ADDENDUM TO RFP DOCUMENTS

SOLANO COMMUNITY COLLEGE	ADDENDUM # 03
	SCCD RFP: # 14-014
	Project: Solano Community College District Theater Renovation
	Date: 08/13/2015

Addendum # 03 – The following clarifications are provided based on questions received and must be added/considered when completing your submittal: Acknowledgement of receipt of this ***ADDENDUM*** is required in the proposal's cover letter of introduction. Please clearly note the addendum date and number.

Increment 1 –
Architectural Drawings

1. Hazmat Sheets HAZ.01 and HAZ.02.
   - Sheets were revised and included in Addendum 01, but not listed on the Addendum 01 narrative. Changes indicated in Keynotes.
2. Hazmat Sheet HAZ.03
   - Removed in Addendum 01. Added back into project in this Addendum (03) as it appeared prior to Addendum 01. No change to drawing.

Specifications
1. Section 00 1116 Revised bid date to August 25, 2015

Information Items
1. The Hazmat Survey is attached for information only.

Increment 2 –
Architectural Drawings
1. Sheet A2.11
   - Moved ELEVATOR EQUIPMENT ROOM 1273 to new location adjacent to CUSTODIAL ROOM 1211, and changed room number to 1219
   - Added door 1219

2. Sheet A2.12
   - Change ELEVATOR EQUIPMENT ROOM 1273 to STORAGE ROOM 1273.

3. Sheet A2.60
   - Added WALLCOVERING TYPES WC4 and WC5. Both are add alt #1 only.

4. Sheet A2.61
   - In CORRIDOR 1296 added WC5
   - In CORRIDOR 1225 added WC4

- In CORRIDOR 1224 added WC4
- In CORRIDOR 1254 added WC5

5. Sheet A2.62
   - On left and right hand sides of BALCONY SEAT 1212 added WC4.

6. Sheet A2.81
   - On door 1227 changed hardware group from 14 to 10.
   - On door 1253.3 changed;
     - Door type to (E)
     - Door material to (E)
     - Frame type to (E)
     - Frame material to (E).

7. Sheet A9.55
   - Revised details B4, B6, D4, D6, F4 AND F6. Details where changed to remove timely knockdown type to standard heavy-duty hollow metal with fully wielded frames.

8. Sheet A3.22
   - Revised building section H1 at ELEVATOR EQUIPMENT ROOM 1219.

9. Sheet M2.2
   - Added fire smoke damper to practice room 1261 in the 10x10 supply duct.

Specifications

1.	Section 00 1116	Revised bid date to August 25, 2015.
2.	Section 08 1213	Hollow Metal Frames - Replaced entire section. Includes interior/exterior frames for doors and/or windows. Removed reference to timely type and replaced with fully welded.
3.	Section 08 4113	Aluminum-Framed Entrances and Storefronts – Paragraph 2.01, A, 4. Added Specific door type as basis of design.
4.	Section 09 7200	Wall Coverings – Paragraph 2.01, C & D: Added Wallcovering types: WC4 and WC5.
5.	Section 11 6123	ADDED Section 116123 for orchestra pit filler platforming system. Reference pit filler platform drawing details on PR1.01, PR2.01, and PR5.01.
6.	Section 11 6133	CHANGED Section 116133 to remove orchestra pit filler platforming system specifications in section 1.01, 2.13.
7.	Section 14 2010	Passenger Elevators- Paragraph 2.03, A: Removed word “less” from Equipment Description.
8.	Section 23 0500	HVAC - Revised section 2.08 to Delta controls only.
9.	Section 26 7113	Telecommunication Cabling - Revise all references in 267113 to ST connectors to LC type connectors.

Answers to Submitted Questions:

1. Bat Guano and Mold
   Question: Appendix A Hazardous Materials Report, Scope of Work / Project Specific Requirements. We would like to request additional clarification regarding bat guano and mold contaminated building materials clean up. These types of contamination issues are consoled behind walls and or ceiling and are difficult to quantify. Please provide clarification on how much contamination we will encounter. In addition to this, please also provide clearance criteria for mold as well as bat guano.
   Response: There are 10,000 SF of attic space that require bat guano removal. The clearance criteria for bat guano removal is visual only. There are 5,000 SF of mold contamination that requires abatment. The clearance criteria for the mold is non-viable air samples.

2. Elevator Room Code Violations
   Question: 14 20 10 PASSENGER ELEVATORS
   The specified machine room-less hydraulic elevator is not legal in California and the equipment room on the plans appears to be too small plus it has double doors which is not legal for a hydraulic application either. At a minimum they will need 6'-1" x 6'-5" with a single door.
   Please verify.
   Response:
   a. Elevator equipment room will be relocated to storage area under theater seating area.
   b. Specification section 2.03.A - remove the word "Less".

   Response from electrical:

   Relocate the following electrical connections, shown on detail B/E501, from Room 1273 to the new Elevator equipment room 1219:

   - Elevator disconnect, connection to elevator controller, and 100A feeder from MSB.
   - Dedicated 120V circuit and connection to elevator car lighting, receptacles, and ventilation, L1A-17
   - Dedicated 120V circuit and GFCI receptacle, L1A-15
   - Leave one convenience receptacle in room 1273, connect to circuit L1A-66.

   Make the following revisions to Fire Alarm shown on sheet E4.01.

   - Relocate the heat detector shown in room 1273 to new Elevator Equipment Room 1219.
   - Provide the following devices in Elevator Equipment Room 1219; include in shop drawings; coordinate installation with the elevator contractor:

   - Control Relay for Primary Floor Recall
   - Control Relay for Alternate Floor Recall
   - Control Relay for smoke detection in equipment room and/or Hostway
   - Control Relay for shunt trip of breaker feeding elevator
   - Monitor Module for shunt trip power

Lighting at room 1273 shall remain as shown on sheet E2.01, but with single level occupancy sensor instead of single pole switch. (3) F11 fixtures to remain in Storage 1218. In room 1219, provide an F11 fixture, and single pole switch, and connect to same circuit as machine room receptacle L1A-15.

In Elevator pit 1226, provide one additional light fixture, per numbered sheet note #13 on E5.01. Provide two additional lights at the top of the shaft, on a dedicated single pole switch; connect to the same circuit as lights at bottom of the pit.

Response from mechanical:

The FC-4 fan coil unit for the elevator equipment room 1273 shown on sheet M2.1, will relocate to Storage room 1218 to serve the new elevator equipment room 1219. The Condensing unit CU-4 will move to the upper roof near grid lines 4 and D1. The condensate drain from FC-4 will route to the janitor sink in Custodial room 1211.

3. Vapor Emission Barrier
   Question:
   a. With regard to the vapor emission sealant section 090561. I noticed it talked about test but is there a recommendation of what product to use if RH or Calcium Chloride test are higher than the flooring manufacture allows?
   b. Our Synthetics 30 warranties 100% RH, 14 PH and up to 30 lbs. for 15 years. I'm including our data sheet, MSDS and substitution form for this 090561 section.

   Response: Refer to specification section 09 05 61. 2.01.C

4. Fire Alarm Specification
   Question: I am putting together a proposal for the electrical at Solano Community College and I didn't see usable specs on the fire alarm. Is there a preferred vendor for the property?
   Response: Refer to specification section 26 61 13

5. Hazmat and demo questions
   Question:
   a. Regarding abatement, should note 210, which covers partial wall removal, be included in the note list on the scope of work – project specific requirements?
      Response: No.
   b. As the bat guano and mold scope is unknown at this time, will you be stating a dollar allowance amount so all contractors are bidding the same scope?
      Response: Refer to question number one on addendum 03.
   c. Can you verify the extent of sheet rock on the underside of the roof rafters to be abated 4is between grid lines 1 and 10 and A and G?
      Response: Refer to demolition Ceiling plans, There is more Gypsum board to be removed then between grid lines 1 and 10 and A and G

6. Specification Clarifications
   Question:
   a. Narrative for addendum # 1 does not show the revised drawings that are part of the package. HAZ .01 and HAZ .02 have been revised in addendum #1
      Response: Addendum 3 includes the above mentioned drawings. These drawings are part of the project.

b. The addendum deletes HAZ .03 but in document 000102-1 Project Information (part of addendum 1)it still refers to HAZ.03
Response: Sheet HAZ.03 will be added back into the set as part of Addendum #3.

c. I could not find the added spec. section 108100 Bird & Pest Control. Noted in Addendum 1
Response: Bird control spec is in the set for addendum number 1.

d. Alternates have little or no explanation. i.e., Alternate #4 Landscape and Hardscape (landscape is in alternate only? No base bid?)
Response: Refer to A0.10 - Project Add Alternates.
Alt #1 - Interior wall finish types WC4 and WC5. Refer to updated sheets A2.60, A2.61 and A2.62.
Alt #2 - Refer to H1/A4.10 for base contract, Refer to H1/A.11 for add alt.
Alt #3 - Refer to sheet A2.50 keynotes 9 and 12.
Alt #4 - Refer to F1/A0.31 and H5/A1.00 for base contract (note no landscape scope in base contract), Refer to H3/A1.00-ALT and H5/L1.00-ALT for add alt.

e. Drawings show E trees to remain, protect. There are a number of trees shown in base bid and alternate 4 that are outside the limit of work. Protect?
Response: All trees or portions of trees (driplines) within the project limits of work shall be protected. Damage to existing irrigation systems within the limit of work, that may impact trees and landscape outside the limit of work, must also be avoided or immediately repaired to pre-construction conditions.

f. Addendum # 1 replaces division 00. Does this replace both increment # 1 and # 2 with the new documents.
Response: Yes, Addendum 1 includes a new div 00 for both projects

g. The documents talk about a site visit certification. Do we just sign the form and then you verify that we had someone at the pre bid?
Response: Site visit will be verified with the pre-bid sign in sheet. Yes, sign the form and we will verify with sign in sheets

h. Could you clarify the language in section 000102, 1.03 “Owner reserves right to change schedule or terminate entire procurement process at any time.”
Response: The language allows the owner to reschedule or cancel the bid as it deems necessary.

i. Clarification: Contractor should allow 65 calendar days per year for weather delays. Delay days only allowed if they exceed the 65 days.
Response: Yes, if they exceed that number of days and the weather impacts the critical path of the schedule.

7. Production Lighting

Question: This RFI is in connection with Solano Community College Building 1200 Theater Renovation section 11 61 83 Production Lighting Control.

a. Section 11 61 83.2.17A requires (16) worklights, 4 per batten. Relay Panel ARP-1 for the main stage and ARP-2 for the classroom both refer to worklights.
b. Section 11 61 83.2.18 for the Black Box Theatre refers to worklights. Are the (16) worklights reserved only for the main stage? Are more required for the Black Box?
c. In order to determine cabling and/or adapters required for the worklights, please provide guidance as to the locations and connector type (L21-20 or L5-20) of the supply outlets for the worklights.

Response: Provide (16) worklights as specified. Provide with L5-20 twistlock connectors as specified. Install all (16) at main stage. No worklights are included for the blackbox theatre."

8. Question: The bid form lists a base bid and four alternates. What is the method of award for this project?
   Response: Per 001116 15: "The District shall award the Contract, if it awards it at all, to the lowest responsive bidder based on: The lowest total of the bid prices on the base contract and all additive or deductive alternates identified in the bid form".

9. Plumbing specification Question:
   a. Question: Plumbing and Utilities section 220500 1.02 Services: Have the Utility Companies been contacted and if so do you have names and phone numbers to see what these costs might be?
      Response: The utilities are existing and are being reconnected, The existing utilities are water and sewer.
   b. Question: Mechanical Work Section 230500 1.04 Fees and Permits. Has any review and costing of this item been done?
      Response: There has not been a review or costing of these items.
   c. Question: Automatic Fire Protection System section 231313 1.08 Fees and Permits. Has any review and costing of this item been done?
      Response: There has not been a review and costing for these items.

10. Misc. Hardware Questions
    a. Question: What specification controls the frames that are detailed at B4, B6, D4, D6, F4 on plan page A9.55? These knock-down type interior frames are usually specified as part of 081216 or similar specification for Interior Aluminum Frame but that specification does not exist in this project, please clarify.
       Response: Details have been changed to Hollow Metal Frames, refer to specification section 08 12 13.

    b. Question: On the Door Schedule (Plan A2.81) opening 1253.3 is showing a new door and frame (WD Door and HM Frame), but the remarks column for this opening has a 15, which is states "an existing Door & Frame to remain, install new hardware." Is this a new door & frame or existing to remain?
       Response:
       i. This is existing door and frame. Existing door and frame to remain. Remove and replace all door hardware.
       ii. Refer to addendum #3 sheet A2.81 for updated door schedule.

c. Question: On the Door Schedule (Plan A2.81) opening 1227 is shown AS A SINGLE DOOR ASSIGNED TO HARDWARE GROUP 14. Hardware group is for pairs of doors.
Response: Changed to hardware group 10. Refer to Addendum 03 sheet A2.81 for updated door schedule.

d. Question: Hardware group 45 states that the doors, frames and hardware are existing. It states to provide new hardware to replace existing. As openings 1249.2, 1264.2 and 1248 are all assigned to this hardware group and the remarks column states that they are to receive new hardware, please provide a list of new hardware required at these openings. Also please note that opening 1248 is a pair of doors, while 1249.2 and 1264.2 are single doors.
Response: Remove and replace all existing hardware to include the following:
   iii. Hinges
   iv. Door closer
   v. Cylinders (lock sets)
   vi. Weather striping
   vii. Other. Field verify.

11. Existing Transoms
Question: On exterior elevation sheets A3.11 & A3.12 doors 1253.2, 1254, and 1253.1 are shown with sidelites and/or transoms. Are these existing conditions we are to install the doors and frames into, or are they new items we are to furnish and install for this project?
Response:
    1. Remove existing storefront doors and all associated door hardware.
    2. Existing storefront frames and glazing to remain.
    3. Install new storefront door and door hardware.
    4. See door remarks key on sheet A2.81

12. Glazing
Question: Spec section 08 41 13 does not specify a door type to be used. Default would be Kawneer Standard narrow stile doors.
Response:
Specification section updated with - Kawneer, 350 Medium Stile Entranc

13. Mechanical questions
    a. On Drawing M2.2 along column line C1, between 29 and 30 there is a 12 x 12 duct passing through a rated wall. This ductwork does not have a FSD designation. Please confirm no FSD is required at this ductwork.
    Response: The FSD is shown on the addendum 2 drawings.
    b. On Drawing M2.2 along column line 25, between A and A there is a 10 x 10 duct passing through a rated wall. This ductwork does not have a FSD designation. Please confirm no FSD is required at this ductwork.
    Response: Yes, the 10x10 will have an FSD, it will be shown on addendum 3.
    c. We have been unable to find sound trap tagged ST-10. Please confirm it is not required or provide location.

Response: The ST-10 is not required.

d. Please confirm unit tagged AC-6 on M3.1 should be tagged AHU-6.
Response: Yes the AC-6 should be tagged AHU-6.

e. Please confirm unit tagged EF-1 on M3.1 should be tagged REF-1.
Response: Yes the EF-1 should be tagged REF-1.

14. Hazardous Materials Survey
Question: Is there a Hazardous Materials Survey? The report that is supplied says the HMS did the survey but it is not included. May I please get the actual survey? Is there a way of determining what floor coverings are where?
Response: The Hazmat Survey used for this project is included in this addendum.

15. Hardware Question:
    a. Question: Is Specification 081213 used on this project? Timely frames not specified? Please advise.
    Response: Section 08 12 13 has been revised to remove timely type and instead call out fully welded hollow metal type frames.
    b. Question: Hardware groups 18 and 19 state that all hardware for STC doors is to be supplied by the door manufacturer. There is no locking hardware specified in section 081333. Please advise what exit devices, closers, door trip, and/or any other hardware is required at openings 1221.1, 1221.2, and 1221.7.
    Response: Doors 1221.1, 1221.2, and 1221.7 have an STC rating of 50. To achieve this high of STC the door, door frame, and door hardware need to be a single system. Therefore, all door hardware should come from door/door frame supplier. Door lock should be classroom type. All three doors have a 2-hour fire rating and will require closers, panic devices, seals, and other hardware as required to provide a 2-hour rating.

16. Mechanical (8/10/15)
    a. Question: Are all items described for ACOM-1 in the equipment schedule on drawing P0.1 being supplied by the owner? Will the owner also be providing the pressure regulator, relief valves and pressure gauges shown in Detail B on drawing P6.2?
    Response: The pressure regulator, relief valves and pressure gauges will be supplied by the contractor.
    b. Question: The connection to the new site hydronic piping is shown in (2) different locations. Detail 1 on M2.6 shows the point of connection (POC) inside the building. Detail 3 on M2.6 shows the POC outside the building in the vertical. Which location is correct?
    Response: The POC is inside the building per detail 1/M2.6.
    c. Question: Is there a shutoff valve to isolate the theatre hydronic piping for connection? Or will a portion of the campus require a shutdown?
    Response: There are existing shut off valves right outside the building.

17. Data/Fiber Cabling
    a. Question: Increment 2, Section 267113, Page 4: 1.04 A. G- states using ST connectors. Our understanding that with Fiber Upgrade project that is scheduled for this fall all connectors will be LC type.

Response: Revise all references in 267113 to ST connectors to LC type connectors.

b. Question: Increment 2, Section 267113, Page 5: 1.04 B. 1. a. - calls for two cables per outlet. Dwg. E0.00 #D#V reflects 3 drops per outlet. Our experience with the College is that the standard, unless otherwise noted, is 3 drops per outlet.
Response: Revise to 3 horizontal twisted pair cables per outlet, unless otherwise noted.

c. Question: Increment 2, Section 267113, Page 9: 2.01 A. 11. a. - stipulates MaxCell as manufacturer for inner-duct. Dwg. E1.01 reflects installing 1 ea. 3 way 1 1/4" inner-duct.
Response: Provide MaxCell Innerduct per the specifications.

d. Question: Increment 2, Section, 267113, Page 21: 2.06 D. 4- states wiring to be 568A. The Campus is currently wired 568B.
Response: Revise to 568B.

18. Bid Bond and Bid Form

a. It looks like the bid forms issued with Addendum #1 are intended to combine both increments. Please note however that the Bid Bond templates and the Non-Collusion Affidavits provided in Addendum #1 still only refer to Increment 1 or Increment 2 – there is no bid bond template or Non-Collusion Affidavit that refers to both. Also, the DVBE Participation Certifications only refer to Increment 1 or 2 as well. Was this done on purpose so the Generals provide separate bid bonds, non-collusion affidavits, and DVBE forms but combine all other forms? If not, please provide revised forms – in particular the bid bond templates because I know our surety will want to know.
Response: Yes, addendum #1 combines both increments. The contractor is required to submit one copy of the required bid documents for the entire project. NOT one copy for each increment. Contractors can use the Non-Collusion Affidavit and Bid Bond from either increment but it must be filled out to apply to both projects.

19. Specifications Questions

a. Will you issue a new bid form? Currently, there are two separate bid forms Increment 1 and Increment 2, so will the bid form including the necessary documents to be attached (bid bond, designated subcontractors list, site-visit certification, non-collusion declaration) change to one form?
Response: Please see addendum #1. That addendum has a combined bid form. The response to question 18 addresses the supporting documentation required at bid time.

b. According to the wording “Prior to bidding on or submitting a proposal…” on the “Iran Contracting Act Certification” this form should be included at the time of the bid. Please clarify
Response: Yes, this document needs to be included in your bid package at the time of the bid.

c. Is it the contractor’s responsibility to drug test and finger print all subcontractors?
Response: Any required fingerprinting will be at the cost of the contractor. The contractor is required to comply with the Drug-Free work place certification.

d. Testing and inspections are the responsibility of the Owner?
Response: Confirmed.

e. What size of Field office is the contractor responsible to provide? How many offices, meeting room?
Response: Please see section 015213 for field office requirements.

f. Specifications says contractor is to pay for all permits and fee except water and sewer

connection fees. Do you have a dollar amount for these fees?
Response: See response to question 9.

g. Specifications ask for a qualified storm water practitioner to be on site for the duration of the job?
Response: Contractor must comply with section 00 73 13-27 8.2 and all requirements related to SWPP in the documents.

h. Specifications say job will be shut down for student testing. Please provide testing schedule.
Response: That only applies if the building is occupied. This building will not be occupied during construction, the contractor will be required to submit standard notification of noisy activities during construction.

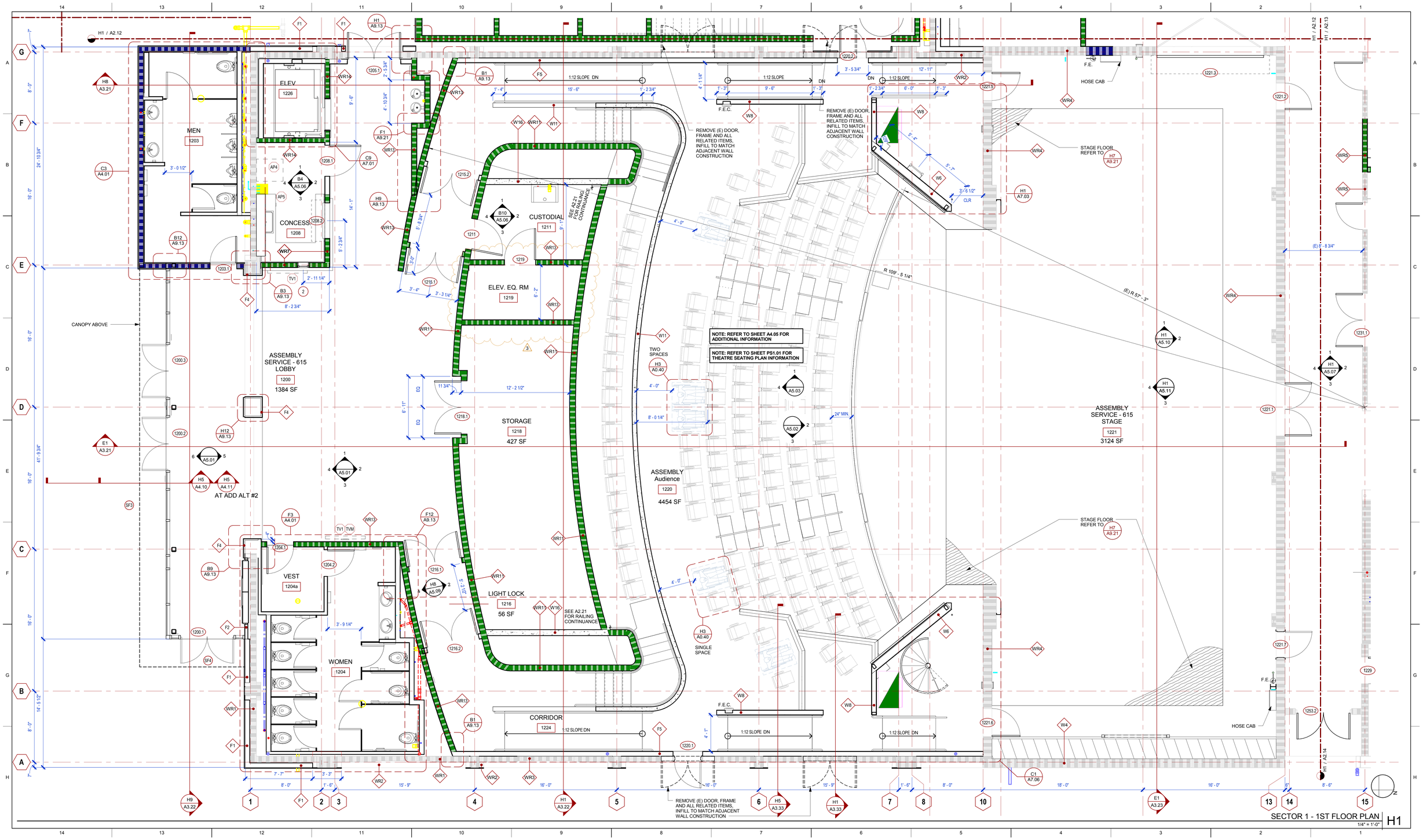
i. Is a Knox box required for the building?
Response: Yes, the owner has procured this item.

20. Qualifications and PLA
    a. Do **subcontractors** need to be pre-qualified?
    Response: Only the specialty subcontractors listed in the specifications.
    b. Was it mandatory for **subcontractors** to attend the July 23rd or July 30th pre-bid meeting/site visit?
    Response: No.
    c. Any Project Labor Agreement (PLA) or Project Stabilization Agreement (PSA) requirements?
    Response: Yes, it is included in addendum #1.

Substitution Requests:

See attached substitution requests.

1.	A/V System Installer Substitution for Conti	Approved	Approved
2.	Theatrical Services Installer Substitution for ProTech	Approved	Approved
3.	Theatrical Services Fixed Audience Seating and Orchestra Filler Wegner	NET/Rejected	NET/Rejected.
4.	Auditorium Seating to Symphony Seats	Pending	MCN provide line by line comparison
5.	Solomon Colors Liquid Floor Treatment	Approved	Approved
6.	Production Rigging and Lighting Installer Secoa	Approved	Approved
7.	Audio Visual Equipment	Approved	Approved



FLOOR PLAN LEGEND

- EXISITNG
- NEW
- EXISTING 1-HR RATED
- NEW 1-HR RATED
- EXISTING 2-HR RATED
- NEW 2-HR RATED
- EXISTING 3-HR RATED
- NEW 3-HR RATED
- 101 — DOOR NUMBER, SEE DOOR SCHEDULE SHEET A2.81
- 12 — WINDOW/STOREFRONT NUMBER, SEE WINDOW SCHEDULE SHEET A2.82
- MATCHLINE
- B — WALL TYPE, SEE SHEETS A9.10 - A9.11

NO.	ISSUE	DATE
3	ADDENDUM #3	08/13/2015

SOLANO COMMUNITY COLLEGE

BUILDING 1200 THEATER RENOVATION

INCREMENT 2

4000 SUISUN VALLEY ROAD, FAIRFIELD,CA

LICENSED ARCHITECT
THERESA PAIGE
C-25452
8-31-15
RENEWAL DATE
STATE OF CALIFORNIA

ARCHITECT / CONSULTANT

APPROVAL

DSA FILE NO: 48-C1

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
INCREMENT 2
02-113590
AC.____ FLS ____ SS____
DATE ____

LPAS

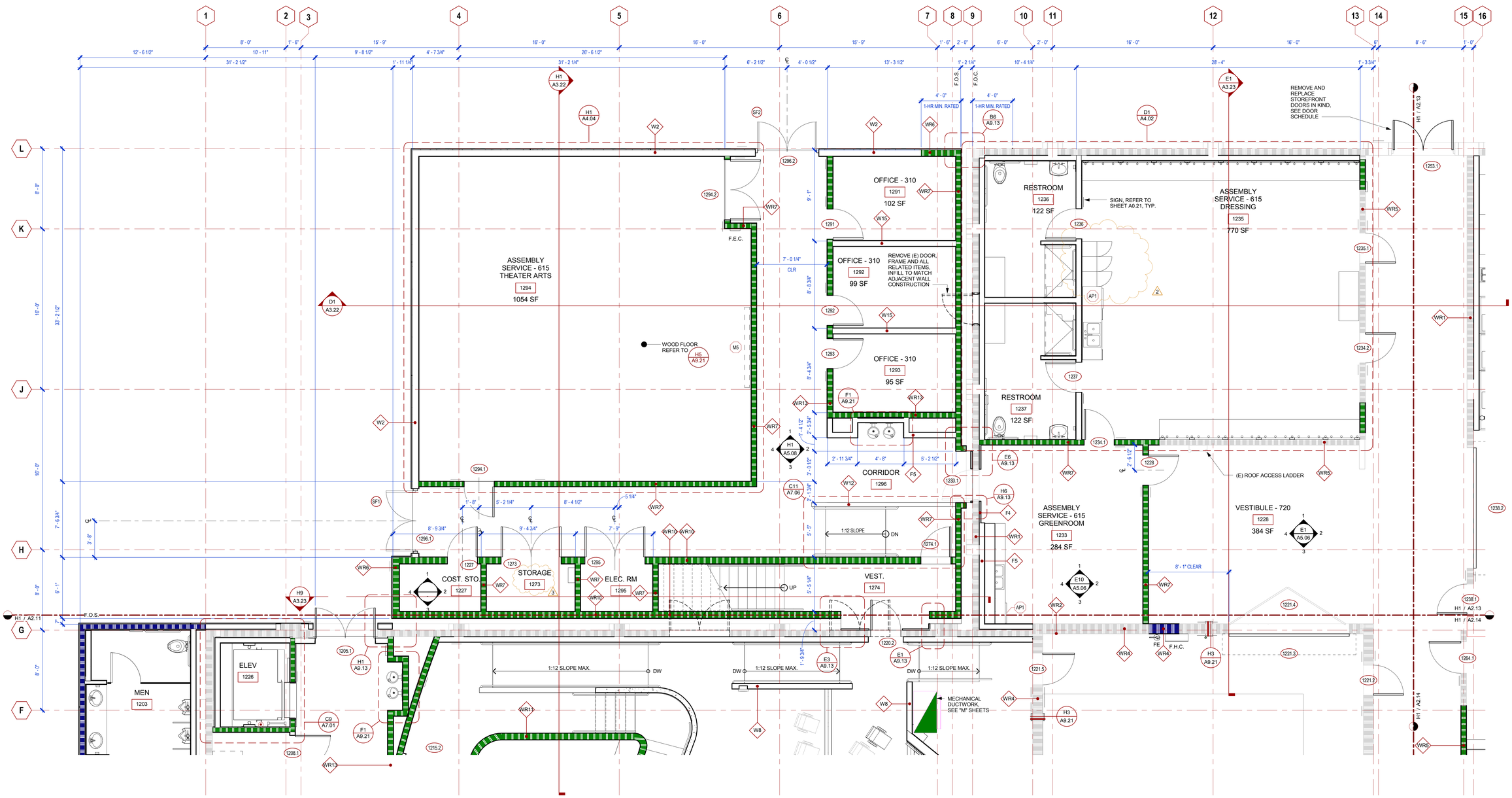
2484 Natomas Park Drive Suite 100 Sacramento CA 95833
916 443 0335 lpasdesign.com **Architecture + Design**

SECTOR 1 - 1ST FLOOR PLAN

SCCD PROJECT NO: 14-014
LPAS PROJECT NO: 764-0002
DATE: 04-22-2015
SHEET NO:

A2.11

CONSTRUCTION SET



FLOOR PLAN LEGEND

- EXISITNG
- NEW
- EXISTING 1-HR RATED
- NEW 1-HR RATED
- EXISTING 2-HR RATED
- NEW 2-HR RATED
- EXISTING 3-HR RATED
- NEW 3-HR RATED
- 101 — DOOR NUMBER, SEE DOOR SCHEDULE SHEET A2.81
- 12 — WINDOW/STOREFRONT NUMBER, SEE WINDOW SCHEDULE SHEET A2.82
- MATCHLINE
- B — WALL TYPE, SEE SHEETS A9.10 - A9.11

