

BID PACKAGE, SPECIAL PROVISIONS AND PLANS

FOR CONSTRUCTION OF



RE-ROOFING

INYO COUNTY COURTHOUSE COMPLEX

RE-ROOFING PROJECT

PROJECT NO. RR-10-011

**FOR USE IN CONNECTION WITH INYO COUNTY
STANDARD SPECIFICATIONS, DATED MARCH 1997, AND
GENERAL PREVAILING WAGE RATES IN EFFECT
ON THE DATE THE WORK IS ACCOMPLISHED**

JUNE 2010

Prepared By: Inyo County Public Works

INYO COUNTY COURTHOUSE COMPLEX

RE-ROOFING PROJECT

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**NOTICE
INVITING BIDS**

FOR

**INYO COUNTY COURTHOUSE COMPLEX
RE-ROOFING PROJECT**

**COUNTY OF INYO
DEPARTMENT OF PUBLIC WORKS**

NOTICE INVITING BIDS

The Inyo County Public Works Department is soliciting bids for:

INYO COUNTY COURTHOUSE COMPLEX RE-ROOFING PROJECT

Bid Packages, which include the Notice Inviting Bids, Bid Proposal Forms, Contract and Bond Forms, Special Provisions, and Plans, may only be obtained from the Inyo County Public Works Department, 168 North Edwards Street, P.O. Drawer Q, Independence, CA 93526, telephone (760) 878-0201. The Bid Packages are also available for inspection at the department offices during regular business hours. There will be a non-refundable charge of \$50.00 for hard copies of the plans and specifications; checks are to be made out to "Inyo County Public Works Department." Bid packages are also available at no charge at the County of Inyo website at www.countyofinyo.org. Bidders who obtain plans and specifications over the internet must notify the county that they are plan holders. Bidders who do not notify the county that they are plan holders may not be aware of any addenda that are issued.

Bids must be submitted in a sealed envelope clearly marked with the bidder's name and address, the word "BID", and the Project Title:

INYO COUNTY COURTHOUSE COMPLEX RE-ROOFING PROJECT

To be considered, **bids must be received by the Inyo County Clerk of the Board of Supervisors, 224 North Edwards Street (mailing address: P.O. Box N), Independence, California 93526 at or before 3:30 P.M. on September 22, 2010** at which time they will be publicly opened and read. No oral, telegraphic, telephonic, or fax proposals or modifications will be accepted.

General Work Description: This re-roofing project will include complete removal of the built-up roofing system on the Courthouse Annex building, located at 168 N. Edwards St., Independence CA, including asbestos abatement, and the replacement of that roofing system with a new built-up roofing system.

The work may also includes the application of an elastomeric coating on the Inyo County Administration building located at 224 N. Edwards St. Independence. The elastomeric coating installation is a additive bid item. The buildings are located in Independence, California.

In addition, this project will include the installation of cant strips and flashing where necessary. Further, if moisture has saturated the existing deck surface, some replacement of the deck may be required. The re-roofing of these facilities is more particularly described in the Plans and Project

Special Provisions. All of the work shall be in accordance with all applicable Federal, State, and local laws, codes, and regulations.

The bidder is required to submit a bid for all the items included in the base bid schedule, and prices for all additive and/or deductive bid items. The base bid schedule includes the asbestos abatement of the existing roofing and installation of a 4-layer hot mopped roofing system. The additive and deductive items are for substitution of a heat welded roofing system and the installation of an elastomeric coating on the County Administration Building, located at 224 N. Edwards St.

The contract, if it is awarded, will be awarded to the low bidder for the base bid schedule items of work, as subject to Inyo County Ordinance No. 1156. It is the county's intent to complete as much work as possible; therefore, the additive/deductible bid items to install the heat welded roofing system and the elastomeric roof coating may be added to the contract by the county at the time of award if the county, in its sole discretion, determines that it is in its best interest to do so.

A list of additional documents pertaining to the project is included in the bid package. Hardcopies of these documents are available for review at the Inyo County Public Works Department. The documents are also available in electronic format, and are available by email only.

GENERAL REQUESTS FOR INFORMATION, SUCH AS HOW TO ORDER BID PACKAGES, FOR INFORMATION SUCH AS ENGINEER'S ESTIMATES, PLAN HOLDER'S LIST, BID RESULTS OR SUMMARIES, SUBCONTRACTOR LISTS, ADDITIONAL DOCUMENTS, OR SIMILAR GENERAL INFORMATION SHOULD BE DIRECTED TO THE RECEPTIONIST AT THE INYO COUNTY PUBLIC WORKS DEPARTMENT AT 760-878-2001.

Technical questions related to engineering, site conditions, materials, construction methods, or testing should be directed to Paul Hancock of the Public Works Department at:
phancock@inyocounty.us

Requests for Information (RFIs) may be submitted by fax (760-878-2008) or by email (phancock@inyocounty.us). The county will not respond to RFIs submitted after 3:00 p.m. on September 17, 2010.

A non-mandatory pre-bid job walk is scheduled for this project on **September 16, 2010** at 1:00 p.m. Please contact Paul Hancock at the Public Works Department at 760-878-0208 for details. Bidders are strongly encouraged but not required to visit the job site prior to bidding on this Project.

Each bid must be accompanied by a cashier's check, a certified check, or a bidder's bond from an admitted corporate surety on the form provided in the Bid Package, in an amount not less than 10% of the amount of the bid, and made payable to the County of Inyo. If the Notice Inviting Bids and Bid Proposal Forms require or permit each bid to include two or more alternates, the amount of the Bid Bond or check must be not less than 10% of the amount of the bid submitted for the alternate having the highest total bid amount. The check or bidder's bond shall be given as security that the bidder will enter into the Contract with the County and furnish the required Labor and Materials Payment Bond, Faithful Performance Bond, Certificates of Insurance, or other required documents,

if the bid is accepted. The check or bond will be forfeited to the County if the bidder fails to timely enter into said Contract or furnish the required bonds, Certificates of Insurance, or other required documents. The check or bidder's bond may be retained by the County for sixty (60) days or until the Contract is fully executed by the successful bidder and the County, whichever first occurs. The successful bidder shall be required to furnish a Faithful Performance Bond and a Labor and Materials Payment Bond on the forms provided in the Bid Package and in the amount of 100% of the Contract amount.

SMALL BUSINESS ENTERPRISE CONTRACTING PREFERENCE

This project is subject to Inyo County Ordinance No. 1156, *An Ordinance of the Board of Supervisors of the County of Inyo, State of California, Adding Chapter 6.06 to the Inyo County Code to Provide Contacting Preferences for Local and Small Businesses*, which is included in the bid package.

The Contract is subject to, and incorporates by reference, the provisions of **Public Contract Code Section 22300**, pursuant to which, the Contractor is permitted to substitute securities for earned retentions or have them placed in escrow at the Contractor's expense.

The Contract is also subject to the State Contract nondiscrimination and compliance requirements pursuant to **Government Code Section 12990, et seq.**

Pursuant to **Section 1773** of the **Labor Code**, to which this Contract is subject, the prevailing wage per diem rates in Inyo County have been determined by the Director of the State Department of Industrial Relations. These wage rates appear in the Department of Transportation publication entitled "General Prevailing Wage Rates" in effect at the time the project is advertised. Future effective wage rates, which have been predetermined and are on file with the State Department of Industrial Relations, are referenced, but not printed, in said publication. Such rates of wages are also on file with the State Department of Industrial Relations and the offices of the Public Works Department of the County of Inyo and are available to any interested party upon request.

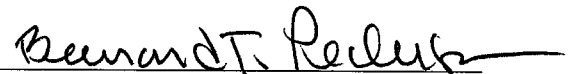
The bidder must be licensed as required by law, as consistent with the contract documents at the time the contract is awarded. Failure of the bidder to obtain proper and adequate licensing for an award of a contract shall constitute a failure to execute the contract and shall result in the forfeiture of the security of the bidder. The contractor license classification required for this project is a current California Class A license or a combination of all of the specialty classifications that will be required for the complete performance of all of the work in accordance with the Contract Documents. In addition, the bidder, if a joint venture, must have a current joint venture license at the time of award of the contract in accordance with **Business and Professions Code Section 7029.1**.

Inyo County reserves the right at any stage of these proceedings to reject any or all bids or to waive any immaterial defect in any bid if it is deemed to be in the best interest of the County.

The meanings of words used in this Notice Inviting Bids are the same as those set forth in **Section 1070, "Abbreviations, Symbols, and Definitions,"** of the Standard Specifications of the Inyo County Public Works Department dated March 1997.

Each bidder must supply all the information required by the Contract Documents, Special Provisions and the Standard Specifications.

County of Inyo
Department of Public Works


Bernard T. Pedersen, Director

Dated: July, 2010

BID PROPOSAL FORMS

FOR

INYO COUNTY COURTHOUSE COMPLEX RE-ROOFING PROJECT

ENCLOSURES:

Bid Proposal Form
Bid Item List
Designation of Subcontractors
Bid Bond
Cashier's or Certified Check Form
Certification Regarding Equal Employment Opportunity
Contractor's Labor Code Certification
Public Contract Code Section 10285.1 Statement
Public Contract Code Section 10162 Questionnaire
Public Contract Code Section 10232 Statement
Public Contract Code Section 7106 Non-Collusion Affidavit
Inyo County Ordinance No. 1156 (Contracting Preference)
Small Business Enterprise Commitment (Construction Contracts)
Small Business Enterprise Final Report of Utilization of Small Business Enterprise

BID PROPOSAL FORM

TO: COUNTY OF INYO
Public Works Department
168 N. Edwards
Independence, California 93526
(Herein called the "County" or "Owner")

FROM: _____

(Herein called "Bidder")

FOR: INYO COUNTY COURTHOUSE COMPLEX RE-ROOFING PROJECT
(Herein called "Project")

Bids will be opened at **3:30 P.M., on September 22, 2010** at the Office of the Clerk of the Board of Supervisors, 224 N. Edwards Street, INDEPENDENCE, CA 93526.

This Bid includes all costs for all labor, materials, tools, taxes, insurance, transportation, and other related functions to perform all work as required by, and in accordance with, the Contract Documents for the INYO COUNTY COURTHOUSE COMPLEX RE-ROOFING PROJECT.

In submitting this Bid, it is understood that:

1. The Notice Inviting Bids; these Bid Proposal Forms; the Contract and Bond Forms; the Special Provisions; the Inyo County Public Works Department Standard Specification dated May 1997 and the Project Plans; including any documents incorporated therein, are to be considered complementary and are incorporated herein by reference and made a part hereof with like force and effect as if all of said documents were set forth in full herein. All of said documents, which include these Bid Proposal Forms, are referred to collectively as the Contract Documents and shall constitute the Contract between the parties which will come into full force and effect upon acceptance, approval, and execution by the Inyo County Board of Supervisors.
2. The Contract for the Inyo County Courthouse Complex Re-roofing Project requires the Contractor to perform a complete and finished project. Anything necessary to complete this work properly and in accordance with the law and lawful governmental regulations shall be performed by the Contractor, whether set out specifically in the Contract Documents or not.

3. The Contractor, if its or his/her Bid is accepted, will furnish the required bonds and Certificates of Insurance and other required documents as described in the Contract Documents.

In submitting this Bid, the Contractor has familiarized itself or himself/herself with the Bid Package which includes the Notice Inviting Bids; the Bid Proposal Forms; the Contract and Bond Forms; the Special Provisions; the Inyo County Public Works Department Standard Specification dated May 1997, and the Project Plans. Contractor further agrees in submitting this Bid to perform all the work in accordance with the Contract Documents within **30 calendar days** as required in Section 4, "Beginning of Work, Time of Completion and Liquidated Damages," of the Special Provisions. The undersigned has/have checked carefully the following figures and understand(s) that the County of Inyo will not be responsible for any errors or omissions on the part of the undersigned in making this Bid.

Attached as a part of this Bid is a Bid Bond from an admitted corporate surety on the form provided in the Bid Package (), or a certified or cashier's check (), in an amount not less than 10% of the Bid, either of which it is agreed, pursuant to the Notice Inviting Bids and the Bid Proposal Forms, shall be forfeited to or retained by the County of Inyo if the undersigned fails to execute the Contract, or furnish the required bonds, Certificates of Insurance, and other required documents within fifteen (15) calendar days after written notice of the Award of Contract.

The County will award the Contract to a responsive and responsible Bidder submitting the lowest bid, as subject to Inyo County Ordinance No. 1156. The lowest bid shall be the lowest of the bid prices on the basis of the total base bid. The County reserves the right to add or deduct from the contract any of the additive or deductive items after the lowest responsible bidder has been determined. Further, if additive or deductive bid items are so included, the County reserves the right to, and shall, award the Contract for the amount of work which the County, in its sole discretion, determines at the time of award to be in the County's best interest.

Also attached as a part of this Bid are the Bid Proposal Form; Bid Item List; Designation of Subcontractors; Certification Regarding Equal Employment Opportunity; Public Contract Code Section 10285.1 Statement; Public Contract Code Section 10162 Questionnaire; Public Contract Code Section 10232 Statement; Non-Collusion Affidavit; Contractor's Labor Code Certification; and either (a) Cashier's or Certified Check Form, or (b) Bid Bond Form. These documents shall be completed and signed as required on the forms provided in the Bid Package. The Bidder's signature on this proposal constitutes an endorsement and execution of each and every certification and declaration which is contained in these documents, and Bidder's promise to perform and abide by the terms of these documents.

The meanings of words used in this Notice Inviting Bids are the same as those set forth in **Section 1070, "Abbreviations, Symbols, and Definitions,"** of the Standard Specifications of the Inyo County Public Works Department dated March 1997.

BASE BID ITEM LIST
INYO COUNTY COURTHOUSE COMPLEX RE-ROOFING PROJECT
PROJECT NO. 01-011

UNIT MEASURE LEGEND:

LS = LUMP SUM

LF = LINEAR FEET

CY = CUBIC YARD

SF = SQUARE FEET

EA = EACH

SY = SQUARE YARDS

ITEM NO.	DESCRIPTION	UNIT MEAS.	EST. QUAN.	ITEM PRICE	TOTAL DOLLARS
1	MOBILIZATION (not to exceed 5% of total bid)	LS	1	\$	\$
2	Asbestos Abatement of existing roofing	LS	1	\$	\$
3	4 layer hot mopped Roofing System, Courthouse Annex	SF	10,425	\$	\$

TOTAL BASE BID (IN NUMBERS) _____

TOTAL BASE BID (IN WORDS) _____

BIDDER'S COMPANY NAME _____

REVIEWED AND CHECKED BY _____ DATE _____
 (For County Use)

No provision in this section is intended or shall be construed to alter the terms and conditions specified in the Contract Documents for payment of any amounts in the event the Project contract is awarded to Bidder pursuant to this Bid

BID ITEM LIST (CONTINUED)
INYO COUNTY COURTHOUSE COMPLEX RE-ROOFING PROJECT
PROJECT NO. 10-011

DEDUCT ITEMS

ITEM NO.	DESCRIPTION	UNIT MEAS.	EST. QUAN.	ITEM PRICE	TOTAL DOLLARS
3	4 layer hot mopped Roofing System, Courthouse Annex	SF	10,425	Price as shown in Base Bid	\$
TOTAL DEDUCT BID					\$

TOTAL DEDUCT BID (IN WORDS). _____

ADDITIVE ITEMS

ITEM NO.	DESCRIPTION	UNIT MEAS.	EST. QUAN.	ITEM PRICE	TOTAL DOLLARS
4	4 layer heat welded roofing system, Courthouse Annex	SF	10,425	\$	\$
5	Elastomeric Roof Coating, Admin. Building	SF	6,000	\$	\$
TOTAL ADDITIVE BID					\$

TOTAL ADDITIVE BID (IN WORDS). _____

REVIEWED AND CHECKED BY _____ DATE _____
 (For County Use)

No provision in this section is intended or shall be construed to alter the terms and conditions specified in the Contract Documents for payment of any amounts in the event the Project contract is awarded to Bidder pursuant to this Bid.

TIME OF COMPLETION:

The undersigned further specifically agrees to complete all the work within thirty (30) calendar days.

BID SECURITY:

The required ten percent (10%) Bid Security for this Bid is attached in the form of:
(Note: Check and complete one of the following items)

- () Bid Bond issued by _____,
an admitted corporate surety on the form provided in the bid package.
- () Certified/Cashier's Check No. _____ issued by _____

ADDENDA:

The undersigned acknowledges receipt of the following Addenda and has provided for all Addenda changes in this Bid.

(Fill in Addendum numbers and dates Addenda have been received. If none have been received, enter "NONE".)

WARNING:

IF AN ADDENDUM OR ADDENDA HAVE BEEN ISSUED BY THE COUNTY AND NOT NOTED ABOVE AS BEING RECEIVED BY THE BIDDER, THIS PROPOSAL MAY BE REJECTED.

ADDITIONAL REQUIRED DOCUMENTS. Bidder agrees that, in addition to the Proposal Guarantee, Bidder is required to submit, as a part of this Bid, the following forms properly completed, and signed as required, all of which accompany this Bid Proposal Form and are incorporated herein by this reference:

- (1) Designation of Subcontractors (Public Contract Code section 4100 et seq.)
- (2) Certification Regarding Equal Employment Opportunity
(Government Code section 12900 et seq., sections 11134-11139.5)
- (3) Contractor's Labor Code Certification (Labor Code section 3700)
- (4) Non-Collusion Affidavit (Public Contract Code Section 7106)
- (5) Public Contract Code Section 10162 Questionnaire
- (6) Public Contract Code Section 10232 Statement
- (7) Small Business Enterprise Commitment (Construction Contracts)
- (8) Small Business Enterprise Final Report of Utilization of Small Business Enterprise

DEFINITIONS. The definition and meaning of the words used in this Bid Proposal Form are the same as set forth in **Section 1070 Abbreviations, Symbols and Definitions**, of the Standard Specifications of the Inyo County Public Works Department, March, 1997

BIDDER'S BUSINESS INFORMATION:

IMPORTANT NOTICE: If bidder or other interested person is a corporation, state legal name of corporation and names of the president, secretary treasurer, and manager thereof; if a copartnership or joint venture, state the true name of the firm or joint venture and the names, current addresses, and telephone numbers of all individual co-partners or joint venturers composing the partnership or joint venture; if bidder or other interested person is an individual, state first and last names in full.

Individual () Partnership () Joint Venture () Corporation ()

Personal Name: _____

Business Name: _____

Address: _____

_____ Zip Code _____

Telephone: (_____) _____

Federal Identification No. _____

Contractor's License No. _____, State of _____, Type _____

License Expiration Date _____

(The above address will be used to send Notice of Acceptance or requests for additional information)

THE UNDERSIGNED HEREBY DECLARES, UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA, THAT THE STATEMENTS MADE IN THIS BID PROPOSAL FORM, INCLUDING ALL OF THE ATTACHED STATEMENTS, DESIGNATIONS, CERTIFICATES, AND AFFIDAVITS, ARE TRUE AND CORRECT, AND THAT THEY ARE THE INDIVIDUAL, MANAGING PARTNER, OR CORPORATE OFFICER, DULY AUTHORIZED BY LAW TO MAKE THIS BID ON BEHALF OF CONTRACTOR, AND BY SIGNING BELOW DO MAKE THIS BID ON BEHALF OF CONTRACTOR ACCORDING TO ALL OF THE TERMS AND CONDITIONS SET FORTH OR REFERENCED HEREIN.

(Signature of Authorized Person)

(Title)

(Printed Name)

(Date)

DESIGNATION OF SUBCONTRACTORS

In compliance with the provisions of the **Subletting and Subcontracting Fair Practices Act (Section 4100 et. seq.** of the **Public Contract Code** of the **State of California**), the undersigned bidder has set forth below the full name, and the location of the place of business of each Subcontractor who will perform work or labor or render service to the Prime Contractor in or about the construction of the work or improvement, or a Subcontractor licensed by the State of California who, under subcontract to the Prime Contractor, specifically fabricates and installs a portion of the work or improvement according to detailed drawings contained in the Plans and Specifications to which the attached bid is responsive, and the portion of the work which will be done by each Subcontractor for each subcontract in excess of one-half of one percent of the Prime Contractor's total bid, or \$10,000.00, whichever is greater.

The Bidder understands that if he fails to specify a Subcontractor for any portion of the work to be performed under the Contract in excess of one-half of one percent of his bid, or \$10,000.00, whichever is greater, he shall be deemed to have agreed to perform such portion himself, and that he shall not be permitted to sublet or subcontract that portion of the work except in cases of public emergency or necessity, and then only after a finding, produced to writing as a public record of the Awarding Authority, setting forth the facts constituting the emergency or necessity. If no Subcontractors are to be employed on the project, enter the word "none".

ITEM NO.	DESCRIPTION OF WORK	% OF TOTAL CONTRACT	SUBCONTRACTOR'S LICENSE TYPE, NUMBER, EXPIRATION DATE	NAME, ADDRESS, PHONE NUMBER

Signature of Authorized Person)

(Title)

(Printed Name)

(Date)

INYO COUNTY PUBLIC WORKS DEPARTMENT

INYO COUNTY COURTHOUSE COMPLEX RE-ROOFING PROJECT

**BID BOND
(BID PROPOSAL GUARANTEE)**

(Not required if a certified or cashier's check or a cash deposit accompanies the bid as a proposal guarantee)

KNOW ALL MEN BY THESE PRESENTS: That we,

_____ (Name of Bidder)

as Principal, and _____ (Name of Corporate Surety)

_____ as Corporate Surety admitted to issue such bonds in the State of California, are held and firmly bound unto the County of Inyo, State of California, in the sum of _____ dollars (\$ _____) for the payment whereof we hereby bind ourselves, our successors, heirs, executors, and administrators, jointly and severally, firmly by these presents.

The condition of the foregoing obligation is such that whereas the above bounded Principal is about to submit to the Board of Supervisors of the County of Inyo a bid for the construction of the **INYO COUNTY COURTHOUSE COMPLEX RE-ROOFING PROJECT**, in compliance with the Contract therefore:

Now, if the bid of the Principal shall be accepted and the Contract awarded to the Principal by said Board of Supervisors, and if the Principal shall fail or neglect to enter into the Contract there for in accordance with the terms of the Principal's bid and the terms set forth in the Bid Package, or to furnish the required Faithful Performance and Labor and Material Payment Bonds, certificates of insurance, and other required documents, to the satisfaction of the Board of Supervisors of said County, no later than fifteen (15) calendar days after the Principal has received notice from the County that the Contract has been awarded to the Principal, then the sum guaranteed by this Bond is forfeited to the County of Inyo.

It is expressly agreed and understood that any errors, clerical, mathematical, or otherwise, in the bid shall not be or constitute a defense to a forfeiture of this Bond, except as provided by law.

WITNESS our hands and seals this _____ day of _____, 20 ____ A.D.

Principal

(SEAL) By: _____
(Title of Authorized Person)

(Address for Notices to be Sent)

Surety

(SEAL) By: _____
(Title of Authorized Person)

(Address for Notices to be Sent)

NOTE:

THE SIGNATURES OF THE PRINCIPAL (BIDDER) AND THE SURETY MUST EACH BE ACKNOWLEDGED BEFORE A NOTARY PUBLIC (OR OTHER OFFICER AUTHORIZED UNDER CALIFORNIA LAW) AND THE ACKNOWLEDGMENTS MUST BE ATTACHED TO THIS BOND. The Bid Bond must be executed on this form by a corporate surety admitted to issue such bonds in the State of California. No substitutions will be accepted. If an attorney-in-fact signs for the surety, an acknowledged statement from the surety appointing and empowering the attorney-in-fact to execute such bonds in such amounts on behalf of the surety, must accompany the Bid Bond.

ADDRESS OF COUNTY FOR NOTICES TO BE SENT:

**County of Inyo (Attn.: Public Works Director)
224 North Edwards Street, P.O. Box N
Independence, California 93526**

INYO COUNTY COURTHOUSE COMPLEX RE-ROOFING PROJECT

**CASHIER'S OR CERTIFIED CHECK
(BID PROPOSAL GUARANTEE)**

(Not required if Bid Bond accompanies the bid as a proposal guarantee)

A cashier's or certified check in the amount required as a proposal guarantee for the Bid and made payable to the County of Inyo is attached below:

[]

ATTACH CHECK HERE

[]

Bidder (print name) : _____

**CERTIFICATION REGARDING EQUAL EMPLOYMENT OPPORTUNITY
(Government Code Section 12900 et seq., Sections 11135-11139.5)**

INYO COUNTY COURTHOUSE COMPLEX RE-ROOFING PROJECT

During the performance of this Contract, the Contractor and its subcontractors shall not unlawfully deny the Contract's benefits to any person, nor shall any person be unlawfully subjected to discrimination under the contract and its performance, on the basis of religion, color, ethnic group identification, gender, age, or disability. In addition, the Contractor and its subcontractors shall not discriminate unlawfully against any employee or applicant for employment because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, age, or gender. The Contractor shall insure that the evaluation and treatment of employees and applicants for employment are free from such discrimination.

The Contractor shall comply with the provisions of the Fair Employment and Housing Act (Government Code, Section 12900 et seq.), the regulations promulgated thereunder (California Code of Regulations, Title 2, Sections 7285.0 et seq.), the Provisions of Article 9.5, Chapter 1, Part 1, Division 3, Title 2 of the Government Code (Government Code, Sections 11135-11139.5).

Contractor and its subcontractors shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement.

The Contractor shall include the nondiscrimination and compliance provisions of this clause in all subcontracts to perform work under the Contract.

(Name and Title of Signer)

Signature

Date

Company Name _____

Business Address _____

CONTRACTORS LABOR CODE CERTIFICATION
(Labor Code Section 3700 et seq.)

INYO COUNTY COURTHOUSE COMPLEX RE-ROOFING PROJECT

I am aware of the provisions of Sections 3700 and following of the Labor Code, which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that Code, and I will comply with such provisions before commencing the performance of the work of this contract.

(Name and Title of Signer)

Signature

Date

Company Name

Business Address

NON-COLLUSION AFFIDAVIT
(Public Contract Code Section 7106)
(Code of Civil Procedure Section 2015.5)

INYO COUNTY COURTHOUSE COMPLEX RE-ROOFING PROJECT

STATE OF CALIFORNIA:

COUNTY OF _____:

I, _____, declare that I hold the office or position of _____ of _____, the party making the foregoing bid, that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract to anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged any fee to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

(Name and Title of Signer)

Signature

Date

Company Name _____

Business Address _____

PUBLIC CONTRACT CODE SECTION 10162 QUESTIONNAIRE
INYO COUNTY COURTHOUSE COMPLEX RE-ROOFING PROJECT

In accordance with Public Contract Code Section 10162, the Bidder shall complete, under penalty of perjury, the following questionnaire:

Has the Bidder, any officer of the Bidder, or any employee of the Bidder who has a proprietary interest in the Bidder, ever been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state, or local government project because of a violation of law or a safety regulation:

Yes _____ No _____

If the answer is yes, explain the circumstances in the following space.

By bidder's signature on the Bid Proposal Form, Bidder certifies, under penalty of perjury under the laws of the State of California, that the foregoing statements in accordance with Public Contract Code Section 10162 are true and correct.

