CFR 1926.

1.4 DRAWING SYMBOLS

- A. General: Except as otherwise indicated, graphic symbols used on drawings are those symbols recognized in the construction industry for purposes indicated.
- B. Mechanical/Electrical Drawings: Graphic symbols used on mechanical and electrical drawings are generally aligned with symbols recommended by ASHRAE.

1.5 INDUSTRY STANDARDS

- A. This Section includes the following:
 1. General Applicability of Standards: Except to the extent that more explicit or more stringent requirements are written directly into the contract documents, applicable

standards of the construction industry have the same force and effect (and are made a part of contract documents by reference) as if copied directly into contract documents, or as if published copies were bound herewith. Refer to the other contract documents for resolution of overlapping and conflicting requirements that result from the application of several different industry standards to the same unit of work. Refer to individual unit of work sections for indications of which specialized codes and standard the Contractor must keep at the project site, available for reference.

2. Referenced standards (referenced directly in contract documents or by governing regulations) have precedence over non-referenced standards that are recognized in industry for applicability to work.
3. Non-referenced standards are hereby defined to have no particular applicability to the work, except as general requirements of whether the work complies with standards recognized in the construction industry.
4. Publication Dates: Except as otherwise indicated, where compliance with an industry standard is required, comply with standard in effect as of date of contract documents.
5. Updated Standards: At the request of the Owner's Representative, submit a change order proposal where an applicable industry code or standard has been revised and reissued after the date of the contract documents and before the performance of the work affected. The Owner's Representative will decide whether to issue the change order to proceed with the updated standard.
6. Copies of Standards: Each entity engaged in work on the Project is required to be familiar with industry standards applicable to that entities' construction activity. Copies of applicable standards are not bound with the Contract Documents.
 - a. Where copies of standards are needed for proper performance of the work, the Contractor is required to obtain such copies directly from the publication source.
 - b. Although certain copies of standards needed for enforcement of the requirements may be required submittals, the Owner's Representative reserves the right to require the Contractor to submit additional copies of these standards as necessary for enforcement of the requirements.
7. Abbreviations and Names: Where acronyms or abbreviations are used but not identified in specifications or other contract documents they are defined to mean the industry recognized name of trade association, standards generating organization, governing authority or other entity applicable to context of text provision. Refer to "Encyclopedia of Associations," published by Gale Research Co., available in large libraries.
8. Abbreviations and Names: The following acronyms or abbreviations as

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referenced in contract documents are defined to mean the associated names. Both names and addresses are subject to change, and are believed to be, but are not assured to be, accurate and up-to-date as of date of contract documents:

- a. AIHA - American Industrial Hygiene Association
475 Wolf Ledges Parkway
Akron, OH 44311
216/762-7294
- b. AIA - American Institute of Architects
1735 New York Ave. NW; Washington, DC 20006
202/626-7474
- c. ANSI American National Standards Institute
1430 Broadway; New York, NY 10018
212/354-3300
- d. ASHRAE - American Society for Heating, Refrigerating, and Air
Conditioning Engineers
1791 Tullie Circle NE; Atlanta, GA 30329
404/636-8400
- E. ASME - American Society of Mechanical Engineers
345 East 47th Street
New York NY 10017
212/705-7722
- f. ASPE - American Society of Plumbing Engineers
3716 Thousand Oaks Blvd., Suite 210
Westlake, CA 91362
805/495-7120
- g. ASTM - American Society for Testing and Materials
1916 Race St.; Philadelphia, PA 19103
215/299-5400
- h. CFR - Code of Federal Regulations
Available from Government Printing Office;
Washington, DC
20402 (usually first published in Federal Register)
- i. CGA - Compressed Gas Association
1235 Jefferson Davis Highway; Arlington, VA 22202
703/979-0900
- j. CS - Commercial Standard of NIST (U.S. Dept. of Commerce)
Government Printing Office; Washington, DC 20402

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202/377-2000

- k. DOT - Department of Transportation
400 M Street, SW
Washington, DC 20590
202/426-4000
- l. EPA - Environmental Protection Agency
401 M St.,SW; Washington, DC 20460
202/382-3949
- m. FS - Federal Specification (General Services Admin.)
Obtain from your Regional GSA Office, or purchase
from GSA Specifications Unit (WFSIS); 7th and D
Streets, SW; Washington, DC 20406
202/472-2205 or 2140
- n. GA - Gypsum Association
1603 Orrington Ave.; Evanston; IL 60201
312/491-1744
- o. GSA - General Services Administration
F St. and 18th St., NW; Washington, DC 20405
202/655-4000
- p. IEEE - Institute of Electrical and Electronic Engineers
345 E. 47th Street
New York, NY 10017
202/705-7900
- q. MIL - Military Standardization Documents
(U.S. Dept. of Defense)
Naval Publications and Forms Center
5801 Tabor Ave.; Philadelphia, PA 19120
- r. NEC - National Electrical Code (by NFPA)
- s. NFPA - National Fire Protection Association
Batterymarch Park; Quincy, MA 02269
617/770-3000
- t. NIST - National Institute of Standards and Technology
(U.S. Dept. of Commerce)
Gaithersburg, MD 20234
301/921-1000
- u. OSHA - Occupational Safety & Health Administration
(U.S. Dept. of Labor)
Government Printing Office; Washington, DC 20402

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- v. PS - Product Standard of NBS (U.S. Dept. of Commerce)
Government Printing Office; Washington, DC 20402

202/783-3238
 - w. RFCI - Resilient Floor Coverings Institute
966 Hungerford Drive, Suite 12-B
Rockville, MD 60062
312/272-8000
 - x. UL - Underwriters Laboratories
333 Pfingsten Rd.; Northbrook, IL 60062
312/272-8800
9. Trade Union Jurisdictions: It is a procedural requirement that the Contractor maintain, and require prime subcontractors to maintain, complete current information on jurisdictional matters, regulations actions and pending actions, as applicable to the work. Discuss new developments at appropriate project meetings at the earliest feasible dates, and record information of relevance along with the action agreed upon. The manner in which contract documents have been organized and subdivided is not intended to be an indication of jurisdictional or trade union agreements. Assign and subcontract the work, and employ tradesmen and laborers, in a manner which will not unduly risk jurisdictional disputes of a kind which could result in conflicts, delays, claims and losses in the performance of the work.

1.6 SUBMITTALS

- A. Permits, Licenses and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence and records established in conjunction with compliance with standards and regulations bearing upon performance of the work.

-END OF SECTION-

SECTION 01904
CODES AND REGULATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF THE WORK

- A. This section sets forth-governmental regulations and industry standards, which are included and incorporated herein by reference and made a part of the specification. This section also sets forth those notices and permits which are known to the Owner and which either must be applied for and received, or which must be given to governmental agencies before start of work.
- B. Requirements include adherence to work practices and procedures set forth in applicable codes, regulations and standards.
- C. Requirements include obtaining permits, licenses, inspections, releases and similar documentation, as well as payments, statements and similar requirements associated with codes, regulations, and standards.

1.3 CODES AND REGULATIONS

- A. This Section includes the following:
 - 1. General Applicability of Codes, Regulations and Standards: Except to the extent that more explicit or more stringent requirements are written directly into the contract documents, all applicable codes, regulations, and standards have the same force and effect (and are made a part of the contract documents by reference) as if copied directly into the contract documents, or as if published copies are bound herewith.
 - a. Contractor Responsibility: The Contractor will assume full responsibility and liability for the compliance with all applicable Federal, State, and local regulations pertaining to work practices, hauling, disposal, and protection of workers, visitors to the site, and persons occupying areas adjacent to the site. The Contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable Federal, State, and local regulations. The Contractor will hold the Owner and Owner's Representative harmless for failure to comply with any applicable work, hauling, disposal, safety, health or other regulation

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on the part of himself, his employees, or his subcontractors.

- b. Federal Requirements: Which govern asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:
- c. U.S. Department of Labor, Occupational Safety and Health Administration, (OSHA), including but not limited to:
- d. Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite; Final Rules, Title 29, Part 1910, Section 1001 and Part 1926, Section 1101 of the Code of Federal Regulations
- c. Respiratory Protection; Title 29, Part 1910, Section 134 of the Code of Federal Regulations Construction Industry; Title 29, Part 1926, of the Code of Federal Regulations
- d. Construction Industry
Title 29, Part 1926 of the Code of Federal Regulations
- e. Access to Employee Exposure and Medical Records; Title 29, Part 1910, Section 2 of the Code of Federal Regulations
- f. Hazard Communication; Title 29, Part 1910, Section 1200 of the Code of Federal Regulations
- g. Specifications for Accident Prevention Signs and Tags; Title 29, Part 1910, Section 145 of the Code of Federal Regulations
- h. U. S. Department of Transportation:
- i. Hazardous Substances
Title 29, Part 171 and 172 of the Code of Federal Regulations
- j. U. S. Environmental Protection Agency (EPA) including but not limited to:
- k. Asbestos Abatement Projects Rule 40
- l. 40 CFR Part 762
- m. CPTS 62044, FRL 2843-9
- n. Title 34, Part 231, Appendix C, Procedures for Containing and Removing Building Materials Containing Asbestos
- o. Title 40, Part 61, Sub-part A of the Code of Federal Regulations National Emission Standard for Asbestos
- p. Title 40, Part 61, Sub-part M (Revised Sub-part B) of the Code of Federal Regulations.

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- q. American National Standards Institute (ANSI) Publication:
- r. Z9.2-79 Fundamentals Governing the Design and Operation of Local Exhaust Systems
- s. American Society for Testing and Materials (ASTM) Publication:
- t. E 849-82 Safety and Health Requirements relating to Occupational Exposure to Asbestos
- u. State Requirements: (1) 25TAC Part 289.141-289.156 (Texas Civil Statutes, 4477-3a, and all additions to this rule, Asbestos Exposure Abatement in Public Buildings, (2) 25 TAC 325.136(b)(6-7) Municipal Solid Waste Management Regulations.
- v. Local Requirements: Abide by all local requirements that govern asbestos abatement work or hauling and disposal of asbestos waste materials.
- w. Texas Asbestos Health Protection Act, Texas Civil Statutes, Article 4477-3a.

1.4 STANDARDS

- A. General Applicability of Standards: Except to the extent that more explicit or more stringent requirements are written directly into the Contract Documents, all applicable standards have the same force and effect (and are made a part of the Contract Documents by reference) as if copied directly into the Contract Documents, or as if published copies are bound herewith.
- B. Contractor Responsibility: The Contractor will assume full responsibility and liability for the compliance with all standards pertaining to work practices, hauling, disposal, and protection of workers, visitors to the site, and persons occupying area adjacent to the site. The Contractor will hold the Owner and the Owner's Representative harmless for failure to comply with any applicable standard on the part of himself, his employees, or his sub-contractors.
- C. Standards: Which govern asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:
 - 1. American National Standards Institute (ANSI)
1430 Broadway
New York, New York 10018
(212) 354-3300
 - 2. Fundamentals Governing the Design and Operation of Local Exhaust Systems
Publication Z9.2-79
 - 3. Practices for Respiratory Protection

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Publication Z288.2-80

4. American Society for Testing and Materials
1916 Race Street
Philadelphia, PA 19103
215/299-5400
5. Safety and Health Requirements Relating to Occupational Exposure to Asbestos
E 849-82
6. Specification for Encapsulants for Friable Asbestos Containing Building Materials
Proposal P-189
"Guide" Specification - 02080 Asbestos Removal AIA Service Corporation
1735 New York Avenue NW
Washington, DC
7. AWCI Guide Specifications for the abatement of asbestos release from spray or
trowel applied materials in buildings and other structural designs
8. U.S. Department of Commerce
9. National Bureau of Standards
10. National Engineering Lab
11. Center for Building Technology

1.5 EPA GUIDANCE DOCUMENTS

A, EPA Guidance Documents: Which discuss asbestos abatement work or hauling and disposal of asbestos waste materials are listed below for the contractor's information only. These documents do not describe the work and are not a part of the work of this contract. EPA maintains an information number (800-334-8571), publications can be ordered from (800-424-9065) and (554-1404 in Washington, DC):

1. Asbestos-Containing Materials in School Buildings - A Guidance Document
Part 1 & 2 (Orange Books)
EPA C00090 (out of print)
2. Guidance for Controlling Asbestos-Containing Materials in Buildings
EPA 560/5-85-024 (Purple Book)
3. Friable Asbestos-Containing Materials in Schools: Identification and Notification
Rule (40CFR Part 763)
4. Evaluation of the EPA Asbestos-in-Schools Identification and Notification Rule
EPA 560/5-84-005
5. Asbestos in Buildings: National Survey of Asbestos-Containing Friable Materials

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EPA 560/5-84-006

6. Asbestos in Buildings: Guidance for Service and Maintenance Personnel
EPA 560/5-85-018
7. Asbestos Waste Management Guidance
EPA 530-SW-85-007
8. Asbestos Fact Book
EPA Office of Public Affairs
9. Asbestos in Buildings: Simplified Sampling Scheme for Friable Surfacing Materials
10. Commercial Laboratories with Polarized Light Microscopy Capabilities for bulk asbestos identification
11. A Guide to Respiratory Protection for the Asbestos Abatement Industry
EPA-560-OPTS-86-001

1.6 NOTICES

- A. U.S. Environmental Protection Agency notification to the US EPA is mandated by the National Emission Standards for Hazardous Pollutants (NESHAPS) Asbestos Regulations (40 CFR 61, Subpart M) for any project which involves the removal of asbestos containing materials. Notification of encapsulation projects is not required, but is not discouraged by EPA.

Demolition/Renovation Notification Form: The Texas Department of Health Demolition/Renovation form combines the requirements of the **National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR, Subpart M** and the **Texas Asbestos Health Protection Rules (TAHPR)**. Both of these regulations require that written notification be submitted before beginning renovation projects which include the disturbance of any asbestos-containing material (ACM) in a building or facility or before the demolition of a building or facility, **even when no asbestos is present.**

- B. Written notification as required by USEPA National Emission Standards for Hazardous Air Pollutants (NESHAPS) Asbestos Regulations (40 CFR 61, Subpart M) to the Regional Asbestos NESHAPS Contact at least 10 working days prior to beginning any work on asbestos-containing materials will be submitted by the Contractor to the following address:

1. Texas Department of Health
Asbestos Notification & Information Section
PO Box 143538
Austin, Tx. 78714-3538

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- C. Changes in the information on the notice will necessitate the refiling of an amended notice by the Contractor.

- D. Notification: The following information will be included in the notification sent to the NESHAPs Contact:
 - 1. Name and address of owner or operator.
 - 2. Description of the facility that is being demolished or renovated, including the size, age, and prior use of the facility.
 - 3. Estimate of the approximate amount of friable asbestos material present in the facility in terms of linear feet of pipe, and surface area on other facility components.
 - 4. Location of the facility being renovated.
 - 5. Scheduled starting and completion dates of renovation.
 - 6. Nature of planned renovation and method(s) to be used.
 - 7. Procedures to be used to comply with the requirements of USEPA National Emission Standards for Hazardous Air Pollutants (NESHAPS) Asbestos Regulations (40 CFR 61, Subpart M).
 - 8. Name and location of the waste disposal site where the friable asbestos waste material will be deposited.
 - 9. Supplement information maybe required on the Contractor's part to obtain approval. The Contractor will provide whatever information requested by the regulatory agencies.

- E. Submit notices required by federal, state and local regulations together with proof of timely transmittal to agency requiring the notice.

- F. Permits: All asbestos waste is to be transported by an entity maintaining a current "Industrial Waste Hauler Permit" specifically for asbestos containing materials, as required for transporting of asbestos containing materials to a disposal site.

- G. Licenses: Maintain current State Asbestos Abatement Contractor License or local jurisdiction for the removal, transporting, disposal or other regulated activity relative to the work of this contract.

-END OF SECTION-

SECTION 01905
SUBMITTALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions apply to work of this section.

1.2 SUMMARY

- A. This section specifies administrative and procedural requirements for submittals required for performance of the Work, including:
 - 1. Contractor's construction schedule.
 - 2. Product data.
 - 3. Miscellaneous submittals.

1.2 ADMINISTRATIVE SUBMITTALS

- A. Refer to other related sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to:
 - 1. Permits.
 - 2. Applications for Payment.
 - 3. Insurance Certificates.
 - 4. Performance and Payments Bonds.
 - 5. List of Subcontractors.

1.3 COORDINATION

- A. Coordinate both the listing and timing of reports and activities required by provisions of this section and other sections, so as to provide consistency and logical coordination between reports. Maintain coordination and correlation between separate reports by updating at weekly intervals. Make appropriate distribution of each report and updated report to all parties involved in the work, including the Owner's Representative and the Owner. In particular provide close coordination of the progress schedule, listing of subcontractors, progress reports, and payment.
- B. Coordinate transmittal of different types of submittals for the related elements of the work so processing will not be delayed by the need to review submittals concurrently for coordination.
- C. The Owner's Representative reserves the right to withhold action on a submittal requiring

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coordination with other submittals until related submittals are received.

1.4 SUBMITTAL

- A. Prepare a schedule, including work dates, work shift time, number of employees, dates of start and estimated completion including dates of preparation work, pre-abatement demolition, asbestos removal, clearance dates, and final inspection dates to the Owner's Representative prior to start of abatement.
- B. Allow sufficient review time so that the project will not be delayed as a result of the time required to process submittals, including time for re-submittals.
- C. Allow one week (5 working days) for review. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. The Owner's Representative will promptly advise the Contractor when a submittal must be delayed for coordination.
- D. No extension of the Contract Time will be authorized because of failure to transmit submittals to the Owner's Representative sufficiently in advance of the work to permit processing.

1.5 PROGRESS MEETINGS

- A. Representatives of the Contractor, the Consultant, and the Owner will meet at the building site or at some other designated meeting place at intervals as necessary to maintain an optimum degree of communication for the progress of the work.
- B. Submit a revised schedule after each meeting or activity where revisions have been made. Issue the updated schedule within 3 days of the meeting.

1.6 PRE-ABATEMENT CONFERENCE

- A. Before any abatement work is started, the Contractor will meet with the Owner's Representative to discuss methods and procedures to be followed during the abatement period.

1.7 REPORTING

- A. Daily Log: The Contractor will maintain a daily log documenting the dates and time of but not limited to, the following items:
 - 1. Meetings; purpose, attendees, discussion (brief),
 - 2. Visitations; authorized and unauthorized,
 - 3. Personnel, by name, entering and leaving the work area,
 - 4. Special or unusual events, i.e. barrier breaching, equipment failures,
 - 5. Air monitoring tests and test results,

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6. Documentation with the confirmation signature of the Owner's Representative of the following:
 - a. Inspection of the work areas preparation prior to start of removal and daily hereafter,
 - b. Removal of any polyethylene barriers,
 - c. Contractors inspection prior to encapsulation,
 - d. Removal of waste material from the work area, and
 - e. Decontamination of equipment (list items).
7. Provide two copies of this log at final closeout of the project to the Owner's Representative.

1.8 PAYMENT

Progress and final payment instructions are set forth in the General and Supplemental Conditions.

1.9 INDEX OF SUBMITTALS

- A. PRIOR TO BEGINNING WORK: Submit these in two (2) copies at least 5 working days before work is scheduled to start.
 1. Plan of Action
 2. Contingency Plan
 3. Texas Department of Health Notice to Abate
 - 4.. Permits, License, Certificates
 5. Asbestos Contractors Texas License
 6. Texas License for Project Supervisor
 7. Texas Worker's Registration for each asbestos worker.
 8. Current signed physician's opinion.
 9. Certificate of Worker's Acknowledgment
 10. Project Work Schedule
 11. Historic Airborne Fiber Data (specified in Section 01911).
- B. DURING THE COURSE OF ABATEMENT: These items will be submitted as available or required during the work period.

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1. Daily sign in sheets - submit at the end of each shift.
2. Any request for change orders - submit as needed.
3. Report of any accident or injury - within 24 hours of occurrence.
4. Any breach of controlled area - within 2 hours of identification of breach.
5. Any incident affecting the ability of the Contractor to complete the project on time.
6. Visit of any official or representative of the media or regulatory agency - within 1 day of visit.
7. Addition of any new asbestos worker - prior to the worker reporting for work inside the containment.

C. POST ABATEMENT:

1. Copies of daily sign-in sheets not previously provided within three working days of project closeout.
2. Copy of all Disposal Waste Manifests - within 10 calendar days of project closeout.

- END OF SECTION -

SECTION 01906

AIR MONITORING-TEST LABORATORY SERVICES

PART 1 – GENERAL

- A. The area and final clearance air monitoring will be accomplished under the direction of a Certified Industrial Hygienist retained by the Owner.

1.1 DESCRIPTION OF THE WORK

- A. This section describes air monitoring carried out by the owner to verify that the building beyond the work area and the outside environment remain uncontaminated. This section also sets forth-airborne fiber levels both inside and outside the work area as action levels, and describes the action required by the Contractor if an action level is met or exceeded.
- B. Air monitoring required by OSHA is work of the Contractor and is not covered in this section.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.
- B. Air Monitoring: During work area clearance is described in Section 01915, Work Area Clearance.

1.3 AIR MONITORING

- A. Work Area Isolation: The purpose of the Owner's Representative air monitoring will be to detect faults in the work area isolation such as:
 - 1. Contamination of the building outside of the work area with airborne asbestos fibers,
 - 2. Failure of filtration or rupture in the negative pressure system,
 - 3. Contamination of the exterior of the building with airborne asbestos fibers.
- B. Should any of the above occur, the contractor will immediately cease asbestos abatement activities until the fault is corrected. Work will not recommence until authorized by the Owner's Representative.
- C. Work Area Airborne Fiber Count: The Owner's Representative will monitor airborne fiber counts in the work area. The purpose of this air monitoring will be to detect airborne fiber counts which may significantly challenge the ability of the work area isolation procedures to protect the balance of the building or outside of the building from contamination by airborne fibers.

- D. Work area clearance: Will be collected to determine if the elevated airborne fiber counts encountered during abatement operations have been reduced to an acceptable level. The Owner's Representative will ensure samples are collected and analyzed in accordance with this requirement.
- E. The Owner's Representative will be conducting air monitoring throughout the course of the project.

1.4.1 AIRBORNE FIBER COUNTS

- A. Inside Work Area: Where an enclosure is used, maintain an average airborne count in the work area of less than 0.1 fibers per cubic centimeter. If the fiber count rises above this figure for any sample taken, revise work procedures to lower fiber counts. If the Time Weighted Average (TWA) fiber count for any work shift or 8 hour period exceeds 0.2 fibers per cubic centimeter, stop all work, leave negative air system in operation and notify Owner's Representative. Do not recommence work until authorized in writing by Owner's Representative.
- B. If airborne fiber counts exceed 0.2 fibers per cubic centimeter for any period of time cease all work until fiber counts fall below 0.1 fibers per cubic centimeter and notify Owner's Representative. Do not recommence work until authorized in writing by the Owner's Representative.
- C. Outside Work Area: If any air sample taken outside of the work area exceeds the base line established below, immediately and automatically stop all work. If this air sample was taken inside the building and outside of critical barriers around the work area immediately erect new critical barriers as set forth in Section 01909 Temporary Enclosures to isolate the affected area from the balance of the building.
- D. Erect Critical Barriers at the next existing structural isolation of the involved space (e.g. wall, ceiling, and floor).
- E. Decontaminate the affected area in accordance with Section 01914 Cleaning & Decontamination Procedures.
- F. Respiratory protection as set forth in Section 01911 Respiratory Protection will be worn in affected area until area is cleared for reoccupancy in accordance with Section 01915 Work Area Clearance.
- G. Leave Critical Barriers in place until completion of work and insure that the operation of the negative pressure system in the work area results in a flow of air from the balance of the building into the affected area.
- H. If the exit from the clean room of the personnel decontamination unit enters the affected area, establish a temporary decontamination facility consisting of a Shower Room and Changing Room as set forth in Section 01912 Decontamination Units. After cleaning and decontamination of the affected area remove the Shower Room and leave the Changing Room in place as an air lock.

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Test Laboratory Services

- I. After certification of visual inspection in the work area remove critical barriers separating the work area from the affected area. Final air samples will be taken within the entire area as set forth in the section on Work Area Clearance.
- J. Effect on Contract Sum: Complete corrective work with no change in the Contract Sum if high airborne fiber counts were caused by Contractor's activities. The Contract Sum and schedule will be adjusted for additional work caused by high airborne fiber counts beyond the Contractor's control.

1.5 ANALYTICAL METHODS

- A. The Owner's Representative in analyzing filters used to collect air samples during the abatement process will use the following methods.
- B. Mixed Cellulose ester filters will be analyzed using NIOSH 7400 method. A representative of the Consultant who has successfully completed a NIOSH 582 course or equivalent and is a licensed Air Monitoring Technician will carry out this analysis at a Texas Licensed laboratory located off the job site or on site. For clearance samples, Mixed Cellulose ester filters will be analyzed using the PCM method.

1.6 SAMPLE VOLUMES

- A. General: The number and volume of air samples taken by the Owner's representative will be in accordance with the following schedule. Sample volumes given may vary depending upon the analytical method used.

6.7 SCHEDULE OF AIR SAMPLES

- A. Before Start of Work: The Owner's Representative will secure the following Air Samples to establish a base line before start of work.

LOCATION SAMPLED	NUMBER OF SAMPLES	FILTER MEDIA 25 mm	DETECTION LIMIT (FIBERS/CC)	MINIMUM VOLUME	RATE LPM
Outside Abatement Area	1	Cellulose Ester	0.01	1250	2-16
Abatement Area	2	Cellulose Ester	0.01	1250	2-16

- B. Base Line: Is an action level expressed in fibers per cubic centimeter that is the highest actual result from the background sampling process.
- C. During Abatement: The Owner has retained the services of Raba-Kistner Consultants, Inc. to provide inspections and air sampling at the areas being abated throughout the course of the project.
- D. Periodic sampling **may be** conducted as follows:

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 Test Laboratory Services

LOCATION SAMPLED	NUMBER OF SAMPLES	FILTER MEDIA 25 mm	DETECTION LIMIT (FIBERS/CC)	MINIMUM VOLUME	RATE LPM
Inside Work Area	2/Day	Cellulose Ester	0.01	960	2-10
Outside Work Area	2/day	Cellulose Ester	0.01	960	2-10
Output Negative Pressure System	2/day	Cellulose Ester	0.01	960	2-10
Clean Room	2/day	Cellulose Ester	0.01	960	2-10

- E. If airborne fiber counts exceed allowed limits, additional samples will be taken as necessary to monitor fiber levels.
- F. Interior Clearance Samples: Upon successful completion of a visual inspection of interior abatement areas, as scheduled by the contractor followed by encapsulation of the abatement area and a drying period, the Owner's Representative will take the following samples:

LOCATION SAMPLED	NUMBER OF SAMPLES	FILTER MEDIA 25 mm	MINIMUM VOLUME	RATE LPM
Each Enclosure	3	Cellulose Ester	1250	<10

- G. Work Space Clearance Samples: Upon successful completion of a visual inspection of work space abatement areas, as scheduled by the contractor followed by encapsulation of the abatement area and a drying period, the Owner's Representative will take the following samples:

LOCATION SAMPLED	NUMBER OF SAMPLES	FILTER MEDIA 25 mm	MINIMUM VOLUME	RATE LPM
Work Space	3 (minimum)	Cellulose Ester	1250	<10

1. **NOTE:** Retesting of clearance samples will be at the Contractor's expense.

- H. Clearance will be given to a work space area, when all samples collected and analyzed by PCM are equal to or below 0.01 fibers per cubic centimeter.
- I. Inspection: The Consultant or his Representative (Owner's Representative), in addition to providing air monitoring services will provide periodic, on-site inspection of all work activities. Twenty-four (24) hour advance notice of the work is required. The following project points will be key, critical inspections:
 - 1. Inspection of Work Area(s) and Containments Prior to Start of Removal:
 - a. Removal operations will not proceed until the Owner's Representative has completed inspection of the work area preparations and provided written approval

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Test Laboratory Services
to proceed.

2. Inspection during Removal: The Owner's Representative will conduct periodic inspections throughout the duration of the project.
3. Inspection of the work area(s) or Containment After Completion of Removal Work, but prior to Encapsulation of Surfaces: A visual inspection of the work site and/or containment area and removal surface will be conducted at this point by the Owner's Representative and encapsulation will not proceed until written approval to do so has been received by the Contractor.
4. Work Area(s) or Containment Clearance, after Encapsulation but prior to Work Area or Containment Disassembly: Air clearance tests will be conducted after a visual inspection of the encapsulation, **but not until the encapsulant is fully dry**. A level of 0.01 fibers per cubic centimeter of air sampled on ALL filters, as evaluated by P.C.M., will be required for clearance.

1.8 PART 2 - PRODUCTS (NOT APPLICABLE)

1.9 PART 3 - EXECUTION

1.10 ADDITIONAL TESTING

- A. The Contractor may conduct his own air monitoring and laboratory testing. If he elects to do this, the cost of such air monitoring and laboratory testing will not be included in the Contract Sum and will be at the Contractor's expense.

1.11 PERSONAL MONITORING

- A. Perform air monitoring as required to meet OSHA Requirements for maintenance of Time Weighted Averaged (TWA) fiber counts for types of respiratory protection provided. Owner Representatives will not be performing air monitoring to meet these OSHA requirements as part of this contract.
- B. A copy of the Personnel Monitoring results will be submitted to the Owner's Representative at least every three days.
- C. Retests and Reinspections: as required.
- D. Additional sample collection and inspections by the Owner's Representative, if required due to failure of the Contractor to achieve clearances, containment failure, retests, etc. will be backcharged by the Owner to the Contractor at the Owner's cost for time and testing.
- E. Testing Outside of Project Schedule:
- F. If the Contractor fails to achieve completion within the Contract time schedule, the costs of inspections and air monitoring services will be backcharged to the Contractor by the Owner at the Owner's cost for time and testing.

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Test Laboratory Services

-END OF SECTION-

SECTION 01907
TEMPORARY FACILITIES

PART 1 - GENERAL

1.1. RELATED DOCUMENTS

A.. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

B. DESCRIPTION OF REQUIREMENTS

1. General: Provide temporary connection to existing building utilities or provide temporary facilities as required herein or as necessary to carry out the work.

C. PRODUCTS (NOT APPLICABLE)

D. MATERIALS AND EQUIPMENT

1. General: Provide new or used materials and equipment that are undamaged and in serviceable condition. Provide only materials and equipment that are recognized as being suitable for the intended use, by compliance with appropriate standards.

1.2 SCAFFOLDING

A. Provide all scaffolding, ladders and/or staging, etc. as necessary to accomplish the work of this contract. Scaffolding may be of suspension type; or standing type such as metal tube and coupler, tubular welded frame, pole or outrigger type or cantilever type. The type, erection and use of all scaffolding will comply with all applicable OSHA provisions.

B. Equip rungs of all metal ladders, etc. with an abrasive non-slip surface.

C. Provide a nonskid surface on all scaffold surfaces subject to foot traffic.

D. During the erection and/or moving of scaffolding, care must be exercised so that the polyethylene floor covering is not damage. Clean, as necessary, debris from non-slip surfaces.

E. At the completion of abatement work, clean all construction aids within the work area, wrap in one layer of 6-mil polyethylene sheet and seal before removal from the work area.

1.3 WATER SERVICE

A. Temporary Water Service Connection: All connections to the Owner's water system will include backflow protection. Valves will be temperature and pressure rated for operation

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of the temperatures and pressures encountered. After completion of use, connections and fittings will be removed without damage or alteration to existing water piping and equipment. Leaking or dripping valves will be piped to the nearest drain or located over an existing sink or grade where water will not damage existing finishes or equipment.

- B. General: Water service will be provided for at the Owner's expense. Supply hot and cold water to the Decontamination Unit in accordance with Section 01912. Hot water may be secured from the buildings hot water system, if available. Maintain hose connections and outlet valves in leak proof condition. Where spillage or leakage might damage finish work below an outlet, provide a drip pan of suitable size to minimize the possibility of water damage. Drain water promptly from pans as it accumulates.
- C. Water Hoses: Employ heavy-duty abrasion-resistant hoses with a pressure rating greater than the maximum pressure of the water distribution system to provide water into each work area and to each Decontamination Unit. Provide fittings as required to allow for connection to existing wall hydrants or spouts, as well as temporary water heating equipment, branch piping, showers, shut-off nozzles and equipment.

1.5 ELECTRICAL SERVICE

- A. General: Electrical services will be provided at the Owner's expense. The Contractor will bear the cost of all temporary connections if the service is not available from normal on-site services. Provide a weatherproof, grounded temporary electric power service and distribution system of sufficient size, capacity, and power characteristics to accommodate performance of work during the abatement period. Install temporary lighting adequate to provide sufficient illumination for safe work and traffic conditions in every area of work.
- B. Power Distribution System: Provide circuits of adequate size and proper characteristics for each use. In general run wiring overhead, and rise vertically where wiring will be least exposed to damage from abatement operations.
- C. Temporary Wiring: In the work area will be type UF non-metallic sheathed cable located overhead and exposed for surveillance. Do not wire temporary lighting with plain, exposed (insulated) electrical conductors. Provide liquid tight enclosures or boxes for wiring devices.
- D. Lockout: Lockout all existing power to or through the work area. Unless specifically noted otherwise, existing power and lighting circuits to the work area are not to be used. All power and lighting to the work area and decontamination units are to be provided from a temporary electrical panel.
- E. Comply with applicable National Electrical Manufacture Association, NECA and Underwriters Laboratories standards and governing regulations for materials and layout of temporary electric service.
- F. Temporary Power: Provide service to Decontamination Unit, if used, subpanel with minimum 60 amp, 2 pole circuit breaker or fused disconnect connected to the buildings

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main distribution panel. Subpanel and disconnect will be sized and equipped to accommodate all electrical equipment required for completion of the work.

- G. Voltage Differences: Provide identification warning signs at power outlets that are other than 110-120 volt power. Provide polarized outlets for plug-in type outlets, to prevent insertion of 110-120 volt plugs into higher voltage outlets. Dry type transformers will be provided where required to provide voltages necessary for work operations.
- H. Ground Fault Protection: Provide receptacle outlets equipped with groundfault circuit interrupters, reset button and pilot light, for plug-in connection of power tools and equipment.
- I. Electrical Power Cords: Use only grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Use single lengths or use waterproof connectors to connect separate lengths of electric cords, if single lengths will not reach areas of work.
- J. Lamps and Light Fixtures: Provide general service incandescent lamps of wattage indicated or required for adequate illumination. Protect lamps with guard cages or tempered glass enclosures, where fixtures are exposed to breakage by construction operations. Provide exterior fixtures where fixtures are exposed to the weather or moisture.

1.5 FIRST AID

- A. First Aid Supplies: Comply with governing regulations and recognized recommendations within the construction industry.

1.6 FIRE EXTINGUISHERS

- A. Fire Extinguishers: Provide Type "A" fire extinguishers for temporary offices and similar spaces where there is minimal danger of electrical or grease-oil-flammable liquid fires. In other locations provide type "ABC" dry chemical extinguishers, or a combination of several extinguishers of recommended types for the exposures in each case.
- B. Comply with the applicable recommendations of NFPA Standard 10 "Standard for Portable Fire Extinguishers". Locate fire extinguishers where they are most convenient and effective for their intended purpose, but provide not less than one extinguisher in each Work Area, in equipment room and one outside work area in clean room.

1.7 INSTALLATION, GENERAL

- A. General: Use qualified tradesmen for installation of temporary services and facilities. Locate temporary services and facilities where they will serve the entire project adequately and result in minimum interference with the performance of the Work.
- B. Relocate, modify and extend services and facilities as required during the course of work so as to accommodate the entire work of the project.

1.8 SANITARY FACILITIES

- A. Toilets: Contractor personnel may use Toilets that have been designated by the Owner. Facilities will be cleaned on a daily basis.

-END OF SECTION-

SECTION 01908

TEMPORARY PRESSURE DIFFERENTIAL AND AIR CIRCULATION SYSTEM

PART 1 - GENERAL

- A. Drawings and general provisions of the contract, and other Division-1 Specification sections, apply to work of this section.
- B. Monitoring: Continuously monitor and record the pressure differential between the work area and the building outside of the work area with a monitoring device incorporating a continuous recorder (e.g. strip chart). If more than one containment is operated concurrently, a separate continuous record will be required for each containment.

PART 2 - PRODUCTS

2.1 HEPA FILTERED FAN UNITS

- A. General: Supply the required number of asbestos air filtration units to the site in accordance with these specifications. Each unit will include the following:
- B. Cabinet: Constructed of steel or other durable materials able to withstand damage from rough handling and transportation. The width of the cabinet should be less than 30 inches to fit through standard-size doorways. Cabinet will be factory sealed to prevent asbestos containing dust from being released during use, transport, or maintenance. Access to and replacement of all air filters will be from intake end. Unit will be mounted on casters or wheels.
- C. Fans: Rate capacity of fan according to useable air-moving capacity under actual operating conditions. Use centrifugal-type fan.
- D. HEPA Filters: The final filter will be the HEPA type. The filter media (folded into closely pleated panels) must be completely sealed on all edges with a structurally rigid frame.
 - 1. A continuous rubber gasket will be located between the filter and the filter housing to form a tight seal.
 - 2. Each filter will be individually tested and certified by the manufacturer to have an efficiency of not less than 99.97 percent when challenged with 0.3 um dioctylphthalate (DOP) particles. Testing will be in accordance with Military Standard Number 282 and Army Instruction Manual 136-300-175A.
 - 3. Each filter will bear a UL586 label to indicate ability to perform under specified conditions.
 - 4. Each filter will be marked with the name of the manufacturer, serial number, airflow rating, efficiency and resistance, and the direction of test airflow.

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- E. Prefilters, which protect the final filter by removing the larger particles, are required to prolong the operating life of the HEPA filter. Two stages of prefiltration are required.
 - 1. The first-stage prefilter will be a low-efficiency type (e.g., for particles 10 um and larger).
 - 2. The second-stage (or intermediate) filter will have a medium efficiency (e.g., effective for particles down to 5 um).
 - 3. Prefilters and intermediate filters will be installed either on or in the intake grid of the unit and held in place with special housings or clamps.
- F. Instrumentation: Each unit will be equipped with a Magnahelic gauge or manometer to measure the pressure drop across filters and indicate when filters have become loaded and need to be changed. A table indicating the useable air-handling capacity for various static pressure readings on the Magnahelic gauge will be affixed near the gauge for reference, or the Magnahelic reading indicating at what point the filters should be changed, noting Cubic Feet per Minute (CFM) air delivery at that point. Provide units equipped with an elapsed time meter to show the total accumulated hours of operations.
- G. Safety and Warning Devices: The unit will have an electrical (or mechanical) lockout to prevent fan from operating without a HEPA filter. Units will be equipped with automatic shutdown system to stop fan in the event of a major rupture in the HEPA filter or blocked air discharge. Warning lights are required to indicate normal operations, too high a pressure drop across the filters (i.e., filter overloading), and too low of a pressure drop (i.e., major rupture in HEPA filter or obstructed discharge).
- H. The National Electrical Manufacturers Association (NEMA) and Underwriter's Laboratories (UL) will approve electrical components. Each unit will be equipped with overload protection sized for the equipment. The motor, fan, fan housing, and cabinet will be grounded.
- I. Manufacturers: Subject to compliance with requirements.

PART 3 - EXECUTION

3.1 PRESSURE DIFFERENTIAL

Isolate the work area from all-adjacent areas or systems of the building with a pressure differential that will cause a movement of air from outside to inside at any breach in the physical isolation of the work area.

3.2 MONITORING

- A. Vent HEPA filtered fan units to outside of the building unless authorized in writing by the Owner's Representative.
- B. Mount units to exhaust directly or through disposable ductwork.
- C. Use only disposable ductwork except for sheet metal connections and elbows.

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Temporary Pressure

- D. Use ductwork and fittings of the same diameter or larger than the discharge connection on the fan unit.
- E. Use inflatable, disposable plastic ductwork in lengths not greater than 50 feet.
- F. Use spiral wire-reinforced flex ductwork in lengths not greater than 100 feet.
- G. If the direction of the discharge from a fan unit is not aligned with the duct, use sheet metal elbow to change direction. Use six (6) feet of spiral reinforced duct after direction change.

3.3 PREPARATION OF THE WORK AREA

- A. NOTE: The Contractor will provide an adequate number of HEPA filtered fan units to exhaust fumes or vapors from the work area to an area outside of the building.
- B. Air Circulation: For purposes of this section, air circulation refers to either the introduction of outside air to the work area or the circulation and cleaning of air within the work area.
- C. Air circulation in the work area is a minimum requirement (four complete air changes per hour) intended to help maintain airborne fiber counts at a level that does not significantly challenge the work area isolation measures. The contractor may also use this air circulation as part of the engineering controls in his worker protection program.

3.4 USE OF THE PRESSURE DIFFERENTIAL AND AIR CIRCULATION SYSTEM

- A. Use of System during Abatement Operations: Start fan units before beginning work (before any asbestos containing material is disturbed). After abatement work has begun, run units continuously to maintain a constant pressure differential and air circulation until decontamination of the work area is complete. Do not turn off units at the end of the work shift or when abatement operations temporarily stop.
- B. Start abatement work at a location farthest from the exhaust units and proceed toward them. If an electric power failure occurs, immediately stop all abatement work and do not resume until power is restored and exhaust units are operating again.
- C. At completion of abatement work, allow exhaust units to turn, to remove airborne fibers that may have been generated during abatement work and cleanup and to purge the work area with clean makeup air. The units may be required to run for a longer time after decontamination, if dry or only partially wetted asbestos material was encountered during any abatement work.
- D. Dismantling the System: When a final inspection and the results of final air tests indicate that the area has been decontaminated, exhaust units may be removed from the work area. Before removal from the work area, remove and properly dispose of pre-filter, and seal intake to the machine with 6-mil polyethylene to prevent environmental contamination from the filters.

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Temporary Pressure

-END OF SECTION-

SECTION 01909
TEMPORARY ENCLOSURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

1.2 SUBMITTALS

- A. Submit Contingency Plans for safe evacuation of the work area in case of fire or injury.

1.03 SAFETY

- A. Contact fire control agencies to review procedures prior to start of work.

PART 2 - PRODUCTS

- A. Polyethylene Sheet: Provide flame-resistant polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-Resistant Textiles and Films. Where a fire hazard exists, the Underwriters Laboratory (UL) will certify all plastic sheeting as being fire retardant. Provide largest size possible to minimize seams, 4.0 or 6.0 mils thick, and frosted or black as indicated.
- B. Duct Tape: Provide duct tape in 2" or 3" widths as indicated, with an adhesive that is formulated to aggressively stick to sheet polyethylene.
- C. Spray Cement: Provide adhesive that is specifically formulated to stick tenaciously to sheet polyethylene.

PART 3 - EXECUTION

3.1 SEQUENCE OF WORK

- A. Carry out work of this section sequentially. Complete each activity before proceeding to the next.

3.2 GENERAL

- A. Work Area: Is the location where asbestos related work occurs. It is a variable of the extent of work of the contract. It may be a portion of a room, a single room, or a complex of rooms. A "work area" is considered contaminated during the work, and must be

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Temporary Enclosures

isolated from the balance of the building, and decontaminated at the completion of the asbestos-control work.

1. Completely isolate the work area so as to prevent asbestos-containing dust or debris from passing beyond the isolated area. Should the areas beyond the work area(s) become contaminated with asbestos containing dust or debris as a consequence of the work, clean those areas in accordance with the procedures indicated in section 01914. Perform all such required cleaning or decontamination at no additional cost to the Owner.
2. Place all tools, scaffolding, staging, etc. necessary for the work in the building prior to erection of plastic sheeting temporary enclosure.
3. Disable Ventilating Systems or any other system bringing air into or out of the work area. Disable system by disconnecting wires, removing circuit breakers, by lockable switch or other positive means that will prevent accidental premature restarting of equipment.
4. Lockout power to the work area by switching off all breakers serving power or lighting circuits to the work area (this is applicable where full enclosure is required). Label breakers with tape over breaker with notation "DANGER circuit being worked on". Lock panel and have all keys under control of Contractor's Superintendent.
5. Lockout power to circuits running through work area wherever possible by switching off all breakers or removing fuses serving these circuits. Label breakers with tape over breaker with notation "DANGER circuit being worked on". Lock panel and have all keys under control of Contractor's Superintendent. If circuits cannot be shut down for any reason, label at intervals 4'- 0" on center with tags reading, "DANGER live electric circuit. Electrocution hazard". Label circuits in hidden locations but which may be affected by the work in a similar manner.
6. Emergency Exits: Provide emergency exits and emergency lighting, as set forth below, where full containment will be utilized.
7. At each existing exit door from the Work Area, provide the following means for emergency exiting:
8. Arrange exit door so that it is secure from outside the Work Area but permits exiting from the Work Area.
9. Mark outline of door on Primary and Critical Barriers with luminescent paint at least 1" wide. Hang a razor knife on a string beside outline. Arrange Critical and Primary barriers so that they can be easily cut with one pass of razor knife. Paint words "EMERGENCY EXIT" inside outline with luminescent paint in letters at least one foot high and 2" thick.
10. Provide battery-operated emergency lighting that switches on automatically in the event of a power failure.

3.3 CONTROL ACCESS

- A. Permit access to the work area only through the Decontamination Unit. All other means of access will be closed off and sealed and warning signs displayed on the clean side of the sealed access.
- B. Provide Warning Signs at each locked door leading to Work Area reading as follows in both English and Spanish:

LEGEND	NOTATION
KEEP OUT	3" Sans Serif Gothic or Block
BEYOND THIS POINT	1" Sans Serif Gothic or Block
ASBESTOS ABATEMENT WORK IN PROGRESS	1" Sans Serif Gothic or Block
BREATHING ASBESTOS DUST MAY BE HAZARDOUS TO YOUR HEALTH	14 Point Gothic

3.4 ALTERNATE METHODS OF ENCLOSURE

- A. Alternate methods of containing the work area may be submitted to the Owner's Representative for approval. Do not proceed with any such method(s) without prior written approval of the Owner's Representative.

3.5 RESPIRATORY AND WORKER PROTECTION

- A. Before proceeding beyond this point in providing Temporary Enclosures:
 - 1. Provide Respiratory Protection per Section 01911.
 - 2. Provide Worker Protection per Section 01910.

3.6 CRITICAL BARRIERS

- A. Completely separate the work area from other portions of the building and the outside by sheet plastic barriers at least 4 mil in thickness and by sealing with duct tape.
- B. Individually seal: All ventilation openings (supply and exhaust), lighting fixtures, clocks, doorways, windows, convectors, speakers, and other openings into the work area with duct tape alone or with polyethylene sheeting at least 4 mil in thickness, taped securely in place with duct tape. Maintain seal until all work including Project Decontamination is completed. Take care in sealing off lighting fixtures to avoid melting or burning of sheeting.

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- C. Provide Sheet Plastic barriers at least 4 mil in thickness as required to completely seal openings from the work area into adjacent areas. Seal the perimeter of all sheet plastic barriers with duct tape and spray cement.
- D. Provide Decontamination Units per Section 01912.
- E. Mechanically Support sheet plastic independently of duct tape or spray cement seals so that seals do not support the weight of the plastic.
- F. Provide Negative Pressure System per Section 01908.
- G. Clean housings and ducts of all overspray materials prior to erection of the Critical Barrier Polyethylene sheeting.

3.7 PREPARE AREA

- A. Scaffolding: If fixed scaffolding is to be used to provide access, HEPA vacuum and wet clean area prior to scaffolding installation.
- B. Clean all fixtures, equipment, etc., with a HEPA filtered vacuum cleaner or by wet cleaning, as specified in Section 01914 Cleaning and Decontamination Procedures, prior to being moved or covered. All fixtures, equipment, etc., are deemed contaminated unless specifically declared as uncontaminated on the drawings or in writing by the Owner's Representative.
- C. Clean all surfaces in work area with a HEPA filtered vacuum or by wet wiping prior to the installation of primary barrier.

3.8 PRIMARY BARRIER

- A. Protect building and other surfaces in the Work Area from damage from water and high humidity or from contamination from asbestos-containing debris, slurry, or high airborne fiber levels by covering with a primary barrier as described below:
- B. Enclose Work Areas with two (2) layers of plastic sheeting on floor and one (1) layer on walls opposite the work area, or as otherwise directed on the contract drawings or in writing by the Owner's Representative.
- C. Cover floor of work Area with 2 individual layers of clear polyethylene sheeting, each at least 6-mil in thickness. Both spray-glue and duct tape all seams in floor covering as well as perimeter edge. Locate seams in top layer six feet (6') from, or at right angles to, seams in bottom layer. Install sheeting so that top layer can be removed independently of bottom layer. Remove all electrical and mechanical items, such as lighting fixtures, clocks, diffusers, registers, escutcheon plates, etc., which cover any part of the surface to be worked on.
- D. Cover all walls opposite the Work Area, including "Critical Barrier" sheet plastic barriers, with one layer of polyethylene sheeting, at least 4 mil in thickness, mechanically supported and sealed with duct tape or spray-glue in the same manner as "Critical

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Barrier" sheet plastic barriers. Tape all joints including the joining with the floor covering with duct tape or as otherwise indicated on the contract documents or in writing by the Owner's Representative.

- E. Cover sheet plastic in areas where scaffolding is to be used with a single layer of 1/2" CDX plywood or 1/4" tempered hardboard. Wrap edges and corners of each sheet with duct tape. At completion of abatement work, wrap plywood or hardboard with 2 layers of 6-mil polyethylene and move to next Work Area or dispose of as an asbestos-contaminated waste material in accordance with Section 01917 of this specification.
- F. Viewing Window: Where feasible, construct a plexiglass-viewing window in accordance with TDH latest revised rules.
- G. Stairs and Ramps: Do not cover stairs or ramps with unsecured sheet plastic. Where stairs or ramps are covered with plastic, provide 3/4" exterior grade plywood treads securely held in place, over plastic. Do not cover rungs or rails with any type of protective materials.
- H. Repair of Damaged Polyethylene Sheeting: remove and replace plastic sheeting which has been damaged by removal operations or where seal has failed allowing water to seep between layers. Remove affected sheeting and wipe down entire area. Install new sheet plastic only when area is completely dries.

3.9 STOP WORK

- A. If the Critical or Primary barrier fails or is breached in any manner, stop work immediately. Do not start work until authorized in writing by the Owner's Representative.

3.10 EXTENSION OF WORK AREA

- A. Extension of Work Area: If the enclosure barrier is breached in any manner that could allow the passage of asbestos debris or airborne fibers, then add affected area to the work area, enclose it as required by this Section of the specification and decontaminate it as described in Section 01912.

3.11 SECONDARY BARRIER

- A. Secondary layer of plastic as a drop cloth to protect the primary layer from debris generated by the asbestos abatement work is specified in the appropriate work sections.

-END OF SECTION-

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SECTION 01910
WORKER PROTECTION

PART 1 - GENERAL --

- A. The minimum respiratory protection during removal of floor tile and mastic, sheet vinyl, white mastic on pipe TSI, black mastic on duct, as well as door and window putty will be half-face (APR) respirators. The minimum respiratory protection during removal of friable ACM will be PAPR respirators. The contractor will provide information to assure that the above respiratory protection is sufficient in accordance with 29 CFR 1926.1101.

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

- A. This section describes the equipment and procedures required for protecting workers against asbestos contamination and other workplace hazards except for respiratory protection.

1.3 RELATED WORK SPECIFIED ELSEWHERE

- A. Respiratory Protection is specified in Section 01911.

1.4 WORKER TRAINING

- A. Train, in accordance with 29 CFR 1926 and 40 CFR PART 763 all workers in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and area protective measures. Include but do not limit the topics covered in the course to the following:
 - B. Methods of recognizing asbestos.
 - C. Health effects associated with asbestos.
 - D. Relationship between smoking and asbestos in producing lung cancer.
 - E. Nature of operations that could result in exposure to asbestos.
 - F. Importance of and instruction in the use of necessary protective controls, practices and procedures to minimize exposure including:
 - 1. Engineering controls
 - 2. Work Practices

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3. Respirators
4. Housekeeping procedures
5. Hygiene facilities
6. Protective clothing
7. Decontamination procedures
8. Emergency procedures
9. Waste disposal procedures

- G. Purpose, proper use, fitting, instructions, and limitations of respirators as required by 29 CFR 1910.134
- H. Appropriate work practices for the work
- I. Requirements of medical surveillance program
- J. Review of 29 CFR 1926
- K. Negative air systems
- L. Work practices including hands on or on-job training
- M. Personal decontamination procedures
- N. Air monitoring, personal and area

1.5 MEDICAL EXAMINATIONS

- A. Provide medical examinations for all workers who may encounter an airborne fiber level of 0.1 f/cc or greater for an 8-hour time weighted average. In the absence of specific airborne fiber data provide medical examination for all workers who will enter the work area for any reason. Examination will as a minimum meet OSHA requirements as set forth in 29 CFR 1926 In addition, provide an evaluation of the individuals ability to work in environments capable of producing heat stress in the worker.

1.6 SUBMITTALS

- A. Before Start of Work: Submit the following to the Owner's Representative for review. Do not start work until these submittals are returned with Owner's Representative's action stamp indicating that the submittal is returned for unrestricted use.
- B Certificate Worker Acknowledgment: Submit an original signed copy of the Certificate of Worker's Acknowledgment found at the end of this section, for each worker who is to be at the job site or enter the work area.
- B. Report from Medical Examination: Conducted within last 12 months as part of compliance with OSHA medical surveillance requirements for each worker who is to enter the work area. Submit, at a minimum, for each worker the following:

- D. Name and Social Security Number
- E. Physicians Written Opinion from examining physician including at a minimum the following:
- F. Whether worker has any detected medical conditions that would place the worker at an increased risk of material health impairment from exposure to asbestos.
- G. Any recommended limitations on the worker or on the use of personal protective equipment such as respirators.
- H. Statement that the worker has been informed by the physician of the results of the medical examination and of any medical conditions that may result from asbestos exposure.
- I. Copy of information that was provided to physician in compliance with 29 CFR 1926.
- J. Statement that worker is able to wear and use the type of respiratory protection proposed for the project, and is able to work safely in an environment capable of producing heat stress in the worker.

PART 2 - EQUIPMENT

2.1 PROTECTIVE CLOTHING

- A. Coveralls: Provide disposable (Tyvek typr) full-body coveralls and disposable head covers and require that all workers in the work area wear them. Provide a sufficient number for all required changes, for all workers in the work area.
- B. Hard Hats: Provide head protectives (hard hats) as required by OSHA for all workers, and provide spares for use by Owner. Label hats with same warning labels as used on disposal bags. Require hard hats to be worn at all times that work is in progress that may potentially cause head injury. Provide hard hats of type with plastic strap type suspension. Require hats to remain in the work area throughout the work. Thoroughly clean, decontaminate and bag hats before removing them from work area at the end of the work.
- C. Goggles: Provide eye protectives (goggles) as required by OSHA for all workers involved in scraping, spraying, or any other activity which may potentially cause eye injury.
- D. Gloves: Provide work gloves to all workers and require that they be worn at all times in the work area. Do not remove gloves from work area. Dispose gloves as asbestos contaminated waste at the end of the work.

2.2 ADDITIONAL PROTECTIVE EQUIPMENT

- A. Respirators, disposable coveralls, head covers, and footwear covers will be provided by the contractor for the Owner and other authorized representatives. Provide two (2) respirators and six (6) complete coveralls and, where applicable, six (6) respirator filter changes per day.

PART 3 - EXECUTION

3.1 GENERAL

- A. Provide worker protection as required by the most stringent OSHA and/or EPA standards applicable to the work. The following procedures are minimums to be adhered to regardless of fiber count in the work area.
- B. Each time work area is entered remove street clothes in the Changing Room of the Personnel Decontamination Unit and put on new disposable coverall, new head cover, and a clean respirator. Proceed through shower room to equipment room and put on work boots.

3.02 DECONTAMINATION PROCEDURES

- A. Air Purifying-Negative Pressure Respirators: Require that all workers use the following decontamination procedure as a minimum requirement whenever leaving the work area with a half or full face cartridge type respirator:
- B. When exiting area, remove disposable coveralls, disposable headcovers, and disposable footwear covers or boots in the equipment room.
- C. Still wearing respirators, proceed to showers. Showering is mandatory. Care must be taken to follow reasonable procedures in removing the respirator and filters to avoid asbestos fibers while showering. The following procedure is required as a minimum:
 1. Thoroughly wet body from neck down.
 2. Wet hair as thoroughly as possible without wetting the respirator filter if using an air purifying type respirator.
 3. Take a deep breath, hold it and/or exhale slowly, complete wetting of hair, thoroughly wetting face, and respirator and filter (air purifying respirator). While still holding breath, remove respirator and hold it away from face before starting to breathe.
 4. Dispose of wet filters from air purifying respirator.
 5. Carefully wash facepiece of respirator inside and out.
 6. Shower completely with soap and water.
 7. Rinse thoroughly.

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8. Rinse shower room walls and floor prior to exit.
 9. Proceed from shower to Changing Room and change into street clothes or into new disposable work items.
- D, Require that workers NOT eat, drink, smoke, chew gum or tobacco in the work area. To eat, chew, drink or smoke, workers will follow the procedure described above, then dress in street clothes before entering the non-work areas of the building.

3.3 CERTIFICATE OF WORKER'S ACKNOWLEDGMENT

- A. Following this section is a Certificate of Worker Training. After each worker has been included in the Contractor's Respiratory Protection Program, completed the training program, and medical examination secure a fully executed copy of this form.

CERTIFICATE OF WORKER'S ACKNOWLEDGMENT

PROJECT NAME _____ DATE _____

PROJECT ADDRESS _____

CONTRACTOR'S NAME _____

WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBERS HAS BEEN LINKED WITH VARIOUS TYPES OF CANCER. IF YOU SMOKE AND INHALE ASBESTOS FIBERS THE CHANCE THAT YOU WILL DEVELOP LUNG CANCER IS GREATER THAN THAT OF THE NON-SMOKING PUBLIC.

Your employer's contract with the owner for the above project requires that: You be supplied with the proper respirator and be trained in its use. You be trained in safe work practices and in the use of the equipment found on the job. You receive a medical examination. These things are to have been done at no cost to you. By signing this certification you are assuring the owner that your employer has met these obligations to you.

RESPIRATORY PROTECTION: I have been trained in the proper use of respirators, and informed of the type respirator to be used on the above referenced project. I have a copy of the written respiratory protection manual issued by my employer. I have been equipped at no cost with the respirator to be used on the above project.

TRAINING COURSE: I have been trained in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and area protective measures. The topics covered in the course included the following:

- Physical characteristics of asbestos
- Health hazards associated with asbestos
- Respiratory protection
- Use of protective equipment
- Negative pressure systems
- Work practices including hands on or on-job training
- Personal decontamination procedures
- Air monitoring, personal and area

MEDICAL EXAMINATION: I have had a medical examination within the past 12 months, which was paid for by my employer. This examination included: health history, pulmonary function tests and may have included an evaluation of a chest x-ray.

Signature _____

Printed Name _____

Social Security Number _____

Witness _____

END OF SECTION-

SECTION 01911

RESPIRATORY PROTECTION

PART 1 - GENERAL

- A. The minimum respiratory protection during removal of joint compound and wallboard will be powered air purifying respirators. Half-face respirators can be used during removal of sink soundproofing, floor tile and mastic, mastic on pipe insulation and ducts, and pipe insulation debris. The contractor will provide information to assure that the above respiratory protection is sufficient in accordance with 29 CFR 1926.1101 / 29 CFR1910.134.

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

- A. Instruct and train each worker involved in asbestos abatement or maintenance and repair of friable asbestos containing materials in proper respiratory use and require that each worker always wear a respirator, properly fitted on the face in the work area from the start of any operation which may cause airborne asbestos fibers until the work area is completely decontaminated. Use respiratory protection appropriate for the fiber level encountered in the work place or as required for other toxic or oxygen-deficient situations encountered.

1.3 STANDARDS

- A. Except to the extent that more stringent requirements are written directly into the Contract Documents, the following regulations and standards have the same force and effect (and are made a part of the Contract Documents by reference) as if copied directly into the Contract Documents, or as if published copies were bound herewith. Where there is a conflict in requirements set forth in these regulations and standards meet the more stringent requirement.

1.4 SUBMITTALS

- A. Before Start of Work submit the following to the Owner's Representative for review. Do not begin work until these submittals are returned with the Owner's Representative's action stamp indicating that the submittal is returned for unrestricted use.
- B. Product Data: Submit manufacturer's product information for each component used, including NIOSH and MSHA Certifications for each component in an assembly and/or for entire assembly.

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- C. System Diagram: When a Type "C" supplied air respiratory system is required by the work, submit drawing showing assembly of components into a complete supplied air respiratory system. Include diagram showing location of compressor, filter banks, backup air supply tanks, hose line connections in work area(s), routing of air lines to work area(s) from compressor.
- D. Operating Instruction: Submit complete operating and maintenance instructions for all components and systems as a whole. Submittal is to be in bound manual form suitable for field use.
- E. Respiratory Protection Program: Submit level of respiratory protection intended for each operation required by the project. Submit this information on the "Respiratory Protection Program" form at the end of this section.
- F. Historic Airborne Fiber Data: Submit airborne asbestos fiber count data from an independent air monitoring firm within the last 12 months to substantiate selection of respiratory protection proposed. Data submitted will include at least the following for each procedure required by the work:
 - 1. Date of measurements
 - 2. Employees monitored
 - 3. Operations monitored and control methods used
 - 4. Sampling and analytical methods used and evidence of their accuracy
 - 5. Number, duration, and results of samples taken.

1.5 AIR QUALITY FOR SUPPLIED AIR RESPIRATORY SYSTEMS

- A. If at any time, Type "C" supplied air respirator are used or required, provide air used for breathing in Type "C" supplied air respiratory systems that meets or exceeds standards set for CGA Type 1 (Gaseous Air) Grade D.

1.6 ALLOWABLE CONTAMINANTS

- A. The following table sets forth the quantity of any given contaminant allowed according to the referenced standards:

CONTAMINANT	CGA TYPE 1 (Gaseous Air)			CSA Z180.1
	Grade D	Grade E	Grade H	
Carbon Monoxide, PPM/V	20	10	5	5

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Carbon Dioxide, PPM/V	1000	500	500	500
Condensed Hydrocarbons, (mg/cu meter)	5	5	---	1
Gaseous Hydrocarbons - As Methane, PPM/V	---	---	10	25
Water Vapor - PPM/V	(1)	(1)	(1)	27
Dewpoint	-50F	-50F	-50F	-63F
Objectionable Odors	None	None	None	None
Nitrogen Dioxide, PPM/V	---	---	0.5	0.2
Nitrous Oxide, PPM/V	---	---	---	5
Sulfur Dioxide, PPM/V	---	---	0.5	---
Halogenated solvents, PPM/V	---	---	1	---
Other gaseous contaminants	---	---	---	(2)
Inorganic particulates, (mg/cu meter)	---	---	---	1

B. NOTE: Indicates that the standard shows no limiting characteristics:

(1) The CGA standards do not call out a specific moisture limit when the ambient temperature is above freezing. However, since a moisture content no greater than a -50 Degrees Fahrenheit dewpoint (66 PPM/V) is necessary for carbon monoxide elimination, the CO limits could not be met unless the air were dried to a -50 Degrees Fahrenheit dewpoint or better.