NO.	ISSUE	DATE
2	ADDENDUM #2	06/26/2015
3	ADDENDUM #3	08/13/2015

SOLANO COMMUNITY COLLEGE

BUILDING 1200 THEATER RENOVATION

INCREMENT 2

4000 SUISUN VALLEY ROAD, FAIRFIELD,CA

LICENSED ARCHITECT — THERESA PAIGE — C-25452 — 8-31-15 RENEWAL DATE — STATE OF CALIFORNIA

ARCHITECT / CONSULTANT

DSA FILE NO: 48-C1

IDENTIFICATION STAMP — DIV. OF THE STATE ARCHITECT — OFFICE OF REGULATION SERVICES — INCREMENT 2 — 02-113590 — AC_____ FLS _____ SS_____ — DATE _____

APPROVAL

LPAS

2484 Natomas Park Drive Suite 100 Sacramento CA 95833
916 443 0335 lpasdesign.com **Architecture + Design**

SECTOR 2 - 1ST FLOOR PLAN

SCCD PROJECT NO: 14-014

LPAS PROJECT NO: 764-0002

DATE: 04-22-2015

SHEET NO:

A2.12

CONSTRUCTION SET

Funiture and Equipment Schedule						
Mark	Description.	Provided By	Installed By	Requirements	Detail	Comments
A6	STEAMER	OWNER	Contractor	120V		WALL MOUNTED
AP1	REFRIGERATOR	OWNER	Contractor	120v		
AP2	STACKABLE LARGE CAPACITY WASHER AND DRYER	OWNER	Contractor	H/C WATER SS 120V		
AP4	REFRIGERATOR/FREEZER	OWNER	Contractor	120V		
AP5	REFRIGERATOR/FREEZER	OWNER	Contractor	120V		
E1	DUST COLLECTOR	OWNER	Contractor	230V		
E2	AIR COMPRESSOR	OWNER	Contractor	230V		
E3	MITER SAW	OWNER	Contractor	120V		
E4	DRILL PRESS	OWNER	Contractor	120V		
E5	BAND SAW	OWNER	Contractor	120V		
E6	TABLE SAW	OWNER	Contractor	230V		
E7	SHAPER	OWNER	Contractor	120V		
E9	WORK TABLE	OWNER	OWNER	NA		
M5	MARKER BOARD	Contractor	Contractor	PROVIDE BACKING PER H9/A9.81		4'X8'
M5.1	HORIZONTAL SLIDING MARKER BOARD	Contractor	Contractor	PROVIDE BACKING PER H9/A9.81		
M5.2	VERTICAL SLIDING MARKER BOARDS	Contractor	Contractor	PROVIDE BACKING PER H9/A9.81		
MS1	FLAMMABLE LIQUID SAFETY CABINET	Contractor	Contractor	PROVIDE BACKING PER H9/A9.81		115 Ga
MS2	STORAGE CABINET WITH BINS	Contractor	Contractor	PROVIDE BACKING PER H9/A9.81		156 BINS
S1	WOOD SHELVING	Contractor	Contractor	PROVIDE BACKING PER H9/A9.81		
TC1	Torch Cart	OWNER	OWNER	NA		EXISTING
TC2	TOOL STORAGE CABINET	OWNER	OWNER	NA		
TV1	FLAT SCREEN TV 50"	OWNER	OWNER	NA		
TVM	FLAT SCREEN TV MOUNT	Contractor	Contractor	NA		
WC1	Welder Cart	OWNER	OWNER	NA		

GENERAL FINISH NOTES

MATERIALS LEGEND: GENERAL NOTES

1. REFER TO INTERIOR ELEVATIONS FOR MORE INFORMATION ON FINISHES AND MATERIAL TRANSITIONS.
2. REFER TO CEILING PLANS FOR MORE INFORMATION ON CEILING MATERIALS AND TRANSITIONS.
3. INSTALL CARPET USING A RANDOM ASHLAR PATTERN, U.O.N
4. GYP BOARD CEILINGS TO BE PAINTED **P1**, U.N.O.
5. ALL EXPOSED SURFACES, MATERIALS, ELECTRICAL COMPONENTS, MECHANICAL AND STRUCTURAL ELEMENTS IN THE THEATER TO BE PAINTED **P3,** U.O.N. OR NOT ALLOWED BY CODE.
6. FLOORING MATERIALS TO TRANSITION AT THE CENTERLINE OFTHE DOORWAY U.O.N. ON THE FINISH PLANS
7. PROVIDE FRP AT THE JANITOR'S CLOSETS BEHIND THE FLOOR SINK TO 48" AFF.
8. CASEWORK: ALL CABINETS TO BE PLASTIC LAMINATE U.O.N. COUNTERS ARE AS SPECIFIED ON THE FINISH PLANS AND INTERIOR ELEVATIONS.
9. DOORS: SEE DOOR SCHEDULE FOR DOOR AND TRIM COLORS. UTILITY ROOMS TO HAVE PAINTED DOORS AND FRAMES TO MATCH ADJACENT WALL SURFACE.
10. PROVIDE AN ANTI -GRAFFITI COATING AT ALL RESTROOM TILE WALLS.
11. WALL TEXTURE TO BE MEDIUM ORANGE PEEL, U.O.N.
12. SEE A3.11 FOR EXTERIOR FINISH INFORMATION.

2

MATERIALS LEGEND

ACOUSTIC CEILINGS

AC1 NOT USED

AC2 ARMSTRONG CEILING
PRODUCT: CALLA SQUARE LAY-IN
COLOR: BLACK
SIZE: 24 X 24 X 7/8"
GRID: PRELUDE 15/16" COLOR: BLACK (BK)

AC3 ARMSTRONG CEILING
PRODUCT: OPTIMA SQ LAY-IN
COLOR:
SIZE: 24 X 48
GRID: PRELUDE 15/16"

AC4 ARMSTRONG
PRODUCT: FINE FISSURED
TONGUE & GROOVE,
SIZE: 1' X 1'
INSTALLATION: DIRECT GLUE TO GYP BOARD
ADHESIVE PER MANUFACTURER'S RECOMMENDATION.

ACOUSTIC PANELS

AP1 ACOUSTIC WALL PANELS
ECHO ELIMINATOR
THICKNESS: 2"
COLOR: BLACK

AP2 ACOUSTIC WALL PANELS
PRODUCT: OWENS CORNING
CONWED DESIGNSCAPE
PRODUCT: RESPOND ULTIMATE 2000
THICKNESS: 1-1/8"
HEIGHT: 4', WIDTH: VARIES
FINISH: TEDLAR; COLOR: TBD (BLACK)

AP3 ACOUSTIC WALL PANELS
PRODUCT: OWENS CORNING
CONWED DESIGNSCAPE
PRODUCT: RESPOND ULTIMATE 2000
THICKNESS: 2"
HEIGHT: 4', WIDTH: VARIES
FINISH: TEDLAR; COLOR: TBD (BLACK)

AP4: ACOUSTIC PANELS - CEILING
CUSTOM NWR CEILING REFLECTORS
SIZE: 4' X 4'
FINISH: PLASTIC LAMINATE - PL2

BASE

B1 JOHNSONITE
4" COVED RUBBER BASE
COLOR: 63 BURNT UMBER **B**

CARPET

C1 BROADLOOM CARPET
TANDUS POWERBOND PERFORMANCE BACKING
PATTERN: PLEXUS COULOUR III 02875
COLOR: BLACK BIRD 18512
12' W

CARPET TILE

CT1 TANDUS CARPET
PATTERN: APPLAUSE III 02803
COLOR: MOSAIC 28502
TILE SIZE: 24 X 24 MODULAR

CT2 TANDUS CARPET
PATTERN: AFTERMATH II 03026
COLOR: FLEECE 23508
TILE SIZE: 24 X 24 MODULAR

CONCRETE

CN1 LM SCOFIELD
SEALED CONCRETE- FINISH TOPCOAT
COLOR: MEDIUM GRAY

SC1 SEALED CONCRETE – TRANSPARENT SEALER FROM RUSTOLEUM

CORNER GUARDS

CG1 KOROGUARD
PRODUCT: GS20 CORNER GUARDS
16 GA STAINLESS STEEL #4 SATIN
SIZE: WING 2"; HEIGHT: VARIES

CG2 KOROGARD
PRODUCT: R100 RECESS MOUNTED CORNER GUARD
COLOR: PORCELAIN
SIZE: 2" WING; HEIGHT: VARIES

FABRIC

FB1 ROSE BRAND
DRAPERY FABRIC: ENCORE 22 OZ VELOUR
COLOR: (BLUE)
WIDTH: 64"

FB2 ROSE BRAND
DRAPERY FABRIC: ENCORE 22 OZ VELOUR
COLOR: (BLACK)
WIDTH: 64"

FB3 MAHARAM TEXTILES
PATTERN: MESSENGER 458640
COLOR: VOYAGE
WIDTH: 54"

FB4 GUILFORD OF MAINE
PATTERN: FR701 2100
COLOR: BLACK 408
WIDTH: 66"

FB5 GUILFORD OF MAINE
PATTERN: FR701 2100
COLOR: TBD
WIDTH: 66"

GROUT

G1 CUSTOM BUILDING PRODUCTS
POLYBLEND SANDED GROUT
COLOR: 183 CHATEAU

G2 CUSTOM BUILDING PRODUCTS
POLYBLEND SANDED GROUT
COLOR: 382 BONE

G3 CUSTOM BUILDING PRODUCTS
PRISM SURECOLOR NON-SANDED GROUT
COLOR: 381 BRIGHT WHITE

METAL WALL PANEL

MP1 OMEGA-LITE
METAL PANEL
FINISH: CLEAR ANNODIZED ALUMINUM
CLIP AND CAULK SYSTEM

PAINTS AND COATINGS

P1 SHERWIN WILLIAMS
COLOR: SW 6126 NAVAJO WHITE

P2 SHERWIN WILLIAMS
COLOR: SW 0037 MORRIS ROOM GREY

P3 SHERWIN WILLIAMS
COLOR: SW 6528 TRICORN BLACK
FINISH: FLAT (FOR ABOVE THEATER)

P4 SHERWIN WILLIAMS
PRODUCT: EPOXY PAINT
COLOR: BLACK, FLAT

P5 SHERWIN WILLIAMS
COLOR: SW 6230 RAINSTORM DARK BLUE (THEATER)

P6 SHERWIN WILLIAMS
COLOR: SW 7075 WEB GRAY

P7 SHERWIN WILLIAMS
COLOR: SW 6509 GEORGIAN BAY

P8 IDEA PAINT PRO
PRODUCT: DRY ERASE PAINT
COLOR: WHITE
SUBSTRATE: GYPSUM BOARD WITH LEVEL 5 FINISH
WHERE THIS PAINT OCCURS.

P9 SHERWIN WILLIAMS
COLOR: SW 7710 BRANDYWINE

P10 SHERWIN WILLIAMS
COLOR: SW 6226 LANGUID BLUE

P11 SHERWIN WILLIAMS
COLOR: #SW714 ELDER WHITE
EXTERIOR PAINT

P12 STONESHIELD
ADD PRODUCT: STONCLAD GS EPOXY FLOOR
ALT 1 COATING
COLOR: BEECHWOOD

P13 'SILVER' POWDERCOAT

PLASTIC LAMINATE

PL1 WILSONART
PATTERN: 7969K-12
WAREHOUSE OAK

PL2 WILSONART
PATTERN: 7971K-12
UPTOWN WALNUT

PL3 WILSONART
PATTERN: 4886-38
PEARL SOAPSTONE

PL4 WILSONART
PATTERN: 1595-60
BLACK

RESILIENT FLOORING

RF1 ARMSTRONG FLOORS
PRODUCT: MIGRATIONS BCT WITH BIOSTRIDE
RF1.1 COLOR: T3501 PLATINUM GRAY
RF1.2 COLOR: T3508 BARK BROWN
RF1.3 COLOR: T3510 NATURAL BEIGE
SIZE: 12 X 12

RF2 TANDUS/CENTIVA
PRODUCT: CONTOUR VINYL PLANK FLOORING
COLOR: AMERICAN CHERRY #3305
SIZE: PLANKS 6" X 36" SQUARE EDGE (SE)
TEXTURE: TICK (TK)

RF3 JOHNSONITE
PRODUCT: ARIA SHEET VINYL
COLOR: 655 GYPSY MOTH WG
ROLL WIDTH: 6'-6"

SOLID SURFACE

SS1 CORIAN SOLID SURFACING
COLOR: CLAM SHELL

SS2 CAMBRIA QUARTZ SURFACING
COLOR: BRISTOL BLUE CLASSIC COLLECTION
THICKNESS: 2CM
EASED EDGE

SS3 CORIAN SOLID SURFACING
COLOR: LINEN

SS4 3 FORM VARIA
ACRYLIC RESIN DIFFUSER
PATTERN: TBD

SPECIALTIES

SP1 BOBRICK RESTROOM PARTITIONS
SIERRA SERIES
COLOR: DESERT BEIGE SC02
FLOOR MOUNTED, OVERHEAD BRACED
CONTINUOUS PRIVACY HINGE

TILE

T1 DALTILE
PRODUCT: RITTENHOUSE SQUARE
T1.1 COLOR: ALMOND 0135 SEMI-GLOSS
T1.2 COLOR: ALMOND X735 MATTE
SIZE: 3 X 6
BULLNOSE TRIM TO MATCH T1.1
GROUT: G2

T2 DALTILE
PRODUCT: SANTINO PORCELAIN TILE
COLOR: CHIARO SN07
SIZE: 12 X 24
GROUT: G1

T3 DAL TILE
PRODUCT: KEYSTONES COLORBODY PORCELAIN TILE
COLRO: ARTISAN BROWN D204
SIZE: 2 X 2 MOSAIC (DOT MOUNTED 1' X 2' SHEET)
TRIM: COVE BASE/CORNERS TO MATCH,
GROUT: G1

T4 AMERICAN OLEAN
PRODUCT: VISIONAIRE GLASS MOSAIC TILE
COLOR: WHISPERING STREAM VA93
SIZE: 5/8" X 1-1/4" MOSAIC (PAPER FACE MOUNTED ON 12-7/8" X 12" SHEET)
GROUT: G3

T5 DALTILE
PRODUCT: RITTENHOUSE SQUARE
T5 COLOR: ALMOND 0135 SEMI-GLOSS
SIZE: 6 X 6
BULLNOSE TRIM TO MATCH
GROUT: G2

WALK-OFF MAT

WM1 NOT USED

WM2 TANDUS FLOORING
PRODUCT: ABRASIVE ACTION II 02578
COLOR: WINTER GRAY 19103
TILE SIZE: 24 X 24 MODULAR BACKING

WALLCOVERING

WC1 KOROSEAL
ARBOR SERIES WOOD VENEER WALLCOVERING
PRODUCT: PLANKED VENEER (MULTI SPECIES)
CUSTOM STAIN - SUBMIT SAMPLES
FINISH: ULTRA 70; BACKING: FIVE-PLY
WIDTH: 36"
HANG IN NUMERICAL SEQUENCE

WC2 KOROGUARD WALLTALKERS
PRODUCT: TACWALL
COLOR: STONE C250-04
WIDTH: 4' H X (LENGTH VARIES)
ALUMINUM J MOLD TRIM – ¾"

WC3 KOROGUARD WALLTALKERS
PRODUCT: TACWALL
COLOR: PEWTER 62
WIDTH: 4' H X (LENGTH VARIES)
ALUMINUM J MOLD TRIM – ¾"

WC4 ADD ALT #1
CARNEGIE WALLCOVERINGS
PRODUCT: XOREL HIGH PERFORMANCE
PATTERN: METEOR 6427W
COLOR: TBD (THEATER)
WIDTH: 52"
HEIGHT: FULL HEIGHT OF SPACE

WC5 ADD ALT #1
CARNEGIE WALLCOVERINGS
PRODUCT: XOREL HIGH PERFORMANCE
PATTERN: METEOR 6427W
COLOR: TBD (CORRIDORS)
WIDTH: 52"
HEIGHT: 8'-0" A.F.F.

3

WALL PANELS

WP1 KORSEAL
ARBOR WOOD VENEER WALLCOVERING
PATTERN: CUSTOM PLANK PATTERN, CUSTOM STAIN COLOR

WP2 NOT USED

WP3 MARLITE FRP
COLOR: S100G WHITE

WP4 ACOUSTIC WALL PANELS
PRODUCT:
THICKNESS:
FABRIC: FB5

WOOD FLOOR

WD1 WOOD STAGE FLOOR
PAINTED P4, BLACK

WD2 3/8" WOOD FLOOR

2 WD3 5/8" PLYWOOD OVER 2X SLEEPERS

WD4 WOOD GRILLE CEILING ACCENT –
REUSE OF EXISTING WOOD SLAT MATERIAL FROM THEATER; BLACK FELT BACKER STAIN TO MATCH PL2; SUBMIT SAMPLES

WD5 GLOBAL
WOOD BENCH

NO.	ISSUE	DATE
2	ADDENDUM #2	06/26/2015
3	ADDENDUM #3	08/13/2015

SOLANO COMMUNITY COLLEGE

BUILDING 1200 THEATER RENOVATION

INCREMENT 2

4000 SUISUN VALLEY ROAD, FAIRFIELD,CA

LICENSED ARCHITECT
THERESA PAIGE
C-25452
6-31-15
RENEWAL DATE
STATE OF CALIFORNIA

ARCHITECT / CONSULTANT

DSA FILE NO: 48-C1

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
INCREMENT 2
02-113590
AC_____ FLS _____ SS_____
DATE _____

APPROVAL

LPAS

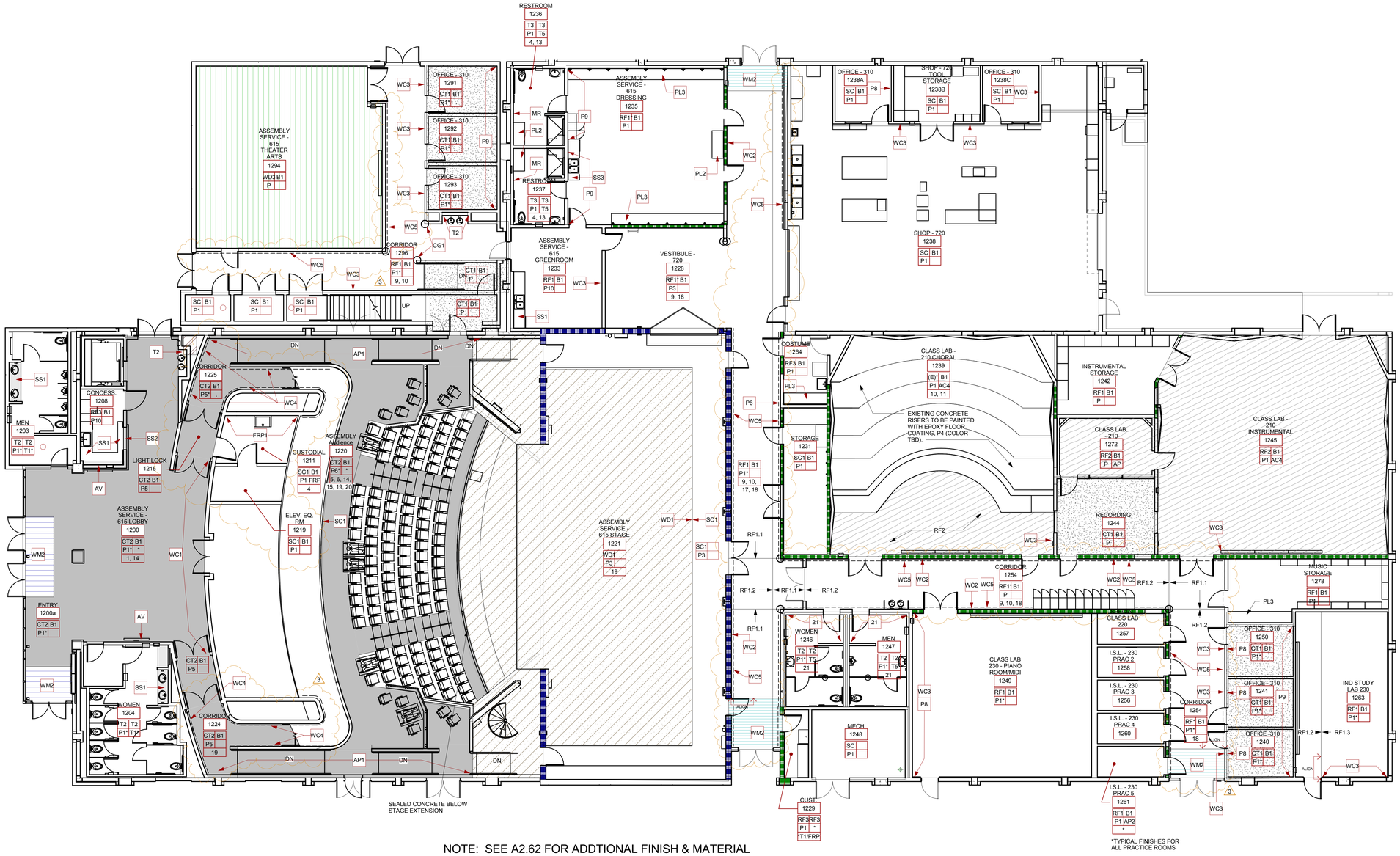
2484 Natomas Park Drive Suite 100 Sacramento CA 95833
916 443 0335 lpasdesign.com **Architecture + Design**

MATERIALS LEGEND

SCCD PROJECT NO: 14-014
LPAS PROJECT NO: 764-0002
DATE: 04-22-2015
SHEET NO:

A2.60

CONSTRUCTION SET



FINISH PLAN SYMBOLS

- FLOOR FINISH → FF | BF ← BASE FINISH
- WALL FINISH → WF | - ← WAINSCOT
- 1, 2, ... ← ROOM FINISH NOTE
- CG 9'-0" TYP. ← CORNER GUARD (CG, HEIGHT)
- P8 ← EXTENT OF WALL FINISH/ TRANSITIONS
- WC ← TACK MATERIAL SEE H7/A2.60
- AV ← FOR REFERENCE: MONITOR OR SCREEN LOCATION.
- MR ← WALL MOUNTED MIRROR
- RF1 ↔ RF2 ← FLOOR FINISH TRANSITIONS

*** ROOM FINISH NOTES**

1. COLUMNS TO BE PAINTED P1.
2. FLOOR AT DRINKING FOUNTAIN ALCOVE TO BE T2 WITH MATCHING BASE.
3. ELEVATOR FINISHES TO BE SELECTED FROM THE MANUFACTURER'S STANDARD FINISH OPTIONS.
4. PAINT FINISH TO BE SEMI-GLOSS.
5. EXPOSED CONCRETE WALLS TO REMAIN UNPAINTED.
6. HANDRAILS AT RAMP TO BE POWER COATED BLACK STEEL.
7. PROVIDE TRANSITION STRIP TO AT ALL EXPOSED EDGES OF CARPET TO CONCRETE.
8. STEPS TO HAVE C1 BROADLOOM CARPET WITH CONSTRASTING STRIPE AT THE TOP AND BOTTOM STEP.
9. SEE A2.61 FOR FLOOR PATTERN DETAIL WHERE TACKABLE WALLCOVERING OCCURS ADJACENT TO A DOOR PROVIDE 12" CLEAR SPACE FOR ROOM SIGNAGE. SEE ELEVATIONS FOR TYPICAL INSTALLATION.
10. RISERS TO BE PAINTED WITH EPOXY FLOOR COATING. PROVIDE CONTRASTING STRIPE AT THE TOP AND BOTTOM STEP.
11. SEE INTERIOR ELEVATIONS FOR LOCATION OF AC4 ACOUSTIC WALL TREATMENT.
12. MR - FULL HEIGHT MIRROR.
13. SEE INTERIOR ELEVATIONS FOR WALL/PAINT FINISH AND ACOUSTIC PANEL LOCATIONS.
14. GYP BOARD AT PARTIAL HEIGHT WALL OF BALCONIES TO BE PAINTED **P3**.
15. SEE RCP FOR CEILING TREATMENTS.
16. PAINT NORTH WALL P6.
17. **ADD ALT 1** TO BE EPOXY FLOOR COATING P12 WITH RUBBER BASE, B1.
18. ALL EXPOSED SURFACES, MATERIALS, ELECTRICAL COMPONENTS, MECHANICAL AND STRUCTURAL ELEMENTS IN THE THEATER TO BE PAINTED **P3**, U.O.N. OR NOT ALLOWED BY CODE.
19. SEE ELEVATIONS FOR PLACEMENT OF AP1 PANELS.
20. P1 PAINT ONLY WITH TILE BASE, NO TILE WAINSCOT.

1ST FLOOR FINISH PLAN 1/8" = 1'-0" | H1

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4000 SUISUN VALLEY ROAD, FAIRFIELD,CA

LICENSED ARCHITECT THERESA PAGE C-25432 8-31-15 RENEWAL DATE STATE OF CALIFORNIA

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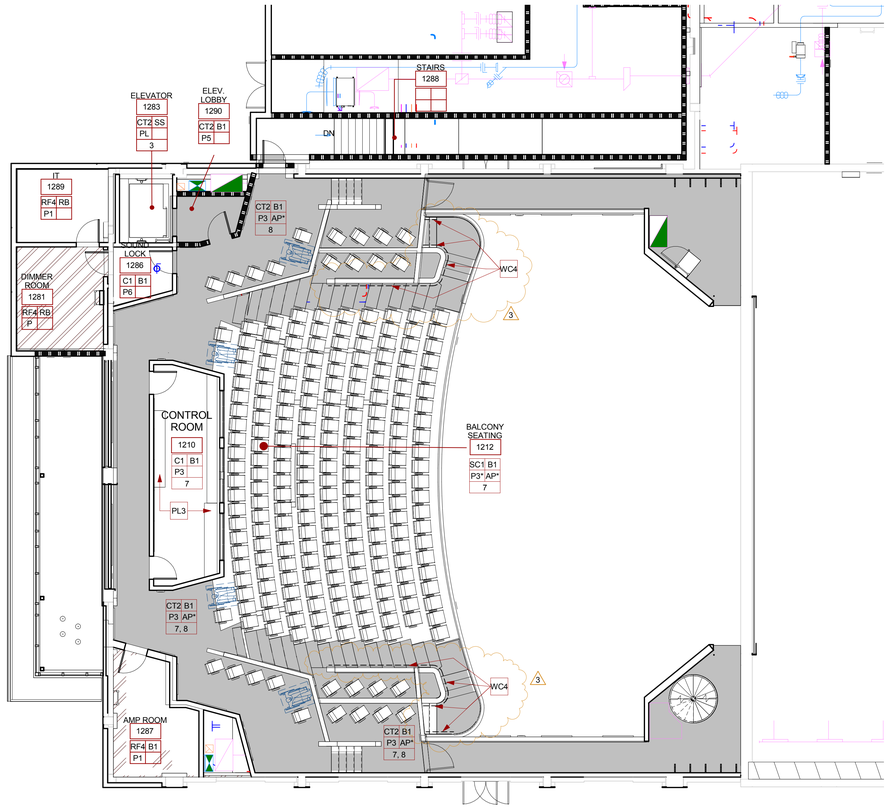
1ST FLOOR FINISH PLAN

SCCD PROJECT NO: 14-014
LPAS PROJECT NO: 764-0002
DATE: 04-22-2015
SHEET NO:

A2.61

CONSTRUCTION SET



2ND FLOOR FINISH PLAN
1/8" = 1'-0"
H7

FINISH PLAN SYMBOLS

FLOOR FINISH — FF BF — BASE FINISH
WALL FINISH — WF - — WAINSCOT
1, 2, ... — ROOM FINISH NOTE

CG 9'-0" TYP. — CORNER GUARD (CG, HEIGHT)

P8 — EXTENT OF WALL FINISH/ TRANSITIONS

WC_ — TACK MATERIAL SEE H7/A2.60

AV — FOR REFERENCE: MONITOR OR SCREEN LOCATION.

MR — WALL MOUNTED MIRROR

RF1 — RF2 — FLOOR FINISH TRANSITIONS

*** ROOM FINISH NOTES**

1. COLUMNS TO BE PAINTED P1.
2. FLOOR AT DRINKING FOUNTAIN ALCOVE TO BE T2 WITH MATCHING BASE.
3. ELEVATOR FINISHES TO BE SELECTED FROM THE MANUFACTURER'S STANDARD FINISH OPTIONS.
4. PAINT FINISH TO BE SEMI-GLOSS.
5. EXPOSED CONCRETE WALLS TO REMAIN UNPAINTED.
6. HANDRAILS AT RAMP TO BE POWER COATED BLACK STEEL.
7. PROVIDE TRANSITION STRIP TO AT ALL EXPOSED EDGES OF CARPET TO CONCRETE.
8. STEPS TO HAVE C1 BROADLOOM CARPET WITH CONSTRASTING STRIPE AT THE TOP AND BOTTOM STEP.
9. SEE A2.61 FOR FLOOR PATTERN DETAIL
10. WHERE TACKABLE WALLCOVERING OCCURS ADJACENT TO A DOOR PROVIDE 12" CLEAR SPACE FOR ROOM SIGNAGE. SEE ELEVATIONS FOR TYPICAL INSTALLATION.
11. RISERS TO BE PAINTED WITH EPOXY FLOOR COATING. PROVIDE CONTRASTING STRIPE AT THE TOP AND BOTTOM STEP.
12. SEE INTERIOR ELEVATIONS FOR LOCATION OF AC4 ACOUSTIC WALL TREATMENT.
13. MR - FULL HEIGHT MIRROR
14. SEE INTERIOR ELEVATIONS FOR WALL/PAINT FINISH AND ACOUSTIC PANEL LOCATIONS.
15. GYP BOARD AT PARTIAL HEIGHT WALL OF BALCONIES TO BE PAINTED **P3**.
16. SEE RCP FOR CEILING TREATMENTS.
17. PAINT NORTH WALL P6.
18. **ADD ALT 1** TO BE EPOXY FLOOR COATING P12 WITH RUBBER BASE, B1.
19. ALL EXPOSED SURFACES, MATERIALS, ELECTRICAL COMPONENTS, MECHANICAL AND STRUCTURAL ELEMENTS IN THE THEATER TO BE PAINTED **P3,** U.O.N. OR NOT ALLOWED BY CODE.
20. SEE ELEVATIONS FOR PLACEMENT OF AP1 PANELS.
21. P1 PAINT ONLY WITH TILE BASE, NO TILE WAINSCOT.