PUBLIC CONTRACT CODE STATEMENT (SECTION 10232)

INYO COUNTY COURTHOUSE COMPLEX RE-ROOFING PROJECT

In accordance with **Public Contract Code Section 10232**, the Contractor hereby states, under penalty of perjury, that no more than one final unappealable finding of contempt of court by a federal court has been issued against the Contractor within the immediately preceding two year period because of the Contractor's failure to comply with an order of a federal court which orders the Contractor to comply with an order of the National Labor Relations Board.

By Bidder's signature on the Bid Proposal Form, Bidder certifies, under penalty of perjury under the laws of the State of California, that the foregoing statements in accordance with **Public Contract Code Section 10232** are true and correct.

Bidder (print name) _____

By: _____

Signature of Authorized Person

Date

Printed Name and Title

ORDINANCE NO. 1156

AN ORDINANCE OF THE BOARD OF SUPERVISORS OF THE COUNTY OF INYO, STATE OF CALIFORNIA, ADDING CHAPTER 6.06 TO THE INYO COUNTY CODE TO PROVIDE CONTRACTING PREFERENCES FOR LOCAL AND SMALL BUSINESSES

The Board of Supervisors of the County of Inyo ordains as follows:

SECTION 1. PURPOSE AND AUTHORITY

The purpose of this ordinance is to contribute to the economic and social well-being of all the citizens of the County by providing a contracting preference for local and small businesses. As a market participant, and pursuant to Public Contract Code § 2002, the County may award a purchasing preference to certain entities to vindicate the governmental purpose of encouraging County and regional economic development.

SECTION 2. ADDITION OF CHAPTER 6.06 TO INYO COUNTY CODE.

Chapter 6.06 is added to the Inyo County Code to read as follows:

Chapter 6.06

CONTRACTING PREFERENCES

Sections:

- 6.06.010 Findings.**
- 6.06.020 Definitions.**
- 6.06.030 General Provisions.**
- 6.06.040 Local Business and Small Business Preference.**
- 6.06.050 Small Business Subcontracting Preference.**
- 6.06.060 Limit On Contracting Preference.**

6.06.010 Findings

Businesses located in Inyo County contribute to the economic and social well-being of all the citizens of the County. Such businesses provide convenient services within the County and provide employment for County citizens. Further, the payroll paid by and income earned by local businesses tend to be largely expended within the County, which enhances the business environment in the County and the well-being of its citizens. It is in the public interest to encourage a vibrant business environment in the County. Providing modest purchasing preferences for County businesses furthers the goal of building a healthy economy in the County. Further, providing contracting preferences for all small businesses is allowed by State law, expands the types of contracts for which preferences may be given, and benefits local small businesses, also furthering the goal of building and maintaining a healthy local economy.

6.06.020 Definitions.

A. A **Small Business** is a business which is certified by the State of California or the Small Business Administration as a small business.

B. A **Local Business** is a business which:

1. Has its headquarters, distribution point or locally-owned franchise located in or having a street address within the County for at least six months immediately prior to the issuance of the request for competitive bids by the County; and
2. Holds any required business license by a jurisdiction located in Inyo County; and
3. Employs at least one full-time or two part-time employees whose primary residence is located within Inyo County, or if the business has no employees, shall be at least fifty percent owned by one or more persons whose primary residence is located within Inyo County.

4. Meets the conditions of one through three of this subsection, but within Mono or Inyo and Mono Counties, if no Inyo County local business submits a bid that is within eight percent of the lowest bid submitted.

C. A **Responsive Bid** is a bid which responds to the requirements of the request for bids and is submitted by a responsible bidder.

6.06.030 General Provisions.

A. The preferences provided in this chapter are intended to extend to the limit of the jurisdiction of Inyo County under California law. Such preferences do not apply where prohibited by Federal or State law. Such preferences do not apply where funding agencies prohibit such preferences as a condition of providing funding for the anticipated project. Where this Chapter provides preferences for multiple classes of entities, and one or more of those classes of entities are disallowed contracting preference by Federal or State law or by the funding agency, those disallowed entities will not be provided preferences, but the remaining classes of entities shall receive preferences.

B. Requests for bids or proposals issued by the County shall specify the applicable contracting preferences available pursuant to this Chapter.

6.06.040 Local Business and Small Business Preference.

Except as excluded by Section 6.06.030(A), for all contracts awarded by Inyo County, if the lowest responsive bid is submitted by a local business or a small business, that business shall be awarded the contract. If the lowest responsive bid is not submitted by a local business or a small business, the lowest responsive bid submitted by a local business that is within eight percent of the lowest responsive bid or by a small business that is within five percent of the lowest responsive bid shall be considered the low bid and that business shall be awarded the contract. To be eligible, a local business or a small business shall provide certification with its bid that it is such business as herein defined.

6.06.050 Small Business Subcontracting Preference.

For public works and road construction contracts awarded by Inyo County, where no entity qualifying under this Chapter for a contracting preference submits a responsive bid that is the lowest or within five percent of the lowest responsive bid, there shall be a preference given to bids in which at least ten percent of the monetary value of the work to be performed is subcontracted to a small business or businesses. If such bid is the lowest responsive bid, that contractor shall be awarded the contract. If such bid is not the lowest responsive bid, any such bid that is within five percent of the lowest responsive bid shall be considered the low bid, and that contractor shall be awarded the contract.

6.06.060 Limit On Contracting Preferences.

Contracting preferences under this Chapter shall not exceed \$10,000.00 for any one solicitation and award determination.

SECTION 3. SEVERABILITY

If any section, subsection, sentence, clause or phrase of this ordinance is for any reason held to be unconstitutional or invalid, such decision shall not affect the validity of the remaining portions of this ordinance. The Board of Supervisors hereby declares that it would have passed this ordinance and every section, subsection, sentence, clause or phrase not declared invalid or unconstitutional, without regard to whether any portion of this ordinance would be subsequently declared unconstitutional or invalid.

SECTION 4. EFFECTIVE DATE

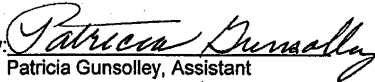
This Ordinance shall take effect and be in full force and effect thirty (30) days after its adoption. Before the expiration of fifteen (15) days from the adoption hereof, this Ordinance shall be published as required by Government Code Section 25124. The Clerk of the Board is hereby instructed and ordered to so publish this Ordinance together with the names of the Board members voting for and against the same.

PASSED AND ADOPTED this 25th day of May, 2010, by the following vote:

AYES: Supervisors Arcularius, Cash, Brown, Fortney and Cervantes
NOES: -0-
ABSTAIN: -0-
ABSENT: -0-


Richard Cervantes, Chairperson
Inyo County Board of Supervisors

ATTEST: Kevin Carunchio
Clerk of the Board

By: 
Patricia Gunsolley, Assistant

s/Ordinance/ContractingPrefSmBusiness

4/29/10

Small Business Enterprise Commitment (Construction Contracts)

NOTE: PLEASE REFER TO INSTRUCTIONS ON THE REVERSE SIDE/NEXT PAGE OF THIS FORM

Department: Inyo County Public Works Department LOCATION: Independence, CA

PROJECT DESCRIPTION: Inyo County Courthouse Complex Re-roofing Project

TOTAL CONTRACT AMOUNT: \$ _____

BID OPENING DATE: _____

BIDDER'S COMPANY NAME: _____

BID ITEM NO.	ITEM OF WORK AND DESCRIPTION OR SERVICES TO BE SUBCONTRACTED OR MATERIALS TO BE PROVIDED	CERT. No. of SMALL BUSINESS ENTERPRISE AND EXPIRATION DATE	NAME AND CONTACT INFORMATION FOR SMALL BUSINESS ENTERPRISE (Must be certified on the date bids are opened)	DOLLAR AMOUNT SMALL BUSINESS ENTERPRISE

For Inyo County to Complete:

Project Number: RR-10-011

Financing Type: _____

Contract Award Date: _____

Checked by: _____

Print Name _____ Signature _____ Date _____

Total Claimed Participation

\$ _____

_____ %

Signature of Bidder

Date (Area Code) Tel. No.

Person to Contact (Please Type or Print)

Small Business Enterprise (Rev 5/10)

INSTRUCTIONS - Small Business Enterprise Commitment (CONSTRUCTION CONTRACTS)
(05/10)

ALL BIDDERS:

PLEASE NOTE: It is the bidder's responsibility to verify that the Small Business Enterprise (SBE) subcontractors are certified by the proper certifying authorities, and submit evidence of that certification with the bid. If an SBE prime contractor is not certified on the date of the bid opening, the SBE prime contractor will not qualify for the contracting preference. If SBE subcontractor or subcontractors are not certified on the date of bid opening, that portion of that firm's participation will not count toward the minimum ten percent of the monetary value of the work needed to qualify for the contracting preference.

The form requires specific information regarding the construction contract: Total Contract Amount, Bid Opening Date, and Bidder's Name.

Indicate the appropriate bid item number (or numbers); Item of Work and description or services to be subcontracted or materials to be provided by the SBE; the SBE's certification number and its expiration date; the SBE's contact information, including company and contact name, address, and telephone number; and the dollar amount expected to be paid to the SBE.

IMPORTANT: Identify **all** SBE firms being participating in the project regardless of tier, including the prime contractor, if an SBE. Names of the First Tier SBE Subcontractors and their respective item(s) of work listed should be consistent, where applicable, with the names and items of work in the "List of Subcontractors" submitted with your bid. **Provide copies of the SBEs' quotes, and if applicable, a copy of joint venture agreements pursuant to the Subcontractors Listing Law and the Special Provisions.**

There is a column for the total SBE dollar amount. Enter the Total Claimed SBE Participation dollars and percentage amount of items of work submitted with your bid pursuant to the special provisions. (If 100% of item is not to be performed or furnished by the SBE, describe exact portion of time to be performed or furnished by the SBE.)

This form must be submitted with the bid if the bidder is attempting to qualify for the SBE contracting preference. If the bidder is not attempting to qualify for the SBE contracting preference the form does not need to be submitted.

FINAL REPORT - UTILIZATION OF SMALL BUSINESS ENTERPRISES
(SBE), FIRST-TIER SUBCONTRACTORS

PROJECT: Inyo County Courthouse Complex Re-roofing Project				CONTRACT COMPLETION DATE			
PRIME CONTRACTOR		BUSINESS ADDRESS		ESTIMATED CONTRACT AMOUNT			
BID ITEM NO.	SUBCONTRACTOR NAME, BUSINESS ADDRESS, AND PHONE	DESCRIPTION OF WORK PERFORMED	SBE CERT. NUMBER	CONTRACT PAYMENTS		DATE WORK COMPLETE	DATE OF FINAL PAYMENT
				NON-SBE	SBE		
				\$	\$		
				\$	\$		
				\$	\$		
				\$	\$		
				\$	\$		
				\$	\$		
				\$	\$		
				\$	\$		
			TOTAL	\$	\$		
(i) Original Commitment							
\$ _____							
2) I CERTIFY THAT THE ABOVE INFORMATION IS COMPLETE AND CORRECT							
CONTRACTOR REPRESENTATIVES SIGNATURE				BUSINESS PHONE NUMBER		DATE	
4) TO THE BEST OF MY KNOWLEDGE, THE ABOVE INFORMATION IS COMPLETE AND CORRECT							
RESIDENT ENGINEER'S SIGNATURE				BUSINESS PHONE NUMBER		DATE	

To be completed by the contractor and submitted to the Resident Engineer upon project completion.

INSTRUCTIONS - FINAL REPORT - UTILIZATION OF SMALL BUSINESS
ENTERPRISES (SBE), FIRST-TIER SUBCONTRACTORS

The form requires specific information regarding the construction project, including the prime contractor name and address, contract completion date, and estimated contract amount. The objective of the form is to describe who did what by bid item numbers and description, asking for specific dollar values of item work completed broken down by subcontractors who performed the work, both SBE and non-SBE work forces. SBE prime contractors are required to show the date of work performed by their own forces along with the corresponding dollar value of work.

Indicate appropriate bid item number or numbers, a description of work performed or materials provided, and subcontractor name and address. For those firms who are SBE, enter the SBE certification number. The SBE shall provide their certification number to the contractor and notify the contractor in writing with the date of decertification if their status changes during the course of the project.

The form has two columns for the dollar value to be entered from the item work performed by the subcontractor. The non-SBE column is used to enter the dollar value of work performed by firms who are not certified SBEs. Enter the dollar value of work performed by firms who are SBEs in the SBE column.

If the prime contractor or a subcontractor performing work as a SBE on the project becomes decertified and still performs work after their decertification date, enter the total value performed by the contractor/subcontractor under the appropriate SBE identification column.

If the prime contractor or a subcontractor performing work as a non-SBE on the project becomes certified as a SBE, enter the dollar value of all work performed after certification as a SBE under the appropriate SBE identification column.

Enter the total of each column on the form. Any changes to SBE certification must also be submitted on the ***SMALL BUSINESS ENTERPRISE (SBE) CERTIFICATION STATUS CHANGE FORM***

CONTRACT AND BOND FORMS

FOR

**INYO COUNTY COURTHOUSE COMPLEX
RE-ROOFING PROJECT**

ENCLOSURES:

Contract
Faithful Performance Bond
Labor and Material Payment Bond

C O N T R A C T
for the
INYO COUNTY COURTHOUSE COMPLEX RE-ROOFING PROJECT

THIS CONTRACT is awarded by the COUNTY to CONTRACTOR on, and made and entered into effective as of, _____, 20____, by and between the COUNTY OF INYO, a political subdivision of the State of California, (herein "Owner"), and

_____ (herein "CONTRACTOR"), for the construction of the **INYO COUNTY COURTHOUSE COMPLEX RE-ROOFING PROJECT** (herein also "Project"), which parties agree, for and in consideration of the mutual promises, as follows:

1. CONTRACTOR shall furnish all labor, materials, methods, processes, implements, tools, machinery, equipment, transportation, permits, services, utilities, and all other items, and related functions and otherwise shall perform all work necessary or appurtenant to construct the Project in accordance with the Contract Documents and within the Time for Completion set forth in the Contract Documents, for:

Title: **INYO COUNTY COURTHOUSE COMPLEX RE-ROOFING PROJECT**

2. For the performance of all such work, COUNTY shall pay to CONTRACTOR the following amount, which constitutes the total bid by CONTRACTOR for said Work:

_____ (\$ _____),
adjusted by such increases or decreases as authorized in accordance with the Contract Documents, and payable at such times and upon such conditions as otherwise set forth in the Contract Documents.

3. CONTRACTOR and COUNTY agree that this Contract shall include and consist of (a) all of the provisions set forth expressly herein; (b) the Bid Proposal Form, the Faithful Performance Bond, and the Labor and Materials Payment Bond, all of which are incorporated herein and made a part hereof by this reference; and (c) all of the other Contract Documents as described in **Section 1070.04 "Definitions"** of the Standard Specifications of the Inyo County Public Works Department, March, 1997, all of which are incorporated herein and made a part of this Contract by this reference, including without limitation, the Bid Package, the applicable Standard Specifications of the Inyo County Public Works Department, March, 1997 and the Special Provisions concerning this Project, including the Appendices, the Plans, any and all amendments or changes to any of the above listed documents, including without limitation, contract change orders, and any and all documents incorporated by reference into any of the above listed documents.

4. The definition and meaning of the words used in this Contract are the same as set forth in **Section 1070 Abbreviations, Symbols and Definitions** of the Standard Specifications of the Inyo County Public Works Department, March, 1997.

5. This Contract, including the Contract Documents and all other documents, which are incorporated herein by reference, constitutes the entire agreement between CONTRACTOR and COUNTY with respect to the subject matter hereof.

6. Pursuant to **Section 1773 of the Labor Code**, to which this Contract is subject, the prevailing wage per diem rates in Inyo County have been determined by the Director of the State Department of Industrial Relations. These wage rates appear in the Department publication entitled "General Prevailing Wage Rates," in effect at the time the project is advertised. Future effective wage rates, which have been predetermined and are on file with the State Department of Industrial Relations are referenced but not printed in said publication. Such rates of wages are also on file with the State Department of Industrial Relations and the offices of the Public Works Department of the County of Inyo and are available to any interested party upon request.

C O N T R A C T
for the

INYO COUNTY COURTHOUSE COMPLEX RE-ROOFING PROJECT

IN WITNESS WHEREOF, COUNTY and CONTRACTOR have each caused this Contract to be executed on its behalf by its duly authorized representative, effective as of the day and year first above written.

COUNTY

CONTRACTOR

COUNTY OF INYO

By: _____

By: _____

Name: _____

Name: _____

Title: _____

Title: _____

Dated: _____

Dated: _____

APPROVED AS TO FORM AND
LEGALITY:

Taxpayer's Identification or
Social Security Number:

County Counsel

APPROVED AS TO ACCOUNTING
FORM:

County Auditor

APPROVED AS TO INSURANCE
REQUIREMENTS:

County Risk Manager

INYO COUNTY COURTHOUSE COMPLEX RE-ROOFING PROJECT

**FAITHFUL PERFORMANCE BOND
(100% OF CONTRACT AMOUNT)**

KNOW ALL MEN BY THESE PRESENTS: That _____

(Name of Contractor)

as Principal, hereinafter called Contractor, and, _____

(Name of Corporate Surety)

as Corporate Surety, hereinafter called Surety, are held and firmly bound unto the County of Inyo as Obligee, hereinafter called County, in the amount of _____

dollars (\$ _____), for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assignees, jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written Contract dated _____, 20____, entered into an agreement with the County for the Construction of the **INYO COUNTY COURTHOUSE COMPLEX RE-ROOFING PROJECT** (herein "Project"), to be constructed in accordance with the terms and conditions set forth in the Contract for the **INYO COUNTY COURTHOUSE COMPLEX RE-ROOFING PROJECT**, which contract is by reference incorporated herein and is hereinafter referred to as the "Contract".

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Contractor shall promptly and faithfully perform said Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

The Surety hereby waives notice of any alteration or extension of time made by the County.

Whenever Contractor shall be, and is declared by County to be, in default under the Contract, the County having performed Owner's obligations thereunder, the Surety may promptly remedy the default, or shall promptly either:

1. Complete the Contract in accordance with its terms and conditions, or

2. Obtain a Bid or Bids for completing the Contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible Bidder, or, if the County elects, upon determination by the County and the Surety jointly of the lowest responsible Bidder, arrange for a Contract between such Bidder and County, and make available as work progresses (even though there should be a default or a succession of defaults under the Contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Contract price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the Contract price," as used in this paragraph, shall mean the total amount payable by County to Contractor under the Contract and any amendments thereto, less the amount properly paid by County to Contractor.

Any suit under this Bond must be instituted before the expiration of two (2) years from the date on which final payment under the Contract falls due, or the date on which any warranty or guarantee period expires, whichever is later.

No right of action shall accrue on this Bond to or for the use of any person or corporation other than the County named herein.

Signed and sealed this _____ day of _____, 20 _____.

(Name of Corporate Surety)

By: _____
(Signature)

(SEAL)

(Title of Authorized Person)

(Address for Notices to be Sent)

(Name of Contractor)

By: _____
(Signature)

(SEAL)

(Title of Authorized Person)

(Address for Notices to be Sent)

NOTE:

THE SIGNATURES OF THE CONTRACTOR AND THE SURETY MUST EACH BE ACKNOWLEDGED BEFORE A NOTARY PUBLIC (OR OTHER OFFICER AUTHORIZED UNDER CALIFORNIA LAW) AND THE ACKNOWLEDGMENTS MUST BE ATTACHED TO THIS BOND. The Faithful Performance Bond must be executed by a corporate surety on this form. No substitutions will be accepted. If an attorney-in-fact signs for the surety, an acknowledged statement from the surety appointing and empowering the attorney-in-fact to execute such bonds in such amounts on behalf of the surety must accompany the Faithful Performance Bond.

ADDRESS OF COUNTY FOR NOTICES TO BE SENT:

**County of Inyo
224 North Edwards Street, P.O. Box N
Independence, California 93526**

INYO COUNTY COURTHOUSE COMPLEX RE-ROOFING PROJECT

LABOR AND MATERIALS PAYMENT BOND
(100% OF CONTRACT AMOUNT)

KNOW ALL MEN BY THESE PRESENTS, that _____
(Name of Contractor)

_____ as Principal, hereinafter called CONTRACTOR,

and _____
(Name of Corporate Surety)

as Corporate Surety, hereinafter called SURETY, are held and firmly bound unto the County of Inyo as Obligee, hereinafter called COUNTY, for the use and benefit of claimants as hereinafter defined in the amount of _____
_____ Dollars (\$_____)

for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assignees, jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written contract dated _____, 20 ____, entered into an agreement with County for the construction of the **INYO COUNTY COURTHOUSE COMPLEX RE-ROOFING PROJECT** (hereinafter referred to as "PROJECT"), to be constructed in accordance with the terms and conditions set forth in the contract for the **INYO COUNTY COURTHOUSE COMPLEX RE-ROOFING PROJECT** which contract is by reference incorporated herein, and is hereinafter referred to as the "CONTRACT".

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Contractor shall promptly make payment to all claimants as hereinafter defined, for all labor and material used or reasonably required for use in the performance of the Contract, then this obligation shall be void; otherwise, it shall remain in full force and effect, subject, however, to the following conditions.

1. A claimant is defined as one having a direct contract with the Contractor, or with a Subcontractor of the Contractor, for labor, materials, or both, used or reasonably required for use in the performance of the Contract. Labor and material is construed to include, but not limited to, that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental of equipment directly applicable to the Contract.

2. The above named Contractor and Surety hereby jointly agree with the County that every claimant as herein defined, who has not been paid in full before the expiration of a period of ninety (90) calendar days after the date on which the last of such claimant's work or labor was done or performed, or materials were furnished by such claimant, may sue on this Bond for the benefit of such claimant, prosecute the suit to final judgment for such sum or sums as may be justly due claimant, and have execution thereon. The County shall not be liable for the payment of any costs or expenses of any such suit.

3. No suit or action shall be commenced hereunder by any claimant:

a) Unless claimant, other than one having a direct contract with the Contractor, shall have given written notice to any two of the following: the Contractor, the County, or the Surety above named, within ninety (90) calendar days after such claimant did or performed the last of the work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the work or labor was done or performed. Such notice shall be served by mailing the same by registered mail or certified mail, postage prepaid, in any envelope addressed to the Contractor, County, or Surety, at the address below, or at any place where an office is regularly maintained for the transaction of their business. Such notice may also be served in the state in which the aforesaid project is located, save that such service need not be made by a public officer.

b) After the expiration of one (1) year following the date on which County accepted the work done under the Contract. However, if any limitation embodied in this Bond is prohibited by any law controlling the construction hereof, such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.

c) Other than in a State Court of competent jurisdiction in and for the County or other political subdivision of the state in which the Project, or any part thereof, is situated, and not elsewhere.

4. The amount of this Bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics' liens, which may be filed or recorded against said Project, whether or not claim for the amount of such lien be presented under and against this Bond.

Signed and sealed this _____ day of _____, 20 ____.

(Name of Contractor)

By: _____
(Signature)

(SEAL)

(Title of Authorized Person)

(Address for Notices to be Sent)

(Name of Corporate Surety)

By: _____
(Signature)

(SEAL)

(Title of Authorized Person)

(Address for Notices to be Sent)

NOTE:

THE SIGNATURES OF THE CONTRACTOR AND THE SURETY MUST BE ACKNOWLEDGED BEFORE A NOTARY PUBLIC (OR OTHER OFFICER AUTHORIZED UNDER CALIFORNIA LAW). The Labor and Materials Payment Bond must be executed by a corporate surety on this form. No substitutions will be accepted. If an attorney-in-fact signs for the surety, an acknowledged statement from the surety appointing and empowering the attorney-in-fact to execute such bonds in such amounts on behalf of the surety, must accompany the Labor and Materials Payment Bond.

ADDRESS OF COUNTY FOR NOTICES TO BE SENT:

**County of Inyo
224 N. Edwards, P.O. Box N
Independence, California 93526**

SPECIAL PROVISIONS

FOR

INYO COUNTY COURTHOUSE COMPLEX

RE-ROOFING PROJECT

COUNTY OF INYO
DEPARTMENT OF PUBLIC WORKS

SPECIFICATIONS APPROVAL

INYO COUNTY COURTHOUSE COMPLEX RE-ROOFING PROJECT

**These Special Provisions have been prepared by the Inyo County Public Works
Department under the direction of the undersigned and are approved for the work
contemplated herein.**

Bernard T. Pedersen

Director of Public Works



9/7/10

7-13-2010

Specifications Approval Date

INYO COUNTY COURTHOUSE COMPLEX RE-ROOFING PROJECT

SPECIAL PROVISIONS

General Work Description: General Work Description: This re-roofing project will include complete removal of the built-up roofing system on the Courthouse Annex building, including asbestos abatement, and the replacement of that roofing system with a new built-up roofing system.

The work may also includes the application of an elastomeric coating on the Inyo County Administration building located at 224 N. Edwards St. Independence. The elastomeric coating installation is a additive bid item. The buildings are located in Independence, California.

In addition, this project will include the installation of cant strips and flashing where necessary. Further, if moisture has saturated the existing deck surface, some replacement of the deck may be required. The re-roofing of these facilities is more particularly described in the Plans and Project Special Provisions. All of the work shall be in accordance with all applicable Federal, State, and local laws, codes, and regulations. The County will provide 3rd party monitoring of the asbestos abatement.

SECTION 40 SMALL BUSINESS ENTERPRISE PARTICIPATION

This project is subject to Inyo County Ordinance No. 1156, *An Ordinance of the Board of Supervisors of the County of Inyo, State of California, Adding Chapter 6.06 to the Inyo County Code to Provide Contacting Preferences for Local and Small Businesses*, which is included in the bid package.

Take necessary and reasonable steps to ensure that small business enterprises (SBEs) have opportunity to participate in the contract.

Make work available to SBEs and select work parts consistent with available SBE subcontractors and suppliers.

To qualify for the SBE contracting preference as described in Inyo County Ordinance No. 1156 (Ordinance No. 1156), Section 6.06.040, the bidder must show that he/she is a SBE as described in Ordinance No. 1156 Section 6.06.020.

To qualify for the SBE subcontracting preference as described in Ordinance No. 1156, Section 6.06.050, the bidder must show that the subcontractor(s) proposed for work on the project is/are a SBE(s) as described in Ordinance No. 1156 Section 6.06.020.

It is the bidders responsibility to verify that the SBE(s) is certified as a small business enterprise at the date of bid opening.

SBE Contracting Preference Commitment Submittal

If the bidder is claiming the SBE contracting preference, submit SBE information on the “Small Business Enterprise Commitment (Construction Contracts),” form included in the Bid Package. If the bidder is not claiming the SBE contracting preference remove the form from the Bid Package before submitting your bid.

Submit written confirmation from each SBE subcontractor stating that it is participating in the contract. Include confirmation with the SBE Commitment form. A copy of a SBE subcontractor’s quote will serve as written confirmation that the SBE is participating in the contract.

SUBCONTRACTOR AND SBE RECORDS. The Contractor shall maintain records showing the name and business address of each first-tier subcontractor. The records shall also show the name and business address of every SBE subcontractor, SBE vendor of materials and SBE trucking company, regardless of tier. The records shall show the date of payment and the total dollar figure paid to all of these firms. SBE prime contractors shall also show the date of work performed by their own forces along with the corresponding dollar value of the work.