(2) Maximum allowable content of trichlorotrifluoroethane, dichlorodifluoromethane, and chlorodifluoromethane is 2 PPM/v for each. Unlisted contaminants will not exceed one-tenth of the Threshold Limit Values (TLV's) for Chemical Substances in Workroom air adopted by the American Conference of Governmental Industrial Hygienists (ACGIH).

1.7 DELIVERY

- A. Deliver replacement parts, etc., not otherwise labeled by NIOSH or MSHA to job site in manufacturer's containers.

PART 2 - EQUIPMENT

2.1 AIR PURIFYING RESPIRATORS

- A. Respirator Bodies: Provide half face or full face type respirators. Equip full face respirators with a nose cup or other anti-fogging device as would be appropriate for use

in air temperatures less than 32 degrees fahrenheit.

- B. Filter Cartridges: Provide, at minimum, HEPA type filters labeled with NIOSH and MSHA Certification for "Radionuclides, Radon Daughters, Dust, Fumes, Mists including Asbestos-Containing Dusts and Mists" and color-coded in accordance with ANSI Z228.2 (1980). In addition, a chemical cartridge section may be added, if required, for solvents, etc., in use. In this case, provide cartridges that have each section of the combination canister labeled with the appropriate color code and NIOSH/MSHA Certification.
- C. Non-permitted respirators do not use single use, disposable or quarter face respirators.

2.2 SUPPLIED AIR RESPIRATOR SYSTEMS

- A. Provide equipment capable of producing air of the quality and volume required by the above reference standards applied to the job site conditions and crew size. Comply with provisions of this specification if more stringent than the governing standard.
- B. Face Piece and Hose: Provide full face piece and hose by same manufacturer that has been certified by NIOSH/MSHA as an approved Type "C" respirator assembly operating in pressure demand mode with a positive pressure face-piece.
- C. Auxiliary backup system: In atmospheres which contain sufficient oxygen (greater than or equal to 19.5% oxygen) provide a pressure-demand full face piece supplied air respirator equipped with an emergency back up HEPA filter.
- D. Escape air supply: In atmospheres which are oxygen deficient (less than 19.5% oxygen) provide a pressure-demand full face piece supplied air respirator incorporating an auxiliary self-contained breathing apparatus (SCBA) which automatically maintains an uninterrupted air supply in pressure demand mode with a positive pressure face piece.
- E. Backup air supply: Provide a reservoir of compressed air located outside the work area which will automatically maintain a continuous uninterruptable source of air automatically available to each connected face piece and hose assembly in the event of compressor shut-down, contamination of air delivered by compressor, power loss or other failure. Provide sufficient capacity in the back-up air supply to allow a minimum escape time of one-half hour times the number of connections available to the work area. Air requirement at each connection is the air requirement of the respirators in use plus the air requirement of an average sized adult male engaged in moderately strenuous activity. Warning-device: Provide a warning device that will operate independently of the building's power supply. Locate so that alarm is clearly audible above the noise level produced by equipment and work procedures in use in all parts of

the work area and at the compressor. Connect alarm to warn of:
 - F. Compressor shut down or other fault requiring use of backup air supply, Carbon
 - 1. Monoxide (CO) levels in excess of 5 PPM/V.
 - 2. Carbon Monoxide (CO) Monitor: Continuously monitor and record on a strip chart

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recorder Carbon Monoxide (CO) levels. Place monitors in the airline between compressor and back-up air supply and between backup air supply and workers. Connect monitors so that they also sound an alarm as specified under "Warning Devices".

3. Compressor shut Down: Interconnect monitors, alarms and compressor so that compressor is automatically shut down and the alarms sounded if any of the following occur:
4. Carbon Monoxide (CO) concentrations exceed 5 PPM/v in the airline between the filter bank and backup air supply.
5. Compressor temperature exceeds normal operating range.
6. Compressor Motor: Provide a compressor driven by an electric motor. Do not use a gas or diesel engines to drive compressor. Insure that electrical supply available at the work site is adequate to energize motor.
7. Compressor Location: Locate compressor outside of building in location that will not impede access to the building, and that will not cause a nuisance by virtue of noise or fumes to occupied portions of the building.
8. Air Intake: Locate air intake remotely from any source of automobile exhaust or any exhaust from motors, or buildings.
9. After Cooler: Provide an after cooler at entry to filter system that is capable of reducing temperatures to outside ambient air temperatures.
10. Self-Contained Breathing Apparatus (SCBA): Configure system to permit the recharging of 2 hour 2260 PSI SCBA cylinders.

PART 3 - EXECUTION

3.1 GENERAL

- A. Respiratory Protection Program: Comply with ANSI Z88.2 - 1980 "Practices for Respiratory Protection" and OSHA 29 CFR 1910 and 1926.
- B. Require that respiratory protection be used at all times that there is any possibility of disturbance of asbestos-containing materials whether intentional or accidental.
- C. Require that a respirator be worn by anyone in a work area at all times, regardless of activity, during a period that starts with any operation which could cause airborne fibers until the area has been cleared for re-occupancy in accordance with Section 01915.
- D. Regardless of Airborne Fiber Levels: Require that the minimum level of respiratory protection used be a half-face air-purifying respirator with high efficiency filters.

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- E. Do not allow the use of single-use, disposable, or quarter-face respirators for any purpose.

3.2 FIT TESTING

- A. Initial Fitting: Provide initial fitting of respiratory protection during a respiratory protection course of training set up and administered by a Certified Industrial Hygienist. Fit types of respirator to be actually worn by each individual. Allow an individual to use only those respirators for which he has been trained and fit.
- B. On a Weekly Basis, check the fit of each worker's respirator by having irritant smoke blown onto the respirator from a smoke tube.
- C. Upon Each Wearing: Require that each time an air-purifying respirator is put on, it be checked for fit with a positive and negative pressure fit test in accordance with the manufacturer's instructions or ANSI Z88.2 (1980).

3.3 TYPE OF RESPIRATORY PROTECTION REQUIRED

- A. Provide Respiratory Protection as indicated in paragraph below. Where paragraph below does not apply, determine the proper level of protection by dividing the expected or actual airborne fiber count in the work area by the "protection factors" given below. The level of respiratory protection which supplies an airborne fiber level inside the respirator, at the breathing zone of the wearer, at or below the permissible exposure limit (PEL) is the minimum level of protection allowed.

3.4 PERMISSIBLE EXPOSURE LIMIT (PEL)

- A. 8-Hour Time Weighted Average (TWA) of asbestos fibers to which any worker may be exposed will not exceed the following.
- B. Fibers: For purposes of this section fibers are defined as all fibers regardless of composition as counted in the OSHA Reference Method (ORM), NIOSH P&CAM 239 or 7400 procedure, or asbestos fibers of any size as counted using either a scanning or transmission electron microscope.
- C. Time Weighted Average (TWA) - 0.1-fibers/cubic centimeter

3.5 RESPIRATORY PROTECTION FACTOR

A.	RESPIRATOR TYPE	PROTECTION FACTOR
1.	Air purifying: Negative pressure respirator High efficiency filter Half facepiece	10
2.	Air purifying: Negative pressure respirator	50

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	High efficiency filter Full facepiece	
3.	Powered-air purifying (PAPR): Positive pressure respirator High efficiency filter Half or Full facepiece	100
4.	Type C supplied air: Positive pressure respirator Continuous-flow Half or full facepiece	1000
5.	Type C supplied air: Positive pressure respirator Pressure demand Full facepiece	2000
6.	Type C supplied air: Positive pressure respirator Pressure demand Full facepiece Equipped with a auxiliary positive pressure Self-contained breathing apparatus (SCBA)	10000
7.	Self-contained breathing apparatus (SCBA): Positive Pressure respirator Pressure demand Full facepiece	10000

3.6 AIR PURIFYING RESPIRATORS

- A. Negative pressure - half or full facemask: Supply a sufficient quantity of respirator filters approved for asbestos, so that workers can change filters during the workday. Require that respirators be wet-rinsed, and filters discarded, each time a worker leaves the work area. Require that new filters be installed each time a worker re-enters the work area. Store respirators and filters at the job site in the changing room and protect totally from exposure to asbestos prior to their use.
- B. Powered air purifying - half or full face mask: Supply a sufficient quantity of high efficiency respirator filters approved for asbestos so that workers can change filters at any time that flow through the face piece decreases to the level at which the manufacturer recommends filter replacement. Require that regardless of flow, filter cartridges be replaced after 40 hours of use. Require that HEPA elements in filter cartridges be protected from wetting during showering. Require entire exterior housing of respirator

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including blower unit, filter cartridges, hoses, battery pack, face mask, belt, and cords to be washed each time a worker leaves the work area. Caution should be used to avoid shorting battery pack during washing. Provide an extra battery pack for each respirator so that one can be charging while one is in use.

3.7 TYPE "C" RESPIRATOR

- A. Air Systems Monitor: Continuously monitor the air system operation including compressor operation, filter system operation, backup air capacity and all warning and monitoring devices at all times that system is in operation. Assign an individual trained, by manufacturer of the equipment in use or by a Certified Industrial Hygienist, in the operation and maintenance of the system to provide this monitoring. Assign no other duties to this individual that will take him away from monitoring the air system.

-END OF SECTION-

SECTION 01912
DECONTAMINATION UNITS

PART 1 - GENERAL:

- A. A decontamination unit, as described in this section, will be required during the removal of all asbestos containing materials.

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions apply to work of this section.

1.02 DESCRIPTION OF WORK

- A. Provide separate personnel and equipment decontamination facilities. Require that the Personnel Decontamination Unit be the only means of ingress and egress for the work area. Require that all materials exit the work area through the Equipment Decontamination Unit. For work in the show room and shop building, a remote decontamination unit may be used, with written approval of the Owner's Representative.

1.3 RELATED WORK SPECIFIED ELSEWHERE

- A. Refer to Section 01907 Temporary Facilities - Asbestos Abatement for electrical requirements and requirements relative to connection of decontamination facilities to building systems such as water, sewer, and electrical.

PART 2 - PRODUCTS

- A. Polyethylene Sheet: A single polyethylene film in the largest sheet size possible to minimize seams, 4.0 or 6.0 mils thick as indicated, clear, frosted, or black as indicated.
- B. Duct Tape: Provide duct tape in 2" or 3" widths as indicated, with an adhesive that is formulated to aggressively stick to sheet polyethylene.
- C. Spray Cement: Provide adhesive that is specifically formulated to stick tenaciously to sheet polyethylene.
- D. Shower: Provide a shower that meets approval of the Owner's Representative.
- E. Shower Head and Controls: Provide a factory made showerhead producing a spray of water that can be adjusted for spray size and intensity. Feed shower with water mixed from hot and cold supply lines. Arrange so that control of water temperature, flow rate, and shut off is from inside shower without outside aid.

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- F. Filters: Provide cascaded filter units on drain lines from showers or any other water source carrying asbestos contaminated water from the work area. Provide units with disposable filter elements as indicated below. Connect so that discharged water passes primary filter and output of primary filter passes through secondary filter.

- G. Primary Filter - Pass particles 20 microns and smaller
Secondary Filter - Pass particles 5 microns and smaller

- H. Sump Pump: Provide totally submersible waterproof sump pump with integral float switch. Provide unit sized to pump 2 times the flow capacity of all showers or hoses supplying water to the sump, through the filters specified herein when they are loaded to the extent that replacement is required. Provide unit capable of pumping debris, sand, plaster or other materials washed off during decontamination procedures without damage to mechanism of pump. Adjust float switch so that a minimum of 3" remains between top of liquid and top of sump pan.

PART 3 - EXECUTION

1.1 GENERAL

- A. Personnel Decontamination Unit: Provide a Personnel Decontamination Unit consisting of a serial arrangement of connected rooms or spaces, Changing Room, Shower Room, Equipment Room. Require all persons without exception to pass through this decontamination unit for entry into and exiting from the work area for any purpose. Do not allow parallel routes for entry or exit. Do not remove equipment or materials through Personnel Decontamination Unit. Provide temporary lighting within decontamination units as necessary to reach a lighting level of 100-foot candles.

- B. Changing Room (clean room): Provide a room that is physically and visually separated from the rest of the building for the purpose of changing into protective clothing. Construct using black polyethylene sheeting, at least 6-mil in thickness, to provide an airtight seal between the Changing Room and the rest of the building. Locate so that access to Work Area from Changing Room is through Shower Room. Separate Changing Room from the building by a sheet polyethylene flapped doorway.

- C. Require workers to remove all street clothes in this room, dress in clean disposable coveralls, and don respiratory protection equipment. Do not allow asbestos contaminated items to enter this room. Require Workers to enter this room either from outside the structure dressed in street clothes, or naked from the showers.

- D. An existing room may be utilized as the Changing Room if it is suitably located and of a configuration whereby workmen may enter the Changing Room directly from the Shower Room. Protect all surfaces of room with sheet plastic. Authorization for this must be obtained from the Owner's Representative in writing prior to start of construction.

- E. Maintain floor of changing room dry and clean at all times. Do not allow overflow water from shower to wet floor in changing room.

- F. Damp wipe all surfaces twice after each shift change with a disinfectant solution.

- G. Provide a continuously adequate supply of disposable bath towels.
- H. Provide posted information for all emergency phone numbers and procedures.
- I. Shower Room: Provide a completely water tight operational shower to be used for transit by cleanly dressed workers heading for the Work Area from the Changing Room, or for showering by workers headed out of the Work Area after undressing in the Equipment Room.
 - 1. Separate this room from the rest of the building with airtight walls fabricated of 6-mil polyethylene.
 - 2. Separate this room from the Changing and Equipment Rooms with airtight walls fabricated of 6-mil polyethylene.
 - 3. Provide splashproof entrances to Changing and Equipment Rooms with 2 doors.
 - 4. Provide showerhead and controls.
 - 5. Provide temporary extensions of existing hot and cold water and drainage, as necessary for a complete and operable shower.
 - 6. Provide a soap dish and a continuously adequate supply of soap and maintain in sanitary condition.
 - 7. Arrange so that water from showering does not splash into the Changing or Equipment Rooms.
 - 8. Arrange water shut off and drain pump operation controls so that a single individual can shower without assistance from either inside or outside of the work area.
 - 9. Provide flexible hose showerhead.
 - 10. Pump wastewater to drain or to storage for subsequent disposal. If pumped to drain, provide 20 micron and 5 micron waste water filters in line to drain or waste water storage. Change filters daily or more often if necessary. Locate filters inside shower unit so that water lost during filter changes is caught by shower pan.
 - 11. Provide hose bib.
 - 12. Airlock: Provide an airlock between the shower room and the equipment room. This is a transit area for workers. Separate this room from the equipment room by a sheet plastic doorway.
 - 13. Equipment Room (contaminated area): Require work equipment, footwear and additional contaminated work clothing to be left here. This is a change and transit area for workers. Separate this room from the work area by a 6-mil polyethylene flap

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doorway.

14. Separate this room from the rest of the building with airtight walls fabricated of 6-mil polyethylene.
 15. Separate this room from the Shower Room and Work Area with airtight walls fabricated of 6-mil polyethylene.
- J. Work Area: Separate work area from the Equipment Room by black polyethylene barriers. If the airborne asbestos level in the work area is expected to be high, as in dry removal, add an intermediate cleaning space between the Equipment room and the Work area. Damp wipe clean all surfaces after each shift change. Provide one additional floor layer of 6-mil polyethylene per shift change and remove contaminated layer after each shift.

2.1 CONSTRUCTION

- A. Walls and Ceiling: Construct air tight walls and ceiling using polyethylene sheeting, at least 6-mil in thickness. Attach to existing building components or a temporary framework.
- B. Floors: Use 2 layers (minimum) of 6-mil. Polyethylene sheeting to cover floors in the Equipment, Shower (underneath shower pan), and Changing Rooms. Provide an additional layer in the Equipment Room for every shift change expected. Roll one layer of plastic from Equipment Room into Work Area after each shift change. Provide a minimum of two (2) layers of plastic at all times. Use only clear plastic to cover floors.
- C. Doors: Fabricated from overlapping sheets with openings a minimum of three feet (3') wide. Configure so that sheeting overlaps adjacent surfaces. Weigh sheets at bottoms as required so that they quickly close after being released. Put arrows on sheets to indicate direction of overlap and/or travel. Provide a minimum of six feet (6') between entrance and exit of any room.
- D. If the decontamination area is located within an area containing friable asbestos on overhead ceilings, ducts, piping, etc., provide the area with a minimum 3 inch hardboard or 2 inch plywood "ceiling" with polyethylene sheeting, at least 4 mil in thickness covering the top of the "ceiling".
- E. Alternate methods of providing decontamination facilities may be submitted to the Owner's Representative for approval. Do not proceed with any such method(s) without written authorization of the Owner's Representative.
- F. Electrical: Provide subpanel at Changing Room to accommodate all removal equipment. Power subpanel directly from a building electrical panel. Connect all electrical branch circuits in decontamination unit and particularly any pumps in shower room to a ground-fault circuit protection device.

3.2 DECONTAMINATION SEQUENCE

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A. Entering Work Area:

1. Worker enters Changing Room and removes street clothing, puts on clean disposable overalls and respirator, and passes through the Shower Room into the Equipment Room.
2. Any additional clothing and equipment left in Equipment Room needed by the worker are put on in the Equipment Room.
3. Worker proceeds to Work Area.
4. Exiting Work Area:

B. Before leaving the work area, require the worker to remove all gross contamination and debris from overalls and feet. The worker then proceeds to the Equipment Room and removes all clothing except respiratory protection equipment. Extra work clothing may be stored in contaminated end of the Equipment Room. Disposable coveralls are placed in a bag for disposal with other material. Decontamination procedures found in Section 01914 will be followed by all individuals leaving the work area.

C. After showering, the worker moves to the Changing Room and dresses in either new coveralls for another entry or street clothes if leaving.

3.3 EQUIPMENT DECONTAMINATION UNITS

A. Provide an Equipment Decontamination Unit consisting of a serial arrangement of rooms, Clean Room, Holding Room, Wash Room for removal of equipment and material from work area. Do not allow personnel to enter or exit work area through Equipment Decontamination Unit.

B. Wash Down Station: Provide an enclosed shower unit located in work area just outside Wash Room as an equipment, bag and container cleaning station.

C. Wash Room: Provide wash room for cleaning of bagged or containered asbestos-containing waste materials passed from the work area. Separate this room from the work area by a single flap of 6-mil polyethylene sheeting.

D. Holding Room: Provide Holding Room as a drop location for bagged asbestos-containing materials passed from the Wash Room. Separate this room from the adjacent rooms by double flaps fabricated from $\pm 1/16$ " thick single ply rubber roofing material either EPDM or Neoprene.

E. Clean Room: Provide Clean Room to isolate the Holding Room from the building exterior.

F. Separate this room from the exterior by a single flap of 6-mil polyethylene sheeting.

G. Equipment or Material: Take all equipment or material from the work area through the Equipment Decontamination Unit according to the following procedure:

1. At washdown station, thoroughly wet-clean contaminated equipment or sealed

polyethylene bags and pass into Wash Room.

2. When passing equipment or containers into the Wash Room, close all doorways of the Equipment Decontamination Unit, other than the doorway between the Washdown Station and the Wash Room. Keep all outside personnel clear of the Equipment Decontamination Unit.
3. Once inside the washroom, wet-clean the bags and/or equipment.
4. When cleaning is complete pass items into Holding Room. Close all doorways except the doorway between the Holding room and the Clean Room.
5. Workers from the building exterior enter Holding Area and remove decontaminated equipment and/or containers for disposal.
6. Require these workers to wear full protective clothing and wearing appropriate respiratory protection.
7. At no time is a worker from an uncontaminated area to enter the enclosure when a removal worker is inside.

3.4 CLEANING OF DECONTAMINATION UNITS

- A. Clean debris and residue from inside of Decontamination Units on a daily basis or as otherwise indicated on contract drawings. Damp wipe or hose down all surfaces after each shift change. Clean debris from shower pans on a daily basis.
- B. If the Changing Room of the Personnel Decontamination Unit becomes contaminated with asbestos-containing debris, abandon the entire decontamination unit and erect a new decontamination unit. Use the former Changing Room as an inner section of the new Equipment Room.

3.5 SIGNS

- A. Post an approximately 20 inch by 14 inch manufactured caution sign at each entrance to the work area displaying the following legend with letter sizes and styles of a visibility required by 29 CFR 1926:

LEGEND

Danger

Asbestos

Cancer and Lung Disease Hazard

Respirators and Protective Clothing are Required in this Area

- B. Provide spacing between respective lines at least equal to the height of the respective upper line. Post an approximately 10 inch by 14 inch manufactured sign at each entrance

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to each work area displaying the following legend with letter sizes and styles of a visibility at least equal to the following:

LEGEND	NOTATION
No Food, Beverages or Tobacco Permitted	:" Block
All Persons Will Don Protective Clothing (Coverings) Before Entering the Work Area	:" Block
All Persons Will Shower Immediately After Leaving Work Area and Before Entering the Changing Area	:" Block

-END OF SECTION-

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SECTION 01913
PROJECT CLOSEOUT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions apply to work of this section.

1.2 DESCRIPTION OF REQUIREMENTS

- A. Definitions: Project closeout is the term used to describe certain collective project requirements, indicating completion of the Work, that are to be fulfilled near the end of the Contract time in preparation for final acceptance and occupancy of the Work by the Owner, as well as final payment to the Contractor and the normal termination of the Contract.
- B. Time of closeout is directly related to "Substantial Completion"; therefore, the time of closeout may be either a single time period for the entire Work or a series of time periods for individual elements of the Work that have been certified as substantially complete at different dates. This time variation, if any, will be applicable to the other provisions of this section.

1.3 SUBSTANTIAL COMPLETION

- A. Inspection Procedures: Upon receipt of Contractor's request for inspection, the Owner's Representative will either proceed with inspection or advise Contractor of unfulfilled prerequisites.
- B. Following initial inspection, Owner's Representative will either prepare the certificate of substantial completion, or will advise Contractor of work that must be performed before the certificate will be issued. The Owner's Representative will repeat the inspection when requested and when assured that the Work has been substantially completed.
- C. Results of the completed inspection will form the initial "punch-list" for final acceptance.

1.4 PREREQUISITES TO FINAL ACCEPTANCE

- A. General: Complete the following before requesting the Owner's Representative's final inspection for clearance of final acceptance, and final payment as required by the General Conditions. List known exceptions, if any, in request:
 - B. Submit the payment request with final releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.

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Project Closeout

- C. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
- D. Submit a certified copy of the Owner's Representatives final punch-list of itemized work to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance and has been endorsed and dated by the Owner's Representative and Owner.
- E. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
- F. Reinspection Procedure: The Owner's Representative will reinspect the Work upon receipt of the Contractor's notice that the work, including punch-list items resulting from earlier inspections, has been completed, except for these items whose completion has been delayed because of circumstances that are acceptable to the Owner's Representative.
- G. Upon completion of reinspection, the Owner's Representative will either prepare a certificate of final acceptance, or will advise the Contractor of work that is incomplete or of obligations that have not been fulfilled, but are required for final acceptance.
- H. If necessary, the reinspection procedure will be repeated.

1.5 RECORD DOCUMENT SUBMITTALS

- A. General: Specific requirements for record documents are indicated in the individual sections of these specifications. Other requirements are indicated in the General Conditions. General submittal requirements are indicated in "submittals" sections.
- B. Do not use record documents for construction purposes; protect from deterioration and loss in a secure, fire-resistive location; provide access to record documents for the Architect/Engineer's reference during normal working hours.
- C. Note related change-order number where applicable.
- D. Record Specifications: Maintain one complete copy of the Project Manual, including specifications and addenda, and one copy of other written construction documents such as change orders and similar modifications issued in printed form during construction. Mark these documents to show substantial variations in the actual work performed in comparison with the text of the specifications and modifications as issued. Give particular attention to substitutions, selection of options and similar information on work where it is concealed or cannot otherwise be readily discerned at a later date by direct observation. Note related record drawing information and product data, where applicable.
- E. Upon completion of the Work, submit record specifications to the Owner's Representative for the Owner's records.
- F. Record Sample Submittal: Immediately prior to date or dates of substantial completion, the

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Project Closeout

Contractor will meet at the site with the Owner's Representative and the Owner's personnel, if desired, to determine which, if any, of the submitted samples that have been maintained by the Contractor during progress of the Work, are to be transmitted to the Owner for record purposes. Comply with delivery to the Owner's sample storage space.

- G. Miscellaneous Record Submittals: Refer to other sections of these specifications for requirements of miscellaneous record keeping and submittals in connection with the actual performance of the Work. Immediately prior to the date or dates of substantial completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to the Owner's Representative for the Owner's records.

3.1 FINAL CLEANING

- A. General: General Cleaning during the regular progress of the Work is required by the General Conditions and is included under section 01916.
- B. Removal of Protection: Except as otherwise indicated or requested by the Owner's Representative's, remove temporary protection devices and facilities which were installed during the course of the work to protect previously completed work during the remainder of the construction period.
- C. Compliance: Comply with safety standards and governing regulations for cleaning operations. Do not burn waste materials at the site. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile or other harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.
- D. Where extra materials of value remaining after completion of associated work have become the Owner's property, dispose of these to the Owner's best advantage as directed.

-END OF SECTION-

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SECTION 01914

PROJECT DECONTAMINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF REQUIREMENTS

- A. General: This section applies to areas where surfacing ACM is to be abated. Since the asbestos removal for these areas is primarily friable materials, the workspace is deemed contaminated before start of the work and in need of decontamination. In this case the work is a four-step procedure with two cleanings of the room surfaces to remove any new or existing contamination. In both cases, operation of the negative pressure system is used to remove airborne fibers generated by the abatement work.

1.3 RELATED WORK SPECIFIED ELSEWHERE

- A. Removal of Gross Debris is integral with the performance of abatement work and as such is specified in the appropriate work section(s) of these specifications:
 - 1. Section 01916 – Removal of Asbestos-Containing Materials
- B Work Area Clearance: Air testing and other requirements that must be met before release of Contractor and reoccupancy of the work area are specified in this section.

3.1 GENERAL

- A. Work of This Section: Includes the decontamination of air in the Work Area which has been, or may have been contaminated by the elevated airborne asbestos fiber levels generated during abatement activities, or which may previously have had elevated fiber levels due to friable asbestos containing materials in the space.
- B. Work of This Section: Includes the cleaning, decontamination, and removal of temporary facilities installed prior to abatement work including:
 - Critical barriers erected by work of Section 01909.
 - Decontamination Unit erected by work of Section 01915.
- C. Work of This Section: Includes the cleaning, and decontamination of all surfaces (ceiling, walls, floor) of the Work Area, and all furniture or equipment in the Storage Work Area.

3.2 START OF WORK

- A. Previous Work: During completion of the asbestos abatement work specified in other sections, the Secondary Barrier of polyethylene sheeting will have been removed and disposed of along with any gross debris generated by the asbestos abatement work.
- B. Start of Work: Work of this section begins with the cleaning of the work area. At start of work the following will be in place:
 - 1. Primary Barriers
 - 2. Critical Barriers
 - 3. Decontamination Units for personnel and equipment in operating condition.

3.3 FIRST CLEANING

- A. First Cleaning: Carry out a first cleaning of all surfaces of the work area including items of remaining sheeting, tools, scaffolding and/or staging by use of damp-cleaning and mopping, and/or a High Efficiency Particulate Absolute (HEPA) filtered vacuum. (Note: A HEPA vacuum will fail if used with wet material.) Do not perform dry dusting or dry sweeping. Use each surface of a cleaning cloth one time only and then dispose of as contaminated waste. Continue this cleaning until there is no visible debris from removed materials or residue on plastic sheeting or other surfaces.
- B. Remove all filters in the pressure handling system and dispose of them as asbestos containing waste in accordance with the requirements of Section 01917.

3.4 SECOND CLEANING

- A. Carry out a second cleaning of all surfaces in the work area in the same manner as the first cleaning.
- B. Immediately following the second cleaning of the work area, remove the primary barrier sheets and Material Decontamination Unit, if there is one, leaving only:
- C. Critical Barrier: Which forms the sole barrier between the work area and other portions of the building.
- D. Critical Barrier Sheeting: Over lights, ventilation openings, doorways, and other openings.
- E. Decontamination Unit: For personnel in operating condition.

3.5 FINAL CLEANING

- A. Final Cleaning: If dust is apparent, carry out a final cleaning of all surfaces in the work area in the same manner as the previous cleaning.

3.6 VISUAL INSPECTION

- A. After Final Cleaning, Perform a Complete Visual Inspection of the entire work area including: decontamination unit, all plastic sheeting, seals over ventilation openings, doorways, windows, and other openings; look for debris from any sources, residue on surfaces, dust or other matter. If any such debris, residue, dust or other matter is found repeat final cleaning and continue decontamination procedure from that point. When the area is visually clean, complete the certification at the end of this section. Visual inspection is not complete until confirmed in writing, on the verification, by the Owner's Representative.

3.7 FINAL AIR SAMPLING

- A. Phase Contrast Microscopy (PCM): After the work space work area is found to be visually clean, and then encapsulated, air samples will be taken and analyzed in accordance with the procedures for PCM sampling.
- B. If Release Criteria is not met, repeat Final Cleaning and continue decontamination procedure from that point.
- C. If more than one final clearance inspections and samplings are required, the Contractor will bear the cost of analysis and time involved.
- D. If release criteria is met, remove the Critical Barriers separating the work area from the rest of the building and shut down and remove the negative pressure system.

3.8 COMPLETION OF ABATEMENT WORK

- A. Seal negative air machines with 6-mil polyethylene sheet and duct tape to form a tight seal at intake end before being moved from work area.
- B. Asbestos Abatement Enclosure Work is Complete upon meeting the work area clearance criteria and fulfilling the following:
- C. Remove all equipment, materials, and debris from the work site.
- D. Dispose of all asbestos containing waste material as specified in Section 01917.
- E. Asbestos Abatement Enclosure Work is Substantially Complete upon meeting the requirements of this section and section 01909, including submission of: Certificate of Visual Inspection.
- G. Receipts documenting proper disposal as required by section 01917.

3.9 VERIFICATION OF VISUAL INSPECTION

- A. Following this section is a "Verification of Visual Inspection". This document is to be completed by

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- B. the Contractor and verified by the Owner's Representative. Submit completed document with application for final payment. Final payment will not be made until this verification is executed.

-END OF SECTION-

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3.10. VERIFICATION OF VISUAL INSPECTION

In accordance with this Section (01914) "Project Decontamination" the contractor hereby certifies that he has visually inspected the work area (all surfaces including pipes, beams, ledges, walls, ceiling and floor, Decontamination Unit, sheet plastic, etc.) and has found no dust, debris or residue.

BY: (Signature) _____ (Date) _____

(Print Name) _____

(Print Title) _____

OWNER REPRESENTATIVE VERIFICATION

The Owner Representative hereby verifies that he has accompanied the contractor on his visual inspection and that this inspection has been thorough and to the best of his knowledge and belief, the contractor's verification above is a true and honest one.

BY: (Signature) _____ (Date) _____

(Print Name) _____

(Print Title) _____

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SECTION 01915
WORK AREA CLEARANCE

PART 1 - GENERAL:

Interior clearance air samples will be collected and the samples from the work areas will be analyzed using PCM method.

1.1 RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division - 1 Specification sections, apply to work of this section.

1.2 CONTRACTOR RELEASE CRITERIA

The Work is Complete when the work area is visually clean and airborne fiber levels have been reduced to the level specified below.

1.3 AIR MONITORING

- A. To determine if the elevated airborne fiber counts encountered during abatement operations have been reduced to the specified level, the Owner's Representative will secure samples and analyze them according to the following procedures.
- B. Fibers Counted: "Fibers" referred to in this section will be as defined in NIOSH Method 7400, NIOSH 7402, or the AHERA Method.

1.4 SAMPLING

- A. Aggressive air samples will be collected based upon the individual circumstances under which the abatement was completed. The Consultant retained by the Owner will determine the type or sample to be collected. In the case of aggressive sampling, the technique is as follows:
 - 1. There are no standards available for flow rate of leaf blowers or large fans. However this information is not critical to the success of the procedure.
 - 2. Before sampling pumps are started the exhaust from forced air equipment (leaf blower with at least 1 horsepower electric motor) will be swept against the abated area and all surfaces.

1.5 SCHEDULE OF AIR SAMPLES

- A. General: The number and volume of air samples taken and analytical methods used by the owner will be in accordance with the following schedule. Sample volumes given may vary depending upon the analytical instruments used.

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SECTION 01916

REMOVAL OF ASBESTOS-CONTAINING MATERIALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division - 1 Specification sections, apply to work of this section.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Installation of Critical and Primary Barriers, and work area isolation procedures if used by the Contractor, are set forth in Section 01909.
- C. Project Decontamination procedures after removal of the secondary barrier is specified in Section 01914.
- D. Disposal of asbestos-containing waste is specified in Section 01917.

1.3 SUBMITTALS

- A. Before Start of Work: Submit the following to the Owner's Representative for review. Do not start work until these submittals are returned with Owner's Representative's action stamp indicating that the submittal is returned for unrestricted use.
- B. Surfactant: Submit product data, use instructions and recommendations from manufacturer of surfactant intended for use. Include data substantiating that material complies with requirements.
- C. Removal Encapsulant: Submit product data, use instructions and recommendations from manufacturer of removal encapsulant intended for use. Include data substantiating that material complies with requirements.
- D. Adhesive Removal Solvent: Submit product data, use instructions and recommendations from manufacturer of removal solvent intended for use. Include data substantiating that material complies with requirements. Solvents must have a flash point of at least 140° Fahrenheit.
- E. NESHAPS Certification: Submit certification from manufacturer of surfactant or removal encapsulant that, to the extent required by this specification, the material, if used in accordance with manufacturer's instructions, will wet asbestos containing materials to which it is applied as required by the National Emission Standard for Hazardous Pollutants (NESHAPS) Asbestos Regulations (40 CFR 61, Subpart M).

Section 01916
Removal of Asbestos Containing Materials

- F. Material Safety Data Sheet: Submit the Material Safety Data Sheet, or equivalent, in accordance with the OSHA Hazard Communication Standard (29CFR 1910.1200) for each surfactant, encapsulating material, or solvent proposed for use on the work. Include a separate attachment for each sheet indicating the specific worker protective equipment proposed for use with the material indicated.

PART 2 - PRODUCTS

- A. Wetting Materials: For wetting prior to disturbance of asbestos-containing materials uses either amended water or a removal encapsulant:
- B. Amended Water: Provide water to which a surfactant has been added. Use a mixture of surfactant and water which results in wetting of the asbestos containing material and retardation of fiber release during disturbance of the material equal to or greater than that provided by the use of one ounce of a surfactant consisting of 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with five gallons of water.
- C. Removal Encapsulant: Provide a penetrating type encapsulant designed specifically for removal of asbestos containing material. Use a material which results in wetting of the asbestos-containing material and retardation of fiber release during disturbance of the material equal to or greater than that provided by water amended with a surfactant consisting of 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with five gallons of water.
- D. Polyethylene Sheet: A single polyethylene film in the largest sheet size possible to minimize seams, 4.0 or 6.0 mils thick as indicated, clear, frosted, or black as indicated.
- E. Duct Tape: Provide duct tape in 2" or 3" widths as indicated, with an adhesive that is formulated to aggressively stick to sheet polyethylene.
- F. Spray Cement: Provide spray adhesive in aerosol cans that is specifically formulated to stick tenaciously to sheet polyethylene.
- G. Fiberboard Drums: Provide heavy duty leak tight fiberboard drums with tight sealing locking metal tops.
- H. Paper board Boxes: Provide heavy duty corrugated paperboard boxes coated with plastic or wax to retard deterioration from moisture. Provide in sizes that will easily fit in disposal bags.
- I. Felt: Standard felt approximately 1/16" thick and 36" to 72" in width.
- J. Disposal Bags: Provide true 6-mil thick leak-tight polyethylene bags labeled with the owners name, building name, project location, date and one of the two labels with text as follows:

1. First Label:

CAUTION
CONTAINS ASBESTOS FIBERS

AVOID OPENING OR BREAKING CONTAINER
BREATHING ASBESTOS IS HAZARDOUS TO YOUR HEALTH

2. Second Label: Provide in accordance with 29 CFR 1910.1200(f) of OSHA's Hazard Communication standard:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
BREATHING AIRBORNE ASBESTOS, TREMOLITE, ANTHOPHYLLITE, OR
ACTINOLITE FIBERS IS HAZARDOUS TO YOUR HEALTH

PART 3 - EXECUTION

3.1 SECONDARY BARRIER

- A. Secondary Barrier: Over the Primary Barrier, install as a drop cloth a clear 6-mil sheet plastic in all areas where asbestos removal work is to be carried out. Completely cover floor with sheet plastic. Where the work is within 10'-0" of a wall, extend the Secondary Barrier up wall to ceiling. Support sheet plastic on wall with duct tape, seal top of Secondary plastic to Primary Barrier with duct tape so that debris is unable to get behind it. Provide cross strips of duct tape at wall support as necessary to support sheet plastic and prevent its falling during removal operations.
- B. Install: Secondary Barrier at the beginning of each work shift. Install only sufficient plastic for work of that shift.
- C. Remove: Secondary Barrier at end of each work shift or as work in an area is completed. Fold plastic toward center of sheet and pack in disposal bags. Keep material on sheet continuously wet until bagged.

3.2 WORKER PROTECTION

- A. Before beginning work with any material for which a Material Safety Data Sheet has been submitted provide workers with the required protective equipment. Require that appropriate protective equipment be used at all times.

Section 01916
Removal of Asbestos Containing Materials
3.3 WET REMOVAL

- A. Thoroughly wet to satisfaction of Owner's Representative asbestos-containing materials to be removed prior to stripping and/or tooling to reduce fiber dispersal into the air. Accomplish wetting by a fine spray (mist) of amended water or removal encapsulant. Saturate material sufficiently to wet to the substrate without causing excess dripping. Allow time for water or removal encapsulant to penetrate material thoroughly. If amended water is used, spray material repeatedly during the work process to maintain a continuously wet condition. If a removal encapsulant is used, apply in strict accordance with manufacturer's written instructions. Perforate outer covering of any installation which has been painted and/or jacketed in order to allow penetration of amended water or removal encapsulant, or where necessary, carefully strip away while simultaneously spraying amended water or removal encapsulant on the installation to minimize dispersal of asbestos fibers into the air.
- B. Mist work area continuously with amended water whenever necessary to reduce airborne fiber levels.
- C. Removal of sheet vinyl flooring, floor tile and flooring mastics will be removed until the deck is exposed. Flooring mastic removal from the concrete deck will be achieved by using hand tools or a stripper machine in conjunction with amended water or removal solvents. In any power tools are used inside the containments, fire retardant poly must be used for the entire containment. Solvents must have a flash point of at least 140° Fahrenheit.
- D. The Contractor will remove all duct insulation with white mastic attached, leaving the duct intact. The duct mastic occurs at junctions between sections of duct insulation. The Contractor may cut and remove sections of duct with insulation and mastic attached or remove the mastic and insulation inside an abatement enclosure, leaving the metal clean.
- E. Remove saturated asbestos-containing material in small sections from all areas. Do not allow material to dry out. As it is removed, simultaneously pack material while still wet into disposal bags. Twist neck of bags, bend over and seal with minimum three wraps of duct tape. Clean outside and move to washdown station adjacent to equipment decontamination unit. Contractor shall perform all work in compliance to all applicable rules.

3.4 AIRBORNE FIBER COUNTS

- A. General: Use work procedures that result in an 8 hour Time Weighted Average (TWA) airborne fiber count less than that indicated in the section of these specifications on "Air Monitoring - Test Laboratory Services". If airborne fiber counts exceed this level, immediately mist the area with amended water to lower fiber counts and revise work procedures to maintain airborne fiber levels within the required limit.

Section 01916
Removal of Asbestos Containing Materials

-END OF SECTION-

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SECTION 01917

DISPOSAL OF ASBESTOS-CONTAINING WASTE MATERIAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions apply to work of this section.

1.2 DISPOSAL

- A. Friable asbestos-containing waste material and debris which is packaged in accordance with the provision of this Specification may be disposed of at designated sanitary landfills when certain precautions are taken.
- B. Notice to Appropriate Environmental Protection Agency regional office.
- C. Notice and Permit from Appropriate State and/or Local Agencies.
- D. See Section 01904 for Agency Locations and Codes.
- E. Dispose of non-friable asbestos containing material in accordance with applicable regulations.

1.3 SUBMITTALS

- A. Submit copies of all manifests and landfill receipts to Owner's Representative within 10 calendar days of project completion.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 GENERAL

- A. Carefully load containerized waste on sealed trucks or other appropriate vehicles for transport. Exercise care before and during transport, to insure that no unauthorized persons have access to the material.
- B. Do not store disposal-bagged material outside of the work area. Take bags from the work area directly to a sealed truck or dumpster. Label containers or bags with the name of the waste generator and the location at which the waste was generated.
- C. Do not transport disposal-bagged materials on open trucks. Double-bagged material may

Section 01917

Disposal of Asbestos Containing Materials

be transported on open trucks if they are first loaded in sealed drums. Label drums with same warning labels as bags. Uncontaminated drums may be reused. Treat drums that have been contaminated as asbestos-containing waste and dispose of in accordance with this specification.

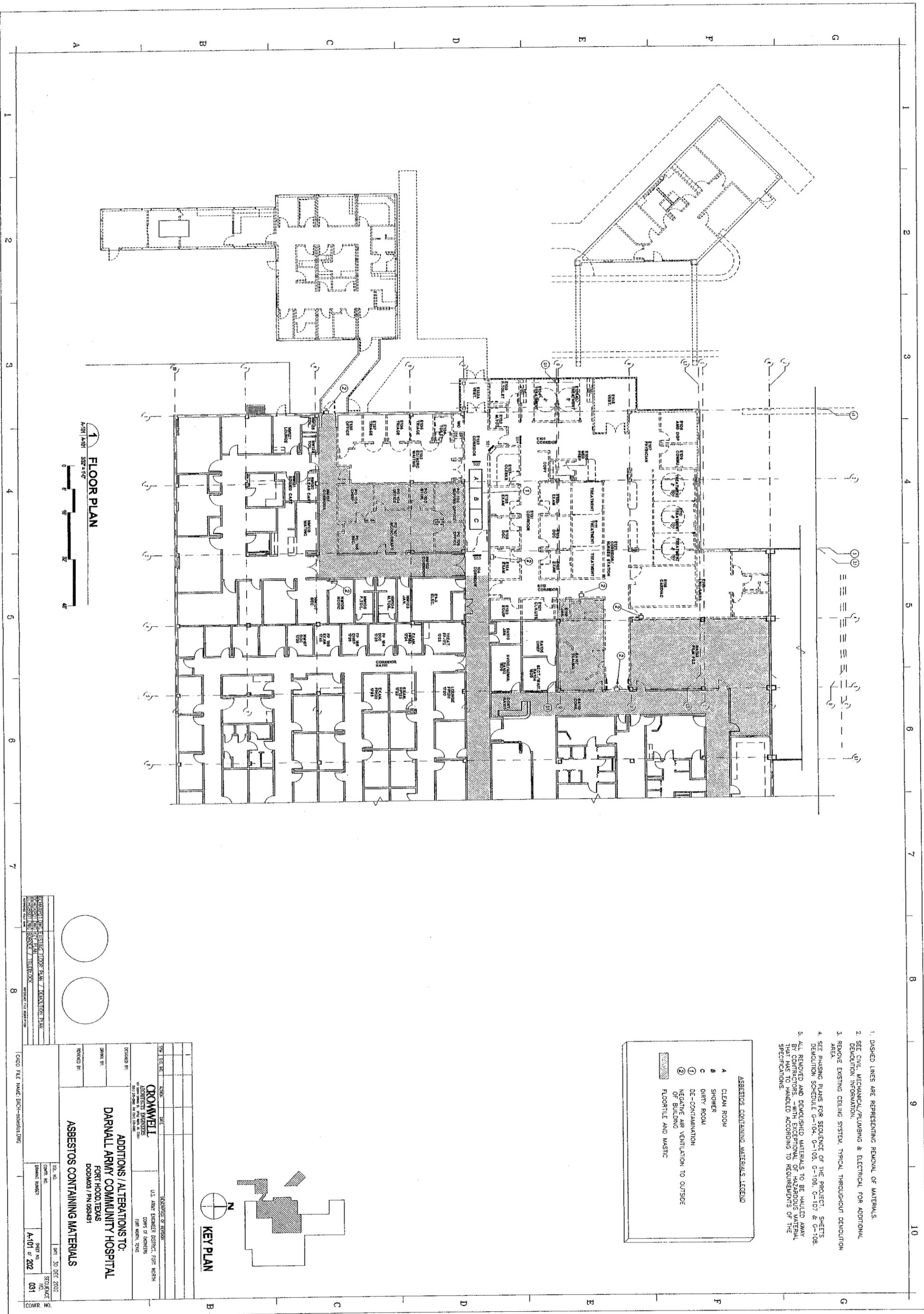
- D. Advise the sanitary landfill operator, at least twenty-four hours in advance of transport, of the quantity of material to be delivered.
- E. At the burial site, sealed plastic bags may be carefully removed from the truck. If bags are broken or damaged in transit, leave in the truck and clean entire truck and contents.
- F. Retain receipts from landfill for materials disposed of.
- G. The Owner until all the properly executed manifests have been submitted to the Owner's Representative may withhold final payment.

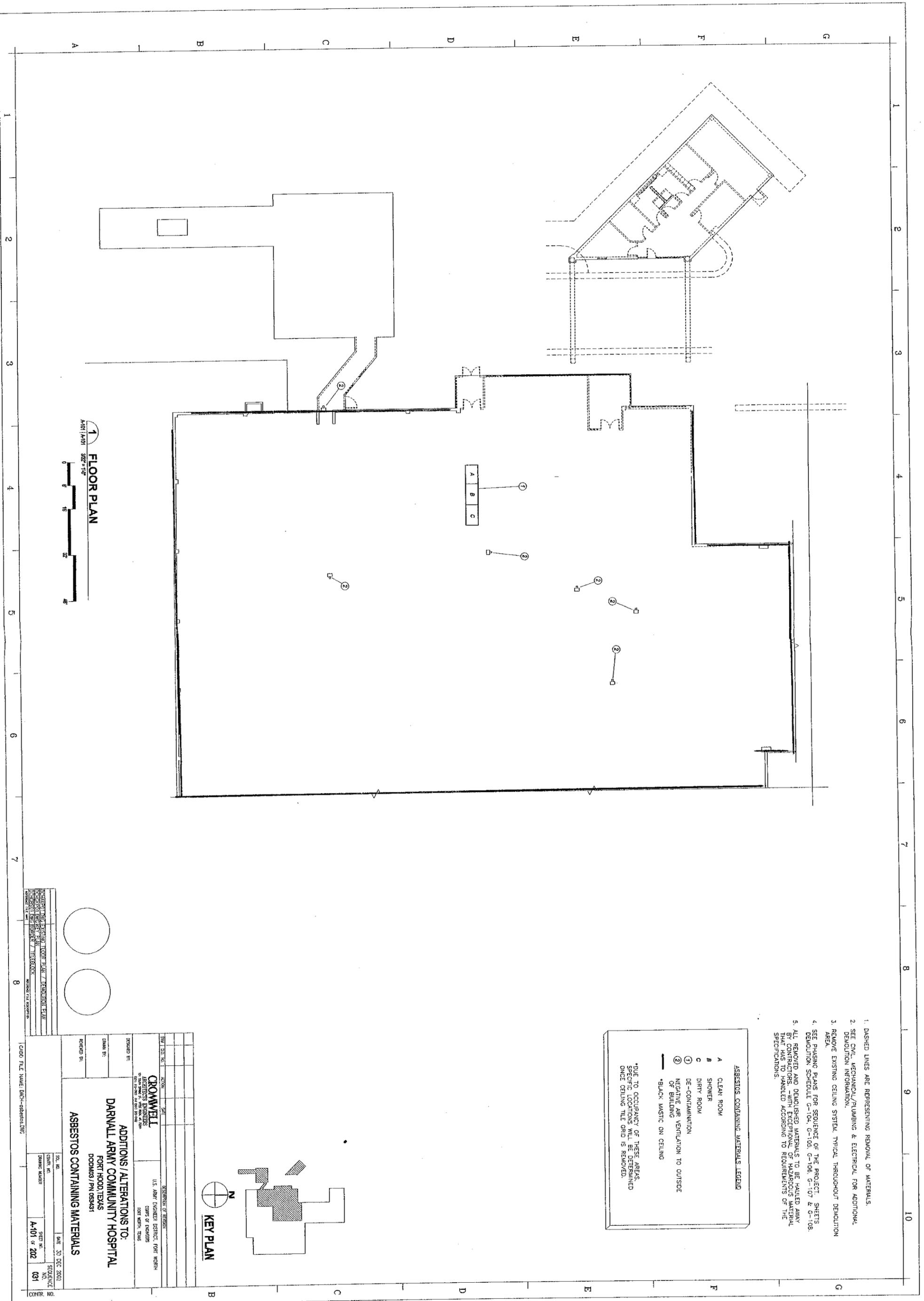
-END OF SECTION-

Section 01917
Disposal of Asbestos Containing Materials

DIVISION 1- DRAWINGS

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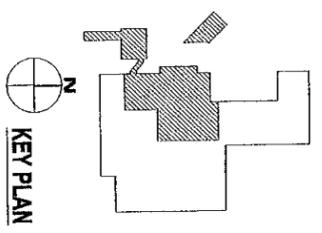


1. DASHED LINES ARE REPRESENTING REMOVAL OF MATERIALS.
2. SEE CIVIL, MECHANICAL/PLUMBING & ELECTRICAL FOR ADDITIONAL DEMOLITION INFORMATION.
3. REMOVE EXISTING CEILING SYSTEM, TYPICAL THROUGHOUT DEMOLITION AREA.
4. SEE PHASING PLANS FOR SEQUENCE OF THE PROJECT. SHEETS, DEMOLITION SCHEDULE G-104, G-105, G-106, G-107 & G-108.
5. ALL REMOVED AND DEMOLISHED MATERIALS TO BE HAULED AWAY BY CONTRACTORS, WITH LEADERSHIP OF HAZARDOUS MATERIAL SPECIALISTS, HANDLED ACCORDING TO REQUIREMENTS OF THE SPECIFICATIONS.

ASBESTOS CONTAINING MATERIALS LEGEND

A	CLEAN ROOM
B	SHOWER
C	DIRTY ROOM
①	DE-CONTAMINATION
②	NEGATIVE AIR VENTILATION TO OUTSIDE OF BUILDING
—	BLACK MASTIC ON CEILING

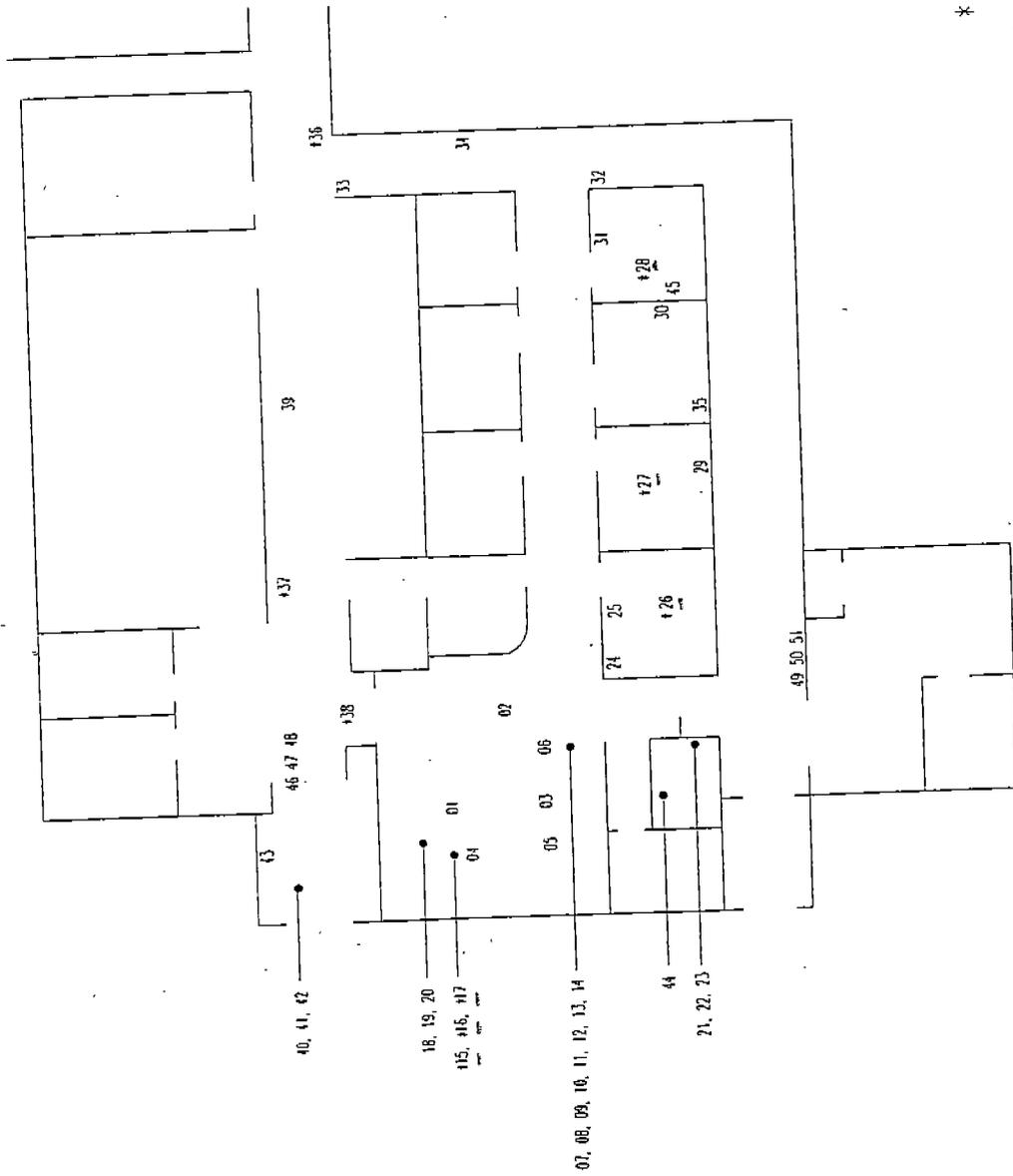
*DUE TO OCCUPANCY OF THESE AREAS, SPECIFIC LOCATIONS WILL BE DETERMINED ONCE CEILING TILE GRID IS REMOVED.



1 FLOOR PLAN
 1/4" = 1'-0"
 0 8 16 32 48'

PROJECT TITLE: ASBESTOS CONTAINING MATERIALS DARNALL ARMY COMMUNITY HOSPITAL FORT HOOD, TEXAS DD FORM 131 / PN 058431	
DESIGNED BY: CROWWELL ASBESTOS ENGINEERS 2010 S. W. 10TH ST., SUITE 100, FT. WORTH, TEXAS 76104 (817) 733-1111	DESCRIPTION OF REGION: U.S. ARMY ENGINEER DISTRICT, FORT WORTH OFFICE OF ENGINEERS FORT WORTH, TEXAS
DATE: 30 DEC 2002 SEQUENCE NO.: 031 SHEET NO.: A-101 OF 202	REVISIONS: NO. 1: 30 DEC 2002 NO. 2:

Sample Locations For Asbestos

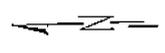


APEX TECHNICAL SERVICES INC.

DRAWN BY M.F.

NOT TO SCALE

Darnall Army Community Hospital
Emergency Room
Ft. Hood, Texas



RESERVOIRS ENVIRONMENTAL SERVICES, INC.
 NVLAP Accredited Laboratory #1896 TDH 30-0136

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES 71233-1
 Apex Technical Services, Inc.
 Darnell Army Hospital Emergency Room
 July 25, 2000
 PLM Short Report, Bulk
 24 Hour

Client Sample Number	Lab ID Number	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT		Non-Fibrous Components (%)
				BY LAYER Mineral	Visual Estimate (%)	
HD072000ER-21	EM 497979	A Brown fibrous material	5	ND	90	10
		B Yellow resin	5	ND	0	100
		C White ceramic tile	90	ND	0	100
HD072000ER-22	EM 497980	A Yellow resin	99	ND	0	10
		B White ceramic tile	5	ND	90	100
		A Brown fibrous material	5	ND	0	100
HD072000ER-23	EM 497981	A Brown fibrous material	90	ND	0	100
		B Yellow resin	30	ND	30	70
		C White ceramic tile	70	ND	0	100
HD072000ER-24	EM 497982	A White mud	100	ND	0	100
		B Pink drywall				
HD072000ER-25	EM 497983	A White mud				
		B White tile				
HD072000ER-26	EM 497984	A Black tar	10	Chrysotile	10	90
		B Brown/white tile	90	Chrysotile	4	96
HD072000ER-27	EM 497985	A Black tar	3	Chrysotile	15	85
		B Brown/white tile	97	Chrysotile	4	96
HD072000ER-28	EM 497986	A Black tar	3	Chrysotile	15	85
		B Brown/white tile	97	Chrysotile	5	95

ND = None Detected
 TR = Trace, < 1% Visual Estimate

Trem-Act = Tremolite-Actinolite
 Point Count Trace = Observed but not countable under protocol, < 0.25%

Data QA

TABLE 1. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 711233-1
 Client: Apex Technical Services, Inc.
 Client Project: Darnell Army Hospital Emergency Room
 Date Samples Received: July 25, 2000
 Analysis Type: PLM Short Report, Bulk
 Turnaround: 24 Hour

Client Sample Number	Lab ID Number	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT		Non-Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
				BY LAYER	Visual Estimate (%)		
HD072000ER-12	EM 497970	A Gray resin w/silver foil	100		ND	0	100
		A Silver wrap	10		ND	15	85
		B White fibrous woven material	20		ND	90	10
		C White resin	20		ND	20	80
HD072000ER-13	EM 497971	D Yellow fibrous material	50		ND	95	5
		A Silver wrap	15		ND	15	85
		B White fibrous woven material	15		ND	90	10
		C White resin	25		ND	15	85
HD072000ER-14	EM 497972	D Yellow fibrous material	45		ND	90	10
		A Silver wrap	15		ND	15	85
		B White fibrous woven material	15		ND	90	10
		C White resin	25		ND	15	85
HD072000ER-15	EM 497973	A Black tar	100	Chrysotile	15	0	85
		A Black tar	100	Chrysotile	15	0	85
HD072000ER-16	EM 497974	A Black tar	100	Chrysotile	15	0	85
		A Black tar	100	Chrysotile	20	0	80
HD072000ER-17	EM 497975	A Black tar	100	Chrysotile	20	0	80
		A Black tar	100	Chrysotile	20	0	80
HD072000ER-18	EM 497976	A White mud	50		ND	10	90
		B Pink drywall	50		ND	15	85
HD072000ER-19	EM 497977	A White mud	100		ND	0	100
		A White mud	100		ND	0	100
HD072000ER-20	EM 497978	A White mud	100		ND	0	100

ND = None Detected
 TR = Trace, < 1% Visual Estimate

Term-Act = Tremolite-Actinolite
 Point Count Trace = Observed but not countable under protocol, < 0.25%

SM
 Data QA

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Department of the Army
Fort Worth District, Corps of Engineers



FY03 DARNALL HOSPITAL
ADDITION/ALTERATION
FORT HOOD, TEXAS



NO. DACA 63-00-D-0001

ASBESTOS AND LEAD-BASED PAINT SURVEY

February 28, 2003

101 So. Spring Street ■ Little Rock, Arkansas

CROMWELL
ARCHITECTS ENGINEERS

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Material Sample Log Locations

Asbestos

APPENDIX A.....Material Sample Log

APPENDIX B.....CADD

APPENDIX C.....Pictures

LEAD-BASED PAINT

APPENDIX D.....Material Sample Log

APPENDIX E.....Drawing Locations

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ASBESTOS

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APPENDIX A

Material Sample Log

Chain of Custody

ASBESTOS MATERIAL SAMPLING LOG

SAMPLED BY: Norberto Ochotorena / Bill Bishop

PROJECT NO.: ASF00-245-00

LICENSE NO. 60-0794 / 10-5401

CLIENT: Cromwell Architects

DATE	SAMPLE NO.	SAMPLE LOCATION	MATERIAL SAMPLED	CATEGORY	CONDITION	RESULTS
6-19-01	DH-01	E104 A – SW Corner	Fire Proofing – gray fibrous	Non-friable	ND	Negative
6-19-01	DH-02	E104 A – SW Corner	Sheetrock/joint compound – white chalky paper backing	Non-friable	ND	Negative
6-19-01	DH-03	E104 A – SW Corner	2'x2' drop ceiling – gray fibrous random fissures and holes with white paint	Friable	ND	Negative
6-19-01	DH-04	E104 A – SW Corner	Domestic cold water – yellow fiberglass white paper/foil wrap with white mastic	Friable	ND	Negative
6-19-01	DH-05	E104 A – SW Corner	White joint compound – wall penetration	Non-friable	ND	Negative
6-19-01	DH-06	E104 A – SW Corner	HVAC – yellow fiberglass foil wrap and white mastic	Non-friable	ND	Negative
6-19-01	DH-07	Building entry next to waiting room and emergency room	Sheetrock/joint compound – white chalky paper backing	Non-friable	ND	Negative
6-19-01	DH-08	Building entry next to waiting room and emergency room	Fire barrier caulk – red hard	Non-friable	ND	Negative
6-19-01	DH-09	Building entry next to waiting room and emergency room	2'x2' drop ceiling – gray fibrous random fissures and holes with white paint	Friable	ND	Negative
6-19-01	DH-10	Building entry next to waiting room and emergency room	White joint compound – wall penetration	Non-friable	ND	Negative
6-19-01	DH-11	Building entry next to waiting room and emergency room	Fire barrier caulk – red hard	Non-friable	ND	Negative
6-19-01	DH-12	Trauma Room – center room	HVAC – yellow fiberglass foil wrap and white mastic	Non-friable	ND	Negative
6-19-01	DH-13	Trauma Room – center room on concrete and ceiling hangers	Black Mastic	Non-friable	ND	Negative
6-19-01	DH-14	Trauma Room – North wall	Grout – white hard	Non-friable	ND	Negative
6-19-01	DH-15	Trauma Room – North wall	Grout – white hard	Non-friable	ND	Negative
6-19-01	DH-16	Trauma Room – North wall	Sheetrock/joint compound – white chalky paper backing	Friable	ND	Negative
6-19-01	DH-17	Trauma Room – North wall	Sink under coating – white	Friable	ND	Negative

Project No. ASF00-245-00

DATE	SAMPLE NO.	SAMPLE LOCATION	MATERIAL SAMPLED	CATEGORY	CONDITION	RESULTS
6-19-01	DH-18	Head nurse office	2'x2' drop ceiling – gray fibrous random fissures and holes with white paint	Friable	ND	Negative
6-19-01	DH-19	Head nurse office – on concrete ceiling and hangers	Black mastic	Non-friable	ND	Negative
6-19-01	DH-20	Head nurse office	Fire barrier caulk – red hard	Non-friable	ND	Negative
6-19-01	DH-21	Head nurse office	HVAC – yellow fiberglass foil wrap and white mastic	Non-friable	ND	Negative
6-19-01	DH-22	Restroom across from head nurse	Sink under coating – white	Non-friable	ND	Negative
6-19-01	DH-23	Restroom across from head nurse	Grout – white hard	Non-friable	ND	Negative
6-19-01	DH-24	Emergency room	Sink under coating – white	Non-friable	ND	Negative
6-19-01	DH-25	Emergency room	Black mastic	Non-friable	ND	Negative
6-19-01	DH-26	EMS room door entry	White caulking for wall penetrations	Non-friable	ND	Negative
6-19-01	DH-27	E104 - above ceiling on I beam	Fire Proofing – gray fibrous	Friable	ND	Negative
6-19-01	DH-28	E104 - above ceiling on I beam	Fire Proofing – gray fibrous	Friable	ND	Negative
6-19-01	DH-29	Exterior south side by drive thru to emergency room	Exterior plaster - light brown sandy rough texture	Non-friable	ND	Negative
6-19-01	DH-30	Exterior south side by drive thru to emergency room	Exterior plaster - light brown sandy rough texture	Non-friable	ND	Negative
6-19-01	DH-31	Exterior south side by drive thru to emergency room above door entry	Concrete – light brown sandy hard	Non-friable	ND	Negative
6-19-01	DH-32	Exterior south side by drive thru to emergency room	Drain pipe insulation – yellow fiberglass paper/foil wrap	Non-friable	ND	Negative
6-19-01	DH-33	Exterior south side by drive thru to emergency room	Exterior plaster - light brown sandy rough texture	Non-friable	ND	Negative
6-19-01	DH-34	Exterior south side by drive thru to emergency room	Exterior plaster - light brown sandy rough texture	Non-friable	ND	Negative
6-19-01	DH-35	Exterior south side by drive thru to emergency room	Exterior plaster - light brown sandy rough texture	Non-friable	ND	Negative
6-19-01	DH-36	Exterior south side by drive thru to emergency room	Caulking – soft light brown with gray paint	Non-friable	ND	Negative
6-19-01	DH-37	Exterior south side by drive thru to emergency room	Caulking – soft light brown with gray paint	Non-friable	ND	Negative
6-19-01	DH-38	Exterior south side by drive thru to emergency room	Caulking – soft light brown with gray paint	Non-friable	ND	Negative
6-19-01	DH-39	Exterior south side by drive thru to emergency room next to SE window	Putty – gray soft	Non-friable	ND	Negative

Project No. ASF00-245-00

DATE	SAMPLE NO.	SAMPLE LOCATION	MATERIAL SAMPLED	CATEGORY	CONDITION	RESULTS
6-19-01	DH-40	Exterior south side by drive thru to emergency room next to SW window	Putty - gray soft	Non-friable	ND	Negative
6-19-01	DH-41	Exterior south side by drive thru to emergency room next to South window	Putty - gray soft	Non-friable	ND	Negative
6-19-01	DH-42	Boiler room - next to crawlspace	Hot water pipe insulation - yellow fiberglass white paper/foil wrap with white mastic	Friable	ND	Negative
6-19-01	DH-43	Boiler room - NW area	Hot water pipe insulation - yellow fiberglass white paper/foil wrap with white mastic	Friable	ND	Negative
6-19-01	DH-44	Boiler room - central area	Hot water pipe insulation - yellow fiberglass white paper/foil wrap with white mastic	Friable	ND	Negative
6-19-01	DH-45	Boiler room - next to crawlspace	Chilled water pipe insulation - yellow fiberglass white paper/foil wrap with white mastic	Friable	ND	Negative
6-19-01	DH-46	Boiler room - NW area	Chilled water pipe insulation - yellow fiberglass white paper/foil wrap with white mastic	Friable	ND	Negative
6-19-01	DH-47	Boiler room - central area	Chilled water pipe insulation - yellow fiberglass white paper/foil wrap with white mastic	Friable	ND	Negative
6-19-01	DH-48	Boiler room - central area south end	Hot water tank insulation - yellow fiberglass white paper/foil wrap with white mastic	Friable	ND	Negative
6-19-01	DH-49	Boiler room - central area north side	Hot water tank insulation - yellow fiberglass white paper/foil wrap with white mastic	Friable	ND	Negative

Project No. ASF00-245-00

DATE	SAMPLE NO.	SAMPLE LOCATION	MATERIAL SAMPLED	CATEGORY	CONDITION	RESULTS
6-19-01	DH-50	Boiler room – central area northeast end	Hot water tank insulation - yellow fiberglass white paper/foil wrap with white mastic	Friable	ND	Negative
6-19-01	DH-51	Boiler room – next to crawl space	Steam/condensate pipe insulation - yellow fiberglass white paper/foil wrap with white mastic	Friable	ND	Negative
6-19-01	DH-52	Boiler room – central area	Steam/condensate pipe insulation - yellow fiberglass white paper/foil wrap with white mastic	Friable	ND	Negative
6-19-01	DH-53	Boiler room – NW area	Steam/condensate pipe insulation - yellow fiberglass white paper/foil wrap with white mastic	Friable	ND	Negative
6-19-01	DH-54	Boiler room – next to crawlspace	Soft water pipe insulation - yellow fiberglass white paper/foil wrap with white mastic	Friable	ND	Negative
6-19-01	DH-55	Boiler room – central area	Soft water pipe insulation - yellow fiberglass white paper/foil wrap with white mastic	Friable	ND	Negative
6-19-01	DH-56	Boiler room – NW area	Soft water pipe insulation - yellow fiberglass white paper/foil wrap with white mastic	Friable	ND	Negative
6-19-01	DH-57	Boiler room – next to crawlspace	CMU wall and texture – gray sandy with white paint	Non-friable	ND	Negative
6-19-01	DH-58	Boiler room – central area	CMU wall and texture – gray sandy with white paint	Non-friable	ND	Negative
6-19-01	DH-59	Boiler room – NW area	CMU wall and texture – gray sandy with white paint	Non-friable	ND	Negative

CATEGORY: S-Surface Sprayed-on or Troweled-on, T-Thermal, M-Miscellaneous (floor tile, ceiling tile, mastic, etc.)