NO.	ISSUE	DATE
3	ADDENDUM #3	08/13/2015

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4000 SUISUN VALLEY ROAD, FAIRFIELD,CA

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2ND FLOOR FINISH PLAN

SCCD PROJECT NO: 14-014
LPAS PROJECT NO: 764-0002
DATE: 04-22-2015
SHEET NO:

A2.62

CONSTRUCTION SET

DOOR SCHEDULE1

#		DOOR WIDTH	DOOR HEIGHT	DOOR THICKNESS	DOOR TYPE	DOOR MATL	DOOR FINISH	FRAME TYPE	FRAME MATL	FRAME FINISH	DETAILS HEAD	DETAILS JAMB	DETAILS THRESHOLD	FIRE RATING	STC	HDWR GROUP	PANIC HARDWARE REQ'D	REMARKS
1291		3' - 0"	7' - 0"	1 3/4"	HV	HM	P	HM1	HM	P	B3/A9.50	D3/A9.50		20 MIN.		35	NO	
1292		3' - 0"	7' - 0"	1 3/4"	HV	HM	P	HM1	HM	P	B3/A9.50	D3/A9.50		20 MIN.		35	NO	
1293		3' - 0"	7' - 0"	1 3/4"	HV	HM	P	HM1	HM	P	B3/A9.50	D3/A9.50		20 MIN.		35	NO	
1294.1		3' - 0"	7' - 0"	1 3/4"	F1	HM	WL	HM1	HM	P	B3/A9.50	D3/A9.50		45 MIN.	43	52	YES	
1294.2	Pair	6' - 0"	7' - 0"	1 3/4"	F1	HM	WL	HM1	HM	P	B3/A9.50	D3/A9.50		45 MIN.	43	37	YES	
1295	Pair	6' - 0"	7' - 0"	1 3/4"	F1	HM	P	HM1	HM	P	B3/A9.50	D3/A9.50		60 MIN.		51	NO	
1296.1	Pair	6' - 0"	9' - 0"		SF-FV	AL	FF	SF1	AL	FF	F7/A8.20	D9/A8.20		NA		47	YES	
1296.2	Pair	5' - 11"	9' - 0"		SF-FV	AL	FF	SF1	AL	FF	F7/A8.20	D9/A8.20		NA		47	YES	

DOOR REMARKS KEY:

1. ELECTRONIC ENTRY SYSTEM.
2. ADA PUSH BUTTON OPERATION (AUTOMATIC DOOR OPERATOR)
3. (E) STAGE SOUND DOOR TO REMAIN, REPLACE DOOR SOUND SEALS, AND REFURBISH HINGES, LATCHES AND HARDWARE
4. FIELD VERIFY OPENING DIMENSIONS
5. HARDWARE BY MANUFACTURER
6. PUSH/PULL, NO LATCH, SELF CLOSE, HOLD OPEN
7. PANIC HARDWARE, ELECTRONIC HOLD OPEN
8. COILING OVERHEAD DOOR, PROVIDE WITH PADLOCK
9. INSULATED
10. CHAIN OPERATOR
11. MOTORIZED
12. SAW CUT THROUGH (E) CONCRETE WALL AS REQUIRED
13. ALL HARDWARE BY MANUFACTURER
14. (E) STOREFRONT TO REMAIN, INSTALL NEW DOOR & DOOR HARDWARE.
15. (E) DOOR AND (E) FRAME TO REMAIN. INSTALL NEW HARDWARE.

ALL WOOD DOORS WITH PANIC HARDWARE TO RECEIVE EXPOSED RODS
ALL HM AND STOREFRONT DOORS WITH PANIC HARDWARE TO RECEIVE INTERNAL RODS

ILLUMINATED EXIT SIGN NOTES
1.EXIT DOORS SHALL BE MARKED WITH AN APPROVED EXIT SIGN READILY VISIBLE FROM ANY DIRECTION OF EGRESS TRAVEL.

2.EXIT ACCESS DOORS SHALL BE MARKED WITH AN APPROVED EXIT SIGN READILY VISIBLE FROM ANY DIRECTION OF EGRESS TRAVEL. EXIT SIGNS ARE NOT REQUIRED IN ROOMS OR AREAS THAT REQUIRE ONLY ONE EXIT OR EXIT ACCESS.

3.EXIT SIGN PLACEMENT SHALL BE SUCH THAT NO POINT IN A CORRIDOR IS MORE THAN 100 FEET, OR THE LISTED VIEWING DISTANCE OF THE SIGN, WHICHEVER IS LESS, FROM THE NEAREST VISIBLE SIGN.
4.ILLUMINATED EXIT SIGNS ARE SHOWN ON THE ARCHITECTURAL CEILING PLAN FOR REFERENCE ONLY. REFER TO ELECTRICAL PLANS FOR SIGNS.

DOOR NOTES:
1.ALL RATED DOORS ARE TO BE POSITIVE LATCHING AND SELF-CLOSING.

2."LABEL" SHALL MEAN "FIRE ASSEMBLY" AS DEFINED IN 2013 CBC SECTION 716.5.

3.FIRE DOORS AND FIRE WINDOWS SHALL HAVE AN APPROVED LABEL OR LISTING MARK INDICATING THE FIRE PROTECTION RATING, WHICH IS PERMANENTLY AFFIXED AT THE FACTORY WHERE FABRICATION AND ASSEMBLY ARE DONE. (2013 CBC SECTIONS 716.5.7.1 AND 716.5.8.3)

4.ALL 60-MINUTE RATED ASSEMBLIES SHALL BE PROVIDED WITH APPROVED GASKETING MATERIAL SO INSTALLED TO PROVIDE A SEAL WHERE THE DOOR MEETS THE STOP ON BOTH SIDES AND ACROSS THE TOP. THE DOOR AND FRAME SHALL BEAR AN APPROVED LABEL OR OTHER IDENTIFICATION SHOWING THE RATING THEREOF, FOLLOWED BY THE LETTER "S". (2013 CBC SECTIONS 716.5.7.3)

5.FIRE RATED DOOR FRAMES SHALL BE INSTALLED STRICTLY PER MANUFACTURER'S PRINTED INSTRUCTIONS. (NFPA 80.)

6.ROOMS NOTED AS INCIDENTAL USE AREAS SHALL HAVE DOORS THAT ARE SELF-CLOSING OR AUTOMATIC-CLOSING UPON DETECTION OF SMOKE. DOORS SHALL NOT HAVE AIR TRANSFER OPENINGS AND SHALL NOT BE UNDERCUT IN EXCESS OF THE CLEARANCE PERMITTED IN ACCORDANCE WITH NFPA 80, TABLE 1-11.4.

7.ALL HAND-ACTIVATED DOOR OPENING HARDWARE, HANDLES, PULLS, LATCHES, LOCKS, AND OTHER OPERATING DEVICES ON ACCESSIBLE DOORS SHALL HAVE A SHAPE THAT IS EASY TO GRASP WITH ONE HAND AND DOES NOT REQUIRE TIGHT GRASPING, TIGHT PINCHING OR TWISTING OF THE WRIST TO OPERATE. HARDWARE SHALL BE CENTERED BETWEEN 30" AND 44" ABOVE THE FLOOR. LATCHING AND LOCKING DOORS THAT ARE HAND-ACTIVATED AND WHICH ARE IN A PATH OF TRAVEL SHALL BE OPERABLE WITH A SINGLE EFFORT BY LEVER-TYPE HARDWARE, PANIC BARS, PUSH-PULL ACTIVATING BARS OR OTHER HARDWARE DESIGNED TO PROVIDE PASSAGE. LOCKED EXIT DOORS SHALL OPERATE AS ABOVE IN EGRESS DIRECTION. (2013 CBC 11B-309)

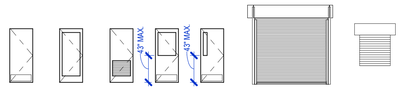
DOOR TYPE ABBREVIATIONS

F1	FLUSH
SF	STOREFRONT
FV	FULL VISION
HL	HALF LOUVER
HV	HALF VISION
NV	NARROW VISION
OH1	OVERHEAD COILING
OH2	OVERHEAD COILING COUNTER
FF	FACTORY FINISH
ST	STAIN
WL	WOOD LAMINATE
HM1	HOLLOW METAL FRAME
HM	HOLLOW METAL
P	PAINT
WD	WOOD
(E)	EXISTING

DOOR TYPE NOTES:

* DOOR SAFETY GLAZING SHALL COMPLY WITH CBC 2406.4 WITH A CATEGORY CLASS I RATING FOR GLAZING WITH SURFACE AREA OF GLAZING ON ONE SIDE OF ONE LITE EQUAL TO OR LESS THAN 9 S.F.

** DOOR SAFETY GLAZING SHALL COMPLY WITH CBC 2406.4 WITH A CATEGORY CLASS II RATING FOR GLAZING WITH SURFACE AREA OF GLAZING ON ONE SIDE OF ONE LITE MORE THAN 9 S.F.



F1 SF-FV** HL HV* NV* OH1 OH2

HM1

NOTE: REFER TO STOREFRONT WINDOW ELEVATIONS ON A2.82 FOR DETAIL CALLOUTS AT STOREFRONT DOORS

AC1

DOOR TYPE LEGEND
1/8" = 1'-0"

DOOR FRAME SCHEDULE
1/8" = 1'-0"

DOOR SCHEDULE1

#		DOOR WIDTH	DOOR HEIGHT	DOOR THICKNESS	DOOR TYPE	DOOR MATL	DOOR FINISH	FRAME TYPE	FRAME MATL	FRAME FINISH	DETAILS HEAD	DETAILS JAMB	DETAILS THRESHOLD	FIRE RATING	STC	HDWR GROUP	PANIC HARDWARE REQ'D	REMARKS
12	Pair	6' - 0"	7' - 0"	1 3/4"	F1	HM	P	(E)	(E)	P								
1200.1	Pair	6' - 0"	9' - 0"		SF-FV	AL	FF	SF4	AL	FF	F7/A8.20	D7/A8.20		NA	NA	01	YES	1,2
1200.2	Pair	6' - 0"	9' - 0"		SF-FV	AL	FF	SF3	AL	FF	F7/A8.20	D7/A8.20		NA	NA	47	YES	
1200.3	Pair	6' - 0"	9' - 0"		SF-FV	AL	FF	SF3	AL	FF	F7/A8.20	D7/A8.20		NA	NA	47	YES	
1203.1		3' - 0"	7' - 0"	1 3/4"	F1	WD	ST	HM1	HM	P	B3/A9.50	D3/A9.50		20 MIN.	NA	04	NO	
1204.1		3' - 0"	7' - 0"	1 3/4"	F1	WD	ST	HM1	HM	P	B3/A9.50	D3/A9.50		20 MIN.	NA	04	NO	
1204.2		3' - 0"	7' - 0"	1 3/4"	F1	WD	ST	HM1	HM	P	B3/A9.50	D3/A9.50		NA	NA	05	NO	
1205.1	Pair	6' - 0"	7' - 0"	1 3/4"	F1	HM	P	HM1	HM	P	B5/A9.50	E5/A9.50		3 HR.	NA	06	YES	
1208.1		3' - 6"	7' - 0"	1 3/4"	F1	WD	ST	HM1	HM	P	B1/A9.50	D1/A9.50		20 MIN.	NA	07	NO	
1208.2		4' - 0"	4' - 0"	2"	OH2	AL	FF				C7/A9.51	F7/A9.51	H7/A9.51	45 MIN.		08		5
1210.1		3' - 0"	7' - 0"	1 3/4"	F1	HM	P	HM1	HM	P	B1/A9.50	D1/A9.50			NA	09	NO	
1210.2		3' - 0"	7' - 0"	1 3/4"	F1	HM	P	HM1	HM	P	B1/A9.50	D1/A9.50			NA	09	NO	
1211		3' - 6"	7' - 0"	1 3/4"	F1	WD	ST	HM1	HM	P	B8/A9.50	D8/A9.50		20 MIN.	NA	10	NO	
1215.1	Pair	6' - 0"	7' - 0"	1 3/4"	F1	WD	ST	HM1	HM	P	B8/A9.50	D8/A9.50		20 MIN,.	NA	11	YES	7
1215.2	Pair	6' - 0"	7' - 0"	1 3/4"	F1	WD	ST	HM1	HM	P	B8/A9.50	D8/A9.50			NA	12	YES	6
1216.1	Pair	6' - 0"	7' - 0"	1 3/4"	F1	WD	ST	HM1	HM	P	B8/A9.50	D8/A9.50		20 MIN,.	NA	11	YES	7
1216.2	Pair	6' - 0"	7' - 0"	1 3/4"	F1	WD	ST	HM1	HM	P	B8/A9.50	D8/A9.50			NA	12	YES	6
1218.1	Pair	6' - 0"	7' - 0"	1 3/4"	F1	WD	ST	HM1	HM	P	B8/A9.50	D8/A9.50		20 MIN.	NA	14	NO	
1219		3' - 6"	7' - 0"	1 3/4"	F1	WD	ST	HM1	HM	P				60 MIN.				
1220.1		3' - 0"	7' - 0"	1 3/4"	F1	HM	P	HM1	(E)	P	B5/A9.50	E5/A9.50			43	15	YES	
1220.2		3' - 0"	7' - 0"	1 3/4"	F1	HM	P	HM1	HM	P	B8/A9.50	D8/A9.50		3 HR.	NA	16	YES	
1220.3		3' - 6"	3' - 6"	1 3/4"	GATE 1	STL	P	NA	NA	NA	-	H10/A9.51				17	NO	GATE W/ POSTS
1220.4		3' - 6"	3' - 6"	1 3/4"	GATE 1	STL	P	NA	NA	NA	-	H10/A9.51				17	NO	GATE W/ POSTS
1220.5		2' - 6"	3' - 6"	1 3/4"	GATE 1	STL	P	N/A	NA	NA	-	H10/A9.51				17	NO	GATE W/ POSTS
1220.6		2' - 6"	3' - 6"	1 3/4"	GATE 1	STL	P	N/A	HM	NA	-	H10/A9.51				17	NO	GATE W/ POSTS
1221.1	Pair	6' - 0"	12' - 0"	1 3/4"	F1	HM	P	HM1	HM	P	B5/A9.50	E5/A9.50		2 HR.	50	18	YES	
1221.2		3' - 0"	7' - 0"	1 3/4"	F1	HM	P	HM1	HM	P	B5/A9.50	E5/A9.50		2 HR.	50	19	YES	4
1221.3		12' - 0"	16' - 0"	2"	OH1		P			P	C4/A9.51	F4/A9.51		2 HR.	NA	20	N/A	3,8,10,13
1221.4		12' - 0"	16' - 0"	2"							-	-		NA	NA	21	N/A	
1221.5		3' - 2"	7' - 0"	1 3/4"	F1	HM	P	HM1	HM	P	B5/A9.50	E5/A9.50		2 HR.	NA	22	NO	4
1221.6		3' - 2"	7' - 0"	1 3/4"	F1	HM	P	HM1	HM	P	B5/A9.50	E5/A9.50		2 HR.	NA	22	NO	4
1221.7		3' - 0"	7' - 0"	1 3/4"	F1	HM	P	HM1	(E)	P	B5/A9.50	E5/A9.50		2 HR.	50	19	YES	4
1221.8		3' - 0"	6' - 8"	1 3/4"	F1	HM	P	HM1	HM	P	B5/A9.50	E5/A9.50		2 HR.		29	NO	12
1227		3' - 0"	7' - 0"	1 3/4"	F1	HM	P	HM1	HM	P	B3/A9.50	D3/A9.50		20 MIN.		10	YES	
1228		3' - 0"	7' - 0"	1 3/4"	F1	HM	P	HM1	HM	P	B3/A9.50	D3/A9.50		45 MIN.		25	NO	3
1229		3' - 0"	7' - 0"	1 3/4"	F1	HM	P	HM1	HM	P	B3/A9.50	D3/A9.50		20 MIN,.		26	NO	
1231.1	Pair	6' - 0"	7' - 0"	1 3/4"	F1	HM	PL	HM1	HM	P	B3/A9.50	D3/A9.50		20 M IN.		27	NO	
1231.2		3' - 0"	7' - 0"	1 3/4"	F1	HM	PL	HM1	HM	P	B3/A9.50	D3/A9.50		20 MIN.		24	NO	
1233.1		3' - 0"	7' - 0"	1 3/4"	F1	HM	P	HM1	HM	P	B8/A9.50	D8/A9.50		2 HR.		28	NO	
1234.1		3' - 0"	7' - 0"	1 3/4"	F1	WD	ST	HM1	HM	P	B1/A9.50	D1/A9.50		45 MIN.		29	NO	
1234.2		3' - 0"	7' - 0"	1 3/4"	F1	HM	WL	HM1	HM	P	B3/A9.50	D3/A9.50		45 MIN.		30	NO	
1235.1		3' - 0"	7' - 0"	1 3/4"	F1	HM	WL	HM1	HM	P	B3/A9.50	D3/A9.50		45 MIN.		30	NO	
1236		3' - 0"	7' - 0"	1 3/4"	F1	WD	ST	HM1	HM	P	B1/A9.50	D1/A9.50		45 MIN.		32	NO	
1237		3' - 0"	7' - 0"	1 3/4"	F1	WD	ST	HM1	HM	P	B1/A9.50	D1/A9.50				32		
1238.1		3' - 0"	7' - 0"	1 3/4"	F1	HM	P	HM1	HM	P	B5/A9.50	E5/A9.50		45 MIN.		25	NO	
1238.2		12' - 0"	16' - 0"	2"	OH1		P			P	C4/A9.51	F4/A9.51		45 MIN.		33	N/A	8,11,13
1238.4		10' - 0"	16' - 0"	2"														
1238.4		10' - 0"	16' - 0"	2"	OH1		P			P	C4/A9.51	F4/A9.51		NA		33	N/A	8,9,13
1238.5		3' - 0"	7' - 0"	1 3/4"	F1	HM	P	(E)	(E)	P	B5/A9.50	E5/A9.50				34	YES	
1238A		3' - 0"	7' - 0"	1 3/4"	HV	HM	P	HM1	HM	P	B3/A9.50	D3/A9.50				35	NO	
1238B	Pair	6' - 0"	7' - 0"	1 3/4"	F1	HM	P	HM1	HM	P	B3/A9.50	D3/A9.50				36	NO	
1238C		3' - 0"	7' - 0"	1 3/4"	HV	HM	P	HM1	HM	P	B3/A9.50	D3/A9.50				35	NO	
1239.1	Pair	6' - 0"	7' - 0"	1 3/4"	F1	HM	WL	HM1	HM	P	B3/A9.50	D3/A9.50		45 MIN.	43	37	YES	
1239.2		3' - 0"	7' - 0"	1 3/4"	F1	HM	WL	HM1	HM	P	B3/A9.50	D3/A9.50		45 MIN.	43	38	YES	1
1240		3' - 0"	7' - 0"	1 3/4"	HV	HM	P	HM1	HM	P	B3/A9.50	D3/A9.50		20 MIN.		39	NO	
1241		3' - 0"	7' - 0"	1 3/4"	HV	HM	P	HM1	HM	P	B3/A9.50	D3/A9.50		20 MIN.		39	NO	
1242.1	Pair	6' - 0"	7' - 0"	1 3/4"	F1	HM	P	HM1	HM	P	B3/A9.50	D3/A9.50		45 MIN.		40		
1243.1		3' - 0"	7' - 0"	1 3/4"	HL	HM	P	HM1	HM	P						41		
1244.1		3' - 0"	7' - 0"	1 3/4"	NV	HM	WL	HM1	HM	P	B3/A9.50	D3/A9.50		20 MIN.	43	42	NO	
1245.1	Pair	6' - 0"	7' - 0"	1 3/4"	F1	HM	WL	HM1	HM	P	B3/A9.50	D3/A9.50		45 MIN.	43	37	YES	1
1245.2	Pair	6' - 0"	7' - 0"	1 3/4"	F1	HM	P	(E)	(E)	P	B8/A9.50	D8/A9.50			43	43	YES	
1246		3' - 0"	7' - 0"	1 3/4"	F1	HM	WL	HM1	HM	P	B3/A9.50	D3/A9.50		20 MIN,.		44	NO	
1247		3' - 0"	7' - 0"	1 3/4"	F1	HM	WL	HM1	HM	P	B3/A9.50	D3/A9.50		20 MIN,.		44	NO	
1248	Pair	6' - 0"	7' - 0"	1 3/4"	(E)	(E)	P	(E)	(E)	P	-	-				45	NO	15
1249.1	Pair	6' - 0"	7' - 0"	1 3/4"	F1	HM	WL	HM1	HM	P	B3/A9.50	D3/A9.50		45 MIN.		46	NO	1
1249.2		3' - 0"	7' - 0"	1 3/4"	(E)	(E)	P	(E)	(E)	P	-	-				45	NO	15
1250		3' - 0"	7' - 0"	1 3/4"	HV	HM	P	HM1	HM	P	B3/A9.50	D3/A9.50		20 MIN.		39	NO	
1251		3' - 0"	7' - 0"	1 3/4"	F1	HM	P	HM1	HM	P	B3/A9.50	D3/A9.50		45 MIN.		24	NO	
1253.1	Pair	6' - 0"	7' - 0"		SF-FV	AL	FF	(E)	(E)	FF	-	-		NA		47	YES	14
1253.2	Pair	6' - 0"	7' - 0"		SF-FV	AL	FF	(E)	(E)	FF	B8/A9.50	D8/A9.50		NA		56	YES	1, 14
1253.3	Pair	6' - 0"	7' - 0"	1 3/4"	(E)	(E)	ST	(E)	(E)	3 P	B1/A9.50	D1/A9.50				48	YES	15
1254	Pair	6' - 0"	7' - 0"		SF-FV	AL	FF	(E)	(E)	FF	-	-		NA		47	YES	14
1256		3' - 0"	7' - 0"	1 3/4"	NV	HM	WL	HM1	HM	P	H3/A9.18	H3/A9.18		20 MIN.	43	49	NO	
1257		3' - 0"	7' - 0"	1 3/4"	NV	HM	WL	HM1	HM	P	H3/A9.18	H3/A9.18		20 MIN.	43	49	NO	
1258		3' - 0"	7' - 0"	1 3/4"	NV	HM	WL	HM1	HM	P	H3/A9.18	H3/A9.18		20 MIN.	43	49	NO	
1260		3' - 0"	7' - 0"	1 3/4"	NV	HM	WL	HM1	HM	P	H3/A9.18	H3/A9.18		20 MIN.	43	49	NO	
1261		3' - 0"	7' - 0"	1 3/4"	NV	HM	WL	HM1	HM	P	H3/A9.18	H3/A9.18		20 MIN.	43	49	NO	
1263		3' - 0"	7' - 0"	1 3/4"	(E)	(E)	P	(E)	(E)	P	-	-				50	NO	1, 15
1264.1		3' - 2"	7' - 0"	1 3/4"	F1	HM	P	HM1	HM	P	B3/A9.50	D3/A9.50		20 M IN.		24	NO	
1264.2		3' - 0"	7' - 0"	1 3/4"	(E)	(E)	P	(E)	(E)	P	-	-				45	NO	15
1272.1		3' - 0"	7' - 0"	1 3/4"	F1	HM	P	HM1	HM	P	-	-		NA	43	49	NO	
1272.2		3' - 0"	7' - 0"	1 3/4"	F1	HM	P	HM1	HM	P	B3/A9.50	D3/A9.50		NA	43	49	NO	
1273	Pair	6' - 0"	7' - 0"	1 3/4"	F1	HM	P	HM1	HM	P	B3/A9.50	D3/A9.50		60 MIN.		51	NO	
1274.1		3' - 0"	7' - 0"	1 3/4"	F1	HM	P	HM1	HM	P	B3/A9.50	D3/A9.50		20 MIN.	43	52	YES	
1281.1		3' - 0"	7' - 0"	1 3/4"	F1	HM	P	HM1	HM	P	B8/A9.50	D8/A9.50				26	NO	
1282.2		3' - 0"	7' - 0"	1 3/4"	F1	HM	P	HM1	HM	P	B1/A9.50	D1/A9.50				26	NO	
1286		3' - 0"	7' - 0"	1 3/4"	F1	HM	P	HM1	HM	P	B1/A9.50	D1/A9.50				49	NO	
1287		3' - 0"	7' - 0"	1 3/4"	F1	HM	P	HM1	HM	P	B3/A9.50	D3/A9.50			43	26	NO	
1288		3' - 0"	7' - 0"	1 3/4"	F1	HM	P	HM1	HM	P				2 HR.		54	YES	
1290		3' - 0"	7' - 0"	1 3/4"	F1	HM	P	HM1	HM	P	B3/A9.50	D3/A9.50		60 MIN.		55	NO	

NO.	ISSUE	DATE
3	ADDENDUM #3	08/13/2015

SOLANO COMMUNITY COLLEGE

BUILDING 1200 THEATER RENOVATION

INCREMENT 2
4000 SUISUN VALLEY ROAD, FAIRFIELD,CA

LICENSED ARCHITECT
THERESA PAIGE
C-25452
8-31-15
RENEWAL DATE
STATE OF CALIFORNIA

ARCHITECT / CONSULTANT

DSA FILE NO: 48-C1

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
INCREMENT 2
02-113590
AC_____ FLS _____ SS_____
DATE _____

APPROVAL

LPAS

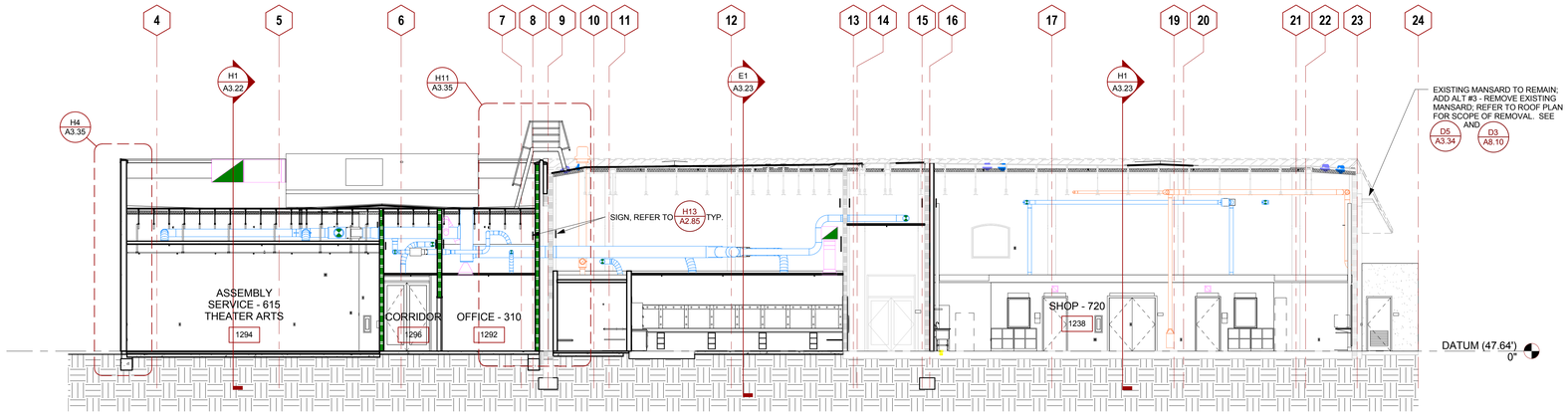
2484 Natomas Park Drive Suite 100 Sacramento CA 95833
916 443 0335 lpasdesign.com **Architecture + Design**

DOOR SCHEDULE

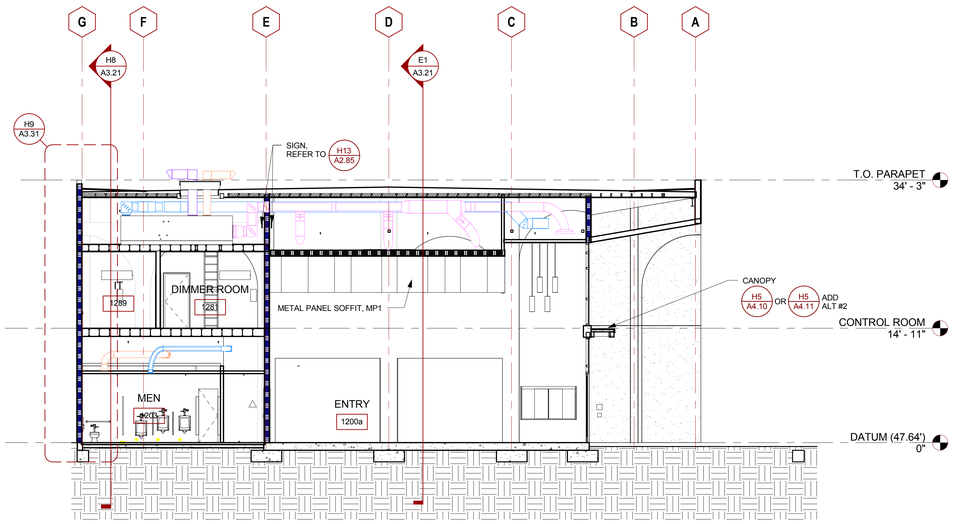
SCCD PROJECT NO: 14-014
LPAS PROJECT NO: 764-0002
DATE: 04-22-2015
SHEET NO:

A2.81

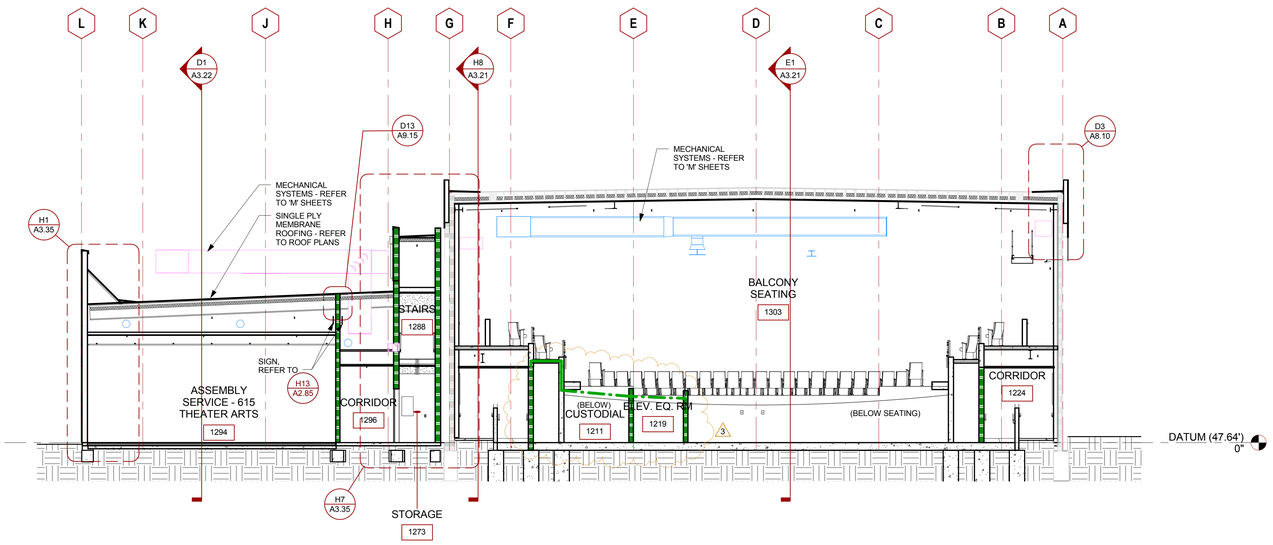
CONSTRUCTION SET



BUILDING SECTION | D1
1/8" = 1'-0"



BUILDING SECTION | H9
1/8" = 1'-0"



BUILDING SECTION | H1
1/8" = 1'-0"

NO.	ISSUE	DATE
3	ADDENDUM #3	08/13/2015

SOLANO COMMUNITY COLLEGE

BUILDING 1200 THEATER RENOVATION

INCREMENT 2
4000 SUISUN VALLEY ROAD, FAIRFIELD,CA

LICENSED ARCHITECT
THERESA PAIGE
C-25452
8-31-15
RENEWAL DATE
STATE OF CALIFORNIA

ARCHITECT / CONSULTANT

DSA FILE NO: 48-C1

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
INCREMENT 2
02-113590
AC_____ FLS _____ SS_____
DATE _____

APPROVAL

LPAS

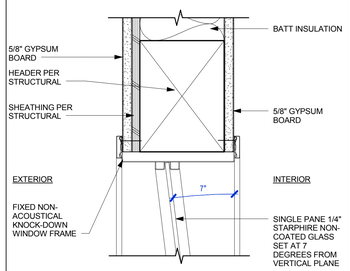
2484 Natomas Park Drive Suite 100 Sacramento CA 95833
916 443 0335 lpasdesign.com **Architecture + Design**

BUILDING SECTIONS

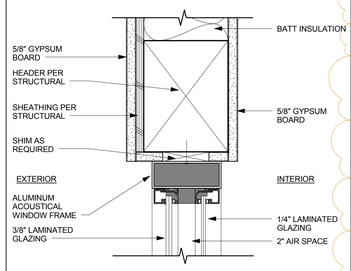
SCCD PROJECT NO: 14-014
LPAS PROJECT NO: 764-0002
DATE: 04-22-2015
SHEET NO:

A3.22

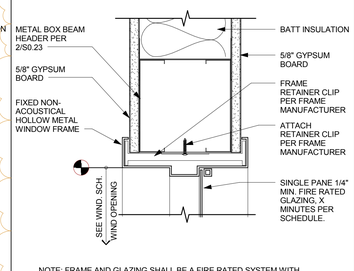
CONSTRUCTION SET



PROJECTOR PORT HEAD @ WOOD FRAMING | B10
3" = 1'-0"

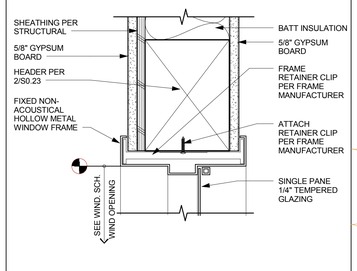


ACOUSTICAL WIN. HEAD @ WOOD FRAMING | B8
3" = 1'-0"

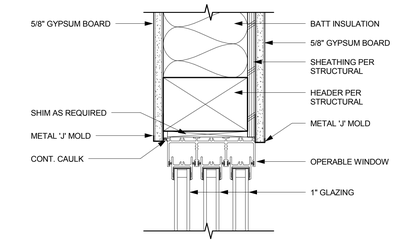


NOTE: FRAME AND GLAZING SHALL BE A FIRE RATED SYSTEM WITH UL LABEL, MIN RATING PER SCHEDULE.