Upon completion of the contract, a summary of these records shall be prepared on “Final Report – Utilization of Small Business Enterprises - (SBE), First-Tier Subcontractors,” certified correct by the Contractor or his authorized representative, and submitted to the Engineer. The form shall be furnished to the Engineer within 90 days from the date of contract acceptance.

SECTION 700, “INSURANCE, DEFENSE AND INDEMNIFICATION”,
is amended to read as follows:

701 INSURANCE REQUIREMENTS FOR CONTRACTORS

Bidders’ attention is directed to the insurance requirements designated below. It is highly recommended that bidders confer with their respective insurance carriers or brokers to determine in advance of bid submission the availability of insurance certificates and endorsements as prescribed and provided herein. If an apparent low bidder fails to comply strictly with the insurance requirements, that bidder may be disqualified from award of the Contract.

Contractor shall procure and maintain, for the duration of the Contract, insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, his agents, representatives, employees or subcontractors. The cost of such insurance shall be included in the Contractor's bid.

The cost of such insurance shall be included in the Contractor’s bid.

702 MINIMUM SCOPE OF INSURANCE:

Coverage shall be at least as broad as:

1. Insurance Services Office Commercial General Liability coverage (occurrence Form CG 00 01) or Insurance Services Offices Form (CG 00 09 11 88 Owners and Contractors Protective Liability Coverage Form – Coverage for Operations of Designated Contractor).

2. Insurance Services Office Form Number CA 0001 covering Automobile Liability, code 1 (any auto).
3. Workers' Compensation Insurance as required by the State of California and Employer's Liability Insurance.
4. Builder's Risk (Course of Construction) insurance covering all risks of loss less policy exclusions.
5. Surety Bonds as described below.

703 MINIMUM LIMITS OF INSURANCE:

Contractor shall maintain limits of no less than:

1. General Liability (including operations, products and completed operations): \$1,000,000 per occurrence for bodily injury and property damage. If Commercial General Liability insurance or other form with a general aggregate limit is used, the general aggregate limit shall be \$2,000,000 higher.
2. Automobile Liability: \$1,000,000 per accident for bodily injury and property damage.
3. Workers Compensation: As required by the State of California.
4. Employer's Liability: \$1,000,000 each accident, \$1,000,000 policy limit bodily injury by disease, \$1,000,000 each employee bodily injury by disease.
5. Builder's Risk - Installation Floater: Completed value of the project with no coinsurance penalty provisions.

704 DEDUCTIBLES AND SELF-INSURED RETENTION:

Any deductibles or self-insured retention must be declared to and approved by the County. At the option of the County, either the insurer shall reduce or eliminate such deductibles or self-insured retention as respects the County, its officers, officials, employees and volunteers; or the Contractor shall provide a financial guarantee satisfactory to the County guaranteeing payment of losses and related investigations, claims administration, and defense expenses.

705 OTHER INSURANCE PROVISIONS:

The general liability and automobile liability policies are to contain, or be endorsed to contain the following provisions:

1. The County, its officers, officials, employees and volunteers are to be covered as insured with respect to liability arising out of automobiles owned, leased, hired or borrowed by or on behalf of the Contractor; and with respect to liability arising out of work or operations performed by or on behalf of the Contractor including materials, parts or equipment furnished in connection with

such work or operations. General liability coverage can be provided in the form of an endorsement to the Contractor's insurance, or as a separate owner's policy.

2. For any claims related to this project, the Contractor's insurance coverage shall be primary insurance as respects the County, its officers, officials, employees, and volunteers. Any insurance or self-insurance maintained by the County, its officers, officials, employees or volunteers shall be in excess of the Contractor's insurance and shall not contribute with it.
3. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be canceled by either party, except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to the County.

Coverages shall not extend to any indemnity coverage for the active negligence of the additional insured in any case where an agreement to indemnify the additional insured would be invalid under Subdivision (b) of Section 2782 of the Civil Code.

706 ACCEPTABILITY OF INSURERS:

Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A:VII, unless otherwise acceptable to the County. Exceptions may be made for the State Compensation Insurance Fund when not specifically rated.

707 VERIFICATION OF COVERAGES:

Contractor shall furnish the County with original endorsements effecting coverages required by this clause. The endorsements are to be signed by a person authorized by that insurer to bind coverage on its behalf. The endorsements should be on forms provided by the County, unless the insurance company will not use the County's forms. All endorsements are to be received and approved by the County before work commences. However, failure to do so shall not operate as a waiver of these insurance requirements. As an alternate to the County's forms, the Contractor's insurer may provide complete copies of all required insurance policies, including endorsements effecting the coverage required by these specifications.

708 SUBCONTRACTORS:

Contractor shall require and verify that all subcontractors maintain insurance meeting all the requirements stated herein.

709 BUILDERS RISK (Course of construction Insurance)

Contractor may submit evidence of Builders Risk in the form of Course of Construction coverage. Such coverage shall contain the following provision:

- a. The entity shall be named as loss payee as their interest may appear.

If the project does not involve new, or major reconstruction, at the option of the County, an Installation Floater may be acceptable. For such projects, a property installation floater shall be obtained that provide for the improvements, remodel, modifications, alteration, conversion, or

adjustment to the existing buildings, structures, processes, machinery and equipment. The Property Installation Floater shall provide property damage coverage for any building, structure, machinery or equipment damaged, impaired, broken or destroyed during the performance of the Work, including during transit, installation and testing at the County's site.

710 DEFENSE AND INDEMNIFICATION:

Contractor shall defend, indemnify and hold harmless the County, its agents, officers, and employees from and against all claims, damages, losses, judgments, liabilities, expenses and any other costs, including litigation costs and attorney's fees, arising out of, resulting from, or in connection with the performance of this Contract by Contractor, or Contractor's agents, officers, employees or subcontractors. Contractor's obligation to defend, indemnify and hold the County, its agents, officers, and employees harmless applies to any actual or alleged personal injury, death, or damage or destruction to tangible or intangible property, including the loss of use. Excepting only those liabilities, claims, and damages caused solely and exclusively by the active fault or negligence of the County, the Engineer, or their officers, agents, or employees, Contractor's obligation under this paragraph extends to any claim, damage, loss, liability, expense or any other cost which is caused in whole or in part by any act or omission of the Contractor, its agents, employees, subcontractors, suppliers, or anyone directly or indirectly employed by any of them, or anyone for whose acts or omissions any of them may be liable. Contractor's obligation to defend, indemnify and hold the County, its agents, officers, and employees harmless under the provisions of this paragraph is not limited to or restricted by any requirement in this Contract for Contractor to procure and maintain a policy of insurance.

711 CONTRACTOR'S LIABILITY NOT LIMITED BY INSURANCE:

Nothing contained in the insurance requirements is to be construed as limiting the liability of the Contractor or the Contractor's sureties.

712 CLAIMS MADE/POLLUTION LEGAL

If General Liability are written on a claims-made form:

1. The retroactive date must be shown, and must be before the date of the contract or the beginning of contract work.
2. Insurance must be maintained and evidence of insurance must be provided for at least five (5) years after completion of contract work.
3. If coverage is cancelled or non-renewed, and not replaced with another claims-made policy form with a retroactive date prior to the contract effective date, the Contractor must purchase extended reporting coverage for a minimum of five (5) years after the completion of the contract work.
4. A copy of the claims reporting requirements must be submitted to the County for review.

713 WAIVER OF SUBROGATION

Contractor hereby agrees to waive subrogation which any insurer of Contractor may acquire from Contractor by virtue of payments of any loss. Contractor agrees to obtain any endorsements that may be necessary to effect this waiver of subrogation. The Workers' Compensation policy shall be endorsed with a waiver of subrogation in favor of the County for all work performed by the Contractor, its employees and subcontractors.

714 SURETY BONDS

The Contractor shall provide the following Surety Bonds

1. A bid Bond.
2. A performance Bond
3. A payment Bond.

SECTION 1017, "Prosecution and PROGRESS", is amended to read as follows:

SECTION 1017.07 - "TIME FOR COMPLETION AND PAYMENTS TO COUNTY FOR DELAY".

SECTION 1017.07.1 - TIME FOR COMPLETION

The Contractor shall complete all designated portions of the work required to be provided pursuant to the contract no later than **(30) Calendar days** from and including the Starting Date, plus such additional days, if any, which are expressly granted as extensions of time by Contract Change Orders signed and issued by the County. Such total number of days shall be referred to herein as the "Time for Completion".

Failure of the Contractor to perform any covenant or condition contained in the Contract Documents within the time period specified shall constitute material breach of this Contract entitling the County to terminate the Contract unless the Contractor applies for, and receives, an extension of time in accordance with the procedures set forth in Section 1017.09 SS, "EXTENSION OF TIME."

SECTION 1017.07.2 - LIQUIDATED DAMAGES

In accordance with Government Code Section 53069.85, the Contractor shall pay to the County of Inyo, liquidated damages in the amounts of:

\$100.00 per day for each and every calendar day delay in finishing work in excess of the Time for Completion specified.

The County shall be entitled to deduct the amounts of liquidated damages from any payment otherwise due to the Contractor.

DIVISION 10

ASBESTOS ABATEMENT

Section 1200 PROJECT MEETINGS

1200.01 PRE-ABATEMENT MEETING

The successful Bidder shall attend a pre-Abatement meeting. Attending this meeting will be representatives of the County and the Contractor and supervisory personnel who will provide on-site direction of the abatement activities. The Contractor's Air Sampling Professional shall also attend the meeting. The meeting will cover the procedures and process to be followed during the abatement. The location of this meeting will be at the offices of the Inyo County Department of Public Works in Independence, CA. The time and date will be provided in written notice to the Contractor prior to the commencement of work and after the Contractor submits the signed Contract and other documents as required.

2081.0 PROJECT IDENTIFICATION / DESCRIPTION OF ACM SPECIFICATIONS

Inyo County Department of Public Works
Post Office Drawer Q
168 North Edwards Street
Independence, California 93526

BEF Environmental #: 2010-0012
Inyo County Courthouse Complex Re-roofing Project

This specification covers primary and secondary efforts necessary for the removal and disposal of asbestos-containing materials (ACM) as indicated in Section 2081.1. Also associated with the removal of these materials is the installation of temporary systems, and the decontamination, removal/demolition, and disposal of specified building construction materials/components as specified herein or as deemed appropriate by the County (Owner) and/or the Consultant, retained by the County to oversee this project, to properly access the ACM to be removed and disposed of. The purpose of this Project to remove asbestos-containing materials from the areas identified by Owner according to the procedures outlined.

2081.1 SUMMARY OF WORK

2081.1.1 Scope of Work

The primary and general intent of this abatement project is the removal and disposal of asbestos containing materials impacted by re-roofing activities. By submitting a bid, the contractor warrants his intent to conduct the above said work properly using qualified personnel, employed by licensed contractors. It is the general intent of this

project to remove and dispose of the ACM as identified below and in the attached survey report.

Material Description	Material Location	Estimated Quantity
Roof Mastic	Various Locations	500 square feet
Roofing Base sheet	Entire roof	10,425 square feet

2081.1.2 Asbestos-Containing Materials

All ACM, debris, and residue shall be removed from the areas defined in the summary of work and the Appendix. The referenced materials and locations shown are intended to assist the Contractor in the initial identification of asbestos-containing materials within each work area. The Contractor is responsible for assessing the type, extent and quantity of asbestos-containing material, debris, and residue to be removed in each area of the project. All asbestos waste shall be transported to and disposed of at an owner and EPA-approved landfill. Non-friable materials will be manifested and transported as non-hazardous asbestos containing waste. Contractor shall submit name and qualifications of waste hauler to Owner for approval.

2081.1.3 Authority to Stop Job Activities

All asbestos abatement efforts shall be conducted using good work practices to prevent the release of asbestos fibers outside of the containment area. If unacceptable work practices are followed, the Consultant shall direct the Contractor to make the necessary corrections. If area fiber concentration levels (no personal samples) in the workplace exceed 0.1 f/cc measured by PCM, this will generally be viewed as an indication of poor work practices unless it is a direct result of design or external circumstances anticipated in the project specifications. If appropriate corrections are not made, or if an immediate threat exists that fibers could be released outside the work area, abatement work shall be stopped. The decision to stop work shall be made jointly by the Consultant and the Owner's representative.

Loss or damage due to a stop-work order issued by the Owner's representative shall be the responsibility of the Contractor.

2081.1.4 Alternate Procedures

Alternative procedures shall provide equivalent or greater protection than the procedures they replace. In addition, any alternative procedure must be approved in writing by Owner or Owner's Representative prior to implementation.

2081.1.5 Unacceptable Methods, Procedures, and Results

- (a) In connection with this project "unacceptable methods, procedures, and results" means methods, procedures, and results other than:
 - (1) Those recommended by the manufacturer of approved products and materials.

- (2) Those required by pertinent regulations of governmental agencies having jurisdiction.
- (3) Those requirements set forth by these specifications.
- (4) Those agreed upon (in writing), via approved change orders.

2081.1.6 Progression of Work

The general intent of the progression of work is to minimize disturbance to building occupants. Therefore, the Owner reserves the right to change the progression of work at any time. This may include a temporary stoppage of work. Schedule will be discussed at the jobwalk and must be adhered to unless further instructed by Owner and/or Consultant.

2081.1.7 Summary by References

Work of the Contract can be summarized by reference to the Contract, General Conditions, Supplementary Conditions, Specification Sections, Drawings/Diagrams, addenda and modifications to the Contract Documents issued subsequent to the initial printing of this project manual and including but not limited to printed material referenced by any of these.

Work of the Contract may be unavoidably affected or influenced by governing regulations, natural phenomenon including weather conditions and other forces outside the contract documents.

2081.2 PROJECT COORDINATION

2081.2.1 General Superintendent

- (a) The Contractor shall provide a full-time General Superintendent who is 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 Contractor's Representative responsible for compliance with all applicable federal, state and local regulations, particularly those relating to asbestos-containing materials.**
- (b) The General Superintendent must have successfully completed a course at an EPA Training Center or equivalent certificate course in asbestos abatement procedures, and have had a minimum of two (2) years on-the-job training in asbestos abatement procedures. Copy of current training certificate shall be submitted with the bid.
- (c) The General Superintendent is to be a Competent Person as required by OSHA in 29 CFR 1926.1101.
- (d) The General Superintendent shall be accredited as an Asbestos Abatement Supervisor in accordance with AHERA regulation 40 CFR Part 763, Subpart E, Appendix C.

2081.2.2 **Emergency Plan**

The Contractor shall be responsible for developing an Emergency Fire, Safety, and Evacuation Plan for this project. This will include, but not be limited to, procedures to be used in the event of emergencies such as fire, medical problems, loss of power, loss of pressure differential, breach of containment, waste removal spills, water leaks, etc. The Emergency Plan will describe how (1) impact on the abatement project and the building will be minimized and (2) the actions to be taken to control or limit the release of asbestos fibers. No requirement in this specification shall impede safe exiting or providing of adequate medical attention in the event of an emergency. Plans shall be submitted at pre-construction conference.

2081.2.3 **Information Provided by Owner or Owner's Representative**

Owner Shall provide the following information to the Contractor at the pre- Abatement meeting, or prior to that meeting if requested by the Contractor:

- (a) Results of pre-abatement air sampling (if available), including location of samples, equipment utilized, and method of analysis.
- (b) Location of access, shut-down, and protection requirements of equipment and systems in the work area.
- (c) Site security requirements needed to protect work efforts and equipment.

2081.2.4 **Entry Log for Work Area**

Contractor is responsible for enforcing the timely and correct log entries in the "Daily Sign-in/Sign-out & Visitors log". This form must be available at all times in the clean room of each work area.

2081.2.5 **Fire Watch**

A Fire Watch shall be provided by the Contractor to be present at all times. If work is in progress, the Contractor's senior on-site representative (superintendent or foreman) will be responsible for the fire watch.

2081.3 **DEFINITIONS**

Definitions contained in this section are not necessarily complete, but are general to the extent that they are not defined more explicitly elsewhere in the Contract Documents. However, no implied meaning shall be interpreted to extend Owner's Representative's responsibility into the Contractor's area of construction supervision.

Abatement: Procedures to control fiber release from asbestos-containing materials.

Accredited PCM Laboratory: A laboratory which participates in the Proficiency Analytical Testing (PAT) program to count asbestos fibers with at least one person who is a qualified participant in a Quality Assurance Program meeting the requirements of 29 CFR 1926.1101.

ACGIH: American Conference of Governmental
Industrial Hygienists
6500 Glenway Avenue, Building D-5
Cincinnati, Ohio 45211

AHERA: The Asbestos Hazard Emergency Response Act.

AIHA: American Industrial Hygiene Association
475 Wolf Ledges Parkway
Akron, Ohio 44311

Airlock: A system for permitting ingress and egress with minimum air movement between a contaminated area and an uncontaminated area.

Air Monitoring: The process of measuring the fiber content of a known volume of air collected during a specific period of time.

Air Monitoring Professional: The professional contracted or employed by the Contractor to supervise and/or conduct personal air monitoring and analysis.

Amended Water: Water to which a chemical wetting agent or surfactant has been added.

ANSI: American National Standards Institute
1430 Broadway
New York, New York 10018

AQMD: See GREAT BASIN UNIFIED APCD

Asbestos: The asbestiform varieties of serpentine (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite (amosite), anthophyllite, and actinolite or tremolite.

Asbestos-Containing Material (ACM): Material composed of Asbestos of any type and in an amount greater than one tenth of one percent by weight, either alone or mixed with other fibrous or non-fibrous materials.

Asbestos-Containing Waste Material: Any waste generated by the disturbance or removal of asbestos-containing material, containing greater than one percent asbestos by weight.

ASTM: American Society for Testing and Materials
1916 Race Street
Philadelphia, PA 19103

Authorized Visitor: Any designated representatives of Owner or their representative and/or a representative of a regulatory or other agency having jurisdiction over the project, and/or any person authorized in writing by Owner or their Representative as a visitor.

Building Owner: Any authorized representative of County of Inyo, Department of Public Works.

Certified Industrial Hygienist (C.I.H.): An industrial hygienist holding a current certification in Comprehensive Practice by the American Board of Industrial Hygiene.

Class I Non-friable Asbestos-Containing Material: non-friable material containing more than one percent (1%) asbestos by area or by weight and that can potentially be broken, crumbled, pulverized, or reduced to powder in the course of demolition or renovation activities. Non-friable asbestos-containing material may become friable when physically worn or disturbed by mechanical force.

Class II Non-friable Asbestos-containing Material: all other asbestos-containing material that is neither friable nor Class I non-friable.

Clean Room: An uncontaminated area or room, which is a part of the Worker Decontamination Enclosure System with provisions for storage of worker's street clothes and clean protective equipment.

Clearance Air Monitoring: The process of measuring airborne asbestos concentration to determine if an abated area is sufficiently clean to allow re-occupancy.

Competent Person: A person trained in all aspects of asbestos, tremolite, anthophyllite, or actinolite abatement; the contents of OSHA regulation 29 CFR 1926.1101; the identification of asbestos, tremolite, anthophyllite, or actinolite and their removal procedures; and other practices for reducing the hazard. Such training shall be obtained in a comprehensive course, such as a course conducted by an EPA Asbestos Training Center, or an equivalent course.

Containment Work Area: Work Area which has been sealed, plasticized, and equipped with both Worker Decontamination and Waste and Equipment Decontamination/Pass-Out Enclosure Systems.

Contractor (or Abatement Contractor): The individual and/or business with whom Owner or their Representative arranges to perform the asbestos abatement.

Curtained Doorway: A device to allow ingress or egress from one room to another while permitting minimal one-way air movement.

Demolition: The wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations.

Encapsulant: A liquid material which, when applied to asbestos-containing material, controls the possible release of asbestos fibers from the material.

Encapsulation: The application of an Encapsulant to Asbestos-Containing Materials to control the release of asbestos fibers into the air.

Enclosure: The construction of an airtight, impermeable, permanent barrier around Asbestos-Containing Material to control the release of asbestos fibers into the air.

EPA: U.S. Environmental Protection Agency, Region IX
215 Fremont Street
San Francisco, CA 94105

Equipment Room: A contaminated area or room which is part of the Worker Decontamination Enclosure System with provisions for storage of contaminated clothing and equipment; also referred to as the dirty room.

Facility: Any institutional, commercial or industrial structure, installation or building.

Facility Component: Any pipe, duct, boiler, tank, reactor, turbine or furnace at or in a facility, or any structural member of a facility.

Fixed Object: A piece of equipment or furniture in the Work Area which cannot be removed from the Work Area or has been specified to remain in the Work Area during abatement.

Friable Asbestos-Containing Material: Material which when dry can be broken, crumbled, pulverized, or reduced to powder by hand pressure and that contains more than one percent (1%) asbestos by area or by weight as determined by the procedure in "Methods of Analysis for Bulk Samples" (refer to Rule 1403 paragraph (g)).

Glovebag Technique: A method for removing friable Asbestos-Containing Material from HVAC ducts, short piping runs, valves, joints, elbows, and other non-planar surfaces. The glovebag is constructed and installed in such a manner that it surrounds the object or material to be removed and contains all asbestos fibers released during the process.

Great Basin Unified APCD: Great Basin Unified Air Pollution Control District, the agency designated to enforce NESHAPs regulations in Inyo County.

Great Basin Unified Air Pollution Control District
157 Short Street, Suite 6
Bishop, CA 93514-3537

HEPA Filter: A high efficiency particulate air filter capable of removing particles 0.3 microns or larger in diameter with 99.97 percent efficiency.

HEPA Vacuum: A vacuum system equipped with HEPA filtration.

Holding Area: A secured area adjacent to the Waste and Equipment Decontamination/Pass-Out Enclosure System located in an uncontaminated area, used for temporary storage of waste prior to disposal.

Limit of Detection: The number of fibers counted below which accurate analysis cannot be made. For air monitoring by PCM, 5.5 fibers per 100 fields; TEM, one fiber per 10 grid squares. Represented as < *** (example: < 0.04 f/cc), when converted to airborne fiber concentration.

Limited-Containment Work Area: An isolated or controlled access Work Area which has been sealed, but not fully plasticized and is equipped with a Worker Decontamination Enclosure System and an Air Pressure Differential System.

Movable Object: A piece of equipment or furniture in the Work Area which can be removed from the Work Area.

MSHA: The Mine Safety and Health Administration
4105 Wilson Blvd.
Arlington, Virginia 22203

NESHAPS: The National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61).

NIOSH: The National Institute for Occupational
Safety and Health
CDC - NIOSH
Building J, N.E., Room 3007
Atlanta, GA 30333

On-Site Sample Evaluation: On-site evaluation (counting) by a person with a current satisfactory listing in the American Industrial Hygiene Association Asbestos Analysis Registry or a person who is a participant in a quality assurance program meeting the requirements of 29 CFR 1926.1101.

OSHA: The Occupational Safety and
Health Administration
200 Constitution Avenue
Washington, D.C. 20210

Outside Air: The air outside buildings and structures or the air outside a Containment Work Area where Abatement is being performed.

Owner's Representative: An individual qualified by virtue of experience and education, and designated by the Owner as its representative. Individual may include owner's employee, agent, or consultant, including CTL.

Phase Contrast Microscopy (PCM): Optical analytical method for determining fiber concentrations in air. The acceptable method is the NIOSH Method 7400, specified in the "NIOSH Method of Analytical Methods".

Physician's Written Opinion: A written opinion from the examining physician as to whether an employee has any detected medical conditions that would place the employee at an increased risk of material health impairment from exposure to

asbestos; any recommended limitations on the employee or on the use of personal protective equipment such as respirators; and a statement that the employee has been informed by the physician of the results of the medical examination and of any medical conditions that may result from asbestos exposure.

Plasticize: To cover floors, ceilings and walls with plastic sheeting (polyethylene film) as herein specified.

Polarized Light Microscopy (PLM): An optical method used to analyze bulk or wipe samples that uses polarized light and may include dispersion staining.

Removal: The stripping of any Asbestos-Containing Materials from surfaces or components of a facility.

Renovation: Altering in any way one or more facility components. Operations in which load-supporting structural members are wrecked or taken out are excluded.

Seal (Sealing): The formation of an air tight connection between Plasticized Work Areas and the outside environment.

Shower Room: A room between the Clean Room and the Equipment Room in the Worker Decontamination Enclosure System with hot and cold or warm running water controllable at the tap and suitably arranged for complete showering during decontamination.

Staging Area: An area adjacent to the Waste and Equipment Decontamination/Pass-Out Enclosure System, where containerized Asbestos-Containing Waste has been placed prior to removal from the Work Area, with facilities to clean the container holding the waste before it is passed out through the Waste and Equipment Decontamination/Pass-Out Enclosure System.

Strip: To take off Friable Asbestos materials from any part of the facility.

Structural Member: Any load-supporting member of a facility (such as a beam or a load-supporting wall).

Surfactant: A chemical-wetting agent added to water in order to improve penetration.

Time Weighted Average (TWA): The TWA for Asbestos is an eight-hour time weighted average airborne concentration of fibers equal to or longer than five (5) micrometers. The TWA is expressed in terms of the number of these fibers per cubic centimeter of air.

Transmission Electron Microscopy (TEM): A method of analysis for air monitoring or wipe sampling that uses a transmitted electron beam to identify and/or count fibers.

Type "C" Respirator: A pressure demand, supplied-air respirator.

UL: Underwriters Laboratories
333 Tvingften Road
Norfolk, Illinois 60062

Ventilation System: A portable exhaust system equipped with HEPA filtration and capable of maintaining a constant low velocity air flow into contaminated areas from adjacent uncontaminated areas.

Visible Debris: Any (particulate) asbestos material or residue that is visually detectable on a surface without the aid of instruments.

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.

Waste and Equipment Decontamination/Pass-Out Enclosure System: A decontamination system used for transferring containerized waste or equipment from inside to outside of the Work Area.

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 water and afterwards thoroughly decontaminated or disposed of as Asbestos-Contaminated Waste Material.

Wipe Sampling: A sampling method used to determine if Asbestos is present on surfaces. Samples are collected by pressing an adhesive material onto substrate surfaces or by gently wiping a mixed cellulose ester filter across the surfaces. Analysis is by Polarized Light or Electron Microscopy.

Work Area: Designated rooms, spaces, or areas of the project in which Asbestos Abatement actions are to be undertaken or which may become contaminated as a result of such abatement actions.

Worker Decontamination Enclosure System: A decontamination system consisting of a Clean Room, a Shower Room, and an Equipment Room separated from each other and from the Containment Work Area or Limited-Containment Work Area by Curtained Doorways and Airlocks, connected directly to the Work Area.

2081.4 CODES, REGULATIONS, & STANDARDS

Applicable Standards and Guidelines

- (a) General Requirements: All work under this contract, and any other trade work done in conjunction with the Abatement Project, shall be done in strict accordance with all applicable Federal, State and Local regulations, standards and codes governing asbestos abatement, transportation, and disposal.

- (b) The most recent edition of any relevant regulation, standard, document or code shall be in effect. Where conflict among the requirements or with these specifications exists, the most stringent requirements shall be used.

Contractor Responsibility

The Contractor shall assume full responsibility and liability for 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.