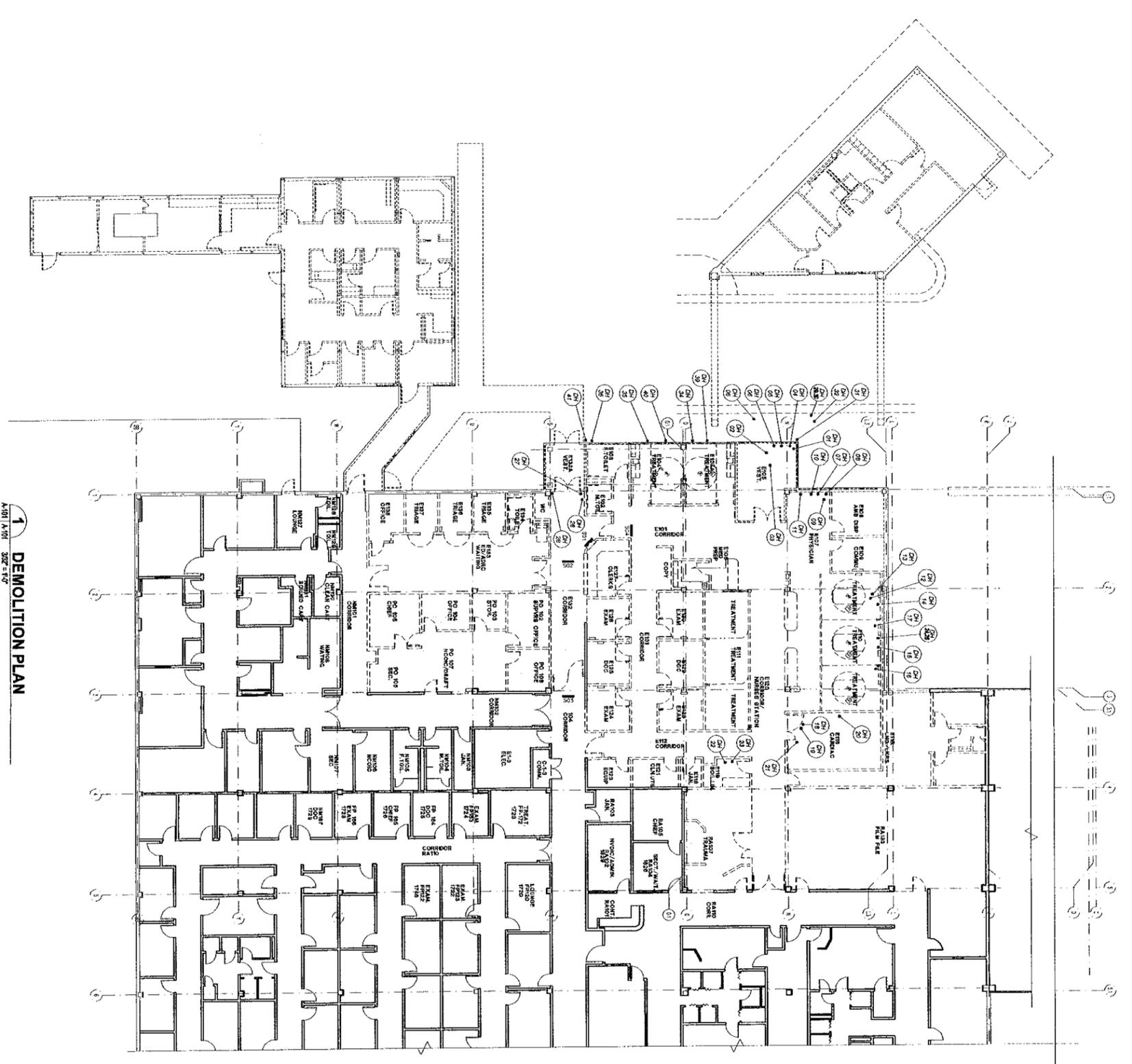
CONDITION: ND-No Damage, MD-Minor Damage (small dents, tears), D-Damage (less than 3 sq. ft. of total area), SD-Significant Damage (greater than 3 sq. ft. of total area or heavy damage in local area)

APPENDIX B

Material Sample Log Locations

CADD

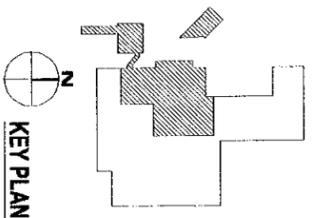
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1 DEMOLITION PLAN
 1/8" = 1'-0"
 1/4" = 1'-0"
 1/2" = 1'-0"
 3/4" = 1'-0"
 1" = 1'-0"

1. DEMOLISH EXIST. BRICK AND STUD WALL BLDG. CONC. SLAB, FOUNDATION AND FOOTING.
2. REMOVE EXIST. CANOPY - STL. BEAMS, JOISTS, BRACING, COLUMNS, FOOTING AND FOUNDATION.
3. REMOVE CONCRETE CURB AND OUTER PAVEMENT AND WALKS. SEE CIVIL DEMOLITION PLAN.
4. REMOVE STEEL FRAME AND ROOF CANOPY / COVERED WALL SYSTEM.
5. REMOVE STUD WALL, STEEL FRAME, CONC. FOUNDATION AND FOOTING SYSTEM.
6. REMOVE STUD WALL, EPS. SLAB ON GRADE, FOOTING AND FOUNDATION AT CONNECTING STRUCTURE.
7. REMOVE EXTERIOR WALLS, TYPICAL, SHOWN AS DASHED.
8. REMOVE EXTERIOR EXTERIOR FACE BRICK TO FOOTING AND REMOVE STUD WALL BACKING AND GYP. BD. AND SHEATHING.
9. REMOVE ALUMINUM STOREFRONT SYSTEM.
10. REMOVE ALUMINUM CLOSET/STOR. WINDOW SYSTEM.
11. REMOVE FREE-STANDING MASONRY SCREEN WALL AND RELATED FOUNDATION AND FOOTING SYSTEM. SEE CIVIL DEMOLITION DRAWINGS FOR EXIST.
12. VERIFY RATING ON EXISTING DOOR. DOOR TO REMAIN IF 1-1/2 HOUR. REPLACE DOOR IF RATING IS LESS THAN 1-1/2 HOUR.
13. REMOVE EXIST. DOORS AND FRAMES TYP. OF DASHED DOORS.
14. REMOVE MILLWORK.
15. REMOVE EXIST. EQUIPMENT AND STORE IN HOSPITAL STORAGE FACILITY AS DIRECTED BY CONTRACTING OFFICER.
16. REMOVE PLUMBING FIXTURES AND CAP BELOW OR BEHIND THE SURFACE. -COORDINATE WITH MEDICAL HAZARDOUS WASTE -SEE PLUMBING DEMOLITION PLAN.
17. REMOVE WALL AS REQ'D. TO INSTALL NEW DOOR AND FRAME SYSTEM. REMOVE TO REINSTATE EACH OF NEW WELDED FRAME.
18. REMOVE EXIST. FIRE EXTINGUISHER CABINET.
19. COLUMN TO REMAIN.
20. REMOVE EXISTING WALLS, COLUMNS, CONC. SLAB FOUNDATION, FOOTING, STL. BEAMS AND JOISTS THIS AREA. [Hatched pattern]
21. REMOVE EXIST. GYP. BD. ON NEW CONSTRUCTION SIDE OF WALL. REMOVE REINFORCED CONCRETE NEW DOORS AND OTHER OPENINGS.
22. REMOVE CONSTRUCTION FENCING.
23. REMOVE CONCRETE WALK.
24. REMOVE VOT WITH ASBESTOS CONTAINING GLUE IN SHADED AREA. [Shaded area]
25. REMOVE EXIST. REINF. CONC. AREAWAY WALLS AND STEEL GRATE. KEEP ACCESS TO EXIST. CRAWL SPACE.
26. REMOVE ASBESTOS CONTAINING CEILING HANGER WIRE IN THE SHADED AREA. [Shaded area]

1. DASHED LINES ARE REPRESENTING REMOVAL OF MATERIALS.
2. SEE CIVIL, MECHANICAL/PLUMBING & ELECTRICAL FOR ADDITIONAL DEMOLITION INFORMATION.
3. REMOVE EXISTING CEILING SYSTEM, TYPICAL THROUGHOUT DEMOLITION AREA.
4. SEE PHASING PLANS FOR SEQUENCE OF THE PROJECT. SHEETS DEMOLITION SCHEDULE 0-104, 0-105, 0-106, 0-107 & 0-108.
5. ALL REMOVED AND DEMOLISHED MATERIALS TO BE HAULED AWAY BY CONTRACTORS, -WITH EXCEPTIONAL OF HAZARDOUS MATERIAL THAT HAS TO HANDLED ACCORDING TO REQUIREMENTS OF THE SPECIFICATIONS.



CONTRACT NO.	0341101206
DATE	30 DEC 2002
SEQUENCE NO.	031
SHEET NO.	A-101 of 202
PROJECT NAME	ADDITIONS / ALTERATIONS TO: DARVALL ARMY COMMUNITY HOSPITAL FORT HOOD TEXAS DDDM03 / PN 053451
DESIGNED BY	U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CHECKED BY	10TH WARR. ENGRS
APPROVED BY	COMWELL
DESIGNATION OF DESIGNS	ADDITIONS / ALTERATIONS TO: DARVALL ARMY COMMUNITY HOSPITAL FORT HOOD TEXAS DDDM03 / PN 053451
CONTRACTOR	COMWELL
ENGINEER	COMWELL
ARCHITECT	COMWELL
MECHANICAL	COMWELL
ELECTRICAL	COMWELL
PLUMBING	COMWELL
CIVIL	COMWELL
LANDSCAPE	COMWELL
HAZARDOUS WASTE	COMWELL
ASBESTOS	COMWELL
ENVIRONMENTAL	COMWELL
ARCHITECTURAL	COMWELL
INTERIOR	COMWELL
EXTERIOR	COMWELL
MECHANICAL	COMWELL
ELECTRICAL	COMWELL
PLUMBING	COMWELL
CIVIL	COMWELL
LANDSCAPE	COMWELL
HAZARDOUS WASTE	COMWELL
ASBESTOS	COMWELL
ENVIRONMENTAL	COMWELL
ARCHITECTURAL	COMWELL
INTERIOR	COMWELL
EXTERIOR	COMWELL

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APPENDIX C

Material Sample Log Locations

Pictures

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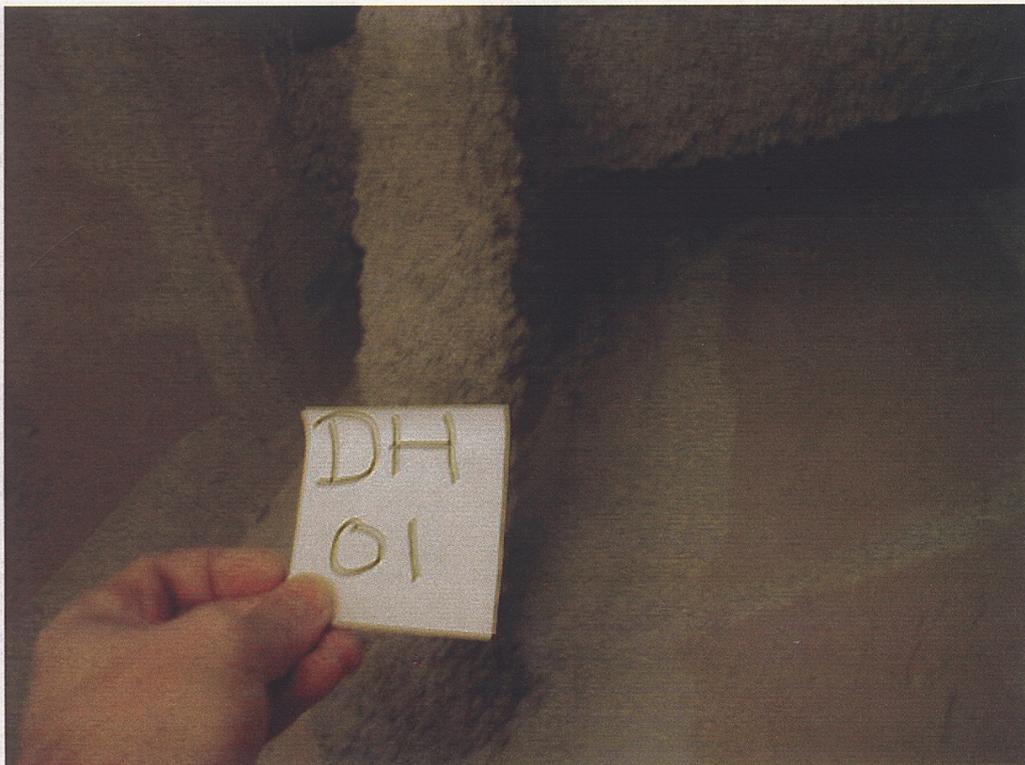


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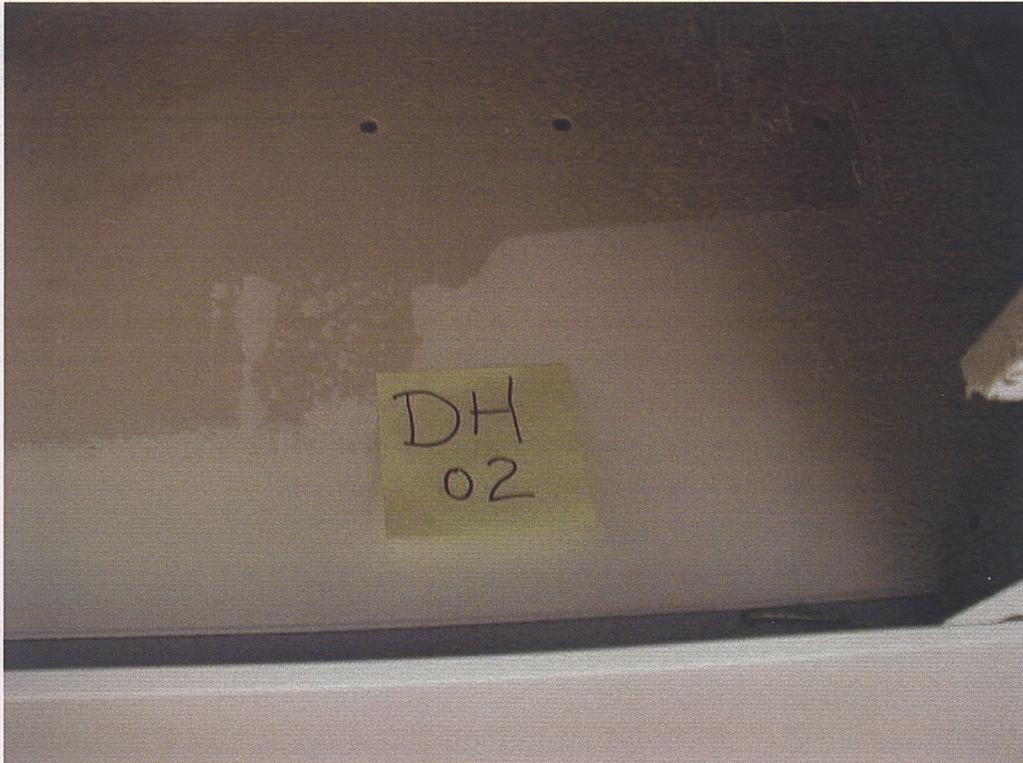


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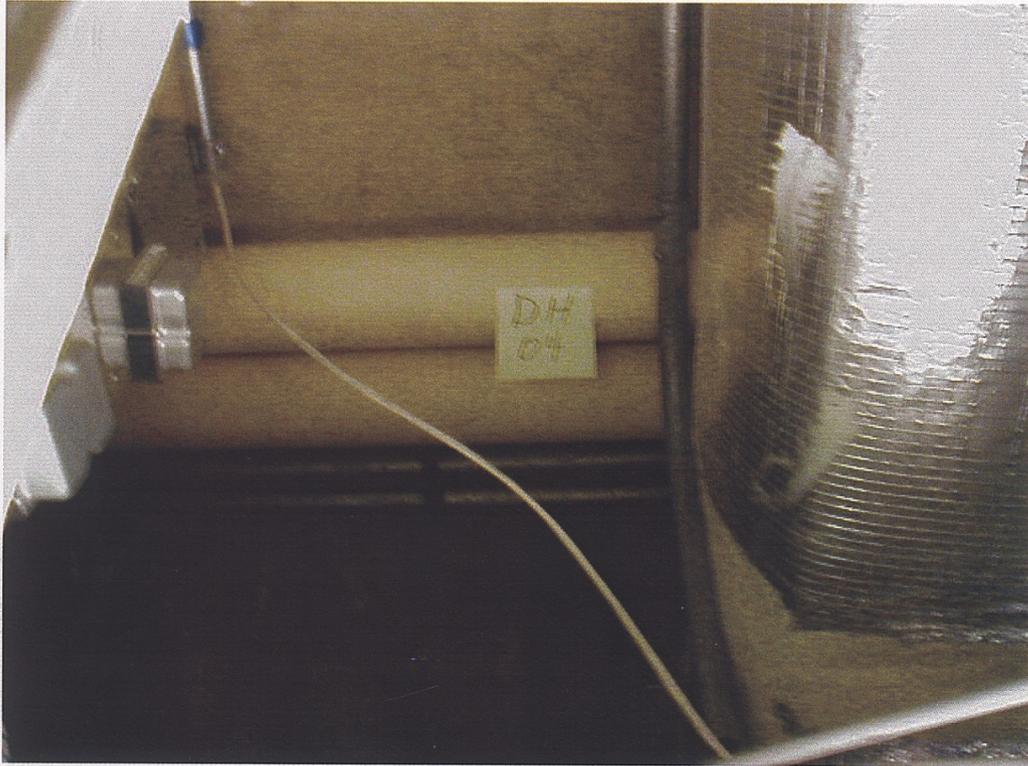


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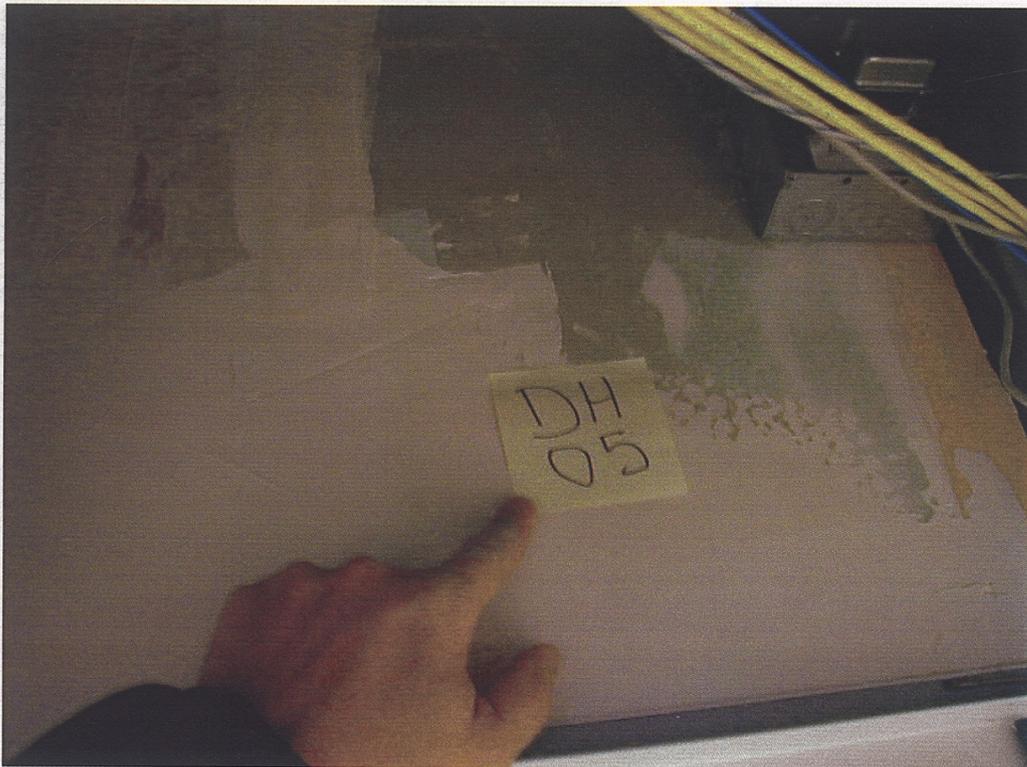


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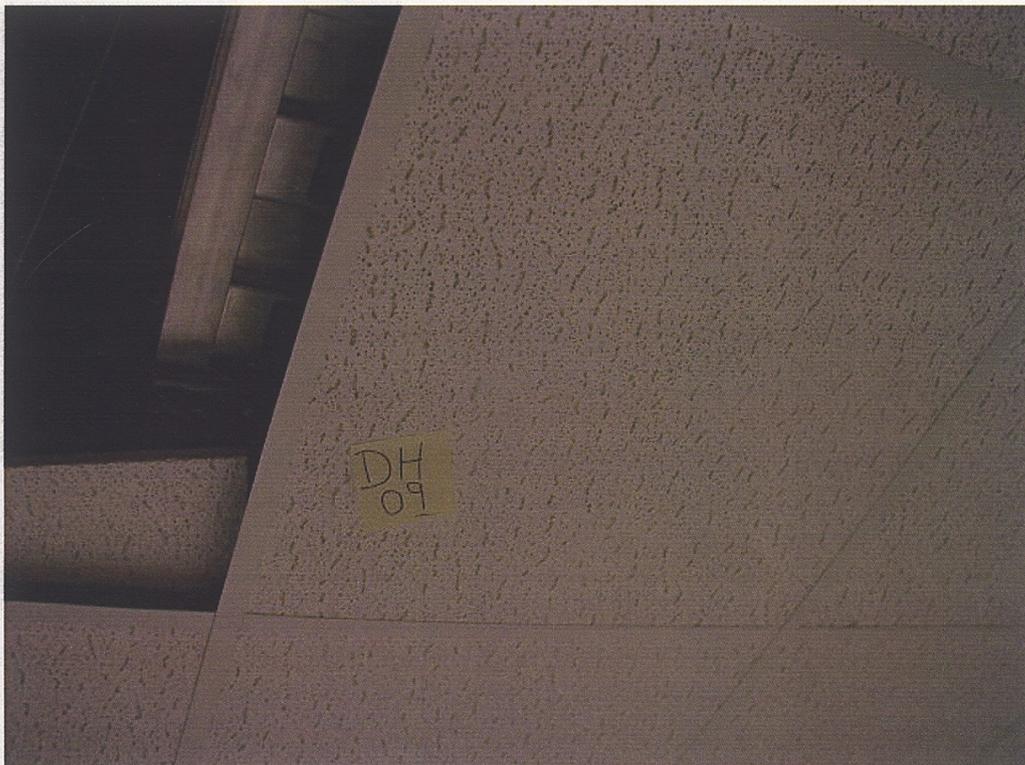


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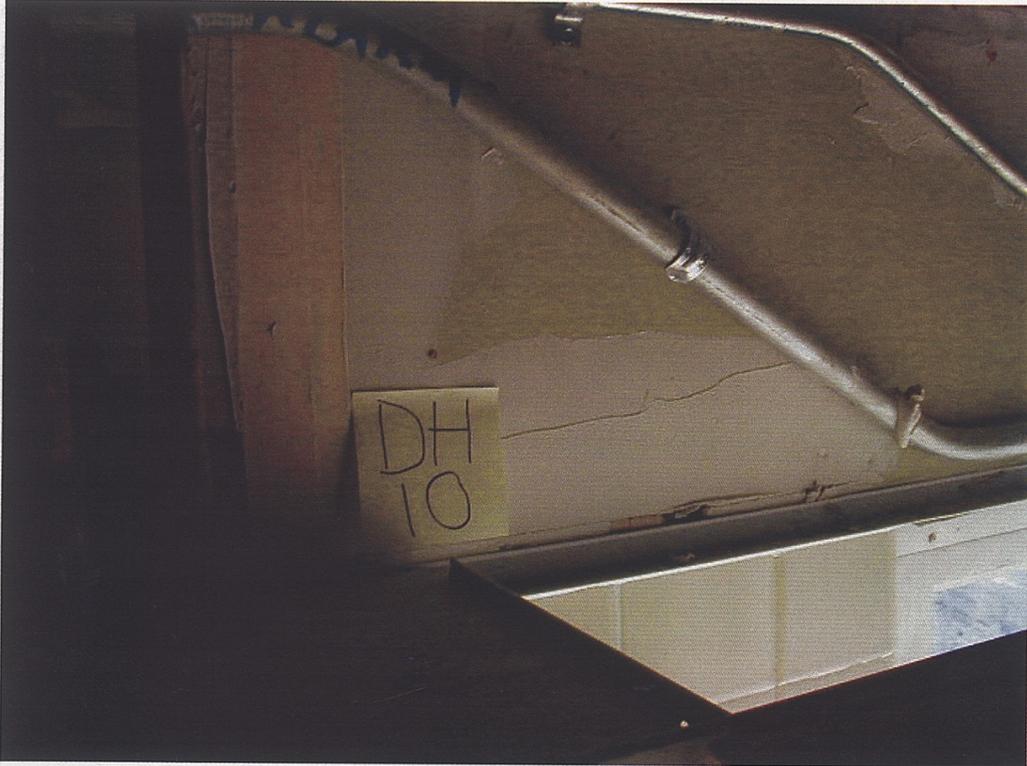


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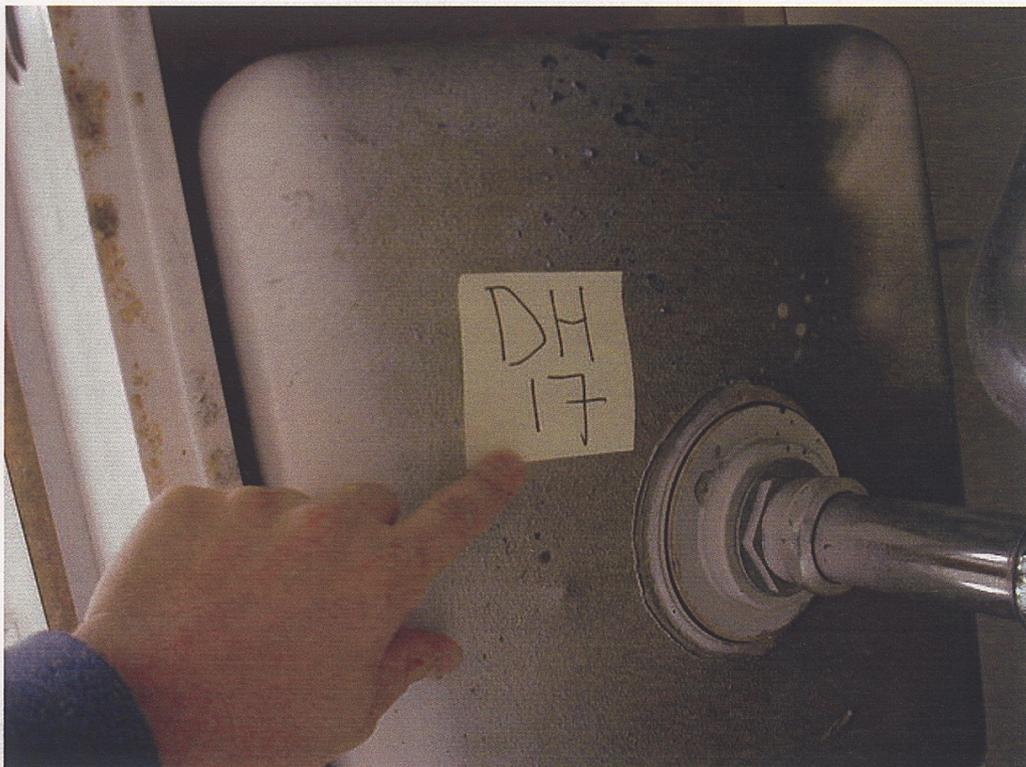


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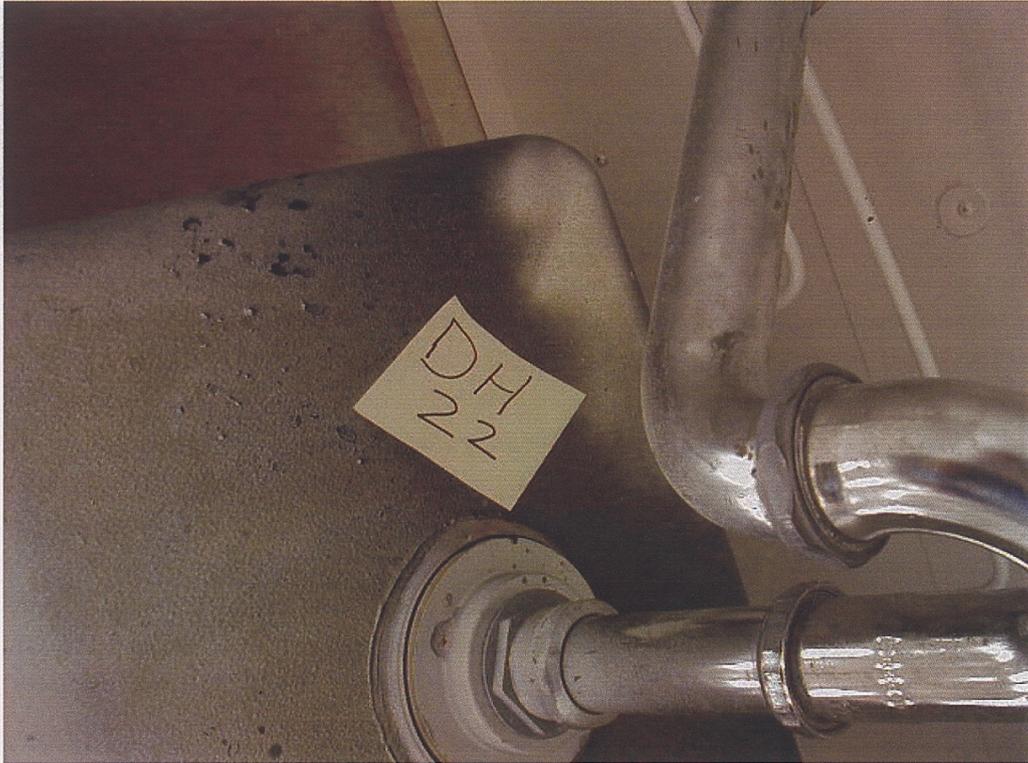


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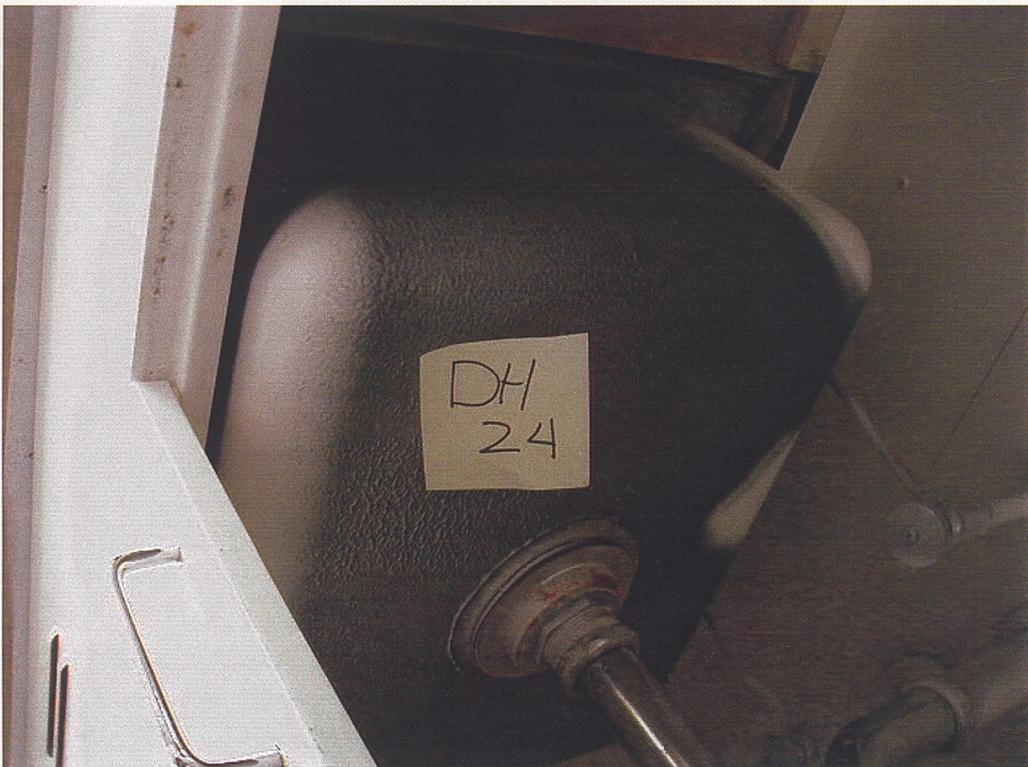


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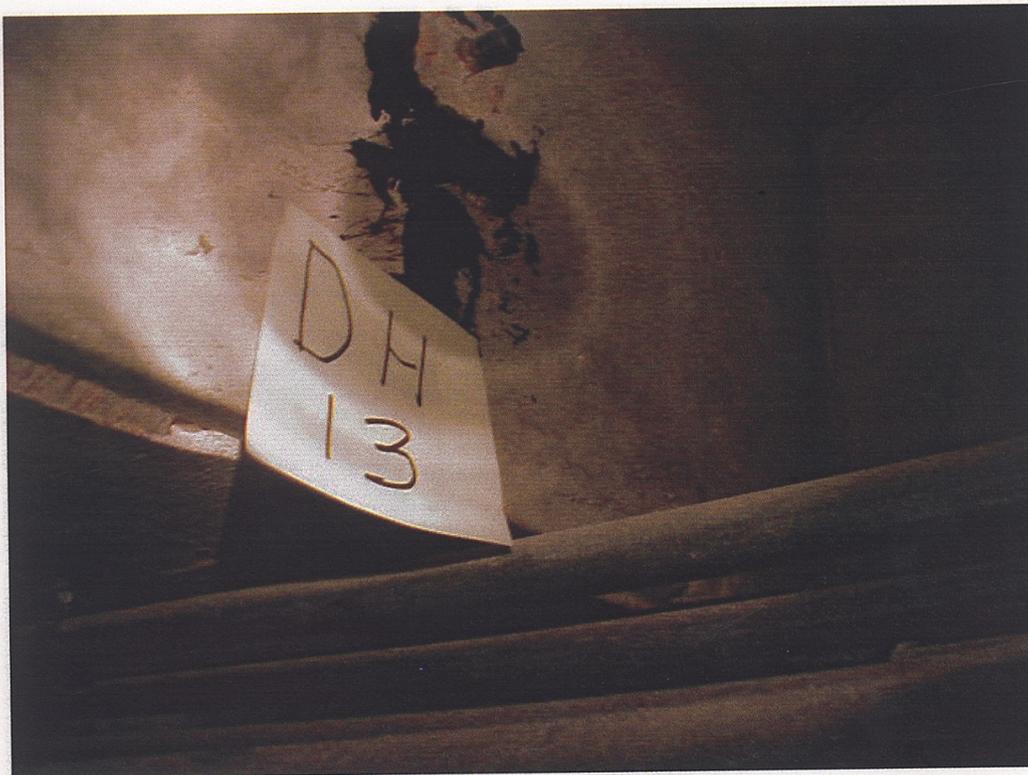


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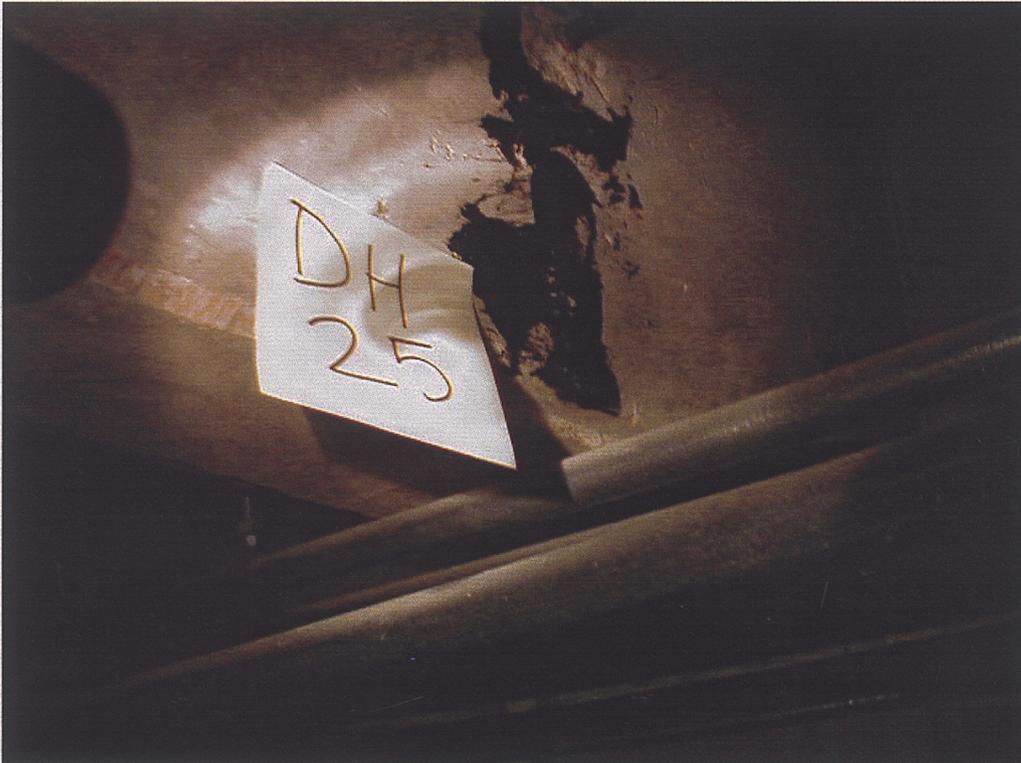


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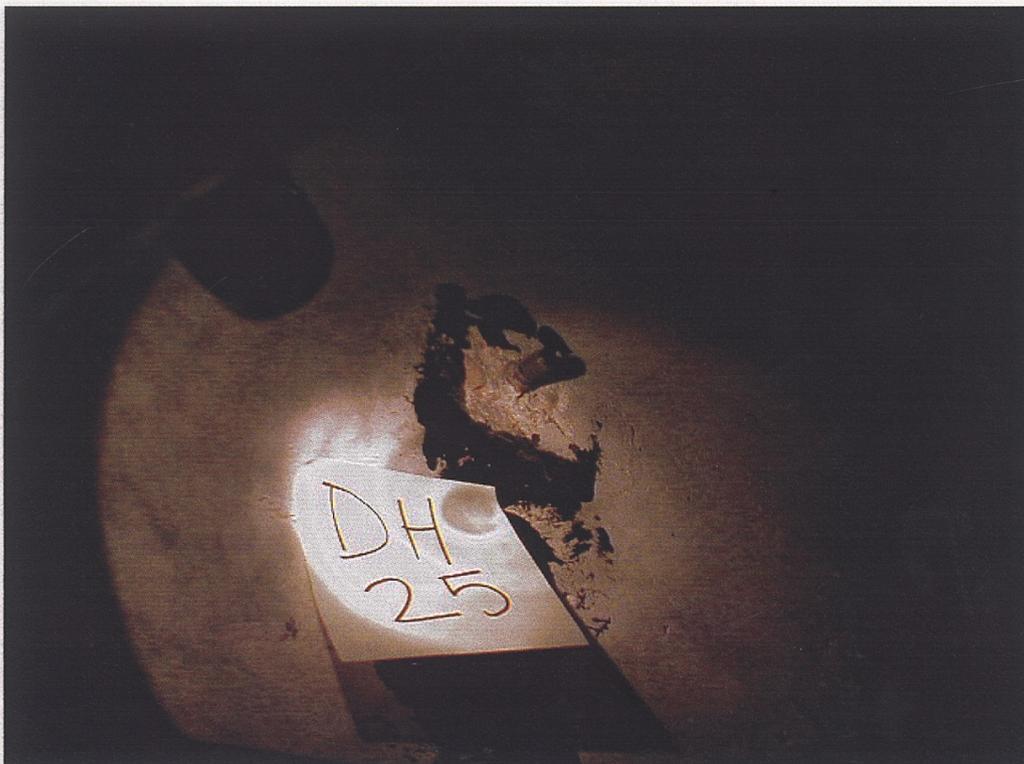


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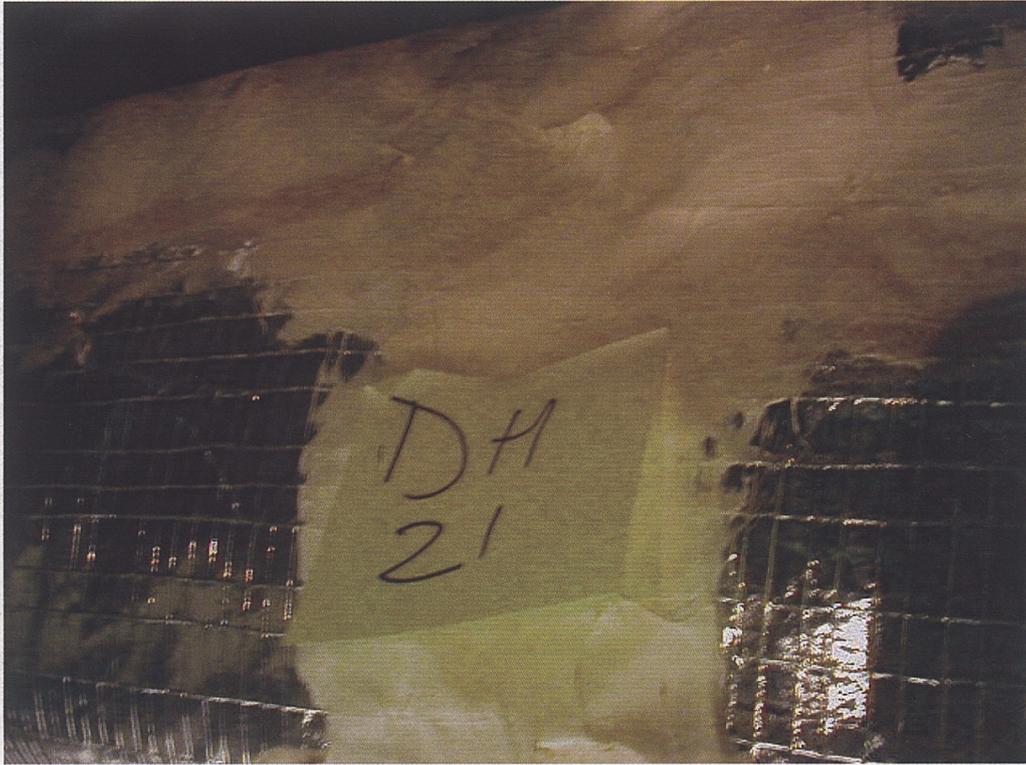


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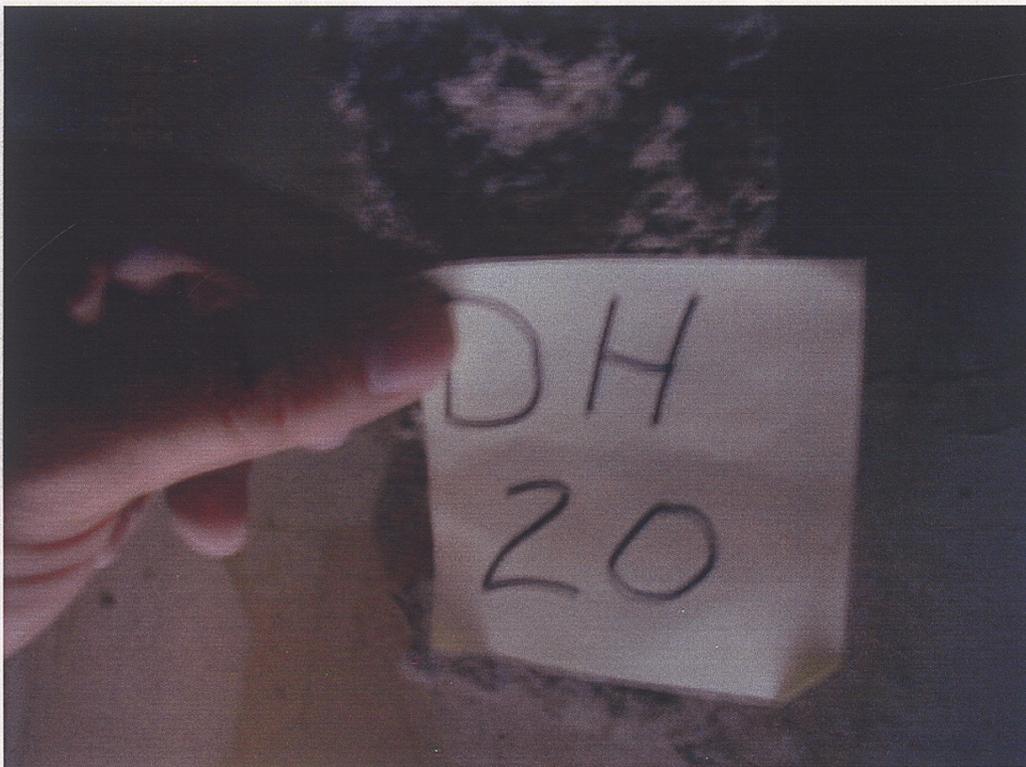


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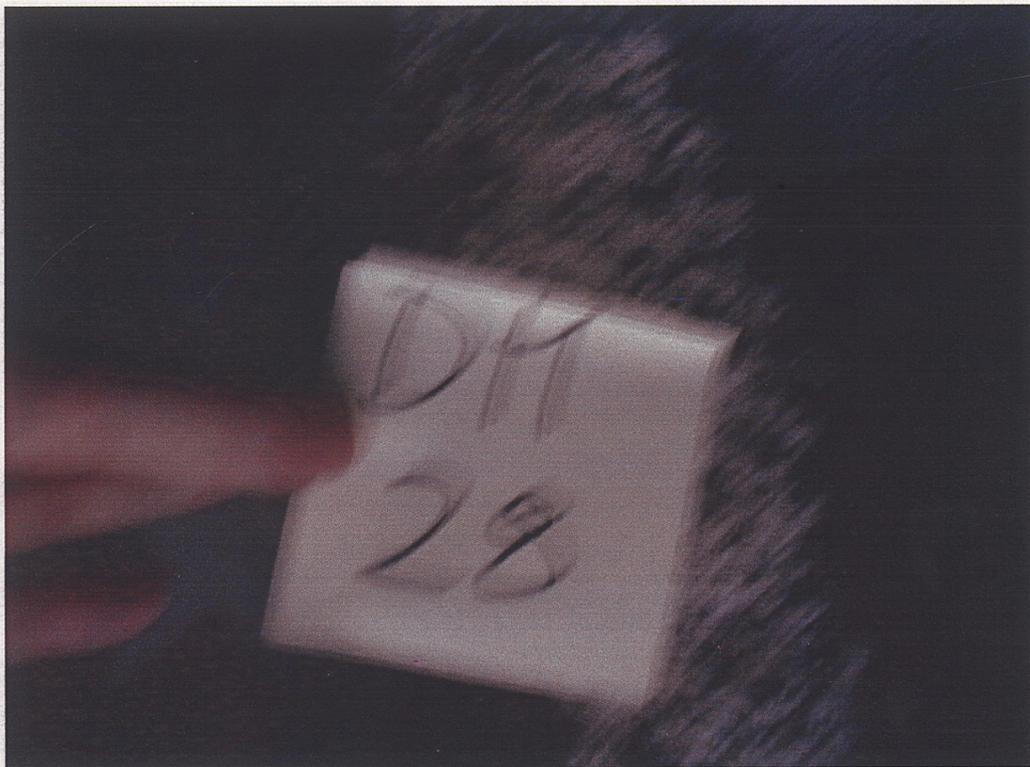


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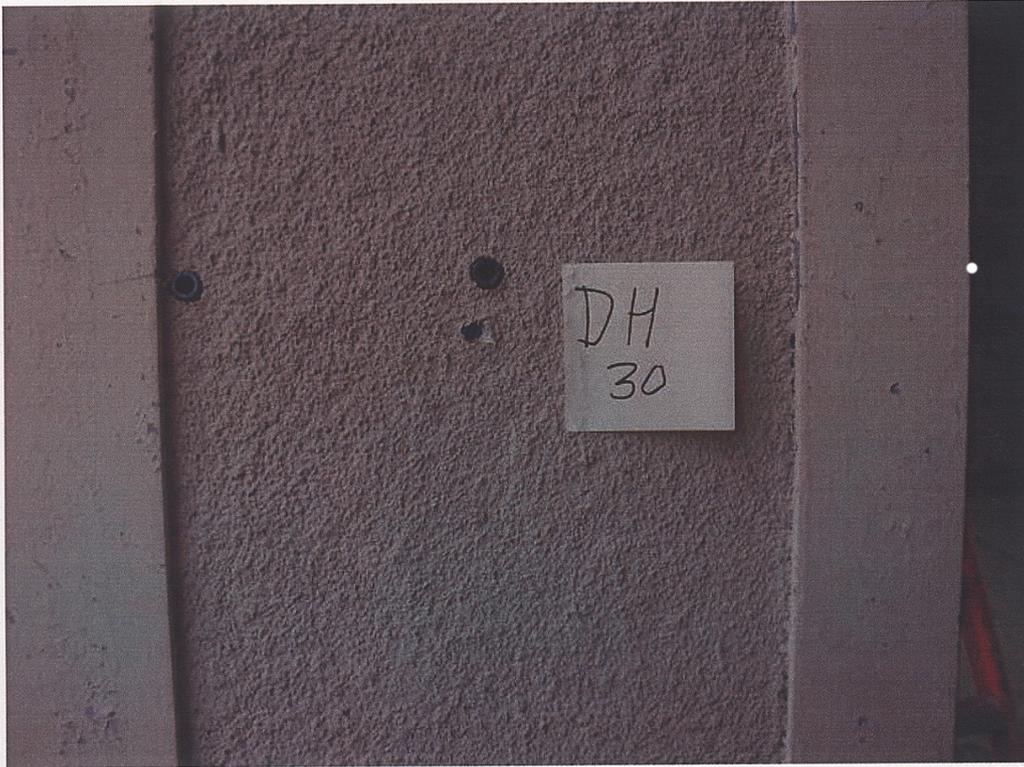


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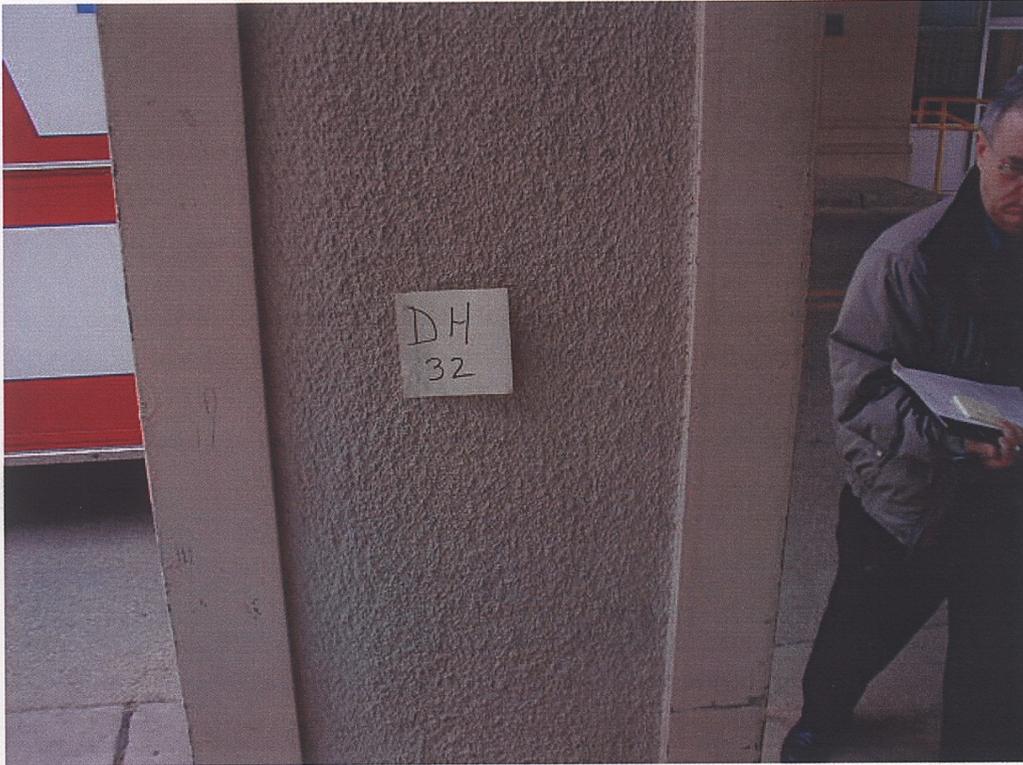


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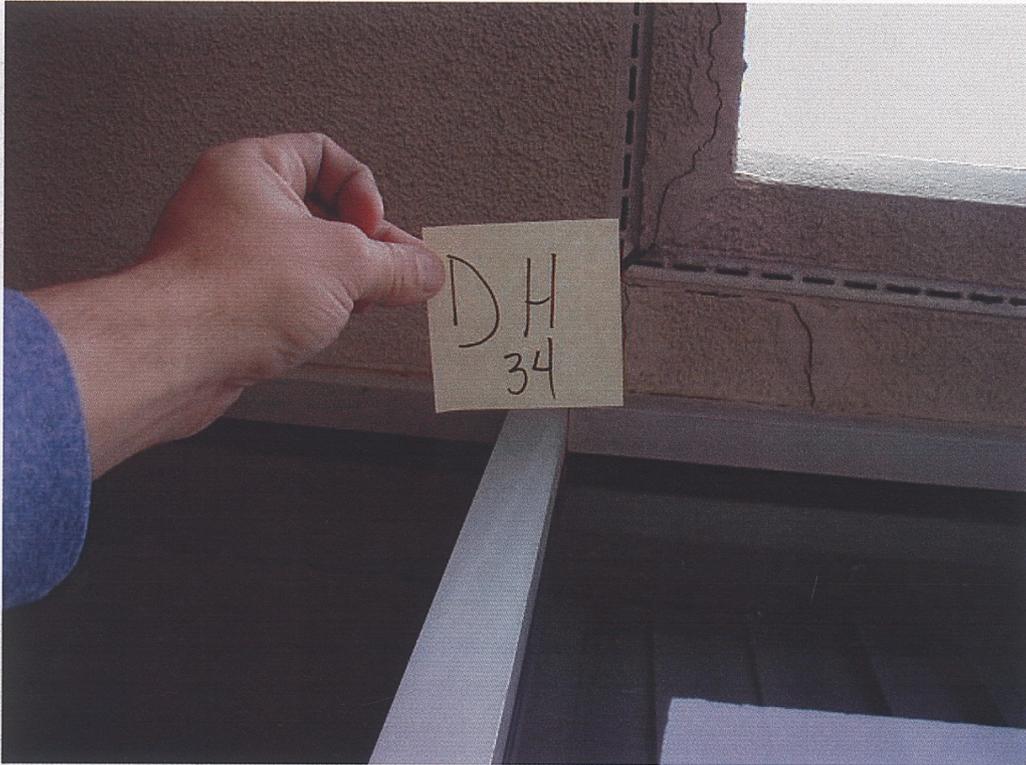


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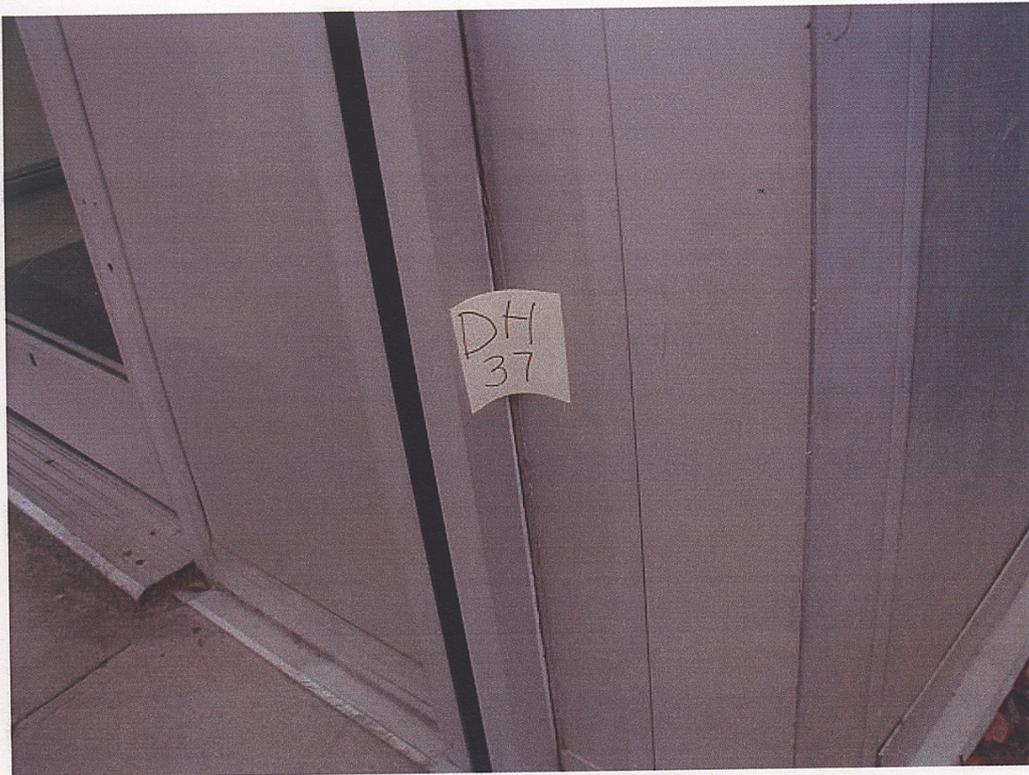