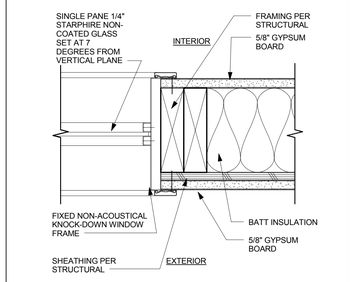
FIXED WINDOW HEAD @ METAL FRAMING | B6
3" = 1'-0"



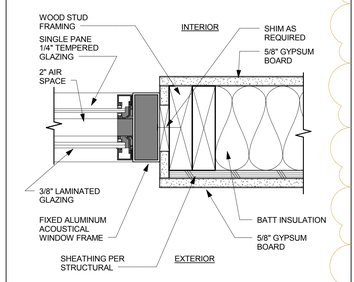
FIXED WINDOW HEAD @ WOOD FRAMING | B4
3" = 1'-0"



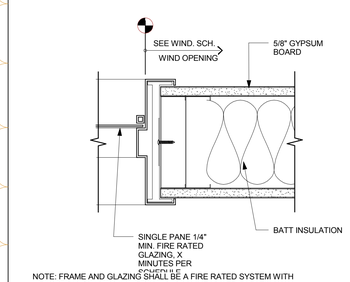
OPERABLE WINDOW HEAD | B1
3" = 1'-0"



PROJECTOR PORT JAMB @ WOOD FRAMING | D10
3" = 1'-0"

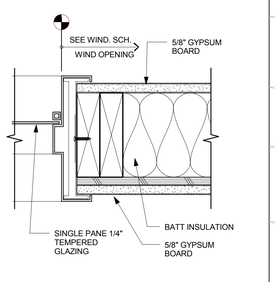


ACOUSTICAL WIN. JAMB @ WOOD FRAMING | D8
3" = 1'-0"

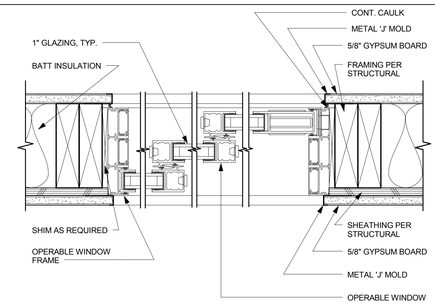


NOTE: FRAME AND GLAZING SHALL BE A FIRE RATED SYSTEM WITH UL LABEL, MIN RATING PER SCHEDULE.

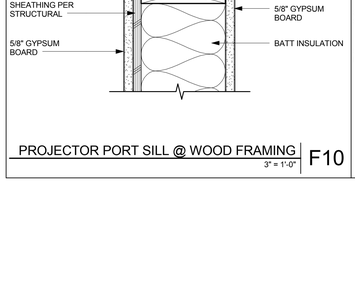
FIXED WINDOW JAMB @ METAL FRAMING | D6
3" = 1'-0"



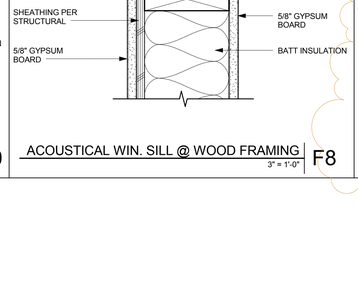
FIXED WINDOW JAMB @ WOOD FRAMING | D4
3" = 1'-0"



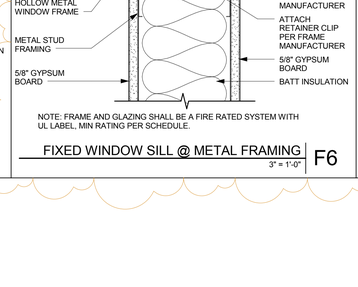
OPERABLE WINDOW JAMB | D1
3" = 1'-0"



PROJECTOR PORT SILL @ WOOD FRAMING | F10
3" = 1'-0"



ACOUSTICAL WIN. SILL @ WOOD FRAMING | F8
3" = 1'-0"



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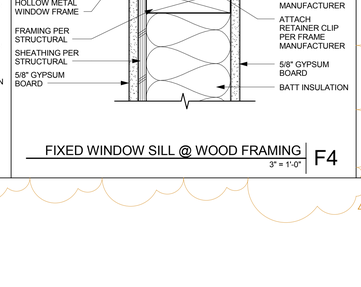
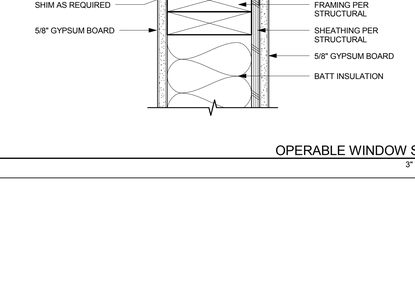
FIXED WINDOW SILL @ METAL FRAMING | F6
3" = 1'-0"



FIXED WINDOW SILL @ WOOD FRAMING | F4
3" = 1'-0"



OPERABLE WINDOW SILL | F1
3" = 1'-0"

3

NO.	ISSUE	DATE
3	ADDENDUM #3	08/13/2015

SOLANO COMMUNITY COLLEGE

BUILDING 1200 THEATER RENOVATION

INCREMENT 2

4000 SUISUN VALLEY ROAD, FAIRFIELD,CA

LICENSED ARCHITECT
THERESA PAIGE
C-25452
8-31-15
RENEWAL DATE
STATE OF CALIFORNIA

ARCHITECT / CONSULTANT

DSA FILE NO: 48-C1

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
INCREMENT 2
02-113590
AC.____ FLS.____ SS.____
DATE ____

APPROVAL

LPAS

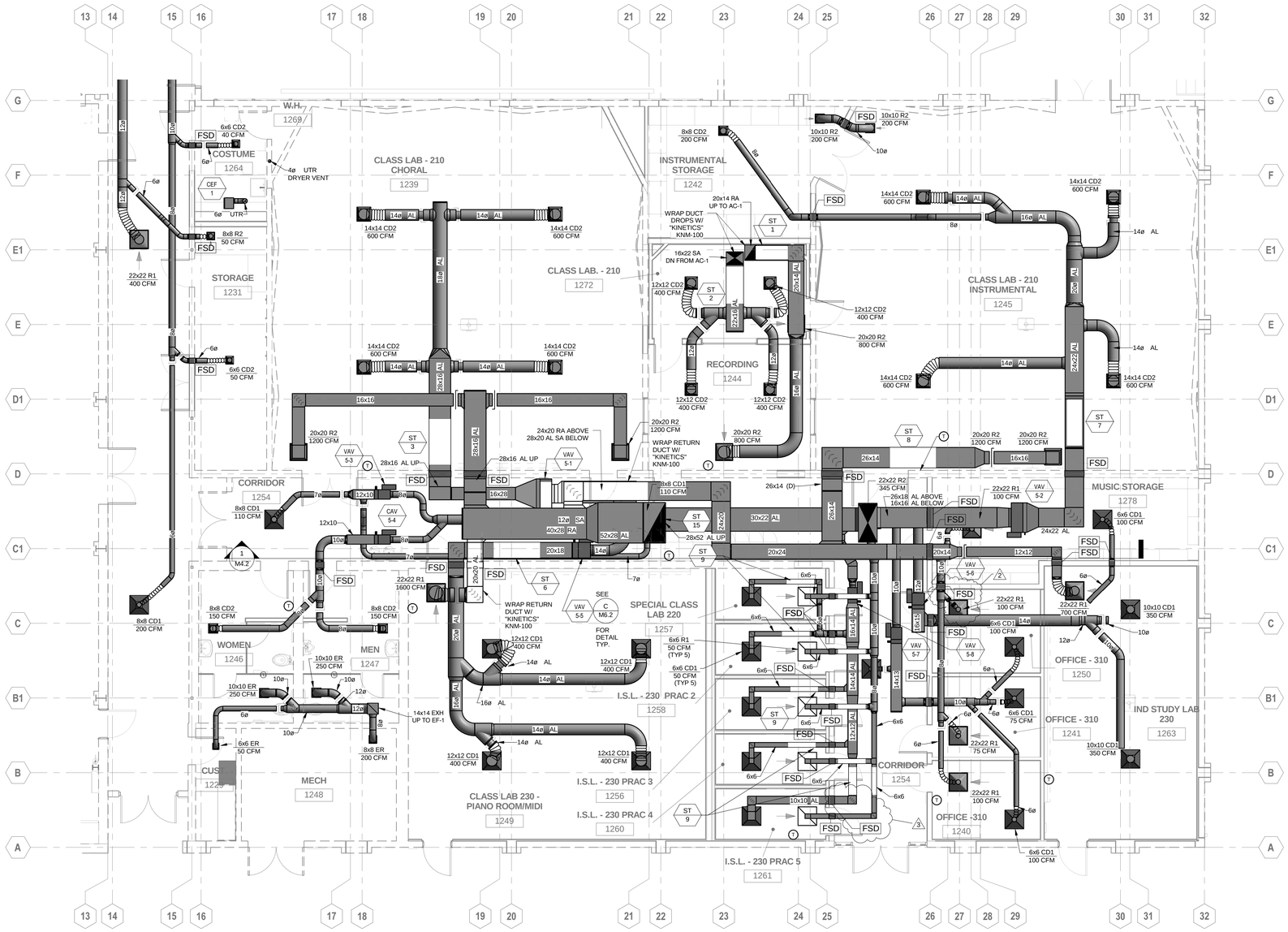
2484 Natomas Park Drive Suite 100 Sacramento CA 95833
916 443 0335 lpasdesign.com **Architecture + Design**

WINDOW DETAILS

SCCD PROJECT NO: 14-014
LPAS PROJECT NO: 764-0002
DATE: 04-22-2015
SHEET NO:

A9.55

CONSTRUCTION SET



1 ENLARGED MECHANICAL FIRST FLOOR PLAN

SCALE: 3/16" = 1'-0"

GENERAL NOTES

1. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR SEISMIC BRACING USING A "PRE-APPROVED" MANUFACTURER SUCH AS "TOLCO", "MASON", ETC. THE CONTRACTOR WILL SUBMIT SEPARATE SEISMIC DRAWINGS, SEPARATE FROM THE SHOP DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ADDITIONAL STEEL, ENGINEERING AND PROCESSING.

NO.	ISSUE	DATE
2	ADDENDUM # 2	2015-06-26
3	ADDENDUM # 3	2015-08-11

SOLANO COMMUNITY COLLEGE

BUILDING 1200 THEATER RENOVATION
INCREMENT 2

4000 SUISUN VALLEY ROAD, FAIRFIELD,CA

LICENSED ARCHITECT
THERESA PAIGE
C-25452
R-31-15
RENEWAL DATE
STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER
No. M039446
Exp. 12/31/15
MECHANICAL
STATE OF CALIFORNIA

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
02-113590
AC.____ FLS.____ SS.____
DATE _____

ARCHITECT / CONSULTANT

APPROVAL

TURLEY & ASSOCIATES
MECHANICAL ENGINEERING GROUP, INC.
1914 5 STREET
Sacramento, CA 95811
(916) 325-1065
FAX: (916) 325-1075
Email: office@turleymech.com

Project Engineer:	BP	Job Number:	13285
Project Manager:	TF	Plot Date: ?	
Project Drafter:	PO	Logic: ?	

LPAS

2484 Natomas Park Drive Suite 100 Sacramento CA 95833
916 443 0335 lpasdesign.com **Architecture + Design**

ENLARGED MECHANICAL FIRST FLOOR PLAN

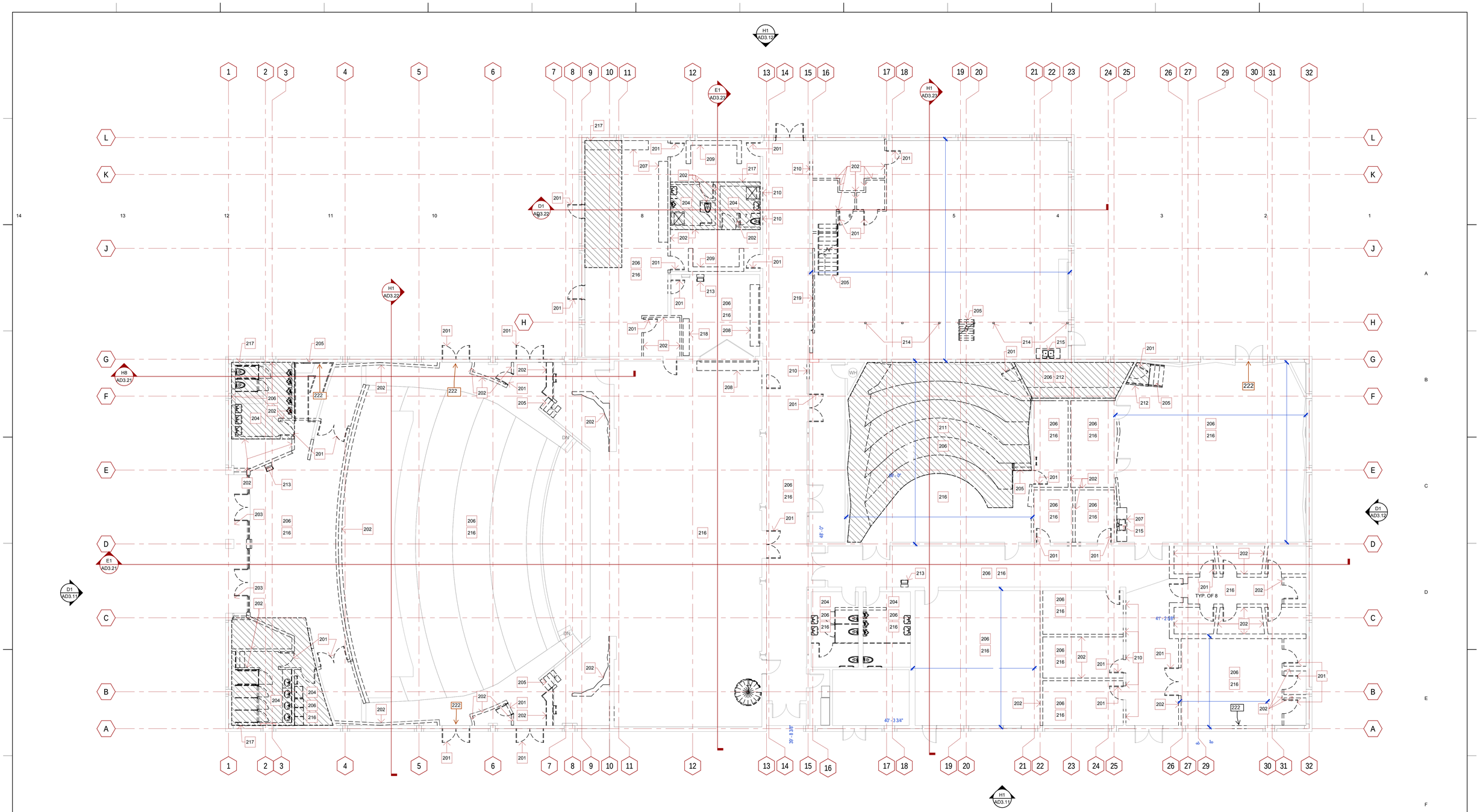
PROJECT NO: 14-014

DATE: 04-22-2015

SHEET NO:

M2.2

CONSTRUCTION SET



FIRST FLOOR ABATEMENT PLAN

ABATEMENT NOTES:
201 REMOVE ASBESTOS EXTERIOR DOOR FRAME SEALANT, TYP. - DISPOSE AS ASBESTOS CONTAINING WASTE
202 REMOVE EXISTING DRYWALL, WALL FINISH, AND FRAMING MEMBERS. ABATE ALL DRYWALL/JOINT COMPOUND. TYP - DISPOSE AS A REGULATED ASBESTOS CONTAINING MATERIAL (RACM)
203 NOT APPLICABLE WITH HAZARDOUS MATERIAL ABATEMENT
204 REMOVE EXISTING PLUMBING FIXTURES, CASEWORK, AND TOILET PARTITIONS - GENERAL DEMOLITION DEBRIS
205 NOT APPLICABLE WITH HAZARDOUS MATERIAL WORK
206 REMOVE EXISTING DRYWALL FINISH DOWN TO FRAMING MEMBERS - DISPOSE AS REGULATED ASBESTOS CONTAINING MATERIAL (RACM)
207 REMOVE EXISTING CASEWORK IN ODER TO ACCESS ASBESTOS DRYWALL - GENERAL DEMOLITION DEBRIS
208 NOT APPLICABLE WITH HAZARDOUS MATERIAL ABATEMENT
209 REMOVE EXISTING LOCKERS - GENERAL DEMOLITION DEBRIS
210 NOT APPLICABLE WITH HAZARDOUS MATERIAL ABATEMENT
211 REMOVE FLOOR FINISH ONLY - DISPOSE AS ASBESTOS CONTAINING MATERIAL
212 NOT APPLICABLE WITH HAZARDOUS MATERIAL ABATEMENT
213 NOT APPLICABLE WITH HAZARDOUS MATERIAL ABATEMENT
214 NOT APPLICABLE WITH HAZARDOUS MATERIAL ABATEMENT
215 REMOVE EXISTING SINK WITH BLACK UNDERCOATING
216 REMOVE EXISTING FLOOR FINISH DOWN TO SLAB - ABATE 9" VFT AND 12" VFT AND MASTIC. TYP. - DISPOSE AS ASBESTOS CONTAINING MATERIAL
217 NOT APPLICABLE WITH HAZARDOUS MATERIAL ABATEMENT
218 NOT APPLICABLE WITH HAZARDOUS MATERIAL ABATEMENT
219 NOT APPLICABLE WITH HAZARDOUS MATERIAL ABATEMENT
220 REMOVE EXISTING STAGE EXTENSION -
221 NOT APPLICABLE WITH HAZARDOUS MATERIAL ABATEMENT

222 REMOVE EXISTING MOISTURE BARRIER TYP. ALL NEW EXTERIOR PENETRATIONS - DISPOSE AS NON-FRIABLE ASBESTOS CONTAININNG MATERIAL - ADDENDUM #1 3/20/15

NO.	ISSUE	DATE
1	ADDENDUM #1	03/20/2015

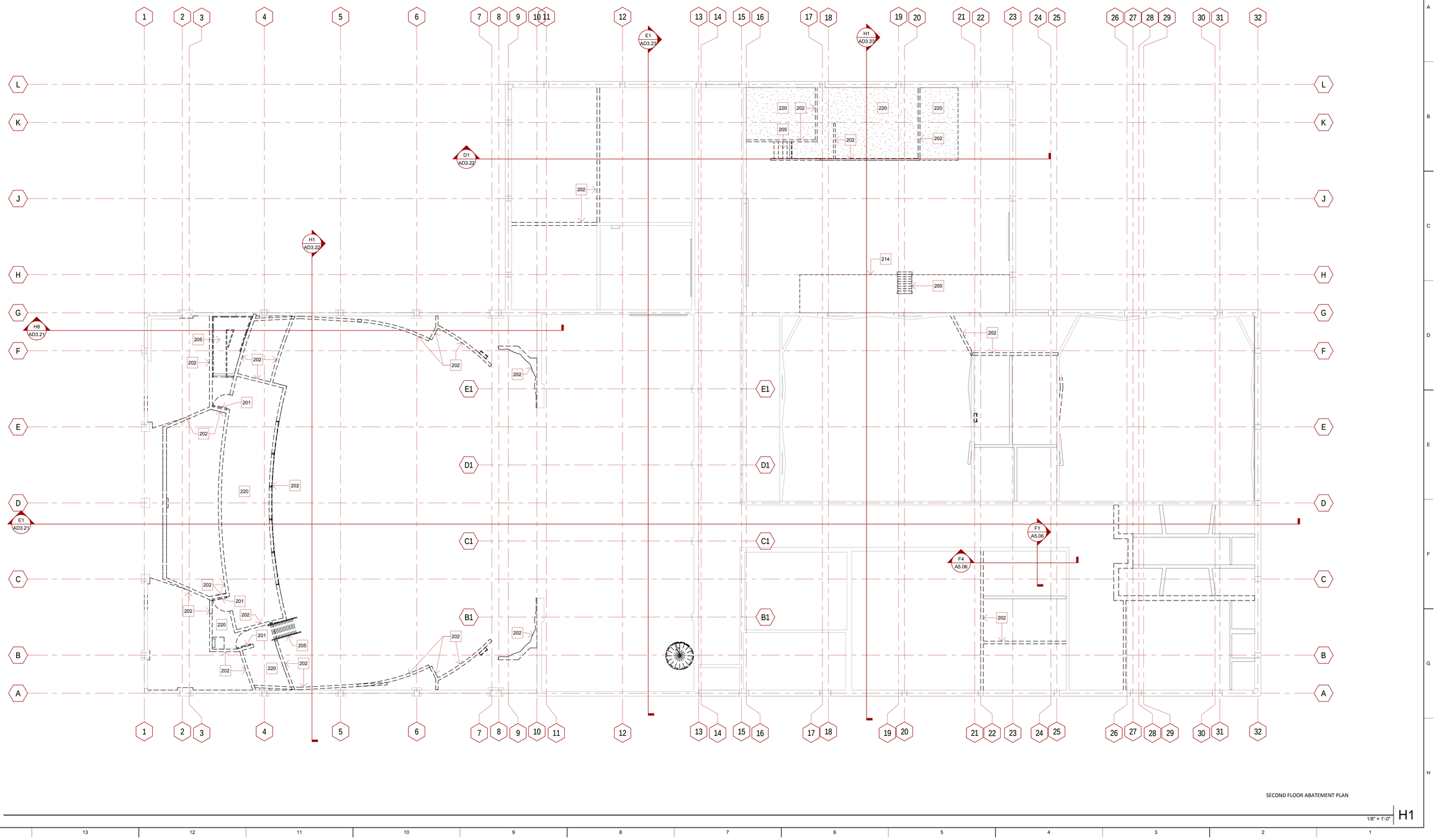
SOLANO COMMUNITY COLLEGE

BUILDING 1200 THEATER RENOVATION

4000 SUISUN VALLEY ROAD, FAIRFIELD,CA

HAZ MAT - 1ST FLOOR
FOR REFERENCE ONLY

HAZ.01



ABATEMENT NOTES:
201 REMOVE EXTERIOR DOOR FRAME SEALANT, TYP - DISPOSE AS ASBESTOS CONTAINING MATERIAL
202 REMOVE EXISTING DRYWALL, WALL FINISH, AND FRAMING MEMBERS. ABATE DRYWALL/JOINT COMPOUND. TYP - DISPOSE AS REGULATED ASBESTOS CONTAINING MATERIAL (RACM)
205 NOT APPLICABLE WITH HAZARDOUS MATERIAL WORK
214 NOT APPLICABLE WITH HAZARDOUS MATERIAL ABATEMENT
220 REMOVE EXISTING FLOORING - ABATE 9" VFT AND 12" VFT AND MASTIC. TYP - DISPOSE AS ASBESTOS CONTAINING WASTE

NO.	ISSUE	DATE
1	ADDENDUM #1	03/20/2015

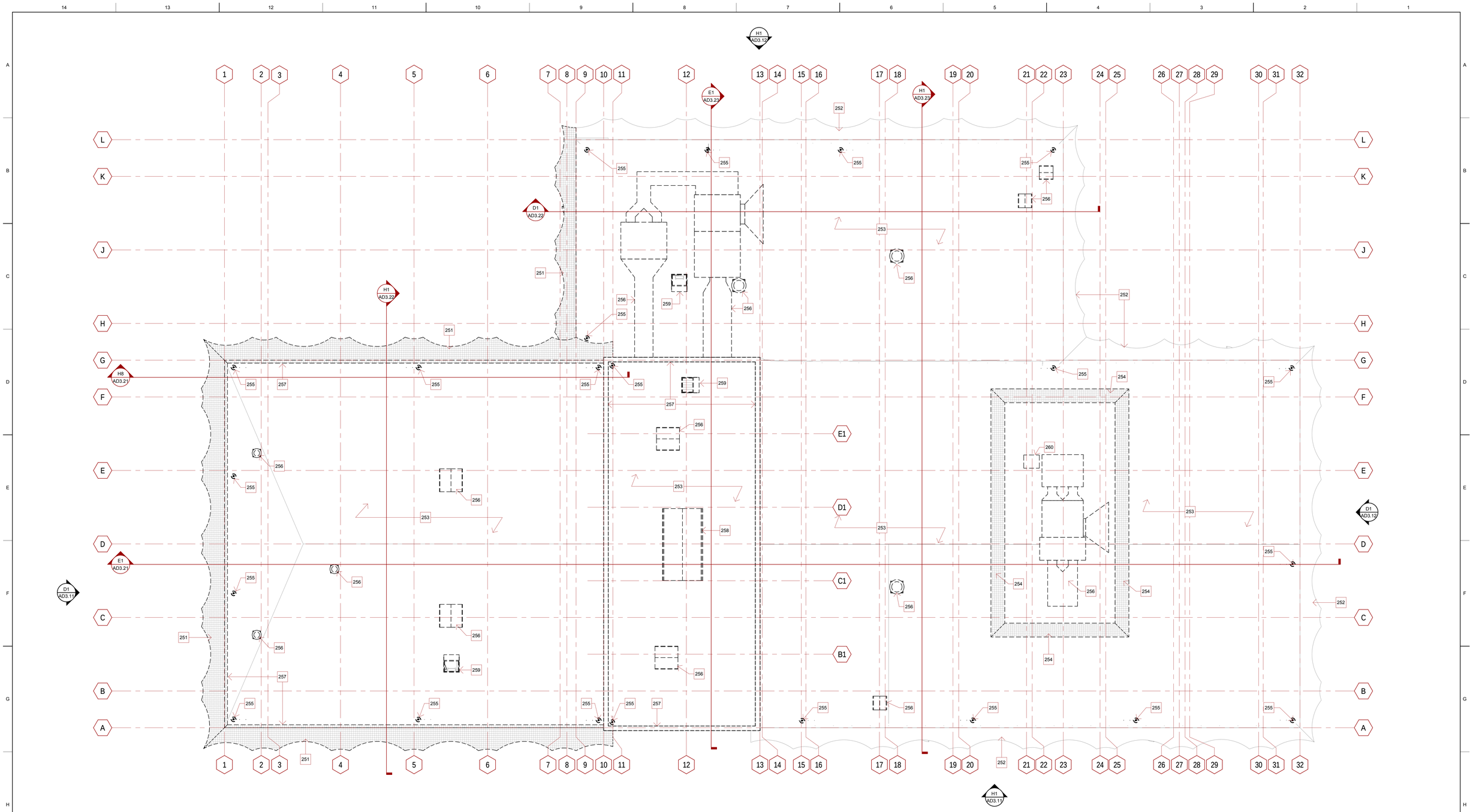
SOLANO COMMUNITY COLLEGE

BUILDING 1200 THEATER RENOVATION

4000 SUISUN VALLEY ROAD, FAIRFIELD,CA

HAZ MAT - 2ND FLOOR
FOR REFERENCE ONLY

HAZ.02



ROOF ABATEMENT PLAN

1/8" = 1'-0"

H1

ABATEMENT NOTES:
251 NOT APPLICABLE WITH HAZARDOUS MATERIAL ABATEMENT
252 EXISTING MANSARD TO REMAIN. PROTECT DURING CONSTRUCTION
253 REMOVE EXISTING BLACK ROOLED ROOFING UNDER GRAY CONCRETE SHINGLES DOWN TO PLYWOOD SUBSTRATE (THIS INCLDUES ALL PENETRATION MASTIC). TYP - DISPOSE AS ASBESTOS CONTAINING WASTE
254 NOT APPLICABLE WITH HAZARDOUS MATERIAL ABATEMENT
255 NOT APPLICABLE WITH HAZARDOUS MATERIAL ABATEMENT
256 NOT APPLICABLE WITH HAZARDOUS MATERIAL ABATEMENT
257 NOT APPLICABLE WITH HAZARDOUS MATERIAL ABATEMENT
258 NOT APPLICABLE WITH HAZARDOUS MATERIAL ABATEMENT
259 NOT APPLICABLE WITH HAZARDOUS MATERIAL ABATEMENT
260 NOT APPLICABLE WITH HAZARDOUS MATERIAL ABATEMENT
261 REMOVE ROLLED ROOFING DOWN TO CONCRETE DECK (THIS INCLUDES ALL PENETRATION MASTIC) TYP. - DISPOSE AS ASBESTOS CONTAINING WASTE

NO. ISSUE DATE

SOLANO COMMUNITY COLLEGE

BUILDING 1200 THEATER RENOVATION

4000 SUISUN VALLEY ROAD, FAIRFIELD,CA

HMS Hazard Management Services SINCE 1984

HAZ MAT - ROOF

HAZ.03

DOCUMENT 00 11 16

NOTICE TO BIDDERS

1. Notice is hereby given that the governing board ("Board") of the Solano Community College District ("District") will receive sealed bids ("Bid") for the following project, **Building 1200 Theater Renovation Increment 1 & 2.**

2. Sealed Bids will be received until **2:00 P.M. August 25, 2015**, at **Solano Community College 4000 Suisun Valley Road Building 600 Boardroom, Fairfield, California, 94534** at or after which time the bids will be opened and publicly read aloud. Bids should be marked C/O Purchasing: Laura Scott. Any claim by a bidder ("Contractor") of error in its bid must be made in compliance with section 5100 et seq. of the Public Contract Code. Any bid that is submitted after this time shall be non-responsive and returned to the Contractor.