Notification

Abatement Contractor shall make all necessary Great Basin Unified APCD, State and Local Notifications in a timely and proper manner.

Other Specific Requirements

Where requirements are in conflict or overlapping exists, most stringent requirements apply. Specific requirements include but are not necessarily limited to the following:

- (a) Occupational Safety and Health Administration (OSHA):

Title 29 Code of Federal Regulations Section 1910.134 -Respiratory Protection.

Title 29 Code of Federal Regulations Part 1926 - Construction Industry.

Title 29 Code of Federal Regulations Section 1910.20 -Access to Employee Exposure and Medical Records.

Title 29 Code of Federal Regulations Section 1910.1200 -Hazard Communication.

Title 29 Code of Federal Regulations Section 1926.1101 -Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite; Final Rule (October 11, 1994).

- (b) Environmental Protection Agency (EPA):

Title 40 Code of Federal Regulations Part 61 Subparts A and M (Revised Subpart B) - National Emission Standard for Asbestos.

Title 40 Code Of Federal Regulations Part 763, "Asbestos-Containing Materials in Schools; Final Rule and Notice (for institutions under the guidelines of the "Asbestos Hazard Emergency Response Act" (AHERA))".

(c) Department of Transportation (DOT):

Title 49 Code of Federal Regulations Part 177.844 - Carriage by Public Highway.

Title 49 Code of Federal Regulations Part 173.1090 -Shippers - General Requirements for Shipments and Packaging.

State of California Requirements

The Contractor shall be required to adhere to asbestos abatement, transportation, and disposal requirements as mandated by the State of California. These will include, but not necessarily be limited to licensing, regulations, training, handling, and disposal requirements as shown in CCR 1529. The Contractor shall be required to notify the State of California of this project, and follow any specific requirements imposed by this state.

Scaffolding, Ladders, Platforms and Barricades

The Contractor shall comply with all standards, code, and regulation requirements for erection of structurally adequate scaffolding, ladders, platforms, and barricades, in order to prevent accidents and losses.

2081.5 SUBMITTALS

2081.5.1 Notification

Abatement Contractor shall notify in writing, in compliance with 40 CFR 61, Subpart M, Section 61.146, and General Industry Safety Orders, Title 8, California Administrative Code (CAC), Section 5208, the appropriate State DOHS Office for the area and Federal air pollution control agency responsible for the enforcement of the National Emission Standard for Asbestos at least ten days prior to the commencement of any on-site project activity. Provide Owner or their Representative with a copy of this notice.

2081.5.2 Prior to Commencement of Work

The Contractor shall provide the following submittals to the Owner's Representative seven days prior to the pre-construction meeting, unless specified otherwise in this Section or by Owner or their Representative. Piecemeal submittal of data is not acceptable and such submittals will be returned without review for correction.

- (a) The Contractor shall submit documentation satisfactory to the Owner's Representative that the Contractor's employees, including foremen, supervisors, and any other company personnel or agents who may be exposed to airborne asbestos fibers or who may be responsible for any aspects of abatement activities, have received adequate training that includes, at a minimum, information in Section 2081.6 of this document.

- (b) After each worker has been included in the Contractor's Respiratory Protection Program and completed the training program and medical examination, secure a fully executed copy of a Certificate of Worker's Acknowledgment.
- (c) The Contractor shall submit documentation from a physician that all employees or agents who may be exposed to airborne Asbestos in excess of the background level have been medically monitored to determine whether they are physically capable of working while wearing the respirator required without suffering adverse health effects. In addition, the Contractor shall document that his asbestos abatement personnel have received medical monitoring as required in 29 CFR 1926.1101. The documentation shall be in the form of a Physician's Written Opinion (see Article 2081.6.9).
- (e) The Contractor shall submit certification for all HEPA Vacuums, ventilation units, and other local exhaust ventilation equipment.
- (f) Whenever rental equipment is to be used in abatement areas, or to handle or transport Asbestos-Containing Waste Material, the Contractor shall submit to the rental agency a written notification concerning the intended use of the rental equipment. A copy of this written notification shall be submitted to the Owner's Representative.
- (g) The Contractor shall document NIOSH or MSHA approvals for all respiratory protective devices used on site. The Contractor shall include manufacturer certification of HEPA filtration capabilities for all cartridges and filters.
- (h) The Contractor shall submit to the Owner's Representative a written respiratory protection program meeting the requirements of 29 CFR 1910.134 (b) (d) (e) and (f), documentation that all employees using respirators having received the training specified in Section 2081.6, and documentation of respirator fit-testing for all Contractor employees and agents who must enter the Work Area wearing negative pressure respirators. This fit-testing shall be in accordance with procedures as detailed in 29 CFR 1926.1101.
- (i) The Contractor shall submit information for all the material and equipment he proposes to furnish for accomplishment of contract work. The submittal shall include manufacturer's name, trade name, catalog number, size, specification reference, and all other information necessary to establish contract compliance. For materials brought on-site by the Contractor that are considered as hazardous materials under 29 CFR 1910.1200, the Contractor shall submit Material Safety Data Sheets to the Owner's Representative. Two copies of each submittal shall be submitted, in one completely marked and coordinated package, for approval within ten (10) calendar days after award of contract and before executing any work.
- (j) The Contractor shall provide proof that his materials conform to the requirements and standards of organizations such as the American Society for

Testing Materials (ASTM), and the Underwriters Laboratories (UL). The label or listing of the specified organization will be acceptable evidence.

- (k) Where installation procedures or any part thereof are required to be in accordance with the recommendations of the manufacturer of the material being installed, the Contractor shall furnish printed copies of these recommendations to the Owner's Representative prior to installation.
- (l) The Contractor shall submit an emergency evacuation plan for the Owner's Representative's approval prior to the commencement of work. This plan shall include consideration of containment failure, fire, explosion, toxic atmospheres, electrical hazards, slips, trips and falls, confined spaces and heat related injury.
- (m) The Contractor shall submit written notification to EPA, OSHA, the local Air Quality Management District, and the local fire department of planned abatement activities. Copies of these notifications shall be provided to the Owner's Representative.
- (n) The Contractor shall verify that an EPA generator number has been obtained for the Asbestos-Containing Waste Material generated from the abatement project.
- (o) The Contractor shall submit a bar-chart type progress schedule. On the schedule, the Contractor shall indicate a time bar for each major category or unit of work to be performed at the site; these categories and units shall be properly sequenced and coordinated with other elements of work.
- (p) The Contractor shall submit an Initial Exposure Assessment in accordance with 29 CFR 1926.1101.
- (q) The Contractor shall submit a Negative Exposure Assessment in accordance with 29 CFR 1926.1101.
- (r) The Contractor shall submit names, address, contact person, and phone number for proposed licensed waste hauler and proposed landfill.
- (s) The Contractor shall submit information on the proposed location of secured dumpster(s).

2081.5.3 Submittals During Abatement Activities

Submittals described in this section may, at Owner or their Representative's discretion, be provided to the Owner's Representative rather than directly to Owner. The Contractor shall submit the following items on a daily or weekly basis as directed by Owner or their Representative:

- (a) Daily job progress reports detailing abatement, transportation, and disposal activities.

- (b) Daily copies of work site entry logbooks with information on worker and visitor access.
- (c) Daily logs documenting filter changes on respirators, HEPA vacuums, ventilation units, and other engineering controls.
- (d) Results of any material tests conducted during the Abatement, for use during the abatement activities.
- (e) Copies of California Uniform Hazardous Waste Manifest forms for all Asbestos-Containing Waste Material removed from the abatement site and transported to the disposal site.
- (f) Daily personal monitoring results, within 48 hours of sample collection.

2081.6 WORKER PROTECTION

2081.6.1 Training

Prior to commencement of abatement activities, all personnel who will be required to enter the Work Area or handle containerized Asbestos-Containing Materials must have received adequate training in accordance with this Section.

2081.6.2 Personnel Requiring Training

The Contractor shall provide training to all employees or agents who may be required to disturb or handle Asbestos-Containing Materials or Asbestos-Containing Waste Materials for abatement, transportation, disposal and auxiliary purposes, and to all supervisory personnel who may be involved in planning, execution or inspection of abatement projects.

2081.6.3 On-Site Training

The Contractor shall conduct and document, as required, special on-site training on equipment and procedures unique to this job site.

2081.6.4 Emergency Response and Evacuation

The Contractor shall provide and document training in emergency response and evacuation procedures.

2081.6.5 Minimum Training Information

The training provided by the Contractor shall provide at a minimum and in a language the individual is able to comprehend, information on the following topics:

- (a) The health hazards of Asbestos, including the nature of various asbestos-related diseases, routes of exposure, known dose-response relationships, the

synergistic relationship between asbestos exposure and cigarette smoking, latency periods for disease and health basis for standards. See Section 2081.5.

- (b) The physical characteristics of Asbestos including fiber size, aerodynamic properties, physical appearance, and use.
- (c) Employee personal protective equipment including the types and characteristics of respirator classes, limitations of respirators, proper selection, inspection, donning, use, maintenance and storage of respirators, field testing the face-piece-to-face seal (positive and negative pressure fitting tests), qualitative and quantitative fit-testing procedures, variations between laboratory and field fit factors, factors that affect respirator fit (e.g., facial hair), selection and use of disposable clothing, non-skid shoes, gloves, eye protection, and hard hats.
- (d) Medical monitoring requirements for workers including required and recommended tests, reasons for medical monitoring and employee access to records.
- (e) Air monitoring procedures and requirements for workers including description of equipment and procedures, reasons for monitoring, types of samples and current standards with recommended changes.
- (f) Work practices for asbestos abatement, transportation, and handling including purpose, proper construction and maintenance of air-tight plastic barriers, job set-up of Airlocks, Worker Decontamination Enclosure Systems and Waste and Equipment Decontamination/Pass-Out Enclosure Systems, posting of warning signs, engineering controls for electrical and ventilation system lockout, proper working techniques, waste clean-up, waste handling, storage and disposal procedures.
- (g) Personal hygiene including entry and exit procedures for the Work Area, use of showers and prohibition of eating, drinking, smoking and chewing in the Work Area.
- (h) Special safety hazards that may be encountered including electrical hazards, air contaminants (carbon monoxide, wetting agents, Encapsulants, materials from Building Owner or Owner's Representative's operation), fire and explosion hazards, scaffold and ladder hazards, slippery surfaces, confined spaces, heat stress, and noise.
- (i) The applicable OSHA and EPA standards.

2081.6.6 Training Documentation

The Contractor must document training by providing; date of training, training entity, course outline, and names and qualifications of trainers. Submit evidence (refer to Section 2081.5) that all workers have been trained, certified and accredited as required by state or local code or regulation. The submittals will include copies of AHERA-accredited training certificate for all proposed workers with the bid.

2081.6.7 Specific Training Requirements

For the purpose of this specification, EPA-approved state accreditation training program (AHERA), Asbestos NESHAP provisions 40 CFR Part 61.145, 61.146, 61.147, and 61.152; in California Rule 1403 Asbestos Emissions from Demolition/Renovation Activities, or an equivalent program, as approved by Owner, shall be required. Each employee as defined in 1560.1 and 1560.2 shall attend and possess a certificate of such training.

2081.6.8 Medical Monitoring

The Contractor shall provide medical monitoring to any employee or agent that may be exposed to asbestos in excess of background levels during any phase of the abatement project.

2081.6.9 Minimum Medical Monitoring Requirements

Medical monitoring provided by the Contractor shall include at a minimum:

- (a) A medical and work history with special emphasis directed to the pulmonary, cardiovascular, and gastrointestinal systems.
- (b) On initial examination, the standardized questionnaire (contained in 29 CFR 1926.1101 and, on annual examination, the abbreviated standardized questionnaire (contained in 29 CFR 1926.1101).
- (c) A physical examination directed to the pulmonary and gastrointestinal systems, including a chest roentgenogram to be administered at the discretion of the physician, and pulmonary function tests of forced vital capacity (FVC) and forced expiratory volume at one second (FEV1). Interpretation and classification of chest roentgenograms shall be conducted in accordance with 29 CFR 1926.1101.
- (d) Any other examinations or tests deemed necessary by the examining physician.

2081.6.10 Examination by a Physician

The Contractor shall require his employees to be evaluated by a physician to determine their capability to work safely while breathing through the added resistance of a respirator, carrying the extra weight of a respirator, or are psychologically able to wear a respirator.

2081.6.11 Protective Clothing

The Contractor shall provide for all workers and authorized visitors, one-piece disposable clothing including head, foot and full body protection in sufficient quantities and adequate sizes. Disposable briefs shall also be provided by the Contractor. At no time shall the Contractor's personnel be in public areas wearing protective clothing and/or respiratory protection, except as a part of disposal activities

in Section 2081.12. While outside the Work Area, the Contractor's personnel shall not wear coveralls or other clothing which is similar in appearance and color to the clothing used inside the Work Area.

2081.6.12 Miscellaneous Safety Equipment

The Contractor shall provide hard hats (meeting the requirements of ANSI Standard Z89.1-1981), protective eye wear (meeting the requirements of ANSI Standard Z87.1-1979), and disposable gloves to all workers. Safety shoes (meeting the requirements of ANSI Standard Z41.1-1967) may be required for some activities.

2081.6.13 Footwear

The Contractor shall provide non-skid, high-top rubber boots or other appropriate footwear to all abatement workers. Disposable clothing shall be adequately sealed to the footwear to prevent body contamination.

2081.6.14 Respirators

The Contractor shall provide all respiratory protection to workers in accordance with the submitted written respiratory protection program, which includes all items in 29 CFR 1910.134 (b) (1-11) and 29 CFR 1926.1101. The Contractor shall post a copy of this program in the Clean Room of the Worker Decontamination Enclosure System.

The Contractor shall 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 properly fitted respirator in the Work Area from the start of any operation which may cause airborne asbestos fibers until the Work Area is completely decontaminated. **Do not use single use, disposable or quarter face respirators.**

Requirements During Abatement

All abatement will be conducted with respiratory protection in full accordance with all regulatory requirements including but not limited to current OSHA regulations. The Contractor will be responsible for determining the appropriate level of respirator protection for the Contractor's employees. The Contractor and the Contractor's employees shall indemnify the consultant and Owner or their representative against any claims relating to respiratory protection.

Fit Testing

- (a) Workers shall perform positive and negative air pressure fit tests each time a respirator is put on, whenever the respirator design so permits.
- (b) The Contractor shall give workers a fit test in accordance with procedures detailed in 29 CFR 1926.1101 for all negative pressure respirators to be used on this abatement project.

- (c) The Contractor shall provide documentation of adequate respirator fit-tests to Owner's Representative.

Restrictions

The Contractor shall permit no one wearing a beard to put on a respirator and enter the Work Area. The Contractor shall not allow his workers to eat, drink, smoke, or chew gum or tobacco at the work site.

Additional Respirators Required for Authorized Visitors

The Contractor shall make available additional respirators (minimum of two (2) of each type) for Authorized Visitors, who may be required to enter the Work Area. The Contractor shall provide training on their donning at the work site for all persons whom Owner's Representative determines have not provided satisfactory documentation of prior training. The Contractor shall not provide anyone with a respirator without reasonable documentation that such person has been examined by a physician and been found medically fit to wear a respirator.

Personally Issued Respirators

The Contractor shall provide workers with personally issued respirators individually identified (marked with waterproof designations).

Minimum Level of Protection

In all cases, airborne asbestos levels within any abatement worker breathing zone shall not exceed 0.01 f/cc.

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 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.

Respirator Care and Maintenance

The Contractor shall dispose of used filter material at the end of each working day and replace it with new filter material. All respirators shall be cleaned and maintained daily. A record log, recording these procedures, shall be maintained on site. Refer to Section 2081.6.

2081.6.15 Certificate of Worker's Acknowledgment

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 a Certificate of Worker's Acknowledgment.

2081.6.16 Worker Protection, Special Equipment

Before beginning work with any material for which a Material Safety Data Sheet has been submitted provide workers with the required protective equipment (refer to Section 2081.6). Require that appropriate protective equipment be used at all times.

2081.7 AIR MONITORING BY OWNER'S REPRESENTATIVE

General Information

- (a) All of the samples taken in accordance with this Section will be area samples. The Owner's Representative will not collect personal samples on the Contractor's employees but may, at its option, obtain personal samples on the Owner's Representative employees.
- (b) The Contractor's exposure monitoring shall be performed under the supervision of an Air Sampling Professional.

Background Air Monitoring by the Owner's Representative

Prior to commencement of work (abatement) activities, the required background air samples will be collected throughout the building by the Owner's Representative to determine background airborne fiber concentrations. These samples will be analyzed on-site utilizing Phase Contrast Microscopy (PCM).

During Abatement

During the preparation, removal and clean-up activities, air samples will be collected by the Owner's Representative, both inside and outside of the abatement areas. These samples will be analyzed by PCM.

If air samples collected outside of the Work Area during abatement activities indicate airborne fiber concentrations greater than 0.1 fibers per cubic centimeter of air (f/cc) using the Phase Contrast Microscopy (PCM) analytical technique, or preliminary background/ambient levels (whichever is higher), the Contractor will be directed to halt work immediately. The Contractor shall immediately identify and remedy the problem at its source, at no additional cost to Owner.

Clearance Samples

The Owner's Representative will collect clearance samples to demonstrate the acceptability of each abated area for release in accordance with the sampling and analysis procedures given in Article 2081.11.2.

Abatement Air Monitoring by the Contractor

The Contractor shall be responsible for all personal exposure monitoring of his employees, as required by law. The Contractor's air monitoring procedures shall be conducted according to procedures defined in 29 CFR 1926.1101.

Discontinuation of Personal Monitoring

Personal monitoring shall be conducted during the entirety of the project.

Contractor Response Actions to the Owner's Representative and Contractor Monitoring Results

As directed, the Contractor shall take remedial action (e.g., wet cleaning, misting, repair of containment, etc.) to reduce fiber concentrations to acceptable levels.

Analysis of Samples Outside the Work Area by TEM

If, at any time, results of air samples taken outside the Work Area exceed 0.10 f/cc, the Contractor may request, and if such request is granted, the Contractor shall pay for analysis of samples by Transmission Electron Microscopy (TEM) to determine whether the actual asbestos fiber concentration is in excess of acceptable levels. See Section 2081.1

Fiber Levels Inside the Work Area

Asbestos fiber levels inside the Work Area shall not exceed 0.1 f/cc as determined by phase contrast microscopy (PCM). If such levels occur, the Contractor shall then take immediate action to reduce airborne fiber concentrations.

2081.8 MATERIALS AND EQUIPMENT

2081.8.1 General

- (a) Load equipment, tools, supplies, and necessary machinery into the buildings between the hours of 8:00 a.m. and 4:00 p.m.
- (b) The Contractor shall deliver all materials in original packages, containers or bundles bearing the name of the manufacturer and the brand name.

2081.8.2 Substitutions

Materials, equipment or methods shall not be substituted by the Contractor unless such substitution has been specifically approved in writing by Owner or their Representative. Review of all change requests will require 5 working days.

2081.8.3 Materials-General

All materials used for the construction and maintenance of containment barriers shall be fire resistant. The Contractor shall ensure that materials used on the project are truly fire resistant as represented. This will require acceptance of sealed boxes from responsible manufacturers. Submit manufacturer's certification. Materials shall be properly stored and adequately protected and carefully handled to prevent damage before and during installation. Contractor shall not use damaged, deteriorating or previously used materials. Damaged or defective items shall be replaced at no cost to Owner. Materials shall be essentially the standard cataloged products of manufacturers regularly engaged in production of such materials or equipment and shall be the manufacturer's latest standard design that complies with the specification requirements. Materials shall essentially duplicate items that have been in satisfactory commercial or industrial use at least two (2) years prior to bid openings. Polyethylene sheeting used for Worker Decontamination Enclosure Systems shall be opaque. The Contractor shall use 6-mil polyethylene disposal bags, pre-printed with labels as required by 40 CFR 61.152 (b) (i) (iv) or 29 CFR 1926.1101. The Contractor may use disposal drums made out of metal or fiberboard with locking ring tops. These drums shall not be reused. The Contractor shall use stick-on labels as per OSHA requirement 29 CFR 1926.1101 for disposal drums. The Contractor shall post warning signs as required by 29 CFR 1926.1101.

2081.8.4 Encapsulant

Foster brand 32-60 encapsulant or proven equal. Submit to Owner or their Representative documentation of any proposed substitute.

2081.8.5 Other Materials

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. The Contractor shall use a Surfactant (wetting agent) with a surface tension of twenty-nine (29) dynes/cm² as tested in its properly mixed concentration, using ASTM method D1331-56-"Surface and Interfacial Tension of Solutions of Surface Active Agents."

Polyethylene Sheet: flame retardant, 6.0 mil thick, clear, frosted, or black as indicated.

Duct Tape: Provide reinforced duct tape in 2" or 3" widths as indicated, with an adhesive which is formulated to stick aggressively to sheet polyethylene.

Spray Adhesives: Specific approval will be required for any spray adhesive proposed for use on this project. Consideration will be given only to adhesives certified as non-volatile. Supply MSDS sheets with material information.

Disposal Bags: Provide 6 mil thick leak-tight polyethylene bags labeled as required by Section 2081.12 Disposal of Asbestos Containing Waste Material.

Fiberboard Drums: Provide heavy-duty leak tight fiberboard drums with tight sealing locking metal tops.

2081.8.6 Equipment-Ventilation Units (NOT USED)

Use a sufficient quantity of ventilation units equipped with HEPA filtration and operated in accordance with ANSI 29.2-79 (local exhaust ventilation requirements) and with the U.S. EPA Guidance Document, Guidance for Controlling Friable Asbestos-Containing Materials in Buildings, Appendix J, EPA 560/5-85-024, to provide one Work Area air change every ten (10) minutes. Total air flow requirements will be calculated using the following formula:

$$\text{Total ft}^3/\text{min} = \frac{\text{Vol of Work Area (ft}^3\text{)}}{10 \text{ min}}$$

The number of units needed for the Abatement will be calculated using the following formula:

$$\text{No. of units needed} = \frac{\text{Total air flow needed (ft}^3/\text{min)}}{\text{Capacity of unit (ft}^3/\text{min)}}$$

The Contractor shall investigate and make sure that the electrical power supplied by Owner or their Representative is adequate to meet the electrical power demand of the ventilation units. If electrical power is insufficient, the Contractor shall notify Owner or their Representative. Provide evidence of permitting as required by local authority.

2081.8.7 Miscellaneous Equipment

- (a) The Contractor shall provide, as needed, a sufficient supply of scaffolds, ladders, lifts and hand tools (e.g. scrapers, wire cutters, nylon bristle brushes, utility knives, wire saws, etc.).
- (b) The Contractor shall provide sprayers with pumps capable of supplying amended water spray at a flow rate of two (2) gallons per minute and at a pressure of five hundred (500) pounds per square inch (psi) at the nozzle tip.
- (c) The Contractor shall provide rubber dustpans and rubber squeegees for cleanup. Metal shovels shall not be used to pick up or move accumulated waste.
- (d) Brushes used by the Contractor for removing Asbestos-Containing Material shall have nylon or fiber bristles, not metal bristles.
- (e) The Contractor shall provide a sufficient supply of HEPA filtered vacuums during cleanup.

2081.9 TEMPORARY ENCLOSURES/REGULATED AREAS (NOT USED)

2081.9.1 General Requirements

Fire rated partitions, walls, doors, and other fire cut-offs that are temporarily altered are subject to Local Fire Department and/or Local Department of Building and Safety requirements having jurisdiction. Abatement Contractor shall be responsible to comply with all applicable requirements. Build protective structures around all electrical and mechanical equipment. Use flame resistant polyethylene placed over fire rated materials (wood, gypsum board, etc.) in all instances. Maintain adequate cooling ventilation as necessary. Construct critical barriers by installing two layers of 6-mil flame resistant (f.r.) poly at all openings which penetrate the work area. Construct an initial barrier of plywood and caulk for openings larger than four feet measured in any direction. Construct full decontamination facilities for all work areas. Post caution signs in accordance with the specifications of 29 CFR 1926.1101 at any location where airborne concentrations of asbestos may exceed ambient background levels. Post signs at a distance sufficiently away from the Work Area to permit an employee to read the sign and take the necessary protective measures to avoid exposure.

2081.9.2 Emergency and Fire Exits

The Contractor shall establish emergency exits, and clearly mark the exits with duct tape arrows or other effective designations to permit easy location from anywhere within the Work Area. Secure to prevent access from uncontaminated areas and still permit emergency exiting.

2081.9.3 Electric Power and Lighting

The Building shall provide the source for electrical power. If electrical power is insufficient, the Contractor shall notify Owner or their Representative, who will arrange to have adequate power provided. The Contractor shall provide circuits of adequate size and proper characteristics for each use. In general, the Contractor shall run wiring overhead; place rises vertically to be least exposed to damage from construction operations. Wiring of circuits shall not exceed a 110-120 Volt, 20 AMP rating, and wiring of lighting circuits shall not be non-metallic sheathed cable. The Contractor shall not wire temporary lighting with plain, exposed (insulated) electrical conductors. The Contractor shall provide metal enclosures or boxes for wiring devices. The Contractor shall use only grounded extension cords (use "hard-service" cords where exposed to abrasion and traffic). The Contractor shall use single lengths or waterproof connectors to connect separate lengths (if single lengths do not reach Work Areas). The Contractor shall provide general service incandescent lamps of a wattage required for adequate illumination. The Contractor shall protect lamps with guard cages. The Contractor shall coordinate with Owner or their Representative to provide the required protection and retention of all utility systems to remain active during the abatement. When placed in proximity to electrical fixtures, the Contractor shall take all precautions necessary to avoid heating of polyethylene sheeting.

2081.9.4 Heating, Ventilating and Air Conditioning System (NOT USED)

- (a) The Contractor shall shut down and/or isolate all heating, ventilating, and air conditioning (HVAC) system components, and openings such as grills, diffusers, etc. that supply or pass through Containment Work Areas.

2081.9.5 Sealing Off Work Area (NOT USED)

- (a) The Contractor shall separate the contaminated Work Area from uncontaminated areas of the building by the construction of air tight barriers of flame resistant material.
- (b) The Contractor shall seal off all windows, doorways, elevator openings, corridor entrances, drains, ducts, grills, grates, diffusers, skylights, and any other openings between the Containment Work Area and uncontaminated areas outside of the Containment Work Area with a minimum of two sheets of 6-mil polyethylene sheeting and duct tape. Openings greater than four feet measured in any direction shall be sealed as described below.
- (c) The Contractor shall use wood or metal framing to support barriers in all openings larger than 4 ft. or ductwork larger than 12" in length, measured in any direction. Barriers shall be constructed of 2-inch by 4-inch lumber. The Contractor shall install polyethylene in two (2) layers, at least 10-mils in thickness, on the work area side of the barrier fabricated by the Contractor. The walls of decontamination and waste load-out units shall be covered on both sides with at least two layers of polyethylene of at least 10-mils in thickness.
- (d) The Contractor shall use tools equipped with, or in conjunction with, sufficiently powered HEPA filtered local exhaust ventilation to drill, cut into or otherwise disturb asbestos-containing materials during the installation of support systems for the barrier enclosures and the final installation of such enclosures.

2081.9.6 Inspection Windows (NOT USED)

Install inspection windows as necessary.