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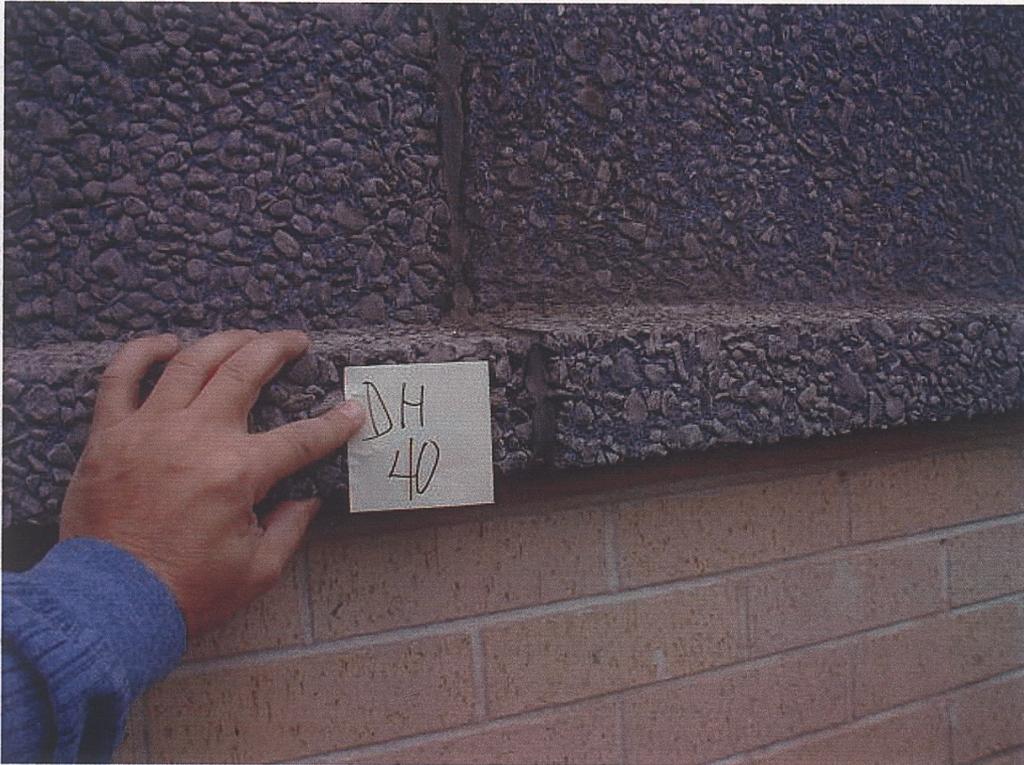


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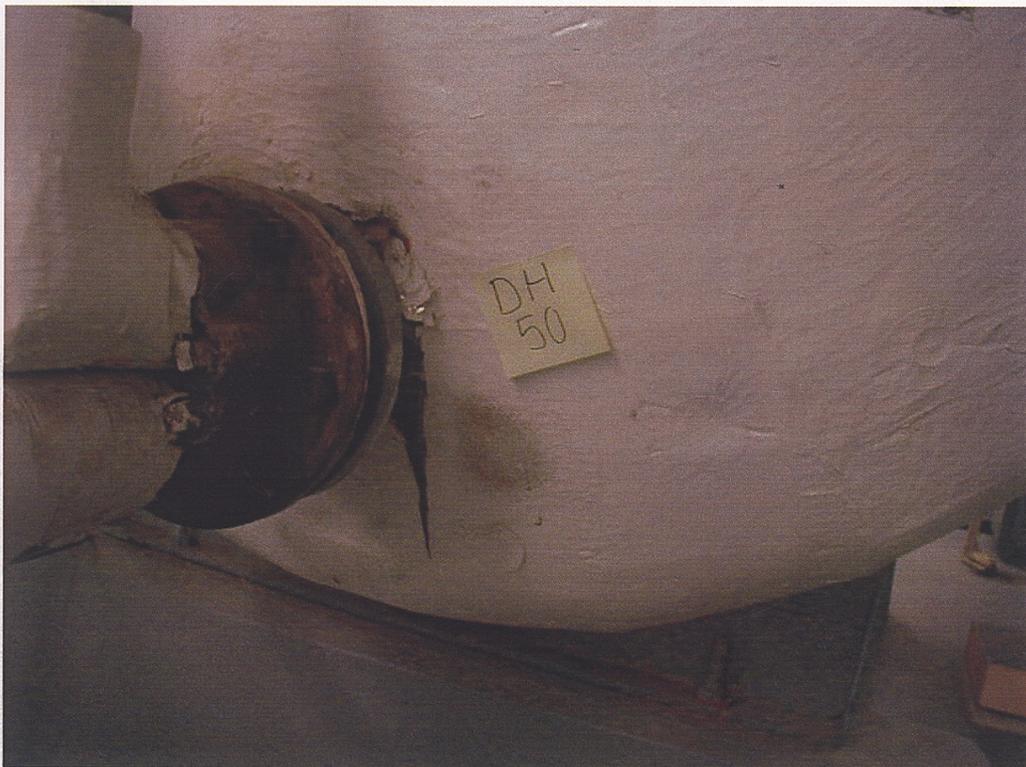


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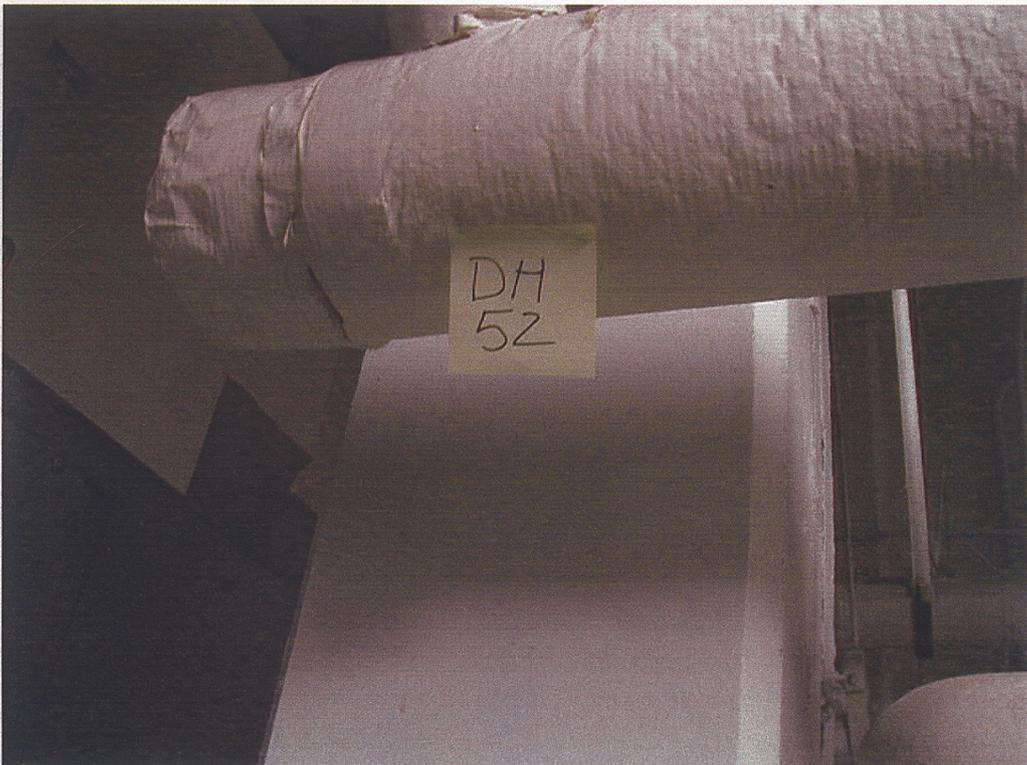


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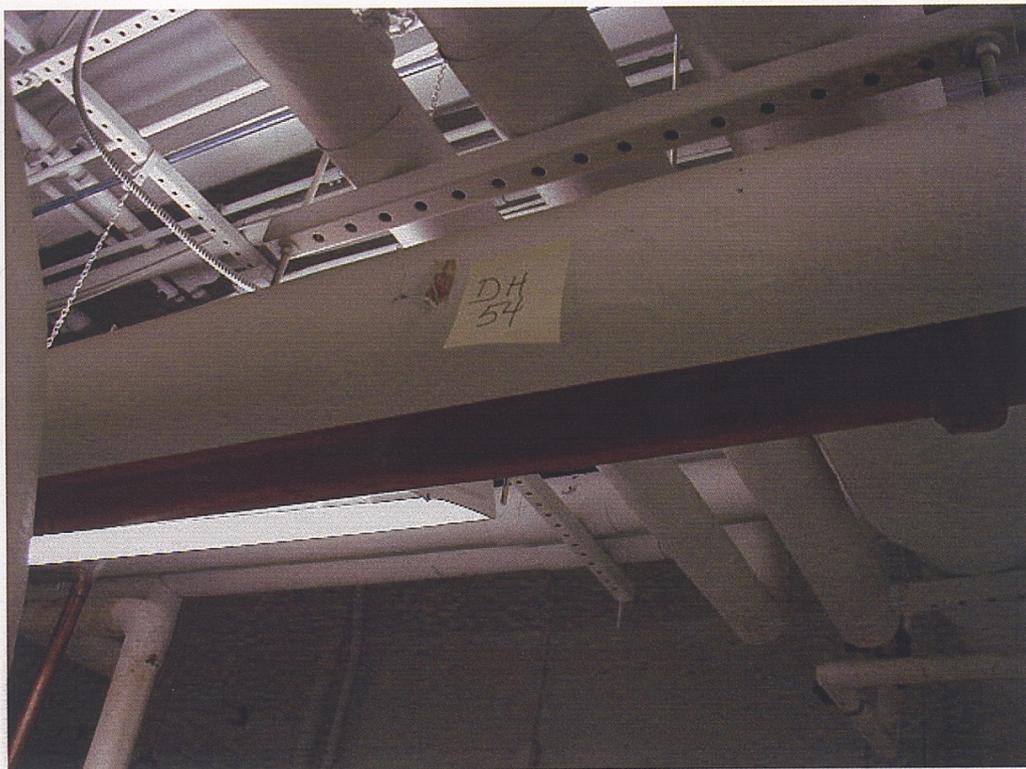


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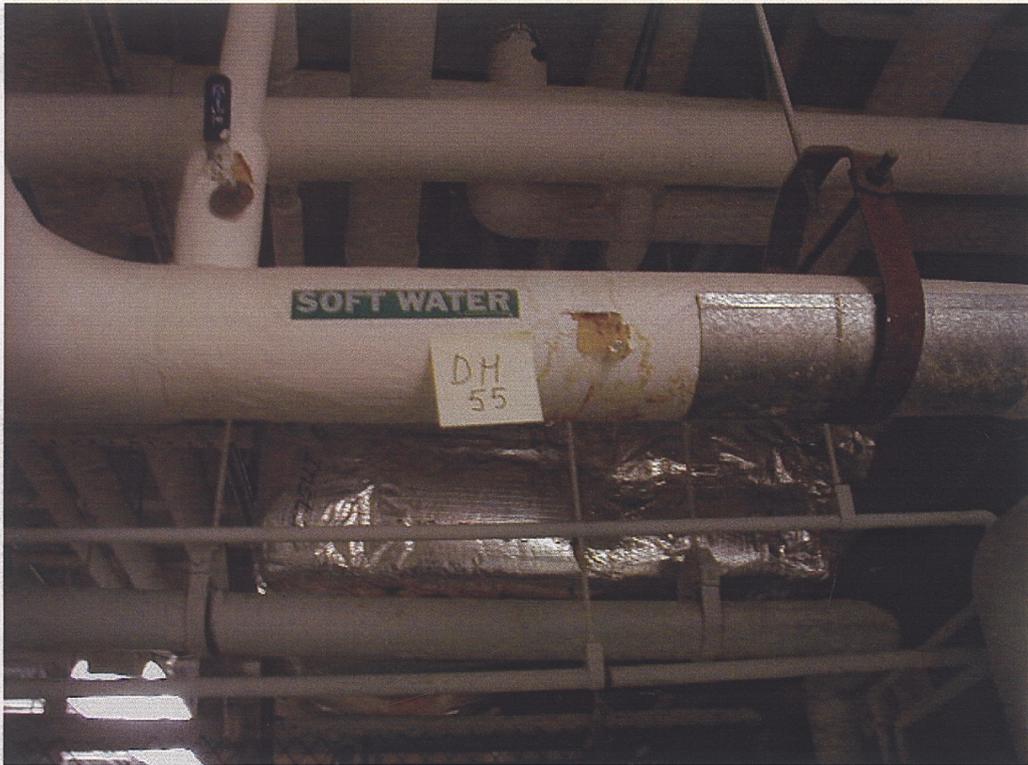


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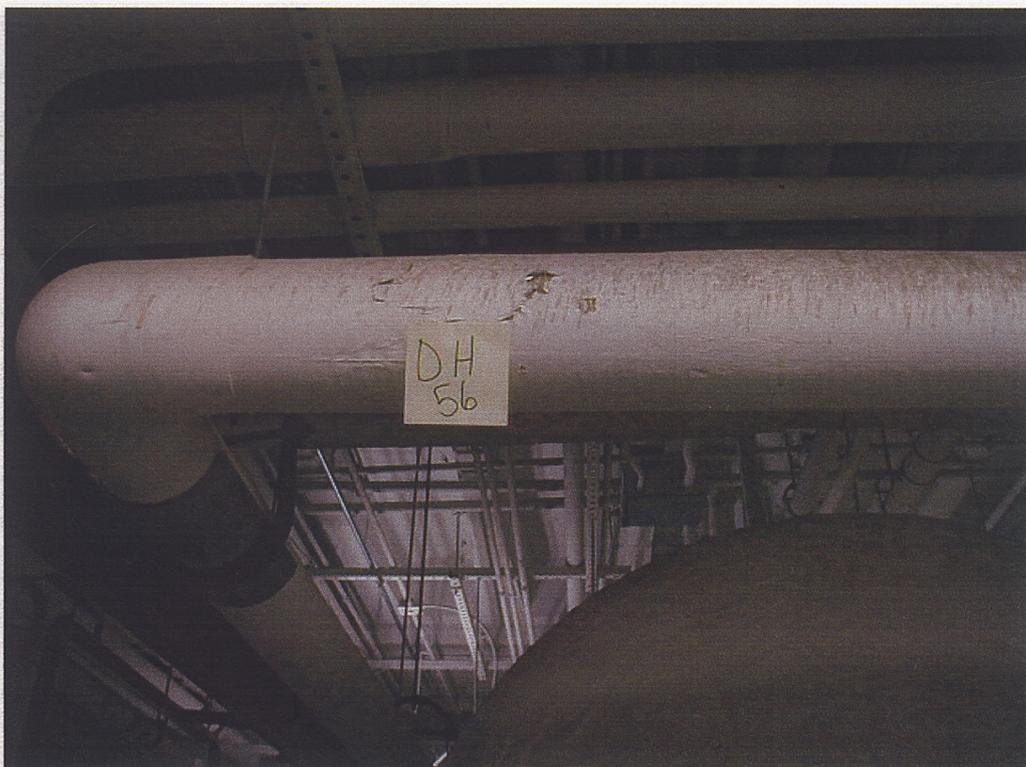


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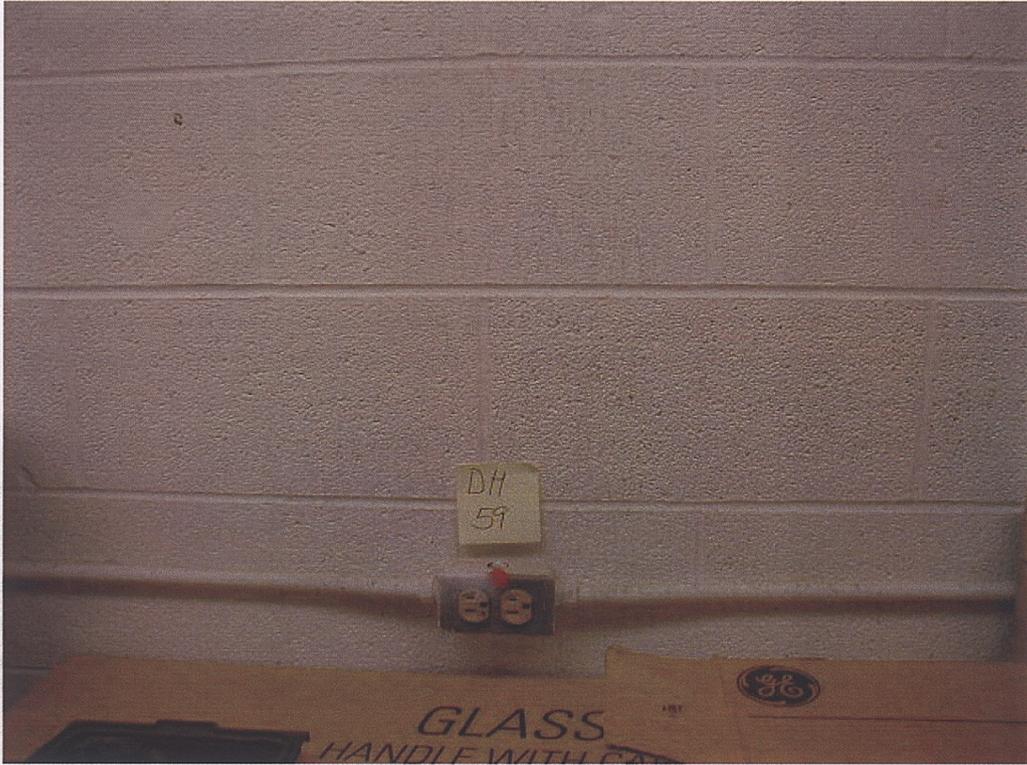


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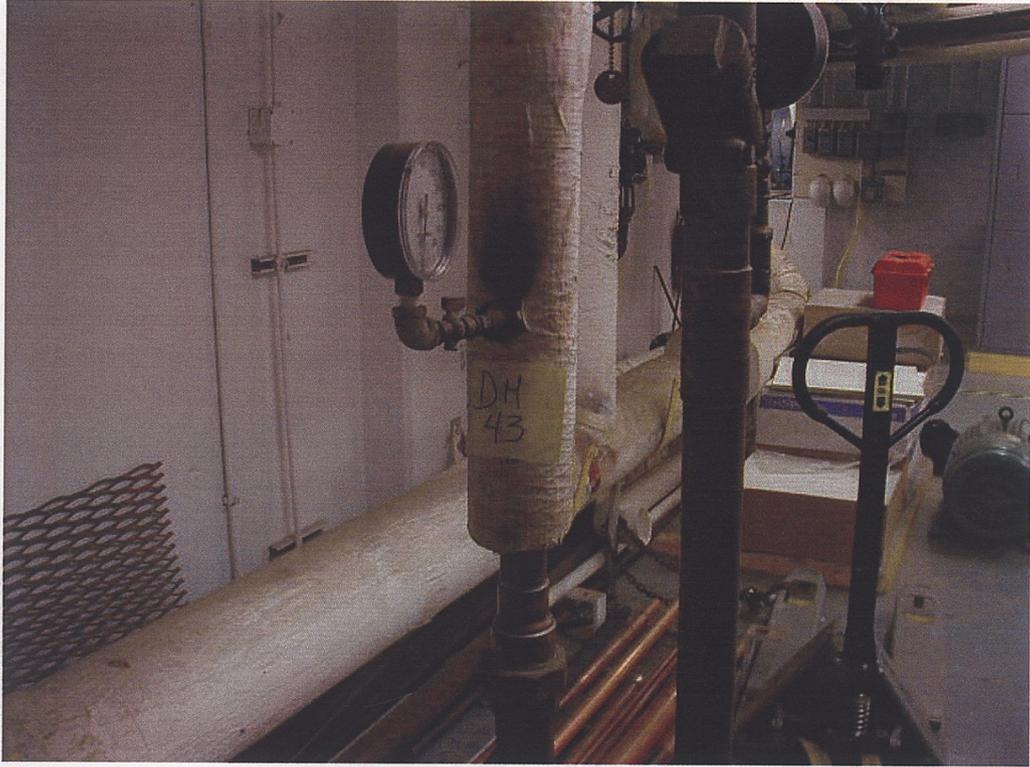


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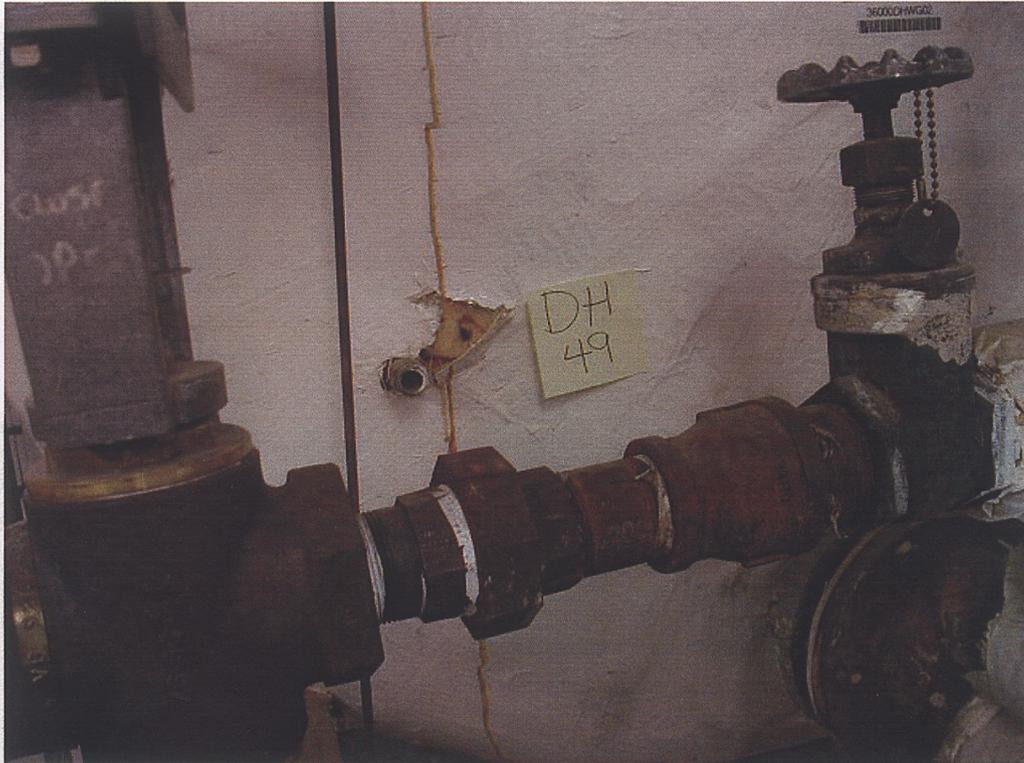


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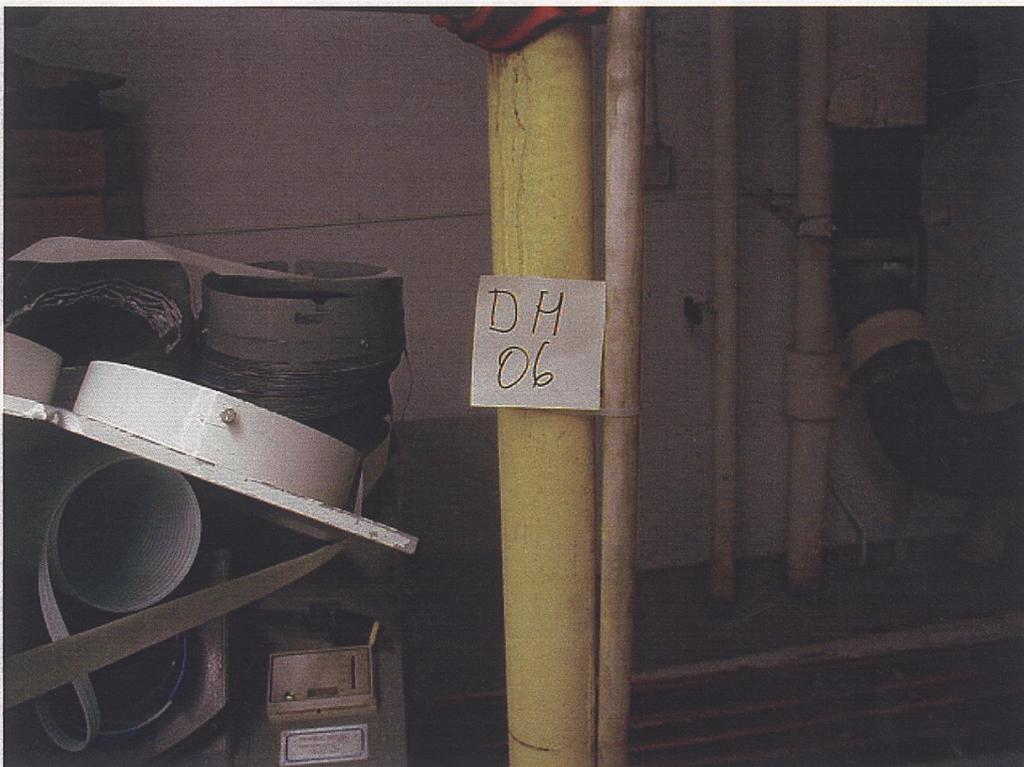


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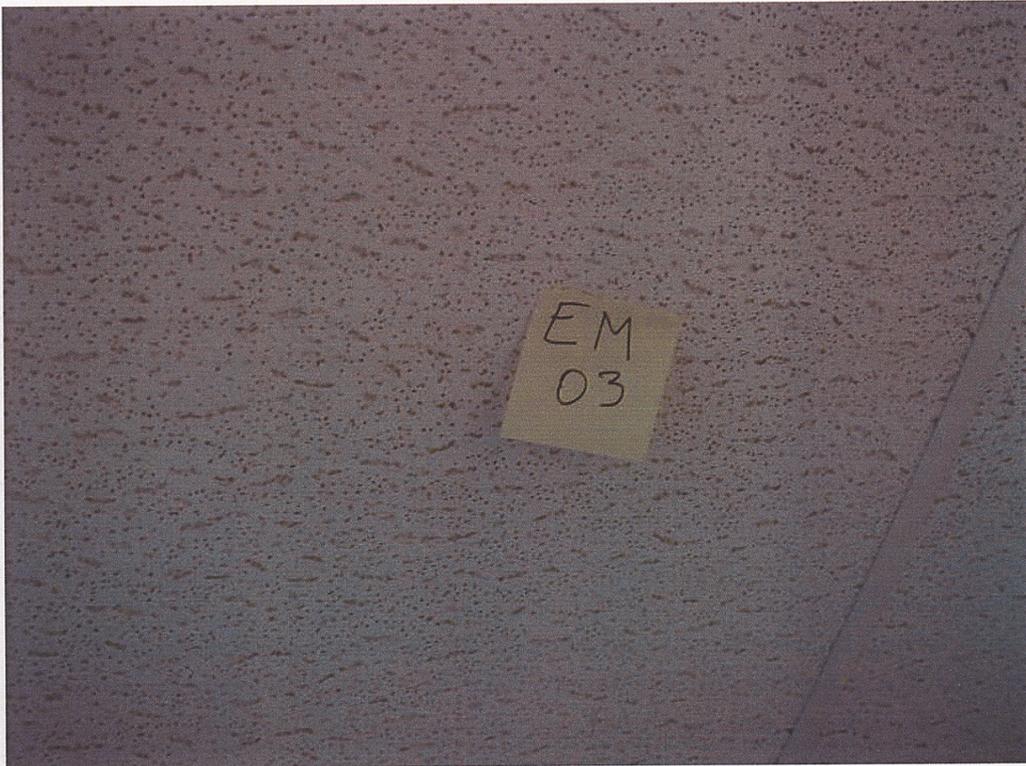


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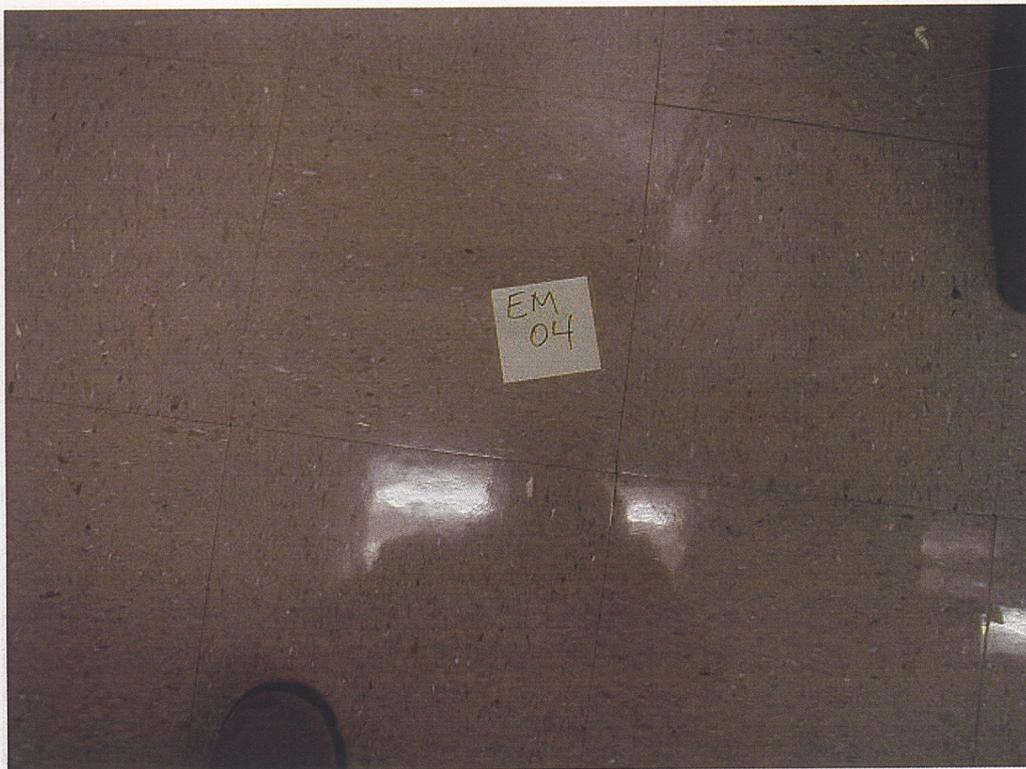


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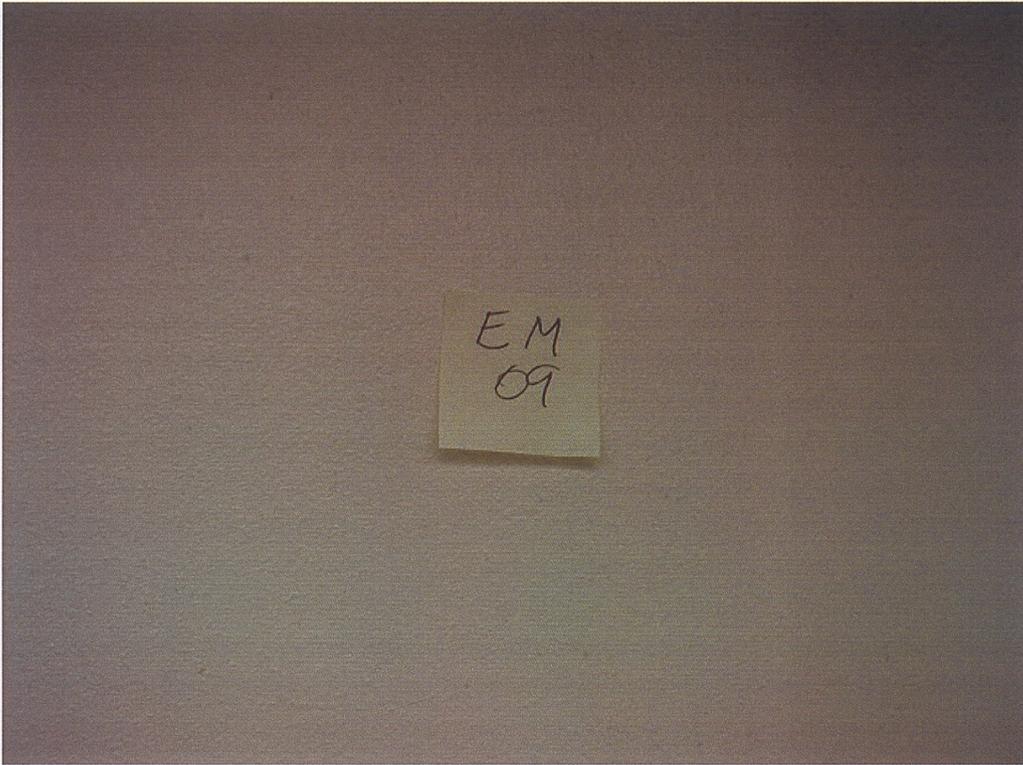


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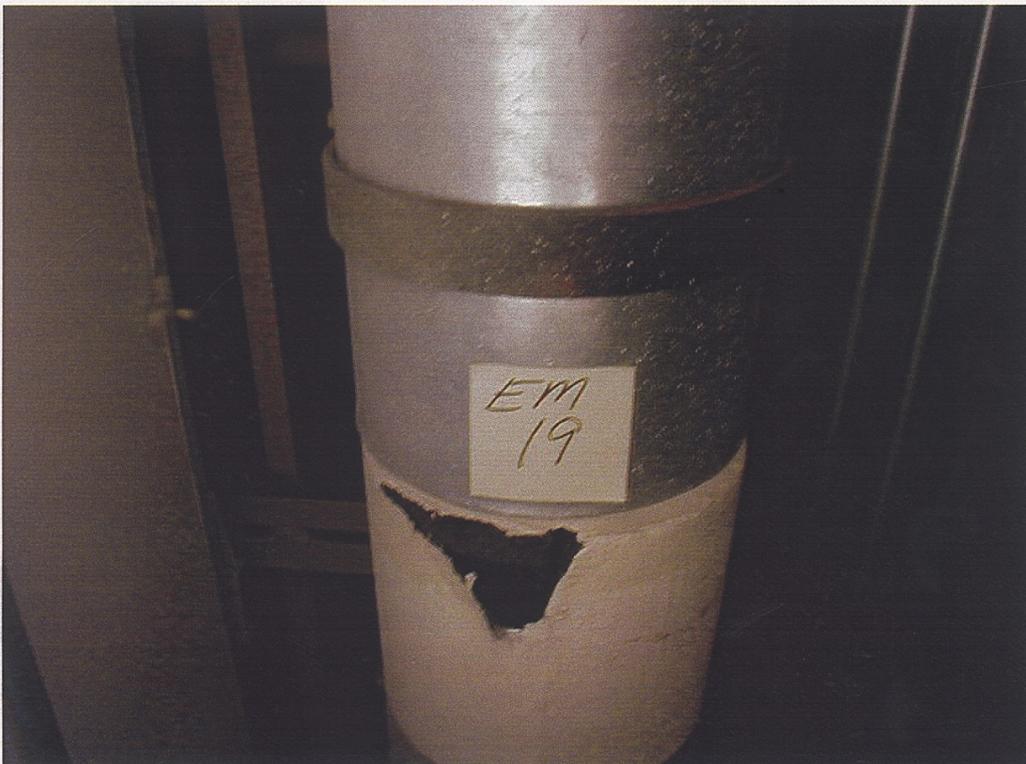


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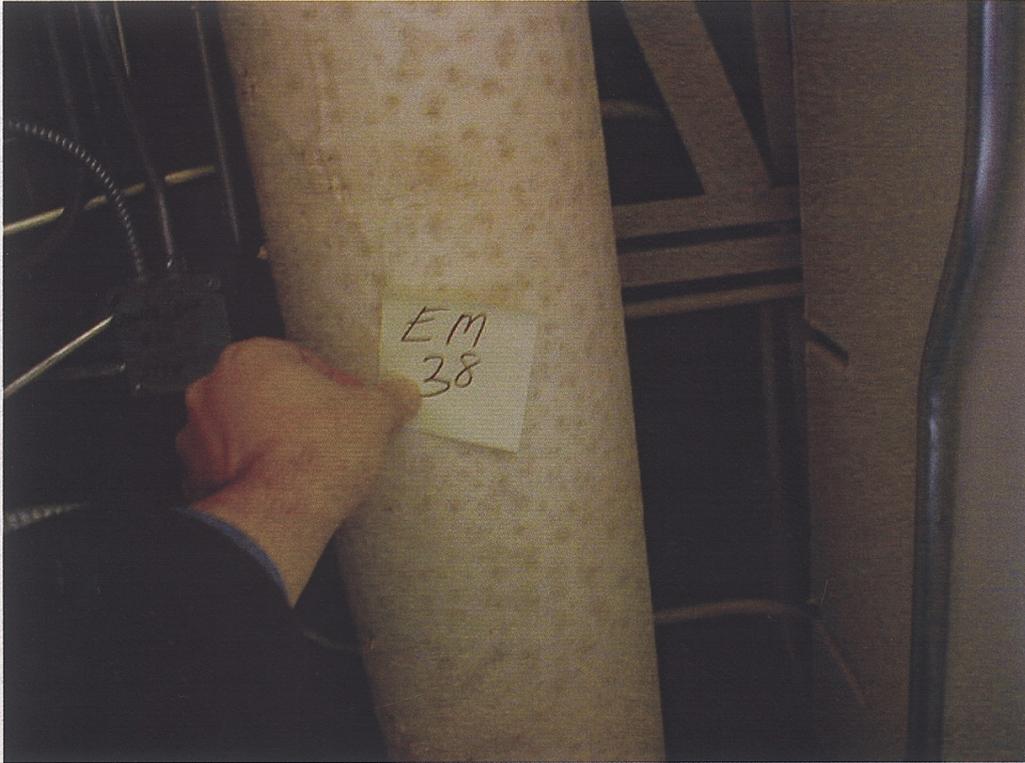


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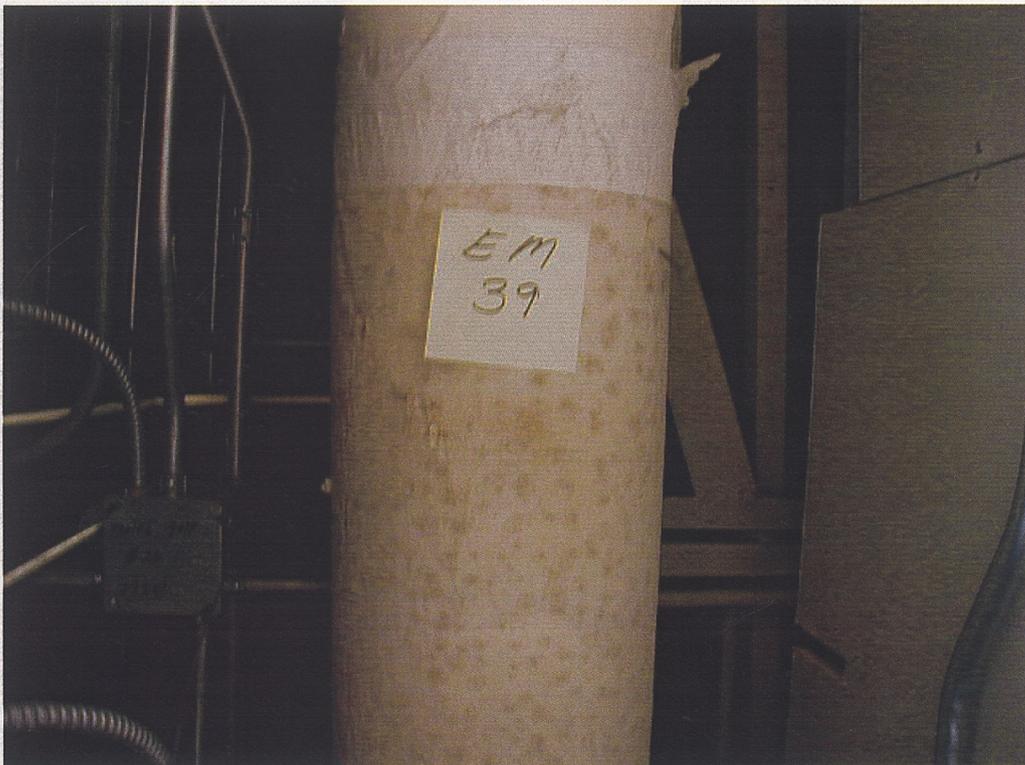


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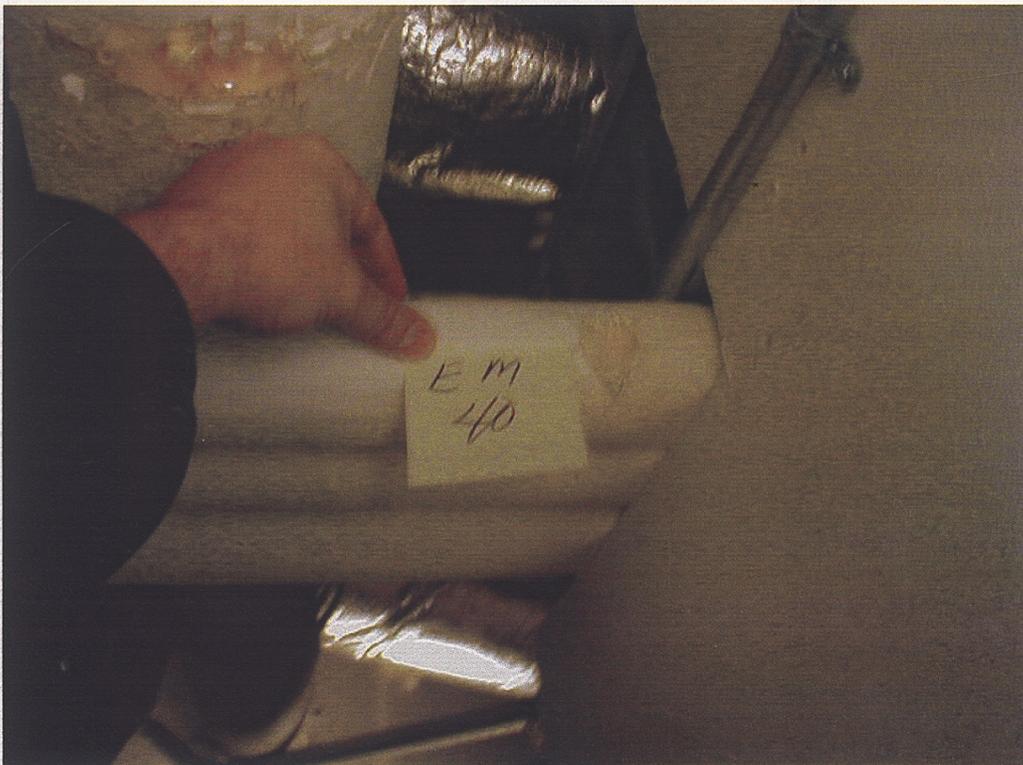


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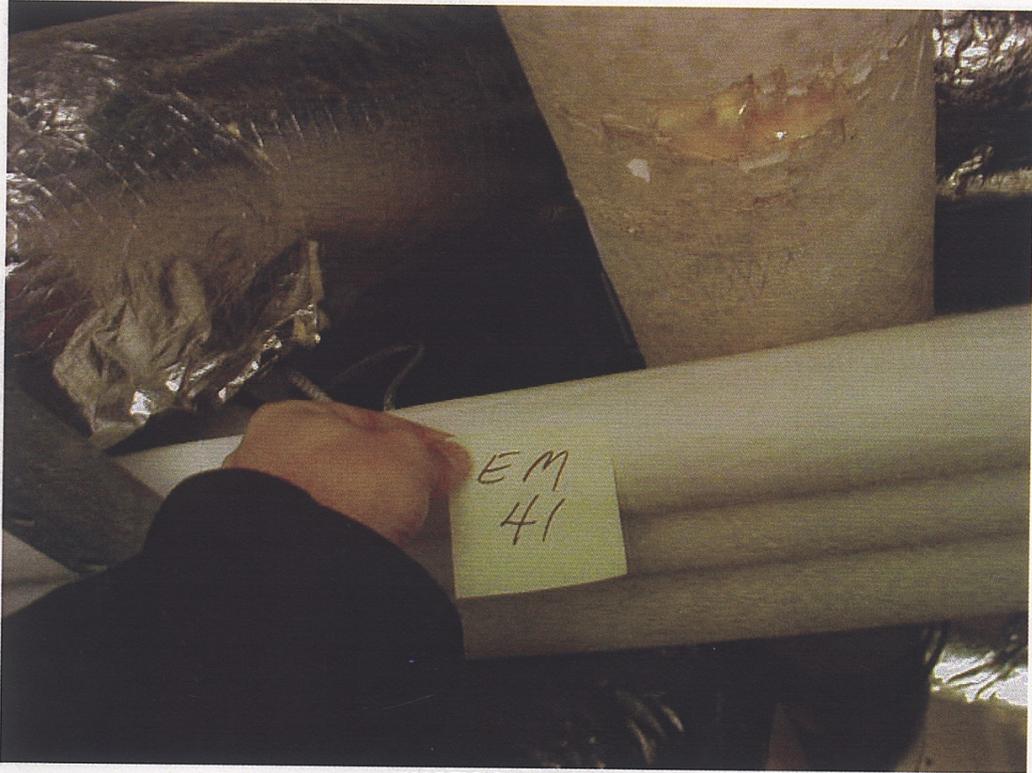


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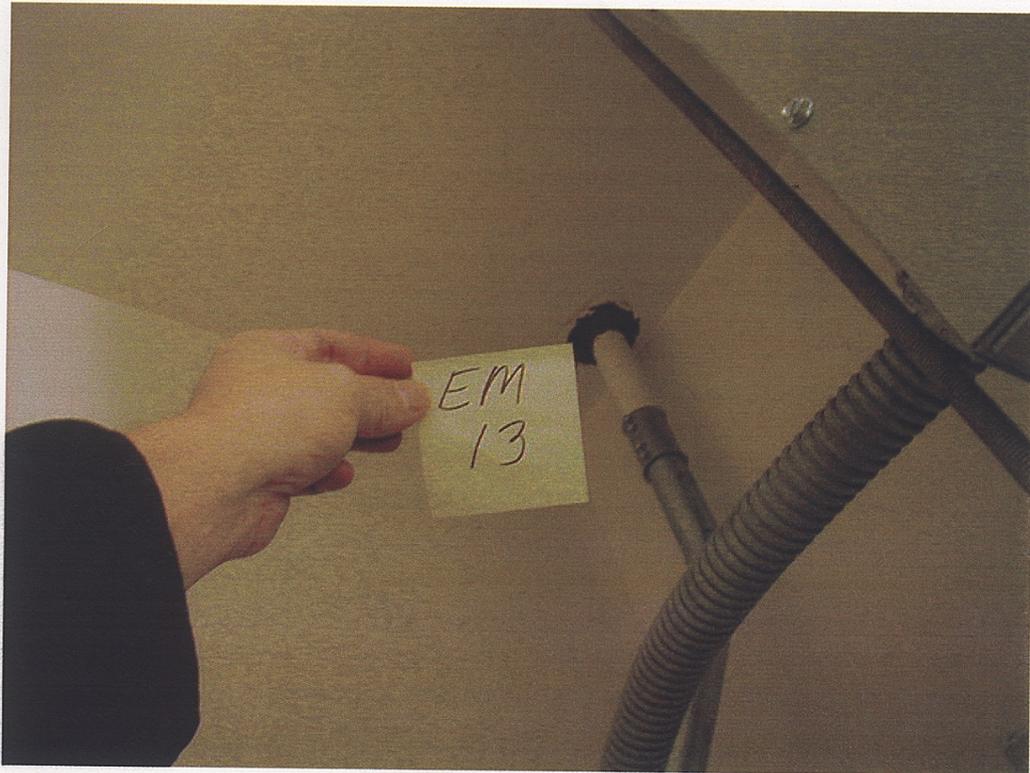


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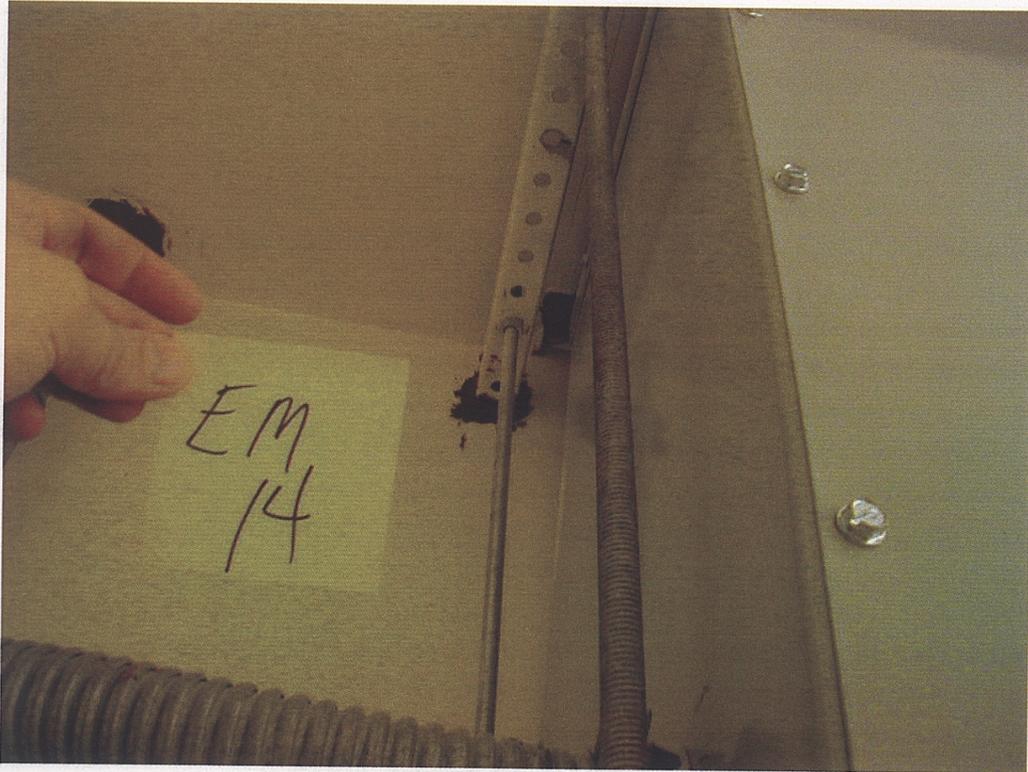


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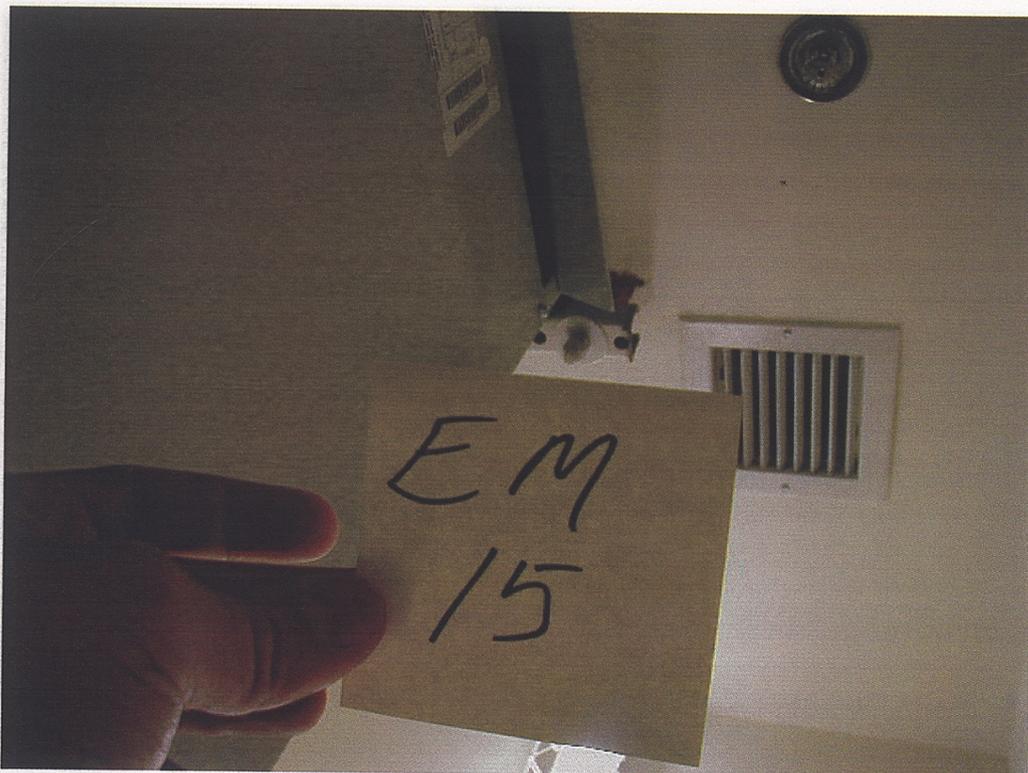


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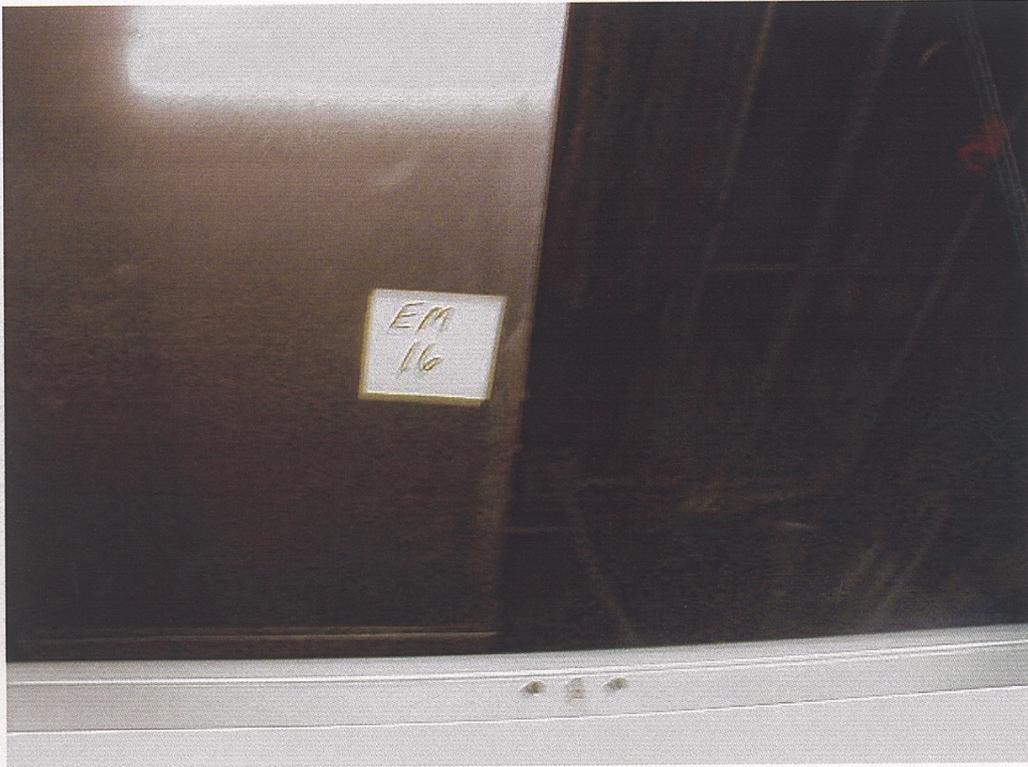


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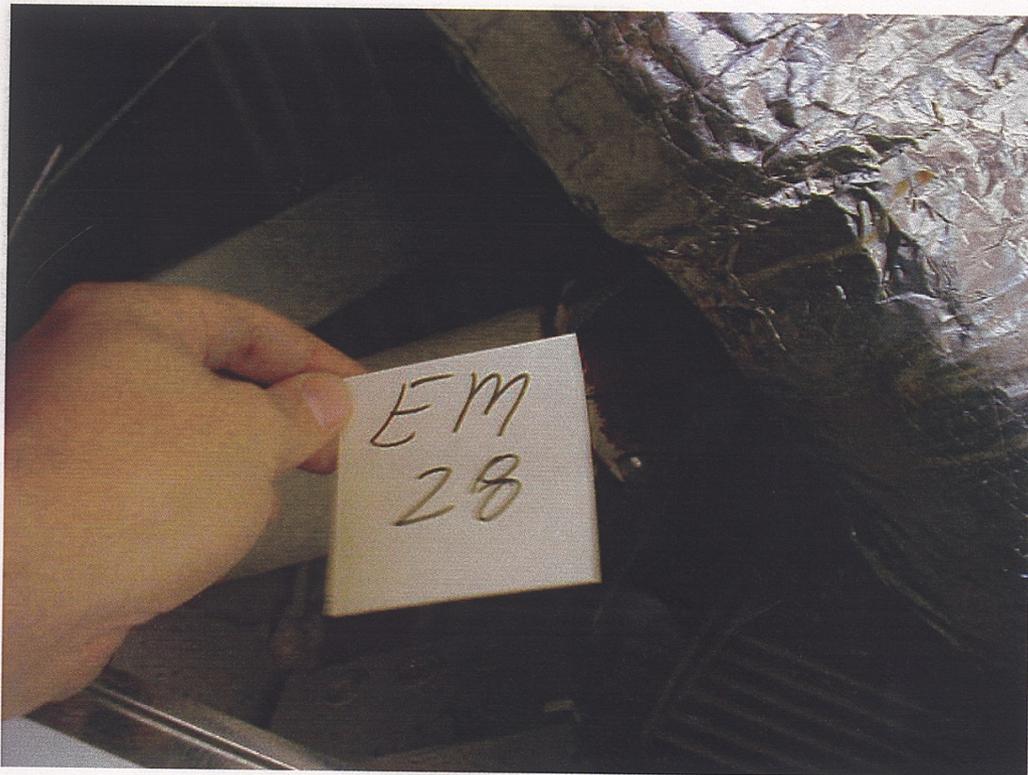


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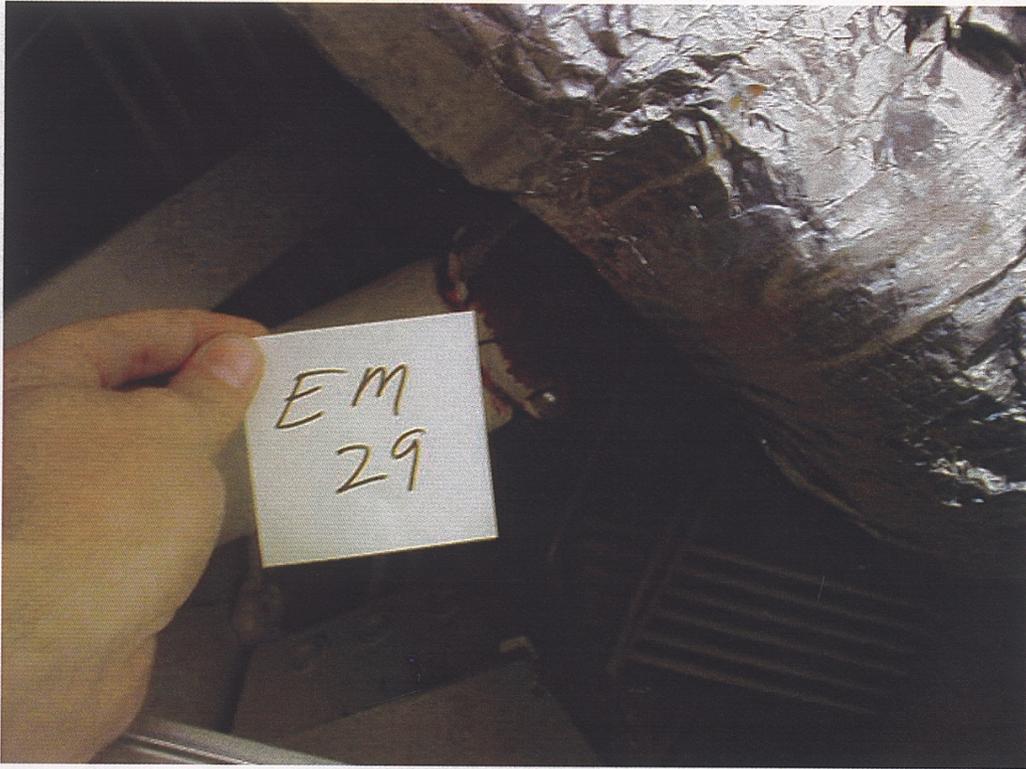


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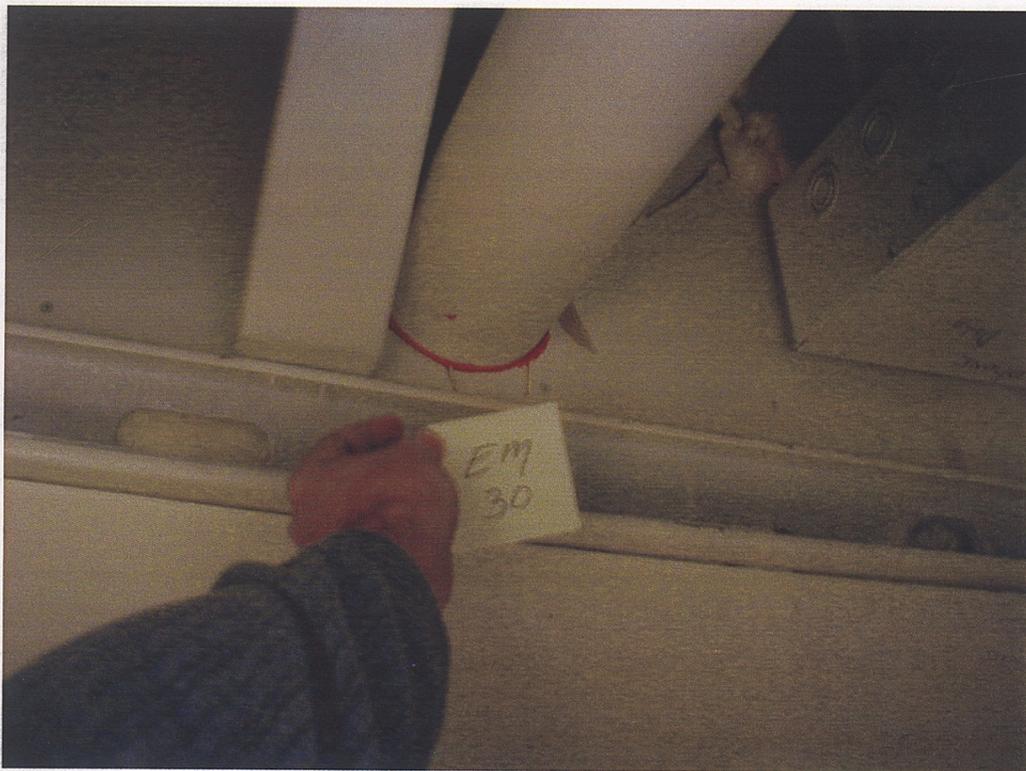