3. All pre-bid questions must be submitted in writing to the Project Manager, Eric Van Pelt at eric@vpcsonline.com. Pre-Bid questions must be submitted by **August 11, 2015**.

4. The Project scope includes but not limited to:

   Increment 1: The increment includes, all work of any nature detailed within the contract documents, including but not necessarily limited to: hard and soft demolition of structural and architectural components, removal and disposal of all hazardous containing materials, electrical demolition, HVAC demolition, site demolition and grading.

   Refer to: Appendix A – Hazardous Materials Report
   Drawings HAZ-01, HAZ-02 and HAZ-03
   For removal and disposal of hazardous containing materials.

   Roofing tile to be removed from the mansards will need to be palletized and stored on site as directed by the Construction Manager. The quantity of the tile is not known at this time; therefore, the contractor should anticipate storing 100 SF of this material.

   Increment 2: This increment is a full modernization of the existing building. Will include the replacement of the existing interior floor, wall, and ceilings. Exterior envelope will have new storefront lobby. The existing roof system will be replaced. There will be upgrades made to the building structural systems. Mechanical, electrical, and plumbing systems will be removing and replacing with modern high efficient systems. There will be two additions to existing building, firs is a new 900 SF restroom core, second is a new 2800 SF assembly space.

   BOTH INCREMENTS WILL NEED TO BE FULLY COORDINATED BY AWARDED CONTRACTOR UNDER A SINGLE CONTRACT.

5. All bids shall be on the form provided by the District. Each bid must conform and be responsive to all pertinent Contract Documents, including, but not limited to, the Instructions to Bidders.

6. To bid on this Contract, the Contractor is required to possess one or more of the following State of California Contractor Licenses:

   B – General Building

   The Contractor's license(s) must remain active and in good standing throughout the term of the Contract.

7. A bid bond by an admitted surety insurer on the form provided by the District, shall accompany the Bid Form and Proposal, as a guarantee that the Contractor will, within seven (7) calendar days after the date of the Notice of Award, enter into a contract with the District for the performance of the services as stipulated in the bid.

8. The successful Contractor shall be required to furnish a 100 % Performance Bond and a 100% Payment Bond if it is awarded the contract for the Project, on the form provided by the district.

9. The successful Contractor may substitute securities for any monies withheld by the District to ensure performance under the Contract, in accordance with the provisions of section 22300 of the Public Contract Code.

10. The Contractor and all subcontractors under the Contractor shall pay all workers on all work performed pursuant to this Contract not less than the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work as determined by the Director of the Department of Industrial Relations, State of California, for the type of work performed and the locality in which the work is to be performed within the boundaries of the District, pursuant to sections 1770 et seq. of the California Labor Code. Prevailing wage rates are also available from the District or on the Internet at: http://www.dir.ca.gov.

11. The District has entered into a Project Labor Agreement that is applicable to this Project**.** For questions or assistance concerning the Project Labor Agreement, contact Eric Van Pelt, eric@vpcsonline.com.

12. Two mandatory pre-bid conferences and site visits will be held at **10:00 A.M. on July 23, 2015 and July 30, 2015 at Solano Community College, 4000 Suisun Valley Road Building 1200, Fairfield, California 94534**. All participants are required to sign in at the front of Building 1200. The Site Visit is expected to take approximately 1 hour. If mandatory, failure to attend or tardiness will render bid ineligible. Bidders shall attend at least one of these meetings to be qualified to bid.

13. Contract Documents are available on July 15, 2015. In addition, Contract Documents are available for Contractors' review at the following builders' exchanges:

Sacramento Builders Exchange 1331 T Street Sacramento, CA 95811 T: 916-442-8991 F: 916-446-3117	Solano-Napa Builders Exchange 135 Camino Dorado Napa, CA 94558 T: 707-255-2515 F: 707-255-2749	Bay Area Builders Exchange 2440 Stanwell Drive Concord, CA 94520 T: 925-685-8630 F: 925-685-3424

14. Contract Documents are also available for purchase (non-refundable) and viewing through **BPXpress in Benicia at (707) 745-3593 or Benicia@blueprintexpress.com and on the public plan room:**

www.blueprintexpress.com/sccdmeasureq

13. The District's Board has found and determined that the following item(s) shall be used on this Project based on the purpose(s) indicated. (Public Contract Code section 3400(b)): A particular material, product, thing, or service is designated by specific brand or trade name for the following purpose(s): NONE

14. The Board reserves the right to reject any and all bids and/or waive any irregularity in any bid received. If the District awards the Contract, the security of unsuccessful Contractor(s) shall be returned within sixty (60) days from the time the award is made. Unless otherwise required by law, no Contractor may withdraw its bid for ninety (90) days after the date of the bid opening.

15. The District shall award the Contract, if it awards it at all, to the lowest responsive responsible bidder based on: The lowest total of the bid prices on the base contract and all additive or deductive alternates identified in the bid form.

16. Contact: Eric Van Pelt

Project Manager/ VPCS
Eric@vpcsonline.com

DOCUMENT 00 11 16

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16. Contact: Eric Van Pelt

Project Manager/ VPCS
Eric@vpcsonline.com

SECTION 23 0550
HEATING, VENTILATING AND AIR CONDITIONING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

A. The requirements of the General Conditions and Division 1 apply to all work hereunder, also applicable provisions of Sections 230500 MECHANICAL WORK - General Requirements.

B. Drawings and general provisions of the Contract, including general and supplementary conditions apply to the work of this Section.

1.02 DESCRIPTION OF WORK:

A. Furnish and install all heating, ventilating and air conditioning work indicated on the drawings and described herein. Also any incidental work not shown or specified that is necessary to provide the complete system.

1.03 COORDINATED LAYOUTS:

A. Contractor shall provide 1/4" equals one foot scaled coordination drawings showing plan and pertinent section views of all piping, ductwork and electrical systems. Since scale of contract drawings is small and all offsets and fittings are not shown, contractor shall make allowances in bid for additional coordination time, detailing, fittings, offsets, hangers and the like to achieve a fully coordinated installation. If changes in duct size are required, equivalent area shall be maintained and the aspect ratio shall not be in excess of 2 to 1 unless approved by the engineer. Drawings shall be submitted for review prior to fabrication and installation. Drawings may be submitted in packages representing at least 1/4 of the building ductwork.

B. Check routing on all ductwork before fabricating. Report any discrepancies to Architect. No extra cost will be allowed for failure to conform to above.

C. It shall be responsibility of Heating, Ventilating and Air Conditioning Contractor to coordinate the other mechanical and electrical trades so that complete job is neat and in conformity with plans and specifications.

1.04 PLUMBING:

A. All plumbing work required in the course of this contract shall be performed in strict accordance with all codes and regulations. Plumbing work done under this contract shall not adversely affect the operation of the existing plumbing systems. All materials shall be new and shall match existing.

PART 2 - PRODUCTS (OR MATERIALS)

2.01 PIPE AND FITTINGS:

A. See General Requirements section for dielectric fittings and pipe protection.

B. Hot Water, Chilled Water Piping Above Slab or Ground: Schedule 40 black steel pipe, ASTM A-53. Fittings shall be Nibco standard butt welding type conforming to ANSI

Specification B16.28; except that fittings 2" and smaller and local exposed connections to equipment may be 150 psi malleable screwed fittings. Changes in size of steam piping shall be made with eccentric fittings.

D. Air Vent Discharge Piping: Type L hard copper tubing with wrought copper fittings.

E. Water drain, or gas connections to equipment shall match connected piping.

F. Condensate Drain Piping: Type DWV copper tubing and fittings or Schedule 40 galvanized steel pipe and cast iron drain or vent fittings.

G. Blow Off and Relief Valve Discharge Piping: Schedule 40 galvanized steel pipe and galvanized malleable fittings.

H. Refrigeration Piping: Refrigeration gas and liquid piping shall be Type "L" hard drawing copper tubing with wrought copper fittings. All joints shall be made with Sil-fos. Relief valve discharge piping shall be full size of relief discharge, Schedule 40 steel pipe and malleable fittings, all galvanized if exposed to the weather. Furnish and install Superior, Sporian, Alco, Henry, or equal, stop valves, solenoid valves, adjustable thermal expansion valves, sight glass, flexible connection, charging valve, and drier with valve bypass in the liquid lines and Superior DFN shell and cartridge suction line filter sized 2-1/2 times tonnage.

2.02 FANS:

A. All fans AMCA labeled with self aligning, enclosed ball bearings, accessible for lubrication, unless specified otherwise.

B. Roof Mounted:

1. Provide bird guard and disconnect switch.
2. Fan wheels shall be centrifugal, non-overloading, all aluminum.
3. Curb cap and orifice inlet shall be one piece aluminum.
4. Shaft and motor bearings shall be relubricable ball bearings for belt-drive.
5. Wheel configuration shall be as scheduled on the drawings.
6. Hood fans shall be all aluminum with horizontal discharge, access door for cleaning, belts and drive system shall be completely out of air stream. Motor shall be mounted in completely enclosed compartment with positive ventilation.
7. Laboratory hood exhaust fans shall be Keysite coated.
8. Provide ventilated curb for kitchen exhaust fans.

C. In-Line:

1. Heavy duty propeller type with belt or direct drive as specified. Blades shall be individually mounted to wheel.
2. Centrifugal fan with air foil blades, aluminum or steel housing, externally mounted belt-drive motor, external lube tubes, integral support brackets.

D. Ceiling: Acoustic lined cabinet, built-in backdraft damper, vibration isolated fan and motor, variable speed switch.

2.03 FAN DRIVES:

A. Drive Design: The design horsepower rating of each drive shall be at least 1.5 times, single belt drives 2 times, the name plate rating of the motor with proper allowances for sheave diameters, speed ratio, arcs of contact and belt length.

1. All drives shall be variable speed, Dayco, Browning or Woods. Allow for replacement of fan drive and belt as required to suite the balance requirements of the project.
2. All drives for 5 horsepower motors and larger shall have a minimum of 2 belts.
3. Belts shall be within 1 degree 30 minutes of true alignment in all cases.
4. All variable speed drives shall be selected to allow an increase or decrease of minimum of 10% of design fan speed.
5. Motors of 25 HP and less shall have adjustable pitch sheaves; sheaves on motors above 25 HP may be non-adjustable. Change, at no extra cost to Owner, the non-adjustable sheaves to obtain desired air quantities.

B. Sheaves: Sheaves shall be cast or fabricated, bored to size or bushed with fully split tapered bushings to fit properly on the shafts. All sheaves shall be secured with keys and set screws.

C. Belts: All belts shall be furnished in matched sets.

2.04 FILTERS:

A. Filters shall be 2" thick Farr 30/30, or 1" or 2" throwaway as scheduled on the drawings.

B. Air filters shall be of an approved type tested in accordance with test method SFM-12-71-1 as shown in Part 12, Title 24, California Code of Regulations. Preformed filters having combustible framing shall be tested as a complete assembly.

C. Air filters in all occupancies shall be Class 2 or better as defined in the test method above.

D. Air filters shall be accessible for cleaning.

E. Air filters shall be SFM listed.

F. Panel type filters shall be 2" thick Farr 30/30, Farr D/C, or equal with replaceable media.

2.05 DAMPERS:

A. Fire Dampers

1. Dampers shall be rated and approved by California State Fire Marshal. Installation shall conform to manufacturer's instructions.
2. Ruskin D1BD2, UL 555 dynamic rated fire damper for wall installation.
3. Ruskin CFD2 or CFD4, Ul listed fire damper for ceiling installation. Provide UL classified thermal insulating blanket to fit inlet or outlet condition.
4. Smoke/fire dampers: Class 2, UL 555S classified, Ruskin FSD36 120 volt, single phase controlled from smoke detection system. Provide all accessories

required to make a complete operating system, including end switches, wiring, conduit, relays, etc.

B. Backdraft Dampers: Ruskin CBD2, counterbalanced.

C. Manual Air and Balance Dampers: Ruskin CD35, opposed blade.

2.06 DUCTWORK:

A. Galvanized Sheet Metal, See Part 3.

2.07 VIBRATION ELIMINATOR RAILS:

A. Provide Kinetics or equal vibration eliminator rails as specified on the drawings.

2.08 TEMPERATURE CONTROL SYSTEM:

A. Shall be Delta as called for on the drawings.

2.09 WATER RELIEF VALVES:

A. Provide Water Pressure Relief Valves as indicated, of size and capacity as selected by installer for proper relieving capacity, in accordance with ASME Boiler and Pressure Vessel Code.

B. Combined Pressure-Temperature Relief Valves: Bronze body, test lever, thermostat, complying with ANSI Z21.22 listing requirements for temperature discharge capacity. Provide temperature relief at 210 degrees F and pressure relief at 125 psi.

C. Pressure Relief Valves: Watts Series 740, or equal, bronze body, test lever, ASME rated. Provide pressure relief at 30 psi.

D. Available Manufacturers: Subject to compliance with requirements, manufacturers offering water relief valves which may be incorporated in the work include the following:

Amtrol, Inc.

Bell and Gossett ITT; Fluid Handling Division

Spirax Sarco

PART 3 - EXECUTION

3.01 EQUIPMENT START-UP:

A. Initial start-up of supply, exhaust and return fan systems and pumps shall be under the direct supervision of the Testing and Balancing Contractor.

3.02 PIPING:

A. Refrigerant Piping: Extreme care shall be taken to keep the entire system clean and dry during installation. All lines shall be straight and free from kinks, restrictions or traps; horizontal suction lines shall be sloped toward compressor, 1" to 10'. For pre-fab line sets, all tubing shall be evacuated and sealed at the factory. The seal must not be broken until ready for assembly. If there is any evidence of dust, moisture, or corrosion, the tubing must be cleaned out by drawing a swab soaked with methyl alcohol through the tubing as many times as necessary to thoroughly clean the tubing.

B. All piping under suspended floors shall be kept 6" minimum above ground; excavate as necessary.

3.03 EXPANSION JOINTS:

A. Furnish and install expansion loops or joints in the steam or water lines as required with anchors and guides as required for the proper operation of the expansion loops or joints.

3.04 ANTI-VIBRATION BASES AND HANGERS:

A. Isolate all ventilating and air conditioning equipment connections including conduit, piping, drains, etc., so that equipment will operate under continuous demand without objectionable vibration.

B. Support all air conditioning units, all fans, and all pumps of 5 HP and over on anti-vibration bases or hangers. Other equipment shall be supported on anti-vibration bases, pads, or hangers, as shown on the drawings or specified with the equipment. Individual fans shall have integral fan and motor bases, spring-typed unless noted. High velocity fans - unguided stable springs with 2" deflection.

C. Selection of the bases or supporting units shall be in accordance with the vibration eliminator manufacturer's recommendations. Minimum static deflection shall be 1-1/2" or as marked on the drawings.

D. The equipment manufacturer shall furnish the weight of equipment at each point of support.

3.05 FILTERS:

A. Mount filters in airtight frames furnished by the filter manufacturer, and install in accordance with manufacturer's recommendations.

B. Provide temporary filters for all fans that are operated during construction; after all construction dirt has been removed from the building install new filters at no additional cost to the Owner.

C. Identify each filter access door with 1/2" high minimum stenciled letters.

3.06 SHEET METAL WORK:

A. Construct and install all sheet metal in accordance with latest SMACNA recommendations for 2" static pressure (**REVISE FOR EACH JOB**). Provide variations in duct size, and additional duct fittings as required to clear obstructions and maintain clearances, as approved by the Architect, at no extra cost to Owner.

B. Provide drive slip or equivalent flat seams for ducts exposed in the conditioned space or where necessary due to space limitations. On ducts with flat seams, provide standard reinforcing on inside of duct. Duct connection to outlet on exposed duct shall be full size of outer perimeter of outlet flange.

1. Ducts exposed in the conditioned space shall be free of dents and blemishes and be mounted tight against adjacent surface with flat hangers.

2. All ductwork, adhesives, lining, sealants, flex duct and the like shall have a flame spread of 25 or less and developed smoke rating of 50 or less when tested in accordance with ASTM E84.

C. Round ducts with equivalent effective cross sectional area as determined by ASHRAE Guide, latest edition, may be used in lieu of concealed rectangular ducts shown, space

permitting. Round and oval sheet metal ducts shall be spiral lock seam or longitudinal construction seam construction. Fittings shall be continuous weld or spot weld and seal. United Sheet Metal, SEMCO, or equal.

D. The throat radius of all bends shall be 1-1/2 times the width of the duct wherever possible and in no case shall the throat radius be less than one width of the branch duct. Provide square elbows with Titus or HEP double thickness turning vanes where space does not permit the above radius, or where square elbows are shown.

E. The slopes of transitions shall be approximately one to five unless shown otherwise, and no abrupt changes or offsets of any kind in the duct system shall be permitted.

F. Provide sheet metal angle frame at all duct penetrations to wall, floor, or ceiling. Seal ductwork watertight at equipment room floor.

G. All round ductwork shall be United Sheet Metal spiral duct and fittings. Assemble with USM duct sealer and sheet metal screws.

H. Exposed round ducts shall be United Sheet Metal spiral duct and fittings, 22 gauge minimum for duct, 20 gauge minimum for fittings. Assemble with USM duct sealer and SM screws.

I. Provide Ventlon flexible connections on inlet and outlet of AC Unit, air handler, and heating/evaporative cooler unit. Provide galvanized weather hood over flexible connections exposed to the weather.

J. Duct size shown on lined duct is the outside dimension.

K. Paint inside of ducts, visible through grille, dull black.

L. Flexible ducts shall be Thermaflex M-KE secured with worm gear bands. Maximum length of flexible duct shall be 8'-0". Support flexible ducts at 30" maximum with 1-1/2" x 24 gauge straps. Factory-made air ducts shall be approved for the use intended or shall conform to the requirements of CMC Standard No. 6-1. Each portion of a factory-made air duct system shall be identified by the manufacturer with a label or other suitable identification indicating compliance with CMC Standard No. 6-1 and its class designation. These ducts shall be UL listed Class 1, 25/50 smoke and flame spread and shall be installed in accordance with the terms of their listing. Omit external insulation. Make connection to duct with spin-in fittings, with air scoop and balance damper.

M. Provide lateral bracing per Section 230500.

N. Ducts shall clear combustible construction by 1" minimum.

O. Seal airtight transverse seams of all supply and return ducts with 6 oz. canvas dipped in Arabol; seal insulated ducts before insulating.

P. Provide Ventlok #699 test hole fittings where indicated or specified.

Q. All materials except sheet metal including duct liner shall be approved before installation.

R. Clothes Dryer Exhaust Ducts: Provide aluminum duct and fittings in wall and ceiling as indicated on Drawings.

S. Fabricate shower exhaust ducts and supports from aluminum or stainless steel for a length of 20 feet from exhaust grille or register.

3.07 ANTI-VIBRATION ISOLATION:

A. Isolate all ventilating and air conditioning equipment connections including conduit, piping, drains, etc., so that equipment will operate under continuous demand without objectionable vibrations.

3.08 DAMPERS:

A. All dampers automatically controlled by damper motors are specified under "Temperature Control System" except those specified with items of equipment.

B. Provide opposed blade manual air dampers at each branch duct connection and at locations indicated on the drawings and where necessary to control air flow for balancing system. Provide Ventlok regulators. Provide an opposed blade balancing damper in each zone supply duct. Damper blades shall be 16 gauge minimum galvanized steel with 3/8" minimum shaft, and 10" maximum blade width. Provide an access panel or Ventlok flush-type damper regulator on ceiling or wall for each concealed damper.

C. Install fusible link fire dampers full size of duct at points where shown or required.

D. Provide 18" x 12" minimum access doors in ductwork and furring for easy access to each fire damper; insulated access doors in insulated ducts. Label access doors with 1/2" high red letters.

1. Provide Ventlok access doors with Series 100 hardware for convenient access to all automatic dampers and other components of the system, insulated type in insulated ducts. Provide Ventlok #202 for light duty up to 2" thick doors, #260 heavy duty up to 2"k thick doors and #310 heavy duty for greater than 2" thick doors. Provide #260 hinges on all hinged and personnel access doors, include gasketing.

3.09 AIR INLETS AND OUTLETS:

A. Provide all air inlets and outlets with gaskets and install so that there will be no streaking of the walls or ceilings due to leakage. Duct connection to outlet on exposed duct shall be full size of outer perimeter of outlet flange. Support each ceiling diffuser with four wires from overhead construction per Title 24 and secure to ceiling framing system with two concealed screws at opposite sides.

B. Furnish all air inlets and outlets with a baked prime coat unless otherwise noted. Provide off-white baked enamel finish on ceiling-mounted air inlets and outlets. Exposed mounting screws shall be painted to match the material being secured.

C. Air inlets and outlets shall match all qualities of those specified including appearance, throw, noise level, adjustability, etc.

3.10 FANS:

A. Each ceiling-mounted fan shall have multi-speed switch and integral backdraft damper.

B. Provide access doors for fans or motors mounted in ductwork.

C. Mount all fans so that they are completely isolated from building.

D. Fan motors mounted in air-stream to be totally enclosed.

E. Completely line supply, return or exhaust fan cabinets with 1" thick, 3/4 lbs. density acoustic insulation securely cemented in place.

F. Roof fans shall be mounted level.

3.11 RELIEF VENTS:

A. Install relief vents to provide a level mounting for backdraft damper.

3.12 TEMPERATURE CONTROL SYSTEM:

A. General:

1. Coordinate with the requirements of Section 230900.

3.13 EQUIPMENT CHECK, TEST AND START:

A. The check, test and start of each air conditioning unit, make-up air unit, air handler unit and gas unit heater shall be performed by a specialized company, Aircon Service, Commercial Air, or equal, acting as a subcontractor to the air conditioning contractor. The company selected shall have had experience on similar projects and shall have demonstrated by past performance that the personnel are qualified to do such work. The firm selected shall have approval of the Architect prior to start of work.

B. The company shall provide all personnel, test instruments, and equipment to properly perform the check, test and start.

C. The check, test and start of each item of equipment shall be in accordance with manufacturer's printed instructions. Three (3) copies of the completed check, test and start report of each item of equipment shall be bound with the operating and maintenance instructions.

D. Upon completion of the work, provide a schedule of planned maintenance indicating frequency of service for all equipment components. Post schedule where directed under plastic.

3.14 TESTING AND BALANCING (SMALL AND MEDIUM SIZE; INDEPENDENT TEST):

A. Obtain the service of an independent test and balance agency that specialized in, and whose business is limited to, testing and balancing of air conditioning systems.

B. Coordinate work done by testing and balancing agency with work of other trades.

C. Testing and balancing agency, as a part of its contract, shall act as authorized inspection agency and shall report any discrepancies or items not installed in accordance with Contract Drawings and/or Specifications pertaining to air and water distribution, and exhaust systems.

D. Contractor shall provide for adjustments and/or additions or modifications to fan and motor sheaves, belts, damper linkages and the like to achieve proper air balance at no additional cost.

E. Testing and balancing shall be performed in complete accordance with AABC National Standards for Field Measurement and Instrumentation, Volume Four. Testing and balancing shall be performed on air distribution system, chilled water system, condenser water system, heating water system, and domestic water system.

F. Balance air quantities of supply and exhaust to achieve those given on Drawings. Measure the total air quantity at each fan. Measure the total air quantity at each supply fan with maximum outside air and with minimum outside air. Measure the ampere reading of each motor input after final adjustments have been made. Provide static pressure profile for each air moving equipment. Upon satisfactory completion of balance and operational test, submit three (3) sets of reports to the Architect on balance final readings, summary of fan CFM delivery rates, static pressure ratings,motor ampere input, and general summary of test results. Specified ratings and motor nameplate ratings shall be listed with measured readings.

G. Instruments used for testing and balancing of systems shall have been calibrated within a period of six (6) months and shall be checked for accuracy prior to start of work.

H. Three (3) copies of complete test report shall be submitted prior to final acceptance of project.

I. Tabulate magnetic starters size, type, and manufacturer with heater strip size, type and rating along with motor nameplate data.

J. Air balance shall be achieved using variable fan speeds.

K. Adjust single or double deflection registers and variable pattern diffusers to evenly distribute air within the conditioned space. The terminal air velocity at 5' above the floor shall not exceed 50 FPM in normal air conditioned spaces.

L. Measure the ampere reading of each motor input after final adjustments have been made.

M. Hydronic System Balancing

1. Calibration and testing of hydronic system in conformance with AABC recommendations.

2. Complete air balance prior to hydronic system balancing.

3. Water Balance Procedures: Set combination chilled/hot water, and condenser water and hot water pumps to design GPM quantities.

4. Check and adjust water temperature and GPM flow characteristics at all cooling and heating coils.

5. Upon completion of flow ratings and coil adjustments, mark all settings and record all data.

6. Recorded data shall include:

   a. Inlet and leaving temperatures at all coils and heating and cooling equipment.

   b. Pressure drop at each coil including coil bypass.

   c. Pump operating suction and discharge pressure and final total dynamic pump head.

   d. Rated and actual running amperage of pump motors.

7. Venturies and calibrated orifices with portable or permanent flow meters shall be used to balance the waterflows. When above equipment is not installed, obtain

waterflow balance by measurement of temperature differential across the various coils or elements.

3.15 EQUIPMENT MOUNTING:

A. Mounting and anchorage of equipment shall be in strict compliance with drawings details. Alternate anchorage methods will not be considered for roof mounted equipment.

END OF SECTION

SECTION 267113

TELECOMMUNICATION CABLING SYSTEMS

PART 1 - GENERAL

1.01 SUMMARY

A. Work included: Labor, materials and equipment necessary to complete the installation required for the item specified under this Division, including but not limited to:

1. Equipment rooms.
2. Equipment bonding.
3. Backbone fiber optic cabling.
4. Backbone twisted pair cabling.
5. Horizontal twisted pair cabling.
6. Telecommunication testing.

1.02 REFERENCES

A. Comply with the latest edition of the following applicable Specifications and standards except as otherwise indicated or specified:

1. Federal Communications Commission (FCC) Regulations:

   FCC Part 15; Radio Frequency Devices & Radiation Limits.

   FCC Part 68; Connection of Terminal Equipment to the Telephone Network.

2. Electronics Industries Alliance (EIA):

   EIA; Testing Standards.

3. American National Standards Institute, Inc. (ANSI) / Telecommunications Industry Association (TIA) / Electronics Industries Alliance (EIA):

   ANSI/TIA/EIA-568-C; Commercial Building Telecommunications Cabling Standards, including the following:

   - Part 1: General Requirements.
   - Part 2: Balanced Twisted-Pair Cabling Components.
   - Part 2, Addendum 1: Transmission Performance Specifications for 4-Pair 100 Ohm Category 6 Cable.
   - Part 3: Optical Fiber Cabling Components Standard.

   ANSI/TIA/EIA-569-A; Commercial Building Standard for Telecommunications Pathways and Spaces, including the following:

   - TIA/EIA-569-A-1: Perimeter Pathway Addendum.
   - TIA/EIA-569-A-2: Furniture Pathway Fill Addendum.
   - TIA/EIA-569-A-4: Poke-Thru Devices.
   - TIA/EIA-569-A-7: Cable Trays and Wireways.

ANSI/TIA/EIA-598-B; Optical Fiber Cable Color Coding.

ANSI/TIA/EIA-606-A; Administration Standard for Commercial Telecommunications Infrastructure.

ANSI/J-STD-607-A; Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications.

ANSI/TIA/EIA-758; Customer-Owner Outside Plant Telecommunications Cabling Standard (TIA/EIA-758-1: Addendum No. 1).

TIA TSB-155; Guidelines for the Assessment and Mitigation of Installed Category 6 Cabling to Support 10GBase-T.

4. Building Industry Consulting Service International, Inc. (BICSI):

BICSI (TDMM); Telecommunication Distribution Methods Manual.

BICSI; Customer-Owner Outside Plant Design Manual.

BICSI (WDRM); Wireless Design Reference Manual.

BICSI (NDRM); Network Design Reference Manual.

5. Insulated Cable Engineers Association (ICEA):

ICEA S-80-576-2002; Category 1 & 2 Individually Unshielded Twisted Pair Indoor Cables for Use in Communications Wiring Systems.

ICEA S-83-596-1994; Fiber Optic Premises Distribution Cable.

ICEA S-87-640-1999; Fiber Optic Outside Plant Communications Cable.

ICEA S-90-661-2002; Category 3, 5 & 5e Individually Unshielded Twisted Pair Indoor Cable for Use in General Purpose and LAN Communication Wiring Systems.

ICEA S-104-696-2001; Standard for Indoor-Outdoor Optical Cable.

6. Underwriters Laboratories, Inc. (UL):

UL 444; Communication Cables.

UL 497; Protectors for Paired-Conductor Communication Circuits.

UL 1651; Optical Fiber Cable.

UL 1690; Data-Processing Cable.

UL 1963; Communications-Circuit Accessories.

UL 2024A; Optical Fiber Cable Routing Assemblies.

1.03 DEFINITIONS

A. Adapter: Shall mean a connecting device joining two fiber connectors, either like or unlike.

B. Cabling: A system comprised of cables, wires, cords, and connecting hardware.

C. Channel: End-to-end transmission path, i.e. the entire portion of the horizontal cabling to each outlet consisting of the Permanent Link, line cord (at the workstation), patch cord, and,

if a full cross connection is implemented, the cross connect termination/connecting apparatus and equipment cord.

D. Connect: To install required patch cords, equipment cords, cross-connect wires, etc. to complete an electrical or optical circuit.

E. Cord: Shall mean length of cordage having connectors at each end. The term “cord” is synonymous with the term “jumper” and “lead.”

F. Identifier: A unique code assigned to an element of the telecommunication infrastructure that links it to its corresponding record.

G. Passive link segment: Shall mean the cable, connectors, couplings, and splices between two fiber optic termination units.

H. Permanent link: Test configuration for a horizontal cabling link excluding test cords, connections at the ends of the test cords, patch cords, equipment cords, line cords, etc. The “permanent” portion of the horizontal cabling to each outlet consisting of cable, consolidation point (if used), termination/connecting apparatus in equipment rooms, and the connectors at outlets.

I. Abbreviations:

1. BEP: Building Entrance Protection, for termination of OSP twisted pair cabling.
2. CAT: Category, used when identifying the performance characteristics of twisted pair cabling.
3. CMP: Communication Media Plenum, rating applied to ISP twisted pair cable.
4. CMR: Communication Media Riser, rating applied to ISP twisted pair cable.
5. IDF: Intermediate Distribution Facilities, telecommunication equipment rooms housing network equipment and containing termination fields for backbone cabling from MDF and horizontal cabling from outlet devices.
6. ISP: Inside Plant, cable installation within building.
7. MDF: Main Distribution Facilities, telecommunication equipment room housing possible service entrance facilities for interbuilding backbone cabling, network equipment, house voice system equipment headend, backbone cabling distribution headend, termination fields for backbone and horizontal cabling.
8. MM: Multimode, fiber cable.
9. MPOE: Minimum Point of Entry, for serving telecommunications utility terminations. House’s service provider’s termination field(s) and interfaces between utility’s facilities and premises facilities.
10. NAM: Network Access Module, workstations.
11. OFN: Optical Fiber Non-conductive, general purpose indoor non-plenum rated.
12. OFNP: Optical Fiber Non-conductive Plenum, plenum rated cable.
13. OFNR: Optical Fiber Non-conductive Riser, non-plenum rated riser cable.
14. OSP: Outside Plant, cable installation outside of building.