2081.9.7 Repair of Damaged Polyethylene Sheeting (NOT USED)

Inspections: Owner or their Representative shall inspect all containment barriers inside the Work Area, in the Worker Decontamination Enclosure System, in the Waste and Equipment Decontamination/Pass-out Enclosure System, and at partitions constructed to isolate the Work Area from occupied areas. Immediately remove and replace plastic sheeting which has been damaged by removal operations. The Contractor shall repair damage and defects in the enclosure system(s) immediately upon discovery or upon notification from Owner or their representative. If visible material is observed outside of the Work Area or if damage occurs to barriers, the Contractor shall immediately

repair barriers and clean up debris/residue using appropriate HEPA vacuuming and wet wiping procedures.

2081.9.8 Alternate Methods of Enclosure (NOT USED)

Alternate methods of containing the Work Area may be submitted to Owner's Representative for approval. Do not proceed with any such method(s) without prior written approval of Owner's Representative.

2081.9.9 Extension of Work Area (NOT USED)

If the Critical Barrier is breached in any manner that could allow the passage of asbestos debris or airborne fibers, then add the affected area to the Work Area, enclose it as required by this Section.

2081.9.10 Temporary Pressure Differential System (NOT USED)

This Section is designed to comply with the intent and actual requirements of the OSHA Rules and Regulations 29 CFR 1926.1101 and its appendices. The Contractor has sole responsibility for determining whether patents are applicable to any equipment, methods, or procedures used on this project and to meet any requirements of the patent owner. The Contractor will be responsible for any fees associated with the use of any patents.

Pressure Differential Isolation

The Contractor shall isolate the Work Area from all adjacent areas or systems of the building with a Pressure Differential System that will cause a movement of air from outside to inside at any breach in the physical isolation of the Work Area. He shall arrange the Work Area and decontamination units so that the majority of make up air comes through the Decontamination Units. Use only one Decontamination Unit at any one time and seal the other so that make up air passes through only the unit in use.

Supplemental Makeup Air Inlets

Only as approved by Owner or Representative.

Air Recirculation System

Pressure differential isolation and air circulation in the Work Area may be partially accomplished by a recirculation system.

Testing and Monitoring of Enclosure for Leakage

Contractor shall smoke-test the effectiveness of the barrier systems daily prior to the start of abatement activities. Ventilation equipment shall be sufficient to maintain a minimum pressure differential of minus 0.02 inches of water column relative to adjacent, unsealed areas. Daily monitoring of the pressure differential with an

automatic recording instrument shall be conducted by the Contractor. At no time shall the building ventilation system be used as the local exhaust system.

Monitoring

Continuously monitor and record the pressure differential between the Work Area and the building outside of the Work Area with a monitoring device (manometer) incorporating a continuous recorder (e.g. strip chart).

Ventilation Equipment

- (a) The Contractor shall install and initiate the operation of ventilation equipment, as needed, to provide one air change in the Work Area every ten (10) minutes.
- (b) Openings made in the enclosure system to accommodate these units shall be made airtight with tape and/or caulking as needed. If more than one unit is installed, units shall be turned on slowly and in sequence.
- (c) Ventilation units shall be exhausted to the outside of the building. Where necessary twelve (12)-inch diameter extension ducting shall be used as a minimum to reach from the Work Area to the outside. Careful installation, air monitoring and daily inspection shall be done to ensure that the ducting does not release fibers into uncontaminated building areas.
- (d) The proper operation of ventilation units shall be documented in the daily log. Records shall include all filter changes, and daily air pressure differential readings.

Commencement of Work

The Contractor shall not commence work unless the following requirements have been met. These requirements must be met each time abatement work is to begin in a new Work Area.

- (a) Enclosure systems have been constructed, tested, and approved.
- (b) Ventilation Systems are functioning adequately and abatement area has been tested to achieve a minimum of minus 0.02 inches of water for one (1) hour.
- (c) All pre-abatement submittals, notifications, posting and permits have been provided and are satisfactory to Owner's Representative.
- (d) Installation of all required temporary systems is completed and has been appropriately inspected, tested, and if applicable, approved by authorities claiming jurisdiction.
- (e) All equipment/materials for abatement, clean-up and disposal are on hand.
- (f) All worker training (and certification) is completed.

- (g) Contractor receives written permission from Owner's Representative to commence abatement.

Use of System During Abatement Operations

- (a) 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) Do not shut down air pressure differential system during encapsulating procedures, unless authorized by Owner's Representative in writing. Supply sufficient pre-filters to allow frequent changes.

Dismantling the System

When a final inspection and clearance air sample results have been obtained indicating that the area has been decontaminated, fan units may be shut down and removed from the Work Area. Before removal from the Work Area, remove and properly dispose of pre-filter, decontaminate exterior of machine and seal intake to the machine with 6 mil polyethylene to prevent environmental contamination from the filters.

2081.9.11 Regulated Areas

The Work Area shall be restricted to only authorized, trained, and properly protected personnel. These personnel may include the Contractor's employees, Owner or their Representative's employees, state and local inspectors and any other individuals approved by Owner or their Representative. A list of authorized personnel shall be established and submitted to Owner prior to job start and posted in the Clean Room of the Worker Decontamination Enclosure System. The Contractor is responsible to properly demarcate all regulated areas in accordance with OSHA requirements.

Unauthorized Entry into the Work Area

The Contractor shall immediately report to Owner or their Representative the entry of unauthorized individuals into the Work Area.

Access to Work Area

The Contractor shall provide access to the Containment Work Area through a single Worker Decontamination Enclosure System located at the entrance to each Work Area. All other means of access (doors, windows, hallways, etc.) shall be blocked or locked to prevent entry to or exit from the Work Area.

Personnel Entry and Exit

All workers and authorized personnel shall enter the Work Area through the Worker Decontamination Enclosure System. All personnel who enter and exit the Work Area must sign the entry log, located in the Clean Room, upon entry and exit.

Entry Procedure

To enter the Work Area, all personnel shall proceed first to the Clean Room, remove all street clothes and appropriately don respiratory protection (as deemed adequate for the job conditions) and disposable coveralls, head covering and foot covering. Hard hats, eye protection (if using half-face respirator), and gloves shall also be used if required. Clean respirators and protective clothing shall be provided and used by each person for each separate entry into the Work Area.

Exit Procedure

To exit the Work Area, all personnel shall first remove gross contamination from the outside of respirators and protective clothing by HEPA vacuuming and/or wet wiping procedures. (Small HEPA Vacuums may be used for this purpose. Larger machines may tear the suits). Each person shall clean the bottoms of their protective footwear in a walk-off pan just prior to entering the Equipment Room. All personnel shall remove only their protective clothing and footwear in the equipment room and deposit the clothing in labeled bags or containers. They shall not remove their respirators in the equipment room. All personnel shall proceed to the shower or wash station to decontaminate. Respirators can be removed only after the decontamination procedure. All personnel shall change into their street clothes in the designated clean area. Where a remote and centralized decontamination unit is more feasible for outdoor (roof) or multi-work areas, all personnel shall remove their protective clothing and footwear and don clean protective clothing in the equipment room before proceeding to the shower that is not adjacent to the work area.

Control of Site Security

The Contractor shall provide site security for his equipment outside of the Work Area. The Contractor shall provide security for the building at all times.

Record keeping (Log Book)

- (a) The Contractor shall maintain a record of the arrival and departure times for all personnel as required by OSHA 29 CFR 1926.1101 and provide copies to Owner's Representative.
- (b) The Contractor shall maintain a separate log book in the Clean Room of the Worker Decontamination Enclosure System. Anyone who enters the Work Area must record their name, affiliation, time in, and time out for each entry.

Posting of Emergency Procedures

The Contractor shall have emergency procedures in written form, posted prominently in the Clean Room and Equipment Room of the Worker Decontamination Enclosure System.

Employee Training

- (a) The Contractor shall train his employees in evacuation procedures in the event of work place emergencies.
- (b) For non-life-threatening situations, employees injured or otherwise incapacitated shall decontaminate following normal procedures, with assistance from fellow workers if necessary, before exiting the Work Area to obtain proper medical treatment.
- (c) For life-threatening injury or illness, worker decontamination shall take least priority after measures to stabilize the injured worker, remove the worker from the Work Area, and secure proper medical treatment for the worker.

Posting of Telephone Numbers

The Contractor shall have telephone numbers of all emergency response personnel posted prominently in the Clean Room and Equipment Room, along with the location of the nearest telephone.

2081.9.12 Decontamination Units

The Contractor shall provide a Worker Decontamination Enclosure System at all locations where workers will enter and exit the Work Area. One system is required at each location. The Worker Decontamination Enclosure Systems shall consist of at least a Clean Room, a Shower Room, and an Equipment Room, each separated from each other and from the Work Area by a Curtained Doorway and Airlocks lined with 2 layers of polyethylene inside and out.

Construction of Worker Decontamination Enclosure System

- (a) A decontamination shower with air locks will be constructed outside the Work Area, directly connected thereto.
- (b) Openings (such as doors, windows, vents) which are contiguous to or adjacent to uncontaminated areas will also be sealed with polyethylene sheeting.

Curtained Doorways

Entry to and exit from the Worker Decontamination Enclosure System's rooms shall be through Curtained Doorways consisting of three sheets of overlapping polyethylene sheeting. The Contractor shall secure one sheet at the top and left side, the second sheet at the top and right side, and the third sheet at the top and left side. All sheets

shall have weights attached to the bottom to ensure that they hang straight and maintain a seal over the doorway when not in use. The Contractor shall provide access between any two rooms in the Worker Decontamination Enclosure System through a section with at least three (3) feet separating each curtained doorway.

Clean Room

The Contractor shall size the Clean Room to adequately accommodate the work crew whenever possible. Clean Rooms may be located in the entrance hallway and bathroom of some apartments. Clean work clothes, clean disposable clothing, replacement filters for respirators, towels and other necessary items shall be provided in adequate supply at the Clean Room. A location for postings shall also be provided in this area. Postings shall include a list containing the names, addresses, and telephone numbers of the Contractor, Owner's Representative, and Building Maintenance Supervisor. Whenever possible, a lockable door shall be used to permit access into the Clean Room from outside the Work Area. Lighting, heat, and electricity shall be provided as necessary for comfort. This space shall not be used for storage of tools, equipment, or materials.

Shower Room

Each shower head shall be supplied with hot and cold water, adjustable at the tap. The Shower Room enclosure shall be constructed to ensure against water leakage. An adequate supply of soap, shampoo, and towels shall be supplied by the Contractor and available at all times. Shower water shall be drained, collected, and filtered through a five-stage system as follows:

Stage 1	50.0 microns
Stage 2	50.0 microns
Stage 3	20.0 microns
Stage 4	5.0 microns
Stage 5	0.5 microns

In the event that a nearby sewer drain cannot be provided, the Contractor shall filter shower water and drain into a leak-proof drum and discard the water at a sewer source as designated by the Owner and/or Consultant.

Equipment Room

Equipment and tools may be stored in an equipment room adjacent to the Decontamination Unit (work area side), or may be stored in the Contractor's staging area following decontamination. Do not store equipment in decontamination units. Transport equipment in covered carts.

Construction of Waste and Equipment Decontamination / Pass-Out Enclosure

- (a) Waste and Equipment Decontamination/Pass-Out Enclosure System shall be used for transferring containerized waste from inside the Work Area to the outside and for emergency exits.

- (b) The Contractor shall construct the waste container pass-out airlock in a similar fashion to the Worker Decontamination Enclosure System using similar materials, and airlock and curtain doorway designs.

2081.10 REMOVAL PROCEDURES

2081.10.1 Decontamination of Tools and Equipment

The Contractor shall decontaminate and remove, at the appropriate time in the cleaning sequence, all tools and equipment. All tools and equipment shall be placed in 6-mil polyethylene bags and sealed to prevent the release of fibers to non-work areas. This procedure shall be used every time tools and equipment are transported from one Work Area to the next.

2081.10.2 Cleanup

Do not perform any dry dusting or dry sweeping. Air filtering units will remain in operation, and all openings shall remain sealed. During cleaning, Owner's Representative will collect air samples for on-site PCM analysis.

2081.10.3 Notification to Owner's Representative

When the Contractor believes the entire Work Area to be clean, the Contractor shall submit a written request to Owner's Representative for a final inspection.

2081.10.4 Wet Cleaning of Asbestos-Containing Material

The Contractor shall wet all asbestos-contaminated surfaces with amended water using equipment capable of providing a fine spray mist, without allowing excessive water to accumulate in the Work Area. The Contractor shall keep all removed material wet enough to prevent fiber release until it can be containerized for disposal. Wetting procedures shall be used for all types of non-electrical materials and components.

2081.10.5 Removal of Asbestos-Containing Material

For All Materials: 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. Remove excess air. Twist neck of bags, bend over and seal with minimum three wraps of duct tape. Clean outside and move to Wash Down Station adjacent to Decontamination Unit. Evacuate air from disposal bags with a HEPA filtered vacuum cleaner before sealing.

(The following material-specific work requirements identify work methods unique to each material. General preparation, demolition removal and disposal requirements are more accurately described elsewhere in this document.)

Floor Tile & Mastic Removal:

(NOT USED)

- Engineering Controls: Wet hand removal and chemical solvent to facilitate mastic removal. No power saws without Point-of-Cut local exhaust capture. Establish critical barriers and negative pressure differential. A minimum of two-stage decontamination facility with wash station at each work area will be required (See 2081.9.11 for exit procedure).
- Min. Resp. Protection: Half-face negative pressure respirators with HEPA filters. Provide personal monitoring and otherwise comply with Cal/OSHA requirements during removal.
- Removal: Wet all work area surfaces. Allow surfactant to soak into material to be removed. Remove in small sections.
- Preparation/Transport: Bag immediately, using double six-mil marked bags. Keep wet and cover during transport to dumpster.
- Disposal: Dispose of as non-friable asbestos-containing waste. A Non-Hazardous Waste Shipment Record (manifest) required. In cases where floor tile comes up with glued down carpeting, the carpeting shall be disposed of as asbestos contaminated waste.

Spray-on Acoustical Ceiling:

(NOT USED)

- Engineering Controls: Wet hand removal. No power saws without Point-of-Cut local exhaust capture. Establish critical barriers and negative pressure differential. A minimum of two stage decontamination facility with wash station at each work area will be required (See 2081.9.11 for exit procedure).
- Respiratory Protection: At a minimum, use a full-face powered air-purifying respirator (PAPR) with the appropriate HEPA filters (P100 recommended). Provide personal monitoring or otherwise comply with CAL/OSHA requirements during removal.
- Removal: Wet material surface and mist work area continuously during removal. Bag material as it is removed.
- Preparation/Transport: Double bag immediately in six-mil properly labeled bags. Keep material wet. Cover during transportation by cart to the assigned dumpster.
- Disposal: Dispose of fireproofing as friable asbestos-containing waste.

Ceiling Tile and Mastic:

(NOT USED)

Engineering Controls:	Seal off work area per 2081.9.5. Establish full containment and include a three-stage decontamination facility with shower (See 2081.9.11 for exit procedure). Provide negative pressure within the containment with a minimum pressure differential of 0.02 inches w.c. Containment may be smoke tested prior to each shift. Use wet removal methods
Respiratory Protection:	Half-face negative pressure respirators with HEPA filters. Provide personal monitoring and otherwise comply with Cal/OSHA requirements during removal.
Removal:	Wet material surface and mist work area continuously during removal. Bag material as it is removed.
Preparation/Transport:	Double bag immediately in six-mil properly labeled bags. Keep material wet. Cover during transportation by cart to the assigned dumpster.
Disposal:	Dispose of as non-friable asbestos-containing waste. (Asbestos is only present in the mastic and not in the ceiling tile.)

Roofing:

Engineering Controls:	Wet hand removal. No power saws without Point-of-Cut local exhaust capture.
Min. Resp. Protection:	Half-face negative pressure respirators with HEPA filters. Provide personal monitoring and otherwise comply with Cal/OSHA requirements during removal.
Removal:	Mist air with surfactant during removal. Remove material and immediately place, still damp, into 6-mil polyethylene bags. Evacuate air, tie and seal in a gooseneck fashion. Immediately transport to dumpster.
Preparation/Transport:	Keep wet and covered during transport to dumpster.
Disposal:	Dispose of in accordance with all applicable regulations as non-friable asbestos-containing waste.

2081.10.5 Dry Removal

Special circumstances (e.g. live electrical equipment, hot equipment, materials with high amosite content, and materials previously coated with an encapsulant or paint) may prohibit the adequate use of wet methods to reduce fiber concentrations. For these situations, a dry removal may be required. The Contractor shall acquire special permits, different from those mentioned herein from the NESHAPS enforcement agency for dry removal. (EPA 40 CFR Part 61 Subparts A and M (Revised Subpart b)). These permits must be submitted to Owner's Representative prior to start of work and be posted in the job log book maintained at the job site.

2081.10.6 Handling of Asbestos-Containing Material

The Contractor shall not drop or throw to the floor material removed from building structures or components. Material shall be removed as intact sections or components whenever possible.

2081.10.7 Comprehensive Visual Inspection by Owner's Representative

Following final cleanup of the work area and when the area is entirely dry with no visible pools of water or condensation in the work area, Owner's Representative will conduct a comprehensive visual inspection. Provide ladders, scaffolding, and lifts as required to provide access to all surfaces in the area to be subjected to visual inspection. Access shall allow touching of all surfaces. If any debris, residue, dust or other matter is found, repeat final cleaning and continue decontamination procedure from that point until the area is visually clean, and no debris, residue, dust or other material is found. Visual inspection is not complete until confirmed in writing.

2081.10.8 Sealing of Non-Visible Residue

After the Work Area has been rendered free of visible residues to the satisfaction of Owner's Representative and written notice has been provided thereof, the Contractor shall apply a coat of an approved encapsulating agent at the manufacturer's recommended rate to all surfaces in the work area including structural members, building components and coverings of non-removable items. Comply with Section 2081.8.

2081.10.9 Request to Owner's Representative for Clearance Air Monitoring

Following encapsulation and drying period, the Contractor shall request Owner's Representative to conduct Clearance Air Monitoring.

2081.10.10 Removal of Barriers

If the sample results from Clearance Air Monitoring show that the Work Area is not acceptable for clearance (See 2081.11.2), the cleaning cycle shall be repeated, at no additional cost to Owner, including the cost of sample collection and analysis, until sample results meeting the clearance specification requirements are obtained and Owner's Representative has provided the Contractor with a written notice of

acceptance. Upon receipt of the acceptance notice, the Contractor shall remove the remaining barriers in the Work Area.

2081.10.11 Final Inspection

After removal of the barriers, Owner's Representative will conduct a final inspection with the Contractor in attendance, for the express purpose of identifying any remaining ACM. Any material found shall immediately be removed and disposed of, and affected area cleaned following all applicable precautions deemed necessary by the Owner's Representative.

2081.11 WORK AREA CLEARANCE

2081.11.1 General Requirements

The Contractor shall be responsible for the following requirements during Work Area Clearance:

- (a) The air filtering units shall remain in continuous operation until the Clearance Air Monitoring has been completed.
- (b) The Worker Decontamination Enclosure System shall remain in place and be used in the prescribed manner until Clearance Air Monitoring has been completed.
- (c) The respiratory protection requirements shall remain in force until Clearance Air Monitoring has been completed.
- (d) Work in this Section shall not begin until the Visual Inspection has been completed.
- (e) The HEPA filtered ventilation equipment shall be in operation in the area during Clearance Air Monitoring unless authorized otherwise by Owner's Representative. The area must be dry with no visible pools of water or condensation.

2081.11.2 Clearance Air Monitoring

- (a) Owner's representative will collect a sufficient number of samples relative to the size of the work area (generally, not less than two but not greater than five samples).
- (b) In accordance with 40 CFR 763, AHERA, all areas in excess of 160 square feet will be cleared by aggressive sampling and analysis by Transmission Electron Microscopy (TEM). For areas less than 160 square feet, the analysis will be performed on site by Phase Contrast Microscopy (PCM) methods. Clearance will be issued when all samples show that the airborne fiber

concentration is equal or less than 0.01 f/cc or the background level, whichever is greater.

2081.11.3 Additional Cleanup and Air Monitoring Expenses

Contamination of Adjacent Areas: The Contractor shall be responsible for (and pay for) additional Air Monitoring and visual inspections in the Shower Area, Clean Room, adjacent Airlocks, and any areas surrounding the outside of the Work Area that become contaminated by asbestos debris or dust as a result of work activities.

2081.12 DISPOSAL OF ASBESTOS-CONTAINING WASTE MATERIAL

2081.12.1 General

Prior to Abatement, the Contractor shall consult with the landfill approved regarding specific containerization and disposal requirements at that site. The Abatement Contractor is responsible for meeting these requirements. All ACM shall be transported and disposed of in accordance with all applicable federal, state and local regulations by a licensed waste hauler pre-approved by Owner or Owner's Representative. All manifests for disposal of waste shall be signed by the contractor in accordance with a letter of authorization provided by Owner or Owner's Representative. CTL shall review the preparation of dumpsters for waste transport and shall initial each manifest form next to the Contractor's signature. The Contractor shall obtain weight slips for each truckload of waste. A copy of the weight slip shall be attached to the Owner's copy of the waste manifest.

2081.12.2 Personal Protection

The Contractor shall provide personnel unloading containers at the disposal site with protective equipment consisting of disposable head, body, and foot protection and, at a minimum, half facepiece, air-purifying, dual cartridge respirators equipped with HEPA Filters.

2081.12.3 Containers - Friable Waste

The Contractor shall seal containers (6-mil polyethylene bags or fiber-pack in metal drums) when full. The Contractor shall use double bagging procedures. Bags shall not be overfilled. These bags shall be securely sealed, and excess air shall be evacuated. To prevent accidental opening and leakage, the tops of bags shall be tied with an overhand knot or by taping in gooseneck fashion. Bags shall not be sealed with wire or cord. Bags may be placed in clean drums and sealed with locking ring tops.

2081.12.4 Large Components

Large components removed intact may be wrapped in two layers of 6-mil polyethylene sheeting and secured with tape by the Contractor for transport to the landfill.

2081.12.5 Sharp-Edged Components

The Contractor shall place Asbestos-Containing Waste with sharp-edged components (e.g., nails, screws, metal lath, tin sheeting) into drums for disposal.

2081.12.6 Disposal Drums

The disposal drums used to hold the Asbestos-Containing Waste Materials shall be made out of metal or fiberboard, and have locking ring tops.

2081.12.7 Labeling Requirements

- (a) The Contractor shall label disposal bags and drums with pre-printed labels, as required by EPA regulation 40 CFR 61.152 (b) (i) (iv), OSHA regulation 29 CFR 1926.1101, and DOT (other regulated materials, class ER (ORM-E) label).
- (b) Warning labels in the work area shall be as specified by Occupational Safety and Health Standards of the Department of Labor, OSHA under 29 CFR 1910.1001 (j) (2) or 1926 (k) (2) (iii), or current Cal/OSHA requirements:

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

2081.12.8 Secure Storage

If the containerized waste cannot be removed from the site within twenty-four (24) hours, the Contractor shall provide a securely locked dumpster or secured area for storage of this waste. This secured area must not be accessible to the general public. This secured dumpster or area must be approved by the Building Owner or Owner's Representative. The Contractor shall not store Asbestos-Containing Waste Material within the work area.

2081.12.9 Handling and Loading Requirements

The Contractor is encouraged to use hand trucks, carts, and proper lifting techniques to avoid back and other injuries when his employees are moving bags and drums of asbestos waste. Trucks with lift gates are helpful for raising drums and pallets during truck loading. The Contractor shall not drop, or throw to the ground, Asbestos-Containing Waste Material. This material should be carefully lowered to the ground.

The Contractor shall clean the enclosed cargo area of the truck of debris and line the cargo area with one (1) layer of 6-mil polyethylene sheeting to prevent contamination from damaged or leaking containers. First, floor sheeting shall be installed to extend up the sidewalls a minimum of two (2) feet. Then, wall sheeting shall be overlapped and taped into place.

The Contractor shall place the cargo on level surfaces in the cargo area of the truck and pack containers tightly. Do not throw the cargo into the truck cargo area. Provide each employee handling and loading asbestos outside the Work Area with protective clothing. Remove any debris or residue observed on containers or surfaces outside of the Work Area using HEPA filtered vacuum equipment and/or wet methods, as appropriate.

Waste cargo shall be loaded in a manner that complies within the limits of the approved maximum weight load for the truck, trailer, waste bin, or container as determined by the California Highway Patrol and the Department of Transportation.

2081.12.10 Preparation of the Cargo

The Contractor shall be responsible for preparing the Asbestos-Containing Material for transportation, as required by Department of Transportation (DOT) and EPA regulations (including Federal NESHAPS-Part 61, Subparts A and M and Revised Subpart B). Contractor must comply with all applicable regulations and requirements.

2081.12.11 Transportation Requirements

- (a) The Contractor shall transport Asbestos-Containing Waste Material from this abatement site directly to an Owner approved landfill. The Contractor shall not accept material from any other site when transporting Asbestos-Containing Waste Material from this abatement site.
- (b) The Contractor shall transport the Asbestos-Containing Waste Material in a covered truck with lockable doors.
- (c) The Contractor may use such handling equipment as hand trucks and carts to avoid back injuries of his employees during handling of Asbestos-Containing Waste Material.
- (d) The Contractor shall provide all respiratory protection to workers handling asbestos waste in accordance with the submitted written respiratory protection program, which includes all items in 29 CFR 1910.134 (b) (1-11), and 29 CFR 1926.1101. The Contractor shall have a copy of this program available for all of his employees.
- (e) The Contractor shall provide personnel handling asbestos waste with, at a minimum, half facepiece, air-purifying, dual cartridge respirators equipped with high efficiency particulate filters or as required. The Contractor shall provide these workers with personally issued, individually identified (marked with waterproof designations) respirators.
- (f) The Contractor shall provide one-piece disposable clothing including head, foot, and full body protection in sufficient quantities and adequate sizes for all workers. The Contractor shall provide hard hats, protective eyewear, gloves, rubber boots and/or other footwear as required for workers. Safety shoes may be required for some activities.

2081.12.12 Notifying Landfill Operator

The Contractor shall advise the landfill operator, at least twenty-four (24) hours prior to transportation, of the quantity of material to be delivered.

2081.12.13 Shipping Papers

Both the Contractor and Building Owner or Owner's Representative shall fill out the California Department of Health Services Uniform Hazardous Waste Manifest form each time the Contractor ships Asbestos-Containing Waste Material. The shipping papers shall include names and addresses of the Building Owner, the Contractor, and the landfill operator; and information on the type and number of asbestos-waste containers. The Contractor shall provide CTL with signed copies of the manifest before each departure.

2081.12.14 Unloading

Upon reaching the landfill, the Contractor's trucks are to approach the dump location as close as possible for unloading the Asbestos-Containing Waste Material. The Contractor shall inspect containers as they are unloaded at the disposal site. Material in damaged containers shall be repacked in empty containers, as necessary. The Contractor shall carefully place waste containers on the ground at the disposal site, and shall not push or throw the containers out of the trucks.