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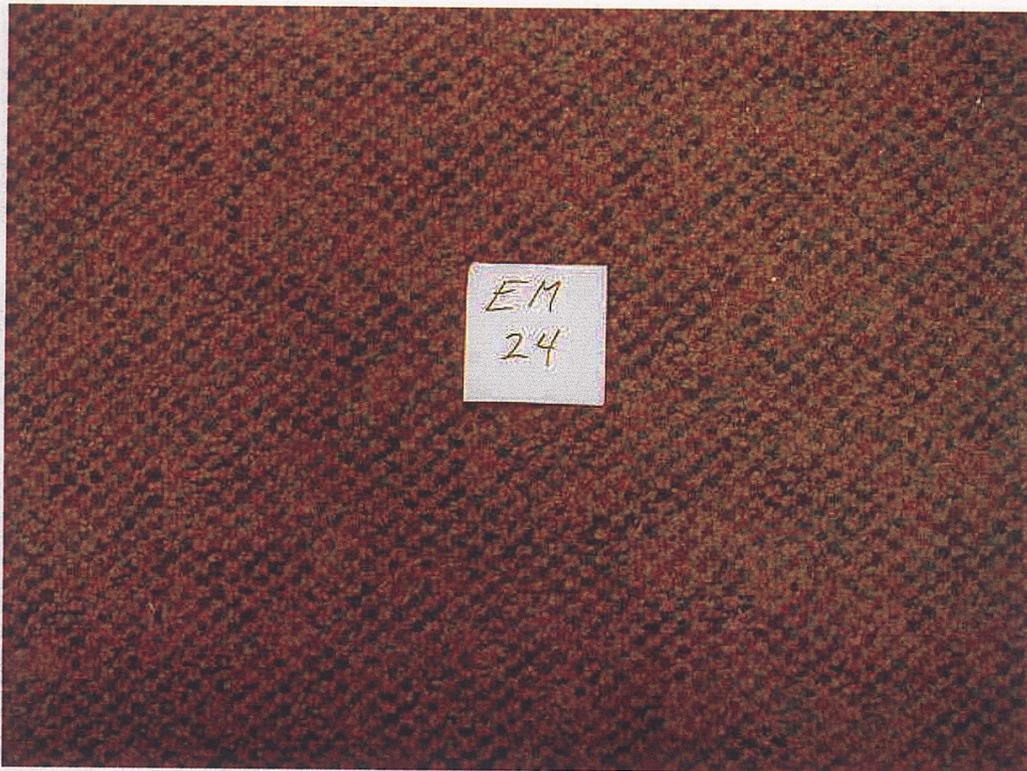


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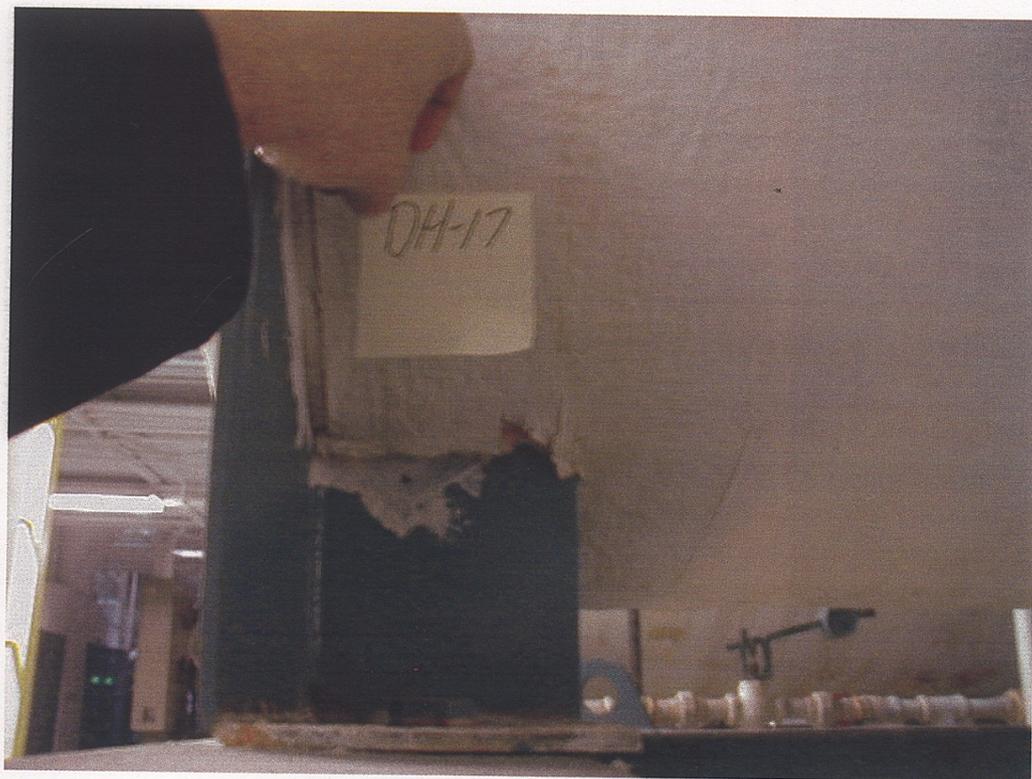


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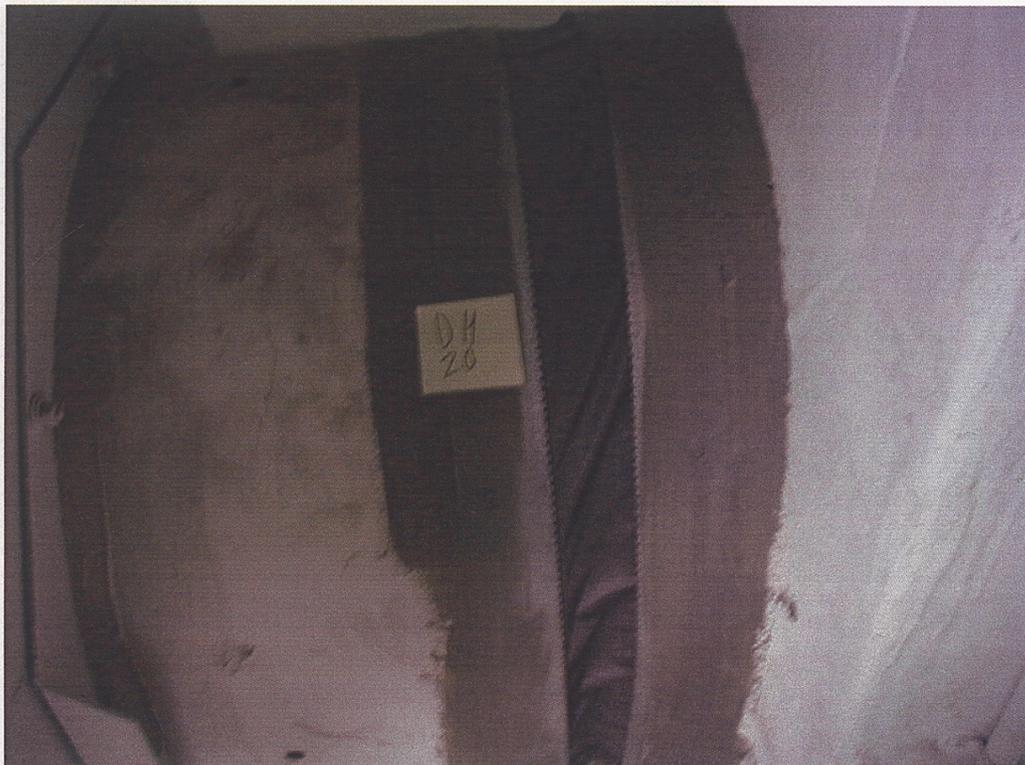


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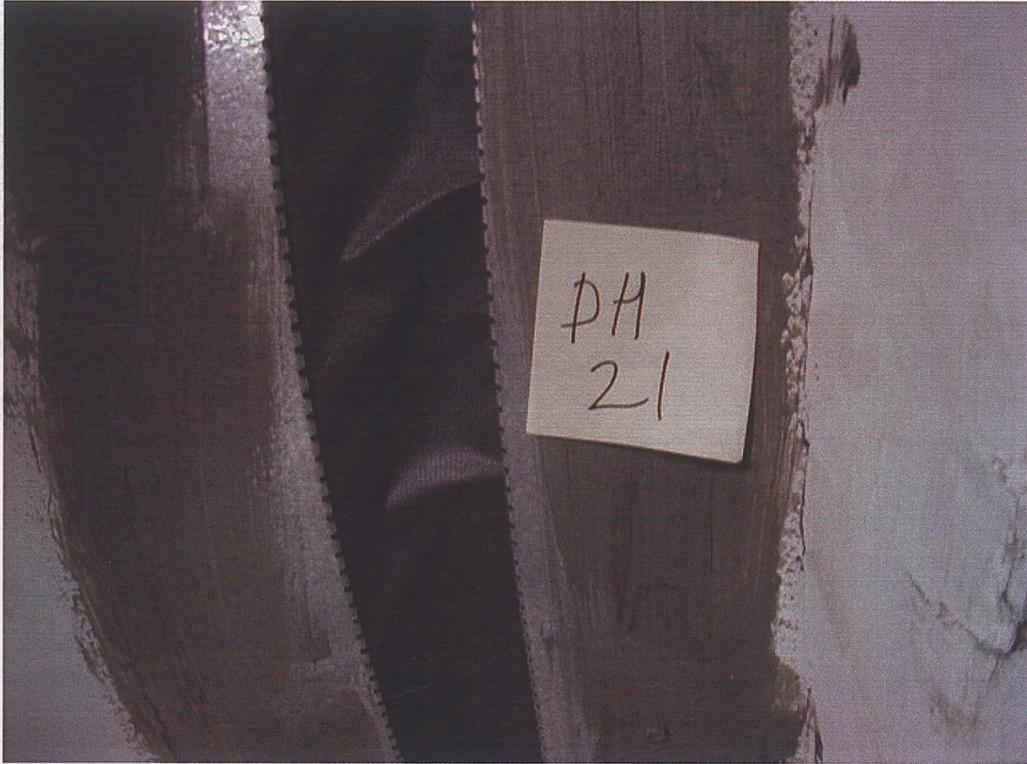


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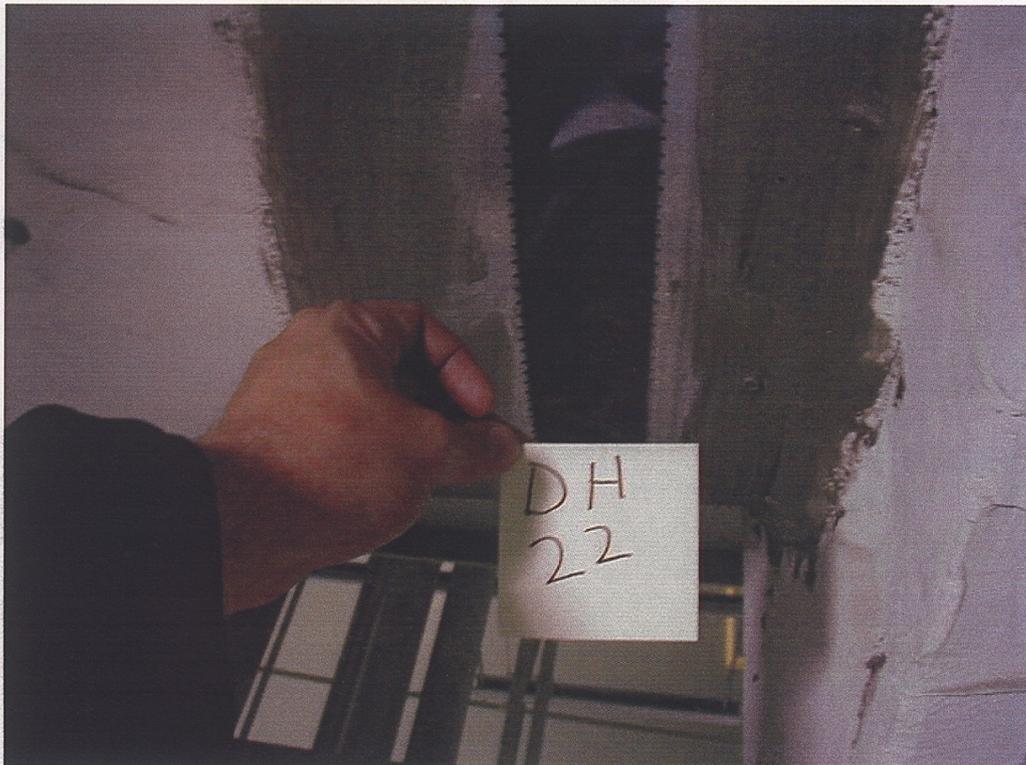


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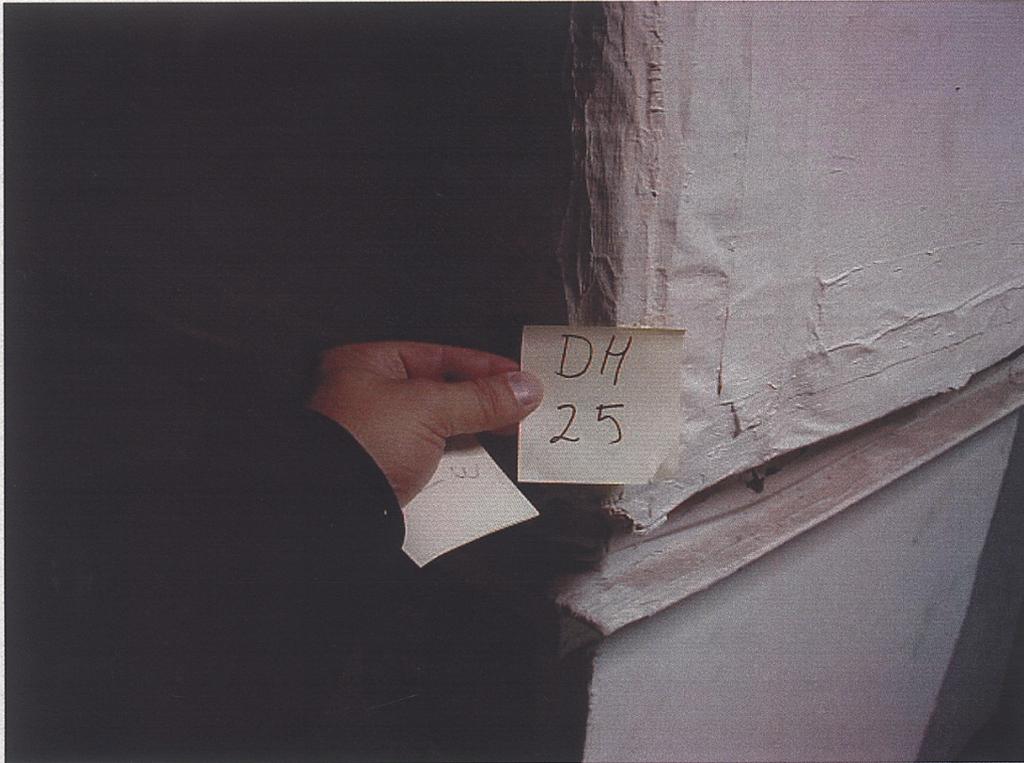


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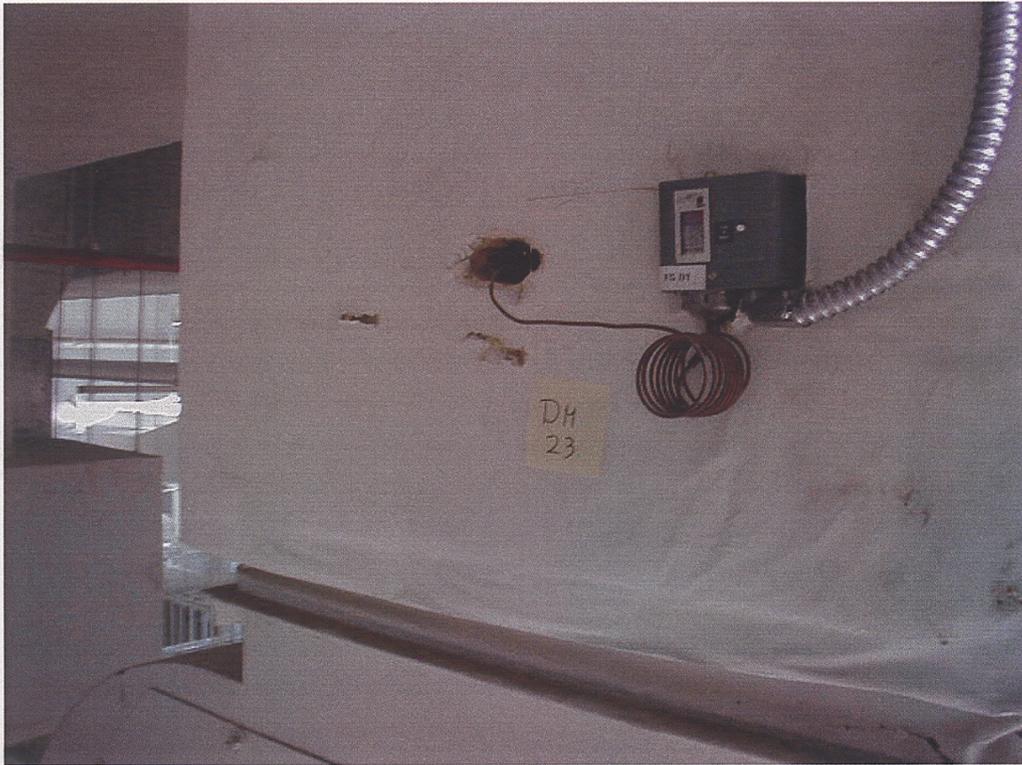


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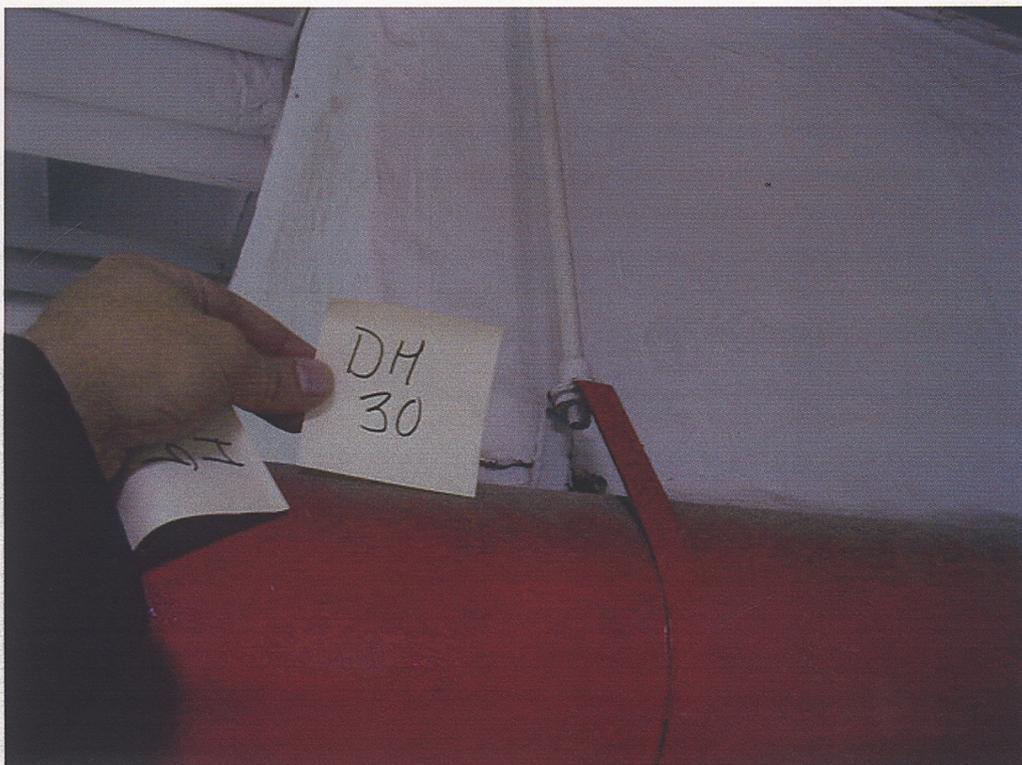


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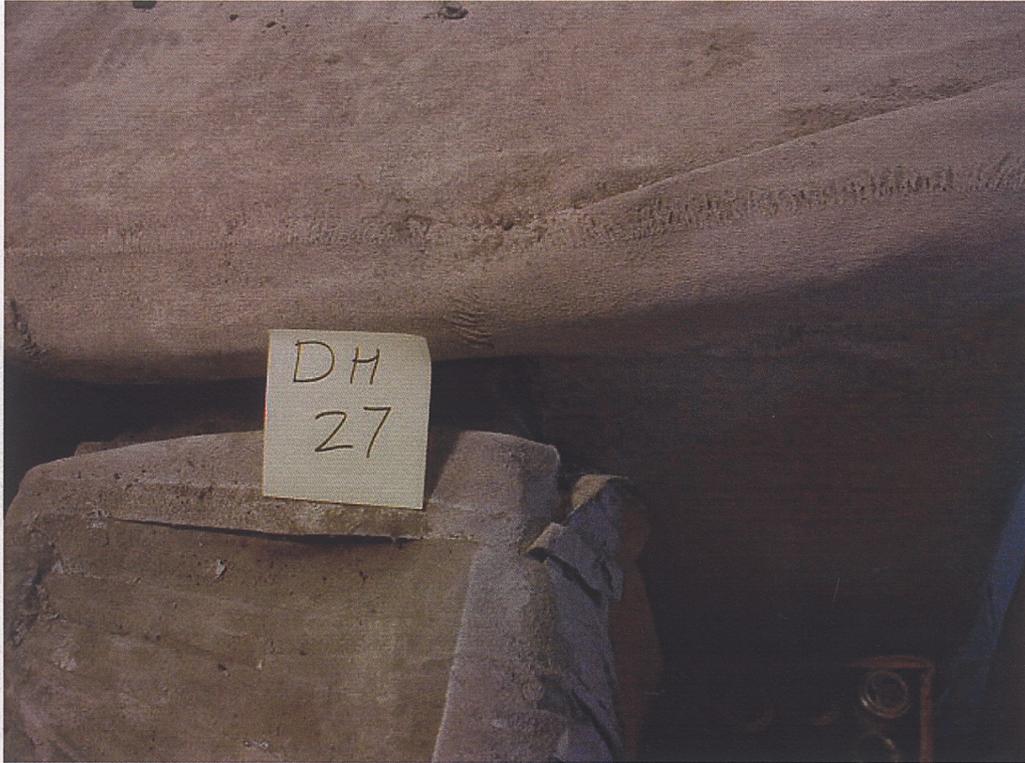


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PHOTOGRAPH NO. 118
PHOTOGRAPH TAKEN BY R-K ON 2/5/03.

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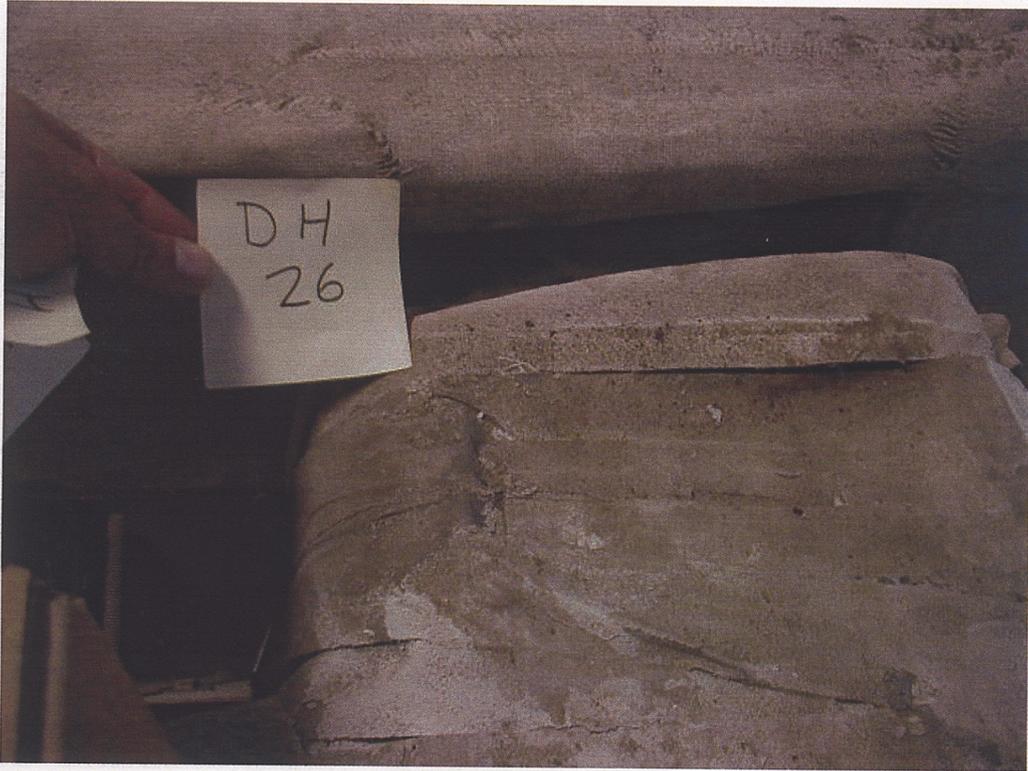


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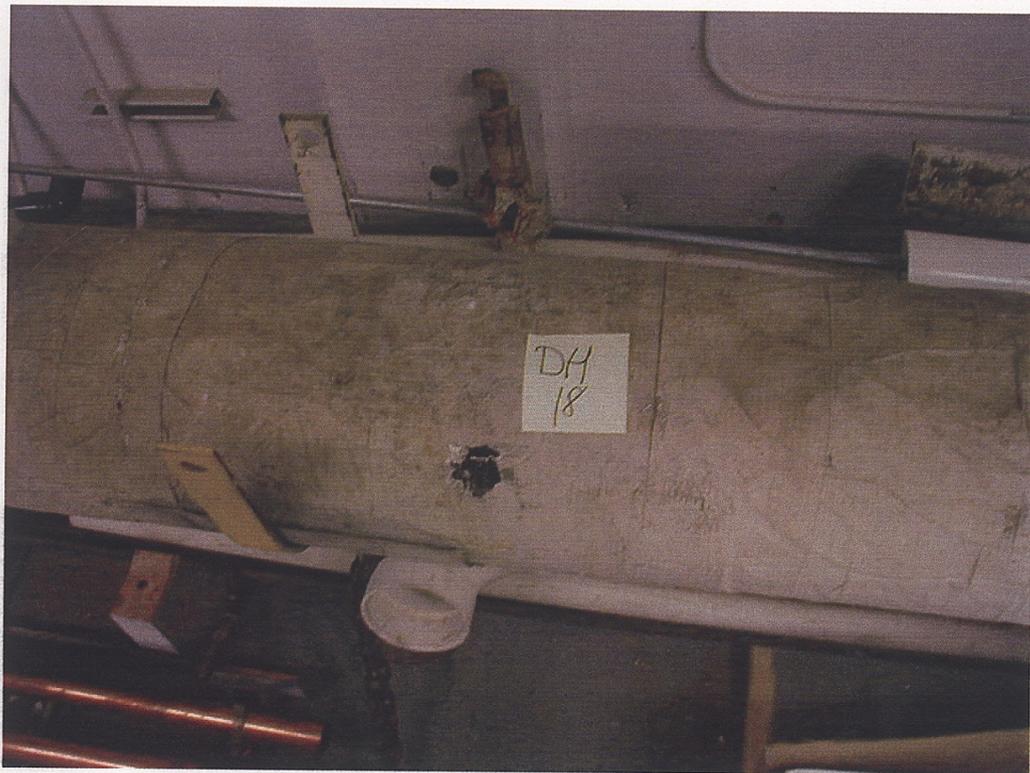


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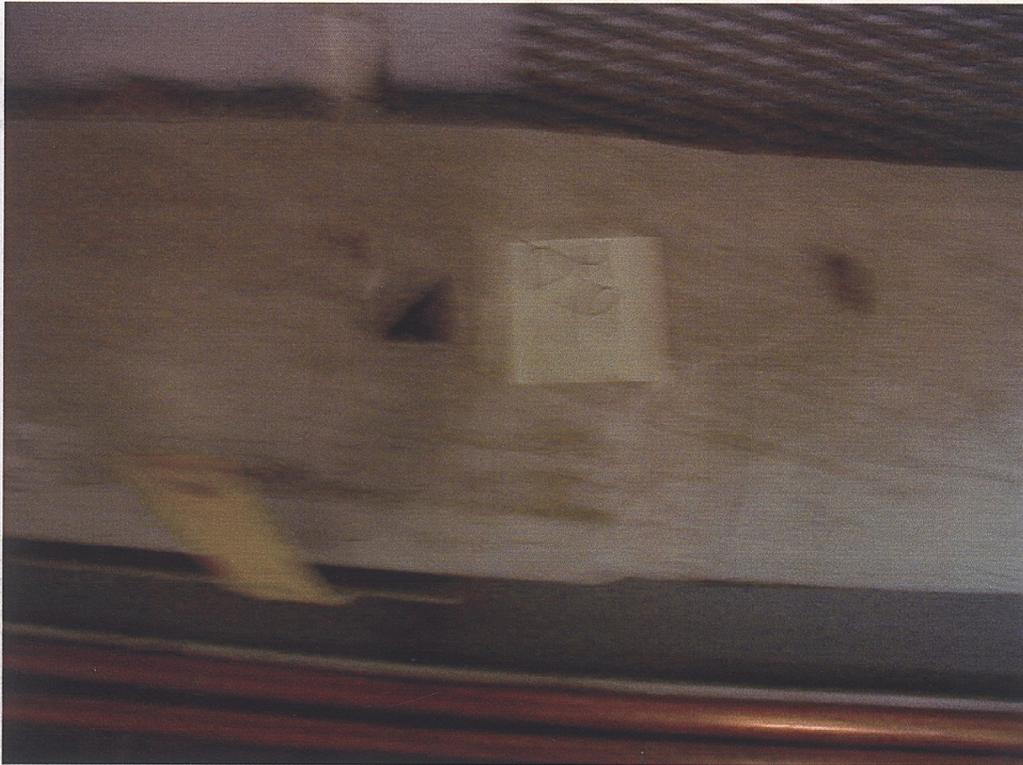


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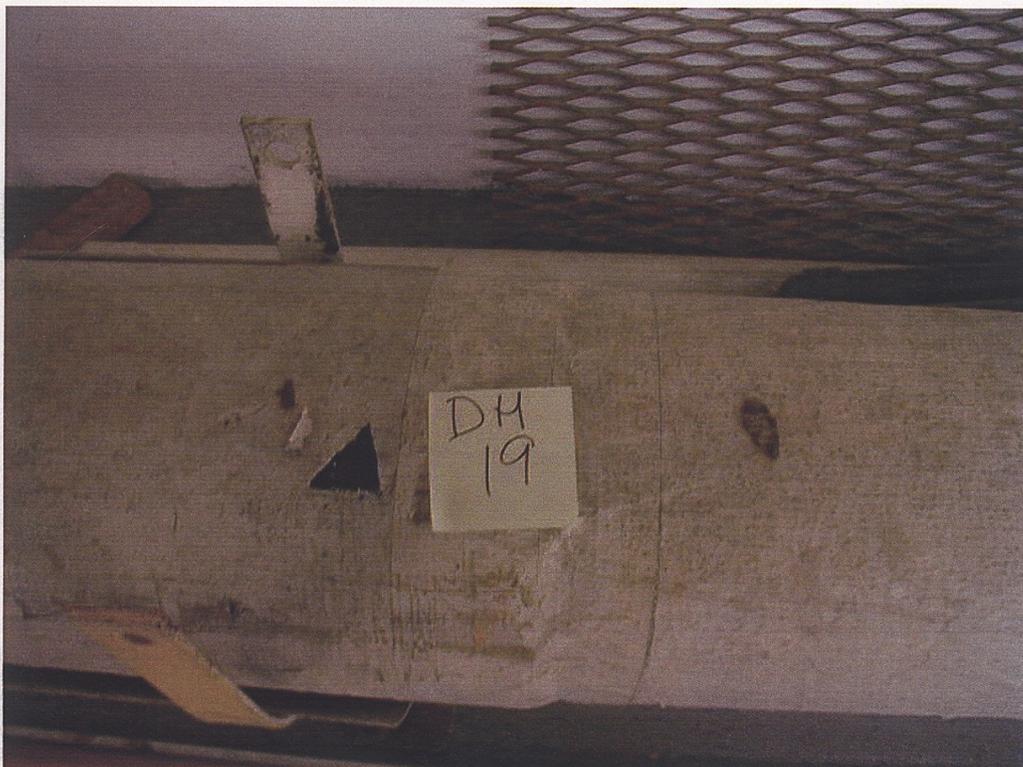


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PHOTOGRAPH NO. 123
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LEAD

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APPENDIX D

Material Sample Log

LEAD MATERIAL SAMPLING LOG

PROJECT NO.: _____ ASF01-245-00 _____

SAMPLED BY: Norberto Ochotorena and Bill Bishop

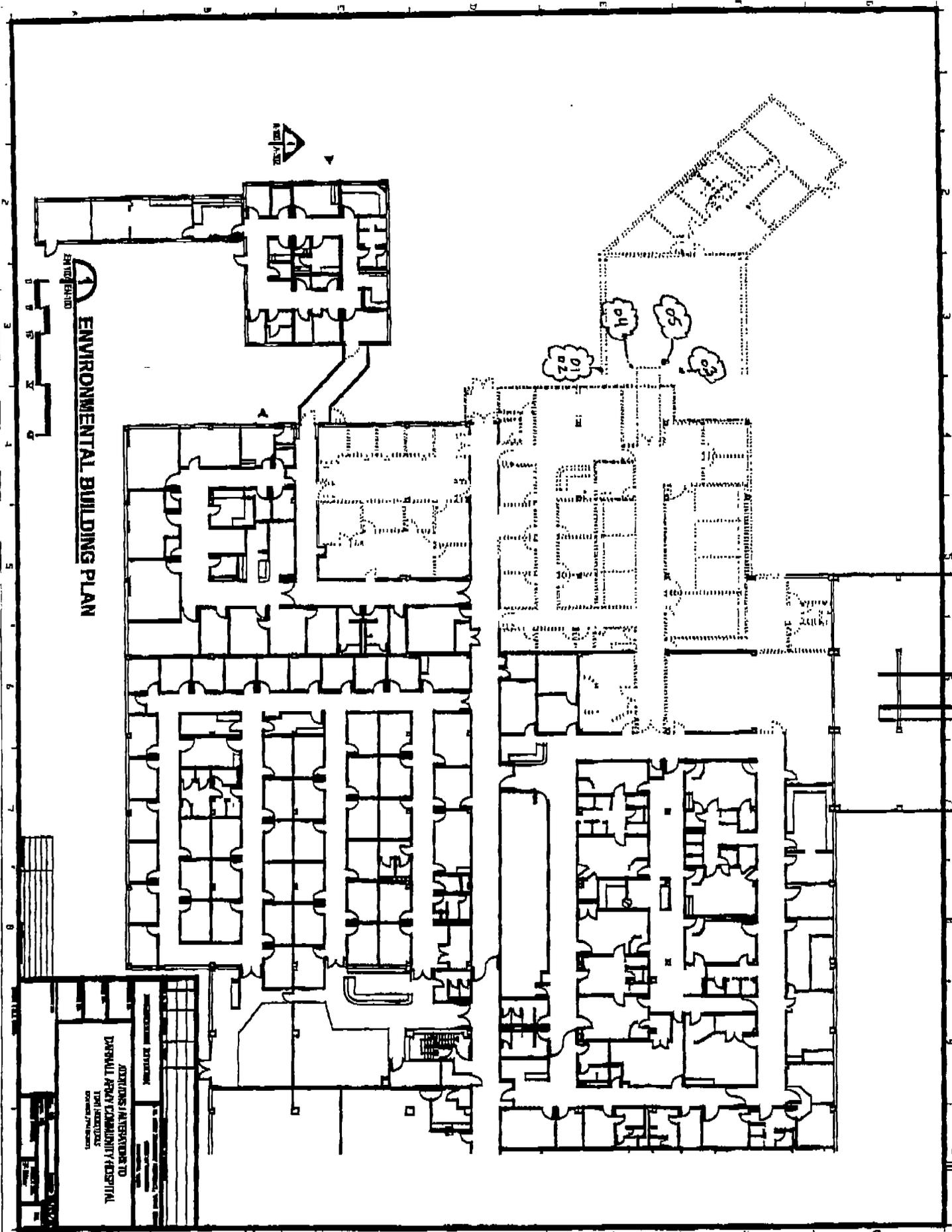
CLIENT: _____ Cromwell Architects _____

ANALYZED BY: CA Labs

DATE	SAMPLE NO.	SAMPLE LOCATION	MATERIAL SAMPLED	COLOR	CONDITION	RESULTS (%)
6-19-01	DH-01	Exterior column – next to emergency room west side	Exterior column	Light brown	Slightly damaged	Negative 0.3250
6-19-01	DH-02	Exterior column – next to emergency room west side	Exterior column	Light brown	Slightly damaged	Negative 0.3000
6-19-01	DH-03	Exterior column – next to emergency room east side	Exterior column	Light brown	Slightly damaged	Positive 2.0000
6-19-01	DH-04	Next to emergency entrance west side	Exterior railing	Yellow	No damage	Positive 12.0000
6-19-01	DH-05	Next to emergency entrance East side	Exterior railing	Yellow	No damage	Positive 19.0721
6-19-01	DH-06	Boiler room – next to crawl space	Drain pipe	Yellow	No damage	Negative 0.0230
6-19-01	DH-07	Boiler room – next to crawlspace	Concrete walls	White	No damage	Positive 1.1413
6-19-01	DH-08	Boiler room – South wall	Concrete walls	White	No damage	Negative 0.0094
6-19-01	DH-09	Boiler room – NE corner	Concrete walls	White	No damage	Negative 0.0230
6-19-01	DH-10	Boiler room – under drain pipe	Concrete floor	Gray	No damage	Negative 0.2729
6-19-01	DH-11	Boiler room – South area	Concrete floor	Gray	No damage	Negative 0.0777
6-19-01	DH-12	Boiler room – middle of room	Concrete floor	Gray	No damage	Negative 0.1792

APPENDIX E

Drawing Locations



Lead-Based Paint Sample Locations

(# 1-5) exterior building

ENVIRONMENTAL BUILDING PLAN

ADDITIONS/ALTERATIONS TO
DERRILL ARMY COMMUNITY HOSPITAL
1001 HANCOCK
CONTRACT # 1000000000

DH-06

DH-07

DH-08

DH-09

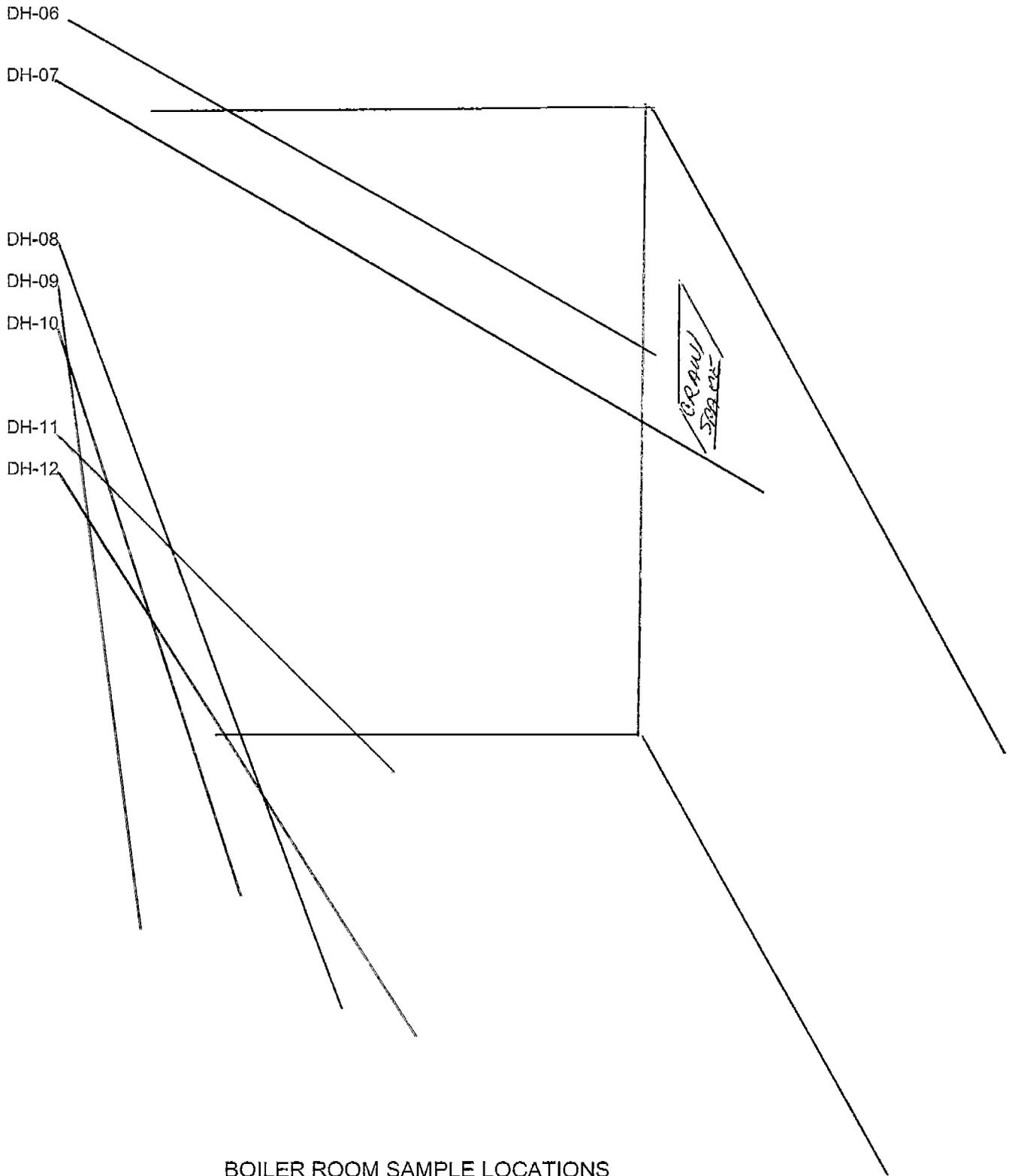
DH-10

DH-11

DH-12

CRANK SPACE

BOILER ROOM SAMPLE LOCATIONS



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Department of the Army
Fort Worth District, Corps of Engineers



FY03 DARNALL HOSPITAL
ADDITION/ALTERATION
FORT HOOD, TEXAS



NO. DACA 63-00-D-0001

LEAD HAZARD AND CONTROL ACTIVITIES

March 6, 2003

101 So. Spring Street ■ Little Rock, Arkansas

CROMWELL
ARCHITECTS ENGINEERS

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SECTION 13281A

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03/02

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Fort Hood, Texas

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SECTION 13281A

LEAD HAZARD CONTROL ACTIVITIES
03/02

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI Z9.2 (1979; R 1991) Fundamentals Governing the Design and Operation of Local Exhaust Systems

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM E 1553 (1993) Practice for Collection of Airborne Particulate Lead During Abatement and Construction Activities

ASTM E 1613 (1999) Standard Test Method for Determination of Lead by Inductively Coupled Plasma Atomic Emission Spectrometry (ICP-AES), Flame Atomic Absorption Spectrometry (FAAS), or Graphite Furnace Atomic Absorption (GFAAS) Techniques

ASTM E 1644 (1998) Practice for Hot Plate Digestion of Dust Wipe Samples for the Determination of Lead

ASTM E 1726 (1995) Sample Digestion of Soils for the Determination of Lead by Atomic Spectrometry

ASTM E 1727 (1999) Field Collection of Soil Samples for Lead Determination by Atomic Spectrometry Techniques

ASTM E 1728 (1999) Field Collection of Settled Dust Samples Using Wipe Sampling Methods for Lead Determination by Atomic Spectrometry Techniques

ASTM E 1729 (1999) Field Collection of Dried Paint Samples for Lead Determination by Atomic Spectrometry Techniques

ASTM E 1741 (2000) Preparation of Airborne Particulate Lead Samples Collected During Abatement

and Construction Activities for Subsequent
Analysis by Atomic Spectrometry

- ASTM E 1792 (1996a) Wipe Sampling Materials for Lead
in Surface Dust
- ASTM E 1795 (2000) Non-Reinforced Liquid Coating
Encapsulation Products for Leaded Paint in
Buildings
- ASTM E 1796 (1997) Selection and Use of Liquid Coating
Encapsulation Products for Leaded Paint in
Buildings
- ASTM E 1797 (2000) Reinforced Liquid Coating
Encapsulation Products for Leaded Paint in
Buildings

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

- NFPA 701 (1999) Methods of Fire Tests for
Flame-Resistant Textiles and Films

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

- NIOSH Pub No. 84-100 (1984; Supple 1985, 1987, 1988 & 1990)
NIOSH Manual of Analytical Methods

U.S. ARMY CORPS OF ENGINEERS (USACE)

- EM 385-1-1 (1996) U.S. Army Corps of Engineers Safety
and Health Requirements Manual

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT (HUD)

- HUD 6780 (1995; Errata Aug 1996; Rev Ch. 7 - 1997)
Guidelines for the Evaluation and Control
of Lead-Based Paint Hazards in Housing

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

- EPA 747-K-99-001 (1999) Protect Your Family From Lead in
Your Home

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

- 24 CFR 35 Lead-Based Paint Poisoning Prevention in
Certain Residential Structures
- 29 CFR 1910 Occupational Safety and Health Standards
- 29 CFR 1926 Safety and Health Regulations for
Construction
- 40 CFR 745 Lead-Based Paint Poisoning Prevention in
Certain Residential Structures

UNDERWRITERS LABORATORIES (UL)

1.2 DEFINITIONS

- a. a. Lead Hazard Control Activity - Any construction work where a worker may be occupationally exposed to lead and procedures have to be followed to assure that: 1). Lead inside the lead hazard control area is cleaned up to appropriate levels and 2). Lead dust does not disperse outside the lead hazard control area at unacceptable levels.
- b. Public/Commercial Building - Buildings on real property, including residential real property, generally accessible to the public except target housing, child occupied facilities and industrial buildings. Examples include offices, stores/shopping centers, churches, schools, barracks, hospitals, museums, airports, hotels, convention centers.
- c. Industrial Building - Any building used for industrial purposes where normal operations inside the building may produce lead aerosol that will settle out on inside surfaces.
- d. Target Housing - Residential real property which is housing constructed prior to 1978, except housing for the elderly or persons with disabilities (unless any one or more children age 6 years or under resides or is expected to reside in such housing for the elderly or persons with disabilities) or any 0 bedroom dwelling.
- e. Child-occupied Facility - Real property which is a building or portion of a building constructed prior to 1978 visited regularly by the same child, 6 years of age or under, on at least two different days, provided that each day's visit lasts at least 6 hours, and the combined annual visits last at least 60 hours. Child-occupied facilities include but are not limited to, day-care centers, preschools and kindergarten classrooms.
- f. Residential Real Property - Real property on which there is situated one or more residential dwellings used or occupied, or intended to be used or occupied, in whole or in part, as the home or residence of one or more persons.

1.3 DESCRIPTION OF WORK

The work covered by this section includes work tasks, on the individual work task data sheets at the end of this section, and the precautions specified in this section for the protection of workers, building occupants and the environments.

1.3.1 Protection of Existing Areas To Remain

All project work including, but not limited to, lead hazard work, storage, transportation, and disposal shall be performed without damaging or contaminating adjacent work and areas. Where such work or areas are damaged or contaminated, the Contractor shall restore work and areas to the original condition at no additional cost to the Government.

1.3.2 Coordination with Other Work

The contractor shall coordinate lead hazard control activities with work being performed in adjacent areas. Coordination procedures shall be explained in the Contractor's Accident Prevention Plan and shall describe how the Contractor will prevent lead exposure to other contractors and/or Government personnel performing work unrelated to lead hazard control activities.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Materials and Equipment; G,
Expendable Supplies; G,

A description of the materials, equipment and expendable supplies required; including Material Safety Data Sheets (MSDSs) for material brought onsite to perform the work.

Qualifications; G,

A report providing evidence of qualifications and designating responsibilities for personnel and laboratories.

SD-06 Test Reports

Pressure Differential Log; G,
Licences, Permits, and Notifications; G,
Accident Prevention Plan (APP); G,

A report describing how the Contractor will protect workers, building occupants, and building contents while performing lead hazard control activities; and how project clearance will be performed.

Sampling and Analysis; G, _____

A log of the analytical results required for the sampling. The log shall be kept current.

Clearance Report; G,

Report prepared by the QSHP.

1.5 QUALIFICATIONS

1.5.1 Qualifications and Organization Report

The Contractor shall furnish a qualification and organization report. The report shall describe the qualifications of the qualified safety and health professional (QSHP), onsite safety and health supervisor (OSHS), labor staff and the independent risk assessor. The report shall include an organization chart showing the Contractor's personnel by name and title and

project specific responsibilities and authorities. The report shall describe the qualifications of the laboratories selected for this project. The report shall be signed by the Contractor and the qualified safety and health professional to indicate that all personnel and laboratories comply with certification and experience requirements of this section and that project personnel have been given the authority to complete the tasks assigned to them.

1.5.2 Personnel and Subcontractor Responsibilities and Qualifications

1.5.2.1 Qualified Safety and Health Professional (QSHP)

The QSHP shall be responsible for development of project specific requirements in the Accident Prevention Plan (APP); supervise implementation of the APP requirements; visit the site as needed to verify effectiveness of the APP and to coordinate resolution of unknown situations that may develop as the work progresses; be available to provide consultation to the Onsite Safety and Health Supervisor (OSHS); review sampling and analytical results to evaluate occupational exposure levels, verify effectiveness of controls and determine if clearance requirements have been met. The QSHP shall have demonstrable experience with the implementation of occupational safety and health regulations.

1.5.2.2 Lead Hazard Control Workers

Lead Hazard Control workers shall be responsible for performing the labor necessary to complete the lead hazard control activities required in this contract.

1.5.2.3 Independent Certified Risk Assessor

The independent Certified Risk Assessor shall be a subcontractor to the prime Contractor on the project. The risk assessor shall be responsible to perform the sampling and evaluating the analytical data to verify clearance levels have been achieved. The independent risk assessor shall sign the clearance report indicating clearance requirements for the contract have been met.

1.5.2.4 Testing Laboratories

The laboratory selected to perform analysis on paint chip, soil or dust wipe samples shall be accredited by EPA's National Lead Laboratory Accreditation Program (NLLAP). The laboratory selected perform analysis on worker exposure (industrial hygiene) samples shall be in the American Industrial Hygiene Association's Industrial Hygiene Laboratory Accreditation Program (IHLAP) and shall be successfully participating in the Proficiency Analytical Testing (PAT) program for lead.

1.5.2.5 Blood Lead Testing

The laboratory selected to perform analysis on worker blood samples shall be approved by OSHA and meet the requirements contained in http://www.osha-slc.gov/OCIS/toc_bloodlead.html.

1.5.2.6 Disposal Facility and Transporter

The Contractor shall furnish written evidence that the landfill to be used is approved for lead disposal by USEPA and Texas state requirements. Copies of any required signed agreements between the Contractor (including

subcontractors and transporters) and the lead disposal facility shall be provided.

1.6 REGULATORY REQUIREMENTS

In addition to the detailed requirements of this specification, work shall be performed in accordance with requirements of EM 385-1-1 and applicable regulations including, but not limited to 29 CFR 1910, 29 CFR 1926, especially Section .62, and the accepted Accident Prevention Plan with Appendices. Matters of interpretation of the standards shall be resolved to the satisfaction of and with the concurrence of, the Contracting Officer before starting work. Where these requirements vary, the most stringent shall apply. The following State and local statutes, regulations and requirements apply to lead hazard control activities to be performed: State, Texas.

1.7 ACCIDENT PREVENTION PLAN (APP)

1.7.1 APP Content and Organization

The Contractor's Accident Prevention Plan shall be organized into 5 parts, consisting of the overall plan and 4 appendices. The overall plan shall address each element in Appendix A of EM 385-1-1 in project specific detail. The elements are: a. Signature Sheet, b. Background Information, c. Statement of Safety and Health Policy, d. Responsibilities and Lines of Authorities, e. Subcontractors and Suppliers, f. Training, g. Safety and Health Inspections, h. Safety and Health Expectations, Incentive Programs and Compliance, i. Accident Reporting, j. Medical Support, k. Corporate Plans and Programs required by this contract, (HAZCOM, Respiratory Protection).

1.7.1.1 Lead Hazard Control Plan Appendix

The Lead Hazard Control Appendix shall address occupational exposure issues and shall describe the procedures to be followed to protect employees from lead hazards while performing lead hazard control activities. Each of the following elements shall be addressed in the lead hazard control appendix:

- a. The location and a brief description of each work activity that will emit lead into the workplace atmosphere. A description of any components containing lead shall be included and keyed to the project drawings.
- b. Description of equipment and materials, controls, crew size, worker responsibilities, and operating and maintenance procedures.
- c. Description and sketch of the Lead Hazard Control Areas, including decontamination areas.
- d. Description of the specific lead control methods and procedures to protect workers and other onsite contractors from lead exposure.
- e. Technologic equipment used to keep occupational exposure below the Permissible Exposure Limit and minimize worker exposure to lead (i.e., HEPA-filtered vacuum equipment/cleaners, special negative air enclosure equipment and supplies, etc.).
- f. Worker Exposure Assessment including methods and procedures to monitor and document worker exposure to lead. Worker exposure

monitoring shall be broken into two parts in the plan. Part A: Initial Determination. The Contractor shall describe worker monitoring (if performed for the "initial determination" described in 29 CFR 1926 (.62) (d). Monitoring for the initial determination may be omitted from the plan if the Contractor has sufficient proof from previous operations as specified in 29 CFR 1926 (.62) (d)(3)(iii) and (iv) that workers will not be exposed over the action level. The Contractor shall substitute objective proof of action level compliance in Part A if "initial determination" monitoring is omitted. Part B: Continued Exposure Monitoring. Worker exposure monitoring after the initial lead exposure determination has been made.

- g. Work Practices Program describing the protective clothing to be used to protect workers from lead exposure, house keeping procedures employed to minimize spread on lead contamination in the lead hazard control area, hygiene facilities and practices used to prevent workers from inadvertent ingestion of lead.
- h. Administrative Control Procedures, to be used as a last resort, to limit worker exposure to lead. The worker rotation schedule to be employed, should engineering or personal protective equipment precautions fail to be effective, shall be described. This element of the plan shall be omitted if administrative controls will not be used.
- i. Medical Surveillance practices and procedures used to monitor worker exposure to lead and to assure fitness for wearing respiratory protection devices.
- j. Worker training meeting the requirements of 29 CFR 1926 Sections (.62) and (.59) to assure workers understand hazard associated with working with lead and how to protect themselves.
- k. Security: Fenced and locked security area for each lead hazard control area. Entry into lead hazard control areas shall only be by personnel authorized by the Contractor and the Contracting Officer. Persons entering control areas shall be trained, medically evaluated, and equipped with personal protective equipment required for the specific control area to be entered.

1.7.1.2 Activity Hazard Analyses Appendix

An Activity Hazard Analysis (AHA) shall be prepared for each work task data element specified on the individual work task data element sheets at the end of this section. The AHA shall be submitted to the Contracting Officer prior to beginning specified work. Format shall be in accordance with EM 385-1-1, figure 1-1. The AHA shall be continuously reviewed and modified, when appropriate, to address changing conditions or operations. Each accepted AHA shall be appended to and become part of the APP.

1.7.1.3 Occupant/Building Protection Plan Appendix

The Contractor shall develop and implement an Occupant/Building Protection Plan describing the measures and management procedures to be taken during lead hazard control activities to protect the building occupants/building facilities (and future building occupants/facilities) from exposure to any lead contamination while lead hazard control activities are performed.

1.7.1.4 Clearance Plan Appendix

The Contractor shall develop a Clearance Plan describing practices and procedures used to assure that lead hazard control activities are complete and that lead contamination within the lead hazard control area comply with final clearance levels or visual clearance criteria. Sampling and analysis procedures used to document project completion and clearance goals shall be explained in the Clearance Plan Appendix.

1.7.2 Lead Hazard Information Pamphlet Distribution

Prior to commencing lead hazard control activities, the Contractor shall provide owners/occupants who are affected by the project as defined in 40 CFR 745.Subpart E, the EPA 747-K-99-001. The pamphlet shall be provided in compliance with 40 CFR 745 (.80) through 40 CFR 745 (.88). The Contractor shall collect signatures from affected residents acknowledging they have been informed of planned lead hazard control activities.

1.8 PRE-CONSTRUCTION SAFETY CONFERENCE

1.8.1 Conference General Requirements

The Contractor and the QSHP shall attend a pre-construction safety conference prior to starting work. Items required to be submitted shall be reviewed for completeness, and where specified, for acceptance. Details of the APP shall be revised to correct any deficiencies, and resubmitted for acceptance. Onsite work shall not begin until the APP has been accepted, unless otherwise authorized by the Contracting Officer. One copy of the APP shall be maintained in the Contractor's jobsite file, and a second copy shall be posted where it will be accessible to personnel on the site. As work proceeds, the APP shall be adapted to new situations and conditions. Changes to the APP shall be made by the QSHP with acceptance by the Contracting Officer. Should an unforeseen hazard become evident during performance of the work, the QSHP shall inform the Contracting Officer, both verbally and in writing, for immediate resolution. In the interim, the QSHP shall take necessary action to re-establish and maintain safe working conditions; and to safeguard onsite personnel, visitors, the public, and the environment. Disregard for provisions of this specification, or the accepted APP, shall be cause for stopping of work until the matter is rectified.

1.8.2 Preparatory Inspection Meeting

The Contractor shall arrange and hold a preparatory inspection meeting to review completeness and adequacy of the APP immediately prior to beginning each phase of work.

1.9 MEDICAL SURVEILLANCE REQUIREMENTS

The Contractor shall comply with the following medical surveillance requirements:

- a. The Contractor shall make every attempt to keep occupational exposure to lead on this project below the action level of 30 micrograms/cubic meter defined in 29 CFR 1926 (.62). If it is not possible, and if occupational exposures could possibly exceed the action level for 30 or more days per year, the Contractor shall institute a medical surveillance program. The program shall meet the examination frequency and content requirements specified in

paragraph (j)(1), (j)(2) and (j)(3) of 29 CFR 1926 (.62). Medical removal as specified in paragraph (k) of 29 CFR 1926 (.62), if necessary, shall be at the Contractor's expense.

- b. Medical surveillance and biological monitoring shall be in compliance with 29 CFR 1926 (.62) (g) and (j). Initial biological monitoring shall be performed on lead hazard control workers prior to assignment to the project. Workers shall not be assigned to the project if results indicate a need for restricted activities.
- c. All lead hazard control workers shall pass the medical examinations necessary to be approved by the occupational physician to wear respiratory protection on this project. Occupational physician's approval shall be given prior to assignment to the project.

1.10 RESPIRATORY PROTECTION PROGRAM

The Contractor shall have a written respiratory protection program and shall be fully capable of implementing the requirement of the respiratory protection program on this project. The respiratory protection program shall meet the requirements of 29 CFR 1926 (.62) and 29 CFR 1910 (.134). Project specific respiratory protection requirements shall be included in the lead hazard control plan appendix of the Contractor's accident prevention plan.

1.11 LICENCES, PERMITS AND NOTIFICATIONS

The Contractor shall certify in writing to the Contracting Officer at least 10 days prior to the commencement of work that all licenses, permits and notifications have been obtained. The Contractor is responsible for all associated fees or costs incurred in obtaining the licenses, permits and notifications.

1.12 TRAINING

1.12.1 OSHA Training Requirements

All Contractor personnel and/or subcontractors performing or responsible for onsite oversight of lead hazard control activities shall meet the following training requirements.

- a. Content of 29 CFR 1926 (.62) and its appendices.
- b. How operations could result in exposure over the action level.
- c. Purpose, selection, fitting, use and limitations of respirators.
- d. Purpose and description of the medical surveillance program.
- e. Use of engineering controls and good work practices to limit occupational exposure to lead.
- f. Implementation of the lead hazard control plan appendix of the accident prevention plan.
- g. Medical supervision for the use of chelating agents.
- h. Employee right of access to medical surveillance records as

specified in 29 CFR 1910 (.20).

1.12.2 Qualified Safety and Health Professional

The qualified safety and health professional shall meet the training requirements in paragraph 1.12.1 and shall meet the training, experience and authority requirements in 29 CFR 1926 (.62) to be a competent person and be trained and have the experience and education to meet 40 CFR 745 Subpart L requirements to carry the following certifications:

- a. Certified Risk Assessor
- b. Certified Project Designer
- c. Certified Supervisor

1.12.3 Independent Risk Assessor

The independent risk assessor shall meet the training requirements in paragraph OSHA Training Requirements, above, and shall meet the training and experience requirements in 40 CFR 745 to carry certification as a certified risk assessor.

1.12.4 Abatement Worker

Workers shall meet the OSHA Training Requirements specified above and the training requirements in 40 CFR 745 Subpart L to carry certification as a Certified Worker, if required.

1.12.5 Training Program Certification

Training to meet 40 CFR 745 Subpart L requirements shall be provided by an EPA accredited training provider and the Contractor shall provide proof in the Qualifications and Organization Report showing that personnel have passed certification examinations for their respective disciplines, that fees for certification have been paid to the EPA (or to the state for state-run programs) and that EPA has certified the QSHP, independent risk assessor, certified workers to perform their duties.

1.13 SAMPLING AND ANALYSIS

1.13.1 Sampling and Analytical Procedures

1.13.1.1 Sampling and Analysis Methods

Analysis shall conform to NIOSH Pub No. 84-100 Method 7082, Lead, for personal sampling required by 29 CFR 1926 (.62) and ASTM E 1613 Sampling shall conform to ASTM E 1553 and ASTM E 1741.

1.13.1.2 Paint Chip Sampling and Analysis

Sampling shall conform to ASTM E 1729 .

1.13.1.3 Dust Wipe Materials, Sampling and Analysis

Sampling shall conform to Analysis shall conform to ASTM E 1613.

1.13.2 Occupational Exposure Assessment

Sampling and analytical procedures to determine compliance with the occupational exposure monitoring requirement of this section shall be

described in the lead hazard control plan appendix of the Contractor's accident prevention plan. Monitoring for the initial determination may be omitted if the Contractor has sufficient proof from previous operations as specified in 29 CFR 1926 (.62) (d)(3)(iii) and (iv) that workers will not be exposed over the action level. The following occupational exposure monitoring requirements apply and shall be implemented if the requirements of 29 CFR 1926 (.62)(d)(3) (iii) and (iv) cannot be demonstrated.

- a. During Initial Monitoring the Contractor shall representatively sample employees with the greatest potential for exposure to aerosolized lead.
- b. Continued/Additional Monitoring shall meet applicable paragraphs in 29 CFR 1926 (.62)(d)(6), Frequency, after the initial determination has been made.

1.13.3 Lead Hazard Control Area/Containment Monitoring

The Contractor shall perform a visual inspection once per day outside the lead hazard control area to assure visual clearance criteria are maintained while lead hazard control activities are performed. The Contractor shall clean at its own expense, and to the Contracting Officer's satisfaction, all contaminated surfaces outside the lead hazard control area, if surfaces fail visual clearance criteria.

1.13.4 Occupancy During Work

The Contractor shall wipe sample a floor surface at a location no more than 10 feet outside the lead hazard control area at a frequency of once per day while lead hazard control activities are being performed. Wipe sampling analytical results shall pass clearance criteria for floors specified in this contract. The Contractor shall clean all contaminated surfaces at its own expense and to the Contracting Officer's satisfaction, if floor wipe samples required in this paragraph fail clearance criteria.