15. PIC: Plastic Insulated Conductors.
16. PVC: Polyvinyl Chloride.
17. SM: Singlemode, fiber cable.
18. UTP: Unshielded Twisted Pair, copper cable type.

1.04 SYSTEM DESCRIPTION

A. Provide a complete telecommunication cabling system installation as specified herein and as shown on the Drawings. In general, system shall include, but not be limited to, the following:

1. OSP backbone fiber optic cabling:
   a. Backbone fiber optic cable shall route underground between existing underground fiber cable, and shall consist of one 24-strand singlemode, OSP, fiber optic cable. The cable shall splice to the existing cable in a vault as indicated on drawings.
   b. Provide Underground fiber splice case and fusion splice all fiber strands.
   c. OSP backbone fiber optic cables shall terminate on full height rack in MDF rooms for cable interface with ISP backbone fiber optic cables. Terminate cables on backside of rack mounted 24-port patch panels.
   d. Include full height rack(s) at MDF room(s) for fiber termination with 48-*p*ort patch panels as required and patch cord management placed above and below each 48-port patch panel.
   e. OSP backbone fiber optic patch panel field shall interface with ISP backbone fiber optic patch panel field at MDF via fiber patch cords between modular connectors on front side of patch panels.
   f. Fiber optic cable connector standard shall be Type ~~ST~~LC. Connectors shall be singleplex type.
2. OSP backbone twisted pair cabling:
   a. Backbone twisted pair cable shall route underground to a site vault and splice to existing feeder cable as shown on drawings and shall consist of one multi-conductor 50-pair, Category 3, UTP, OSP, filled copper cable.
   b. Provide underground splice case at site vault.
   c. Terminate backbone twisted pair cables on Category 3 wall-mounted, 110 style, BEP blocks at the building MDF.
3. ISP backbone fiber optic cabling:
   a. Backbone fiber optic cable shall route between the building MDF and the mechanical room fire alarm control panel. throughout same building, and shall consist of one 4-strand singlemode**,** ISP, fiber optic cable(s).
   b. ISP backbone fiber optic cables shall terminate on same rack as OSP backbone fiber at MDF room, utilizing rack mounted, 12-port patch panels with patch cord management placed above and below the 12-ports of singlemode fibers. Locate the ISP backbone patch field just below the OSP patch field.

c. ISP backbone fiber optic patch panel field shall interface with routing/switching equipment, furnished by Owner, at MDF and/or each IDF via fiber patch cords from modular connectors on patch panel front side.

d. Fiber connector standard is type ~~ST~~LC, singleplex type.

4. Horizontal twisted pair cabling:

a. Horizontal twisted pair cables shall route between MDF or IDF's and workstation outlets, and shall consists of two Category 6, 4-pair, UTP, plenum rated copper cables.

b. Horizontal twisted pair cables shall terminate on back of rack mounted, Category 6, 48-port, 19" wide patch panels with modular 8-pin connector front for interface with Owner furnished routers/switches or voice patch panel field via Category 6 patch cords. Patch panels shall have 110 type terminations at rear for horizontal cable terminations.

c. Wire management shall be provided above and below, 2 RU, for each 48-port patch panel.

d. Copper jack standard is Category 6, RJ-45 connectors at patch panels and workstation outlets.

5. Patch cords:

a. Patch cords shall match the physical and performance criteria of the specified horizontal twisted pair cable and be terminated at each end with 8-postion modular plugs.

b. Patch cords shall be furnished in varying lengths as required.

c. Patch cord quantities shall match the following:

1) One patch cord for data patch panel port per every standard workstation outlet.

2) One patch cord for data workstation per every standard workstation outlet

3) One patch cord for voice field per every standard workstation outlet.

4) One parch cord for voice field per every telephone only outlet.

B. Workstation outlets:

1. Standard telecommunication outlets shall consist of the following, unless otherwise noted on the Drawings:

a. ~~Two~~ Three horizontal twisted pair cable(s) per outlet.

b. Single -gang coverplate with *4*-ports.

c. Two RJ-45 connector jacks for twisted pair terminations.

2. Wall mounted telephone outlets shall consist of the following, unless otherwise noted on the Drawings:

a. One horizontal twisted pair cable per outlet.

b. Single-gang metal coverplate with 1-port and two support studs.

c. One RJ-45 connector jack for twisted pair terminations.

C. Refer to Drawings for complete documentation of above requirements and all additional requirements.

1.05 SUBMITTALS

A. Submit in accordance with the requirements of Section 260010: Basic Electrical Requirements, the following items:

1. Data/catalog cuts for each product and component specified herein, listing all physical and electrical characteristics and ratings indicating compliance with all listed standards.
2. Describe system operation, equipment, dimensions and indicate features of each component.
3. Clearly mark on each data sheet the specific item(s) being submitted and the proposed application.
4. Shop Drawings prepare in AutoCAD Release 2012 or later, to include the following:
   a. Building floor plans showing location of all outlets, raceways, cable trays, conduits and cable routing to each device at same scale as construction documents.
   b. Riser diagram(s) indicating all major components of system with required cable interties and backbone cable identification labels.
   c. Provide 1/4" scale plans of equipment layout in MPOE, MDF and IDF rooms.
   d. Provide wall elevations of MPOE, MDF and IDF rooms at ½” scale.
   e. Provide equipment rack elevations at 1” scale.
   f. Use identical symbols as those used in construction documents.
   g. Text shall be a minimum of 3/32” high when plotted at full scale.
   h. Screen all background information.
5. Furnish structural calculations for equipment anchorage as described in Section 260010: Basic Electrical Requirements.
6. Complete bill of materials listing all components.
7. Warranty.

B. Installer's qualifications: Furnish satisfactory proof of required experience specified herein for system installer.

C. Record Drawings:

1. Furnish Record Drawings as described in Section 260010: Basic Electrical Requirements, utilizing Shop-Drawing submissions with updated field conditions. These Drawings shall include but not be limited to the following:
   a. Plot plans and building floor plans, showing point-to-point wiring location of all devices.
   b. Block Diagram/Riser Diagram showing the system components and all conduit and wire type/sizes between each.

2. Drawings shall be incorporated into the Record Drawing submission.
3. Final acceptance will not be made until the Engineer has approved the Record Drawings.

1.06 OPERATION AND MAINTENANCE MANUAL

A. Supply operation and maintenance manuals in accordance with the requirements of Section 260010: Basic Electrical Requirements, to include the following:

1. A detailed explanation of the operation of the system.
2. Pictorial parts list and part numbers.
3. Schematic wiring diagrams.
4. Telephone numbers for the authorized parts and service distributor.
5. Final testing reports.

1.07 QUALITY ASSURANCE

A. All materials, equipment and parts comprising the units specified herein shall be new, unused and currently under production.

B. Only products and applications listed in this section may be used on the Project unless otherwise submitted.

C. Manufacturer qualifications: Manufacturer must have a minimum 5 continuous years of experience in design and manufacturing of the materials and equipment specified herein.

D. Installer's qualifications:

1. Installer must have a minimum 5 continuous years of experience in satisfactory completion for Projects similar in scope and cost. Provide backup information on 5 such Projects.
2. Installer shall possess a current, active and valid C7 or C10 California State Contractors License.
3. The installer shall be the Manufacturer's certified reseller/installer of the telecommunication equipment provided. Provide evidence of this certification.
4. Category 6 Cable: ADC Corporation certified installer and capable of providing an extended warranty. Provide evidence of this certification.
5. Fiber Optic Cable: Corning Corporation certified installer and capable of providing an extended warranty. Provide evidence of this certification.

1.08 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Delivery: Telecommunication system components shall not be delivered to the Project site until protected storage space is available. Storage outdoors covered by rainproof material is not acceptable. Equipment damaged during shipping shall be replaced and returned to Manufacturer at no cost to Owner.

B. Storage: Store in clean, dry, ventilated space free from temperature extremes. Maintain factory wrapping or provide a heavy canvas/plastic cover to protect units from dirt, water, construction debris and traffic.

C. Handling: Handle in accordance with Manufacturer's written instructions. Be careful to prevent internal components damage, breakage, denting and scoring. Damaged units shall not be installed. Replace damaged units and return equipment to Manufacturer.

1.09 WARRANTY

A. Units and components offered under this Section shall be covered by a 15 year product and application warranty for malfunctions resulting from defects in materials and workmanship. Warranty shall begin upon acceptance by the Owner.

1.10 MAINTENANCE

A. Maintenance services:

1. Distributor of the major system components shall maintain a replacement parts department and provide testing equipment when needed. A complete parts department shall be located close enough to supply replacement parts within a 4 hour period.

2. Service must be rendered within 4 hours of system failure notification.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Products furnished by the following Manufacturers are the owners standard and shall be provide with no alternates accepted. All features specified herein and indicated on the Drawings.

1. Equipment Cabinet and cable runways:

   a. Chatsworth Product Inc. “CPI.”

2. Bonding strap:

   a. Chatsworth Product Inc. “CPI.”

3. Bonding connectors and lugs:

   a. Panduit.

   b. Thomas & Betts.

   c. O-Z/Gedney.

4. Backbone fiber optic cable:

   a. Corning Cable Systems.

5. Backbone fiber optic terminations:

   a. Corning Cable Systems.

6. Backbone twisted pair cable: ANMW or PE89

   a. General

   b. Superior Essex

7. Backbone twisted pair terminations:

a. Circa (OSP).

8. 110 Blocks
    a. Panduit
9. Horizontal twisted pair and modular patch cord cable:
    a. ADC
10. Horizontal twisted pair and modular patch cord terminations:
    a. ADC
11. Innerduct and duct plugs:
    a. MaxCell
12. Test equipment:
    a. Corning Cable Systems
    b. Fluke Networks.
    c. Agilent Technologies WireScope 350 Test Set.
    d. Laser Precision.
    e. Tektronix.

B. Substitutions: Under provisions of Section 260010: Basic Electrical Requirements.

2.02 EQUIPMENT ROOMS

A. Equipment Cabinet: Chatsworth M-Series Megaframe Cabinet System
    1. Application: Suitable for the support of termination apparatus, cable and cord management apparatus, network equipment, and other similar equipment within a telecommunication room.
    2. 19”wide, 84”H, 39”D with tapped rails, top & side panels
    3. Finish: Powder coat, black.
    4. Doors: Vented plexiglass front/perforated metal rear.
    5. Cabinet shall be shipped by the manufacturer fully assembled.
    6. UL Listed.
    7. Load rating: 2000 lbs, when evenly distributed for the height of rack.
    8. Accessories: Include required accessories, such as floor installation kits, mounting hardware, etc. for a complete installation.
    9. CPI part #M1040-732.
        a. Cooling Fan Kit: #12480-701, one kit at each cabinet

B. Vertical management sections:

1. Application: Suitable for cable routing (back) and cord slack storage (front) vertically within a rack bay, from bottom of rack to the top.
2. Configuration: The vertical management sections shall be double-sided having covered cable guides on the front and flip-retainers on the rear.
3. Size and capacity: 8'-0" high by 6" wide, having at least 7" deep cable storage capacity in back and 7" deep cord storage capacity in front.
4. Mounting: The vertical management sections shall have matching bolt holes for attachment to equipment rack.
5. Finish: Black, guide and cover.
6. CPI part #13171-700.

C. Horizontal cable support bar:

1. Application: Suitable to horizontally support cables at termination points on back of patch panels.
2. Finish: Shall match the rack.

D. Horizontal management panels:

1. Application: Suitable to horizontally support cord management within rack bay on front of patch panels.
2. Configuration: The horizontal management panels shall be single-sided.
3. Size: 2U high by 19" mounting width.
4. Finish: Black, guide and cover.
5. Part #: Panduit WMPHF2E

E. Cable runway:

1. Application: Suitable for the support and management of cabling, either overhead or mounted vertically on walls, within equipment rooms. Also, provides overhead equipment rack bracing.
2. Construction:
   a. Runway shall be constructed of two longitudinal side elements known as "stringers" and crossing members known as "rungs." Rungs are spaced 12" on center and are welded to stringers on both sides.
   b. Stringers and rungs are constructed of rectangular tube steel, 1-1/2" by 3/8" by 0.65" wall thickness.
   c. Size: 10'-0" straight section by 12" wide.
3. Accessories: Provide accessories for a complete installation as shown on the drawings to include 45º and 90º junctions, "T" junctions, butt splices, swivel butt splices, end caps, end closing kits, vertical wall brackets, wall angle supports, triangle supports, rack-to-runway attachments, drop-out kits, bonding straps, etc.

F. Label plates for equipment racks:

1. Label plates shall be suitable to affix onto top angle of equipment rack.
2. Label plate shall be “engraved-able” stock melamine plastic laminate substrate.
3. Size: 1/2” high by 6” long by 1/16” thick.
4. Lettering shall be white, engraved, 1/8” high.

2.03 EQUIPMENT BONDING

A. General:

1. The telecommunication system grounding backbone is covered under Section 260526: Grounding and Bonding and shown on the drawings in Riser Diagram format. It includes grounding bus bars, grounding riser conductors, connections to main service ground system, ground lugs and clamps, etc.
2. The work outlined in this Section covers the bonding of all telecommunication equipment and apparatus in the equipment rooms to the telecommunication system grounding backbone.

B. Bonding conductor:

1. Refer to Section 260519: Building Wire and Cable.
2. Conductor: #6 AWG (or larger), copper, stranded.
3. Insulation: THHN/THWN, green in color.

C. Cable runway bonding straps:

1. Refer to Section 260526: Grounding and Bonding.
2. Conductor: Flexible braided copper strap with factory installed termination connectors.

D. Connectors and lugs:

1. Conductor to conductor connector: C-type copper compression tap, heavy-wall, for tapping into unbroken continuous conductors as a splice, wire joint, “T” tap, or making parallel wire connections. Connector can be used with stranded or solid conductors.
2. Conductor to busbar, racks, cabinets, or other equipment/component connector: Two-hole, copper, compression type lugs for #6 AWG conductors.
3. Conductor to cable runway connector: Cable tray ground clamp, Extruded aluminum/tin-plated, mechanical type connector with set screws for tightening both tray and bonding conductor.

2.04 BACKBONE FIBER OPTIC CABLING

A. ISP backbone fiber optic cable:

1. Application:
   a. Suitable for indoor installations, between floors exposed in equipment rooms as vertical risers, or above suspended ceilings and below raised floors exposed in cable trays, hangers or on deck. If space is used as an air plenum, cable shall either be plenum rated or installed in EMT conduit.
   b. Exhibit stable performance in a building environment.

c. Optical transmission performance is not significantly affected by environmental fluctuations, installation or aging.

d. Materials do not evolve hydrogen in quantities that will increase light attenuation.

2. Singlemode fiber strands shall meet or exceed the following physical criteria:

a. Core diameter: 8.3µm.

b. Cladding diameter: 125µm, ±1.0µm.

c. Core/cladding offset: ≤0.5µm.

d. Coating diameter: 254µm, ±7.0µm.

e. Coating/cladding concentricity: 12.0µm.

f. Minimum tensile strength: 100,000psi.

3. Singlemode fiber strands shall meet or exceed the following performance criteria:

a. Attenuation: 0.35dB/km at 1310nm and 0.25dB/km at 1550nm wavelengths, maximum.

b. Mode field diameter: 9.2µm ±0.3µm at 1310nm and 10.5µm ±1.0µm at 1550nm.

c. Cutoff wavelength: ≤1260nm.

d. Dispersion: 3.2ps/nm●km at 1285-1330nm and 18ps/nm●km at 1550nm.

4. Primary coating:

a. Each fiber shall be completely covered with a “primary coating” (acrylate material).

b. Coating diameter: 250µm, ±5µm.

5. Buffering:

a. Each coated fiber shall be fully covered with a material extruded over and directly onto the coating. This shall be the tight buffer.

1) Tight buffer diameter: 900µm, ±5µm.

2) Material: PVC or equivalent flame retardant thermoplastic.

b. Buffer strands shall be individually color-coded to meet the requirements of ANSI/TIA/EIA-598-A-1995 (also reference ANSI/ICEA S-83-596-1994 and EIA-230).

6. Cable sheath:

a. Strength element: The cable shall have an internal strength element such as aramid yarn.

b. Outer jacket: The cable shall have a seamless outer jacket, LS-PVC or equal, applied to and completely covering the internal components (fiber strands, strength element, etc.).

c. Tensile strength: The cable shall have a 150 lb minimum rated load.

d. Flame rating: OFNP for plenum rated OFNR for non-plenum riser rated**,** according to NEC Article 770, tested to NFPA 262 and UL Listed as such.

B. OSP backbone fiber optic cable:

1. Application:
    a. Suitable for outdoors, in underground PVC conduit installations where protection against water and moisture entry is required.
    b. Optical transmission performance is not significantly affected by environmental fluctuations, installation or aging.
    c. Materials do not evolve hydrogen in quantities that will increase light attenuation.
2. Singlemode fiber strands shall meet or exceed the following physical criteria:
    a. Core diameter: 8.3µm.
    b. Cladding diameter: 125µm, ±0.7µm.
    c. Core/cladding offset: ≤0.5µm.
    d. Coating diameter: 254µm, ±7.0µm.
    e. Coating/cladding concentricity: 12.0µm.
    f. Minimum tensile strength: 100,000psi.
3. Singlemode fiber strands shall meet or exceed the following performance criteria:
    a. Attenuation: 0.45dB/km at 1310nm and 0.25dB/km at 1550nm wavelengths, maximum.
    b. Mode field diameter: 8.4µm ±0.6µm at 1310nm and 8.9µm ±0.6µm at 1550nm.
    c. Cutoff wavelength: ≤1260nm.
    d. Dispersion: 8.0ps/nm●km at 1310nm and 2.6-6.0ps/nm●km at 1530-1565nm.
4. Buffering:
    a. Fibers shall be loosely buffered, either in a core tube or in multiple tubes around central member.
    b. Buffering tube(s) shall be filled with compound to protect against moisture penetration. Filling compound shall be non-hygroscopic and non-nutritive to fungus ("FLEXGEL," or equivalent). The compound shall be easily removed with conventional nontoxic solvents.
    c. Fibers and buffer tube(s) shall be individually color-coded to meet the requirements of ANSI/TIA/EIA-598-A-1995 (also reference ANSI/ICEA S-83-596-1994 and EIA-230).
5. Cable and sheath:
    a. Central member: Dielectric rod (glass-reinforced plastic, GRP).
    b. Fillers (where required to maintain circularity): Plastic rods matched to buffer tube diameter.
    c. Water blocking tape: Applied longitudinally over the central member/buffer tube(s)/filler core.
    d. Strength element: The cable shall have an internal strength element such as aramid yarn.
    e. Rip cord: Nylon or similar (to aid splitting the outer jacket).

f. Outer jacket: The cable shall have a seamless outer jacket, high or medium density polyethylene or equal, applied to and completely covering the internal components (central member, buffer tube(s), fillers, strength element, etc.). The outer jacket shall contain UV inhibitors for stable performance in direct sunlight. The outer jacket shall be non-hygroscopic and non-nutritive to fungus.

g. Printing: The jacket shall be printed/permanently marked with the manufacturer, sequential length (feet), fiber type, month and year or quarter and year of manufacture.

6. Tensile strength: The cable shall have a 600 lb minimum rated load.

7. Operating temperature range: -40º to 158ºF.

8. Manufacturer Corning

C. Fiber Splice Case

1. Preform - Coyote or approved equal

2. Corning - 12 fiber fusion splice tray

3. Corning - Misc Materials as required

D. Backbone fiber optic terminations:

1. Fiber optic patch panels:

a. Patch panels shall be an enclosed housing for protecting, storing and organizing the termination of fiber cables and fiber strands. Shall also contain facilities to store fiber slack and provide patch cord management.

b. Patch panels shall be passive physical equipment and apparatus used in terminating, interconnecting and cross-connecting fiber optic cabling. Panel shall possess a minimum fire resistant rating of UL94V-1 and shall conform to existing OSHA Health and Safety Laws.

c. Patch panels shall come equipped with safety labels such as laser identification or warning labels as required by system considerations.

d. Panels shall be 2U and/or 4U high, 19" rack mountable, accepting up to 8 and/or 12 adapter panels with 12-ports in each panel. Panels shall contain rear fiber entry slots, wire retainers and fiber storage drums. Furnish with slide out rails for front access and jumper troughs for cable management. Panels shall be suitable for multimode or singlemode fiber cable terminations.

e. Panels shall be provided with ~~ST~~LC couplings for termination of fiber cables with matching connectors.

f. Provide patch panel and port quantities as required for cable terminations.

g. Fiber Termination Panel

1) Corning CCH-02U

a) 12 Port Panel: CCH CP24-19T Loaded

2. Fiber optic connectors:
    a. Singlemode:
        1) Materials:
            a) Ferrule ceramic (zirconia or alumina) with pre-radiused finish/face.
            b) Connector housing: Plastic.
        2) Connector shall meet or exceed Ultra PC performance.
        3) Connector shall have an integral strain relief feature, including a bend limiting rear boot.
        4) Connector shall be installable via either epoxy or anaerobic method.
        5) Connector type shall be ~~ST~~LC**.**
        6) Corning #95-201-52-SP

E. Fiber optic patch cords:
    1. Suitable for indoor installations within equipment rooms.
    2. Cords shall be factory-assembled from a single, continuous length of cordage, homogenous in nature, and terminated at both ends via connectors as required. Splices are not permitted anywhere.
    3. Cordage:
        a. Conductors: 2 optical conductors/strands, matching physical and optical performance parameters of the multimode and singlemode cable plant specified above.
        b. Construction: “Mini Zipcord” type with strength member (aramid yarn) and jacket of PVC.
        c. Flame rating: NEC OFN rated or higher, and UL Listed as such.
    4. Connectors:
        a. Multimode patch cords shall be terminated with duplex ~~ST~~LC connectors at one end for connection with the cable plant and via connector type as required for connection to equipment at other end.
        b. Singlemode patch cords shall be terminated with duplex ~~ST~~LC Ultra PC connectors at one end for connection with the cable plant and via connector type as required for connection to equipment at other end.
    5. Manufacturer Corning, 2 meter

F. Labels:
    1. Label type shall be a durable plastic tag, suitable for indoor and/or outdoor use, and shall contain UV inhibitors. The tag shall attach to the cable via a separate steel or plastic tie wrap.
    2. Labels shall have a self-laminating feature.
    3. Printable area shall be 3.5” x 2”, minimum.

4. Color shall be yellow with black legend test.

G. Innerduct:

1. Suitable for outdoor installations within underground duct banks to create multiple "cells" within a single conduit for fiber optic cables installed during the same phase of construction or for future installations of cables.

2. Innerduct shall be manufactured from internally processed polyester and nylon resins, factory lubricated. Materials shall be halogen-free.

3. Innerduct shall be flexible engineered fabric sub-ducting, stitched into multi-cell a design. Cells shall come equipped with pulling tape/rope and shall be color-coded via printing and/or stitching.

H. Duct plugs:

1. Suitable for installation within exterior conduits at terminations within inground vaults/pullboxes and where entering buildings from underground at equipment rooms. Duct plugs shall provide a watertight (up to 20 psi) seal around innerducts and cables.

2. Duct plugs shall be sized per conduit trade/actual size, per innerduct trade/actual size, and per cable outside diameter, as required per instance.

3. Duct plugs shall be re-enterable and re-usable.

I. Miscellaneous:

1. Fiber slack storage reel.

2. Velcro cable ties:

a. Width: 0.75".

b. Color: Same color as the cable to which it is being applied.

2.05 BACKBONE TWISTED PAIR CABLING

A. ISP backbone twisted pair cable:

1. Application:

a. Suitable for indoor installations, between floors exposed in equipment rooms as vertical risers, or above suspended ceilings and below raised floors exposed in cable trays, hangers or on deck. If space is used as an air plenum, cable shall either be plenum rated or installed in EMT conduit.

b. Each cable run shall be continuous single cable, homogenous in nature, without splices.

c. Twisted pair PIC type cable, air core, with an "ALVYN" sheath, compatible with Bell System type "ARMM."

d. Multipair cable shall be non-plenum rated.

2. Conductors:

a. Annealed solid copper, 24 AWG.

b. Fully insulated conductors consisting of an inner layer of expanded polyolefin and covered with an outer layer (skin) of solid PVC.

c. Conductors shall be twisted into pairs. Twisted pairs shall be stranded into 25-pair bundles and into larger units of 25-pair increments, to make up the specified pair count, as well as supper units (if required by pair count).

d. Twisted pairs and units shall be color-coded to industry standards, ANSI/ICEA Publication S-80-576 and EIA-230.

3. Core and sheath:

a. Cable core (twisted pairs) shall have a tape applied longitudinally, wrapped around its entirety. Tape material shall be non-hydroscopic polypropylene film or equivalent.

b. Sheath type shall be "ALVYN" consisting of an inner shield and an outer jacket:

1) Shield: 0.008" aluminum corrugated tape applied longitudinally with an overlap.

2) Jacket: Flame-retardant PVC, adhesively bonded to shield.

4. Cable shall be NEC rated as CMR cable and UL listed as such.

5. Electrical performance of the twisted pairs and overall cable shall comply with TIA/EIA-568-B Part 2 requirements for Category 3 UTP cabling, minimum.

B. OSP backbone twisted pair cable:

1. Application:

a. Suitable for outdoors, in underground PVC conduit installations where protection against water and moisture entry is required.

b. Each cable run shall be continuous single cable, homogenous in nature, without splices.

c. Twisted pair PIC type cable, filled core, with an "ASP" sheath, compatible with Bell System type "ANMW" or Rural Utilities Service type "PE89."

2. Conductors:

a. Annealed solid copper, 24 AWG.

b. Fully insulated conductors consisting of an inner layer of expanded polyolefin and covered with an outer layer (skin) of solid polyolefin.

c. Conductors shall be twisted into pairs. Twisted pairs shall be stranded into 25-pair bundles and into larger units of 25-pair increments, to make up the specified pair count, as well as supper units (if required by pair count).

d. Twisted pairs and units shall be color-coded to industry standards, ANSI/ICEA Publication S-80-576 and EIA-230.

3. Core and sheath:

a. Cable core (twisted pairs) shall have a tape applied longitudinally, wrapped around its entirety. Tape material shall be non-hydroscopic polypropylene film or equivalent.

b. Cable core and sheath shall be flooded with filling compound "FLEXGEL," or equal, to protect against moisture penetration.

c. Sheath type shall be "ASP" consisting of a two layer inner shield and an outer jacket:

1) Shield:

a) 0.008" corrugated aluminum tape applied longitudinally over the core wrap.

b) 0.006" corrugated steel tape applied longitudinally over the aluminum tape with an overlap.

2) Jacket: Black, linear low density polyethylene, bonded to shield.

C. Backbone twisted pair terminations:

1. Inside plant:

a. Suitable for installation within equipment rooms for termination of twisted pair backbone cables, either wall or rack mounted, vertically oriented in wall mount column configuration.

b. 110 block type. Provide kits as required for 100, 300 or 900-pair, 5-pair based.

c. Insulated displacement connector blocks consisting of oxygen free mechanical fastening system, arranged in a flame-retardant molded plastic, and fastened to a mounting bracket.

d. Tower mounting construction with legless 110 blocks mounted to steel riser trough.

e. Termination apparatus accompanied by the quantity of management panels for routing of both horizontal and vertical cords or cross-connect wires. Horizontal wiring management between block sections and crossconnect trough at bottom.

f. Blocks shall meet Category 3 and conform to REA PE-87.

g. Include both standard blocks and pre-wired blocks as noted on drawings. Pre-wired terminal blocks shall be wired to an RJ-21C (50 Pin) connector either on block or on end of pigtail stub cable.

2. Outside plant:

a. Termination of outside plant cables with building entrance protection "BEP":

1) BEP terminals:

a) Suitable for indoor installations, within equipment rooms (such as MPOE). BEP terminals shall provide termination of outside plant twisted pair backbone cables, shall protect premise equipment against induced voltages and stray currents, and shall accept 5-pin protector modules.

b) BEP terminals shall be designed for wall mounted configurations and shall have the capacity to accept 50 to 100-pair incoming and/or outgoing cable pairs.

c) 710-type input splice modules.

d) 110-type output punch down blocks.

2) Circa #1880ECA1-50

3) BEP modules:

a) Standard 5-pin type BEP, suitable for installation into BEP terminals.

b) Gas tube overvoltage device with DC breakdown voltage of 230-350V.

c) Heat coil sneak current device with 1 amp of sneak current and response time less than 15 seconds.

4) Circa #4BIE

D. Labels:

1. Labels type shall be durable plastic (PE or equal) tags, suitable for indoor and/or outdoor use, and shall contain UV inhibitors. The tags shall attach to the cable via an integrated tie or via a separate steel or plastic tie wrap.

2. Printable area shall be 1.50” by 2.62”, minimum.

3. Tags shall be gray. Tie wraps for indoor locations shall be white. Tie wraps for outdoor locations shall be black.

2.06 HORIZONTAL TWISTED PAIR CABLING

A. Horizontal cables:

1. Application:

a. Suitable for indoor installations, exposed within equipment rooms, above suspended ceilings and below raised floors in cable trays, hangers or on deck, or within walls. If space is used as an air plenum, cable shall either be plenum rated or installed in EMT conduit.

b. Each cable run shall be continuous single cable, homogenous in nature, without splices.

c. Cables shall meet Cat 6 performance criteria.

d. Cables shall be plenum rated.

2. Conductors:

a. Insulated conductors: Eight #23 AWG, solid copper wire insulated with fluorinated-ethylene-propylene (FEP) for plenum rated applications.

b. Twisted pairs: Two insulated conductors twisted together to form a pair and four such paired cables to form a unit with individually color-coded pairs to conform to industry standards (ANSI/ICEA Publication S-80-576-1994 and EIA-230).

3. Cable sheath:

a. Outer jacket: Seamless outer jacket, flame-retardant PVC (low smoke for plenum application), applied to and completely covering the internal components (twisted pairs).

b. Flame rating: CMP according to NEC Article 800, tested to NFPA 262 and UL Listed as such.

4. Electrical performance: Meet or exceed TIA/EIA-568-C.2 and ISO 11801 Class E specifications for CAT6 UTP cabling.

5. Manufacturer: ADC

B. Modular patch cords:

1. Application: Suitable for indoor installations within equipment rooms or workstation environments.

2. Cords assembled from a single, continuous length of cordage, homogenous in nature and terminated at both ends via 8-position modular plugs. Splices are not permitted anywhere.

3. Cordage:

a. Insulated conductors: Eight #23 AWG, solid copper wire insulated with thermoplastic polyethylene or high-density polyolefin for non-plenum rated applications.

b. Twisted pairs: Two insulated conductors twisted together to form a pair and four such paired cables to form a unit with individually color-coded pairs to conform to industry standards (ANSI/ICEA Publication S-80-576-1994 and EIA-230).