2081.12.15 Clean-up Procedures

If Containers are broken or damaged, the Contractor shall leave the containers in the truck and clean the entire truck and its contents using HEPA Vacuums and wet cleaning methods, until no visible residue is observed. Following the removal of all containerized waste, the Contractor shall decontaminate the truck cargo area using HEPA Vacuums and/or wet cleaning methods until no visible residue is observed. Polyethylene sheeting shall be removed and discarded as Asbestos-Containing Waste Material, along with contaminated cleaning materials and protective clothing, in containers at the disposal site.

CERTIFICATION OF VISUAL INSPECTION

In accordance with Section 2081.10.1 "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: (Signature _____ Date _____

(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: (Signature _____ Date _____

(Print Name) _____

(Print Title) _____

WORK AREA

Location:

Room:

SECTION 7514

BUILT-UP HOT ASPHALT ROOFING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Completely tear off existing roof, insulation and all other related items to the deck. Repair existing roofing surface for application of the specified SBS system per NRCA and manufacturer's recommendations.
 - 1. Repair existing roofing surface for application of the specified SBS system per NRCA and manufacturer's recommendations.
 - 2. Remove or repair existing drains.
- B. Install crickets where required to prevent any ponding water. Contractor is solely responsible to determine the number and location of the crickets.
- C. Flash all perimeter, curb, and penetration conditions with flashing accessories as appropriate to the site condition.
- D. Install wall and base flashings systems.
- E. Install sheet metal flashing.
- F. Mechanically fasten one layer of SBS modified base sheet over the wood deck.

1.02 RELATED SECTIONS: Drawings, General Provisions, Special Provisions and Division 1 apply to the work of this section.

- A. Section 1300 - Submittals
- B. Section [-----] - Rough Carpentry
- C. Section [-----] - Roof Decks
- D. Section 7620 - Sheet Metal Flashing and Trim
- E. Section 7565 - Preparation for Re-Roofing
- F. Section 1200 – Asbestos abatement

1.03 REFERENCES: References in these specifications to standards, test methods, codes etc., are implied to mean the latest edition of each such standards are adopted. The following is an abbreviated list of associations, institutions, and societies, which may be used as references throughout these specifications.

- A. American Society For Testing & Materials (ASTM):
 - 1. ASTM D 312: Asphalt Used in Roofing.
 - 2. ASTM D 412: Standard Test Methods For Rubber Properties In Tension.
 - 3. ASTM D 728: Standard Specification For Perlite Thermal Insulation Board.
 - 4. ASTM E 96: Standard for Water Transmission
 - 5. ASTM D-6162: Standard Specification for SBS Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements.
 - 6. ASTM D-6163: Standard Specification for SBS Modified Bituminous Sheet Materials Using Glass Fiber Reinforcements
 - 7. ASTM C 1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.
 - 8. ASTM D 4586 - Standard Specification for Asphalt Roof Cement, Asbestos-Free.
 - 9. ASTM D 41 - Standard Specification for Asphalt Primer Used in Roofing, Damp proofing and Waterproofing
 - 10. California Title 24 requirements for Cool Roof.
- B. Uniform Building Code Standard:
 - 1. UBC 32-4: Roof Construction And Covering, Roof Insulation.
- C. Industry Publications:
 - 1. National Roofing Contractors Association (NRCA) Roofing and Waterproofing Manual
 - 2. Underwriters Laboratories (UL) - Roofing Systems and Materials Guide (TGFU R1306).
 - 3. Factory Mutual (FM Global) - Approval Guide.
Factory Mutual Standard 4470 - Approval Standard for Class 1 Roof Covers.
- D. SMACNA: Sheet Metal and Air Conditioning Contractors National Association
Chantilly, VA
- E. CERTA: Certified Roofing Torch Applicator, Rosemont, IL
- F. OSHA: Occupational Safety and Health Administration, Washington, DC

1.04 COORDINATION

Coordinate with other trades affecting or affected by work of this section.

1.05 QUALITY ASSURANCE

- A. Contractor Qualifications: Prior to award of the contract the contractor shall submit evidence of the following:
 - 1 Contractor shall provide a letter stating that they have at least 4 years experience with SBS modified bitumen membrane torch application and a list of 3 jobs of over 150 squares each that used a similar system as outlined in this specification.
 - 1 An updated letter from the primary roofing manufacturer they propose to use stating the Contractor has a valid “ Certificate of Eligibility “ and that application done by contractor will qualify for the warranty as required by the specification.

Manufacturer’s Qualifications: Roofing manufacturer shall submit a letter on their letterhead stating that they have manufactured the products they propose to be used for the project for not less than 7 years.

- B. Pre-Roofing Conference: Meet at the project site well in advance of the time schedules for roofing and other related work, and review requirements for the work and conditions which could possibly interfere with successful performance of the work, or required to coordinate with it or to protect it there after with representatives of all firms involved in the work. Require manufacturer's technical representative to participate in the conference. Date shall be determined after project has been awarded.
- C. Final Inspection: Owners’ representative shall provide a comprehensive intermediate and final inspection after completion of the roof system. All application errors shall be addressed and final punch list completed.
- D. Testing and agency requirements:
 - 1. Fire Testing: Material shall be tested for a minimum of Class A fire rating. The system should pass the said tests without any rock, covering or emulsions thus facilitating maintenance and eliminating excess load on the roof. All modified bituminous sheet roofing systems must bear testing agency (Underwriters Lab, Warnock Hersey etc.) on package or container indicating that materials have been produced under testing agency’s classification and follow-up service.
 - 2. Contractor shall obtain all local permits for the application of the roofing system. The contractor prior to the job must obtain necessary permits.

1.06 WARRANTY

- A. Roofing Contractor: Upon completion of work, furnish a written five-year workmanship guarantee. This warranty shall cover all leaks due to defective

workmanship for a period of 5 years. Owner may conduct an inspection within 3 years of project completion date. All deficiencies identified in the report shall be fixed and brought up to specification at no cost to the owner.

- B. Manufacturer: Manufacturer shall provide owner with a 20 year non-prorated Roofing System Guarantee. Warranty should cover all leaks caused by faulty workmanship or material. Warranty will be in effect on the date of substantial completion of the project.
- C. Manufacturer's Maintenance Agreement: Manufacturer may inspect the building every three-years for duration of the warranty period. The purpose of the inspection is to prepare a report on the condition of the roof and any areas, which has not been maintained. A comprehensive report should be prepared (digital and printed format), describing the condition of the roof. The report should alert the owners to any areas that require maintenance. Manufacturer may make repairs identified in the report and by the owner. All these repairs shall be done at no charge to the owner, even if they have not resulted in leaks. The following are some of the example of the areas, which needs to be repaired on the roof by the manufacturer through out the warranty period: Granule loss, loose flashing, dried out mastic or caulking, blisters, loose flashing, mud cracking. Any damage done to the roofing system due to ponding water.

1.07 SUBMITTALS

- A. Pursuant to the provisions of the General Provisions and Section 01300 "Submittals" the Contractor shall submit the following:
 - 1. Product specification sheet for each roofing component within the specified system. Data should substantiate that materials comply with the specifications.
 - 2. Test results as outlined in Article 1.05.B above.
 - 3. Final warranty per Article 1.06.
 - 4. Samples (3" x 5") of each roofing component within the specified system.
 - 5. Shop Drawings: Provide manufacturers standard details and approved shop drawings for the roof system specified.
 - 6. Installer shall provide written documentation from the manufacturer of their authorization to install the roof system, and eligibility to obtain the warranty specified in this section.
 - 7. As part of the submittal package, contractor shall submit a letter from the manufacturer agreeing to perform the maintenance services identified in section 1.06 C at no cost to the owner.

1.08 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Roofing material shall be delivered to the job-site in new, dry, unopened containers clearly showing catalog number, product description, manufacturer's name and location. Delivered quantities should be sufficient to assure continuous work.

- B. Assure that materials are kept clean, and away from excessive heat and cold; do not remove labels or tear off protective covering until ready for application; store in an enclosed area where temperature is above 10 degrees C (50 degrees F) and below 32 degrees C (90 degrees F). Material shall not be stored directly on the ground.
- C. Do not double stack membrane. Maintain aisle space between stacks to facilitate fire suppression.
- D. Do not overload structure with building materials.
- E. Strictly follow recommended storage instructions supplied by the manufacturer.
- F. Store roll goods on end on pallets in a clean, dry, protected area. Take care to prevent damage to roll ends or edges. Do not double stack modified bitumen products or lay them on their side. Follow manufacturers instruction for storage and handling.

PART 2 - PRODUCTS

2.01 ROOFING SYSTEM

- A. All components of the roofing system must be SBS modified bitumen and have been successfully manufactured in the US for a minimum of 7 years. All the layers (base, ply and cap) shall be supplied by the company issuing the warranty. Non-modified asphalt coated fiberglass Type II base sheet is not an acceptable substitution for the modified base sheet. Acceptable manufacturers, provided all requirements outlined in the specifications are met are:
 - 1. MBTechnology www.mbtechnology.com
 - 2. Garland www.garland.com
 - 3. Tremco www.tremco.com
 - 4. John Mansville: Built up roofing system specification 4GNC
 - 5. Or: "Pre-Approved Equal" from other manufacturer acceptable to owner / architect with submittals ten (10) days prior to Bid. Only products approved via a written addendum will be accepted.
- A. Roofing Membranes: Roofing membrane components include:
 - 1. BASE: Shall be SBS modified weighting a minimum of 40 Lbs/ Square and meeting ASTM D 4601-91, Type II. Approved membranes are:

MBTechnology layflat SBS LF40

Garland Versiply 40

Or: "Pre-Approved Equal" from other manufacturer acceptable to owner / architect with submittals ten (10) days prior to Bid. Only products approved via a written addendum will be accepted.

- a) Modifier: SBS Modified
- b) Weight: Minimum of 40 lbs/ 100 square feet
- c) Tensile @ Room Temp: 44 lbs/in
- d) Weight: 40 lbs/square

2. Smooth Interply & Base Flashing: Shall be a smooth surfaced membrane, which meets or exceeds the following minimum standards. Approved membranes are:

MBTechnology superflex SBS SF160CSA

Garland Stress IV Plus Smooth

Or: "Pre-Approved Equal" from other manufacturer acceptable to owner / architect with submittals ten (10) days prior to Bid. Only products approved via a written addendum will be accepted.

- a) Modifier: Styrene Butadiene Styrene.
- b) Dual reinforcement consisting of a layer of polyester and a layer of fiberglass mat.
- c) Tensile strength shall be min. 210 lbs/in. MD and 180 lbs/in CMD @ 0 deg F.
- d) Tensile strength shall be min. 110 lbs/in. MD and 80 lbs/in CMD @ 73.4 deg F.
- e) Tear strength to be min. 150 lbs MD and 120 lbs CMD @ 73.4 F.
- f) Ultimate Elongation of 40% @ 73.4 deg F.
- g) Thickness: 140 mils, minimum.
- h) Bottom Surface: Sand
- i) Mass Weight: Minimum nominal weight of 110 pounds per 1 square roll.
- j) Meet and exceed requirements of ASTM D6162 Grade S.

3. Cap Membrane: Shall meet or exceed ASTM D 6162 Grade G. It shall be a dual reinforced fire rated SBS membrane suitable for cold adhesive application. Cap membranes reinforced with a single layer of polyester or fiberglass mat are not acceptable. Cap membranes reinforced with polyester mat with fiberglass strands are not acceptable. The cap membrane shall meet the following specifications:

MBTechnology fireguard SBS FG160CWH

Garland Stessply IV Plus Granulated

Or: "Pre-Approved Equal" from other manufacturer acceptable to owner / architect with submittals ten (10) days prior to Bid. Only products approved via a written addendum will be accepted.

- a) Modifier: Styrene Butadiene Styrene.

- b) Reinforcement: Dual reinforcement consisting of a layer of polyester and a layer of fiberglass mat.
 - c) Tensile strength shall be min. 210 lbs/in. MD and 110 CMD @ 0 deg F.
 - d) Tensile strength shall be min. 120 lbs/in. MD and 80 CMD @ 73.4 deg F
 - e) Tear strength to be min. 168 lbs MD and 130 lbs CMD @ 73.4 F.
 - f) Testing shall be in accordance with ASTM D 5147 at 0 degrees F.
 - g) Thickness: 165 mils, minimum.
 - h) Bottom Surface: Burn off backer film.
 - i) Mass Weight: Minimum nominal weight of 110 pounds per square.
4. Flashing: Shall meet or exceed ASTM D 6162 Grade G. It shall be a dual reinforced fire rated SBS membrane suitable for torch application. Cap membranes reinforced with a single layer of polyester or fiberglass mat are not acceptable. Cap membranes reinforced with polyester mat with fiberglass strands are not acceptable. The cap membrane shall meet the following specifications:

MBTechnology fireguard fastorch SBS FGFT160CWH

Garland Stessply IV Plus Granulated

Or: "Pre-Approved Equal" from other manufacturer acceptable to owner / architect with submittals ten (10) days prior to Bid. Only products approved via a written addendum will be accepted.

- a) Modifier: Styrene Butadiene Styrene.
- b) Reinforcement: Dual reinforcement consisting of a layer of polyester and a layer of fiberglass mat.
- c) Tensile strength shall be min. 180 lbs/in. MD and 150 CMD @ 0 deg F.
- d) Tear strength to be min. 180 lbs MD and 130 lbs CMD @ 73.4 F.
- e) Testing shall be in accordance with ASTM D 5147 at 0 degrees F.
- f) Thickness: 165 mils, minimum.
- g) Bottom Surface: Burn off backer film.
- h) Mass Weight: Minimum nominal weight of 116 pounds per 1 square roll.

2.02 ROOFING ACCESSORIES:

- A. Fasteners: Nailing patterns & type of fasteners (including screws & plates) on all insulation & membranes shall comply with Factory Mutual guidelines (FM I-90) requirements and roof membrane manufacturers written recommendations.
- B. Cants: Shall be pressure treated redwood. New lumber shall be free from warping as manufactured by Exterior Woods or equal. Cant shall be pressure treated redwood. New lumber shall be free from warping as manufactured by Exterior Woods or equal.
- C. asphalt primer, no substitution allowed. .

- D. Pitch pans, Expansion Joints, Metal Flashings: Shall be in full compliance with NRCA and SMACNA approved application standards.
- E. Pitch Pan Filler: Shall consist of a two component, cold applied urethane compound as approved by roofing membrane manufacturer.
- F. Caulking Sealant: Comply with Federal Spec number TTS 0023c. And should consist of a single component, high performance, elastomeric compound as manufactured by or similar and equal to the following:
- G. Mastic: Elastomeric mastics, adhesives, and caulking products are required over standard grade adhesive and mastics. , All mastics must conform to ASTM D4586 Elastomeric Mastic -Pros-choice 1010 by Gibson Homan or approved equal.
- H. Traffic Pad: Same as flashing material as designated in section 2.01 membrane flashings in different color.
- I. Insulation Adhesive shall be Olybond 500 adhesive manufactured by Olympic Fasteners.
- J. Asphalt Primer: ASTM D 41, Leak Buster Matrix 307 Premium Asphalt Primer, by BMCA or equal.
- K. Hot Asphalt shall be Type III or IV as required by SBS Modified Bitumen manufacturer for issuance of the warranty specified within this specification. Mexican asphalt is not allowed.

PART 3 - EXECUTION

3.01 EXISTING / GENERAL CONDITIONS

- A. Contractor shall verify that surfaces are smooth, dry, sound, and free from any conditions effecting proper roofing applications. Prior to starting work, owner shall be advised of conditions needing correction. Work will not be started until other trade work required ahead of membrane application is completed. Contractor is responsible for all carpentry work such as wood nailers, wood curbs, wood expansion or contracting members, wood cants and similar items necessary for the completion of the work according to these specifications.

Removal of existing roof

1. The existing roofing membrane(s) and insulation shall be removed to the existing deck and shall include but not be limited to, all wall flashings, edge flashings, and all other items incorporated there in.
2. Remove only as much roofing as can be replaced with a completely new roofing system and made watertight the same day. Phase roofing application is not allowed.

3. All debris shall immediately be removed from the roof surface and deposited into trucks or containers through an enclosed trash chute. Removal of existing roofing materials should be performed in conjunction with the installation of the new roofing system. All exposed areas must immediately be covered and made watertight. No overnight stockpiling of debris on the roof shall be permitted.
4. Contractor shall clean all roof surfaces and is responsible for keeping the building and surrounding area neat and orderly.
5. Trash container or trucks shall be removed from the premises when they are full.
6. Clean the roof deck surfaces of all loose materials and other impediments detrimental to the application of the new roofing materials.

3.02 PROTECTION

- A. Prior to any job shut-down, all seams laid in the preceding time period shall be checked for water tightness. Required precautions should be taken to leave the job in watertight condition. If moisture is present at any location contractor at no expense to the owner or manufacturer will replace all wet material.
- B. All finished work of other trades that is damaged in the execution of work under this section shall be replaced or restored at the expense of the trade who caused the damage.
- C. Ground storage and work shall be confined to the areas designated by the Owner as agreed upon at the pre-bid conference. Do not travel across landscaped areas without the Owner's approval.

3.03 SURFACE PREPARATION

- A. Prior to installing the roofing material, remove from deck all debris, nails, sharp objects, dirt, moisture, petrochemical materials or projections that could in any way damage the systems. Surface shall be prepared such that there is positive and workable drainage. Areas of the roof with ponding water should be corrected and the slope adjusted accordingly so as to prevent future standing water.

3.04 WORKMANSHIP

- A. Contractors must be thoroughly skilled in the application of specified materials; with all workmanship done in such a manner as to fulfill the requirements of drawings and specifications. Any specific directions furnished by manufacturer, and as published in the manufacturer's manual for modified bitumen roofing systems, regarding the application of roofing materials shall be strictly followed. All deviations from the manufacturer's published instructions shall be secured in writing on the manufacturer's letterhead approved by the "Manager of Technical Services".

- B. Prior to applying membranes the contractor and his foreman shall review the specifications and the manufacturer's technical manual with the manufacturer's technical representative to make certain all aspects of membrane application is understood. Application will proceed in strict accordance with specifications and detailed drawings and instructions in said technical manual. No verbal/oral deviation will be accepted unless authorized on company's letterhead signed by the company's " Manager of Technical Services ".
- C. Maintain constant supervision by a competent foreman.
- D. Contractor must supervise installation of and be responsible for seeing that roof mechanical, electrical equipment, roof drains and other works are properly flashed. Make roof and flashing repairs as necessary; advise the Architect / owner in writing of all potential leaks as may be caused by other trades.
- E. Install only as much roofing material as can be completed and covered with a cap membrane in one day. No section of the roof should be left exposed and unfinished. Phase roofing is not accepted.
- F. Do not roll roofing equipment or stack materials on completed new roofing surfaces, without the adequate protection of a ½” plywood sheets.
- G. Do not apply any roofing materials before sunrise, or at anytime when there are indications of moisture, (rain, mist, dew, frost or snow).
- H. Insure that no heavy objects remain in one place on the portions of the new roofing membrane where the membrane has not yet set or the adhesive has not fully bonded the layers. .
- I. Insure that all fish mouths are cut and patched (do not attempt to walk down the fish mouths). Objects causing separation between reinforcing plies must be removed.
- J. Every attempt shall be made to install flashings at openings, projections, and walls adjoining new roofing during all work periods. If circumstances do not allow this, these areas shall be made watertight at the end of each day or work period.
- K. Aesthetic Considerations: An aesthetically pleasing overall appearance of the finished roof application is a standard requirement for this project. Make necessary preparations, utilize recommended application techniques, and apply the specified materials including granules, and exercise care in ensuring that the finished application is acceptable to the Owner.

3.05 NOT USED

3.06 HOT ASPHALT

A. Modified SBS Base Sheet:

On decks with slope (1/4" per foot), base sheet must be applied in shingle fashion starting at the low point of the roof proceeding upwards, with all end laps staggered. Base sheet shall be lapped 2" on the sides and 4" at the ends. On decks with slopes greater than above in addition to the above requirements the end lap, shall also be staggered no less than 3 feet apart. Sheets will be nailed 12" from the edge, 18" apart. Turn up 2" above cant strip at all vertical surface.

B. Smooth Interply Application:

The first course shall be applied in half width starter rolls with subsequent course applied in full width rolls. The interply shall have a minimum of 3" side laps and 6" end laps. All subsequent plies must be staggered. Uniform solid mopping of steep asphalt at nominal rate of 25 lb. per 100 square feet. Broom in place. Turn up 2" above cant strip at all vertical surfaces.

C. Cap Membrane Application

Lap each membrane 3 3/4" on side laps and 6" on end laps. End laps shall be staggered not less than three (3) feet apart. Uniform solid mopping of steep asphalt at nominal rate of 25 lb. per 100 square feet. Broom in place. Turn up 2" above cant strip at all vertical surfaces. Areas with less than 1/8" outflow of bitumen will be checked with a trowel, heat applied between laps and properly sealed. For slopes of 1"-2" per lineal foot apply material parallel to the slope; back nail head laps 2" from the edge, 6" o.c. and side laps 8" off center.

NOTE: Flying in 11'- 17' lengths of relaxed membrane into hot asphalt is recommended.

D. Guidelines On Hot Asphalt Application

1. Temperature: Hot asphalt application is NOT recommended when ambient temperature is below 50 degrees Fahrenheit. Do not over compensate by heating the asphalt above the equiviscous temperature.
2. It is recommended that membranes be rolled out and relaxed before application. It may be necessary depending on temperature to cut rolls in minimum 11' lengths to facilitate proper relaxing of membranes (pre storage of membranes in a warm environment will help expedite application).
3. Asphalt temperature shall never fall below 400 degrees Fahrenheit at the point of application of the membrane. Brooming of membrane is absolutely required.
4. Type IV shall be used on all slopes 1/4 inch per foot and over. Asphalt shall be applied at its EVT temperature or 425 degree F; whichever is greater, in a uniform layer, without voids, at a rate of 25 lb/ square. The mopping stroke will be such that the side lap is covered with asphalt last. A

rolling bank (puddle) of mopping asphalt shall be maintained across the full width of the roll.

5. Slope Requirements:

Starting at low point of the roof apply the smooth ply & cap sheet perpendicular to the slope with a minimum of 3" side laps and 6" end laps. A flow of asphalt of 3/8" shall be obtained at all seams. Offset end laps a minimum of 36". For slopes of 1/2"-2" per lineal foot apply the material parallel to the slope; back nail head laps 2" from the edge, 6" O.C and side laps 8" O.C. All side laps must be staggered 18" between successive plies. End laps of all cap membranes must be staggered a minimum of 3 feet. The roofing membrane components shall immediately be applied after application of base sheet and/or insulation as a continuous operation.

6. Priming: All metal flanges (all jacks, edge metal, lead drain flashings) and concrete and masonry surfaces shall be primed with an asphalt primer meeting ASTM D 41.

7. Fill all voids between the penetration and flashing collar with approved caulking.

8. All rolls (both ply and cap) shall never be put down in full-length rolls (33 lineal feet). They should be cut to the following lengths.

Slopes of	1/4" up to 1 1/2"	17-foot max
Slopes of	1 1/2" to 2"	11-foot max

Coiled rolls should be unrolled, placed upside down and allowed to "relax" prior to installation. Then re-roll to apply.

9. Care should be taken to insure that the cap sheet lays flat in the asphalt. There shall be complete adhesion between the cap sheet and the mopping asphalt.

10. Brooming of the plies may be necessary under certain conditions to insure that the cap sheet adheres solidly to the asphalt. Apply extra pressure to avoid creating open channels, where three or more membranes are lapped.

11. A minimum 3/8 inch asphalt flow-out shall be obtained at all laps. Dry laps are not acceptable. Check all seams for full and uniform adhesion. All end laps shall be staggered a minimum of 18 inches so that no adjacent end laps coincide. If end laps fall in line or are not staggered the proper distance, a full width of SBS membrane shall be installed over the end laps. All material must be cut to specified lengths then relaxed or heated until the material lies completely flat before installation. (i.e. no wrinkles, buckles or rigid end strips)

12. Matching granules may be broadcast into the Hot Asphalt bleed out at seams while hot to enhance the finished appearance of the membrane. A minimum 3/8 inch asphalt flow-out shall be obtained at all laps. Dry laps are not acceptable. Check all seams for full and uniform adhesion.

13. All laps shall be parallel or perpendicular to the slope of the roof such that the flow of water is not against the lap.

3.07 BASE FLASHINGS

- A. Install all base flashings of roof wall junctures, projections and expansion point curbing per manufacturers specification. All flashings shall be applied via heat welding. Cold adhesive or hot asphalt application of flashing is not recommended due to possibility of slippage. All flashing should be strapped with maximum 1.21-meter (4') sections.
- B. Base flashing shall be fused in place so that it extends a minimum 15 cms (6") onto surface of roof and a minimum of 10 cm (4") above termination of roofing membrane on wall. When flashing has to be installed over a porous surface, apply asphalt primer at a rate of 1.9 - 2.8 liter / 10 sqm (1/2 to 3/4 gal. per 100 sq. ft) and allow to dry.
- C. Apply pressure to the flashing membrane to obtain maximum contact to surface to which it is applied. There shall be no voids under the base flashing membrane. It is imperative that complete attachment be obtained to the roof surface, roofing membrane over cant, and the wall. A small bead of hot asphalt should be squeezed out at the edges.
- D. Subsequent strips of base flashing shall be fused in place in the same fashion, overlapping preceding strip by 10 cms (4"). Overlap shall be interply fused to preceding strip. Pressure shall be applied to surfaces to ensure adhesion.
- E. The flashing must not remain open at the end of the workday.
- F. The contractor shall thoroughly inspect the completed flashing system at the end of each day's work.
- G. Mechanically fasten top edge base flashings with approved fasteners 10 –15 cms (4"-6") on center per manufacturer's specifications.
- H. Install metal counter flashing as required.
- I.

3.08 SEALANT

- A. All edges of flashing exposed at gravel stops, waste stacks, pitch pans, vent stacks, etc., shall be caulked with a smooth continuous bead of approved sealant.

3.09 INSPECTION OF COMPLETED SYSTEM

- A. All cap membrane shall be carefully inspected by the Architect / owner for construction damage and imperfect heat fusion. Any holes or tears shall be patched with the appropriate cap membrane. The patch must extend at least 4" in all directions from the edges of the tear or puncture. The final inspection of the

roofing system shall be done prior to application of the coating. Any deficiency identified shall be repaired prior to applying the coating.

3.10 DEFICIENCY ADJUSTMENTS

- A. Deficiencies identified by the Architect / owner during the final inspection shall be corrected within five (5) working days. The warranty will not be issued until the deficiencies are corrected.

3.11 CLEANING AND REPAIRING

- A. The contractor shall be held fully responsible for cleaning, repairing, touch up or replacing (when directed) items or areas which have been soiled, discolored or damaged by the work of this section. Precaution shall be taken against splashing any material on to adjacent areas. The contractor shall immediately remove any trace of such splashes or spills.

3.12 WALKWAYS

- A. Walkways for normal rooftop traffic shall be constructed from two plies of modified bituminous membranes.
- B. Construct walkways prior to the application of field surfacing by solidly adhering a first ply of smooth surfaced membrane via heat welding to the field of the roof and then adhering a granule surfaced of membrane to the surface of the first ply by heat welding.
- C. Walkway sections shall be no longer than 10 feet (3000 mm), with a 6 inches (152 mm) minimum gap between each section to allow for drainage.