1.13.5 Clearance Monitoring

Sampling and analytical procedures to determine the clearance requirements of this section shall be described by the Contractor in the Clearance Plan Appendix of the Accident Prevention Plan. The Contractor shall perform the following sampling and analysis to verify that clearance requirements for the contract (inside the lead hazard control) area have been met.

- a. The Contractor shall take dust wipe samples inside the lead hazard control area after the final visual inspection in the quantities and at the locations specified.

(1) Floors.

1.13.6 Waste Disposal Sampling

The Contractor shall sample the following waste streams for TCLP analysis to determine waste disposal requirements.

- a. The Contractor shall take 1 sample of building demolition debris.

1.13.7 Analytical Results

The Contractor shall develop and maintain during the course of the project

a log of analytical results generated by the above sampling requirements. The log shall clearly describe the reason for which the sample was taken (worker exposure, migration control, clearance) the analytical result for each sample and evaluate if the analytical result passed or failed the action levels. At a minimum, the Contractor shall include analytical results for samples required to be taken in paragraphs Occupational Exposure Assessment, Lead Hazard Control Area/Containment Monitoring, Occupancy During Work, and Clearance Monitoring specified above.

1.14 CLEARANCE REQUIREMENTS

Clear lead hazard control areas in industrial facilities: visual clearance criteria.

1.15 PERSONAL PROTECTIVE EQUIPMENT (PPE)

The Contractor shall describe the PPE to be used to protect workers from lead hazards in the Lead Hazard Control Plan Appendix of the Accident Prevention Plan. The Contractor shall furnish, at no cost to the workers, clothing for protection from lead-contaminated dust and debris. An adequate supply of these items shall be available for worker and Government personnel use. Protective clothing shall include:

- a. Coveralls : Full-body Tyvek type, moisture permeable (breathable) disposable coveralls shall be provided to lead hazard control workers.
- b. Boots: Boots and shoes shall be provided as required by EM 385-1-1 Section 05.A.08 for workers. Boot/shoe covers shall be provided to prevent contamination of boots and shoes.
- c. Hand Protection: Gloves, etc., shall be provided as required by EM 385-1-1 Section 05.A.10 for workers.
- d. Head Protection: Hard hats shall be provided as required by 29 CFR 1910 (.135) and EM 385-1-1 Section 05.D for workers and authorized visitors.
- e. Eye and Face Protection: Eye and face protection shall be provided as required by 29 CFR 1910 (.133) and EM 385-1-1 Section 05.B for workers and authorized visitors.
- f. Respirators: NIOSH certified air-purifying respirators or filtering face pieces shall be provided for use as respiratory protection for airborne lead and for other hazardous airborne contaminants that may be encountered; as determine by the on-site safety and health supervisor. At a minimum, respirators shall be furnished to each employee required to enter a lead hazard control area where an employee exposure assessment has not yet been performed, or where monitoring data establishes the need for respiratory protection, or if requested by the employee.
- g. Respirator Cartridges/Filtering Face Pieces: Respirator cartridges shall be changed out/filtering face pieces properly disposed of when the they become sufficiently loaded with particulate matter that workers experience breathing resistance. Cartridges and filtering face pieces shall be N, R or P 100 rated to assure sufficient protection from lead exposure.

1.16 HYGIENE FACILITIES

The Contractor shall describe the personal hygiene facilities to be used by the workers in the Lead Hazard Control Plan Appendix of the Accident Prevention Plan. The Contractor shall provide hygiene facilities for lead hazard control workers. Hygiene facilities shall consist of the following:

1.16.1 Hand Wash Stations

The Contractor shall provide hand washing facilities for use by lead hazard control workers. Hand washing facilities shall comply with the requirements in 29 CFR 1926 (.51) (f). Faces and hands shall be washed when leaving the lead hazard control area and after each work-shift if showers are not provided.

1.16.2 Change Area

The Contractor shall provide a change area to workers. The change area shall be equipped so that contaminated work clothing and street clothes shall be stored separately to prevent cross contamination.

1.16.3 Showers

Showers shall be provided if feasible and if worker exposures exceed the PEL. When provided, showers facilities shall meet the requirements of 29 CFR 1926 (.51) (f).

1.16.4 Eating Area

The Contractor shall set aside an area or provide a room for taking breaks and eating lunch. This area shall be kept as free as practicable from lead contamination. Workers shall be required to follow the procedures in 29 CFR 1926 (.62) (i)(4) when using the room.

1.17 POSTED WARNINGS AND NOTICES

The following regulations, warnings, and notices shall be posted at the worksite in accordance with 29 CFR 1926 (.62).

1.17.1 Regulations

At least two copies of 29 CFR 1926 (.62) shall be made available for use by either the Contracting Officer or affected workers; and for the purpose of providing required information and training to the workers involved in the project. One copy shall be maintained in the Contractor's jobsite file, and a second copy shall be posted where it will be accessible to workers on the site.

1.17.2 Warning Signs and Labels

Warning signs shall be posted in each lead hazard control area where worker exposure to lead is undetermined or where the exposures are above the permissible exposure limit as defined in 29 CFR 1926 (.62). Signs shall be located to allow personnel to read the signs and take necessary precautions before entering the lead hazard control area.

1.17.2.1 Warning Signs

Warning signs shall be in English and Spanish, be of sufficient size to be

clearly legible, and display the following:

WARNING
LEAD WORK AREA
POISON
NO SMOKING OR EATING

1.17.2.2 Warning Labels

Warning labels shall be affixed to all lead waste disposal containers used to hold materials, debris and other products contaminated with lead hazards; warning labels shall be in English and Spanish, and be of sufficient size to be clearly legible, and display the following:

CAUTION: CLOTHING CONTAMINATED WITH LEAD. DO NOT REMOVE DUST BY BLOWING OR SHAKING. DISPOSE OF LEAD CONTAMINATED WASH WATER IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE OR LOCAL REGULATIONS.

1.17.3 Worker Information

Right-to-know notices shall be placed in clearly visible areas accessible to personnel on the site, to comply with Federal, state, and local regulations.

1.17.4 Air Monitoring Results

Air monitoring results shall be prepared so as to be easily understood by the workers. One copy shall be maintained in the Contractor's jobsite file, and a second copy shall be posted where it will be accessible to the workers as specified in 29 CFR 1926 (.62).

1.17.5 Emergency Telephone Numbers

A list of emergency telephone numbers shall be posted at the site. The list shall include numbers of the local hospital, emergency squad, police and fire departments, Government and Contractor representatives who can be reached 24 hours per day, and professional consultants directly involved in the project.

1.18 MATERIALS AND EQUIPMENT

Sufficient quantities of health and safety materials required by 29 CFR 1926 (.62), and other materials and equipment needed to complete the project, shall be available and kept on the site.

1.18.1 Chemical Paint Strippers

Chemical paint strippers shall not contain methylene chloride and shall be formulated to prevent stain, discoloration, or raising of the substrate materials.

1.18.2 Chemical Paint Stripper Neutralizer

Neutralizers for paint strippers shall be compatible with the substrate and suitable for use with the chemical stripper that has been applied to the surface.

1.18.3 Detergents and Cleaners

Detergents or cleaning agents used shall have demonstrated effectiveness in lead control work using cleaning techniques specified by HUD 6780 guidelines.

1.19 EXPENDABLE SUPPLIES

1.19.1 Polyethylene Bags

Disposable bags shall be polyethylene plastic and shall be a minimum of 6 mils thick (4 mils thick if double bags are used) or any other thick plastic material shown to demonstrate at least equivalent performance; and shall be capable of being made leak-tight. Leak-tight means that solids, liquids or dust cannot escape or spill out.

1.19.2 Polyethylene Leak-tight Wrapping

Wrapping used to wrap lead contaminated debris shall be polyethylene plastic that is a minimum of 6 mils thick or any other thick plastic material shown to demonstrate at least equivalent performance.

1.19.3 Polyethylene Sheeting

Sheeting shall be polyethylene plastic with a minimum thickness of 6 mil, or any other thick plastic material shown to demonstrate at least equivalent performance; and shall be provided in the largest sheet size reasonably accommodated by the project to minimize the number of seams. Where the project location constitutes an out of the ordinary potential for fire, or where unusual fire hazards cannot be eliminated, flame-resistant polyethylene sheets which conform to the requirements of NFPA 701 shall be provided.

1.19.4 Tape and Adhesive Spray

Tape and adhesive shall be capable of sealing joints between polyethylene sheets and for attachment of polyethylene sheets to adjacent surfaces. After dry application, tape or adhesive shall retain adhesion when exposed to wet conditions, including amended water. Tape shall be minimum 2 inches wide, industrial strength.

1.19.5 Containers

When used, containers shall be leak-tight and shall be labeled in accordance with EPA, DOT and OSHA standards, as specified in paragraph WARNING LABELS.

1.19.6 Chemicals

Chemicals, including caustics and paint strippers, shall be properly labeled, used in accordance with the manufacturers recommendations and stored in leak-tight containers. Material Safety Data Sheets (MSDSs) shall be provided and hazard communication procedures implemented in conformance with paragraph HAZARD COMMUNICATION PROGRAM.

1.20 STORAGE OF MATERIALS

Materials shall be stored protected from damage and contamination. During periods of cold weather, plastic materials shall be protected from the

cold. Flammable or hazardous materials shall not be stored inside a building. Materials shall be regularly inspected to identify damaged or deteriorating items. Damaged or deteriorated items shall not be used and shall be removed from the site as soon as they are discovered. Stored materials shall not present a hazard or an inconvenience to workers, visitors, and/or other occupants and employees of the facility in which they are located.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 WORK PROCEDURES

The Contractor shall perform work following practices and procedures described accident prevention plan.

3.1.1 Lead Hazard Control Areas, Equipment and Procedures

The Contractor shall set up lead hazard control areas and operate equipment within the lead hazard control area in a manner that will minimize migration of lead dust beyond the lead hazard control area boundaries and minimize exposure to workers.

3.1.2 Lead Hazard Control Areas

Access into lead hazard control areas by the general public shall be prohibited. Workers entering the lead hazard control area shall meet medical surveillance requirements of this contract and shall be required to understand and follow procedures described in the Contractor's accident prevention plan for reducing lead exposure. Lead hazard control area preparation and restriction requirements follow:

- a. Containment features for interior lead hazard control projects:
Yellow caution tape to designate the lead hazard control area. The floor in the lead hazard control area shall be covered with two layers of polyethylene sheeting. The entry/exit shall be sealed.
- b. Containment features for exterior lead hazard control projects:
Colored caution tape A roped-off boundary perimeter, using caution tape or a barrier installed at entrance/exit from where the lead control work is performed.

3.2 USE OF HYGIENE FACILITIES

- a. Personnel and equipment shall be decontaminated when exiting the lead hazard control area. The Contractor shall comply with the following personnel and equipment decontamination procedures:

- (1) HEPA vacuum outer garments and equipment.
- (2) Wet Wipe Equipment.
- (3) Remover outer layer of garments.
- (4) Thoroughly wash face and hands, if showering not required.
- (5) Shower (if applicable).
- (6) Remove Respirator (if applicable).
- (7) Exit lead hazard control area.

- b. The Contractor shall provide, and workers shall use, a change room

to change into work clothing at the beginning of a work shift. At the end of the work shift workers shall change back into street clothing and leave contaminated work clothing at the site for disposal.

- c. The Contractor shall provide an eating facility as free as practical from lead contamination. Workers shall be allowed usage of the eating facility for rest/lunch breaks.

3.3 FURNISHINGS

The Contractor shall remove furniture and equipment from the work area before lead hazard control work begins.

3.4 WASTE DISPOSAL PROCEDURES

3.4.1 Construction Debris and/or Sanitary Landfill Waste

The Contractor shall dispose of the following waste streams in a sanitary landfill: Building Demolition Debris, Used Personal Protective Equipment, and Disposable material from containment structures.

3.4.2 Waste Stream Classification

The Contractor shall determine the RCRA waste classification for all waste streams generated by the lead hazard control project. The Contractor shall perform the sampling and analysis specified in paragraph WASTE DISPOSAL, evaluate analytical results and propose waste stream treatment and disposal requirements for the contract. The Contracting Officer will approve waste stream treatment and disposal requirements proposed by the Contractor.

3.4.3 RCRA Subtitle C Hazardous Waste

The Contractor shall dispose of the following waste streams at the RCRA subtitle C Treatment Storage and Disposal Facility or at the RCRA subtitle C hazardous wastes landfill: Building demolition debris Paint sludge and residue from chemical.

3.4.4 Hazardous Waste Transportation and Disposal

The Contractor shall transport, treat and dispose of hazardous waste in accordance with the requirements of Section 02120A TRANSPORTATION AND DISPOSAL OF HAZARDOUS MATERIALS .

3.5 LEAD HAZARD CONTROL PROCEDURES, METHODS AND TECHNIQUES.

3.5.1 Paint Removal Methods

Prohibited paint removal methods shall include: open flame burning or torching, including the use of heat guns having operating temperatures greater than 1,100 degrees F; machine sanding or grinding without HEPA exhaust; non-contained hydro blasting or high-pressure water wash; abrasive blasting or sandblasting without HEPA exhaust; dry scraping, except near electrical outlets or when using a heat gun. Chemical paint removers containing methylene chloride are prohibited. Building components and structures adjacent to the removal process shall be appropriately protected from damage due to the removal process employed. Stripping shall be done according to manufacturer's recommendations. Stripped substrates shall be thoroughly washed and neutralized before applying a primer or sealing coat.

3.5.1.1 Wet Scraping

Surfaces near electrical outlets shall not be moistened but shall be dry scraped only. Loose material shall be scraped from the surface and deposited onto the containment plastic. Damp scrapings shall be cleaned up as soon as possible to prevent tracking throughout the work area. Scraper blades shall be kept sharp. Additional scraper blades shall be supplied and shall be selected for the type of surface being scraped.

3.6 CLEARANCE PROCEDURES

3.6.1 Visual Inspection

QSHP shall perform a visual inspection, using the form at the end of this section, for each lead hazard control area to assure that lead hazard control activities, identified in the individual work task data elements, have been properly completed. The QSHP shall visually verify that lead hazards have been removed, control technology has been appropriately applied/installed and that the lead hazard control area is free of dust and paint chips generated by lead hazard control activities.

3.6.2 Analytical Demonstration of Clearance

After the visual inspection the independent risk assessor shall take clearance samples for laboratory analysis to verify clearance requirements specified in paragraph CLEARANCE REQUIREMENTS have been met.

3.7 EVALUATION OF SAMPLING AND MONITORING RESULTS

Analytical results from samples taken during lead hazard control activities shall be evaluated to determine compliance with occupational safety and health standards and project specific control efficiency and clearance/clean up levels.

3.7.1 Occupational Safety and Health

The QSHP shall review the analytical results from samples taken for the initial exposure assessment and continued occupational safety and health monitoring if required. Effectiveness and adequacy of personal protective equipment, respirators, work practices, hygiene facilities and personal decontamination procedures shall be evaluated and upgrades/downgrades in equipment and procedures made. After notifying the Contracting Officer the following shall be applied:

- a. Exposures over the PEL (0.05 mg/cubic meter):
 - (1) Improve work practices to reduce exposures.
 - (2) Don respirators.
 - (3) Assure eating facilities and change rooms are clean and are free from settled dust.
 - (4) Shower as part of personal decontamination.
- b. Exposures over the Action Level (0.03 mg/cubic meter):
 - (1) Assure exposed individuals enrolled in the medical

surveillance program.

(2) Assure exposed individuals enrolled in and up to date with lead exposure training requirements.

3.7.2 Control Efficiency of Containment Features

The QSHP shall review and document results of the visual inspection determining visual clearance criteria are being met while lead hazard control activities are being performed. The QSHP shall review analytical results from samples taken to determine if lead is migrating outside lead hazard control areas at levels in excess of clearance criteria. The QSHP shall notify the Contracting Officer and apply the following actions if results exceed project specific clearance levels outside the lead hazard control area:

- a. Require/improve containment.
- b. Improve work practices to reduce lead aerosol generation.

3.7.3 Clearance

The QSHP shall review analytical results for the samples taken to determine compliance with project specific clearance requirements. The following actions apply and shall be performed at the Contractor's expense if project specific clearance levels are exceeded:

- Reclean surfaces.
- Retest to determine clearance.

3.7.4 Removal of Lead Hazard Control Area

Upon acceptance of the final clearance certification by the Contracting Officer, and when authorized, cleared Lead Hazard Control Area boundary controls and warning signs shall be removed.

3.8 CLEARANCE REPORT

The QSHP shall prepare a clearance report including the following information:

- a. Start and completion dates of lead hazard control activities.
- b. Type of lead hazard control activity performed (i.e., abatement, interim control, renovation, remodeling), locations and lead hazards controlled or abated.
- c. The name and address of each firm conducting lead hazard control activities and the name of each supervisor assigned to the project.
- d. The Occupant Protection Plan prepared pursuant to paragraph OCCUPANT PROTECTION PLAN.
- e. The name, address and signature of the QSHP or independent risk assessor to indicate clearance requirements have been met.
- f. Certification of each Final Cleaning and Visual Inspection performed by the QSHP.

- g. Analytical results from clearance sampling performed by the QSHP or independent risk assessor, the name of the laboratory that conducted the analysis. Results shall be provided in both the laboratory report and on the appropriate example forms provided at the end of this section.
- h. A detailed written description of the lead hazard control activities performed, including hazard control methods used, locations of rooms and/or components where lead hazard control activities occurred, reason for selecting particular hazard control methods for each component, and any suggested monitoring of encapsulants or enclosures.
- i. Hazardous waste disposal documentation.
- j. Contractor provided installation/maintenance manuals.

3.9 TITLE TO MATERIALS

Materials resulting from demolition work, except as specified otherwise, shall be come the property of the Contractor, and shall be disposed of in accordance with Section 02220A DEMOLITION, except as specified.

3.10 PAYMENT FOR HAZARDOUS WASTE

Payment for disposal of hazardous waste will not be made until a signed copy of the manifest from the treatment or disposal facility certifying the amount of lead-containing materials delivered is returned and a copy is furnished to the Government.

3.11 CERTIFICATION OF VISUAL INSPECTION

Certify that the lead hazard control ares(s) for each individual work task data elements have passed visual clearance criteria and are ready for clearance sampling. To pass visual clearance, lead hazards have to be removed; control technology appropriately applied/installed; the lead hazard control area must be free from visible dust debris, paint chips or any other residue that may have been generated by the lead hazard control activities.

FY03 Darnall Hospital Addition/Alteration
Fort Hood, Texas

I certify that the clearance samples taken meet the clearance sampling requirements of this contract.

By: _____ Date: _____
QSHP or independent risk assessor

Print name and Title: _____

CONTRACTING OFFICER ACCEPTANCE OR REJECTION

I have inspected sampling locations and procedures and have found them to be
_____ Acceptable, meet contract requirements.

_____ Unacceptable, do not meet contract requirements, Contractor is directed to resample.

By: Contracting Officer's Representative

Signature _____ Date _____

Print Name and Title _____

INDIVIDUAL WORK TASK DATA ELEMENTS

Sheet _____ of _____

There is a separate data sheet for each individual work task.

WORK TASK DESIGNATION NUMBER: _____

2. LOCATION OF WORK TASK:
3. BRIEF DESCRIPTION OF THE LEAD HAZARD CONTROL ACTIVITY:
4. POST LEAD HAZARD CONTROL BUILDING/FACILITY USE: INDUSTRIAL
5. LEAD CONTAMINATED DEBRIS DISPOSAL DESTINATION: RCRA subtitle C Landfill
6. CLEARANCE REQUIREMENTS: VISUAL

-- End of Section --

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Appendix B

SECTION 01920

SUMMARY OF WORK LEAD-BASED PAINT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Project consists of the hand demolition and disposal of the materials coated with lead based paint (LBP). Contractor shall be responsible for disposal of lead-painted substrates and debris generated from the hand demolition process.
 - 1. Project Location: The project is located at Darnall Hospital "Old Mechanical Room". The lead-based paint is located on the west wall at the crawl space entrance next to the chill water lines.
 - 2. Owner: Darnall Hospital
- B. Contract Documents were prepared for the Project by Raba-Kistner Consultants, Inc., 8200 Cameron Road, Suite C-154, Austin, Texas 78754. Telephone number is (512) 339-1745 and fax (512) 339-6174.
- C. The Work consists of the hand demolition of approximately four (4) 2 ft by 2 ft holes in the wall, which has been identified as possessing a lead paint coating. The Contractor shall complete all LBP abatement work within the timeline allocated for the asbestos abatement work. Hand demolition is defined as using crow bars, pry bars, and other non-destructive methods to remove the lead painted substrates. Power tools without HEPA attachments are not allowed. The use of hand saws, axes, sledge hammers, torches, wrecking balls, or heavy machinery are not allowed. It is the intent to remove specific items and abate others with lead painted substrates.

All lead based paint debris and waste will be sized in such a manner to facilitate handling and to maximize the available secure waste storage areas, dumpsters or trucks.

LOCATIONS

Darnall Hospital "Old Mechanical Room". The lead-based paint is located on the west wall at the crawl space entrance next to the chill water lines.

Lead Specifications

Old Mechanical Room

<i>Item</i>	<i>Location</i>	<i>Approximate Amount</i>	
West wall	Mechanical Room	16 sq. ft.	To be abated

QUANTITIES ARE ESTIMATES ONLY AND MUST BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO DISPOSAL.

All debris created during the removal process shall be classified and manifested by the Contractor. Disposal of the waste will be done by the Owner or the Contractor. Contractor will minimize potential hazardous waste stream by carefully segregating waste materials as described in Section 01938. Review of any previous work study does not discharge the Contractor of his obligation to properly classify the hand demolition debris. The Owner's Representative shall be present during any and all sampling performed for the purpose of classifying the demolition debris.

D. The Work will be accomplished under a single prime contract.

1.3 PLAN OF ACTION

Submit a detailed job-specific plan of the procedures proposed for use in complying with the requirements of this specification. Include in the plan the location, size, layout and details of the work areas and worker decontamination facilities. Include the sequencing of all work processes, especially in consideration of the asbestos abatement activities that will also occur, the interface of trades involved in the performance of work, methods to be used to assure the safety of adjacent building occupants and visitors to the site area, disposal plan including location of approved disposal site, and a detailed description of the methods to be employed to control fugitive dust and debris. Method of removal to reduce lead dust generation in the work area, and packaging of removed lead paint, dust and debris must also be included. Describe the methods that will be used to comply with OSHA requirements including submission of exposure monitoring to demonstrate adequacy of respiratory and worker protection equipment selected. **Note that if previous exposure monitoring is not available, the guidelines presented in Section 01932 will dictate the minimum respiratory program.** The plan must be approved by the Owner's Representative prior to commencement of work.

Section 01937 Remediation of Lead Contaminated Soil shall be applicable for work execution if the Contractor has contaminated soil during the execution of work in this contract. The LBP abatement task shall comply with other submittal and regulatory requirements as specified in Section 13281 Lead Hazard Control Activities and all related LBP hazard control documents in this contract.

1.4 EXAMINATION

Prior to commencement of work, examine areas in which work will be performed with the

Owner's Representative. Prepare a listing of damage to structure, surfaces, equipment or of surrounding properties which could be misconstrued as damage resulting from the work. Photograph or videotape existing conditions as necessary to document conditions. Submit to Owner's Representative prior to starting work.

1.5 POTENTIAL LEAD HAZARD

The disturbance or dislocation of lead-based painted materials may cause lead dust to be released into the atmosphere, thereby creating a potential health hazard to workers, visitors to the adjacent area and adjacent building occupants. Apprise all workers, supervisory personnel, subcontractors and consultants who will be at the job site of the seriousness of the hazard and of proper work procedures which must be followed.

Where in the performance of the work, workers, supervisory personnel, subcontractors, or consultants may encounter, disturb, or otherwise function in the immediate vicinity of any identified lead-based paint, take appropriate continuous measures as necessary to protect all individuals from the potential hazard of exposure to lead dust. Such measures shall include the procedures and method described herein, and compliance with regulations and guidelines of applicable federal, state and local agencies.

1.6 STOP WORK

If the Owner presents a written or verbal stop work order, or if stop work levels as set forth in the Contract Documents are exceeded, immediately and automatically stop all work. Do not recommence work until authorized in writing by the Owner or Owner's Representative.

1.7 LEAD BASED PAINTED SURFACES

- A. Lead-based painted surfaces are known to be present at the work site. There may be other surfaces that are also painted with lead-based paint. Components and surfaces not in this list may be included in the Work.
The referenced lead-based paint coated materials are known to be present in the Buildings. It is the Abatement Contractor's responsibility to estimate the quantities of lead based paint surfaces to be abated for this project. The attached quantities are for information only. **The Abatement Contractor shall field verify the quantities.**

1.8 WORK UNDER OTHER CONTRACTS

- A. **Separate Contract:** The Owner has not awarded a separate contract for performance of other construction operations at the site. There will be only one contract awarded by Owner for all details of this project. Some ancillary work efforts may be undertaken by the Owner's work forces.
- B. Cooperate fully with Owner's work forces so that their work may be carried out smoothly, without interfering with or delaying work under this Contract.

1.9 FUTURE WORK – not applicable

1.10 WORK SEQUENCE

The work will be conducted in a single phase.

1.11 CONTRACTOR USE OF PREMISES

- A. **General:** During the demolition period the Contractor shall have full use of the premises. The Contractor's use of the premises is limited only by the Owner's right to perform work or to retain other contractors on portions of the Project.
- B. **Use of the Site:** Limit use of the premises to work in areas indicated. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated.
 - 1. **Surrounding roadways:** Keep surrounding roadways serving the premises clear and available to the Owner, the Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials unless prior arrangements have been made. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
 - 2. **Lock automotive type vehicles, such as passenger cars and trucks and other mechanized or motorized construction equipment, when parked and unattended, so as to prevent unauthorized use.**

Do not leave such vehicles or equipment unattended with the motor running or the ignition key in place or accessible to unauthorized persons.
 - 3. **Do not unreasonably encumber the site with materials or equipment. Confine stockpiling of materials and location of storage sheds to the areas indicated.**
 - 4. **Keep all public areas free from accumulation of waste, rubbish or construction debris.**
 - 5. **No Smoking or open fires will be permitted within the project enclosure or on the premises.**

1.12 SUBMITTALS

Before the Start of Work: Submit the following to the Owner's Representative for review. Do not begin work until these Submittals are returned with Owner's Representative's action stamp indicating that the submittal is returned for unrestricted use or final-but-restricted use.

- A. **Plan of Action:** Submit as a written report in the same manner as product data.
- B. **Inspection:** Report on inspection carried out as required by this section. Include

copies of all photographs, video tapes, etc. Submit in the same manner as product data.

- C. Alternative Methods: Submit any alternative methods proposed to accomplish the work of this contract.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01920

SECTION 01921
COORDINATION
LEAD-BASED PAINT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and supervisory requirements necessary for Project coordination including, but not necessarily limited to the following:
 - 1. General project coordination procedures.
 - 2. Conservation.
 - 3. Coordination Drawings.
 - 4. Administrative and supervisory personnel.
 - 5. Cleaning and protection
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 1 Section "Submittals" for preparing and submitting the Contractor's Construction Schedule.
 - 2. Division 1 Section "Materials and Equipment" for coordinating general installation.
 - 3. Division 1 Section "Project Close-out" for coordinating contract close-out.

1.3 COORDINATION

- A. Coordinate demolition operations included in various Sections of these Specifications to assure efficient and orderly completion of each part of the Work. Coordinate demolition operations included under different Sections that depend on each other for proper demolition, installation, connection, and operation.
 - 1. Schedule demolition operations in the sequence required to obtain the best results where installation or removal of one part of the Work depends on installation or removal of other components, before or after its own installation or removal.
 - 2. Coordinate removal of different components to assure maximum accessibility for required demolition and to ensure that the surrounding properties are not damaged due to collapse of the structure.
 - 3. Make provisions to accommodate items scheduled for later installation.

- B. Where necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.
 - 1. Prepare similar memoranda for the Owner and separate contractors where coordination of their work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 - 1. Preparation of schedules.
 - 2. Installation and removal of temporary facilities.
 - 3. Delivery and processing of submittals.
 - 4. Progress meetings.
 - 5. Project Close-out activities.
- D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

1.4 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

- A. General Superintendent: Provide a full-time General Superintendent who is experienced in administration and supervision of the demolition of lead based paint projects including work practices, protective measures for building and personnel, disposal procedures, etc. This person is the Contractor's representative responsible for compliance with all applicable federal, state and local regulations and guidelines, particularly those relating to lead based paint and hazardous waste.
- B. Foreman: Provide a Foreman to directly supervise and direct no more than 10 abatement workers. Each Foreman will act as the Competent Person as required by OSHA 29 CFR 1926.62 for the workers the foreman is directing. The Foreman has oversight authority over the workers and reports to the General Superintendent. If there are 10 or fewer abatement workers on the project the General Superintendent may fill the foreman's position.
- C. Experience and Training: The General Superintendent and foreman must meet all the requirements as a Competent Person as required by OSHA 29 CFR 1926.62. They must have completed training in Lead Paint Abatement Health and Safety. The course shall meet the requirements of the HUD Guidelines and the EPA Model Accreditation Program for supervisors (40 CFR 745). They must have documented experience with projects of similar type and size.

1.5 PRE-CONSTRUCTION CONFERENCE

- A. An initial progress meeting, recognized as "Pre-Construction Conference" will be convened by the Owner's Representative prior to start of any work. Meet at

project site, or as otherwise directed with General Superintendent, Owner, Owner's Representative, Project Administrator, and other entities concerned with lead abatement and demolition work.

1. Attendees: Authorized representatives of the Owner, Owner's Representative, and their consultants; the Contractor and its superintendent; major subcontractors; manufacturers; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work.
2. 72 hours advance notice will be provided to all participants prior to convening Pre-construction Conference.
3. This is an organizational meeting, to review responsibilities and personnel assignments, to locate regulated areas and temporary facilities including power, light, water etc.
4. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Critical work sequencing.
 - c. Designation of responsible personnel.
 - d. Procedures for processing field decisions and Change Orders.
 - e. Procedures for processing Applications for Payment.
 - f. Distribution of Contract Documents.
 - g. Submittal of Product Data.
 - h. Preparation of record documents.
 - i. Use of the premises.
 - j. Parking availability.
 - k. Office, work, and storage areas.
 - l. Equipment deliveries and priorities.
 - m. Safety procedures.
 - n. First aid.
 - o. Security.
 - p. Housekeeping.
 - q. Working hours.

1.6 PROGRESS MEETINGS

- A. General: In addition to specific coordination and pre-installation meetings for each element of work, and other regular project meetings held for other purposes, the Owner's Representative will hold general progress meetings as required.
- B. Attendees: In addition to representatives of the Owner and Owner's Representative, the Contractor, each subcontractor, supplier, or other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with the Project and authorized to

conclude matters relating to the work. Require each entity then involved in planning, coordination or performance of work to be properly represented at each meeting.

- C. Agenda: Be prepared to discuss the following items at the progress meetings. Review other items of significance that could affect progress.
1. Contractor's Schedule: Review progress since the last meeting. Determine where each activity is in relation to the Contractor's Schedule, whether on time or ahead or behind schedule. Determine how tasks behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to insure that current and subsequent activities will be completed within the Contract Time.
 2. Review the present and future needs of each entity present, including the following:
 - a. Interface requirements.
 - b. Time.
 - c. Sequences.
 - d. Status of submittals.
 - e. Deliveries.
 - f. Access.
 - g. Site utilization.
 - h. Temporary facilities and services.
 - i. Hours of work.
 - j. Hazards and risks.
 - k. Housekeeping.
 - l. Quality and work standards.
 - m. Change Orders.
 - n. Documentation of information for payment requests.
- D. Reporting: Revise the Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue the revised schedule no later than 1 day after each meeting. Include a brief summary, in narrative form, of progress since the previous meeting and report.

1.7 DAILY LOG

- A. Daily Log: Maintain a daily log documenting the dates and time of but not limited to, the following items:
1. Meetings; purpose, attendees, brief discussion and significant decisions.
 2. Visitations; authorized and unauthorized.
 3. Log of those entering and leaving Work Area including personnel, by name.
 4. Accidents.

5. Special or unusual events, i.e. Barrier breaching, Equipment failures, accidents.
 6. Documentation of Contractor's completion of the following:
 - a. Inspection of work area preparation prior to start of removal and daily thereafter.
 - b. Removal of any sheet plastic barriers.
 - c. Contractors inspections prior to painting, enclosure or any other operation that will conceal the condition of lead based painted components or the substrate from which such materials have been removed.
 - d. Removal of waste materials from work area.
 - e. Decontamination of equipment (list items).
 7. List of subcontractors at the site.
 8. Approximate count of personnel at the site.
 9. High and low temperatures, general weather conditions.
 10. Stoppages, delays, shortages, losses.
 11. Meter readings and similar recordings.
 12. Emergency procedures.
 13. Orders and requests of governing authorities.
 16. Change Orders received, implemented.
 17. Services connected, disconnected.
 18. Equipment or system tests and start-ups.
 19. Partial Completions, occupancies.
 20. Substantial Completions authorized.
 21. Contractors final inspection/final wipe test analysis.
- B. Provide two (2) copies of this log to Project Administrator on a daily basis.
- C. Submit copies of this log at final close-out of project as a project close out submittal.

1.8 SPECIAL REPORTS

- A. General: Except as otherwise indicated, submit special reports directly to Owner within one day of occurrence requiring special report, with copy to Owner's

Representative and others affected by occurrence.

- B. Reporting Unusual Events: When an event of unusual and significant nature occurs at site, within 24 hours prepare and submit a written special report to the Owner's Representative listing chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. When such events are known or predictable in advance, advise Owner in advance at earliest possible date.
- C. Reporting Accidents: Prepare and submit written reports of significant accidents, at site and anywhere else work is in progress. Reports must be submitted to the Owner's Representative within 24 hours after the accident occurs. Record and document data and actions; comply with industry standards. For this purpose, a significant accident is defined to include events where personal injury is sustained, or property loss of substance is sustained, where the event posed a significant threat of loss or personal injury, or where an OSHA 200 Log is required. A copy of an OSHA 200 Log may be submitted for this purpose.
- D. Report Discovered Conditions: When an unusual condition of the building is discovered during the work (e.g. leaks, corrosion) prepare and submit a written special report to the Owner's Representative indicating condition discovered.

1.9 CONTINGENCY PLAN

- A. Contingency Plan: Prepare a contingency plan for emergencies including fire, accident, power failure, or any other event that may require modification or abridgment of decontamination or work area isolation procedures. Include in plan specific procedures for decontamination or work area isolation. Note that nothing in this specification should impede safe exiting or providing of adequate medical attention in the event of an emergency.
- B. Post: At entrance of work area. Telephone numbers and locations of emergency services including but not limited to fire, ambulance, doctor, hospital, police, power company, telephone company.

1.10 NOTIFICATIONS

- A. Notify other entities at the job site of the nature of the lead paint abatement activities, location of lead based painted components, requirements relative to lead paint set forth in these specifications and applicable regulations.
- B. Notify emergency service agencies including fire, ambulance, police or other agency that may service the abatement work site in case of an emergency. Notification is to include methods of entering work area, emergency entry and exit locations, modifications to fire notification or fire fighting equipment, and other information needed by agencies providing emergency services.
- C. Notifications of Emergency: Any individual at the job site may notify emergency service agencies if necessary without effect on this contract or the Contract Sum.

1.11 SUBMITTALS

- A. Before the Start of Work: Submit the following to the Owner's Representative. No work shall begin until these submittals are returned with Owner's Representative's stamp indicating that the submittal has been received.
1. Contingency Plans: for emergency actions.
 2. Telephone Numbers: and location of emergency services.
 3. Notifications: sent to other entities at the work site.
 4. Notifications: sent to emergency service agencies.
 5. Accreditation: submit evidence in form of training course certificate for the general superintendent, foreman and workers as being trained in lead-based paint health and safety in accordance with HUD.
 6. Staff Names: submit a list of the Contractor's principal staff assignments, including the Superintendent and other personnel in attendance at the site; identify individuals, their duties and responsibilities; list their addresses and telephone numbers.
- B. Post copies of the list in the Project meeting room, the temporary field office, and each temporary telephone.

PART 2 - PRODUCTS (Not Applicable).

PART 3 - EXECUTION (Not Applicable).

END OF SECTION 01921

SECTION 01922

REFERENCE STANDARDS AND DEFINITIONS LEAD-BASED PAINT

PART 1 GENERAL:

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. Indicated: The term indicated refers to graphic representations, notes, or

schedules on the Drawings, or other paragraphs or Schedules in the Specifications, and similar requirements in the Contract Documents. Terms such as shown, noted, scheduled, and specified are used to help the reader locate the reference. Location is not limited.

- C. Directed: Terms such as directed, requested, authorized, selected, approved, required, and permitted mean directed by the Owner's Representative, requested by the Owner's Representative, and similar phrases.
- D. Approved: The term approved, when used in conjunction with the Owner's Representative's action on the Contractor's submittals, applications, and requests, is limited to the Owner's Representative's duties and responsibilities as stated in the Conditions of the Contract.
- E. Regulations: The term regulations includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. Furnish: The term furnish means supply and deliver to the Project Site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. Install: The term install describes operations at the Project Site including the actual unloading, unpacking, assembly, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- H. Provide: The term provide means to furnish and install, complete and ready for the intended use.
- I. Installer: An installer is the Contractor or another entity engaged by the Contractor, either as an employee, subcontractor, or contractor of lower tier, to perform a particular construction activity, including installation, erection, application, and similar operations. Installers are required to be experienced in the operations they are engaged to perform.
 - a. The term experienced, when used with the term Installer, means having a minimum of 5 previous projects similar in size and scope to this Project, being familiar with the special requirements indicated, and having complied with requirements of the authority having jurisdiction.
- J. Trades: Using terms such as carpentry does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as carpenter. It also does not imply that requirements specified apply exclusively to trades persons of the corresponding generic name.
- K. Assigning Specialists: Specialists are recognized experts in operations where required by the specifications. Certain Sections of the Specifications require that specific construction activities shall be performed by specialists who are recognized experts in those operations. The specialists must be engaged for

those activities, and their assignments are requirements over which the Contractor has no option. However, the ultimate responsibility for fulfilling Contract requirements remains with the Contractor.

- L. Project Site: is the space available to the Contractor for performing construction activities, either exclusively or in conjunction, with others performing other work as part of the Project. The extent of the Project Site is shown on the Drawings and may or may not be identical with the description of the land on which the Project is to be built.
- M. Testing Agencies: A testing agency is an independent entity engaged to perform specific inspections or tests, either at the Project Site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.
- N. Owner's Representative: This is the entity described as the "Architect" in AIA Document A201 "General Conditions of the Contract for Construction," or is the entity described as "Engineer" in Engineers Joint Contract Document Committee (EJCDC) Document 1910-8 "Standard General Conditions of the Construction Contract." All references to Architect or Engineer in the Contract Documents in all cases refer to the Owner's Representative. The Owner's Representative will represent the Owner during construction and until final payment is due. The Owner's Representative will advise and consult with the Owner. The Owner's instructions to the Contractor will be forwarded through the Owner's Representative.
- O. Project Monitor: This is the entity described as the "Project Representative" in AIA Document A201 "General Conditions of the Contract for Construction," or is the entity described as "Engineer" in Engineers Joint Contract Document Committee (EJCDC) Document 1910-8 "Standard General Conditions of the Construction Contract." The Project Monitor is a full time representative of the Owner at the job site.
 - 1. The Project Monitor has the authority to stop the work upon verbal order if requirements of the Contract Documents are not met, or if in the sole judgment of the Project Monitor or the Owner's Representative, the Owner, the interests of the Owner, safety of any person or the Owner's property are jeopardized by the work.
- P. Project Manual: A bound manual consisting of the General Conditions, the Supplementary Conditions, any Special Conditions and the specification sections.
- Q. Substantial Completion: The work of this contract is substantially complete when clearance criteria set forth in the Contract Documents are met and the work area may be occupied by the Owner.

1.3 DEFINITIONS RELATIVE TO LEAD BASED PAINT ABATEMENT

- 1. Accreditation: A formal recognition that an organization (e.g. laboratory) is competent to carry out specific tasks or type of tests.

2. **Accredited laboratory:** A laboratory that has been evaluated and given approval to perform a specified measurement or task (such as the National Lead Laboratory Accreditation Program), usually for a specific property or analyze for a specified period of time.
3. **Accredited Training Provider:** means a training provider that meets the standards established by EPA to train risk assessors, inspectors, supervisors, and workers.
4. **Adhesion:** the ability of dry paint or other coating to attach to or remain fixed on a surface without blistering, flaking, cracking, or being removed by tape.
5. **Blank:** A non-exposed sample of the medium used for testing, such as a wipe or filter, which is analyzed like other samples to determine whether (1) samples are contaminated with lead before samples are collected (e.g., at the factory, or at the testing site), (2) the samples are contaminated after sample collection (e.g., during transportation to the laboratory or in the laboratory).
6. **Breathing Zone:** A hemisphere forward of the shoulders with a radius of approximately 6 to 9 inches around the nose and mouth of the face.
7. **Ceiling Concentration:** The concentration of an airborne substance that shall not be exceeded.
8. **Certified Industrial Hygienist (C.I.H.):** An industrial hygienist certified by the American Board of Industrial Hygiene.
9. **CFR - The Code of Federal Regulations:** The basic component of the Federal Register publication system. The CFR is a codification of the regulations of the various Federal Agencies.
10. **Common Area:** A room or area that is accessible to all tenants in a project (e.g., hallway, boiler room). Generally, any area that is not kept locked.
11. **Competent Person:** An agent of the Contractor who is a Competent Person as defined by OSHA in 29 CFR 1926.62. This person must be capable of identifying existing and predictable lead hazards in the surroundings or working conditions and who has authorization by the Contractor to take prompt corrective measures to eliminate them.
12. **Detection Limit:** The minimum of a component that a method can reliably measure.
13. **Exposure Monitoring:** The personal air monitoring of an employee's breathing zone to determine the amount of contaminant (e.g. lead) to which he/she is exposed.
14. **Federal Register:** A document published daily by the Federal government that contains either proposed or final regulations.
15. **Hazardous Waste:** As defined in RCRA the term "hazardous waste" means a

solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may:

- a. Cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or
 - b. Pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.
 - c. As defined in the regulations, a solid waste is hazardous if it meets one of four conditions:
 - i. Exhibits a characteristic of a hazardous waste (40 CFR Sections 261.20 through 262.24).
 - ii. Has been listed as hazardous (40 CFR Section 261.31 through 261.33).
 - iii. Is a mixture containing a listed hazardous waste and a non-hazardous solid waste (unless the mixture is specifically excluded or no longer exhibits any of the characteristics of hazardous waste).
 - iv. Is not excluded from regulation as a hazardous waste.
16. HEPA - High Efficiency Particulate Air: A filter capable of filtering out particles of 0.3 microns or greater from a body of air at 99.97% efficiency or greater.
 17. High Phosphate Detergent: Detergent which contains at least 5% tri-sodium phosphate (TSP).
 18. Landfill: A disposal facility or part of a facility where hazardous waste is placed in or on land and which is not a land treatment facility, a surface impoundment, or an injection well.
 19. 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.
 20. Personal Monitoring: Sampling of the lead dust concentrations within the breathing zone of an employee.
 21. Personal Samples (for sampling lead dust): Air samples collected from within the breathing zone of a worker, but outside the respirator. The samples are collected with a personal sampling pump, pulling 1 to 4 liters/minute of air.
 22. 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.
 23. Respirator: A device designed to protect the wearer from the inhalation of harmful atmospheres.
 24. Solid Waste: As defined in RCRA the term "solid waste" means any garbage,

refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under the Clean Water Act, or special nuclear or byproduct material as defined by the Atomic Energy Act of 1954.

25. TCLP (Toxicity Characteristic Leaching Procedure): A test, called the extraction procedure, that is designed to identify wastes likely to leach hazardous concentrations of particular toxic constituents into the ground water as a result of improper management. It is a characteristic of hazardous waste.
26. Time Weighted Average (TWA): The average concentration of a contaminant in air during a specific time period.
27. TSP: Acronym for tri-sodium phosphate.
28. ULPA - Ultra Low Particulate Air: Means a filter capable of filtering out particles of 0.13 microns or greater from a body of air at 99.9995% efficiency or greater.
29. Wet Cleaning (Wet Detergent Wash): The process of eliminating lead dust contamination from building surfaces and objects by using cloths, mops, or other cleaning utensils which have been dampened with a solution of water and trisodium phosphate (TSP) or appropriate substitute and afterwards thoroughly decontaminated or disposed of as lead contaminated waste.
30. Work Area: The area where lead based paint abatement or related work is performed which is defined and/or isolated to prevent the spread of lead dust, or debris, and entry by unauthorized personnel. The work area can either be on site or off site.
31. Work Practice: A procedure followed by workers that is intended to minimize exposure to the worker and the environment.

1.4 INDUSTRY STANDARDS

1. Applicability of Standards: Except where the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
2. Publication Dates: Comply with the standards in effect as of the date of the Contract Documents.
3. Conflicting Requirements: Where compliance with 2 or more standards is specified and where the standards may establish different or conflicting requirements for minimum quantities or quality levels, refer requirements that are different but apparently equal and uncertainties to the Owner's Representative for a decision before proceeding.

- a. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of the requirements. Refer uncertainties to the Owner's Representative for a decision before proceeding.
4. Copies of Standards: Each entity engaged in construction on the Project is required to be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
 - a. Where copies of standards are needed to perform a required construction activity, the Contractor shall obtain copies directly from the publication source.
 5. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. Where such acronyms or abbreviations are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards-generating organization, authority having jurisdiction, or other entity applicable to the context of the text provision. Refer to the "Encyclopedia of Associations," published by Gale Research Co., available in most libraries.
 6. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. The following acronyms or abbreviations, as referenced in Contract Documents, are defined to mean the associated names. Names and addresses are subject to change and are believed, but not assured, to be accurate and up-to-date as of date of the Contract Documents.

A2LA	American Association for Laboratory Accreditation 656 Quince Orchard Road #300 Gaithersburg, MD 20878	(301) 670-1377
AIA	The American Institute of Architects 1735 New York Ave., NW Washington, DC 20006	(202) 626-7300
AIHA	American Industrial Hygiene Assoc. 2700 Prosperity Avenue, Suite 250 Fairfax, VA 22031-4307	(703) 849-8888
ANSI	American National Standards Institute 11 West 42nd St., 13th Floor New York, NY 10036	(212) 642-4900
ASTM	American Society for Testing and Materials 1916 Race St.	

	Philadelphia, PA 19103-1187	(215) 299-5400
GA	Gypsum Association 810 First St., NE, Suite 510 Washington, DC 20002	(202) 289-5440
IESNA	Illuminating Engineering Society of North America 345 E. 47th St. New York, NY 10017	(212) 705-7926
ML/SFA	Metal Lath/Steel Framing Assoc. (A Division of the National Association of Architectural Metal Manufacturers) 600 S. Federal St., Suite 400 Chicago, IL 60605	(312) 922-6222
NEC	National Electrical Code (from NFPA)	
NEMA	National Electrical Manufacturers Assoc. 2101 L St., NW, Suite 300 Washington, DC 20037	(202) 457-8400
NFPA	National Fire Protection Assoc. One Batterymarch Park P.O. Box 9101 Quincy, MA 02269-9101	(800) 344-3555 (617) 770-3000
NSF	National Sanitation Foundation 3475 Plymouth Rd. P.O. Box 130140 Ann Arbor, MI 48113-0140	(800) 223-2301 (313) 769-8010
PDCA	Painting and Decorating Contractors of America 3913 Old Lee Highway Suite 33-B Fairfax, VA 22030	(703) 359-0826
UL	Underwriters Laboratories 333 Pfingsten Rd. Northbrook, IL 60062	(708) 272-8800

7. Federal Government Agencies: Names and titles of federal government standard- or Specification-producing agencies are often abbreviated. The following acronyms or abbreviations referenced in the Contract Documents indicate names of standard- or Specification-producing agencies of the federal government. Names and addresses are subject to change and are believed, but are not assured, to be accurate and up-to-date as of the date of the Contract Documents.

CFR	Code of Federal Regulations (Available from the Government Printing Office) N. Capitol St. between G and H St. NW Washington, DC 20402	(202) 783-3238
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(Material is usually first published in the "Federal Register")

CPSC	Consumer Product Safety Commission 5401 Westbard Ave. Bethesda, MD 20207	(800) 638-2772
EPA	Environmental Protection Agency 401 M St., SW Washington, DC 20460	(202) 382-2090
HUD	Department of Housing and Urban Development Office of Lead-Based Paint Abatement and Poisoning Prevention Room B-133 451 7th St. SW, Washington, DC 20410	(202) 755-1805
MSHA	Mine Safety and Health Administration (U.S. Department of Commerce) 4015 Wilson Blvd Arlington, VA 22203	(703) 235-1565
NIOSH	National Institute of Occupational Safety and Health U.S. Dept. of Labor, Room N-3718 200 Constitution Ave, N.W. Washington, D.C. 20210	(800) 35-NIOSH
NIST	National Institute of Standards and Technology (U.S. Department of Commerce) Gaithersburg, MD 20899	(301) 975-2000
OSHA	Occupational Safety and Health Administration (U.S. Department of Labor) 200 Constitution Ave., NW Washington, DC 20210	(202) 219-6091

1.6 SUBMITTALS

- A. Permits, Licenses, and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established in conjunction with compliance with standards bearing upon performance of the Work.

END OF SECTION 01922

SECTION 01923

CODES, REGULATIONS AND STANDARDS LEAD-BASED PAINT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to this section.

1.2 SUMMARY

This section sets forth governmental regulations and industry standards which are included and incorporated herein by reference and made a part of the specification. This section also sets forth those notices and permits which are known to the Owner and which either must be applied for and received, or which must be given to governmental agencies before start of work.

- A. Requirements include adherence to work practices and procedures set forth in applicable codes, regulations, guidelines and standards.
- B. Requirements include obtaining permits, licenses, inspections, releases and similar documentation, as well as payments, statements and similar requirements associated with codes, regulations, and standards.

1.3 CODES AND REGULATIONS

- A. General Applicability of Codes and Regulations, Guidelines and Standards: Except to the extent that more explicit or more stringent requirements are written directly into the contract documents, all applicable codes, regulations, guidelines and standards have the same force and effect (and are made a part of the contract documents by reference) as if copied directly into the contract documents, or as if published copies are bound herewith.
- B. Contractor Responsibility: The Contractor shall assume full responsibility and liability for the compliance with all applicable Federal, State, and local regulations pertaining to work practices, hauling, disposal, and protection of workers, visitors to the site, and persons occupying areas adjacent to the site. The Contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable Federal, State, and local regulations. The Contractor shall hold the Owner and Owner's Representative harmless for failure to comply with any applicable work, hauling, disposal, safety, health or other regulation on the part of himself, his employees, or his subcontractors.
- C. Federal Requirements: which govern lead based paint abatement work or hauling and disposal of hazardous waste materials include but are not limited to the following:
 - 1. OSHA: U.S. Department of Labor, Occupational Safety and Health

Administration, (OSHA), including but not limited to:

- 29 CFR 1910.134 -Respiratory Protection
- 29 CFR 1926.20 -General safety and health provisions;
- 29 CFR 1926.21 -Safety training and education;
- 29 CFR 1926.23 -First Aid
- 29 CFR 1926.24 -Fire Protection
- 29 CFR 1926.25 -Housekeeping;
- 29 CFR 1926.28 -Personal protective equipment;
- 29 CFR 1926.51(f) - Washing facilities;
- 29 CFR 1926.55 -Gases, vapors, fumes, dusts, and mists;
- 29 CFR 1926.56 -Illumination
- 29 CFR 1926.57 -Ventilation;
- 29 CFR 1926.59 -Hazard Communication Standard;
- 29 CFR 1926.62 -Lead Construction Standard
- 29 CFR 1926.103 -Respiratory protection;
- 29 CFR 1926.353 -Ventilation: Welding, cutting or heating of metals of toxic significance.
- 29 CFR 1926.300, 301, 302 -Hand and power tools.
- 29 CFR 1926.451 -Scaffolding
- 29 CFR 1926.500, 502, 503 -Fall Protection

2. DOT: U. S. Department of Transportation, including but not limited to:

- 49 CFR 171 and 172 -Hazardous Substances

3. EPA: U. S. Environmental Protection Agency (EPA), including but not limited to:

- 40 CFR 260, 261, 262, 263, AND 264 Resource Conservation and Recovery Act (RCRA)

4. HUD: Department of Housing and Urban Development

24 CFR 35, 905, -Lead Based Paint Hazard Elimination; Interim Rule
941, 965 and 968

D. State Requirements: which govern lead based paint abatement work or hauling and disposal of hazardous waste materials include but are not limited to the following:

1. TNRCC 30 TAC 335, Industrial Solid and Municipal Hazardous Waste

E. Local Requirements: which govern lead-based point abatement work or hauling and disposal of lead-based paint waste materials include but are not limited to the following:

F. Local Requirements: Abide by all local requirements which govern lead abatement work or hauling and disposal of hazardous waste materials.

G. Building Codes: Comply with applicable provision of state and/or local building codes that govern any part of the work.

H. Model Codes: In the absence of an applicable adopted state or local building code which governs work involved in the lead abatement project, comply with the applicable provisions of the BOCA National Codes/1993 published by International Conference for Building Officials or the SBCCI Standard Codes published by Southern Building Code Congress International.

1.4 PERMITS

A. Permit: All hazardous waste is to be transported by an entity maintaining a current "Industrial waste hauler permit" as required for transporting of waste materials to a disposal site.

B. Building Permit: Secure all necessary building permits as required by state and/or local building codes.

1.5 POSTING AND FILING OF REGULATIONS

A. Posting and Filing of Regulations: Post all notices required by applicable federal, state and local regulations. Maintain two (2) copies of applicable federal, state and local regulations and standards. Maintain one copy of each at job site. Keep on file in contractor's office one copy of each.

1.6 SUBMITTALS

A. Before Start of Work: Submit each item in this article to the Owner's Representative. No work shall begin until these submittals are returned with Owner's Representative's stamp indicating that the submittal has been received.

1. Permits, Licenses, and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases,

jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence and records established in conjunction with compliance with standards and regulations bearing upon performance of the Work including:

2. State and Local Regulations: Submit copies of codes and regulations applicable to the work.
3. Permits: Submit copies of current valid permits required by state and local regulations.
4. Licenses: Submit copies of all State and Local licenses and permits necessary to carry out the work of this contract.

PART 4 - PRODUCTS (Not Applicable)

PART 5 - EXECUTION (Not Applicable)

END OF SECTION – 01923

SECTION 01924

SUBMITTALS LEAD-BASED PAINT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for submittals from the Contractor to the Owner's Representative as required for performance of the Work, including;
 - 1. Contractor's construction schedule.
 - 2. Submittal schedule.
 - 3. Daily construction reports.
 - 4. Product Data.
 - 5. Request for information.
- B. Administrative Submittals: Refer to other Division-1 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to:
 - 1. Permits.
 - 2. Applications for payment.
 - 3. Performance and payment bonds.
 - 4. Insurance certificates.
 - 5. List of Subcontractors.
- C. The Schedule of Values submittal is included in Section "Applications for Payment."

1.3 SUBMITTAL PROCEDURES

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity.
 - 2. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
 - a. The Owner's Representative reserves the right to withhold action on a

submittal requiring coordination with other submittals until related submittals are received.

3. Processing: Allow sufficient review time so that activities will not be delayed as a result of the time required to process submittals, including time for resubmittals.

- a. Allow three days for initial review. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. The Owner's Representative will promptly advise the Contractor when a submittal being processed must be delayed for coordination.

- b. If an intermediate submittal is necessary, process the same as the initial submittal.

- c. Allow one day for reprocessing each submittal.

- d. No extension of Contract Time will be authorized because of failure to transmit submittals to the Owner's Representative sufficiently in advance of the Work to permit processing.

- B. Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.

1. Include the following information on the label for processing and recording action taken.

- a. Project name.

- b. Date.

- c. Name and address of Owner's Representative.

- d. Name and address of Contractor.

- e. Name and address of subcontractor.

- f. Name and address of supplier.

- g. Name of manufacturer.

- h. Number and title of appropriate Specification Section.

- i. Drawing number and detail references, as appropriate.

- C. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from Contractor to Owner's Representative using a transmittal form. Submittals received from sources other than the Contractor will be returned without action.

1. On the transmittal Record relevant information and requests for data. On the form, or separate sheet, record deviations from Contract Document requirements, including minor variations and limitations. Include Contractor's certification that information complies with Contract Document requirements.

2. Transmittal Form: Use form acceptable to Owner.

1.4 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Schedule: Provide proposed detailed schedule including work dates, work shift time, number of employees, dates of start and completion including dates of preparation work, removals and final inspection dates.

1.5 SUBMITTAL SCHEDULE

- A. After development and acceptance of the Contractor's construction schedule, prepare a complete schedule of submittals. Submit the schedule within 10 days of the date required for establishment of the Contractor's construction schedule.
 - 1. Coordinate submittal schedule with the list of subcontracts, schedule of values and the list of products as well as the Contractor's construction schedule.
 - 2. Prepare the schedule in chronological order; include submittals required during the first 10 days of construction. Provide the following information:
 - a. Scheduled date for the first submittal.
 - b. Related Section number.
 - c. Submittal category.
 - d. Name of subcontractor.
 - e. Description of the part of the Work covered.
 - f. Scheduled date for resubmittal
 - g. Scheduled date the Owner's Representative's final release or approval.
- B. Distribution: Following response to initial submittal, print and distribute copies to the Owner's Representative, Owner, subcontractors, and other parties required to comply with submittal dates indicated. Post copies in the Project meeting room and field office.
 - 1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.
- C. Schedule Updating: Revise the schedule after each meeting or activity, where revisions have been recognized or made. Issue the updated schedule concurrently with report of each meeting.

1.6 DAILY CONSTRUCTION REPORTS

- A. Prepare a daily construction report, recording the following information concerning events at the site; and submit duplicate copies to the Owner's Representative at weekly intervals:
 - 1. Log of those entering and leaving Work Area.
 - 2. List of subcontractors at the site.
 - 3. Approximate count of personnel at the site.
 - 4. High and low temperatures, general weather conditions.
 - 5. Accidents and unusual events.
 - 6. Meetings and significant decisions.

4. Stoppages, delays, shortages, losses.
5. Meter readings and similar recordings.
6. Emergency procedures.
7. Orders and requests of governing authorities.
8. Change Orders received, implemented.
9. Services connected, disconnected.
10. Equipment or system tests and start-ups.
11. Partial Completions, occupancies.
12. Substantial Completions authorized.

1.7 SHOP DRAWINGS

- A. Shop Drawings are not required under this contract.

1.8 MISCELLANEOUS SUBMITTALS

- A. Material Safety Data Sheets: Acknowledge receipt of material safety data sheets.
- B. Records of Actual Work: Furnish 4 copies of records of actual work, one of which will be returned for inclusion in the record documents as specified in section "Project Close-out".
- C. Standards: Where submittal of a copy of standards is indicated, and except where copies of standards are specified as an integral part of a "Product Data" submittal, submit a single copy of standards for the Owner's Representative's use. Where workmanship, whether at the project site or elsewhere is governed by a standard, furnish additional copies of the standard to fabricators, installers and others involved in the performance of the work.
- D. Request for Information: Where questions arise before or during the work activities, submit a written request to the Owner's Representative. Allow for at least 4 hours for review and a response.
- E. Close-out Submittals: Refer to section "Project Close-out" and to individual sections of these specifications for specific submittal requirements of project close-out information.
- F. Record Documents: Furnish set of original documents as maintained on the project site. Along with original marked-up record drawings provide 2 photographic copies of marked-up drawings, which, at the Contractor's option, may be reduced to not less than half size.

1.9 OWNER'S REPRESENTATIVE'S ACTION

- A. Except for submittals for record, information or similar purposes, where action and return is required or requested, the Owner's Representative will review each submittal, mark to indicate action taken, and return promptly.
 1. Compliance with specified characteristics is the Contractor's responsibility.

- B. Action Stamp: The Owner's Representative will stamp each submittal with a uniform, self-explanatory action stamp. The stamp will be appropriately marked, as follows, to indicate the action taken:
1. Final Unrestricted Release: Where submittals are marked "Approved," that part of the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.
 2. Final-But-Restricted Release: When submittals are marked "Approved as Noted," that part of the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance.
 3. Returned for Resubmittal: When submittal is marked "Not Approved, Revise and Resubmit," do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat if necessary to obtain a different action mark.
 - a. Do not permit submittals marked "Not Approved, Revise and Resubmit" to be used at the Project site, or elsewhere where Work is in progress.
 4. Other Action: Where a submittal is primarily for information or record purposes, special processing or other activity, the submittal will be returned, marked "Action Not Required".

PART 6 - PRODUCTS (Not Applicable).

PART 7 - EXECUTION (Not Applicable).

SUBMITTAL CHECKLIST

BEFORE START OF WORK

Supplementary Conditions

- Bodily Injury and Property Damage Liability: Certificate of Coverage
- Worker's Compensation Insurance: Certificate of Coverage
- Automobile Liability: Certificate of Coverage
- Performance Bond: Certificate of Coverage
- Labor and Material Bond: Certificate of Coverage

01920 Summary of Work - Lead-Based Paint

- Plan of Action
- Pre-construction Inspection
- Alternate Methods

01921 Coordination - Lead-Based Paint

- Contingency Plans
- Telephone Numbers
- Notification sent to entities at the work site
- Notifications sent to emergency service agencies
- Accreditation: of general superintendent, foreman and workers
- Staff Names

01922 Reference Standards and Definitions - Lead-Based Paint

- Refer to Section

01923 Codes, Regulations, and Standards - Lead-Based Paint

- Copy of State Regulations
- Copy of Local Regulations
- Licenses
- Certifications
- Permits

01924 Submittals - Lead-Based Paint

- Submittal Schedule
- Contractor's Construction Schedule

01927 Construction Facilities and Temporary Controls - Lead-Based Paint

- Scaffolding (including Shop Drawing)
- Hot Water Heaters: Product data
- Decontamination Unit Sub-panel: Product data and Shop drawing
- Ground Fault Circuit Interrupters (GFCI): Product data
- Lamps and Light Fixtures: Product data

- ___ Temporary Heating Units: Product data
- ___ Temporary Cooling Units: Product data and installation instructions
- ___ Self Contained Toilet Units: Product data and name of sub-contractor
- ___ First Aid Supplies: Provide list of contents
- ___ Fire Extinguisher: Product data, location schedule

01929 Work Area Containment - Lead-Based Paint

- ___ Schedule of locked doors
- ___ Polyethylene: Product data (including fire ratings)
- ___ Construction plan
- ___ Lumber (including fire ratings)
- ___ Spray Cement: Product data

01931 Worker Protection - Lead-Based Paint

- ___ State and Local License: for each worker
- ___ Certificate Worker Acknowledgment: for each worker
- ___ Training Program: course outline
- ___ Report of Medical Examination: of each worker
- ___ Compliance Program: in compliance with 1926.62
- ___ Exposure Assessment: in compliance with 1926.62
- ___ Notarized Certifications

01932 Respiratory Protection - Lead-Based Paint

- ___ Respiratory Protection Program: written manual
- ___ Respirator Product Data
- ___ Historic Air Sample Data

01933 Materials and Equipment - Lead-Based Paint

- ___ Product List Schedule

01936 Removal of Lead-Based Painted Substrates

- ___ HEPA Vacuums: Product data
- ___ Wet Detergent Wash:
- ___ Material Safety Data Sheet

01938 Disposal of Waste Materials - Lead-Based Paint

- ___ Waste Hauler State License
- ___ Waste Hauler Local License
- ___ U.S. EPA Identification Number of Waste Hauler
- ___ Name, address, permit and State License of landfill
- ___ Landfill contact person and telephone number
- ___ EPA Uniform Hazardous Waste Manifest
- ___ EPA Notification of hazardous waste activity
- ___ Forms required by State or Local agencies

09951 Chemical Stripping of Lead-Based Paint

- ___ Product data: each type of product specified
- ___ Material Safety Data Sheet
- ___ Off-site removal: Name, location, materials and methods

09952 Mechanical Removal of Lead-Based Paint

- ___ Manufacturer's product data: each type of equipment specified
- ___ Description of removal methods
- ___ Historic airborne lead concentrations for proposed methods

09954 Painting - Prime Coat

- ___ Product data: each type of product specified
- ___ Samples for initial selection
- ___ Installation instructions

PERIODICALLY DURING WORK

01921 Coordination - Lead-Based Paint

- ___ Daily Logs
- ___ Event Reports
- ___ Accident Reports
- ___ Discovered Condition Reports

01924 Submittals - Lead-Based Paint

- ___ Record Documents

01929 Work Area Containment - Lead-Based Paint

- ___ Photograph of existing damage prior to applying coatings.