4. Cable sheath:

a. Outer jacket: Seamless outer jacket, flame-retardant PVC, applied to and completely covering the internal components (twisted pairs).

b. Flame rating: CM according to NEC Article 800, tested to UL listed as such.

5. Electrical performance: Meet or exceed TIA/EIA-568-C.2 and ISO 11801 Class E specifications for CAT6 UTP cabling.

6. Manufacturer: ADC

C. Crossconnect wires:

1. Crossconnect wires shall be suitable for installation within equipment rooms and fully compatible with the termination apparatus specified within this Section.

2. Crossconnect wires shall be manufactured from a single, continuous length of insulated wire, homogenous in nature. Splices are not permitted anywhere.

3. Conductors:

a. Insulated conductors: #24 AWG, solid copper wire insulated with thermoplastic polyethylene or high-density polyolefin for non-plenum rated applications.

b. Twisted pairs: Two insulated conductors twisted together to form a pair with individually color-coded pairs to conform to industry standards (ANSI/ICEA Publication S-80-576-1994 and EIA-230).

D. Modular patch panels:

1. Application:

a. Modular patch panels shall be suitable for installation within a equipment room for the terminations of horizontal cables specified within this Section.

b. Patch panels shall be horizontally oriented for rack-mounted configuration within a 19" rack.

c. Patch panels shall be capable of supporting, organizing, labeling and patching/cross connecting between the horizontal termination field and the equipment termination field.

2. Modular patch panels shall have 110-type terminations on back for horizontal cabling.

3. Patch panels shall have 24 or 48 ports on front and each port shall be an 8-position modular jack, compliant to TIA/EIA 568-B.2 Chapter 5.

4. Each port shall be ~~T568A~~ T568B wired.

5. Electrical performance: Meet or exceed TIA/EIA-568-C.2 and ISO 11801 Class E specifications for CAT6 UTP cabling.

6. Also, include 24 or 48 port modular patch panels with pre-wired RJ-21C (50 Pin) connectors. Panels shall conform to all above requirements, except performance shall meet TIA/EIA-568-B.2 for CAT3 UTP cabling.

7. Manufacturer: ADC #6653-1-679

E. Modular connectors:

1. Modular connectors shall be 8-position jacks, compliant to TIA/EIA-568-B.2 Addendum 10, and shall be compatible with the specified cable within this Section, both electrically and physically

2. Modular connectors shall be T568A wired.

3. Electrical performance: Meet or exceed TIA/EIA-568-C.2 and ISO 11801 Class E specifications for CAT6 UTP cabling.

4. Manufacturer: ADC 6630-1-830

F. Outlets:

1. Application:

a. Outlet faceplates and mounting frames shall be suitable for indoor installations to standard single or double-gang flush wall mounted outlet box plaster rings, furniture partition outlets and floor boxes.

b. Refer to Specification Section 262726: Wiring Devices for device coverplate finish.

2. Standard wall mounted faceplates:

a. Modular faceplates shall have 4-ports and shall include required accessories, such as icons, blank inserts, label windows and labels.

b. Faceplates shall be single-ganged.

c. Faceplates shall be flush mounted.

d. Faceplates shall be single-gang decora-style to match power wiring devices.

e. ADC #6644-1-164

3. Surface Mount box:

a. Surface Mount Box shall have 2-ports and shall include required accessories, such as icons, blank inserts, label windows and labels.

b. Manufacturer ADC #6644-1-222

4. Wall mounted phone faceplates:

a. Faceplate shall be single-gang, flush mounted with 1 port and shall include required accessories.

b. Faceplate shall include two mounting studs for standard wall phone instrument.

c. Faceplate shall be stainless steel.

d. Manufacturer AllenTel #AT630A-4

G. Labels:

1. Labels shall be machine printable with a laser printer, ink jet printer, thermal transfer printer or hand-held printer.

2. Labels for horizontal cables:

a. Adhesive backed labels and self-laminating feature.

b. Fit the horizontal cables specified herein by fully wrapping around the cable jacket.

c. Size: 2” x .05” printable area, minimum.

d. Color: White.

H. Miscellaneous components:

1. Velcro cable ties:

a. Width: 0.75”.

b. Color: Velcro cable ties the same color as the cable to which it is applied.

2. Plenum cable ties:

a. Suitable for use in plenums or air handling spaces.

b. Color: Maroon or other distinctive non-white color.

2.07 CABLE TESTING EQUIPMENT

A. Fiber optic cabling:

1. Fiber optic light source:

a. Connection interfaces shall be factory installed.

b. Output shall be continuous wavelengths.

c. The light sources may contain internal lenses, pigtails, and modal conditioners, provided they meet the launch conditions as described in "Post-Installation" Passive Link Attenuation Testing Procedures.

d. LASER-based light source for multimode fiber testing shall have the following:

1) Center wavelength of 850nm ±30nm and 1300nm ±20nm

2) Special width (FWHM) of ≤50nm at 850nm and ≤150nm at 1300nm.

3) Minimum output power level of ≥20dBm.

e. LASER-based light source foe singlemode fiber testing shall have the following:

1) Center wavelength of 1320nm ±20nm and 1550nm ±20nm

2) Special width (FWHM) of ≤5nm at 1310nm and ≤5nm at 1550nm.

3) Minimum output power level of ≥3dBm.

2. Fiber optic power meter:

a. Power meter for multimode and singlemode testing shall be capable of measuring relative of absolute power (or both) and must be independent of modal distribution.

b. Power meters used must be calibrated and traceable to the National Bureau of Standards.

c. Power meter used shall have the following:

1) Dynamic range of 0dBm to -40dBm minimum.

2) Accuracy of ±0.2dBm.

3. Fiber optic mandrel:

a. Mandrel diameter for 50/125µm jacketed (3.0mm) fiber shall be 22mm.

b. Mandrel diameter for 50/125µm unjacketed (0.9mm) fiber shall be 25mm.

4. Fiber optic OTDR:

a. Multimode source module:

Wavelength	Dynamic Range	Attenuation Deadzone	Reflective Deadzone	Loss Resolution	Distance Accuracy
850nm	24dB	6.5mt	3.0mt	0.001dB	0.1mt
1300nm	27dB	7.0mt	3.0mt	0.001dB	0.1mt

b. Singlemode source module:

Wavelength	Dynamic Range	Attenuation Deadzone	Reflective Deadzone	Loss Resolution	Distance Accuracy
1310nm	40dB	6.0mt	3.5mt	0.001dB	0.1mt
1550nm	28dB	12.0mt	3.5mt	0.001dB	0.1mt

c. Reader software: Windows-based software capable of reading stored traces and is fully functional with the testing equipment.

5. Fiber optic test cords:
    a. Multimode fiber optic test cords:
        1) The fiber of the multimode test cords shall have the core diameter and numerical aperture nominally equal to that of the multimode fiber optic passive link.
        2) Test cord length for testing insertion loss: 1m to 5m.
        3) Connectors of the test cords shall be compatible with the connector types of the light source and the power meter, and with the cabling plant.
        4) The connectors shall exhibit ≤0.5dB loss per connection @ both 850nm and 1300nm, as measured per FOTP-171 D2.
    b. Singlemode fiber optic test cords:
        1) The fiber of the singlemode test cords shall have the core diameter and numerical aperture nominally equal to that of the singlemode fiber optic passive link.
        2) Test cord length for testing insertion loss: 1m to 5m.
        3) Connectors of the test cords shall be compatible with the connector types of the light source and the power meter, and with the cabling plant.
        4) The connectors shall exhibit ≤0.5 dB loss per connection @ both 1300 nm and 1550 nm, as measured per FOTP-171 D3. The connectors shall inhibit Fresnel reflections (i.e. have a “PC” finish).

B. Twisted pair cabling:
    1. Backbone cable tester: Areas of test measurement shall be Wire Map for continuity, opens, shorts, crossed pairs and split pairs, as a minimum.
    2. Horizontal cable tester:
        a. Equipment shall meet TIA/EIA-568B.2 Addendum 1 requirements for Level III accuracy, as applicable for cable type specified herein.
        b. Test standards: ISO/IEC 11801 Class C and D; ISO/IEC 11801-2000 Class C and D, 1000Base-Y, 100Base-TX; IEEE 802.3 10Base-T; ANSI TP-PMD; IEEE 802.5.
        c. Areas of test measurement (minimum):
            1) Wire Map.
            2) Length.
            3) Insertion Loss.
            4) The following at both master unit and remote unit:
                a) Near End Crosstalk (NEXT) loss.
                b) Power Sum NEXT (PSNEXT) loss.
                c) Equal Level Far End Crosstalk (ELFEXT).
                d) Power Sum ELFEXT.

e) Return Loss (RL).

f) Attenuation-to-Crosstalk Ratio (ACR).

g) Power Sum ACR (PSACR).

5) Propagation Delay and Delay Skew.

6) Characteristic Impedance.

7) DC Loop Resistance.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Contractor shall thoroughly examine Project site conditions for acceptance of the telecommunication cabling system installation to verify conformance with manufacturer and specification tolerances. Do not commence with installation until all conditions are made satisfactory.

B. Verify that pathways and supporting devices are properly and completely installed prior to cable installation.

C. Verify dimensions of pathways to include length, i.e. “true tape” conduit runs.

D. Prior to installation, verify that equipment rooms are ready to accept cables and terminations.

3.02 INSTALLATION

A. Equipment rooms:

1. Cabinet Bay:

a. Equipment Cabinets:

1) Provide parts and accessories required to complete each rack per manufacturer’s instructions and as detailed on drawings.

2) Anchoring and bracing:

a) Anchor cabinets to the floor using structural engineer approved concrete anchors.

b) Each cabinet must be attached to the floor at four points.

c) If required for seismic bracing, provide bracing devices (i.e. brackets, threaded rod with strut, etc.) attached to wall or structure above using appropriate fasteners.

3) Tolerances:

a) Verify dimensions to establish proper clearances as follows:

(1) Front: 40” clearance from channel front mounting flange.

(2) Back: 57” clearance from channel back mounting flange.

b) Provide the correct amount of space between each cabinet for proper installation (according to manufacturer’s written instructions) of the vertical management sections.

b. Vertical management sections:

1) Provide vertical management sections mounted to racks with one between each rack and one on both ends.

2) Bolt sections to the racks at the points designed by the manufacturer and per the manufacturer's instructions.

c. Horizontal management panels:

1) Provide the horizontal management panels mounted to racks with one above each patch panel and one below the bottom patch panel in each rack bay where patch panels occur.

2) Provide fasteners and parts required to complete the installation.

d. Accessories: Provide all accessories as required for a complete installation. Include one bag of rack mounting screws, as come packaged with rack product. Attach the screws directly to the rack, which shall constitute turn-over to the Owner.

2. Overhead cable runway support:

a. Provide support devices (i.e. brackets, threaded rod with strut, etc.) attached to wall or structure above using appropriate fasteners. Installation shall meet manufacturer's instructions and layout on the drawings.

b. Provide all parts and accessories required for a complete installation.

c. Cable runway support shall be centered over equipment racks where shown running parallel.

d. Coordinate the installation of the overhead cable runway support with other trades having Work in same area.

3. Vertical cable runway support:

a. Install cable runway vertically on walls where noted and/or shown on the drawings. Runway shall be for the support of cables routed vertically on walls within the equipment rooms.

b. Provide parts and accessories as required for a complete installation.

c. Install the cable runway such that the rungs are facing outward (the greater distance from the rung to the stringer edge is facing inward).

B. Equipment bonding:

1. Provide telecommunication bonding conductor and appropriate hardware between the telecommunication system grounding backbone bus in each equipment room and the equipment racks/rack bays, overhead cable support, vertical cable support, telecommunication conduits, primary pathways that exit/enter the rooms (if applicable), and all other metallic telecommunication infrastructure components.

2. Telecommunication bonding conductor:

a. The minimum size for the bonding conductor shall be #6 AWG THHN/THWN.

b. Install the bonding conductors in a manner that will protect them from physical and mechanical damage.

c. Route the bonding conductors in the shortest possible path, using right angles for turns and routed parallel to building lines.

d. Utilize a minimum of 1’-0” bending radius.

e. At the backbone ground busbar:

1) Thoroughly clean the busbar prior to attaching connectors and terminating conductors.

2) Attach connectors to the busbar with appropriate size cadmium bronze bolt, flat washer and Belleville washer.

3) Torque all connectors.

3. Rack bays:

a. Bond equipment racks, frames, frame bays, cabinets, server racks, and all other similar support systems located within the same equipment room or space to the backbone ground busbar in same room.

b. Rack bays may be bonded in series using either of the following configurations:

1) Provide a bonding conductor from the backbone busbar to the closest rack and route through ground lug connected to rack, extending the conductor the full length of the rack bay. Each individual rack shall have a ground lug attached that the bonding conductor passes through. Insulation on bonding conductor, where it passes through the lug, shall be removed prior to tightening connection around conductor.

2) Provide a bonding conductor from the backbone busbar to the closest rack and then along the entire length of rack bay. “T” tap a pigtail, sized the same as the bonding conductor, from the bonding conductor to each individual rack and terminate on ground lug connected to rack.

4. Overhead and vertical cable runway support:

a. Bond cable runway located within the same equipment room or space to the backbone ground busbar in same room.

b. Provide a “ground kit” (straps and connectors) to bond sections of the runway for ground continuity. This requirement applies to runway sections and junctions within the same equipment room.

C. ISP backbone fiber optic cabling:

1. Cabling:

a. Cable runs shall have continuous sheath continuity, homogenous in nature, without any splices.

b. Maximum cable length of 1,600 feet (500m) between the terminations at MPOE, MDF’s and IDF’s.

c. Placement:

1) Place cables within designated pathways.

2) Maintain a minimum bend radius of 20 times the cable diameter during installation and a minimum bending radius of 10 times the cable diameter after installation.

3) Maintain pulling tension within manufacturer's limits.

4) Place and suspend cables in a manner to protect them from physical interference or damage. Place cables with no kinks, twists, or impact damage to the sheath. Replace cables damaged during installation.

5) Do not use cable-pulling compounds for indoor installations.

6) Provide 20 to 30 feet minimum sheath cable slack at each end of the run within the equipment rooms. Store cable slack in the fiber slack storage reel mounted on wall.

7) Place a pull rope along with cables where run in conduit and spare capacity still exists in the conduit. Tie off ends of pull rope.

d. Routing:

1) Within equipment rooms, neatly dress and organize cables on designated cable routing facilities and fasten cables to routing facilities via tie wraps or Velcro type straps.

2) When routing horizontally within equipment rooms, utilize the overhead cable support system. When routing vertically within equipment rooms, utilize the vertical cable support system and provide approved cable straps at 24" intervals.

e. Terminations:

1) Properly relieve strain from cables at termination points, at or within the fiber optic termination panels) per manufacturer's instructions.

2) Provide breakout kits to furcated fibers from buffer tubes. Provide required accessories and consumables for the complete termination of fiber strands.

3) Terminate fiber strands at both ends using the specified finer optic connectors appropriate for the mode type of the fiber. Perform termination in accordance with manufacturer's instructions.

4) Provide 3 feet of unsheathed fiber (tight buffer) slack within the patch panel/termination enclosure at each end of the link. Properly store fiber slack in rear of patch panel into the routing rings, per manufacturer's instructions.

2. Termination apparatus:

a. Provide fully assembled termination patch panels in designated equipment racks, located a top of rack. "Fully assembled" includes installation and mounting components and accessories such as adapter panels, coupling adapters, etc. required for operation.

b. Provide accessories required for proper installation of each termination patch panel, including connector panels and adapters.

c. Termination sequence:

1) Rack-mount panels: Terminate singlemode fibers first (upper left-most position), then multimode fibers, all in sequential strand order.

D. OSP backbone fiber optic cabling:

1. Innerduct:

a. Provide innerduct and accessories for all conduits containing outside plant fiber optic cables. Innerducts shall consist of either three 1.25” or four 1” innerducts per 4” conduit. Assume the latter unless indicated otherwise on the Drawings.

b. Install innerduct per manufacturer’s instructions. Use pulling equipment and consumables (such as lubricants) allowed by the manufacturer. Place multiple innerduct using pulling harness designed specifically for the use and also using pulling swivel.

c. At each vault or pullbox, building entrance, and equipment room, secure innerducts with triplex (for use with three 1.25” innerducts) or quadplex (for use with four 1” innerducts) duct plugs.

2. Cabling:

a. Cable runs shall have continuous sheath continuity, homogenous in nature, between either termination points or designated splice points. Only splices as noted on the Construction Documents are permitted.

b. Maximum cable length of 4,900 feet (1,500m) between the terminations at MPOE or MDF’s.

c. Placement:

1) Place cables within designated pathways.

2) Maintain a minimum bend radius of 20 times the cable diameter during installation and a minimum bend radius of 10 times the cable diameter after installation.

3) Maintain pulling tension within manufacturer’s limits.

4) Place and suspend cables in a manner to protect them from physical interference or damage. Place cables with no kinks, twists, or impact damage to the sheath. Replace cables damaged during installation.

5) Only use UL approved cable-pulling compounds when necessary to reduce pulling tension.

6) Provide 20 to 30 feet minimum sheath cable slack at each end of the run within the equipment rooms. Store cable slack in the fiber slack storage reel mounted on wall.

7) Place a pull rope along with cables where run in conduit and spare capacity still exists in the conduit. Tie off ends of pull rope.

d. Routing:

1) Route cables in innerduct between points of termination throughout entire length, except at the fiber take up reel.

2) Within equipment rooms, neatly dress and organize cables on designated cable routing facilities and fasten cables to routing facilities via tie wraps or Velcro type straps.

3) When routing horizontally within equipment rooms, utilize the overhead cable support system. When routing vertically within equipment rooms, utilize the vertical cable support system and provide approved cable straps at 24" intervals.

e. Terminations:

1) Properly relieve strain from cables at termination points, at or within the fiber optic termination panels) per manufacturer's instructions.

2) Provide breakout kits to furcated fibers from buffer tubes. Provide required accessories and consumables for the complete termination of fiber strands.

3) Terminate fiber strands at both ends using the specified finer optic connectors appropriate for the mode type of the fiber. Perform termination in accordance with manufacturer's instructions.

4) Provide 3 feet of unsheathed fiber (tight buffer) slack within the patch panel/termination enclosure at each end of the link. Properly store fiber slack in rear of patch panel into the routing rings, per manufacturer's instructions.

3. Duct plugs:

a. Install plugs per manufacturer's instructions.

b. Provide duct plugs at conduit ends, both within inground vaults/pullboxes and at building entrances. Provide fillers in each used duct port.

4. Termination apparatus:

a. Provide fully assembled termination patch panels in designated equipment racks, located a top of rack. "Fully assembled" includes installation and mounting components and accessories such as adapter panels, coupling adapters, etc. required for operation.

b. Provide accessories required for proper installation of each termination patch panel, including connector panels and adapters.

c. Termination sequence:

1) Rack-mount panels: Terminate singlemode fibers first (upper left-most position), then multimode fibers, all in sequential strand order.

E. ISP backbone twisted pair cabling:

1. Cabling:

a. Cable runs shall have continuous sheath continuity, homogenous in nature, without any splices.

b. Maximum cable length of 1,600 feet (500m) between the terminations at MPOE, MDF's and IDF's.

c. Placement:

1) Place cables within designated pathways.

2) Maintain a minimum bend radius of 6 times the cable diameter during and after installation.

3) Maintain pulling tension within manufacturer's limits.

4) Place and suspend cables in a manner to protect them from physical interference or damage. Place cables with no kinks, twists, or impact damage to the sheath. Replace cables damaged during installation.

5) Place a pull rope along with cables where run in conduit and spare capacity still exists in the conduit. Tie off ends of pull rope.

d. Routing:

1) When routing horizontally within equipment rooms, utilize the overhead cable support system. When routing vertically within equipment rooms, utilize the vertical cable support system and provide approved cable straps at 24" intervals.

2) Route cables a minimum of 6" away from power sources to reduce interference from EMI.

e. Terminations:

1) Provide 15 feet cable slack loop at each end of the cable run. Store slack in overhead cable support system or on backboard.

2) Properly relieve strain from cables at termination points per manufacturer's recommendations.

3) Bond metallic components of the cable sheath (i.e. shield) to the telecommunication ground system in accordance with the NEC and manufacturer's instructions.

4) Terminate twisted pairs onto the termination apparatus in accordance with manufacturer's latest instructions and TIA/EIA-568-B standard installation practices.

2. Termination apparatus:

a. Provide accessories required for a complete installation.

b. Install the termination apparatus such that the bottom row of terminations is no lower than 24" above finished floor and the top row of terminations is no higher than 60" above finished floor.

c. Mount termination apparatus plumb and square to building lines.

3. Crossconnects:

a. Provide one 1-pair crossconnect per workstation outlet between the backbone field and the horizontal field, as a minimum. Neatly route the crossconnect wires within the horizontal and vertical management components.

b. Color: Provide blue/yellow crossconnect wires for all voice circuits. Where fire alarm cables are distributed, provide red/white crossconnect wires.

c. Splices in crossconnect wires are prohibited.

F. OSP backbone twisted pair cabling:

1. Cabling:

a. Cable runs shall have continuous sheath continuity, homogenous in nature, between either termination points or designated splice points. Only splices as noted on the Construction Documents are permitted.

b. Maximum cable length of 4,900 feet between the terminations at MPOE or MDF's.

c. Placement:

1) Place cables within designated pathways.

2) Maintain a minimum bend radius of 6 times the cable diameter during and after installation.

3) Maintain pulling tension within manufacturer's limits. Only use UL approved cable pulling compounds when necessary to reduce pulling tensions.

4) Place and suspend cables in a manner to protect them from physical interference or damage. Place cables with no kinks, twists, or impact damage to the sheath. Replace cables damaged during installation.

5) Neatly dress and organize cables in the cable routing facilities and fasten to support devices via tie wraps.

6) Place a pull rope along with cables where run in conduit and spare capacity still exists in the conduit. Tie off ends of pull rope.

d. Routing:

1) When routing horizontally within equipment rooms, utilize the overhead cable support system. Within overhead cable support, route backbone cables to avoid crossing over horizontal cabling or horizontal cabling crossing over backbone cables. When routing vertically within equipment rooms, utilize the vertical cable support system and provide approved cable straps at 24" intervals.

2) Route cables a minimum of 6" away from power sources to reduce interference from EMI.

e. Terminations:

1) Provide 15 feet cable slack loop at each end of the cable run. Store slack in overhead cable support system or on backboard.

2) Properly relieve strain from cables at termination points per manufacturer's recommendations.

3) Bond metallic components of the cable sheath (i.e. shield) to the telecommunication ground system in accordance with the NEC and manufacturer's instructions.

4) Terminate twisted pairs at both ends onto the specified BEP terminals. Perform terminations in accordance with manufacturer's latest instructions and TIA/EIA-568-B standard installation practices.

2. Building entrance protection:

a. Provide BEP system to include terminals, modules and accessories required for a complete installation. Install BEP per manufacturer's written instructions.

b. Install BEP terminals plumb and square with building lines. Install such that the bottom row of terminations is no lower than 24" above finished floor and the top row of terminations is no higher than 60" above finished floor.

c. Grounding and bonding:

1) Bond BEP terminals to the telecommunication ground system in accordance with the NEC and per the manufacturer's instructions.

2) Provide #6 AWG bonding conductor.

d. Provide quantity of protector modules to completely populate terminals.

G. Horizontal twisted pair cabling:

1. Horizontal cable installation and routing:

a. Cable runs shall have continuous sheath continuity, homogenous in nature with no splicing.

b. No cabling shall exceed a cable length of 295' (90m) from the termination point at the equipment room to the termination at the workstation outlet, including service slack, when measured using test equipment.

c. Place cables within the designated pathways, such as cable tray or basket tray, cable runway, cable hangers, etc. Do not fasten, support or attach cables to other building infrastructures (i.e. ducts, pipes, conduits, etc.), other systems (i.e. ceiling support wires, wall studs, etc.), or to the outside of conduits, cable trays and non0approved pathway systems.

d. Place and suspend cables during installation and termination in a manner to protect them from physical damage or interference. Place cables with no kinks, twists, or impact damage to the sheath. Replace cables damaged during installation or termination at no additional cost.

e. Route cables at 90º angles, allowing for bending radius.

f. Do not exceed pulling tension of 25 lbs.

g. Do not use cable-pulling compounds.

h. Do not exceed a minimum bend radius of 6 times the cable diameter during and after installation.

i. Route cables beneath other building infrastructures (i.e. ducts, pipes, conduits, etc.) in above ceiling applications. Do not route cables over building infrastructures. The installation shall result in easy accessibility to the cables in the future.

j. Place cables 6” minimum away from power sources to reduce interference from EMI.

k. Do not set 360º service loops in place for slack storage. Instead, set slack as forward-and-back or as figure eights.

l. Place a pull string along with cables where run in conduits and spare capacity in conduit remains. Tie off ends of the pull string to prevent the string from falling onto the conduit.

m. When exiting the primary pathway, such as cable or basket tray, to the workstation outlets, exit via the top of the pathway. Secure the cables to the pathway using an approved cable tie.

2. Cable routing and dressing within equipment rooms:

a. Within equipment rooms, only use Velcro type straps.

b. Place cables within the overhead cable support system. When routing vertically on walls, fasten the cables onto vertical supports every 24” on center.

c. Provide 12” minimum sheath cable slack, length not to exceed permanent link maximum length requirement. Place the slack in the overhead cable support system.

d. At the rack bay, route and neatly dress cables from the overhead cable support system into the back of the vertical management sections. Divide the cables equally between both sides of an equipment rack such that a cable does not travel past the midpoint of the rack prior to termination. Fasten the cables to the cable support bar at the back of the patch panel using approved ties.

3. Termination in the equipment rooms:

a. Provide termination apparatus and accessories required for a complete installation. Install and assemble termination apparatus, accessories and associated management apparatus according to the manufacturer’s instructions.

b. Properly relieve strain from the cables to and at termination points per manufacturer’s instructions. Provide a strain relief bar at the back of the modular patch panels for proper strain relief.

c. Terminate cables and twisted pairs in accordance with manufacturer’s latest installation requirements and TIA/EIA-568-B standard installation practices. Terminate cable pairs onto the termination apparatus compliant to T568A wiring.

d. Modular patch panels and horizontal management panels:

1) Provide quantity of modular patch panels to support the terminations of cables served from respective IDF. Provide quantity of horizontal management panels based on the quantity of patch panels.

2) Install and assemble modular patch panels and horizontal management panels according to the manufacturer’s instructions.

3) Install the patch panels and the horizontal management panels as shown on the Drawings.

4) Terminate cables in sequential order using the link's identifier starting at the top left and completing a panel before moving to the next panel below.

4. Cable routing and dressing at workstations:
   a. Provide 12" to 18" cable slack at each workstation outlet, length not to exceed permanent link maximum length requirement. Place the slack within ceiling space neatly on a cable hanger or other approved cable support device.
   b. Route to partition furniture mounted faceplates:
      1) Route cables from primary or secondary pathway within ceiling through the furniture partition feed pathway (stub from wall or floor box) into opening at bottom of furniture system. Exercise caution to prevent scraping, cutting or other damage to cable jacket.
      2) Provide spiral wrap around cables from furniture-feed pathway to point where cables enter furniture.
5. Termination at the workstation outlets:
   a. Provide device components, connectors, and accessories required for a complete installation. Install and assemble connectors, jacks, adapters, termination apparatus, accessories and associated management apparatus according to the manufacturer's instructions.
   b. Connector color shall match the faceplate.
   c. Provide "fog white" connectors for data links and "dark blue" connectors for voice links.
   d. Wall mounted standard devices:
      1) Install devices at heights indicated on drawings.
      2) Mount faceplates plumb, square and at the same level as adjacent power receptacles.
      3) Patch gaps around faceplates so that faceplate covers the entire wall opening.
   e. Partition furniture mounted devices:
      1) Coordinate installation of the faceplate adapters with the furniture contractor, including color.
      2) Mount faceplate adapters into the designated openings for horizontal cables.
   f. Terminate cables and twisted pairs in accordance with the manufacturer's latest installation requirements and TIA/EIA-568-B standard installation practices. Terminate cable pairs onto the connector compliant to T568A wiring.
6. Patching and cross connecting:
   a. In equipment rooms, provide one modular patch cord for the first data connector in each workstation outlet. Install from the horizontal termination field to the network switches/equipment. Neatly dress patch cords within the horizontal and vertical cable management components.

b. In equipment rooms, provide one modular patch cord for the first voice connector in each workstation outlet. Install from the horizontal termination field to the voice field. Neatly dress patch cords within the horizontal and vertical cable management components.

c. Provide one 1-pair crossconnect for each workstation outlet. Install from backbone twisted pair 110 terminal blocks to the pre-wired 110 terminal blocks. Neatly dress patch cords within the horizontal and vertical cable management components.

3.03 LABELING

A. General requirements:

1. Labeling, label colors, and identifier assignments shall conform to EIA/EIA-606-A Administration Standards and as approved by the Owner.
2. Provide permanent and machine-generated labels. Hand written labels will not be accepted.

B. Equipment room labeling:

1. Equipment rack: Provide one label plate per rack and cabinet/frame. Permanently affix label plate centered on the rack's top angle or the cabinet's top front frame.
2. Identifier assignment for equipment racks:
   a. Prefix: "RACK"
   b. First field: The IDF identity.
   c. Second field: The rack number.

C. Backbone fiber optic cable labeling:

1. Cables:
   a. Text color shall be black with #10 font size.
   b. Identifier assignment:
      1) First field: Type of cable.
      2) Second field: Total strand count.
      3) Third field: Cable number.
      4) Fourth field: Strands in use and dead strands.
      5) Fifth field: Source and destination.
      6) Sixth field: Terminal number (MPOE, MDF, IDF).
   c. Label installation:
      1) Provide labels on both ends of cables.
      2) Install such that they are visible by a technician from normal stance.
      3) Fully wrap label around the cable jacket (self lamination).
      4) Provide one label within 12" of the termination apparatus.
      5) Provide one label at the point where the cable enters/exits the equipment room.
      6) Provide one label at the approximate mid-point between where the cable enters/exits the room and the termination apparatus.
2. Fiber patch panels:
   a. Text color shall be black, #10 font size.
   b. Label installation:

1) Provide labels at each port.
2) Install labels into label window.

D. Backbone twisted pair cable labeling:
1. Cables:
a. Text color shall be black with #10 font size.
b. Identifier assignment:
1) First field: Type of cable.
2) Second field: Total number of pairs.
3) Third field: Cable number.
4) Fourth field: Active cable count and “dead” pairs.
5) Fifth field: Source and destination.
6) Sixth field: Terminal number (MPOE, MDF, IDF).
c. Label installation:
1) Provide labels on both ends of cables.
2) Install such that they are visible by a technician from normal stance.
3) Fully wrap label around the cable jacket (self lamination).
4) Provide one label within 12” of the termination apparatus.
5) Provide one label at the point where the cable enters/exits the equipment room.
6) Provide one label at the approximate mid-point between where the cable enters/exits the room and the termination apparatus.
2. BEP terminals:
a. Text color shall be black with #10 font size.
b. Identifier assignment:
1) First field: Building identifier.
2) Second field: Building zone identifier.
3) Third field: Incoming cable pair identifier.
4) Fourth field: Outgoing cable pair identifier.
c. Label installation:
1) Install labels such that they are visible by technician form normal stance.
2) Provide one label on the terminal cover or housing.
3. Modular patch panels:
a. Text color shall be black, #10 font size.
b. Label installation:

1) Provide labels at each port.
2) Install labels into label window.