3.13 NOT USED:

3.14 DEBRIS DISPOSAL

- A. The contractor shall make his own arrangements for disposal of debris and waste material. All disposals will be done off site and at the contractor's expense. The owner assumes no responsibility for the disposal of any roofing material. Debris from project will be removed daily, and at no time allowed to block any thoroughfare. Premises shall be cleaned to the satisfaction of Architect / owner.

3.15 FINAL INSPECTION PRIOR TO COATING:

- A. All cap membrane shall be carefully inspected by the Architect / owner for construction damage and imperfect adhesion. Any holes or tears shall be patched with the appropriate cap membrane. The patch must extend at least 4" in all directions from the edges of the tear or puncture. The final inspection of the

roofing system shall be done prior to application of the coating. Any deficiency identified shall be repaired prior to applying the coating.

3.16 FIRE WATCH:

- A. Fire watch shall be provided continuously during and for at least 2 hour following torch application. At least two 2-1/2 gallon containers of water and two 15-pound carbon dioxide extinguishers shall be available during the fire watch. When work is interrupted, or at the end of a section of roofing, and at end of each day's work, areas which had been subjected to torch applications shall be surveyed with an infra-red sensing device. Hot spots shall be cooled and re-surveyed. If a hot spot persists, the roof shall be cut open and any smoldering shall be extinguished before the foreman leaves the site.

END OF DIVISION

**SECTION 7515
HEAT WELDED ROOFING**

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Completely tear off existing roof, insulation and all other related items to the deck. Repair existing roofing surface for application of the specified SBS system per NRCA and manufacturer's recommendations.
 - 1. Repair existing roofing surface for application of the specified SBS system per NRCA and manufacturer's recommendations.
 - 2. Contractor shall raise mechanical equipment to maintain an 8" curb height.
 - 3. Remove repair existing drains and install new pitch pans.
- B. Install crickets where required to prevent any ponding water. Contractor is solely responsible to determine the number and location of the crickets.
- C. Flash all perimeter, curb, and penetration conditions with flashing accessories as appropriate to the site condition
- D. Install wall and base flashings systems.
- E. Install sheet metal flashing.
- F. Mechanically fasten one layer of SBS modified base sheet over the wood deck.

1.02 RELATED SECTIONS: Drawings, General Provisions, Special Provisions and Division 1 apply to the work of this section.

- A. Section 1300 - Submittals
- B. Section [-----] - Rough Carpentry
- C. Section [-----] - Roof Decks
- D. Section 7620 - Sheet Metal Flashing and Trim
- E. Section 7565 - Preparation for Re-Roofing
- F. Section 1200 – Asbestos Abatement

1.03 REFERENCES: References in these specifications to standards, test methods, codes etc., are implied to mean the latest edition of each such standards are adopted. The following is an abbreviated list of associations, institutions, and societies, which may be used as references throughout these specifications.

- A. American Society For Testing & Materials (ASTM):
- B. ASTM D 312: Asphalt Used in Roofing.

- C. ASTM D 412: Standard Test Methods For Rubber Properties In Tension.
- D. ASTM D 728: Standard Specification For Perlite Thermal Insulation Board.
- E. ASTM D-6162: Standard Specification for SBS Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements.
- F. ASTM D-6163: Standard Specification for SBS Modified Bituminous Sheet Materials Using Glass Fiber Reinforcements
- G. ASTM D-6164: Standard Specification for SBS Modified Bituminous Sheet Materials Using Polyester Reinforcements
- H. ASTM D 4586 - Standard Specification for Asphalt Roof Cement, Asbestos-Free.
- I. ASTM D 41 - Standard Specification for Asphalt Primer Used in Roofing, Damp proofing and Waterproofing
- J. California Title 24 requirements for Cool Roof.
- G. Uniform Building Code Standard:
 - 1. UBC 32-4: Roof Construction And Covering, Roof Insulation.
- H. Industry Publications:
 - 4. National Roofing Contractors Association (NRCA) Roofing and Waterproofing Manual
 - 5. Underwriters Laboratories (UL) - Roofing Systems and Materials Guide (TGFU R1306).
 - 6. Factory Mutual (FM Global) - Approval Guide.
Factory Mutual Standard 4470 - Approval Standard for Class 1 Roof Covers.
- I. SMACNA: Sheet Metal and Air Conditioning Contractors National Association Chantilly, VA
- J. CERTA: Certified Roofing Torch Applicator, Rosemont, IL
- K. OSHA: Occupational Safety and Health Administration, Washington, DC

1.04 COORDINATION

Coordinate with other trades affecting or affected by work of this section.

1.05 QUALITY ASSURANCE

- A. Contractor Qualifications: Prior to award of the contract the contractor shall submit evidence of the following:
 - 1 Contractor shall provide a letter stating that they have at least 4 years experience with SBS modified bitumen membrane torch application and a list of 3 jobs of over 150 squares each that used a similar system as outlined in this specification.
 - 2. An updated letter from the primary roofing manufacturer they propose to use stating the Contractor has a valid “ Certificate of Eligibility “ and that application done by contractor will qualify for the warranty as required by the specification.

- B. **Manufacturer's Qualifications:** Roofing manufacturer shall submit a letter on their letterhead stating that they have manufactured the products they propose to be used for the project for not less than 7 years.
- C. **Pre-Roofing Conference:** Meet at the project site well in advance of the time schedules for roofing and other related work, and review requirements for the work and conditions which could possibly interfere with successful performance of the work, or required to coordinate with it or to protect it there after with representatives of all firms involved in the work. Require manufacturer's technical representative to participate in the conference. Date shall be determined after project has been awarded.
- D. **Final Inspection:** Manufacturer's representative shall provide a comprehensive intermediate and final inspection after completion of the roof system. All application errors shall be addressed and final punch list completed.
- E. **Testing and agency requirements:**
 - 3. **Fire Testing:** Material shall be tested for a minimum of Class A fire rating. The system should pass the said tests without any rock, covering or emulsions thus facilitating maintenance and eliminating excess load on the roof. All modified bituminous sheet roofing systems must bear testing agency (Underwriters Lab, Warnock Hersey etc.) on package or container indicating that materials have been produced under testing agency's classification and follow-up service.
 - 4. Contractor shall obtain all local permits for the application of the roofing system. The contractor prior to the job must obtain necessary permits.
 - 5. **Windstorm Classification:** Provide a roofing system, which will achieve the required uplift resistance as calculated in accordance with ASCE 7-05 or as listed in the current FM Approval Guide. Corners and perimeter areas shall be calculated in accordance with ASCE 7-05 90 psf of uplift resistance

1.06 WARRANTY

- A. **Roofing Contractor:** Upon completion of work, furnish a written five-year workmanship guarantee. This warranty shall cover all leaks due to defective workmanship for a period of 5 years. Manufacturer shall conduct an audit at no cost to owner within 3 years of project completion date. All deficiencies identified in the report shall be fixed and brought up to specification at no cost to the owner.
- B. **Manufacturer:** Manufacturer shall provide owner with a **20** year non-prorated Roofing System Guarantee. Warranty should cover all leaks caused by faulty workmanship or material. Warranty will be in effect on the date of substantial completion of the project.
- C. **Manufacturer's Maintenance Agreement:** Manufacturer shall inspect the building every three-years for duration of the warranty period. The purpose of the inspection is to prepare a report on the condition of the roof and any areas, which

has not been maintained. A comprehensive report should be prepared (digital and printed format), describing the condition of the roof. The report should alert the owners to any areas that require maintenance. Manufacturer shall make repairs identified in the report and by the owner. All these repairs shall be done at no charge to the owner, even if they have not resulted in leaks. The following are some of the example of the areas, which needs to be repaired on the roof by the manufacturer through out the warranty period: Granule loss, loose flashing, dried out mastic or caulking, blisters, loose flashing, mud cracking. Any damage done to the roofing system due to ponding water.

- D. Coating Manufacturer: Coating manufacturer shall issue a 5-year warranty against peeling, flaking and cracking.

1.07 SUBMITTALS

- B. Pursuant to the provisions of the General Provisions and Section 01300 “Submittals” the Contractor shall submit the following:

- 1 Product specification sheet for each roofing component within the specified system. Data should substantiate that materials comply with the specifications.
- 2 Test results as outlined in Article 1.05.B above.
- 3 Final warranty per Article 1.06.
- 4 Samples of each roofing component 3” x 5” of the specified system.
- 5 Shop Drawings: Provide manufacturers standard details and approved shop drawings for the roof system specified.
- 6 Installer shall provide written documentation from the manufacturer of their authorization to install the roof system, and eligibility to obtain the warranty specified in this section.
- 7 As part of the submittal package, contractor shall submit a letter from the manufacturer agreeing to perform the maintenance services identified in section 1.06 C at no cost to the owner.

1.08 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Roofing material shall be delivered to the job-site in new, dry, unopened containers clearly showing catalog number, product description, manufacturer's name and location. Delivered quantities should be sufficient to assure continuous work.
- B. Assure that materials are kept clean, and away from excessive heat and cold; do not remove labels or tear off protective covering until ready for application; store in an enclosed area where temperature is above 10 degrees C (50 degrees F) and below 32 degrees C (90 degrees F). Material shall not be stored directly on the ground.
- C. Do not double stack membrane. Maintain aisle space between stacks to facilitate fire suppression.

- D. Do not overload structure with building materials.
- E. Strictly follow recommended storage instructions supplied by the manufacturer.
- F. Store roll goods on end on pallets in a clean, dry, protected area. Take care to prevent damage to roll ends or edges. Do not double stack modified bitumen products or lay them on their side. Follow manufacturers instruction for storage and handling.

PART 2 - PRODUCTS

2.01 ROOFING SYSTEM

- A. All components of the roofing system must be SBS modified bitumen and have been successfully manufactured in the U.S. for a minimum of 10 years. All the layers (base, ply and cap) shall be supplied by the company issuing the warranty. Non-modified asphalt coated fiberglass Type II base sheet is not an acceptable substitution for the modified base sheet. APP modified membranes are not acceptable. Acceptable manufacturers, provided all requirements outlined in the specifications are met are:
 - 1. MBTechnology www.mbtechnology.com
 - 2. Garland www.garlandco.com
 - 3. Tremco www.tremco.com
 - 4. Or, "Pre-Approved Equal" from other manufacturer acceptable to OWNER, with submittals ten (10) days prior to Bid. Only products approved via a written addendum will be accepted.

- B. Roofing Membranes: Roofing membrane components include:
 - 1. BASE: Shall be SBS modified weighting a minimum of 40 Lbs/ Square and meeting ASTM D 4601-91, Type II. Approved membranes are:
 - MBTechnology layflat SBS LF40
 - Garland Versiply 40
 - Or, "Pre-Approved Equal" from other manufacturer acceptable to OWNER, with submittals ten (10) days prior to Bid. Only products approved via a written addendum will be accepted.

Modifier: SBS Modified
 Weight: Minimum of 40 lbs/ 100 square feet
 Tensile @ Room Temp: 44 lbs/in Weight: 40 lbs/square

2. Smooth Interply & Base Flashing: Shall be a smooth surfaced membrane, which meets or exceeds the following minimum standards. Approved membranes are:

MBTechnology fastorch SBS FT160CSA

Garland Stress IV Plus Smooth

Or. "Pre-Approved Equal" from other manufacturer acceptable to OWNER, with submittals ten (10) days prior to Bid. Only products approved via a written addendum will be accepted.

- a). Modifier: Styrene Butadiene Styrene.
 - b). Dual reinforcement consisting of a layer of polyester and a layer of fiberglass mat.
 - c). Tensile strength shall be min. 120 lbs/in. MD and 80 lbs/in CMD @ 73.4 deg F and 130 lbs/in and 100 lbs/in after heat conditioning.
 - d). Tensile strength shall be min. 210 lbs/in. MD and 180-lbs/in CMD @ O deg F and 200 lbs/in MD and 150 lbs/in CMD after heat conditioning.
 - e). Ultimate Elongation @ 73.4 deg of minimum 30% MD & CMD.
 - f). Tear strength to be min. 160 lbs MD and 130 lbs CMD @ 73.4 F.
 - g). Thickness: 150 mils, minimum.
 - h). Bottom Surface: Burn off backer film.
 - i). Mass Weight: Minimum nominal weight of 110 pounds per 1 square roll.
 - j). Meet and exceed requirements of ASTM D6162 Grade S.
3. Cap Membrane & Flashing: Shall meet or exceed ASTM D 6162 Grade G. It shall be a dual reinforced fire rated SBS membrane suitable for torch application. Cap membranes reinforced with a single layer of polyester or fiberglass mat are not acceptable. Cap membranes reinforced with polyester mat with fiberglass strands are not acceptable. The cap membrane shall meet the following specifications:

MBTechnology fireguard fastorch SBS FGFT160CWH

Garland Stessply IV Plus Granulated

Or. "Pre-Approved Equal" from other manufacturer acceptable to OWNER, with submittals ten (10) days prior to Bid. Only products approved via a written addendum will be accepted.

- a). Modifier: Styrene Butadiene Styrene.

- b). Reinforcement: Dual reinforcement consisting of a layer of polyester and a layer of fiberglass mat.
- c). Tensile strength shall be min. 120 lbs/in. MD and 80 lbs/in CMD @ 73.4 deg F and 130 lbs/in and 100 lbs/in after heat conditioning.
- d). Tensile strength shall be min. 180 lbs/in. MD and 150-lbs/in CMD @ 0 deg F and 240 lbs/in MD and 190 lbs/in CMD after heat conditioning.
- e). Ultimate Elongation @ 73.4 deg of minimum 30% MD & CMD.
- f). Tear strength to be min. 180 lbs MD and 130 lbs CMD @ 73.4 F.
- g). Bottom Surface: Burn off backer film.
- h). Mass Weight: Minimum nominal weight of 110 pounds per 1 square rolls.

2.02 ROOFING ACCESSORIES:

1. Fasteners: Nailing patterns & type of fasteners (including screws & plates) on all insulation & membranes shall comply with Factory Mutual guidelines (FM I-90) requirements and roof membrane manufacturers written recommendations.
2. Cants: Shall be pressure treated redwood. New lumber shall be free from warping as manufactured by Exterior Woods or equal.
all be pressure treated redwood . New lumber shall be free from warping as manufactured by Exterior Woods or equal.
3. Protection Board shall be. ½” Dens Deck by Georgia Pacific pre primed with an asphalt primer, no substitution allowed. .
4. Pitch pans, Expansion Joints, Metal Flashings: Shall be in full compliance with NRCA and SMACNA approved application standards.
5. Pitch Pan Filler: Shall consist of a two component, cold applied urethane compound as approved by roofing membrane manufacturer.
6. Caulking Sealant: Comply with Federal Spec number TTS 0023c. And should consist of a single component, high performance, elastomeric compound as manufactured by or similar and equal to the following:
7. Mastic: Elastomeric mastics, adhesives, and caulking products are required over standard grade adhesive and mastics. , All mastics must conform to ASTM D4586 Elastomeric Mastic -Pros-choice 1010 by Gibson Homan or approved equal.
8. Traffic Pad: Same as flashing material as designated in section 2.01 membrane flashings in different color.
9. Insulation Adhesive shall be Olybond 500 adhesive manufactured by Olyptic Fasteners.
10. Asphalt Primer: ASTM D 41, Leak Buster Matrix 307 Premium Asphalt Primer, by BMCA or equal.

PART 3 - EXECUTION

3.01 EXISTING / GENERAL CONDITIONS

- A. Contractor shall verify that surfaces are smooth, dry, sound, and free from any conditions effecting proper roofing applications. Prior to starting work, owner shall be advised of conditions needing correction. Work will not be started until other trade work required ahead of membrane application is completed. Contractor is responsible for all carpentry work such as wood nailers, wood curbs, wood expansion or contracting members, wood cants and similar items necessary for the completion of the work according to these specifications.

Removal of existing roof

7. The existing roofing membrane(s) and insulation shall be removed to the existing deck and shall include but not be limited to, all wall flashings, edge flashings, and all other items incorporated there in.
8. Remove only as much roofing as can be replaced with a completely new roofing system and made watertight the same day. Phase roofing application is not allowed.
9. All debris shall immediately be removed from the roof surface and deposited into trucks or containers through an enclosed trash chute. Removal of existing roofing materials should be performed in conjunction with the installation of the new roofing system. All exposed areas must immediately be covered and made watertight. No overnight stockpiling of debris on the roof shall be permitted.
10. Contractor shall clean all roof surfaces and is responsible for keeping the building and surrounding area neat and orderly.
11. Trash container or trucks shall be removed from the premises when they are full.
12. Clean the roof deck surfaces of all loose materials and other impediments detrimental to the application of the new roofing materials.

3.02 PROTECTION

- A. Prior to any job shut-down, all seams laid in the preceding time period shall be checked for water tightness. Required precautions should be taken to leave the job in watertight condition. If moisture is present at any location contractor at no expense to the owner or manufacturer will replace all wet material.
- B. All finished work of other trades that is damaged in the execution of work under this section shall be replaced or restored at the expense of the trade who caused the damage.
- C. Ground storage and work shall be confined to the areas designated by the Owner as agreed upon at the pre-bid conference. Do not travel across landscaped areas without the Owner's approval.

3.03 SURFACE PREPARATION

- A. Prior to installing the roofing material, remove from deck all debris, nails, sharp objects, dirt, moisture, petrochemical materials or projections that could in any way damage the systems. Surface shall be prepared such that there is positive and workable drainage. Areas of the roof with ponding water should be corrected and the slope adjusted accordingly so as to prevent future standing water.

3.04 WORKMANSHIP

- A. Contractors must be thoroughly skilled in the application of specified materials; with all workmanship done in such a manner as to fulfill the requirements of drawings and specifications. Any specific directions furnished by manufacturer, and as published in the manufacturer's manual for modified bitumen roofing systems, regarding the application of roofing materials shall be strictly followed. All deviations from the manufacturer's published instructions shall be secured in writing on the manufacturer's letterhead approved by the "Manager of Technical Services".
- B. Prior to applying membranes the contractor and his foreman shall review the specifications and the manufacturer's technical manual with the manufacturer's technical representative to make certain all aspects of membrane application is understood. Application will proceed in strict accordance with specifications and detailed drawings and instructions in said technical manual. No verbal/oral deviation will be accepted unless authorized on company's letterhead signed by the company's " Manager of Technical Services ". The foreman and all the crew shall be trained and also follow the safety and application guidelines as outlined in “ CERTA: Certified Roofing Torch Applicator” manual.
- C. Maintain constant supervision by a competent foreman.
- D. Contractor must supervise installation of and be responsible for seeing that roof mechanical, electrical equipment, roof drains and other works are properly flashed. Make roof and flashing repairs as necessary; advise the Architect / owner in writing of all potential leaks as may be caused by other trades.
- E. Install only as much roofing material as can be completed and covered with a cap membrane in one day. No section of the roof should be left exposed and unfinished. Phase roofing is not accepted.
- F. Do not roll roofing equipment or stack materials on completed new roofing surfaces, without the adequate protection of a ½” plywood sheets.
- G. Do not apply any roofing materials before sunrise, or at anytime when there are indications of moisture, (rain, mist, dew, frost or snow).

- H. Insure that no heavy objects remain in one place on the portions of the new roofing membrane where the membrane has not yet set or the membrane is still hot. Such time shall be 15 minutes, depending on ambient temperatures.
- I. Insure that all fish mouths are cut and patched (do not attempt to walk down the fish mouths). Objects causing separation between reinforcing plies must be removed.
- J. Every attempt shall be made to install flashings at openings, projections, and walls adjoining new roofing during all work periods. If circumstances do not allow this, these areas shall be made watertight at the end of each day or work period.
- K. Aesthetic Considerations: An aesthetically pleasing overall appearance of the finished roof application is a standard requirement for this project. Make necessary preparations, utilize recommended application techniques, and apply the specified materials including granules, and exercise care in ensuring that the finished application is acceptable to the Owner.

3.05 NOT USED

3.06 TORCH WELDING

- A. Modified SBS Base Sheet:

On decks with slopes of ¼"-2" per foot base sheet must be applied in shingle fashion starting at the low point of the roof proceeding upwards, with all end laps staggered. Base sheet shall be lapped 2" on the sides and 4" at the ends. On decks with slopes greater than above in addition to the above requirements the end lap, shall also be staggered no less than 3 feet apart. Sheets will be nailed 12" from the edge, 18" apart. Turn up 2" above cant strip at all vertical surface.

- B. Interply & Cap Membrane Application:

Torch weld the interply layer in half width rolls with subsequent course applied in full width rolls. Torch weld allowing 3.5" side and 6" on end laps. End laps shall be staggered with a minimum spacing of 3". Apply to produce a 1/8" -1/4" outflow of bitumen at all seams. Areas with less than 1/8" outflow will be checked with a trowel, heat applied between laps and properly sealed. Turn up 2" above can strip at all vertical surfaces. All layers shall be 100% adhered to each other and to the protection board or base. Areas of partial or loose adhesion shall be redone at contractor's sole cost and expense.

1. Set all metal flanges in Neoprene SBS Flashing Cement over the SBS base sheet per detailed drawings.
2. Heat fuse a strip of base flashing membrane approximately 10" wide to the primed metal flange so that it extends 4" beyond edge of metal flange.

3. Heat fuse-flashing membrane over the stripped in metal flanges.
4. Apply the pressure to surface of fused flashing cap membrane to ensure adhesion and solid fusion.
5. Fill all voids between the penetration and flashing collar with approved caulking.
6. All rolls (both ply and cap) shall never be put down in full-length rolls (33 lineal feet). They should be cut to the following lengths.

Slopes of	¼” up to 1 ½”	17-foot max
Slopes of	1 ½” to 2”	11-foot max

All material must be cut to specified lengths then relaxed or heated until the material lies completely flat before installation. (i.e. no wrinkles, buckles or rigid end strips)

7. Matching granules may be broadcast into the modified bitumen bleed out at seams while hot to enhance the finished appearance of the membrane.
8. All end laps shall be staggered a minimum of 18 inches (457 mm) so that no adjacent end laps coincide. If end laps fall in line or are not staggered the proper distance, a full width of membrane shall be installed over the end laps. End laps, flashing sheets and other seams formed over granule surfaces require pre-heating of the top surface of the underlying granule surface membrane to a point where the granules just begin to sink into, and the modified bitumen compound comes up through the granules to ensure proper seam construction and adhesion.
9. All laps shall be parallel or perpendicular to the slope of the roof such that the flow of water is not against the lap.

3.07 BASE FLASHINGS

- A. Install all base flashings of roof wall junctures, projections and expansion point curbing per manufacturers specification. All flashings shall be applied via heat welding. Cold adhesive application of flashing is not allowed due to possibility of slippage.
- B. All flashing should be strapped with maximum 1.21-meter (4’) sections.
- C. Base flashing shall be fused in place so that it extends a minimum 6” onto surface of roof and a minimum of 4 “above termination of roofing membrane on wall. When flashing has to be installed over a porous surface, apply asphalt primer at a rate of 1/2 to 3/4 gal. per 100 sq. ft and allow to dry.
- D. Apply pressure to the flashing membrane to obtain maximum contact to surface to which it is applied. There shall be no voids under the base flashing membrane. It is imperative that complete attachment be obtained to the roof surface, roofing membrane over cant, and the wall. A small bead of bitumen should be squeezed out at the edges.

- E. Subsequent strips of base flashing shall be fused in place in the same fashion, overlapping preceding strip by 4". Overlap shall be interply fused to preceding strip. Pressure shall be applied to surfaces to ensure adhesion.
- F. The flashing must not remain open at the end of the workday.
- G. The contractor shall thoroughly inspect the completed flashing system at the end of each day's work.
- H. Mechanically fasten top edge base flashings with approved fasteners 4"-6" on center per manufacturer's specifications.
- I. Install metal counter flashing as required.

3.08 FLASHINGS

- A. Install all base flashings of roof wall junctures, projections and expansion Joint curbing per manufacturers specification. Special care shall be taken to generously preheat the surface to which the flashing is being applied prior to heating the bottom of flashing membranes. Manufacturer's detailed flashing drawing's and application procedures shall be observed and strictly followed.

3.09 SEALANT

- A. All edges of flashing exposed at gravel stops, waste stacks, pitch pans, vent stacks, etc., shall be caulked with a smooth continuous bead of approved sealant.

3.10 INSPECTION OF COMPLETED SYSTEM

- A. All cap membrane shall be carefully inspected by the Architect / owner for construction damage and imperfect heat fusion. Any holes or tears shall be patched with the appropriate cap membrane. The patch must extend at least 4" in all directions from the edges of the tear or puncture. The final inspection of the roofing system shall be done prior to application of the coating. Any deficiency identified shall be repaired prior to applying the coating.

3.11 DEFICIENCY ADJUSTMENTS

- A. Deficiencies identified by the Architect / owner during the final inspection shall be corrected within five (5) working days. The warranty will not be issued until the deficiencies are corrected.

3.12 CLEANING AND REPAIRING

- A. The contractor shall be held fully responsible for cleaning, repairing, touch up or replacing (when directed) items or areas which have been soiled, discolored or damaged by the work of this section. Precaution shall be taken against splashing any material on to adjacent areas. The contractor shall immediately remove any

trace of such splashes or spills.

3.13 WALKWAYS

- A. Walkways for normal rooftop traffic shall be constructed from two plies of modified bituminous membranes.
- B. Construct walkways prior to the application of field surfacing by solidly adhering a first ply of smooth surfaced membrane via heat welding to the field of the roof and then adhering a granule surfaced of membrane to the surface of the first ply by heat welding.
- C. Walkway sections shall be no longer than 10 feet, with a 6 inches minimum gap between each section to allow for drainage.

3.14 NOT USED

3.15 DEBRIS DISPOSAL

- A. The contractor shall make his own arrangements for disposal of debris and waste material. All disposals will be done off site and at the contractor's expense. The owner assumes no responsibility for the disposal of any roofing material. Debris from project will be removed daily, and at no time allowed to block any thoroughfare. Premises shall be cleaned to the satisfaction of Architect / owner.

3.16 FINAL INSPECTION PRIOR TO COATING:

- A. All cap membrane shall be carefully inspected by the Architect / owner for construction damage and imperfect adhesion. Any holes or tears shall be patched with the appropriate cap membrane. The patch must extend at least 4" in all directions from the edges of the tear or puncture. The final inspection of the roofing system shall be done prior to application of the coating. Any deficiency identified shall be repaired prior to applying the coating.

3.17 FIRE WATCH:

- A. Fire watch shall be provided continuously during and for at least 2 hour following torch application. At least two 2-1/2 gallon containers of water and two 15-pound carbon dioxide extinguishers shall be available during the fire watch. When work is interrupted, or at the end of a section of roofing, and at end of each day's work, areas which had been subjected to torch applications shall be surveyed with an infra-red sensing device. Hot spots shall be cooled and re-surveyed. If a hot spot persists, the roof shall be cut open and any smoldering shall be extinguished before the foreman leaves the site.

END OF DIVISION

SECTION 7516

ELASTOMERIC ROOF COATING

Protective Coating: Coating shall be a two-part co-polymer elastomeric coating, white in color.