01931 Worker Protection - Lead-Based Paint

- ___ Updated information on workers

01932 Respiratory Protection - Lead-Based Paint

- ___ Update information on new equipment

01934 Contract Close-out - Lead-Based Paint

- ___ Refer to section

01938 Disposal of Waste Material - Lead-Based Paint

- ___ Copies of manifests and disposal site receipts.
- ___ Notification of unsatisfactory substrate.

PROJECT CLOSE-OUT

01921 Coordination - Lead-Based Paint

___ Daily Log

01934 Contract Close-out - Lead-Based Paint

___ Record Documents

___ Record Product Data

01935 Project Decontamination - Lead-Based Paint

___ Certificate of Visual Inspection

END OF SECTION 01924

SECTION 01925

TEST LABORATORY SERVICES LEAD-BASED-PAINT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division - 1 Specification Sections, apply to work of this section.
- B. Surface lead dust wipe sampling and soil sampling during work area clearance are described in section 01926-project clearance.

1.2 DESCRIPTION OF THE WORK

- A. Not in Contract Sum: This section describes work being performed by the Owner's Project Owner's Representative. This work is not in the Contract Sum.
- B. This section describes air monitoring, soil sampling and surface lead dust wipe sampling carried out by the Project Owner's Representative to verify that the site beyond the work area and outside environment remain uncontaminated. This section also sets forth baseline levels that the contractor must comply with, and describes the action required if the levels are exceeded.
- C. Corrective Work triggered by this section is part of the contract sum and is to be performed by the contractor at no additional cost to the owner.
- D. Additional air monitoring required by OSHA and Section 01932 is work of the Contractor and is not covered in this section.

1.3 ANALYTICAL METHODS

- A. Atomic Absorption Spectroscopy or Inductively Coupled Plasma Emission Spectroscopy will be used for analysis of:
 - 1. Surface lead dust wipe samples will be collected from the concrete floors and ceilings which are to remain in place after the work activities are complete.
 - 2. Air Samples will be collected by the Project Monitor before and during the course of the project to establish area airborne lead dust levels.
 - 3. Soil Samples will be collected by the Project Monitor to establish a base line lead content to assess the area soil before and after all work efforts under this contract are completed. The Contractor shall be present during the collection of these soil samples.

1.4 ESTABLISH BASELINE LEAD CONCENTRATION

- A. Before start of work the Owner will secure the following air, dust and soil samples to establish a baseline level.
 - 1. Air Samples: One sample outside the work area.
 - 2. Dust Samples: Two composite dust samples will be collected from the walls and hallways.
 - 3. Soil Samples: One composite sample, all sides included.

1.5 AIR AND SURFACE LEAD DUST MONITORING

The purpose of the Owner's air and surface lead dust monitoring will be to detect faults in the work area isolation which may cause contamination of the public area and adjacent buildings with lead dust.

- A. Should any of the above occur, cease hazard reduction activities. Correct fault in work area isolation or work procedures at no cost to the owner.

1.6 AIRBORNE LEAD CONCENTRATIONS DURING WORK

The Owner may monitor airborne lead concentrations inside and outside the work area.

- A. Inside Work Area: Maintain lead concentrations at lowest possible levels, not to exceed 30 micrograms/cubic meter. If concentrations rise above this figure revise work procedures to lower lead levels.
- B. Outside Work Area: Maintain lead concentrations at lowest possible levels, not to exceed baseline levels. If concentrations rise above baseline levels, stop hazard reduction work and institute corrective actions. Owner's Project Monitor will determine source of the high reading.

1.7 SURFACE LEAD DUST CONCENTRATIONS

- A. Outside Work Area: Maintain lead concentrations below baseline levels. Baseline levels will be determined by the Owner prior to the start of work. If baseline levels are exceeded stop all hazard reduction activities, and institute corrective actions. Project monitor will determine source of the high reading.

1.8 SOIL LEAD CONCENTRATIONS

- A. Outside Work Area: Maintain lead concentrations at or below baseline levels. If concentrations rise above baseline levels institute corrective actions. Project monitor will determine source of the high reading.

1.9 CORRECTIVE ACTIONS

- A. If the high reading above is outside of the work area, but inside the secure working area and was result of failure of work area containment measures,

initiate the following action:

1. Erect new critical barriers as set forth in section 01929 - Work Area Containment.
 2. Decontaminate affected area in accordance with section 01935 - Project Decontamination at no cost to the Owner.
- B. If the high reading above is soil outside of the work area and was result of failure of work area containment measures initiate the following action; remediate soil in accordance with Section 01937 - Remediation of Lead Contaminated Soil - at no cost to the Owner.

1.10 SCHEDULE OF SAMPLES

From start of work of Section 01929 - Work Area Containment - Lead-Based Paint through the work of section 01935 Project Decontamination, the Owner may be taking the following samples on a daily basis.

Location Sampled	Number of Samples	Type Of Sample	Remarks
Each Work Area	1	Air	Off site work areas are included
Outside Each Work Area	1	Lead Dust	Within 100 feet of critical barrier or entrance to work area
Outside each work area (Exterior Abatement)	1	Soil	Outside regulated area within 10' of barrier fence or tape

1.11 PERSONAL MONITORING

- A. Owner's Project Monitor will not be performing air monitoring to meet Contractor's OSHA requirements for personnel sampling.

1.12 EFFECT ON CONTRACT SUM

Complete corrective work with no change in contract sum if high concentrations were caused by contractor's activities. The contract sum will be adjusted for additional work caused by high concentrations beyond the contractor's control.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION – 01925

SECTION 01926
PROJECT CLEARANCE
LEAD-BASED PAINT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division - 1 Specification Sections, apply to work of this section.
 - 1. Visual Inspection: Required as a prerequisite of sampling is set forth in Section 01935 Project Decontamination.

1.2 DESCRIPTION OF THE WORK

- A. Not in Contract Sum: This section describes work being performed by the Owner's Project Monitor. This work is not in the Contract Sum.
- B. This section sets forth required surface lead dust concentration in the work area and describes testing procedures the Owner will use to measure these levels.
- C. Soil Testing: This section sets forth required soil lead content measurements conducted on exterior abatement projects which will be used to:
 - 1. Support pre-and post-abatement comparisons, and
 - 2. Determine if statistically significant changes in soil lead content exist following completion of abatement.

1.3 ANALYTICAL METHODS

- A. Atomic Absorption Spectroscopy or Inductively Coupled Plasma Emission Spectroscopy will be used for analysis of:
 - 1. Surface lead dust wipe samples
 - 2. Air samples
 - 3. Soil samples

1.4 VISUAL INSPECTION

- A. Work of this section will not begin until the visual inspection described in section 01935 Project Decontamination has been completed and certified by the Project Monitor. It is the intent that the work of this section comply with the work sequence stated in Section 01920 - Summary of Work.

1.5 CLEARANCE CRITERIA

- A. On-site Paint Removal: Not allowed under this contract.

- B. Off-site Paint Removal: Not allowed under this contract.
- C. Wipe Sampling Clearance: Decontamination is complete when every sample is at or below the following levels. If clearance levels are not satisfactory, the decontamination is incomplete and recleaning per Section 01935 - Project Decontamination is required at no additional cost to the Owner.
 - 1. Concrete floors and Walkways: 500 micrograms per square foot.
- D. Soil Sampling Clearance: Remediation is complete when every sample is at or below the following levels. If clearance levels are not satisfactory, the remediation is incomplete and additional remediation per section 01937 is required at no additional cost to the owner.
 - 1. Soil: 400 parts per million

1.6. SCHEDULE OF SAMPLES

At the completion of hazard reduction the following samples will be collected.

SURFACE	SAMPLING LOCATION	NUMBER OF SAMPLES
Concrete Wall	Exposed Surface	Two composite samples
Concrete Substrate	Exposed Surface	Two composite samples
Ground	-----	One composite/building

PART 2 - PRODUCT (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION - 01926

SECTION 01927

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS LEAD-BASED PAINT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF REQUIREMENTS

- A. General: Provide temporary connection to existing utilities or provide temporary facilities as required herein or as necessary to carry out the work.

1.3 SUBMITTALS

- A. Before the Start of Work: Submit the following to the Owner's Representative for review. Begin no work until these submittals are returned with Owner's Representative's action stamp indicating that the submittal is returned for unrestricted use or final-but-restricted use.
- B. Scaffolding: Submit list of rolling and fixed scaffolding intended for use on the project. Submit sufficient detail to indicate compliance with applicable worker safety regulations or other requirements.
- C. Hot water heater: Submit manufacturers name, model number, size in gallons, heating capacity, power requirements.
- D. Decontamination Unit Sub-panel: Submit product data.
- E. Ground Fault Circuit Interrupters (GFCI): Submit product data.
- F. Lamps and Light Fixtures: Submit product data.
- G. Temporary Heating Units: Provide product data.
- H. Temporary Cooling Units: Provide product data and installation instructions.
- I. Self Contained Toilet Units: Provide product data and name of sub-contractor used for servicing self contained toilets. Submit method to be used for servicing.
- J. First Aid Supplies: Provide list of contents of first aid kit. Submit in form of check list.
- K. Fire Extinguishers: Provide product data. Submit schedule indicating location at job site.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT

- A. General: Provide new or used materials and equipment that are undamaged and in serviceable condition. Provide only materials and equipment that are recognized as being suitable for the intended use, by compliance with appropriate standards.

2.2 SCAFFOLDING

- A. Provide all scaffolding, ladders and/or staging, etc. as necessary to accomplish the work of this contract. Scaffolding may be of suspension type; or standing type such as metal tube and coupler, tubular welded frame, pole or outrigger type or cantilever type. The type, erection and use of all scaffolding shall comply with all applicable OSHA provisions.
- B. Equip rungs of all metal ladders, etc. with an abrasive non-slip surface.
- C. Provide a nonskid surface on all scaffold surfaces subject to foot traffic.

2.3 WATER SERVICE

- A. Temporary Water Service Connection: All connections to the Owner's water system shall include backflow protection. Valves shall be temperature and pressure rated for operation of the temperatures and pressures encountered. After completion of use, connections and fittings shall be removed without damage or alteration to existing water piping and equipment. Leaking or dripping valves shall be piped to the nearest drain or located over an existing sink or grade where water will not damage existing finishes or equipment.
- B. Water Hoses: Employ heavy-duty abrasion-resistant hoses with a pressure rating greater than the maximum pressure of the water distribution system to provide water into each work area and to each Decontamination Unit. Provide fittings as required to allow for connection to existing wall hydrants or spouts, as well as temporary water heating equipment, branch piping, showers, shut-off nozzles and equipment.
- C. Water Heater: Provide UL rated 40 gallon electric water heater to supply hot water for the Decontamination Unit shower. Activate from 30 amp circuit breaker located within the Decontamination Unit subpanel. Provide with relief valve compatible with water heater operation; pipe relief valve down to drip pan on floor with type L copper. Drip pans shall consist of a 12" x 12" x 6" (30 cm x 30 cm x 15 cm) deep pan, made of 19 gauge galvanized steel, with handles. A 3-quart (3 L) kitchen saucepan may be substituted for this purpose. Drip pan shall be securely fastened to the water heater with bailing wire or similar material. Wiring of the water heater shall be in compliance with NEMA, NECA, and UL standards.

2.4 ELECTRICAL SERVICE

- A. General: Comply with applicable NEMA, NECA and UL standards and governing regulations for materials and layout of temporary electric service. Provide

equipment which is compatible with existing electrical characteristics and available power. If existing power is either incompatible or inadequate for performance of the Work, provide auxiliary generators(s) located outside of the work area.

- B. Temporary Power: Provide service to Decontamination Unit subpanel with minimum 60 amp, 2 pole circuit breaker or fused disconnect connected to the buildings main distribution panel. Subpanel and disconnect shall be sized and equipped to accommodate all electrical equipment required for completion of the work.
- C. Voltage Differences: Provide identification warning signs at power outlets which are other than 110-120 volt power. Provide polarized outlets for plug-in type outlets, to prevent insertion of 110-120 volt plugs into higher voltage outlets. Dry type transformers shall be provided where required to provide voltages necessary for work operations.
- D. Ground Fault Protection: Equip all circuits for any purpose entering Work Area with ground fault circuit interrupters (GFCI). Locate GFCI's exterior to Work Area so that all circuits are protected prior to entry to Work Area. Provide circuit breaker type ground fault circuit interrupters (GFCI) equipped with test button and reset switch for all circuits to be used for any purpose in work area, decontamination units, exterior, or as otherwise required by national electrical code, OSHA or other authority. Locate in panel exterior to Work Area.

2.5 ELECTRICAL EQUIPMENT

- A. Electrical Power Cords: Use only grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Use single lengths or use waterproof connectors to connect separate lengths of electric cords, if single lengths will not reach areas of work.
- B. Lamps and Light Fixtures: Provide sealed quartz halogen construction lights, general service incandescent lamps or fluorescent lamps of wattage indicated or required for adequate illumination as required by the work or this section. Protect lamps with guard cages where fixtures are exposed to breakage by construction operations. Provide lighting with a secure base to insure that they will not be knocked over. Keep lights away from combustible materials.

2.6 TEMPORARY HEAT

- A. Heating Units: Provide temporary heating units that have been tested and labeled by UL, FM or another recognized trade association related to the fuel being consumed. Use steam or hot water radiant heat where available, and where not available use electric resistant fin radiation supplied from a branch circuit with ground fault circuit interrupter.

2.7 TEMPORARY COOLING

- A. Cooling Units: Provide temporary cooling units consisting of a fan coil unit inside the work area with a compressor and heat rejection coil outside.

2.8 FIRST AID

- A. First Aid Supplies: Comply with governing regulations and recognized recommendations within the construction industry.

2.9 FIRE EXTINGUISHERS

- A. Fire Extinguishers: Provide Type "A" fire extinguishers for temporary offices and similar spaces where there is minimal danger of electrical or grease-oil-flammable liquid fires. In other locations provide type "ABC" dry chemical extinguishers, or a combination of several extinguishers of NFPA recommended types for the exposures in each case.

PART 3 - EXECUTION

3.1 SCAFFOLDING

- A. Require that a Competent Person supervise the erection, movement, and dismantling of scaffolding in accordance with OSHA 29 CFR 1926.451.
- B. During the erection and/or moving of scaffolding, care must be exercised so that any polyethylene ground covering is not damaged.
- C. Clean as necessary debris from non slip surfaces.
- D. At the completion of abatement work clean all construction aids within the work area.

3.2 INSTALLATION, GENERAL

- A. General: Use qualified tradesmen for installation of temporary services and facilities. Locate temporary services and facilities where they will serve the entire project adequately and result in minimum interference with the performance of the Work.
 - 1. Require that tradesmen accomplishing this work be licensed as required by local authority for the work performed.
- B. Relocate, modify and extend services and facilities as required during the course of work so as to accommodate the entire work of the project.

3.3 WATER SERVICE

- A. General: Water connection to Owner's existing potable water system is limited to one 2" pipe-size connection, and a maximum flow of 10 gpm each to hot and cold water supply. Install using vacuum breakers or other backflow preventer as required by local authority.
- B. Maintain hose connections and outlet valves in leak-proof condition. Where finish work below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize the possibility of water damage. Drain water promptly from pans as it accumulates.

3.4 TEMPORARY POWER - REGULATED AREAS

- A. General: Use existing power available in Work Area.
- B. Circuit Protection: Protect each tool or extension cord with a ground fault circuit interrupter (GFCI) of proper size. GFCI can be type that plugs into existing duplex outlets. Insure that outlet is properly grounded before installation of GFCI.

3.5 ELECTRICAL SERVICE

- A. General: Provide a weatherproof, grounded temporary electric power service and distribution system of sufficient size, capacity, and power characteristics to accommodate performance of work during the construction period. Install temporary lighting adequate to provide sufficient illumination for safe work and traffic conditions in every area of work.
- B. Lockout: Lockout all existing power to or through the work area as described below. Unless specifically noted otherwise existing power and lighting circuits to the work area are not to be used. All power and lighting to the Work Area is to be provided from temporary electrical panel described below.
 - 1. Lockout power to work area by switching off all breakers serving power or lighting circuits in work area. Label breakers with tape over breaker with notation "DANGER circuit being worked on". Lock panel and have all keys under control of contractor's superintendent or owner's designated representative.
 - 2. Lockout power to circuits running through work area wherever possible by switching off all breakers serving these circuits. Label breakers with tape over breaker with notation "DANGER circuit being worked on". Sign and date danger tag. Lock panel and supply keys to contractor, Owner and Owner's Representative. If circuits cannot be shut down for any reason, label at 4'-0" on center with tags reading, "DANGER live electric circuit. Electrocutation hazard."
 - 3. Temporary Electrical Panel: Provide temporary electrical panel sized and equipped to accommodate all electrical equipment and lighting required by the work. Connect temporary panel to existing building electrical. Protect with circuit breaker or fused disconnect. Locate temporary panel as directed by Owner or Owner's Representative. Power may be obtained from adjacent power pole box if authorized in writing by the Owner.
- C. Power Distribution System: Provide circuits of adequate size and proper characteristics for each use. In general run wiring overhead, and rise vertically where wiring will be least exposed to damage from construction operations.
- D. Circuit Protection: Protect each circuit with a ground fault circuit interrupter (GFCI) of proper size located in the temporary panel. Do not use outlet type GFCI devices.
- E. Temporary Wiring: In the work area shall be type UF non-metallic sheathed cable located overhead and exposed for surveillance. Do not wire temporary lighting with plain, exposed (insulated) electrical conductors. Provide liquid tight enclosures or boxes for wiring devices.
- F. Number of Branch Circuits: Provide sufficient branch circuits as required by the work. All branch circuits are to originate at temporary electrical panel. At minimum provide the following:

1. For power tools and task lighting, provide one temporary 4-gang outlet in the following locations. Provide a separate 110-120 Volt, 20 Amp circuit for each 4-gang outlet (4 outlets per circuit).
 - a. One outlet in the work area for each 2500 square feet of work area.
 - b. One outlet at each decontamination unit, located in equipment room
2. 110-120 volt 20 amp branch circuits with 4-gang outlet for Owner's exclusive use while conducting air sampling during the work as follows:
 - a. One in each work area.
 - b. One at clean side of each Decontamination Unit.

3.6 TEMPORARY LIGHTING - REGULATED AREAS

- A. General: Provide sufficient temporary lighting to ensure proper workmanship everywhere; by combined use of daylight, general lighting, and portable plug-in task lighting.
- B. Circuit Protection: Protect each light with a ground fault circuit interrupter (GFCI) of proper size. GFCI can be type that plugs into existing duplex outlets. Insure that outlet is properly grounded before installation of GFCI.

3.7 TEMPORARY LIGHTING - CONTAINMENT

- A. Lockout: Lockout all existing power to lighting circuits in work area. Unless specifically noted otherwise existing lighting circuits to the work area are not to be used. All lighting to the Work Area is to be provided from temporary electrical panel described above.
- B. Lighting levels: Provide the following or equivalent where natural lighting or existing building lighting does not meet the required light level:
 1. One 200-watt incandescent lamp per 1000 square feet of floor area, uniformly distributed, for general construction lighting, or equivalent illumination of a similar nature. In corridors and similar traffic areas provide one 100-watt incandescent lamp every 50 feet. In stair ways and at ladder runs, provide one lamp minimum per story, located to illuminate each landing and flight. Provide sufficient temporary lighting to ensure proper workmanship everywhere; by combined use of daylight, general lighting, and portable plug-in task lighting.
 2. Provide lighting in areas where work is being performed as required to supply a 100 foot candle minimum light level.
 3. Provide lighting in any area being subjected to a visual inspection as required to supply a 100 foot candle minimum light level.
 4. Provide lighting in the Decontamination Unit as required to supply a 50

foot candle minimum light level.

- C. Number of Lighting Circuits: Provide sufficient lighting circuits as required by the work. All lighting circuits are to originate at temporary electrical panel.
- D. Circuit Protection: Protect each circuit with a ground fault circuit interrupter (GFCI) of proper size located in the temporary panel.

3.8 TEMPORARY HEAT

- A. General: Provide temporary heat where indicated or needed for performance of the Work.
- B. Temperature: Maintain a minimum temperature of 70 degrees F. where finished work has been installed.
- C. Temperature in shower: Maintain a minimum temperature of 75 degrees F. in the shower of the decontamination unit.
- D. Temperature: Maintain a minimum temperature of 70 degrees F. in the Work Area at all times that work is going on. At all other times and at completion of removal work, but before start of reconstruction work, maintain a minimum temperature of 50 degrees F.
- E. Temperature: Maintain a minimum temperature of 50 degrees F. in the Work Area at all times during and after removal work.

3.9 TEMPORARY COOLING

- A. Required Cooling: Provide units sufficient to supply 20,000 BTU's of cooling per 8,000 cubic feet of work area.

3.10 PROJECT MONITOR'S FIELD OFFICE

- A. Project Monitor's Field Office: The Contractor will not be required to provide the Project Monitor a field office.

3.11 FIRE EXTINGUISHERS

- A. Fire Extinguishers: Comply with the applicable recommendations of NFPA Standard 10 "Standard for Portable Fire Extinguishers". Locate the appropriate class of fire extinguishers where they are most convenient and effective for their intended purpose.

3.11 STORAGE FACILITIES

- A. Storage: The Contractor shall provide a temporary construction trailer as a storage area for tools, equipment and supplies. Waste generated during abatement shall be stored in a construction trailer in addition to above.

END OF SECTION - 01927

SECTION 01928

EXTERIOR REGULATED AREAS LEAD-BASED PAINT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Temporary Facilities: is specified in Section 01927.
- B. Worker Protection: is specified in Section 01931.
- C. Respiratory Protection: is specified in Section 01932.

1.3 DESCRIPTION OF WORK

- A. Work of this section consists of preparing a Regulated Area for exterior work of the following specification sections.
 - 1. Section 01937 Removal of Lead Contaminated soil
 - 2. Section 01936 Removal of Lead-Based Painted Substrate

PART 2 - PRODUCTS

2.1 HEPA FILTERED VACUUM CLEANERS

Available Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the Work include, but are not limited to, the following:

2.2 DUCT TAPE

Provide 2" (51 mm) width tape with an adhesive which is formulated to aggressively stick to sheet polyethylene.

2.3 WET DETERGENT WASH

Provide detergent or cleaning agent formulated to be effective in removing lead dust. Follow dilution ratio recommended by the manufacturer's instructions.

2.4 PLASTIC SHEET

A single polyethylene film in the largest sheet size possible to minimize seams, 4.0 or 6.0 mils thick.

2.5 BARRICADE FENCE

Lightweight polyethylene or polyethylene - polypropylene blend barricade fence, 4' (1.2m) high in high visibility orange.

PART 3 - EXECUTION

3.1 SECURING WORK AREA

- A. Secure work area from access by the public. Accomplish this where possible, by locking the gate, or other means of access to the area.

3.2 DEMARCATION OF REGULATED AREA

- A. Demarcate each exterior Regulated Area with a sheet plastic drop sheet as described below.
- B. Provide barricade fence with support posts 4' (1.22m) o.c. Provide barrier warning tape at perimeter with the following legend "Caution Lead Hazard - Do Not Enter Work Area Unless Authorized." Barricade fence shall be securely fastened and no closer than twelve feet (12') (3.66m) radius from the work.

3.3 EXTERIOR ABATEMENT GENERAL PROCEDURES

- A. The following precautions and procedures have application to the work of this section. Workers must exercise caution to avoid the release of lead dust into the air and to contain lead dust and debris on drop sheet.
- B. Before start of work comply with requirement for worker protection in Section 01931 and respiratory protection in Section 01932.
- C. Do not allow eating, drinking, smoking, chewing tobacco or gum, or applying cosmetics in the regulated area.
- D. Provide barricade fencing and signage. Maintain egress from exits.
- E. Provide one (1) layer of 6 mil polyethylene sheeting as close to foundation as possible. Extend the sheeting out from the foundation a distance of 3 feet (0.91m) per each 12 vertical feet in height being abated or a minimum of 10 feet (3.04m) and a maximum of 24 feet (7.32m). Weight the sheeting at the foundation and along edges and seams. Ensure that the vegetation around the area is covered as well. Install curbs at perimeter no less than 5" (140 mm) high. Curbs are to minimize the dispersion of lead dust and debris from drop cloth. Erect vertical shrouds or suspend work if constant wind speed exceeds 15 mph or there is visible movement of debris beyond ground sheeting.
- F. Provide one layer of 6 mil polyethylene from the work area to the lockable dumpster or trailer. All lead paint substrate shall be transported over this covering to minimize contamination of the surrounding area. The sheeting shall be wide enough to account for the largest (widest) piece of lead paint substrate

anticipated to be carried to the lockable dumpster or trailer.

- G. On a daily basis, collect dust and debris by HEPA vacuuming the surface or by wet sweeping.
- H. At the end of each work day, remove polyethylene sheeting and place in 6 mil disposal bags. Securely store with other waste in a unit which can be securely locked and secured to the site. The Owner is concerned about the security of all wastes generated from these work efforts. All precautions shall be taken to ensure that the wastes are not accessible to the public.
- I. On a daily basis and during final cleanup, visually examine the immediate area to ensure that no lead debris has escaped containment. Wet sweep or rake up any debris found and place in 6 mil disposal bags. Securely store with other waste.
- J. Suspend work activities during inclement weather; including but not limited to rain, snow, ice, and hail.

END OF SECTION - 01928

SECTION 01929

WORK AREA PREPARATION LEAD-BASED PAINT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Temporary Facilities: is specified in Section 01927
- B. Worker Protection: is specified in Section 01931.
- C. Respiratory Protection: is specified in Section 01932.
- D. Exterior Regulated Areas: is specified in Section 01928.

1.3 DESCRIPTION OF WORK

- A. Work of this section consists of preparing a work area for interior or exterior work of the following specification sections.
 - 1. Section 01935 Project Decontamination - Lead-Based Paint
 - 2. Section 01939 Removal of Lead-Containing Dust

PART 2 - PRODUCTS

2.1 HEPA Filtered Vacuum Cleaners:

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the Work include, but are not limited to, the following:

2.2 Duct Tape: Provide 2" (51 mm) width tape with an adhesive which is formulated to aggressively stick to sheet polyethylene.

2.3 Wet Detergent Wash: Provide detergent or cleaning agent formulated to be effective in removing lead dust. Follow dilution ratio recommended by the manufacturer's instructions.

2.4 Plastic Sheet: A single polyethylene film in the largest sheet size possible to minimize seams, 6.0 mils thick.

PART 3 - EXECUTION

3.1 SECURING WORK AREA

- A. Secure work area from access by public. Accomplish this where possible, by locking doors, windows, or other means of access to the area.

3.2 DEMARCATION OF WORK AREA

- A. Demarcate each Work Area as described below.
- B. Provide warning signs at each fence gate and at entrance to change room leading to the controlled area reading as follows:

WARNING

LEAD WORK AREA

POISON

NO SMOKING OR EATING

3.3 SCHEDULING

- A. Work may be carried out during normal working hours in those areas which can be completely secured from access by adjacent building occupants, the public, and staff.

3.4 ABATEMENT GENERAL PROCEDURES

- A. The following precautions and procedures have application to work of this section. Workers must exercise caution to avoid release of lead dust into the air and to contain lead dust within the work area.
 1. Before start of work comply with requirements for worker protection in section 01931, and respiratory protection in section 01932.
 2. Do not allow eating, drinking, smoking, chewing tobacco or gum, or applying cosmetics in the Work Area.
 3. Shut down any air handling equipment bringing air into or out of the Work Area.
 4. Pick up any debris which may puncture polyethylene sheeting from floor and other surfaces in the immediate location of the work prior to commencing work by hand or use of a High Efficiency Particulate Air (HEPA) filtered vacuum.
 5. Cover work area with two (2) layers of 6 mil polyethylene sheeting. Secure with duct tape and tape all seams. The work area is defined as that area previously described around the building and that space between the work area and lockable trailer or dumpster. See 01928-3

3.3(F).

6. Be certain polyethylene sheeting is square and tight to all corners of the buildings and vegetation so it will not be punctured or pulled loose by workers, ladders, tools etc.
7. Except for egress to change room, seal all existing openings, gateways, supply and exhaust vents, and convectors within the work area with 6 mil polyethylene sheeting secured and completely sealed with duct tape.
8. Provide showering facilities for all workers and visitors as specified in Section 01931.2.3.
- 8a. Provide an approximately 3'-0" by 3'-0" (1m x 1m) Change Room, with additional space as required for storage, attached to work area. Fabricate Change Room from 6 mil sheet plastic. Locate so that access to Work Area is through Change Room.
9. Cover floor in front of entry to Change Room with one layer of 6 mil sheet plastic. Securely anchor sheet plastic to prevent slipping.
10. Provide Flapped Door as entry to Change Room from work area and exit from Change Room to non-work side of area. Fabricate each flapped door from overlapping contacting layers of sheet plastic. Fasten each layer on the top and one side. Each flap is to be 3" (76 mm) longer than door opening. Reinforce free side and bottom of each sheet with duct tape. Alternate sides that are fastened on each layer. Form arrows pointing to entry side with duct tape on inside and outside of door.
11. At entry to Change Room post an approximately 20 inch by 14 inch (508 mm x 356 mm) manufactured caution sign displaying the legend cited above in Section 3.2B.
12. Complete requirements of the following:
 - a. Section 01931 Worker Protection - Lead-Based Paint
 - b. Section 01932 Respiratory Protection - Lead-Based Paint
13. At end of work shift remove any paint chips, dust and debris which collects on the sheeting either by using a HEPA vacuum or by spraying with damp wash solution, collect debris with damp paper towels, place in disposal bag while still damp, and clean surface of plastic sheet with damp paper towels.

If at any time, in the Project Monitors' judgment, decontamination procedures are inadequate or not carefully adhered to, the Contractor shall be required to construct and utilize a 3 stage personnel decontamination unit.
14. Complete the following at completion of work in an area before entering Change Room. (Minimum 2 man procedure)

- a. Each worker shall be HEPA vacuumed thoroughly by the other worker. First worker shall then enter Change Room.
 - b. While standing on plastic drop sheet thoroughly HEPA vacuum ladder and any tools used and pass to worker in Change Room.
15. Perform a thorough cleanup of the entire work area daily during active Hazard Reduction Activities.
 - a. Large Debris: Large debris (e.g. beams, trim, casing, etc.) shall be carefully carried to avoid breakage and moved to a lockable trailer or dumpster.
 - b. Small Debris: Small debris shall be collected by HEPA vacuuming all surfaces or by wet misting the area with damp wash solution. Do not create puddle of standing wash solution. Sweep debris while damp and place in 6 mil disposal bags. Seal with duct tape and move to designated waste storage area.
16. Wet wipe the exterior surfaces of all disposal bags or large items wrapped in 6 mil polyethylene sheeting prior to exiting work area.
17. If moving to the next work area in the same secured area: Worker on the drop sheet don clean foot covers, placing each foot, in turn, off the sheet as the foot cover is put on. Remove clean foot covers at the next Work Area while standing on the sheet. Dispose of the used foot covers at completion of work in that area. Do not reuse foot covers to move off the sheet.
18. If work day is complete or if next work area is in another secured area: Follow decontamination procedures in Section 01931 - Worker Protection.

END OF SECTION - 01929

SECTION 01931

WORKER PROTECTION LEAD-BASED PAINT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

- A. This section describes the equipment and procedures required for protecting workers against lead contamination and other workplace hazards except for respiratory protection. For the purpose of this project, and unless the Contractor can show an exposure assessment that can show otherwise, the assumed exposure for this project shall be 50 mg/m³ to 500 mg/m³. This corresponds to an OSHA Class I Exposure Level and requires specific actions on part of the Contractor. This does not however relieve the Contractor of providing less than the Powered-Air Purifying Respirators (PAPR) dictated in Section 01932 - Respiratory Protection.

1.3 STANDARDS

- A. Except to the extent that more stringent requirements are written directly into the Contract Documents, the following regulations and standards have the same force and effect (and are made a part of the Contract Documents by reference) as if copied directly into the Contract Documents, or as if published copies were bound herewith. Where there is a conflict in requirements set forth in these regulations and standards, meet the more stringent requirement.
- B. OSHA U.S. Department of Labor, Occupational Safety and Health Administration, Safety and Health Standards including but not limited to:

The following sections are brought to the contractor's attention for convenience. All appropriate OSHA Standards apply to this project.

- | | | |
|--------------------|---|---|
| 1. 29 CFR 1910.134 | - | Respiratory Protection; |
| 2. 29 CFR 1926.20 | - | General safety and health provisions; |
| 3. 29 CFR 1926.21 | - | Safety training and education; |
| 4. 29 CFR 1926.23 | - | First Aid; |
| 5. 29 CFR 1926.24 | - | Medical Surveillance and Medical Removal Protection Programs; |
| 6. 29 CFR 1926.25 | - | Housekeeping; |

- | | | | |
|-----|--|---|---|
| 7. | 29 CFR 1926.28 | - | Personal protective equipment; |
| 8. | 29 CFR 1926.51(f) | - | Washing facilities; |
| 9. | 29 CFR 1926.55 | - | Gases, vapors, fumes, dusts, and mists; |
| 10. | 29 CFR 1926.56 | - | Illumination; |
| 11. | 29 CFR 1926.57 | - | Ventilation; |
| 12. | 29 CFR 1926.59 | - | Hazard Communication Standard; |
| 13. | 29 CFR 1926.62 | - | Lead Construction Standard; |
| 14. | 29 CFR 1926.103 | - | Respiratory protection; |
| 15. | 29 CFR 1926.3538 | - | Ventilation: Welding, cutting or heating of metals of toxic significance; |
| 16. | 29 CFR 1926.300,
301, 302 | - | Hand and power tools; |
| 17. | 29 CFR 1926.451,
500, 501, 502, 503 | - | Scaffolding & Fallction |

1.4 RELATED WORK SPECIFIED ELSEWHERE

- A. Respiratory Protection: is specified in Section 01932.

1.5 COMPETENT PERSON

- A. Definition: A "Competent Person" is one who is capable of identifying existing and predictable hazards at the worksite, and who has the authority to ensure prompt corrective measures are taken to eliminate them. The competent person has authority to shut down the project in accordance with OSHA 1926.62.
- B. Provide on-site, full time competent person (or persons) to ensure that the worker protection program is effective.

1.6 WORKER TRAINING

- A. Certification: All workers and supervisors are to be trained, certified and accredited as required by federal, state, or local code or regulation.
- B. OSHA-Required Training: All workers are to be trained in the dangers inherent in handling lead and breathing or ingesting lead dust and in the proper work procedures and personal and area protective measures prior to the time of initial job assignment and at least annually thereafter. Include but do not limit the topics covered in the course to the following:

1. Content of OSHA lead standard;
2. Possible routes of exposure to lead;
3. Health effects associated with lead exposure;
4. Medical removal protection program;
5. The importance of good personal hygiene;
6. Nature of operations that could result in exposure to lead;
7. The proper use and maintenance of protective clothing and equipment, including respiratory protection;
8. The correct use of engineering controls and implementation of good work practices;
9. Importance of and instruction in the use of necessary protective controls, practices and procedures to minimize exposure including:
 - a. Engineering controls;
 - b. Work Practices;
 - c. Respirators;
 - d. Housekeeping procedures;
 - e. Hygiene facilities;
 - f. Protective clothing;
 - g. Decontamination procedures;
 - h. Emergency procedures;
 - i. Waste disposal procedures;
10. Purpose, proper use, fitting, instructions, and limitations of respirators as required by 29 CFR 1926.103;
11. The specific methods of hazard reduction to be used for the project;
12. Requirements of medical monitoring/surveillance program;
13. Signs and labels;
14. Work practices including hands on or on-the-job training;
15. Personal decontamination procedures;
16. Health and safety considerations;
17. Review of OSHA written compliance program as required by 29 CFR 1926.62;
18. Information on the use of chelating agents and the fact that they should not be routinely used to remove lead from their bodies except under the

direction of a licensed physician;

19. The employees' right of access to medical records per 29 CFR 1910.20.

C. EPA-Required Training: Training proposed by EPA for all persons conducting "Lead-Based Paint activities," as defined by EPA, calls for additional training requirements including:

1. For workers:

- a. A minimum of 24 hours of training, with a minimum of 10 hours devoted to hands-on training; and
- b. Instruction in regulatory background, Federal, state and local.

2. For supervisors:

- a. A minimum of 32 hours training, with a minimum of 8 hours devoted to hands-on training; and
- b. Instruction in legal insurance issues;
- c. Development of pre-abatement work plans;
- d. Employee information and training;
- e. Project management;
- f. Contract specifications;
- g. Supervisory techniques;
- h. Soil, dust and air testing;
- i. Clearance standards and testing;
- j. Community relations process;
- k. Cost estimations; and
- l. Record keeping.

1.7 MEDICAL SURVEILLANCE:

A. Provide full medical examinations for all workers performing lead abatement at first use of negative pressure respirators and for each worker exposed to lead for more than thirty days a year and/or who have blood lead levels over 25 micrograms/deciliter. Provide initial medical examinations for each worker exposed to lead for more than 1 day a year. Provide medical examination for any employee who has signs and symptoms of lead poisoning or when a worker becomes pregnant.

B. Medical evaluation to include:

1. A detailed work and medical history.
2. A thorough physical examination.
3. Evaluation of pulmonary status.
4. A blood pressure measurement.
5. A blood sample and analysis that determines blood lead levels,

hemoglobin and hematocrit, red cell indices, peripheral smear morphology, blood urea nitrogen, serum creatinine and zinc protoporphyrin.

6. A routine urinalysis.
 7. Any other laboratory or other test which is recommended by the examining physician.
- C. The medical evaluation must be provided prior to the start of the lead hazard reduction project or assignment requiring the use of negative pressure respirators.
- D. Blood testing (blood lead and zinc protoporphyrin) shall be performed at least every 2 months during the first six months of the project and every two months thereafter. An additional blood test shall be performed at the completion of the project and upon termination of employment. The employer must make available the following, before the hazard reduction project begins:
1. Biological monitoring for blood lead level and zinc protoporphyrin level at least every 2 months during the first six months and every two months thereafter.
 2. When an employee's blood lead level is at or above 40::g/dl, biological monitoring at least every two months until two consecutive blood lead level results are below 40:: g/dl.
 3. Monthly blood lead level testing during removal period or any employee medically removed due to an elevated blood lead level.
 4. When an employee's blood lead level meet the criterion for medical removal (at or above 50::g/dl), follow-up blood testing within two weeks.
- E. The medical evaluation must be submitted with a written statement by the examining physician stating that the results from the medical evaluations do not restrict the employee from working in a lead dust environment.

1.8 MEDICAL REMOVAL:

- A. Employers must remove employees with lead exposure at or above 30 micrograms/cubic meter of air each time:
1. A periodic and follow-up blood sampling test indicates a blood lead level at or above 50 :g/dl; and
 2. A final medical determination indicates a detectable medical condition that increases health risks from lead exposure.

1.9 COMPLIANCE PROGRAM:

- A. The OSHA Lead in Construction Standard requires the employer to establish and implement a written compliance program prior to the commencement of a job. All employees covered under this standard must implement engineering and work practice controls to reduce and maintain employee exposures to lead at or below the Permissible exposure limit (PEL). This program must include:
1. Description of activities that produce lead exposures.
 2. Description of the specific means that will be employed to reduce exposure, and where engineering controls are used, the plans and studies used to determine the methods selected.
 3. A detailed schedule for implementing the compliance program.
 4. A report of the technology considered in meeting the PEL.
 5. Air monitoring data that documents the source of the lead exposure.
 6. Specific work practice procedures which will be employed on the project.
 7. A schedule of administrative controls if these are to be utilized.
 8. A description of all arrangements made on multi-employer work sites to inform affected employers about the lead project.

1.10 EXPOSURE ASSESSMENT

- A. The OSHA Lead in Construction Standard requires employers to implement protective measures before exposure assessment has been completed if they are conducting any one of a number of "lead related tasks". These tasks are divided into three different classes. The employer must assume that the worker is exposed to airborne concentrations at least to a certain level of lead (depending on the class) until exposure assessment shows otherwise. When the employer has objective data demonstrating that the process, operation or activity does not result in employee exposure to lead at or above the action level, the employer may rely upon such data for the initial exposure assessment.
- B. Class 1 Tasks - Employer must assume exposure of at least 50 mg/m³ – 500 mg/m³ until exposure assessment proves otherwise. Examples include:
1. Manual demolition of structures;
 2. Manual scraping;
 3. Manual sanding;
 4. Using a heat gun;
 5. Power tool paint removal with dust collection systems;
 6. Spray painting with lead-based paint.

- C. Class 2 Tasks - Employers must assume exposure of at least 500 mg/m³ – 2500 mg/m³ until exposure assessment proves otherwise. Examples include:
1. Using lead containing mortar;
 2. Burning lead;
 3. Rivet busting on lead paint;
 4. Power tool paint removal without dust collection systems;
 5. Clean up activities where dry expendable abrasives are used;
 6. Abrasive blasting enclosures movement and removal.
- D. Class 3 Tasks - Employer must assume exposure of at least 2,500 mg/m³ until exposure assessment proves otherwise. Examples include:
1. Abrasive blasting;
 2. Cutting;
 3. Welding;
 4. Torch burning.
- E. Prior to the completion of an exposure assessment of the tasks being conducted, the employer should follow the regulations as if the employee was exposed above the PEL. The employee(s) must be notified in writing within 5 days of receipt of the results representing their exposure. Where exposure is above the PEL, employees must be informed of this fact and advised of corrective action to be taken. Monitoring and analysis must have an accuracy (to a confidence level of 95%) of not less than plus or minus 25% for airborne lead levels equal to or greater than 30 mg/m³.
- F. Personal protective equipment for each of the tasks above is to include protective work clothing and equipment, change areas, washing facilities, and training. The only difference in protective equipment for the different classes of tasks is respiratory protection which is to be provided in accordance with section 01932.

1.11 SUBMITTALS:

- A. Before Start of Work: Submit the following to the Owner's Project Monitor for review. Do not start work until these submittals are returned with Owner's Project Monitor action stamp indicating that the submittal is returned for unrestricted use.
- B. Certifications: Submit evidence that all workers and supervisors have been trained, certified and accredited as required by federal, state, or local code or regulation.

- C. Certificate of Worker's Acknowledgment: Submit an original signed copy of the Certificate of Worker's Acknowledgment found at the end of this section, for each worker who is to be at the job site or enter the Work Area.
- D. Training Program: Submit a course outline of the worker and supervisor training courses. Include date and time course was given, name and title of teacher.
- E. Report from Medical Examination: conducted within last 12 months as part of compliance with medical surveillance requirements for each worker who is to enter the Work Area. Submit, at a minimum, for each worker the following:
 - 1. Name and Social Security Number
 - 2. Physicians Written Opinion from examining physician including at a minimum the following:
 - a. Whether worker has any detected medical conditions that would place the worker at an increased risk of material health impairment from lead exposure.
 - b. Any recommended limitations on the worker or on the use of personal protective equipment such as respirators.
 - c. Results of blood lead determinations and any actions taken as a result of recommendations.
 - d. Statement that the worker has been informed by the physician of the results of the medical examination and of any medical conditions that necessitates further medical exam or treatment.
 - e. Copy of medical examination detailed in 1.7.
 - 3. Copy of information that was provided to physician prior to the examination.
 - 4. Statement that worker is able to wear and use the type of respiratory protection proposed for the project, and is able to work safely in an environment capable of producing heat stress in the worker.
 - 5. Compliance Program: Submit program in compliance with 1926.62.
 - 6. Exposure Assessment: Submit assessment in compliance with 1926.62.
 - 7. Notarized Certifications: Submit certification signed by an officer of the contracting firm and notarized that exposure measurements, medical surveillance, and worker training records are being kept as required in this specification.

PART 2 - EQUIPMENT

2.1 PROTECTIVE CLOTHING:

- A. Coveralls: Provide cloth full-body coveralls and hats, require that they be worn by all workers in the Work Area. Require that workers change out of coverall in

the Equipment section of the Change Room. Dispose of coverall as hazardous waste at completion of all work.

- B. Shoe Covers: Provide disposable shoe covers and require that they be worn by all workers in the Work Area. Shoe covers must be replaced each time a worker leaves the work area. Shoe covers are disposed as hazardous waste in the equipment section of the Change Room.
- C. Boots: Provide work boots with non-skid soles, and where required by OSHA, foot protectives, for all workers. Provide boots at no cost to workers. Do not allow boots to be removed from the Work Area for any reason, after being contaminated with lead dust. Dispose of boots with clothing waste at the end of the work, or bag and take to next project. Boots that are non-porous may be decontaminated and removed from work area.
- D. Hard Hats: Provide head protectives (hard hats) as required by OSHA for all workers, and provide 4 spares for use by Owner's Representative, Project Monitor and Owner. Require hard hats to be worn at all times that work is in progress that may potentially cause head injury. Provide hard hats of type with plastic strap type suspension. Require hats to remain in the Work Area throughout the work. Thoroughly clean and decontaminate hats before removing them from Work Area at the end of the project.
- E. Goggles and Face Shields: Provide eye and face protection (goggles or face shields) as required by OSHA for all workers involved in scraping, spraying, stripping or any other activity which may potentially cause eye or face injury. Thoroughly clean and decontaminate goggles or face shields before removing them from Work Area at the end of the project.
- F. Gloves: Provide work gloves to all workers and require that they be worn at all times in the Work Area. Do not remove gloves from Work Area. Dispose of as clothing waste at the end of the work.

2.2 ADDITIONAL PROTECTIVE EQUIPMENT:

- A. Respirators, disposable coveralls, head covers, and footwear covers shall be provided by the Contractor for the Owner, Owner's Representative, Project Monitor, and other authorized representatives who may inspect the job site.

2.3 SHOWER FACILITIES:

- A. Provide shower facilities to be used by all workers when lead air concentrations exceed 30 mg/m^3 or surface lead dust concentrations exceed $2,000 \text{ mg/FT}^2$.
 - 1. Provide pre-fabricated or site-built shower facilities. Supply hot and cold water to shower head which can be controlled from inside shower. Filter all shower water or dispose of in accordance with section 01938.
 - 2. Supply a sufficient quantity of soap and towels for the workers and authorized Visitors.

2.4 WASHING FACILITIES:

- A. Provide washing facilities to be used by all workers when exiting the work area.
 - 1. Provide temporary sink with hot and cold water supply. Filter all water or dispose of in accordance with Section 01938.
 - 2. Supply a sufficient quantity of soap and towels for the workers and authorized visitors.

2.5 EYEWASH STATION:

- A. Where the eyes of employees may be exposed to injurious corrosive materials, suitable facilities for flushing of the eyes shall be provided within the work area for immediate emergency use.

PART 3 - EXECUTION

3.1 GENERAL:

- A. Provide worker protection as required by the most stringent OSHA and/or EPA standards applicable to the work. The following procedures are minimums to be adhered to regardless of lead concentration in the Work Area.
- B. Each time Work Area is entered remove street clothes and put on new disposable coverall or (re-use previous coverall if not overly contaminated or torn), new head cover, and a clean respirator with cartridges appropriate for the abatement work to be performed. Reinforce coverall seams and secure gloves to coveralls with duct tape. Proceed through Change Room, don foot covers and enter Work Area.

3.2 DECONTAMINATION PROCEDURES:

- A. Require all workers to adhere to the following personal decontamination procedures whenever they leave the Work Area:
- B. Air Purifying-Negative Pressure Respirators: Require that all workers use the following decontamination procedure as a minimum requirement whenever leaving the Work Area with a half or full face cartridge type respirator:
 - 1. Still wearing respirators, comply with the following procedure. Care must be taken to follow reasonable procedures in removing the respirator and filters to avoid disturbing lead dust. The following procedure is required as a minimum:
 - a. HEPA vacuum heavily contaminated protective work clothing.
 - b. When exiting Work Area, remove foot covers in work area. Remove disposable coveralls and disposable head covers in the Change Room. Remove protective coveralls by carefully rolling down the garment to minimize exposure to lead dust.

2. Remove respirator and set aside.
 3. Thoroughly wash hands and face with soap and water. If shower facilities are available, proceed to shower and shower completely with soap and water.
 4. Remove respirator cartridges from facepiece and either seal with duct tape or discard.
 5. Carefully wash facepiece of respirator inside and out.
 6. Thoroughly wash hands with soap and water.
- C. Powered Air Purifying Respirators: Require that all workers use the following decontamination procedure as a minimum requirement whenever leaving the Work Area with a PAPR:
1. Still wearing respirators, comply with the following procedure. Care must be taken to follow reasonable procedures in removing the respirator and filters to avoid disturbing lead dust. The following procedure is required as a minimum:
 - a. HEPA vacuum heavily contaminated protective work clothing.
 - b. When exiting Work Area, remove foot covers in work area. Remove disposable coveralls and disposable head covers in the Change Room. Remove protective coveralls by carefully rolling down the garment to minimize exposure to lead dust.
 2. Remove respirator, cap filter cartridges, shut blower unit off and set aside.
 3. Thoroughly wash hands and face with soap and water. If shower facilities are available, proceed to shower and shower completely with soap and water.
 4. Carefully wash facepiece of respirator inside and out. Wet wipe blower unit, hose and battery pack. Do not allow battery pack terminals to get wet. Do not remove respiratory cartridges unless wet. If wet, remove respirator cartridges from blower unit and discard.
 5. Thoroughly wash hands with soap and water.
- D. Within Work Area:
1. Require that workers NOT eat, drink, smoke, chew tobacco or gum, or apply cosmetics in the Work Area. To eat, chew, drink or smoke, workers shall follow the procedure described above before entering the Non-Work Areas of the building or exterior.

3.3 CERTIFICATE OF WORKER'S ACKNOWLEDGMENT:

- A. Following this section is a Certificate of Worker Training. After each worker has

been included in the Contractor's Respiratory Protection Program, completed the training program and medical examination, secure a fully executed copy of this form.

END OF SECTION - 01931

CERTIFICATE OF WORKER'S ACKNOWLEDGMENT

PROJECT NAME _____ DATE _____

PROJECT
ADDRESS _____
CONTRACTORS
NAME _____

WORKING WITH LEAD CAN BE DANGEROUS. INHALING AND INGESTING LEAD DUST CAN CAUSE AN INCREASE IN BLOOD LEAD LEVELS WHICH CAN LEAD TO ADVERSE HEALTH EFFECTS SUCH AS KIDNEY DAMAGE, ELEVATED BLOOD PRESSURE OR INFERTILITY.

Your employer's contract with the Owner for the above project requires that: You be supplied with the proper respirator and be trained in its use. You be trained in safe work practices and in the use of the equipment found on the job. You receive a medical examination. These items are to have been done at no cost to you.

RESPIRATORY PROTECTION: You must have been trained in the proper use of respirators, and informed of the type respirator to be used on the above referenced project. You must be given a copy of the written respiratory protection manual issued by your employer. You must be equipped at no cost with the respirator to be used on the above project.

TRAINING COURSE: You must have been trained in the dangers inherent in handling lead and breathing and ingesting lead dust and in proper work procedures and personal and area protective measures. The topics covered in the course must have included the following:

- Possible routes of exposure to lead
- Health hazards associated with lead
- Respiratory protection
- Use of protective equipment
- Work practices including hands on or on-the-job training
- Personal decontamination procedures
- Health and safety considerations

MEDICAL EXAMINATION: You must have had a medical examination within the past 12 months at no cost to you. This examination must have included: health history, physical examination, a blood pressure measurement, pulmonary function test and blood sample and analysis for lead.

By signing this document you are acknowledging only that the Owner of the building you are about to work in has advised you of your rights to training and protection relative to your employer, the Contractor.

Signature _____ Social Security No. _____

Printed Name _____ Witness _____

SECTION 01932

RESPIRATORY PROTECTION

LEAD-BASED PAINT

PART 1 - GENERAL

The minimum respiratory protection during hand removal of lead based paint coated substrates shall be a Powered-Air Purifying Respirator (PAPR).

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work of this section.

1.2 DESCRIPTION OF WORK:

- A. Instruct and train each worker involved in lead abatement or lead based paint hazard reduction in proper respiratory use and require that each worker wear a respirator, properly fitted on the face in the Work Area from the start of any operation which may expose the worker above the permissible exposure limit (PEL) until the Work Area is completely decontaminated. PAPR respiratory protection is required under this contract.

1.3 STANDARDS:

- A. Except to the extent that more stringent requirements are written directly into the Contract Documents, the following regulations, guidelines and standards have the same force and effect (and are made a part of the Contract Documents by reference) as if copied directly into the Contract Documents, or as if published copies were bound herewith. Where there is a conflict in requirements set forth in these regulations and standards, meet the more stringent requirement.
- B. OSHA- U.S. Department of Labor Occupational Safety and Health Administration, Safety and Health Standards 29 CFR 1910, Section 1000 - Air Contaminants, Section 1926.103, 1910.134 - Respiratory Protection and Section 1926.62 - Lead.
- C. ANSI- American National Standards Institute, American National Standard Practices for Respiratory Protection, ANSI Z88.2-1992.
- D. HUD- U.S. Department of Housing and Urban Development, Lead Based Paint: Interim Guidelines for Hazard Identification and Abatement in Public and Indian Housing.
- E. NIOSH- National Institute for Occupational Safety and Health, Guide to Respiratory Protection, 1987, 87-116.

- F. MSHA- Mine Safety and Health Administration

1.4 SUBMITTALS:

- A. Before Start of Work submit the following to the Owner's project monitor for review. Do not begin work until these submittals are returned with the Owner's Project Monitor's action stamp indicating that the submittal is returned for unrestricted use.
- B. Written Respiratory Protection Program: Submit written respiratory protection program in accordance with the OSHA Respiratory Protection Standard 29 CFR 1926.103, 29 CFR 1910.134 and OSHA Lead Construction Standard 1926.62.
- C. Product Data: Submit manufacturer's product information for each component used, including NIOSH and MSHA Certifications for each component in an assembly and/or for entire assembly.
- D. Respiratory Protection Schedule: Submit level of respiratory protection intended for each operation required by the project. Submit this information on the "Respiratory Protection schedule" on the form included at the end of this Section.
- E. Historic Sampling Data: Submit air sampling data from previous projects to substantiate selection of respiratory protection proposed. Data submitted shall include at least the following for each procedure required by the work:
1. Date of measurements.
 2. Operation monitored.
 3. Sampling and analytical methods used and evidence of their accuracy.
 4. Number, duration, and results of samples taken.
 5. Workers name, social security number and job classification.
 6. Type of respirator worn by workers.
 7. Type of material.
 8. Control Methods.
 9. Work Practices.
 10. Training and experience level of workers and supervisors.

PART 2 - PRODUCTS

2.1 AIR PURIFYING RESPIRATORS

- A. Respirator Bodies: Provide full face type respirators. Equip full face respirators with a nose cup or other anti-fogging device as would be appropriate for use in air temperatures less than 32 degrees fahrenheit.
- B. Filter Cartridges: Provide, at a minimum, HEPA type filters labeled with NIOSH and MSHA Certification for "Radionuclides, Radon Daughters, Dust, Fumes, Mists including Asbestos-Containing Dusts and Mists" and color coded in accordance with ANSI Z88.2 (1992). In addition, a chemical cartridge section (organic vapor/acid gas) may be added, if required, for solvents, strippers, etc., in use. In this case, provide cartridges that have each section of the combination canister labeled with the appropriate color code and NIOSH/MSHA Certification.

- C. Non-permitted respirators: Do not use single use, disposable, half face, or quarter face respirators.

PART 3 - EXECUTION

3.1 GENERAL:

- A. Respiratory Protection Program: Comply with ANSI Z88.2 - 1992 "Practices for Respiratory Protection" and OSHA 29 CFR 1910 and 1926.
- B. Require that respiratory protection be used at all times that there is any possibility of airborne lead levels exceeding the permissible exposure level required in OSHA 1926.62
- C. Require that a respirator be worn by anyone in a Work Area at all times, regardless of activity, during a period that starts with any operation which could cause disturbance of lead based paint or dust, until the area has met the requirements of Section 01935 or Section 01926.
- D. Regardless of Airborne Lead Levels or Surface Dust Contamination: Require that the minimum level of respiratory protection used be full-face powered air-purifying respirators with high efficiency filters.
- E. Do not allow the use of single-use, disposable, or quarter-face respirators for any purpose.

3.2 FIT TESTING:

- A. Initial Fitting: Fit types of respirator to be worn by each individual. Require that an individual use only those respirators for which training and fit testing has been provided. Require that fit testing be repeated semiannually, and at any time a respirator is replaced.
- B. On a Monthly Basis, check the fit of each worker's respirator by having irritant smoke blown onto the respirator from a smoke tube.
- C. Upon Each Wearing: Require that each time an air-purifying respirator is put on it be checked for fit with a positive and negative pressure fit check in accordance with 29 CFR 1926.62, Appendix D.

3.3 PERMISSIBLE EXPOSURE LIMIT (PEL):

- A. Permissible Exposure Limit (PEL-TWA) - 50 micrograms/cubic meter
- B. Action Level (TWA) - 30 micrograms/cubic meter

3.4 TYPE OF RESPIRATORY PROTECTION REQUIRED:

- A. Respiratory Protection Factor as indicated in paragraph below are for information purposes only. Respiratory Protection shall be as described in 3.1(D) above.

3.5 RESPIRATORY PROTECTION FACTOR:

Table I. -- Respiratory Protection for Lead Aerosols

A.	Airborne concentration of lead or Required respirator {1} condition of use	
1.	Not in excess of 500 mg/m ³	2 mask air purifying respirator with high efficiency filters.{2},{3} 2 mask supplied air respirator operated in demand (negative pressure) mode.
2.	Not in excess of 1,250 mg/m ³	Loose fitting hood or helmet powered air purifying respirator with high efficiency filters.{3} Hood or helmet supplied air respirator operated in a continuous flow mode -- e.g., type CE abrasive blasting respirators operated in a continuous-flow mode.
3.	Not in excess of 2,500 mg/m ³	Full facepiece air purifying respirator with high efficiency filters.{3} Tight fitting powered air purifying respirator with high efficiency filters.{3} Full facepiece supplied air respirator operated in demand mode. 2 mask or full facepiece supplied air respirator operated in a continuous-flow mode. Full facepiece self-contained breathing apparatus (SCBA) operated in demand mode.
4.	Not in excess of 50,000 mg/m ³	2 mask supplied air respirator operated in pressure demand or other positive-pressure mode.
5.	Not in excess of 100,000 mg/m ³	Full facepiece supplied air respirator operated in pressure demand or other positive-pressure mode -- e.g., type CE abrasive blasting respirators operated in a positive-pressure mode.
6.	Greater than 100,000 mg/m ³ or unknown concentration	Full facepiece SCBA operated in pressure demand of other positive-pressure mode.

{1} Respirators specified for higher concentrations can be used at lower concentrations of lead.

{2} Full facepiece is required if the lead aerosols cause eye or skin irritation at the use concentrations.

{3} A high efficiency particulate filter (HEPA) means a filter that is 99.97 percent efficient against particles of 0.3 micron size or larger.

3.6 AIR PURIFYING RESPIRATORS:

- A. Negative pressure: Half or full face mask: Supply a sufficient quantity of respirator HEPA filters approved for lead, so that workers can change filters as necessary. Require that respirators be wet-rinsed, and filters discarded or covered with duct tape, each time a worker leaves the Work Area. Store respirators and filters at the job site in the changing room and protect totally from exposure to lead prior to their use. Respirator cartridges must be replaced whenever a worker experiences increased breathing resistance.

- B. Powered air purifying: Half or full face mask: Supply a sufficient quantity of high efficiency respirator filters approved for lead so that workers can change filters at any time that flow through the face piece decreases to the level at which the manufacturer recommends filter replacement. Require that regardless of flow, filter cartridges be replaced after 40 hours of use. Require that HEPA elements in filter cartridges be protected from wetting during personal decontamination. Require entire exterior housing of respirator, including blower unit, filter cartridges, hoses, battery pack, face mask, belt, and cords, be washed each time a worker leaves the Work Area. Caution should be used to avoid shorting battery pack during washing. Provide an extra battery pack for each respirator so that one can be charging while one is in use.

END OF SECTION - 01932

SECTION 01933

MATERIALS AND EQUIPMENT LEAD-BASED PAINT

PART 1 - GENERAL

1.0 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

1.1 SUMMARY:

- A. This section specifies administrative and procedural requirements governing the Contractor's selection of products for use in the Project.
- B. The Contractor's Construction Schedule and the Schedule of Submittals are included under Section "Submittals."
- C. Standards: Refer to Section "Definitions and Standards" for applicability of industry standards to products specified.

1.2 DEFINITIONS:

- A. Definitions used in this Article are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories," and similar terms. Such terms such are self-explanatory and have well recognized meanings in the construction industry.
 - 1. "Products" are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - a. "Named Products" are items identified by manufacturer's product name, including make or model designation, indicated in the manufacturer's published product literature, that is current as of the date of the Contract Documents.
 - b. "Foreign Products", as distinguished from "domestic products," are items substantially manufactured (50 percent or more of value) outside of the United States and its possessions; or produced or supplied by entities substantially owned (more than 50 percent) by persons who are not citizens of nor living within the United States and its possessions.
 - 2. "Materials" are products that are substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.

3. "Equipment" is a product with operational parts, whether motorized or manually operated, that requires service connections such as wiring or piping.

1.3 SUBMITTALS:

- A. Product List Schedule: Prepare a schedule showing products specified in a tabular form acceptable to the Owner's Representative. Include generic names of products required. Include the manufacturer's name and proprietary product names for each item listed.
 1. Coordinate the product list schedule with the Contractor's Construction Schedule and the Schedule of Submittals.
 2. Form: Prepare the product listing schedule with information on each item tabulated under the following column headings:
 - a. Related Specification Section number.
 - b. Generic name used in Contract Documents.
 - c. Proprietary name, model number and similar designations.
 - d. Manufacturer's name and address.
 - e. Supplier's name and address.
 - f. Installer's name and address.
 - g. Projected delivery date, or time span of delivery period.
 3. Initial Submittal: Before start of work submit 3 copies of an initial product list schedule. Provide a written explanation for omissions of data, and for known variations from Contract requirements.
 4. Owner's Representative Action: The Owner's Representative will respond in writing to the Contractor within 2 weeks of receipt of the completed product list schedule. No response within this time period constitutes no objection to listed manufacturers or products, but does not constitute a waiver of the requirement that products comply with Contract Documents. The Owner's Representative's response will include the following:
 - a. A list of unacceptable product selections, containing a brief explanation of reasons for this action.