Henrys, 280DC White Roof Coating

MBTechnology CO24 Base and CO24 Top by

Or pre-approved equal

10 Year Warranty

Meets California Commission Title 24

ASTM D-6083-05

UL Classified A and B and Fire Rated

Cool Roof Rating Council (CRRC)

LEED requirements

Coverage: On smooth surfaces: approx. 2 - 3 gallons per 100 sq. ft. depending on porosity and roughness of surface

Submittals: Supply manufacturers product data for materials supplied.

SECTION 7565

PREPARATION FOR RE-ROOFING

PART 1 GENERAL

1.6 SECTION INCLUDES

- A. Removal and disposal of asbestos containing building material (ACBM)
- B. Removal of the existing roofing system in preparation for a new roof membrane system.

1.6 RELATED SECTIONS

- A. Section 7311 - Asphalt Shingles.

1.6 SYSTEM DESCRIPTION

- A. Remove and dispose of asbestos containing building material (ACBM) identified in Appendix A. Contractor shall conform to current applicable regulations and requirements for the removal and disposal of the ACBM included in Appendix A.
- B. Remove existing built up roofing assembly, perimeter flashings, base flashings, counter flashings, vent stack flashings, and roofing membrane if necessary.

1.6 ENVIRONMENTAL REQUIREMENTS

- A. Section 1600 SS- Material and Equipment: Environmental conditions affecting products on site.
- B. Do not remove existing roofing membrane when weather conditions threaten the integrity of the building contents or intended continued occupancy.
- C. Maintain continuous temporary protection prior to and during installation of new roofing system.

1.6 PROJECT CONDITIONS

- A. Section 1040 SS- Coordination and Meetings.
- B. Schedule work to coincide with commencement of installation of new roofing system.

- C. Remove only existing roofing materials that can be replaced with new materials, as the weather will permit.
- D. Coordinate the work with other affected mechanical and electrical work associated with roof penetrations.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Temporary Protection: Sheet polyethylene or fiber reinforced plastic; provide weights to retain sheeting in position.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 1039 SS - Coordination and Meetings: Verification of existing conditions before starting work.
- B. Verify that existing roof surface is clear and ready for work of this section.

3.2 PREPARATION

- A. Sweep roof surface clean of loose matter.
- B. Remove loose refuse and dispose off site.

3.3 MATERIALS REMOVAL

- A. Remove metal counter flashings if necessary.
- B. Fold up metal counter flashings to permit access to top edge of base flashings.
- C. Remove damaged portions of roofing membrane, perimeter base flashings, flashings around roof protrusions,
- D. Cut and lay flat any membrane blisters.
- E. Remove damaged insulation, fasteners, cant strips, and blocking if necessary.
- F. Repair existing wood deck surface to provide smooth working surface for new roof system.

3.4 TEMPORARY PROTECTION

- A. Provide temporary protective sheeting over uncovered deck surfaces.
- B. Turn sheeting up and over parapets and curbing. Retain sheeting in position with weights or temporary fasteners.
- C. Provide for surface drainage from sheeting to existing drainage facilities.
- D. Do not permit traffic over unprotected or repaired deck surface.

3.5 SCHEDULES

- A. Main Roof: Remove flashings, rock and gravel, membrane and underlayment, in preparation for new protected membrane roof system if necessary and as specified in Section 7311.

1.6 SUBMITTALS AT PROJECT CLOSEOUT

- A. Completed form, Report of Use of Regulated Carcinogen, CAL/OSHA 183A (12/06)

END OF SECTION

PHOTOGRAPHS

FOR

INYO COUNTY COURTHOUSE COMPLEX

RE-ROOFING PROJECT



Courthouse Annex Roof, 168 N. Edwards St. Independence, CA



Inyo County Courthouse Complex Re-roofing Project
Photographs
Page 1



Courthouse Annex Roof, 168 N. Edwards St. Independence, CA



PLANS

FOR

INYO COUNTY COURTHOUSE COMPLEX

RE-ROOFING PROJECT

INDEX OF SHEETS

- 1 TITLE SHEET
- 2 COURTHOUSE ANNEX ROOFING PLAN
- 2 ADMIN. BUILDING ROOFING PLAN



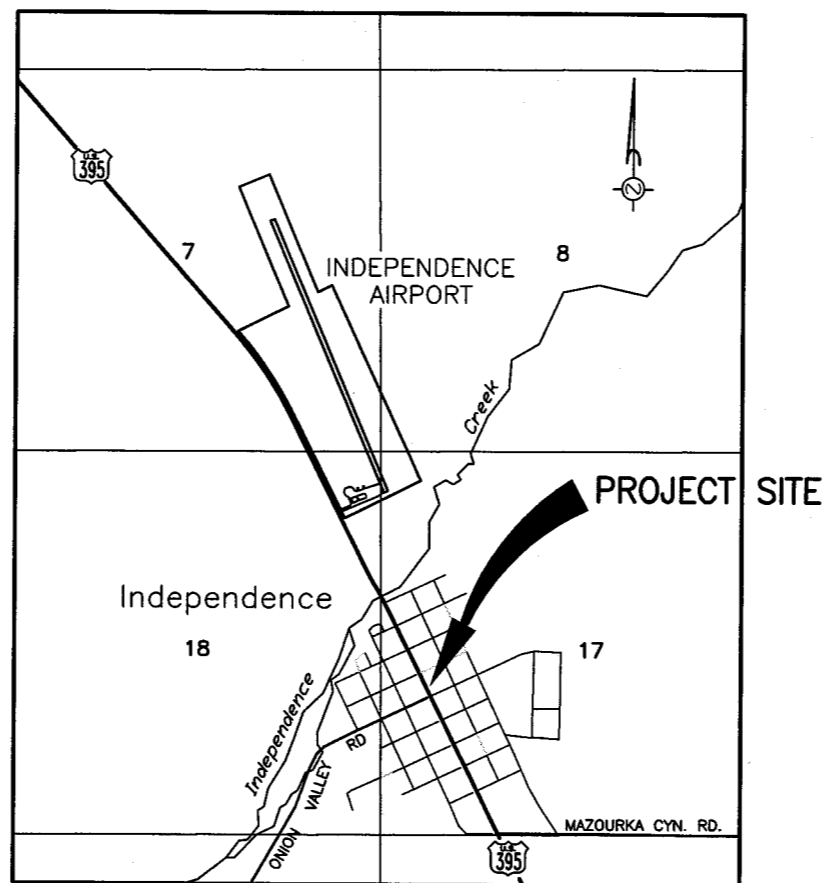
**COUNTY OF INYO
DEPARTMENT OF PUBLIC WORKS**

**PROJECT PLANS FOR
INYO COUNTY COURTHOUSE COMPLEX
RE-ROOFING PROJECT**

To be Supplemented by Inyo County Standard Specifications dated March, 1997

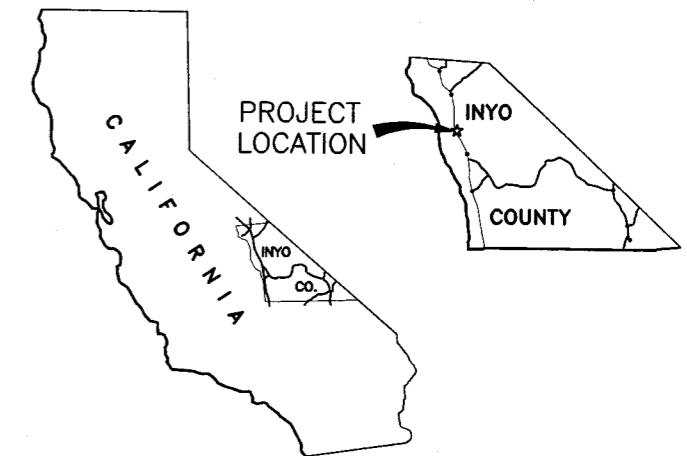
PROJECT NO. RR-10-011

INDEPENDENCE TOWN SITE



VICINITY MAP

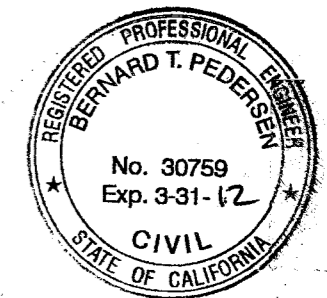
SCALE: NONE



LOCATION MAP
SCALE IN MILES

1. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF DISCREPANCIES BETWEEN THE INFORMATION SHOWN ON THESE DRAWINGS AND THE CONDITIONS EXISTING IN THE FIELD. THE CONTRACTOR SHALL COMPARE ALL DRAWINGS AND VERIFY THE FIGURES BEFORE LAYING OUT THE WORK AND WILL BE RESPONSIBLE FOR ANY ERRORS WHICH MIGHT HAVE BEEN AVOIDED THEREBY. IF THE CONTRACTOR FAILS TO NOTIFY THE ENGINEER IN A TIMELY MANNER OF ANY APPARENT ERROR OR OMISSION ON THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING WORK INCORRECTLY DONE AT THE CONTRACTOR'S OWN EXPENSE.
2. PAYMENT FOR WORK SHOWN ON THESE PLANS EITHER SPECIFIED OR INFERRED, BUT NOT IN THE BID PROPOSAL SHALL BE CONSIDERED AS INCLUDED IN OTHER ITEMS OF WORK.
3. THE CONTRACTOR SHALL TAKE ALL NECESSARY AND PROPER PRECAUTIONS TO PROTECT ADJACENT PROPERTIES FROM ANY AND ALL DAMAGE THAT MAY OCCUR AS A RESULT OF CONSTRUCTION.
4. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THESE PLANS AND SPECIFICATIONS, THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION STANDARDS, THE 2003 INTERNATIONAL BUILDING CODE (IBC), CALIFORNIA BUILDING CODE (CBC), THE UNIFORM BUILDING CODE (UBC), THE UNIFORM FIRE CODE (UFC).
5. ALL CONSTRUCTION WILL BE SUBJECT TO FINAL APPROVAL BY THE INYO COUNTY PUBLIC WORKS DEPARTMENT.
6. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS AND APPROVALS. SIGNATURES BY THE COUNTY ENGINEER AND/OR THE PUBLIC WORKS DIRECTOR ON THESE PLANS DO NOT IMPLY THAT OTHER REQUIRED APPROVALS HAVE OR WILL BE OBTAINED. IT REMAINS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL REQUIRED APPROVALS AND PERMITS.
7. THE PROJECT SHALL BE BUILT PER PLAN. ALL FIELD CHANGES MUST BE PRE-APPROVED BY THE INYO COUNTY ENGINEER.
8. IN ACCORDANCE WITH THE GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR THE CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF PROPER PROJECT SHORING OF TRENCHES IN ACCORDANCE WITH OCCUPATIONAL SAFETY LAWS. THE DUTIES OF THE PROJECT CIVIL ENGINEER DO NOT INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY IN, ON OR NEAR THE CONSTRUCTION SITE.

Bernard T. Pedersen
Director of Public Works



7-13-2010
Plans Approval Date

Plans Prepared by: INYO COUNTY PUBLIC WORKS 168 N. Edward, P.O. Drawer Q Independence, CA 93526 (760) 878-0201		INYO COUNTY COURTHOUSE ANNEX RE-ROOFING PROJECT	
Date:	MAY 2010	TITLE SHEET	
Designed by:	TED PEDERSEN	Drawn by:	PCH
Date:	5/21/2010	Date:	5/21/2010
Drawing Name: Z:\CAD\Current Projects\TERA-VERDE		SHEET 1 OF 3	

FOR REDUCED PLANS
ORIGINAL SCALE IS IN INCHES

Revised By: P. Hancock
Date: 5/21/10

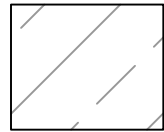
Project Eng. Paul Hancock

Checked by: _____
Date: _____

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EDWARDS STREET (US 395)

LEGEND

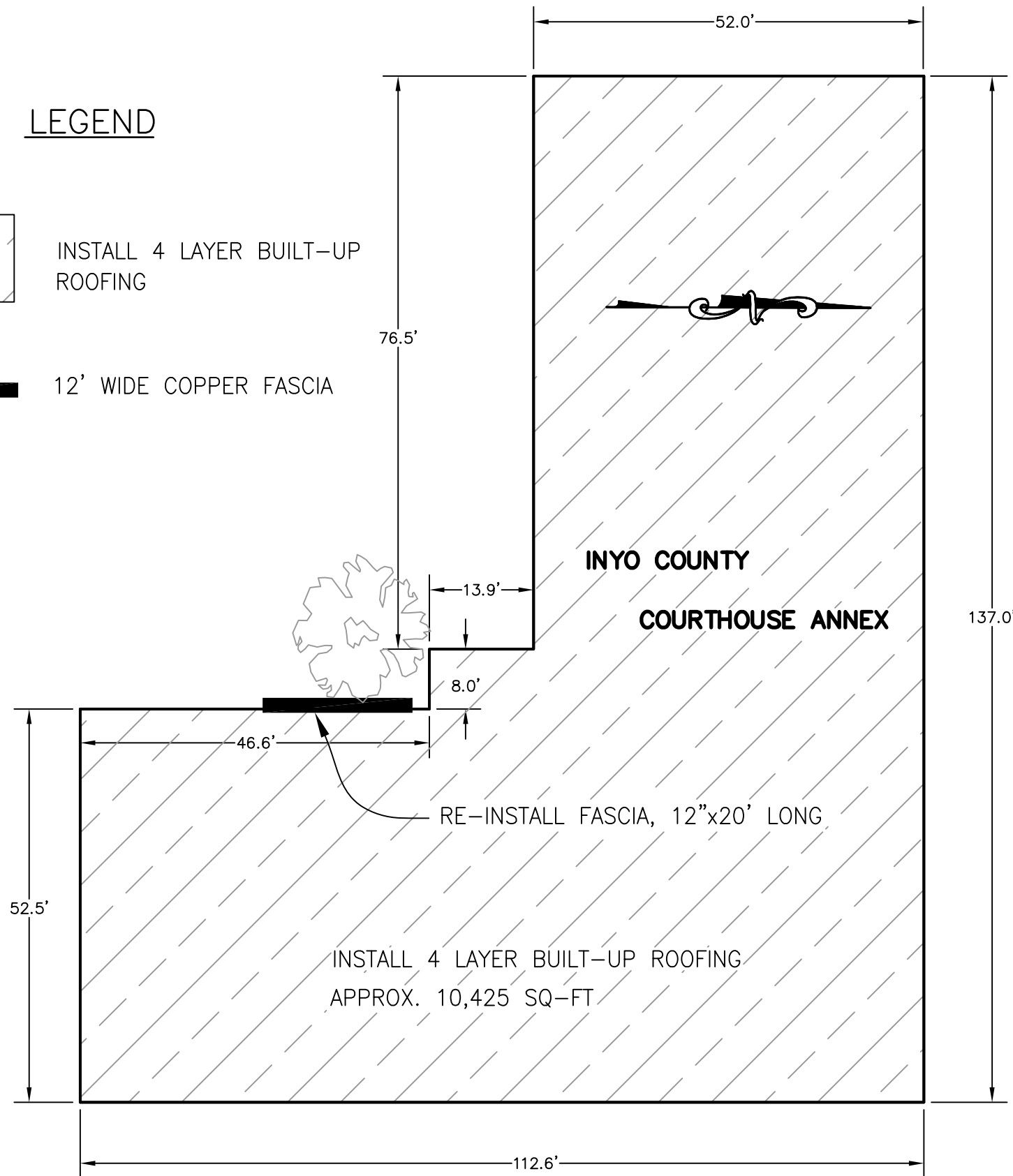


INSTALL 4 LAYER BUILT-UP ROOFING



12' WIDE COPPER FASCIA

MARKET STREET



CONSTRUCTION NOTES

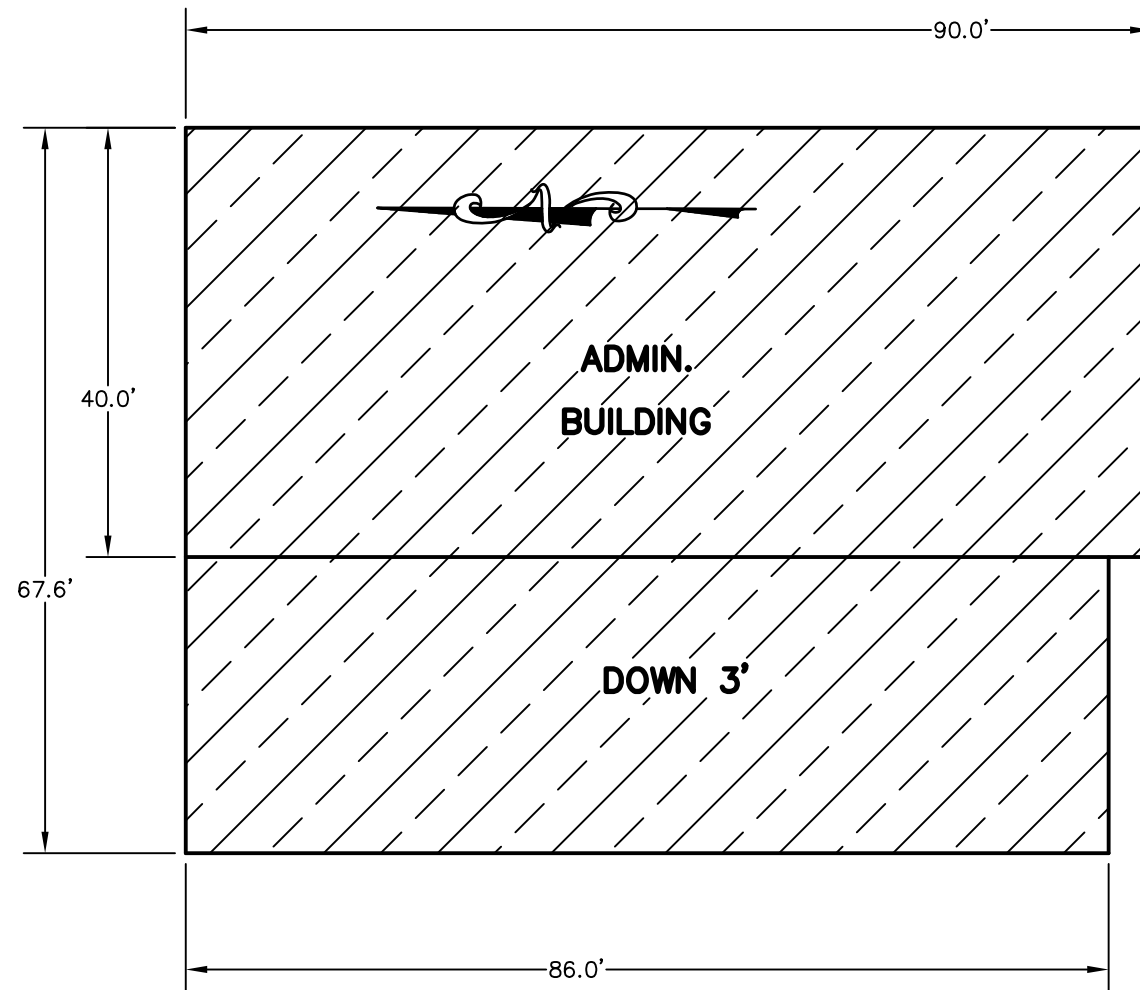
PROJECT LOCATION: COURTHOUSE ANNEX
168 N. EDWARDS ST., INDEPENDENCE, CA

1. DIMENSIONS ARE APPROXIMATE
2. CONTRACTOR TO FIELD VERIFY ALL MEASUREMENTS AND CONDITIONS PRIOR TO CONSTRUCTION
3. REMOVE AND DISPOSE OF ASBESTOS CONTAINING MASTIC IN CONFORMANCE WITH APPLICABLE STATE REGULATIONS
4. PROTECT EX BLOWERS MOTORS AND OTHER EQUIPMENT IN PLACE
5. REMOVE AND DISPOSE OF EX. BUILT-UP ROOFING
6. REPLACE DAMAGED SHEETING AS REQUIRED
7. REMOVE & REPLACE ALL CANT STRIPS
8. INSTALL NEW ROOF JACKS AT ALL PENETRATIONS
9. INSTALL NEW 2" MIN. EVE EDGE IF REQUIRED, APPROX. 500 LF
10. FLASH & LAY-UP UP ROOFING AT VENTILATORS AND EQUIPMENT, FLASH PER MANUFACTURES REQUIREMENTS
11. INSTALL 4 LAYER BUILT-UP ROOFING, APPROX. 10,425 SQ-FT
12. RE-INSTALL 12" WIDE x 20' FASCIA, CONTACT MAINTENANCE STAFF AT 760-878-0230 FOR MATERIALS

SCALE: 1" = 20'

Plans Prepared by: INYO COUNTY PUBLIC WORKS 168 N. Edwards, P.O. Drawer Q Independence, CA 93526 (760) 878-0201		INYO COUNTY COURTHOUSE COMPLEX RE-ROOFING PROJECT	
Revised By: P. Hancock Date: 5-21-10		Designed by: TED PEDERSEN Date:	Drawn by: P. Hancock Date: 5/10
		Date: MAY 2010	ANNEX ROOF PLAN
		SHEET 2 OF 3	

PARKING LOT



CENTER STREET

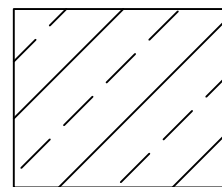
EDWARDS STREET (US 395)

CONSTRUCTION NOTES

PROJECT LOCATION: COURTHOUSE ANNEX
224 N. EDWARDS ST., INDEPENDENCE, CA

1. DIMENSIONS ARE APPROXIMATE
2. CONTRACTOR TO FIELD VERIFY ALL MEASUREMENTS AND CONDITIONS PRIOR TO CONSTRUCTION
4. PROTECT EX BLOWERS MOTORS AND OTHER EQUIPMENT IN PLACE
5. INSTALL ELASTOMERIC COATING PER MANUFACTURERS REQUIREMENTS

SCALE: 1" = 20'



APPLY WHITE ELASTOMERIC ROOF COATING PER SPECIAL PROVISIONS, SECTION 7514 A AND MANUFACTURERS SPECIFICATIONS
APPROX. 5,975 SQ-FT

Plans Prepared by: INYO COUNTY PUBLIC WORKS 168 N. Edwards, P.O. Drawer Q Independence, CA 93526 (760) 878-0201		INYO COUNTY COURTHOUSE COMPLEX RE-ROOFING PROJECT	
Date: MAY 2010		ADMIN ROOF PLAN	
Revised By: P. Hancock Date: 5-21-10	Designed by: TED PEDERSEN Date:	Drawn by: P. Hancock Date: 5/10	SHEET 3 OF 3

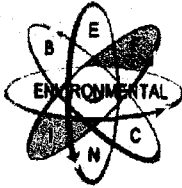
APPENDIX A

INYO COUNTY COURTHOUSE COMPLEX RE-ROOFING PROJECT

CONTENTS:

Building survey & Chain Of Custody

Sample Results



66775

PROJECT #:	1006071FAS		
PROJECT NAME:	Inyo County Courthouse Annex		
ADDRESS:	168 N. Edwards, P.O. Drawer Q Independence, CA 93526		
SAMPLED BY:	DONALD FAWN	DATE:	06-07-10

Contact:

BULK SAMPLING LOG

TAT: 8HR. 24HR. NORMAL OTHER

BUILDING NAME/ LOCATION:	Inyo Co. Courthouse Annex Roof Survey			G= GOOD F= FAIR P= POOR	Y= YES N= NO	SF= SQUARE FOOT LF= LINEAR FOOT
SAMPLE #	MATERIAL DESCRIPTION	SAMPLE LOCATION	HOMOGENEOUS No.	CONDITION G/F/P	FRIABLE Y/N	QUANTITY SF/LF
1	Roof Core	East Roof	1	F	N	10,000
2	Kick/Penet. Roof Door	Center Roof	2	F	N	↓
3	Roof Core	West Roof	1	F	N	↓
4	Penetration Mastic	South Vent	3	F	N	50
5	↓	Inside Center	3	F	N	↓
6	Seam Mastic	North East Roof	4	P	N	150
7	Penetration Mastic	West Roof	3	F	N	
8	Seam Mastic	North	4	P	N	
9	Acoustic Spray Ceiling	2nd Floor Foyer	5	F	N	400
10	Acoustic Ceiling Tile 2x4	2nd Floor South Rm	6	F	N	2000
11	Thermal Insulation-Pipe	2nd Floor Attic	7	P	N	15 LF
12						
RELINQUISHED BY:				DATE & TIME:	RECEIVED BY:	DATE & TIME:
Donald Fawn/ <i>[Signature]</i>				07-08-10	<i>[Signature]</i>	6/8/10
Comments: Email Results to BEF & phancock@inyocounty.us						

Run 1, 3, 9, 10, 11 Hold remaining samples

BEF Environmental, Inc. 13452 Chevalier Road, Bakersfield, CA 93307 • PH 661-873-8878 • Fax 661-872-6500 •

~~XXXXXXXXXXXX~~ Email - BEF 6500 @ Hot Mail.com



WESTERN ANALYTICAL LABORATORY, Inc.
TEST REPORT

REPORT NO:	66775	CLIENT:	BEF Environmental, Inc. 13452 Chevalier Road Bakersfield, CA 93307
DATE COLLECTED:	June 7, 2010	ATTENTION:	Donald Fawn
DATE RECEIVED:	June 8, 2010	REFERENCE:	1006071FAS Inyo County Courthouse Annex 168 N. Edwards P.O. Drawer Q Independence, CA
DATE REQUIRED:	June 9, 2010		

SUBJECT: Polarized Light Microscopy Analysis for Asbestos; 5 samples

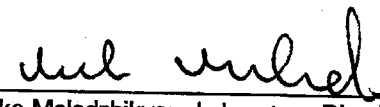
METHODOLOGY: "Method for the Determination of Asbestos in Bulk Building Materials" (EPA 600/R-93/116)"

ACCREDITED: National Institute of Standards and Technology (NVLAP) # 200037

SAMPLE ID NUMBER	SAMPLE LOCATION AND DESCRIPTION	NON-FIBROUS MATERIALS	OTHER FIBROUS MATERIALS	ASBESTIFORM MINERALS
01	East Roof Roof core	Granular Minerals Organics Opaques	Cellulose 20%	Chrysotile 30%
03	West Roof Roof core	Granular Minerals Organics (tar)	Cellulose 20%	Chrysotile 30%
09	2 nd Floor Foyer Acoustic ceiling spray	Granular Minerals Organics Vermiculite Gypsum	None Detected	Chrysotile 2%
10	2 nd Floor South Room Acoustic ceiling tile, 2x4	Granular Minerals Organics	Glass Wool 50% Cellulose 20%	None Detected
11	2 nd Floor Attic Thermal insulation pipe	Granular Minerals Diatoms	Glass Wool 10%	Chrysotile 3-5%

t: Trace >1% = greater than 1% <1 = less than 1%


Optical Microscopist


Mike Maladzhikyan, Laboratory Director

This report only applies to the sample(s) tested. Supporting laboratory documentation is available upon request. This report must not be reproduced except in full, unless approved by Western Analytical. The client is solely responsible for the use and interpretation of test results and reports requested from Western Analytical. This report must not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government.