1.4 QUALITY ASSURANCE:

- A. Source Limitations: To the fullest extent possible, provide products of the same kind, from a single source.
- B. Compatibility of Options: When the Contractor is given the option of selecting between two or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.
- C. Foreign Product Limitations: Except under one or more of the following conditions, provide domestic products, not foreign products, for inclusion in the

Work:

1. No available domestic product complies with the Contract Documents.
2. Domestic products that comply with Contract Document are only available at prices or terms that are substantially higher than foreign products that also comply with the Contract Documents.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING:

- A. Deliver, store and handle products in accordance with the manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss, including theft.
 1. Schedule delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.
 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other losses.
 3. Deliver products to the site in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.
 4. Inspect products upon delivery to ensure compliance with the Contract Documents, and to ensure that products are undamaged and properly protected.
 5. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.
 6. Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.
 7. Store products subject to damage by the elements above ground, under cover in a weather-tight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION:

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, unused at the time of installation.
 1. Provide products complete with all accessories, trim, finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect.

2. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.
- B. Product Selection Procedures: Product selection is governed by the Contract Documents and governing regulations, not by previous Project experience. Procedures governing product selection include the following:
1. Proprietary Specification Requirements: Where only a single product or manufacturer is named, provide the product indicated. No substitutions will be permitted.
 2. Semi-proprietary Specification Requirements: Where two or more products or manufacturers are named, provide one of the products indicated. No substitutions will be permitted.
 - a. Where products or manufacturers are specified by name, accompanied by the term "or equal," or "approved equal" comply with the Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.
 3. Non-Proprietary Specifications: When the Specifications list products or manufacturers that are available and may be incorporated in the Work, but do not restrict the Contractor to use of these products only, the Contractor may propose any available product that complies with Contract requirements. Comply with Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.
 4. Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.
 5. Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements, and are recommended by the manufacturer for the application indicated. General overall performance of a product is implied where the product is specified for a specific application.
 - a. Manufacturer's recommendations may be contained in published product literature, or by the manufacturer's certification of performance.
 6. Compliance with Standards, Codes and Regulations: Where the Specifications only require compliance with an imposed code, standard or regulation, select a product that complies with the standards, codes or regulations specified.

PART 3 - EXECUTION

3.1 INSTALLATION OF PRODUCTS:

- A. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other Work.
 - 1. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION 01933

SECTION 01934

PROJECT CLOSEOUT LEAD BASED PAINT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

1.2 SUMMARY:

- A. This Section specifies administrative and procedural requirements for project closeout, including but not limited to:
 - 1. Inspection procedures.
 - 2. Project record document submittal.
 - 3. Submittal of warranties.
 - 4. Final cleaning.
- B. Closeout requirements for specific construction activities are included in the appropriate Sections in Divisions-2 through -16.

1.3 SUBSTANTIAL COMPLETION:

- A. Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.
 - 1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.
 - a. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
 - 2. Advise Owner of pending insurance change-over requirements.
 - 3. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.
 - 4. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities; include occupancy permits, operating certificates and similar releases.
 - 5. Deliver tools, spare parts, extra stock, and similar items.

6. Make final change-over of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of change-over in security provisions.
 7. Complete start-up testing of systems, and instruction of the Owner's operating and maintenance personnel. Discontinue or change over and remove temporary facilities from the site, along with construction tools, mock-ups, and similar elements.
 8. Complete final clean up requirements, including touch-up painting. Touch-up and otherwise repair and restore marred exposed finishes.
- B. Inspection Procedures: On receipt of a request for inspection, the Owner's Representative will either proceed with inspection or advise the Contractor of unfilled requirements. The Owner's Representative will prepare the Certificate of Substantial Completion following inspection, or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.
1. The Owner's Representative will repeat inspection when requested and assured that the Work has been substantially completed.
 2. Results of the completed inspection will form the basis of requirements for final acceptance.

1.4 FINAL ACCEPTANCE:

- A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.
1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
 2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
 3. Submit a certified copy of the Owner's Representative final inspection list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, and the list has been endorsed and dated by the Owner's Representative.
 4. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Substantial Completion, or when the Owner took possession of and responsibility for corresponding elements of the Work.
 5. Submit consent of surety to final payment.

6. Submit a final liquidated damages settlement statement.
 7. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
- B. Reinspection Procedure: The Owner's Representative will reinspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except items whose completion has been delayed because of circumstances acceptable to the Owner's Representative.
1. Upon completion of reinspection, the Owner's Representative will prepare a certificate of final acceptance, or advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
 2. If necessary, reinspection will be repeated.

1.5 RECORD DOCUMENT SUBMITTALS:

- A. General: Do not use record documents for construction purposes; protect from deterioration and loss in a secure, fire-resistive location; provide access to record documents for the Owner's Representative's reference during normal working hours.
- B. Record Drawings: Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark whichever drawing is most capable of showing conditions fully and accurately; where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.
1. Mark record sets with red erasable pencil; use other colors to distinguish between variations in separate categories of the Work.
 2. Mark new information that is important to the Owner, but was not shown on Contract Drawings or Shop Drawings.
 3. Note related Change Order numbers where applicable.
 4. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover of each set.
- C. Record Specifications: Maintain one complete copy of the Project Manual, including addenda, and one copy of other written construction documents such as Change Orders and modifications issued in printed form during construction. Mark these documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct

observation. Note related record drawing information and Product Data.

1. Upon completion of the Work, submit record Specifications to the Owner's Representative for the Owner's records.
- D. Record Product Data: Maintain one copy of each Product Data submittal. Mark these documents to show significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the site, and from the manufacturer's installation instructions and recommendations. Give particular attention to concealed products and portions of the Work which cannot otherwise be readily discerned later by direct observation. Note related Change Orders and mark-up of record drawings and Specifications.
1. Upon completion of mark-up, submit complete set of record Product Data to the Owner's Representative for the Owner's records.
- E. Record Sample Submitted: Immediately prior to the date or dates of Substantial Completion, the Contractor will meet at the site with the Owner's Representative and the Owner's personnel to determine which of the submitted Samples that have been maintained during progress of the Work are to be transmitted to the Owner for record purposes. Comply with delivery to the Owner's Sample storage area.
- F. Miscellaneous Record Submittals: Refer to other Specification Sections for requirements of miscellaneous record-keeping and submittals in connection with actual performance of the Work. Immediately prior to the date or dates of Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to the Owner's Representative for the Owner's records.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 FINAL HOUSEKEEPING:

- A. General: General cleaning during demolition is required by the General Conditions. Final housekeeping applies to the work area.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface to the condition expected in a normal, commercial building cleaning and maintenance program.
 1. Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion.
 - a. Remove labels that are not permanent labels.
 - b. Clean exposed hard-surfaced finishes to a dust-free condition.
 - c. Wipe surfaces of any permanently fixed mechanical and electrical equipment.

- d. Clean the site, including landscape development areas, of rubbish, litter and other foreign substances. Sweep paved areas broom clean; remove stains, spills and other foreign deposits. Rake grounds that are neither paved nor planted, to a smooth even-textured surface.
- C. Removal of Protection: Remove temporary protection and facilities installed for protection of the Work during construction.
- D. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.

END OF SECTION 01934

SECTION 01935
PROJECT DECONTAMINATION
LEAD-BASED PAINT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF REQUIREMENTS:.

- A. General: Decontamination of the Work Area following Lead-Based Paint Hazard Reduction.

1.3 RELATED WORK SPECIFIED ELSEWHERE:

- A. Removal of Gross Debris is integral with the performance of Lead Hazard reduction work and as such is specified in the appropriate work section(s) of these specifications:
 - 1. Section 01936 Removal of Lead-Based Painted Substrates
- B. Work Area Clearance: Wipe sample testing and other requirements which must be met before release of Contractor and reoccupancy of the work area are specified in Section 01926 Project Clearance.

PART 2 - PRODUCTS

- 2.1 Disposal Bags/Plastic Sheeting: Provide 6 mil polyethylene disposal bags sealed with duct tape.
- 2.2 Wet Detergent Wash: Provide detergent or cleaning agent formulated to be effective in removing lead dust. Follow dilution ratio recommended by the manufacturer's instructions.

PART 3 - EXECUTION

3.1 GENERAL:

- A. Work of This Section: includes the decontamination of surfaces in the Work Area which has been, or may have been, contaminated (existing concrete floors and walkways) by lead dust generated during Hazard Reduction activities, or which may previously have been elevated.
- B. Work of This Section: includes the cleaning, decontamination, and removal of temporary facilities installed prior to Hazard Reduction work, including:

1. Floor and Ground Sheeting and Critical barriers erected by work of Section 01929
- C. Work of This Section: includes the cleaning, and decontamination of all surfaces of the Work Area, and all equipment in the Work Area.

3.2 START OF WORK:

- A. Previous Work: During completion of the Lead Hazard reduction work specified in other sections, the layer of polyethylene sheeting will have been removed and disposed of along with any gross debris generated by the lead work.
- B. Start of Work: Work of this section begins with the cleaning of the concrete floors and walkway surfaces. At start of work the following will be in place:
1. Floor Sheeting And Critical Barrier: A barrier between the work area and other portions of the work area or the areas beyond the work area.

3.3 PRELIMINARY FIRST CLEANING:

- A. Preliminary Cleaning: Clean tools, scaffolding, ladders and equipment by HEPA vacuuming. Follow HEPA vacuuming with wet cleaning of all tools and equipment.
- B. Immediately following preliminary cleaning, mist and remove poly sheeting. Remove highest sheeting first and work down to floor or deck. Fold sheeting inward to trap any leaded dust or residue. Place sheeting in 6 mil disposal bags and dispose if in accordance with Section 01938.

3.4 FINAL CLEANING:

- A. HEPA Vacuum: All surfaces of the remaining concrete foundation slab. Sequence to avoid passing through portions already cleaned.
- B. Mist Critical barriers sheeting and remove.
- C. HEPA Vacuum area previously covered by critical barrier sheeting.
- D. Perform wet detergent wash of the remaining concrete foundation slab surfaces. Change cleaning mixture in accordance with manufacturer's recommendations or a minimum of once after each section. Filter all waste water or dispose of in accordance with section 01938.
- E. Wiping Work Area
1. The work area should be cleaned using a three container method. Fill two buckets with clean water and place them in the work area with the container of cleaning solution.
 2. Pour cleaning solution onto a clean cloth. Wring excess solution into one of the buckets without placing the cloth into the bucket. Wipe the work

surface with the cloth. Add more cleaning solution to the cloth and continue wiping until the entire surface area has been covered. Discard all cloths used in this procedure in the disposal bag.

3. Dip and wring out a clean cloth in the first rinse bucket. Wipe off the work area. Rinse the cloth in the first bucket again and wring out thoroughly. Rinse the cloth in the second bucket and wring out thoroughly again.
4. Continue to clean the work surface with the cloth and rinse using this procedure until the entire work surface has been cleaned. Wipe off all tools to remove any dust.
5. NOTE: The rinse water in the bucket should be changed periodically. The frequency will vary depending on the level of contamination.

F. Mopping Work Area

1. Collect any visible debris using wet cloths before mopping the area. Pour the cleaning solution into the mop bucket. Fill two rinse buckets with clean water. Place the mop into the cleaning solution. Wring excess solution into the mop bucket. mop small sections of the work area. Place the mop into the cleaning solution and wring thoroughly between sections. After the entire surface has been mopped thoroughly, rinse the mop head. Completely rinse the surface by placing the mop in the first bucket, wringing it out thoroughly, placing it in the second bucket, wringing thoroughly and then mopping the surface. Continue this cycle until all areas have been rinsed.
2. NOTE: The water in the two containers should be changed periodically. The frequency will depend on the level of contamination.

G. Perform clear water wash of all surfaces in same manner as wet detergent wash.

H. After all surfaces in work area are allowed to dry, complete final HEPA vacuuming of all surfaces in same manner as first HEPA vacuuming.

I. After Final Cleaning Perform a Complete Visual Inspection of the entire work area including: all surfaces, deck, floor, surfaces previously covered with critical barrier sheeting, and other openings; look for debris from any source, residue on surfaces, dust or other matter. If any debris, residue, dust or other matter is found repeat final cleaning and continue decontamination procedure from that point. When the area is visually clean, complete the certification at the end of this section. Visual inspection is not complete until confirmed in writing, on the certification, by Project Monitor.

J. Painting of substrates: Perform painting/sealing of substrates at this time, if requested by Owner.

K. Perform final clearance sampling in accordance with sub-section 3.6 final clearance sampling.

3.5 ABATEMENT DECONTAMINATION:

- A. First Cleaning: Carry out a first cleaning of all surfaces affected by the work including remaining sheeting, ladders, scaffolding and foundation in a ten-foot (10') radius from the work by use of a High Efficiency Particulate Air (HEPA) filtered vacuum. Immediately following first cleaning remove plastic sheeting and dispose of. Remove any remaining paint chips on soil or surrounding walk ways, porches, etc.
- B. Final Cleaning: Carry out a final cleaning of all surfaces in the same manner as the first cleaning. Comply with requirements of visual inspection.

3.6 FINAL CLEARANCE SAMPLING:

- A. Wipe Sample Analysis by Atomic Absorption Spectroscopy (AAS) or Inductively Coupled Plasma Emission Spectroscopy (ICP): After the work area is found to be visually clean, wipe samples will be obtained and analyzed in accordance with the procedure set forth in Section 01926 Project Clearance.
 - 1. If Release Criteria are not met, repeat HEPA vacuuming, wet wash, HEPA vacuuming until satisfactory clearance results are obtained.
 - 2. If Release Criteria are met, remove work area isolation. Remove all equipment, materials from the site.
- B. Soil Sample Analysis by Atomic Absorption Spectroscopy (AAS) or Inductively Coupled Plasma Emission Spectroscopy (ICP): After the work area is found to be visually clean, soil samples will be obtained and analyzed in accordance with the procedure set forth in Section 01926 Project Clearance.

3.7 SUBSTANTIAL COMPLETION OF HAZARD REDUCTION:

- A. Hazard Reduction Work is Substantially Complete upon meeting the requirements of this section, section 01926 project Clearance, including submission of:
 - 1. Certificate of Visual Inspection
 - 2. Receipts Documenting proper disposal as required by Section 01938 Disposal of Waste Material.
 - 3. Punch list detailing repairs to be made and incomplete items.

3.8 CERTIFICATE OF VISUAL INSPECTION:

- A. Following this section is a "Certificate of Visual Inspection". This certification is to be completed by the Contractor and certified by the Project Monitor. Submit completed certificate with application for final payment. Final payment will not be made until this certification is executed.

END OF SECTION - 01935

CERTIFICATION OF VISUAL INSPECTION

In accordance with Section 01935 "Project Decontamination" the contractor hereby certifies that he has visually inspected the work area (all surfaces including pipes, counters, ledges, walls, ceiling and floor, behind critical barriers, sheet plastic, etc.) and has found no dust, debris or residue.

By: _____ Date: _____
(Signature)

(Print Name)

(Print Title)

PROJECT MONITOR CERTIFICATION

The Project Monitor hereby certifies that he has accompanied the contractor on his visual inspection and verifies that this inspection has been thorough and to the best of his knowledge and belief, the contractor's certification above is a true and honest one.

By: _____ Date: _____
(Signature)

(Print Name)

(Print Title)

WORK AREA

Location: _____

Room: _____

Hazard Reduction Performed: _____

SECTION 01936

REMOVAL OF LEAD-BASED PAINTED SUBSTRATES LEAD-BASED PAINT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

1.2 SUMMARY OF WORK:

Summary of Work: Work of this section includes the removal and off site disposal of the following lead-based painted substrates.

BASE BID

Gym Building: Removal of interior south staircase railings, specific metal and wooden doors and door frames. See drawings

Sairwell between Gym and Auditorium: Remove lead paint from surfaces of specific exterior metal windows and frames. See Drawings

Class Room Building: Removal of specific interior metal and wooden doors and windows and associated frames. See Drawings

ALTERNATE BID # 2

Gym Building: Removal of interior / exterior wooden vents and frames on east and west walls below windows. See drawings

1.3. RELATED WORK SPECIFIED ELSEWHERE:

No other work items are specified elsewhere.

PART 2 - PRODUCTS

2.1 DISPOSAL BAGS/PLASTIC SHEETING:

Provide 6 mil polyethylene disposal bags or wrap deteriorating substrates to be disposed of in 6 mil polyethylene, sealed with duct tape.

2.2 WET DETERGENT WASH

Provide detergent or cleaning agent formulated to be effective in removing lead dust. Follow dilution ratio recommended by the manufacturer's instructions.

PART 3 - EXECUTION

3.1 BEFORE STARTING WORK OF THIS SECTION, COMPLETE THE FOLLOWING:

- A. Section 01927 - Temporary Facilities - Lead-Based Paint
- B. Section 01928 - Exterior Regulated Areas - Lead Based Paint
- C. Section 01929 - Work Area Preparation - Lead Based Paint
- D. Section 01931 - Worker Protection - Lead Based Paint
- E. Section 01932 - Respiratory Protection - Lead-Based Paint

3.2 GENERAL:

- A. Score paint at edges, corners etc. to reduce chipping of paint. Place plastic sheeting under overhead wooden substrates prior to handling to ensure that all loosen lead paint debris is collected. Contractor may wish to use wetting agent prior to dismantling to reduce the dust potential or apply duct tape to dry rot areas. All scaffolding shall be inspected by the Contractor's Responsible Person to ensure that all OSHA guidelines and rules have been met. If necessary, carefully remove by wet scraping loose and flaking paint prior to removal of substrate in accordance with the following procedure:
 - 1. Fine mist surface with wet wash detergent or water using plant mister or garden sprayer.
 - 2. Carefully scrape loose and flaking material or use cut tape to retain. Fallen material shall not fall upon uncovered surfaces or ground.
 - 3. Clean up paint chips and flakes by wet sweeping or pick up with wet towels.
 - 4. Loosen painted wood roofing components and lower onto a second sheet of plastic. This sheet of plastic shall be used to wrap the substrate in such a manner that all substrate surfaces and ends are covered completely.
 - 5. Wrapped substrate shall be sealed with tape at middle and ends to ensure that there is no possibility for lead paint debris to escape the plastic wrap.
- B. Carefully remove the lead based painted substrates to minimize the disturbance of lead based paint and the generation of lead dust on other members.
- C. HEPA vacuum and/or wet wipe to remove all paint chips, debris and dust generated during the work. Do not allow dust or debris to accumulate.
- D. Substrates that are removed shall be disposed of in accordance with section 01938 - Disposal of Waste Materials - Lead-Based-Paint.

3.3 DAMAGES:

Damages to non-protected areas or from lack of care shall be repaired or replaced at the

Contractor's expense.

3.4 SECURITY:

Contractor shall ensure that the work area is secure from the Public's access 24 hours a day.

END OF SECTION 01936

SECTION 01937

REMEDIATION OF LEAD CONTAMINATED SOIL

LEAD-BASED PAINT

PART 1 - GENERAL

- 1.1 Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to work of this section.
- 1.2 Summary Of Work:
 - A. Bare soil with child contact, lead concentration 400 PPM up to 1,999 PPM.
 1. Install Sod over bare soil; or
 2. Install ground cover and/or shrubbery
 - B. Bare soil, with or without child contact, lead concentration - 2,000 PPM up to 4,999 PM.
 1. Install sod over bare soil; or
 2. Install ground cover and/or shrubbery; or
 3. Remove soil to a depth of three (3) inches.
 - C. Bare soil, lead concentration greater than 5,000 PPM
 1. Remove soil to a depth of three (3) inches; and
 2. Install sod over excavated area.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.1 SOIL REMOVAL:

- A. Use hand held spray equipment to dampen soil. Do not over saturate and cause water to run-off to adjacent areas.
- B. Remove soil using shovels or vacuum loading equipment starting at the point farthest from load out area.
- C. Load soil into containers, trucks or dumpsters. Do not track through areas where soil has been removed. Cover containers, trucks or dumpsters prior to transport. Dispose of soil in accordance with section 01938 - Disposal of Waste Materials - Lead-Based Paint .
- D. At the end of each shift or during winds which may disturb and spread soil contamination, cover contaminated sections of soil with 6 mil polyethylene sheeting. Secure Covering against disturbance by windy conditions.

- E. Wash tools, and equipment which came in contact with contaminated soil. Collect and filter wash water. Dispose of in accordance with section 01938 - Disposal of Waste Materials - Lead-Based Paint .

3.2 CLEARANCE CRITERIA:

- A. Complete Soil Sampling in accordance with Section 01926 - Work Area Clearance following soil removal.
 - 1. If release criteria is not met, continue Soil Remediation from that point.

END OF SECTION - 01937

SECTION 01938

DISPOSAL OF WASTE MATERIALS LEAD-BASED PAINT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division-1 Specification Sections, apply to work of this section.
- B. Section 01923 Codes and Regulations - Lead-Based Paint describes applicable federal, state and local regulations.

1.2 DESCRIPTION OF THE WORK:

- A. This section describes the disposal of lead-containing or lead contaminated waste materials. The Contractor's responsibility includes packaging of waste materials. Disposal is to be accomplished by the Owner.

1.3 SUBMITTALS:

- A. Before Start of Work: Submit the following to the Owner's Representative for review. Do not start work until these submittals are returned with Owner's Representative action stamp indicating that the submittal is returned for unrestricted use.

Contractor must ascertain that the Owner is registered with the U.S. EPA as a generator of hazardous waste. If there is no generator status established, the contractor shall assist the owner in obtaining generator identification numbers.

Copy of state or local license for waste hauler.

U.S. EPA identification number of waste hauler.

Name and address of waste disposal facility where hazardous waste materials are to be disposed. Include contact person and telephone number. Copy of state license and permit. Provide disposal facility permits.

1. Copy of EPA "uniform hazardous waste manifest" form.
 2. Copy of EPA "notification of hazardous waste activity" form.
 3. Copy of forms required by state or local agencies.
 4. Sample of disposal bag and labels to be used.
- B. Submit copies of all forms to Owner's project monitor.

PART 2 - PRODUCTS:

- 2.1 Disposal: Provide 6 mil thick leak-tight polyethylene bags or wrap components in 6 mil polyethylene sheeting and seal with duct tape. Label with text as follows:
- A. Label with specific "Hazardous Waste Label: "
 - B. For wrapped materials provide approved stick-on labels.

PART 3 - EXECUTION

3.1 GENERAL:

- A. Owner's responsibility will be to contact DOT, EPA, state and local authorities to determine lead-based paint disposal requirements.
- B. Testing of waste shall be performed through Contractor by a laboratory accredited by either American Hygiene Association (AIHA) or the American Association of Laboratory Accreditation (AALA). Include the cost of testing in the contract sum and supply all test results to the Owner.
- C. Testing of waste may also be performed by a qualified laboratory retained by the Owner. Results will be supplied to the contractor. The contractor shall pay for any additional samples obtained at the site for his use.
- D. The Contractor shall pay for any additional TCLP samples obtained at the site for his use.
- E. Waste tested which results in a lead content in the leachate of greater than or equal to five parts per million is to be considered hazardous, handled and disposed of according to local, city, state, and federal regulations.
- F. Place all waste generated during the project in 6 mil disposal bags or wrap in 6 mil polyethylene sheeting, store in the designated secure storage area, enclosed dumpsters or trucks. Lead based paint substrates shall be sized in such a manner to maximize the amount of waste that may be stored. Separate waste materials into the following categories and label all disposal bags and wrapped packages.
- G. Non-Hazardous Solid Waste:
 - 1. All non-lead paint covered substrate.
 - 2. Plastic sheeting and duct tape used during abatement which has been wet wiped prior to disposal.
 - 3. All other non-lead painted substrate.
- H. Hazardous Solid Waste:

1. All leaded paint covered substrate that is suitable for recycling
 2. All leaded paint covered substrate that is not suitable for recycling
 3. Paint chips.
 4. Rags, sponges, mops, HEPA Vac filters and contents, shower filters, respirator cartridges and other materials used during abatement.
- I. Hazardous Liquid Waste (as determined by testing)
 1. Caustic Pastes
 2. Neutralizers
 3. Paints, Solvents
 - J. Properly store and secure waste at all times. Do not intermix recyclable and non-recyclable waste. Do not leave debris in the yard or in uncovered or unlocked trucks or dumpsters. Do not incinerate debris or use an unauthorized dumpster. Do not introduce lead contaminated water into storm or sanitary sewers. It is the Owners desire to permit recycling of building components coated with Lead-Based Paint.

If the Contractor chooses to recycle components painted with lead-based paint, he will provide the Owner with a Letter of Release acknowledging that he is accepting the components with the lead-based paint and takes full responsibility for its disposal. If anyone segregates lead bearing components for recycling, they must handle the lead paint in accordance with the regulations that require testing and proper disposal.

- K. The Owner will handle the disposal of all Hazardous Waste.

3.2 DISPOSAL OF NON-HAZARDOUS SOLID WASTE: (As Determined By Testing)

- A. Materials are to remain in 6 mil disposal bags or wrapped in polyethylene sheeting. Label all packages. Substrates removed with paint in good condition which is adhered to the substrate may not be placed directly in dumpsters then covered. All lead paint covered substrate shall be wrapped as indicated above.
- B. The Owner shall coordinate and pay for transportation of waste in covered or enclosed trucks or dumpsters.

3.3 DISPOSAL OF NON-HAZARDOUS LIQUID WASTE: (As Determined By Testing)

- A. Dispose of liquid waste by pouring into sanitary sewage system if permission is received from publicly owned treatment works facility (POTW). Do not dispose of liquid waste by pouring onto ground or into storm drain. If the liquid waste contains phosphates or other chemicals advise treatment facility of quantity of liquid and that it likely will contain phosphates.

3.4 DISPOSAL OF HAZARDOUS LIQUID OR SOLID WASTES: (As Determined By Testing)

The Owner shall provide for the disposal of all hazardous waste.

3.5 BACKCHARGES

Where Contractor fails to fulfill packaging, handling, or disposal requirements as outlined herein, Owner will charge back to Contractor all costs associated with insuring that hazardous and non-hazardous wastes are packaged and segregated in accordance with EPA and DOT regulations.

- A. Environmental pollution of Owner's property resulting from Contractor's hazardous waste management activities shall be promptly remediated under Owner direction, to the Owner's sole satisfaction, and at the Contractor's sole expense.
- B. Contractor agrees to either reimburse the Owner, or reduce the Contract amount by change order to cover all costs associated with waste repackaging, waste re-segregation, or pollution remediation efforts.

END OF SECTION - 01938

SECTION 01939

CLEANING AND DECONTAMINATION LEAD-BASED PAINT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

1.2 SUMMARY OF WORK

Work of this section includes cleaning and decontamination of the following:

Decontamination shall consist of cleaning of all remaining structural components of the buildings after all wooden roof structure pieces are removed. A wipe test shall be performed by Project Owner's Representative for clearance purposes. Soil samples may also be collected to determine if adjacent areas possess lead contents greater than those identified prior to the work processes.

1.3 RELATED WORK SPECIFIED ELSEWHERE:

- A. Work Area Clearance: Wipe sample testing and other requirements which must be met before release of Contractor and reoccupancy of the work area are specified in Section 01926 Project Clearance.

PART 2 - PRODUCTS

- 2.1 Disposal Bags/Plastic Sheeting: Provide 6 mil polyethylene disposal bags sealed with duct tape.
- 2.2 Wet Detergent Wash: Provide detergent or cleaning agent formulated to be effective in removing lead dust. Follow dilution ratio recommended by the manufacturer's instructions.

PART 3 - EXECUTION

3.1 GENERAL

- A. Work of This Section: includes the decontamination of surfaces which have been contaminated by lead dust. This may be applicable to both the work area or the adjacent areas.

3.2 START OF WORK:

- A. Start of Work: Work of this section begins with the set up of the work area in accordance with section 01506 work area containment. Complete the following before the start of work of this section.

1. Critical Barrier: At off site work area install critical barrier between the work area and other portions of the building or the outside. Pre-clean surfaces to be covered by critical barriers.
2. Critical Barrier Sheeting: Not required.
3. Flapped Doorway Sheeting: Not required.

3.3 CLEANING PROCEDURES:

- A. HEPA Vacuum: All surfaces in work area. Start at point farthest from main entrance and finish vacuuming back at that point. Begin at top of containment and work down. Sequence to avoid passing through areas already cleaned.
- B. Perform wet detergent wash of all surfaces. Begin at point farthest from main entrance, work from top to bottom. Take care not to damage existing finishes and surfaces. Change cleaning mixture in accordance with manufacturer's recommendations. Filter all waste water or dispose of in accordance with section 01938.
- C. Wiping Work Area
 1. The work area should be cleaned using a three container method. Fill two buckets with clean water and place them in the work area with the container of cleaning solution.
 2. Pour cleaning solution onto a clean cloth. Wring excess solution into one of the buckets without placing the cloth into the bucket. Wipe the work surface with the cloth. Add more cleaning solution to the cloth and continue wiping until the entire surface area has been covered. Discard all cloths used in this procedure in the disposal bag.
 3. Dip and wring out a clean cloth in the first rinse bucket. Wipe off the work area. Rinse the cloth in the first bucket again and wring out thoroughly. Rinse the cloth in the second bucket and wring out thoroughly again.
 4. Continue to clean the work surface with the cloth and rinse using this procedure until the entire work surface has been cleaned. Wipe off all tools to remove any dust.
 5. NOTE: The rinse water in the bucket should be changed periodically. The frequency will vary depending on the level of contamination.
- D. Mopping Work Area
 1. Collect any visible debris using wet cloths before mopping the area. Pour the cleaning solution into the mop bucket. Fill two rinse buckets with clean water. Place the mop into the cleaning solution. Wring excess solution into the mop bucket. mop small sections of the work area. Place the mop into the cleaning solution and wring thoroughly between sections. After the entire surface has been mopped thoroughly, rinse the

mop head. Completely rinse the surface by placing the mop in the first bucket, wringing it out thoroughly, placing it in the second bucket, wringing thoroughly and then mopping the surface. Continue this cycle until all areas have been rinsed.

2. NOTE: The water in the two containers should be changed periodically. The frequency will depend on the level of contamination.
- E. Mist Critical barrier sheeting and remove.
- F. HEPA Vacuum area previously covered by critical barrier sheeting followed by wet detergent wash.
- G. Perform clear water wash of all surfaces in same manner as wet detergent wash.
- H. After all surfaces in work area are allowed to dry, complete final HEPA vacuuming of all surfaces in same manner as first HEPA vacuuming.
- I. After Final Cleaning Perform a Complete Visual Inspection of the entire work area including all surfaces; look for debris from any sources, residue on surfaces, dust or other matter. If any debris, residue, dust or other matter is found repeat final cleaning and continue decontamination procedure from that point. When the area is visually clean, complete the certification at the end of this section. Visual inspection is not complete until confirmed in writing, on the certification, by Project Monitor.
- J. Perform final clearance sampling in accordance with sub-section 3.6 final clearance sampling.

3.4 FINAL CLEARANCE SAMPLING:

- A. Wipe Sample Analysis By Atomic Absorption Spectroscopy (AAS) or Inductively Coupled Plasma Emission Spectroscopy (ICP): After the work area is found to be visually clean, wipe samples will be obtained and analyzed in accordance with the procedure set forth in Section 01926 Project Clearance.
 1. If Release Criteria are not met, repeat HEPA vacuuming, wet wash, HEPA vacuuming procedure until satisfactory clearance results are obtained.
 2. If Release Criteria are met, remove work area isolation. Remove all equipment, materials from the site.

3.5 SUBSTANTIAL COMPLETION OF HAZARD REDUCTION:

- A. Hazard Reduction Work is Substantially Complete upon meeting the requirements of this section, section 01926 project Clearance, including submission of:
 1. Certificate of Visual Inspection

2. Receipts Documenting proper disposal as required by Section 01938 Disposal of Waste Material.
3. Punch list detailing repairs to be made and incomplete items.

3.6 CERTIFICATE OF VISUAL INSPECTION:

- A. Following this section is a "Certificate of Visual Inspection". This certification is to be completed by the Contractor and certified by the Project Monitor. Submit completed certificate with application for final payment. Final payment will not be made until this certification is executed.

END OF SECTION 01939

CERTIFICATION OF VISUAL INSPECTION

In accordance with Section 01939 "Cleaning and Decontaminations" the contractor hereby certifies that he has visually inspected the work area (all surfaces) and has found no dust, debris or residue.

By: _____ Date: _____
(Signature)

(Print Name)

PROJECT MONITOR CERTIFICATION

The Project Monitor hereby certifies that he has accompanied the contractor on his visual inspection and verifies that this inspection has been thorough and to the best of his knowledge and belief, the contractor's certification above is a true and honest one.

By: _____ Date: _____
(Signature)

(Print Name)

(Print Title)

WORK AREA

Location: _____

Room: _____

Hazard Reduction Performed: _____

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Department of the Army
Fort Worth District, Corps of Engineers



FY03 DARNALL HOSPITAL
ADDITION/ALTERATION
FORT HOOD, TEXAS



NO. DACA 63-00-D-0001

REMOVAL, RECYCLING, AND DISPOSAL OF REGULATED MATERIALS

March 6, 2003

101 So. Spring Street ■ Little Rock, Arkansas

CROMWELL
ARCHITECTS ENGINEERS

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DIVISION 13 - SPECIAL CONSTRUCTION

SECTION 13284

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9/2002

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SECTION 13284

REMOVAL, RECYCLING AND DISPOSAL OF REGULATED MATERIALS
9/2002

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

CODE OF FEDERAL REGULATIONS (CFR)

29 CFR 1910	Occupational Safety and Health Standards
29 CFR 1926	Safety and Health Regulations for Construction
40 CFR 82	Protection of Stratospheric Ozone
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 263	Standards Applicable to Transporters of Hazardous Waste
40 CFR 264	Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 268	Land Disposal Restrictions
40 CFR 270	EPA Administered Permit Programs: The Hazardous Waste Permit Program
40 CFR 273	Standards for Universal Waste Management
40 CFR 761	Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce and Use Prohibitions
49 CFR 171	General Information, Regulations and Definitions
49 CFR 173	Shippers - General Requirements for Shipments and Packagings
49 CFR 178	Specifications for Packagings

TEXAS ADMINISTRATIVE CODE (TAC)

TAC 335.91 - 335.94

Standards Applicable to Transporters of
Hazardous Waste

U.S. ARMY CORPS OF ENGINEERS (COE)

COE EM 385-1-1

(Current Edition) Safety and Health
Requirements Manual

1.2 DEFINITIONS

1.2.1 Regulated Materials

Regulated materials are arsenic (As), cadmium (Cd), cesium, chlordane, creosote, ethylene glycol, lead (Pb), mercury (Hg), oil and grease, ozone depleting chemicals (ODC), polychlorinated biphenyls (PCB), trichlorobenzene (TCB), diethylhexyl phthalate (DEPH), and tritium.

1.2.2 Arsenic

A solid and poisonous element that is commonly metallic, steel-gray, crystalline, and brittle. A poisonous trioxide of arsenic is used especially as an insecticide or weed killer. Typically, wood utility poles are treated with arsenic trioxide.

1.2.3 Ballast

A ballast is a device used to give starting voltage and/or stabilizing current to a fluorescent light tube. Ballast is a metal case filled with a solid or semisolid asphalt/tar substance that contain a capacitor. The capacitor may contain the following regulated materials: PCB, TCB or DEPH.

PCB was prohibited 1979 per 40 CFR 761. Approximately half of the ballasts made before 1979 contained PCB. "No PCBs" labels have been used to identify ballasts without PCB since 1 July 1978. Therefore all ballasts without "No PCBs" labels, with labels of fabrication on or before 1979 and no known date of fabrication are assumed as PCB ballasts. PCB-ballasts are regulated and disposal at a landfill is prohibited.

Ballasts from 4-foot lighting fixtures made before 1985 and from all other sizes of fixtures made before 1991 contained wet capacitors. The replacement dielectric fluid for PCBs in these wet capacitors is mineral oil and solvents. The hazardous solvents are typically TCB or DEPH. Unless the non-PCB ballasts are made after 1992, they are presumed to contain TCB or DEPH and shall be recycled at a permitted facility.

1.2.4 Cadmium

A bluish, white, malleable, ductile, toxic, bivalent, and metallic element. It is especially used in protective plating, bearing metals, and electrodes for batteries.

1.2.5 Cesium

A silver white soft ductile element of the alkali metal that is the most electropositive element known and is especially used in photoelectric cells that is typically in smoke detector. Cesium ignites spontaneously

in moist air; causes burns in contact with skin; may explode in contact with sulphur or phosphorus; reacts violently with oxidizing materials. Cesium 137 is a radioactive poison.

1.2.6 Chlordane

It was typically used for treatment of termites in soil around the building foundation and perimeter of structure. Sampling and testing are required for soil disposal.

1.2.7 Creosote

A brownish oily liquid, consisting chiefly of aromatic hydrocarbons. It is obtained by distillation of coal tar and used especially as a wood preservative (i.e. wood utility poles).

1.2.8 Emergency Lights

The emergency lights are operated by a back-up power source such as a battery. Mercury, cadmium, and lead are typically used in batteries.

1.2.9 Fluorescent Light Tube

A light bulb (or tube) of a fluorescent lighting fixture.

1.2.10 Lead

A heavy, soft, malleable, ductile, plastic but inelastic, bluish white, and metallic element. It is found mostly in combination and used especially in pipes, cable sheaths, batteries, solder, and shield against radioactivity.

1.2.11 Lighting Fixture

A unit containing a fluorescent light tube, light reflector, casing and ballast.

1.2.12 Mercury (Hg)

Mercury is a metal that is liquid at room temperature with a small vapor pressure. Mercury-containing items addressed in this specification are thermostats, fluorescent light tubes, and rechargeable battery.

1.2.13 Mercury Bulb Thermostat

A temperature control device containing a mercury ampule attached to a bimetallic sensing element.

1.2.14 Ozone Depleting Chemicals (ODC)

ODC include chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), halon, tetra (and tri) chloroethane, carbon tetrachloride and all isomers of methyl chloroform. A complete list of ODC are in 40 CFR 82 Subpart A, Appendixes A and B. Items potentially containing ODC's are refrigeration equipment for HVAC systems, freezers, refrigerators, drinking fountains, ice machines, beverage and refrigerated food dispensers, halon fire extinguishers, and biomedical equipment.

1.2.15 Polychlorinated Biphenyls (PCBs)

PCB are defined in 40 CFR 761. They are oily in pure form. PCBs can enter the body through lungs, gastrointestinal tract, skin, can circulate through throughout the body, and can be stored in the fatty tissue. Available animal studies indicate an oncogenic potential. PCBs can cause adverse reproductive effects and developmental toxicity in humans. Items containing PCBs in this specification are ballasts and transformers (see definition of Ballast below).

1.2.16 Retorting Mercury

The retorting of mercury is a process whereby mercury is distilled from other materials by using heat. During the fluorescent light tube recycling process, mercury is retorting from phosphor powder that coats the inside of the glass tube.

1.2.17 Transformer

A device employing the principle of mutual induction to convert variations of current in a primary circuit into variations of voltage and current in a secondary circuit. It contains PCB, TCB and/or DEPH. It is pole-mounted or pad-mounted.

1.2.18 Tritium

It is a low radioactive gas, radioactive isotope of hydrogen with atoms of three times the mass of ordinary light hydrogen atoms. It has very low radiotoxicity and is typically used in luminous instrument dials such as lighted exit signs.

1.2.19 Utility Pole

It is typically used for mounting power cable, panel, lighting, control switch, or electrical device such as transformers. An exterior wood pole is typically preserved by pressure treatment with application of arsenic trioxide or creosote.

1.2.20 Heating and Chilling Water

This type of system is used in military installations. It typically contains ethylene glycol (antifreeze), a regulated substance.

1.2.21 Grease Trap

It is commonly installed in dining facility or kitchen. It contains oil and grease sludge. Removal or and discharging to sanitary sewerage system is prohibited.

1.3 DESCRIPTION OF WORK

Prior to the start of demolition work, all items containing regulated materials shall be removed from the buildings. They shall be salvaged and recycled to the maximum extent possible or incinerated. Final disposal of regulated materials in a landfill shall be in accordance with applicable Federal, state, and local regulatory agencies, and when all means of recycling and reuse are exhausted.

1.4 CONTRACTOR'S QUALIFICATIONS

The Contractor and subcontractors shall have at least 2 years experience with battery, thermostats, delisted pesticides and be familiar with Universal Waste Rules in accordance with 40 CFR 273 and Mercury-Containing and Rechargeable Battery Recycling Act, Public Law 104-142, effective since May 13, 1996. The Contractor and subcontractors shall have at least 2 years experience with PCB-containing items and familiar with 40 CFR 761. The Contractor and subcontractors shall have at least 2 years experience in purging and reclaiming ODC and certified in accordance with 40 CFR 82. They shall also be familiar with other applicable Federal, state and local regulations for work to be performed in this specification.

1.5 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Contractor's Qualifications; G.

Documentation of work experience in removal, recycling and/or disposal of items containing regulated material in accordance with paragraph, Contractor's Qualification.

ODC Recovery and Recycling Equipment's Certifications; G,.

A copy of each ODC recovery and recycling equipment's certification in accordance with 40 CFR 82.158. A written agreement of the fluorescent light tubes recycling facility to transport the packaged fluorescent light tubes.

A copy of certification from each technician reclaiming ODC in accordance with 40 CFR 82.161 and 40 CFR 82.164.

Licenses and Permits; G.

A copy of the recycling/destruction facility license for handling, treatment and/or destruction of ballasts containing PCB, TCB and/or DEPH.

A copy of the RCRA Part B permit for the facility that is retorting mercury on site.

Proof of state registration or a copy of permit for pumping, hauling, and transporting hazardous waste in accordance with TAC 335.91 - 335.94, and EPA permit per 40 CFR 263 if transporting to other state.

Proof of state registration to pump, transport, or recycle grease trap sludge.

Notification of Recycling Activity;G,.

Contractor is require to notify TNRCC 90 days prior to recycling activity with the form TNRCC-0525, "Generator

Notification Form for Recycling Hazardous or Industrial Waste".
Furnish a copy to the Contracting Officer.

Spill Prevention Plan; G,.

A written Spill Prevention Plan shall be prepared in accordance with paragraph SPILLS AND SAFETY of this section shall be submitted at least 30 days before start of work.

Environmental Pollution Liability Insurance; G,.

A copy of the current environmental pollution liability insurance policy from the Contractor (subcontractors) and the recycling and/or destruction facilities.

SD-11 Closeout Submittals

Closure Report; G.

A report in accordance with Part 3 paragraph CLOSURE REPORT shall be prepared and submitted in 10 working days or prior to final payment after completion of work specified in this section.

Recycling Activity Delivery Receipt; G,.

The Contractor shall submit to the Contracting Officer a delivery receipt verifying recycling of items to the Contracting Officer. Contractor shall be responsible to manifest in accordance with 40 CFR 261 and 761. Transportation shall be in accordance with 49 CFR 173 and 178.

1.6 LABELING AND RECORD KEEPING

Labeling and record keeping of regulated materials to be salvaged, recycled, incinerated, or placed in a landfill shall be in accordance with 40 CFR 262, 40 CFR 263, 40 CFR 264, and all other applicable Federal, State and local regulations. Bill of lading shall be prepared for each item to be shipped to recycling and/or destruction. Information shall include initial date of storage, generator's name and address, destination address and telephone number and the shipping weight.

1.7 SPILLS AND SAFETY

The Contractor shall prepare, maintain and implement a Spill Prevention Plan. The plan shall establish policies and procedures to prevent spills, minimize spill impact on its surroundings and methods to cleanup. The plan shall encompass all activities including at the site, transportation to recycling and/or destruction facilities. It shall address all the safety and health concerns in accordance with 29 CFR 1926 in event of a spill. It shall address clean-up requirements in accordance with 29 CFR 1910.120 paragraphs (b) through (o). Clean-up personnel shall meet the training requirements of 29 CFR 1910.38 (a); 1910.134; and 1910.1200. As a minimum, the following items shall be addressed in the plan: cleanup of spill by the Contractor; verification and approval of final clearance by the Contracting Officer; personal protective equipment (PPE) and decontamination procedures; equipment and material required for cleanup; reporting required to notify state,

local, and the Contracting Officer verbally and in writing. The plan shall be kept on-site. Spills of one pound or more of PCBs (typically from 16 or more ballasts) shall be reported within 24 hours to National Response Center (1-800-424-8802), the Contracting Officer and cleaned up immediately. The Contractor shall assume full responsibility for compliance with all Federal, state, and local regulations for workers protection, work practices, site safety, transportation and disposal.

1.8 STORAGE

A temporary storage area shall be provided by the Contractor and approved by the Contracting Officer. Storage time limits are 30 days for ballasts containing PCBs (40 CFR 761) and 1 year for thermostats containing Hg (40 CFR 273). All regulated materials must be removed from the site before final acceptance of this project by the Government.

1.9 TRANSPORTATION

Items containing regulated materials shall be transported by a licensed, hazardous waste hauler. The Spill Prevention Plan shall be enforced by the Contractor to prevent spillage in accordance with 49 CFR 171 and 40 CFR 173. The hauler shall not store regulated materials longer than 10 days in accordance with 40 CFR 263 and 40 CFR 273. Vehicle loading, vehicle placarding, waste tracking, notification and record keeping shall be in accordance with all applicable Federal, State and local regulations.

1.10 POTENTIAL BUYERS OF RECYCLED MATERIALS

Contractor shall use www.recycletexasonline.org to find potential buyer to recycle the PCB or wet-type (TCB and/or DEPH) ballasts or transformers.

The receiver of the PCB or wet-type (TCB or DEPH) ballasts or transformers shall have a RCRA Part B permit.

1.11 LICENSES AND PERMITS

Contractor shall furnish the licenses and permits listed in Part 1 paragraph SUBMITTALS.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 VERIFICATION OF REGULATED MATERIALS

Prior to initiation of work in this section, the Contractor shall field verify the actual locations, quantities and categories of items containing regulated materials. The Contractor shall notify the Contracting Officer of any discrepancies or conflicts before performing work.

3.2 WASTE MINIMIZATION, SALVAGE, AND RECLAMATION

The Contractor shall segregate wastes to salvage and reclaim all items to their maximum extent and practice waste minimization. The Contractor shall not dispose of any item in its entirety to the landfill or by incineration. Regulated materials shall be manifested in accordance

with 40 CFR 262, unless exemption is justified.

3.3 REMOVAL, HANDLING, AND PACKAGING

Removing, handling, and packaging shall be in accordance with COE EM 385-1-1.

3.3.1 Ballasts

The Contractor shall remove all ballasts from the lighting fixtures and place them into containers for shipping in accordance with 49 CFR 178. Leaking ballasts shall be placed in containers with absorbent material such as vermiculite or other suitable fire-retardant materials. Containers shall have affixed labels "Non-PCB with TCB or DEPH Ballasts" (NOTE: delete the inapplicable items). Intact ballasts shall be packed and labeled as "Non-PCB with TCB or DEPH Ballasts" (NOTE: delete the inapplicable items). A typical container shall not hold more than 220 ballasts or the total weight of each container shall not exceed 400 kilograms (or 882 pounds). PCB ballast shall be managed in accordance with 40 CFR 761. These containers shall be transported to a permitted facility for incineration or destruction. See attached Environmental Site Review for amounts and location.

3.3.2 Lighted Exit Signs, Smoke Detectors, Emergency lights and Rechargeable Batteries

The Contractor shall field verify locations of these items. They shall be carefully removed and securely packed in separate labeled containers. The container voids shall be filled with vermiculite or other suitable fire-retardant materials. Shipping labels "Used Lighted Exit Signs Contain Tritium (Potential Hazard: Low Radiotoxicity)" and "Smoke Detectors Contain Cesium (Potential Hazard: Fire and Explosion Risk)" shall be affixed on containers with the intact components. Emergency lights with used batteries shall be placed in separate container labeled as "Emergency Lights with Used Batteries (Potential Hazard: lead, cadmium, mercury)". Other rechargeable batteries shall be placed in a separate container labeled as "Used Batteries (Potential Hazard: lead, cadmium, mercury)". The containers shall be vented and voids shall be filled with vermiculite or other suitable fire-retardant materials. The Contractor shall turn in these containers to the (NOTE: delete the inapplicable items manufacturer for recycling. See attached Environmental Site Review for amounts and location.

3.3.3 Fluorescent Light Tubes and Lighting Fixtures

The Contractor shall remove the intact fluorescent light tubes from the lighting fixtures and place in the same boxes that held the replacement light tubes or other similar size containers that have box spacers to prevent breakage. Broken tubes shall be placed in containers in accordance with 49 CFR 178 and labeled as "Broken Fluorescent Light Tubes with Mercury." The containers with broken light tubes shall be manifested for transport and disposal in accordance with 40 CFR 262, 40 CFR 263, and 40 CFR 264. Fluorescent light tubes shall be transported by the recycling facility. The Contractor shall obtain written agreement from the recycling facility to transport the packaged light tubes. Metallic components of the lighting fixtures shall be recycled as scrap metal with other metallic components of the building structure. Plastic components of the lighting fixtures shall be segregated and recycled. See attached Environmental Site Review for amounts and

location.

3.3.4 Mercury Bulb Thermostats

The Contractor shall remove and handle mercury bulb thermostats in accordance with 40 CFR 273. Leaking or broken ones shall be placed in a container with absorbent such as vermiculite and labeled as " Broken Mercury Bulb Thermostats". Intact bulb thermostats shall be packed and labeled as "Intact Mercury Bulb Thermostats." They shall be manifested for transportation and disposal in accordance with 40 CFR 262, 40 CFR 263, and 40 CFR 264. See attached Environmental Site Review for amounts and location.

3.3.5 ODC Units

The Contractor shall purge the units and handle ODC in accordance with 40 CFR 82 Subpart F prior to removal from existing locations. The salvaged refrigerant shall be recycled through the Base Environmental Section .

3.3.6 Transformers

The Contractor shall verify the locations of transformers as shown on the electrical utility layout or demolition plans and obtain data plates information for the transformers to be removed. The Contractor shall coordinate with the Directorate of the Environment (DOE) that has access to the analytical data base of the transformers and obtain data plates information of the transformers to be removed. The Contractor shall perform sampling and analyses for PCB when no analytical results are available. Disconnection of electrical services shall be approved by the Directorate of Public Works and Logistics (DPWL) and/or the Contracting Officer. The Contractor shall prepare government Form 1340 and list transformers identification numbers, types, sizes, and attach PCB test results from the Directorate's data base . A copy of Form 1340 shall be submitted to DOE and the Contracting Officer to schedule for pre-inspection. The Contractor shall remove and transport the transformers to a staging area approved by the Contracting Officer. In accordance with 40 CFR 761.20, The Contractor shall provide containment at the staging area to prevent storm water pollution. The Contractor shall prepare manifests (EPA Form 8700-22)for both PCB contaminated transformers (with PCB levels greater than 50 parts per millions (ppm) but less than 500 ppm) and PCB transformers (with PCB levels equal to or greater than 500 ppm). After approval of pre-inspection, the Contractor shall haul all transformers with Form 1340s to a designated location for final removal by the Contractor]. The Contractor shall provide shipping description (which consists of RQ designation, shipping name, hazard class, UN identification number, packing group, and supplemental information) in accordance with 49 CFR 173.

3.3.7 Utility Poles

The Contractor shall verify locations and sizes of wood poles as shown on the electrical utility layout or demolition plans. The Contractor shall coordinate with the Directorate of Public Work and Logistic (DPWL) to verify those used utility poles to be removed in this project. Utility poles shall be salvaged to the maximum extent possible by the Contractor. However, if they are disposed as waste material, the disposal facility receiving those wood poles shall have permit or written authorization by the Texas Natural Resource Conservation

Commission (TNRCC) to receive wood poles which are typically contaminated with arsenic and/or creosote.

3.3.8 Heating and Chilling Water System

The Contractor shall purge and thoroughly rinse the system prior to dismantling. The contaminated water shall be contained and labeled for recycling at a permitted facility.

3.4 RECYCLING/DESTRUCTION FACILITY

The Contractor shall use EPA permitted recycling/destruction facility in accordance with 40 CFR 261, 40 CFR 268, and 40 CFR 270 and/or State permitted or registered facility which holds current environmental pollution liability insurance coverage.

3.5 CLOSURE REPORT

The report shall contain: (1) A signed cover letter certifying completion of work described herein, (2) A signed Statement of Compliance, appended herein, (3) A brief narrative of worker protection and waste removal, segregation, packaging, transportation, and ultimate method of disposal (i.e. recycled/reuse, incinerated, landfill, etc.), (4) A description of accidents, ruptures, leaks, subsequent response procedures and cleanup, and (5) A copy of final disposition document of each item including at least the following: notification, signed manifest of waste, signed certificates or receipts (Bill of Lading) from each recycling or destruction facility.

3.6 STATEMENT OF COMPLIANCE

The Statement of compliance follows this page.

STATEMENT OF COMPLIANCE

I hereby certify that:

- (1) the appropriate state manifest form has been completely and properly filled out;
- (2) the packing, marking, labeling and placarding of the waste meets all applicable regulations;
- (3) the waste transportation, recycling, destruction and disposal meets all applicable Federal, State and local regulations.

Name _____

Title _____

Date _____

-- End of Section --

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SECTION 13284

APPENDIX A

General Information required for the Pre-Bid Conference:

Lead-Based Paint (hand railings, support metal columns and other lead-based paint metal fixtures will be removed in tact and placed at the Environmental Re-cycling center Section facilities for re-cycling. Contact the DPW for these requirements.

The Chillers will not be demolished and will remain in place.

The General Electric Transformer Unit SR# 0252973-TNK (12470-48OY/277) Manufactured Date January, 1995, could not be confirmed as PCB free. This transformer is scheduled to be removed from the MRI unit as part of this project.

Utility poles will be removed in tact and placed at the Environmental Re-cycling center Section facilities for re-cycling. Contact the DPW for these requirements.

TLCP testing will not be conducted until actual demolition starts at which time sampling will be conducted from the accumulated waste for disposal. This will be addressed during the pre-bid conference.

All smoke detectors, exit lights, and fire extinguishers will be reviewed by the hospital DPW before final re-cycling

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SECTION 13284

APPENDIX B

ENVIRONMENTAL SITE REVIEW REPORT / MATERIALS, QUANTITIES and LOCATIONS

ENVIRONMENT SITE REVIEW / ACCESSMENT
OF
Darnall Army Community Hospital – Magnetic Resonance Imaging Unit (MRI)
Fort Hood, Texas

Prepared for
Cromwell Architects Engineers

Prepared by
RABA-KISTNER CONSULTANTS, INC.

PROJECT NO. ASF02-282-00
June 11, 2002

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1.0 PURPOSE AND SCOPE OF WORK

The purpose of this review was to identify to the extent feasible an assessment of inventory of recognized environmental conditions with the likely presence of potential hazardous substances, verification of locations, quantities and categories of items containing potential regulated waste.

1.0 EXECUTIVE SUMMARY

Included in this report are the results of the Environmental Review/Inventory of Other Regulated Potential Hazardous Materials of the Magnetic Resonance Imaging Unit (MRI). This review was conducted on May 24, 2002, by Mr. Stephen Belyea, Raba-Kistner Consultants, Inc. (R-K).

The environmental review included accessible areas of the MRI. This review did not include destructive sampling methods, testing nor sampling of materials

Inaccessible areas : Room 127 – Scan Room
 Room 128 - Magnet Room
 Room 129 – Equip. Room

3.0 INTRODUCTION

R-K was retained by Mr. Ray Cannon, Cromwell Architects Engineers (Client) to conduct an environmental review for potential hazardous materials at the Darnall Army Community Hospital, Magnetic Resonance Imaging Unit (MRI) facility in preparation for demolitions of this building. Including in this survey with Asbestos and Lead was an inventory review of other regulated materials of potential hazardous waste sources, which fall under the Universal Waste Rules.

This review did not reveal evidence of leaks, spills or stains of the materials observed during this review.

4.0 SURVEY METHODOLOGY

The major activities conducted during this review included reasonably work practices involved with the removal and reattachment of faceplates, lamp fixtures, and miscellaneous covers to determine manufacturing information.

5.0 OBSERVATIONS

The following observations were made during the environmental review of materials: quantities and locations as follows:

Recessed Fluorescent light fixtures, tubes and ballast:

Location	# of fixtures	Size of light fixture	# of tubes (total)	# of ballast (total)
North corridor	2	2'x4'	6	4
South corridor	2	2'x4'	6	4
East corridor	3	2'x4'	9	6
West corridor	3	2'x4'	9	6
Exit/Entry corridor	3	2'x4'	9	6
Rooms :				
100	1	2'x4'	3	2
102	1	2'x4'	3	2
103	1	2'x4'	3	2
105	1	2'x2'	2	1
106	1	2'x2'	2	1
109	1	2'x4'	3	2
109	1	1'x4'	2	1
111	1	2'x4'	3	2
112	1	2'x2'	2	1
113	1	2'x2'	2	1
114	1	2'x2'	2	1
115	2	2'x4'	6	4
118	1	2'x4'	3	2
120	2	2'x4'	6	4
121	1	2'x4'	3	2
122	2	2'x4'	6	4
123	3	2'x2'	6	3
125	2	2'x4'	6	4
126	2	2'x2'	4	2
114	1	2'x2'	2	1
117	2	2'x4'	6	4

Light ballast :
Mark 111
ADVANGE TRANSFORMER
Cat: No. V-140-2T

Fluorescence Tube
Philips – 3' length
ECON-WATT
Model No. E77728B

Magentek
Cat. No. 443-L- SLM-TC-P
Class D
Val Mister
Cat No. 8G1084W

Philips - U tube
FB40wwl6
Gen. Elec. U-shape
F40CW.V6
mod u line

All ballast inspected are labeled **NO PCB's**

Mercury Containing Thermostats

Location

Rooms: 100, 109, 110, 112, 115, 117, 120, 121, 123, 124

Type :Honeywell - mercury bulb

Emergency Exit Lights

Location

Corridors: North
South
Entry hall
Rm. 122
Rm. 115

Each light package contains one battery:

Cat No. elr4 mc
Battery No. (2) ELB0612
12V Lead Calcum

Precolite
Cat. No. RB
6V DC – 4AH

Exit Light EXIT Signs

Location

Corridors: East
South
West
Entry Hall

Model No: UB 645
Seal Lead – Acid Battery

Smoke Detectors

Location: all rooms surveyed

Cerbbers Pyrotronics
Model No. ILP-1
Enclosed lithium battery/ionization sensor

Radon

According to the Final Report of the Texas Indoor Radon Survey published June 1994 by the Texas Department of Health, Bureau of Radiation Control, Bell County the North Texas Region has calculated average level of Radon at 1.2 pCi/L (pico curries per liter) which is well below the EPA threshold of 4.0 pCi/L

Water Fountain

Location: East Hall Corridor
Type: ELKAY
Model No: EBFSA-8-1A
SN: 941112713
Refrigerant: R 134A-4.80 oz.

No. of Fountains: 1

Other regulated materials not observed during this review ;

Transformers (HVAC)
Hydraulic equipment
Creosote treated utility poles
Soil

M.R. - none found

6.0 SURVEY RESULTS

The summary of the Environmental Site Review totals* are as follows:

Fluorescent tubes:	114
Fluorescent light ballast:	72
Mercury containing thermostats:	10
Exit light batteries:	5
Smoke detector/batteries:	24

7.0 RECOMMENDATIONS

All materials reviewed fall under the Universal Waste Rules however the major of material reviewed in this report are in very good condition and may be reused. If these materials are to be recycled or disposed of, a contractor with Universal Waste disposal experience and appropriated documentation should be used to remove, store or recycle as required by the owner.

* Only rooms accessible were counted. Before removal of these materials a complete inventory must be conducted and verified by the approved contractor.

Appendix B

SUMMARY OF WORK

The work consists of removal of all items listed in the specifications and in Appendix B of this report.

All materials will be recycled through the Recycle Program of the DWP Office and notification information will be provided prior to the pre-bid phase.

Environmental Site Review

of

Darnell Army Community Hospital Additional and Alteration Project

Fort Hood , Texas

Prepared for

Cromwell Architects Engineers

Prepared by

Raba-Kistner Consultants, Inc.

Table of Contents

1.0 PUPOSE AND SCOPE OF WORK

2.0 EXECUTIVE SUMMARY

3.0 OBSERVATIONS AND RESULTS

1.0 PURPOSE AND SCOPE OF WORK

The purpose of this review was to identify to the extent feasible an assessment of inventory of recognized environmental conditions with the likely presence of potential hazardous substances, verification of locations, quantities and categories of containing potential regulated waste and quantify asbestos containing materials for abatement for the future demolition and renovation of Darnell Hospital.

2.0 EXECUTIVE SUMMARY

Included in this report are the results of the above mentioned scope of work which was not covered in the original scope of work in the June 2002, review of the Magnetic Resonance Imaging Unit (MRI). It is noted the environmental review included only accessible areas of the hospital. The hospital was in full operation and this made some area of emergency care areas off limits to the review.

3.0 OBSERVATION AND RESULTS

The following observations were recorded during the environmental review during normal operating hours for the hospital making some area none accessible. Before removal of these materials a complete inventory must be conducted and verified by the approved contractor.

HOSPITAL PROJECT AREA

Recessed Fluorescent light fixture, tubes and ballast:

Location	# of fixtures	# of tubes	# of ballast
E-101 through E-137	134	312	134
Rms 1931-1936	20	54	20

Light ballast :
Mark 111
Advange Transformer

Fluorescence Tubes
Phillips – Econ- Watt

All ballast inspected are labeled **NO PCBs**

Mercury Containing Thermostat

Location
Room E-127

1

Emergency Exit Lights

Locations		# of:
Corridors:	East	7
	North	
	South	
	West	

Same type and model as MRI

Smoke Detectors

Locations:		# of
Corridors:	East	6
	North	
	South	
	West	

Water Fountains

Locations:			
Corridor 101	El Kay	Serial #	1WF22
Room 133	Halsey Taylor	#	1WF23
Corridor NM101	Halsey Taylor	#	1WF24

Fire Extinguishers

Locations:		#of
MRI		1
Corridors:		
East		1
West		1
Waiting room 133		1

Refrigeration equipment, air conditioning compressor on roof of Emergency Training Facility and specific emergency room areas were not accessible and not observed due to hospital operations. As stated in the June, 2002, report concerning these potential hazardous materials it is recommended that all materials observed be re-cycled or disposed of by a Universal Waste Disposal company with the experience and approved documentation.

EMERGENCY TRAINING FACILITY

This facility was also not in the original scope of work during the June 2002, survey review of MRI.

Recessed Fluorescent light fixtures, tubes and ballast

Location	# of fixtures	# of tubes	# of ballast
Rooms 1-7	16	40	16

Emergency Exit Lights

Locations

- North door
- South door (entrance)

Mercury Containing Thermostat

Location

- West wall next to office # 5

Lead paint was sampled on the railings at the Emergence Training Center south door entrance and across the drive at the Darnell Hospital entrance: 40 liner feet. Also on the support columns at the entrance area of the hospital: 480 liner feet.