4. Label installation in manholes/vaults/pullboxes:
   a. Provide at least one label within the manholes/vaults/pullboxes.
   b. Install labels such that they are visible by technician from above grade.
5. Label installation at splice points:
   a. Provide one label on each side of splice case.
   b. Install labels such that they are visible by technician from above grade.

E. Horizontal twisted pair labeling:
1. Cables:
   a. Text color shall be black, #10 font size.
   b. Label installation:
      1) Provide labels on both ends of cable.
      2) Install labels such that they are visible by technician from a normal stance.
      3) Fully wrap label around the cable jacket (self lamination).
      4) Provide one label within 4” of the termination apparatus.
2. Modular patch panels:
   a. Text color shall be black, #10 font size.
   b. Label installation:
      1) Provide labels at each port.
      2) Install labels into label window.
3. Outlets:
   a. Text color shall be black, #10 font size.
   b. Label installation:
      1) At faceplates, provide labels above and below jacks.
      2) At surface boxes, provide labels on the top of the box.

3.04 FIELD QUALITY CONTROL AND TESTING

A. General:
1. Calibrate test sets and associated equipment per the manufacturers instructions at the beginning of each day’s testing and after each battery charge. Fully charge the test sets prior to each day’s testing to ensure proper operation.
2. Ensure test equipment and test cords are clean and undamaged during testing activities. Per the Engineer’s discretion, halt testing activity and clean testing equipment, test cords and related apparatus.

3. Permanently record test results electronically within test equipment at the time of testing.

B. Fiber optic testing:

3.05 FIELD QUALITY CONTROL AND TESTING

A. General:

1. Calibrate test sets and associated equipment per the manufacturers instructions at the beginning of each day's testing and after each battery charge. Fully charge the test sets prior to each day's testing to ensure proper operation.

2. Ensure test equipment and test cords are clean and undamaged during testing activities. Per the Engineer's discretion, halt testing activity and clean testing equipment, test cords and related apparatus.

3. Permanently record test results electronically within test equipment at the time of testing.

B. Fiber optic testing:

1. Test fiber optic passive links as follows:

TESTS FOR FIBER OPTIC CABLING TABLE				
Subsystem	**Type**	**Test**	**Direction**	**Wavelength**
OSP backbone	Singlemode	Characterization, passive link insertion loss	Both	1310nm and 1550nm
ISP backbone	Singlemode	Passive link insertion loss	Both	1310nm and 1550nm

2. Precautions:

a. Adhere to the equipment manufacturer's instructions during testing.

b. Prior to testing activity or measurements taken, complete the following activities:

1) Ensure the test equipment is at room temperature, approximately 70ºF.

2) Turn the light source and power meter power on for at least 5 minutes.

3) Clean test/launch cords and system cords, if applicable, connectors and the cabling system adapters with a lint-free wipe and 90% (or higher) isopropyl alcohol.

c. Do not power off OTDR's light source during testing activity.

d. Do not remove launch cord from the OTDR's light source at any time (unless the testing is complete or the equipment is being put away for the evening or during trouble shooting).

e. Do not bend the launch cord smaller than 20 times the cord diameter during testing activities, as this may induce loss into the cord reducing the accuracy of the measurements).

C. Fiber optic characterization testing:

1. Equipment settings/measurement parameters:

a. Index of refraction: Match cable-under-test fiber parameters, default settings as follows:

1) Singlemode: 1.466-1.467 @ 1310nm and 1.467-1.4677 @ 1550nm.

b. Pulse width (20ns for multimode and 50ns for singlemode):

1) Singlemode: 10ns for cable lengths up to 6,560 feet (2,000m); 50ns for cable lengths between 6,560 feet (2,000m) and 32,800 feet (10,000m).

c. Backscatter:

1) Singlemode: -74dB @ 1310nm and 1550nm.

d. Event threshold: 0.05dB.

e. Reflection threshold:

1) Singlemode: -60dB.

f. Fiber break/end-of-fiber: 3dB.

2. Waveform: The waveform shall be real-time and normal density.

3. Obtain measurements using a “launch” cord connected to the test instrument and the cable under test.

a. The fiber of the launch cord shall match the fiber of the cable under test in physical and performance parameters (i.e. type, core/cladding size, index of reflection, refraction profile, etc.). The fiber of the launch cord should match the fiber of the cable under test in manufacturer and product.

b. Use launch cord length between 25 and 100 meters.

D. Fiber optic passive link insertion loss testing:

1. Test cords performance verification:

a. Connect test cord #1 between the light source and the power meter.

b. The value displayed on the power meter is the Reference Power (P_{ref}) measurement. If the power meter has a Relative Power Measurement Mode, enter this Reference Power Measurement (P_{ref}) value into the meter. If it does not, hand-write P_{ref} onto the record document for future reference.

c. Disconnect test cord #1 form the power meter. Do not disconnect test cord #1 from the light source.

d. Connect the “open” end of test cord #1 to an adapter of matching connector type. Connect one end of test cord #2 to the adapter and the other end to the power meter.

e. The value displayed on the power meter is the Power Measurement (P_{sum}). If the power meter is in Relative Power Measurement Mode, the meter reading represents the test cord #2 connection attenuation. If the meter does not have a Relative Power Measurement Mode, perform the following calculation to determine the connection attenuation:

1) If P_{sum} and P_{ref} are in the same logarithmic units (dBm, dBu, etc.): Connection attenuation (dB) = (P_{sum} - P_{ref})

2) If P_{sum} and P_{ref} are in watts: Connection attenuation (dB) = [10 x $\log_{10}$ (P_{sum}/P_{ref})]

3) The measured connection attenuation must be less than or equal to the value found in the Table below.

f. Flip the ends of test cord #2, so that the end connected to the power meter is now connected to the adapter, and the end connected to the adapter is now connected to the power meter.

g. The meter reading is the reversed Power Measurement (P_{sum}). Perform the proper calculations if not using Relative Power Measurement Mode.

h. Verify that both connection attenuation measurements are less than or equal to the value found in the following Table:

ACCEPTABLE TEST CORD CONNECTION ATTENUATION	
Cable Type	**SC Cord**
Singlemode	0.30dB maximum

i. If both measurements are found to be less than or equal to the values found in the Table, then test cord #1 is acceptable for testing purposes. Unacceptable attenuation measurements may be attributable to test cord #1 or #2. Examine each cord with a portable microscope and clean, polish or replace as necessary.

j. Repeat this test procedure from the beginning, reversing the test cords in order to verify the performance of test cord #2.

2. Test equipment set-up:

a. Follow the test equipment manufacturer's initial adjustment and set-up instructions.

b. If the meter has a Relative Power Measurement Mode, select this mode.

c. If the meter can display power levels in dBm, select this unit of measurement to simplify subsequent calculations.

d. Set the light source and power meter to the same wavelength.

3. Singlemode passive link insertion loss testing procedure:

a. Determine the launch conditions:

1) Use the launch conditions as described in FOTP-78.

2) Employ a method to remove high-order propagating modes as described in FOTP-77.

b. Test method: Perform the passive link insertion loss testing of singlemode fibers according to the "Test Method A.1: One Jumper Reference," per OFSTP-7.

1) After setting up the test equipment and verifying the performance of the test cords, the insertion loss of the passive link segments can be measured.

2) Connect test cord #1 between the light source and the power meter.

3) The meter reading is the Reference Power Measurement (Pref). If the power meter has a Relative Power Measurement Mode, enter the Pref value into the meter. If it does not have this mode, then hand-write the Pref for future reference and to be included in the Record Documents.

4) Disconnect test cord #1 from the power meter. Do not disconnect test cord #1 from the light source.

5) Connect test cord #1 to the passive link segment input.

6) At the opposite end of the passive link segment, connect test cord #2 to the link segment input and the power meter.

7) The meter reading is the Power Measurement (Psum). If the power meter is in Relative Power Measurement Mode, the meter reading represents the insertion loss. If the meter does not have this mode, perform the following calculation to determine the insertion loss:

a) If Psum and Pref are in the same logarithmic units (dBm, dBu, etc.): Link segment attenuation (dB) = (Psum - Pref)

b) If Psum and Pref are in watts: Link segment attenuation (dB) = [10 x log10 (Psum/Pref)]

8) Record Psum for inclusion into the record documents.

4. Acceptable measurement values:

a. Remove and replace any cabling links failing to meet the criteria described in this Specification, at no cost to the Owner, with cables that prove to meet the minimum requirements.

b. The general insertion loss equation for any link segment is as follows:

1) Insertion loss = cable loss + connection loss + splice loss + CPR adjustment.

2) Note: A connection is defined as the joint made by two mating fibers terminated with rematerable connectors.

c. Singlemode attenuation coefficients:

1) OSP cable loss = Cable length (km) x (0.40dB/km @ 1310nm) or (0.30dB/km @1550nm).

2) ISP cable loss = Cable length (km) x (0.650dB/km @ 1310nm) or (0.50dB/km @1550nm).

3) Connection loss = (Connection x 0.24dB) + 0.24dB.

4) Splice loss = Splices x 0.07dB.

5) CPR adjustment = Not applicable for singlemode.

E. Record documents:

1. Permanently record all test results.
2. Export test results' numerical values to a single Microsoft Excel spreadsheet.
3. Submit test results in a format acceptable to the Owner, Owner's Representative and the Engineer before system acceptance.
4. Cable, and fiber identifiers of the test reports shall match the identifiers as labeled in the field, i.e. use the same ID on the cable/termination label as what appears on the test report.
5. Measurements shall carry a precision through one significant decimal place, minimum.
6. Use feet for the units for measurements shown on the print of the test measurements.
7. Print report such that fiber strands of a given cabling link have matching axis scales. The "X" and the "Y" axis shall be the same from report-to-report.
8. The trace of the printed test report shall show the launch cord.
9. For each fiber optic backbone cable test, report shall contain the following information:
   a. Project name and address.
   b. Test company's and Operator's name.
   c. Date measurements were taken.
   d. Test equipment type to include model and serial numbers.
   e. Cable identification number, fiber/strand number and fiber type (i.e. multimode, singlemode, etc).
   f. Measurement direction.
   g. Set-up parameters (i.e. wavelength, pulse width, refractive index, event threshold, etc.)
   h. OTDR trace.
   i. Length of fiber.
   j. Overall link loss.
   k. Passive link insertion loss testing:
      1) Wavelength.
      2) Loss measurement.
10. For each cabling link, include either a schematic graphic or a brief narrative accurately describing the test set-up. The description shall include test/launch cord (with length), expected events (connectors, slices, etc.) with expected distances, etc. This information will eliminate many questions the Engineer will have while reviewing the reports.

11. For each twisted pair backbone and horizontal cable test, report shall contain the following information:
    a. Project name and address.
    b. Test company's and Operator's name.
    c. Date measurements were taken.
    d. Test equipment type to include model and serial numbers.
    e. Cable identification number and pair number.
    f. Measurement results.

3.06 INSPECTION AND ADJUSTMENTS

A. Contractor shall inspect all installed Work in conjunction with the General Contractor and develop a "punchlist" for all items needing correction. Provide punchlist to the Engineer prior to their final walk of Project.

B. Punchlist work and the required remediation shall be performed prior to system final acceptance.

C. Replace or repair work completed by others that was defaced or destroyed during the installation of the telecommunication cabling system by this contractor.

D. Make changes to adjust the system to optimum operation for final use. Contractor is responsible for making changes to the system such that any defects in workmanship are correct and all cables and the associated termination hardware passes the minimum test requirements.

3.07 CLEANING

A. Remove all unused, excess and left over products, to include debris, spills, and installation equipment.

B. Leave finished work and adjacent surfaces in neat, clean conditions with no evidence of damage.

C. Legally dispose of debris.

D. Clean installed products in accordance with manufacturer's instructions prior to final punchlist.

3.08 TRAINING

A. At the completion of all Work, a period of not less than 16 hours shall be allocated by the Contractor for instruction and training for the Owner Representative. The Cabling Contractor will need to describe how the cable from each cover plate is separated between different patch panels, how cross-connects are made and other basic cable plant management skills.

B. Contractor shall schedule training with a minimum of 7 days advance notice.

C. Twisted pair testing:
    1. Test for UTP cabling as follows:

TESTS FOR FIBER OPTIC CABLING TABLE				
Subsystem	**Type**	**Test**	**Configuration**	**Notes**
Backbone	OSP	See Notes	-	Wire map & length
Backbone	ISP/Riser	See Notes	-	Wire map & length
Horizontal	CAT6	Category 6	Permanent Link	Per TIA/EIA-568-C.2

2. Precautions:
   a. Adhere to the equipment manufacturer's instructions during all testing.
   b. Prior to any testing activity or any measurements taken, ensure the test equipment is at room temperature, approximately 70ºF.
   c. Fully charge power sources before each day's testing activity.
3. Backbone twisted pair testing:
   a. The installation will be accepted when testing has indicated availability of 100% terminated pairs.
   b. Test continuity and wire map for all pairs.
   c. Test length for 2% of pairs of each cable. Pairs shall be from different 25 pair binder groups.
4. Horizontal twisted pair testing:
   a. Test equipment set-up:
      1) Set-up the tester to perform a full CAT6 test, as a Permanent Link configuration.
      2) If the tester has the capability, set the cable type as product specific setting. If not, set as generic CAT6 cable.
      3) Set the tester to save the full test results (all test points, graphs, etc.).
      4) Save the test results with associated cable link identifier.
      5) Calibrate the test set per the manufacturer's instructions.
   b. Acceptable test results measurements:
      1) Overall test results:
         a) Links which report a Fail, Fail or Pass for any of the individual tests shall result in an overall link Fail. All individual test results must result in a Pass to achieve an overall Pass.
         b) Any reconfiguration of link components required as a result of a test Fail, must be re-tested for conformance.
         c) Remove and replace any cabling links failing to meet the criteria described in this Specification, at no cost to the Owner, with cables that prove to meet the minimum requirements.

2) Wire map: Provide continuous pairs and terminate all of the cabling links correctly at both ends, no exceptions taken.

3) Length: Ninety-four meters (308 feet) is the maximum acceptable electrical length measurements for any cabling link measured under a Permanent Link configuration, including test cords.

4) Insertion loss: The acceptable insertion loss measurements for any horizontal cabling link is that which is no greater than that listed in TIA/EIA-568-B.2.

5) Worst pair-to-pair near end crosstalk (NEXT) loss: The acceptable worst pair-to-pair NEXT loss for any horizontal cable is that which is no greater than that listed in TIA/EIA-568-B.2.

6) Power sum NEXT loss: The acceptable power sum PS-NEXT loss for any horizontal cable is that which is no greater than that listed in TIA/EIA-568-B.2.

7) Worst pair-to-pair ELFEXT and FEXT loss: The acceptable worst pair-to-pair ELFEXT and FEXT loss for any horizontal cable is that which is no greater than that listed in TIA/EIA-568-B.2.

8) Power sum ELFEXT and FEXT loss: The acceptable PS-ELFEXT and PS-FEXT loss for any horizontal cable is that which is no greater than that listed in TIA/EIA-568-B.2.

9) Return loss: The acceptable return loss measurements for any horizontal cabling link is that which is no greater than that listed in TIA/EIA-568-B.2.

10) Propagation delay and delay skew: The acceptable propagation delay and delay skew measurements for any horizontal cabling link is that which is no greater than that listed in TIA/EIA-568-B.2.

D. Record documents:

1. Permanently record all test results.
2. Export test results' numerical values to a single Microsoft Excel spreadsheet.
3. Submit test results in a format acceptable to the Owner, Owner's Representative and the Engineer before system acceptance.
4. Cable, fiber and pair identifiers of the test reports shall match the identifiers as labeled in the field, i.e. use the same ID on the cable/termination label as what appears on the test report.
5. Measurements shall carry a precision through one significant decimal place, minimum.
6. Use feet for the units for measurements shown on the print of the test measurements.
7. Print report such that fiber strands of a given cabling link have matching axis scales. The "X" and the "Y" axis shall be the same from report-to-report.
8. The trace of the printed test report shall show the launch cord.
9. For each fiber optic backbone cable test, report shall contain the following information:
    a. Project name and address.
    b. Test company's and Operator's name.

c. Date measurements were taken.

d. Test equipment type to include model and serial numbers.

e. Cable identification number, fiber/strand number and fiber type (i.e. multimode, singlemode, etc).

f. Measurement direction.

g. Set-up parameters (i.e. wavelength, pulse width, refractive index, event threshold, etc.)

h. OTDR trace.

i. Length of fiber.

j. Overall link loss.

k. Passive link insertion loss testing:

1) Wavelength.

2) Loss measurement.

10. For each cabling link, include either a schematic graphic or a brief narrative accurately describing the test set-up. The description shall include test/launch cord (with length), expected events (connectors, slices, etc.) with expected distances, etc. This information will eliminate many questions the Engineer will have while reviewing the reports.

11. For each twisted pair backbone and horizontal cable test, report shall contain the following information:

a. Project name and address.

b. Test company's and Operator's name.

c. Date measurements were taken.

d. Test equipment type to include model and serial numbers.

e. Cable identification number and pair number.

f. Measurement results.

3.09 INSPECTION AND ADJUSTMENTS

A. Contractor shall inspect all installed Work in conjunction with the General Contractor and develop a "punchlist" for all items needing correction. Provide punchlist to the Engineer prior to their final walk of Project.

B. Punchlist work and the required remediation shall be performed prior to system final acceptance.

C. Replace or repair work completed by others that was defaced or destroyed during the installation of the telecommunication cabling system by this contractor.

D. Make changes to adjust the system to optimum operation for final use. Contractor is responsible for making changes to the system such that any defects in workmanship are correct and all cables and the associated termination hardware passes the minimum test requirements.

3.10 CLEANING

A. Remove all unused, excess and left over products, to include debris, spills, and installation equipment.

B. Leave finished work and adjacent surfaces in neat, clean conditions with no evidence of damage.

C. Legally dispose of debris.

D. Clean installed products in accordance with manufacturer's instructions prior to final punchlist.

3.11 TRAINING

A. Refer to Specification Section 260800: Electrical Commissioning.

B. At the completion of all Work, a period of not less than 16 hours shall be allocated by the Contractor for instruction and training for the Owner Representative. The Cabling Contractor will need to describe how the cable from each coverplate is separated between different patch panels, how cross-connects are made and other basic cable plant management skills.

C. Contractor shall schedule training with a minimum of 7 days advance notice.

END OF SECTION

SECTION 11 61 23

STAGE PLATFORMING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
   1. Reference “PF” series drawings.

B. Coordinate with the following sections in carrying out this work:
   1. Division 01 – General Conditions
   2. Division 05 – Metals
   3. Floor and adjacent architectural finishes
   4. Section 11 61 33 – Production Rigging
   5. Section 11 61 83 – Production Lighting Control
   6. Section 27 41 13 – AV Systems
   7. Division 13 – Fire Suppression
   8. Division 15 – HVAC and Plumbing
   9. Section 26 05 35 – Theatrical Systems Electrical Installation
   10. Division 26 – Electrical

1.02 SUMMARY

A. Section Includes:
   1. Services as listed herein and related to the provision of the following systems:
      a. Pit filler platforms.
   2. The Platform Contractor shall provide all items necessary for a complete, safe, fully functional system as described herein, including all tools, scaffolding, labor, and supervision, even though they may not be specifically enumerated.
   3. Specifications for work in this section have been prepared by the Shalleck Collaborative, Inc., Theatre Consultants.

1.03 REFERENCES

A. Comply with all national, state and local regulations and the procedures and requirements of the CA Division of the State Architect. In the event of conflict between these specifications and the applicable regulations, the more stringent shall govern.

B. Equipment shall be provided per the related trade and regulatory guidelines including but not limited to UL, NEC (National Electrical Code), IEEE, and all manufacturer’s recommendations and requirements. Contractor shall be responsible in the event that work under their control voids or jeopardizes manufacturers’ warranties.

C. Labor shall be provided per applicable labor regulations and practices.

1.04 DEFINITIONS

A. Refer to Div. 01 for definitions.

B. District Representative: For the scope in this Section, authorized personnel representing Solano Community College and The Shalleck Collaborative, Inc., Theatre Consultants.

1.05 SYSTEM DESCRIPTION

A. A multi-level pit filler system, comprised of portable platform decks and support frames and railings, shall be provided.

1.06 SUBSTITUTIONS

A. All requests for substitutions from the specified materials, assemblies or related services shall be submitted for review by the District's Representative prior to bid. Substitution requests made after bid shall be neither reviewed nor accepted. Requests shall be made in accordance with Division 1 of the specifications, and in a timely fashion so as to not affect the project schedule in either case of the substitution being accepted or rejected.

B. Documentation for the substitution shall be submitted with supporting material and shall including the related information for the item as specified so that equivalence can be demonstrated. The burden of proof rests solely upon the Contractor. The District's Representative shall be the sole evaluator of the fitness of the substitution.

C. All expenses related to the substitution including, but not be limited to, all fees and expenses incurred in the evaluation of the substitution, and any effect on the costs and schedule of other trades whether or not the substitution is accepted, shall be borne by the Contractor.

1.07 SUBMITTALS

A. Submittals shall be made in accordance with Division 1.

B. Submittals shall be made electronically in PDF format.

C. Submittals shall be made in a timely fashion so as to not affect the project schedule, and shall allow for adequate time for review and resubmittal. Partial submittals shall not be acceptable and shall be returned without review.

D. All submittals shall be prepared for review by the CA Division of the State Architect as “deferred approval” items. As such complete shop drawings and relevant calculations shall be fully engineered and bear the stamp of a Structural Engineer licensed in the State of CA.

E. Submittals shall be reviewed and field dimensions verified prior to commencing acquisition for, and fabrication of the work in this section. All services and parts of the work in this section shall be verified through the submittal process. Approval does not relieve the Contractor of the responsibility of providing equipment in accordance with the specifications.

F. Shop Drawings:
   1. Submit component and installation drawings and schedules showing all information necessary to fully explain the design features, appearance, function, fabrication, installation, and use of system components in all phases of operation.
   2. Shop drawing plans and section shall be at ¼” scale minimum. Details shall be larger scales to fully explain the component.
   3. Show storage area diagrams for all components un-used in any particular system.
   4. Provide clear space on all shop drawings for comments and approval stamps.

G. Product Data:
   1. Submit data sheets for all standard component parts, which shall include all information necessary to verify compliance with this Section.
   2. Product data shall be properly identifying each components intended use. Any options or variations must be clearly noted.

H. Samples:
   1. Upon 14 days of request by the District’s Representative, submit samples for review. Samples may include, but are not limited to:
      a. 1 square foot full scale mock-up of a typical platform deck.
   2. At time of delivery, submit six copies of submittals including product data, flame certifications, operations and instructions manuals for all products provided, care and maintenance instructions, service line and online contacts and warranty documents.

I. Record Documents:
   1. At time of final acceptance, submit regulatory listings and certifications as required by prevailing building codes.

2. Within 30 days, submit six copies of "as built" submittals including shop drawings, product data, flame certifications, operations and instructions manuals for all products provided, care and maintenance instructions, service line and online contacts and warranty documents.

1.08 WARRANTY

A. Warranty shall provide coverage of material and product defects and assembly workmanship for a period of three years following the date of acceptance by the District.

B. Items under warranty shall be serviced to the satisfaction of the District with 14 days of notification to the Contractor, except for safety related items, which shall be corrected within 48 hours of notification.

1.09 MAINTENANCE SERVICE:

A. Provide maintenance service for a period of one (1) year after final acceptance of the installation. This service consists of at least one visit to the site for checking and adjusting of equipment. Perform the visit 11 months after the system has been accepted. Time of visit shall be coordinated with District and District Representative's schedule.

1.10 QUALITY ASSURANCE

A. Equipment in this Section shall be provided by specialty subcontractors and manufacturers meeting the qualifications listed herein.

B. Specialty subcontractor shall have been continuously engaged in the sales and installation of equipment similar to that specified herein for a minimum of fifteen years.

C. Specialty suppliers shall have at time of bid and continuously maintain throughout the project and warranty period a CA Specialty Contractor's license appropriate for the work in this Section: CA C-61 or D-48 or D34-A license as applicable.

D. Specialty suppliers shall maintain bonds in the amount required for the project.

E. Specialty manufacturers responsible for engineering and manufacturing shall have been continuously engaged in the engineering and manufacturing of equipment similar to that specified herein for a minimum of fifteen years, and shall have provided equipment for at least fifty installations of this type and scope. The District's Representative shall be the final judge of the suitability of experience.

F. All equipment shall be UL listed and bear the appropriate labels.

1.11 DELIVERY, STORAGE AND HANDLING

A. Packing shall prevent damage to the equipment during transit. Costs to repair or replace all equipment damaged during the course of the contract services shall be borne by the Contractor.

B. Do not deliver materials in this Section until building is ready for installation. Contractor is responsible to properly sequence the work and to protect from damage during delivery, handling, storage and installation.

C. Contractor is responsible to coordinate and provide secure and protected storage as required for the execution of the Contract.

1.12 PROJECT CONDITIONS

A. Defects in the field which may impact the work in this Section shall be reported to the District's Representative and corrected in accordance with the requirements of the applicable Section of work prior to commencement of the work in this Section.

B. Field Conditions: All bidders shall fully inform themselves of the conditions under which the work is to be performed. No additional compensation shall be allowed for any labor or item the bidder could have been fully informed of prior to the bid date.

1.13 MAINTENANCE

A. Provide maintenance stock of user-serviceable components within the system. Maintenance stock shall be packaged in labeled long term storage packaging and turned over to the District at time of system commissioning.

PART 2 - PRODUCTS

2.01 PRE-APPROVED PLATFORM SYSTEM MANUFACTURERS

A. The following manufacturers are pre-approved to bid the work in this section:

StageRight, Inc.
495 Pioneer Parkway
Clare, Michigan 48617
Contact: Bill Gareiss
(800) 438-4499

B. Product Shall be:
1. StageRight "All Purpose Deck" double sides platform
2. StageRight "ME1000"
3. No Known Equal

C. Pre-approval to bid does not imply acceptance of the manufacturer. It is the sole responsibility of the contractor for this Section to ensure that any price quotations received and submittals made are for controls systems that meet or exceed the specifications.

2.02 PRE-APPROVED SPECIALTY SUBCONTRACTORS

A. The following production systems specialty subcontractors have been pre-approved for bidding for the work in this section:

Holzmueller Productions
1000 25th St.
San Francisco, CA 94107
Contact: Jim Schelstrate or Michael Hamlin
Tel.: (415) 826-8383

LVH Entertainment
300 Irving Drive
Oxnard, CA 93030
Tel. (888) 313-2033
Contact: Mark Stickelmaier

Musson Theatrical
890 Walsh Ave.
Santa Clara, CA 95050
Contact: Dave Rimerman or Dinna Myers
Tel.: (408) 986-0210

Sacramento Theatrical Lighting
950 Richards Blvd.
Sacramento, CA 95814
Tel. (800) 283-2785
Contact: Steve Odehnal or Bobbie Odehnal

SECOA
8650 109th Avenue North
Champlin, MN 55316
Tel.: (763) 506-8800
Contact: Mark Schlemmer

Stagecraft Industries
5051 N. Lagoon Ave.
Portland, OR 97217-7693
Tel.: (503) 286-1600
Contact: Kevin Shetterly

B. All other subcontractors must be approved prior to bid. Other contractors seeking acceptance must submit the following information at least 2 weeks prior to the bid opening date. Approval of contractors will be by addenda. Failure to submit any of the required information will automatically disqualify the contractor from consideration of approval.
   1. A listing of five equivalent installations including:
      a. Name, address and telephone number of District;
      b. Name, address and telephone number of Theatre Consultant;
      c. Scope of work.
      d. A brief written description of the contractor's operation including facilities, financial capabilities, and experience of key personnel.
   2. A statement from a bonding company agreeing to provide the required bonds in the amount required for the project.

2.03 MATERIALS

A. All components supplied under this Section shall be new. Used or factory reconditioned components shall not be acceptable.

B. Materials shall conform to the following ASTM and ANSI standard specifications:
   1. A-36 - Specification for structural steel
   2. A-47 - Specification for malleable iron casting
   3. A-48 - Specification for gray iron casting
   4. A-120 - Specification for black and hot-dipped zinc-coated (galvanized) steel pipe for ordinary use
   5. B18.2.1&2 - Specification for square and hex bolts and nuts
   6. B221-02 - Specification for aluminum alloy

C. Materials, devices, assemblies and installation shall meet or exceed applicable ESTA standards.

D. In order to establish minimum standards of safety, the following factors shall be used:
   1. Steel - per AISC specifications
   2. Bearings – Two times required load at full speed for 2000 hours
   3. Bolts - Minimum SAE J429 Grade 5 (ISO R898 Class 8.8), zinc plated
   4. Standards of workmanship, design, and fabrication for structural steel shall be AISC Code of Standard Practice and ASTM A36.

E. Welding:
   1. Execute welding in shop and field in accordance with standards of American Welding Society. All welders shall be qualified in accordance with standard qualification procedure of American Welding Society.
   2. Control welding sequence and technique to minimize secondary stresses and distortions.
   3. Net effective weld lengths shall be indicated on the shop drawings and approved before fabrication and installation.

F. All items of incidental hardware shall be furnished plated or painted black u.o.n.

G. All nuts shall be new lock nuts or shall be provided with lockwashers. No exceptions.

H. Fabrication:
   1. The mechanical fabrication and workmanship shall incorporate best practices for good fit and finish. There shall be no burrs or sharp edges to cause a hazard nor shall there be any sharp corners accessible to personnel.
   2. All moving parts shall have specified tolerances.
   3. All equipment shall be built and installed to facilitate future maintenance and replacement.

I. Finishes:
   1. Paint shall be the manufacturer's standard finish and color except as noted.
   2. All items of incidental hardware shall be furnished plated or painted black.
   3. Components shall be painted with rust inhibiting primer and finished with black paint.

J. Recommended Working Load: This specification calls for minimum recommended working loads for hardware. The manufacturer's recommended working load is the maximum load which the manufacturer recommends be applied to properly installed, maintained, and operated new equipment. Manufacturer's recommended working loads shall be determined by calculations by a Licensed Professional Engineer and destructive testing by an independent testing laboratory. These calculations and reports shall be available for review.

2.04 STAGE EXTENSION AND SEATING PLATFORMS

A. Platform decking
   1. Deck shall be portable and provide a stable surface when used under the audience seating and as a stage extension in both configurations as shown on the drawings. The platforms shall be equal length
   2. Deck shall be a laminate of high-strength outer layers bonded to a honeycomb core for rigidity and light weight. Deck shall be a 3.2"-thick laminated composite constructed of phenolic-treated cellulose honeycomb between solid-core fir plywood. Deck edges shall be closed with a 6005-T5 aluminum extrusion that is anodized black. Corner reinforcement shall be made of high-impact, injection-molded polycarbonate.
   3. Performance: Certified, uniformly distributed live-load capacity of 4800 pounds per 4' x 8' section (150 pounds per sq. foot) to meet 2013 CBC code.
   4. Deck shall attach by molded corner receptacles to scaffold supports without tools, clamps or clips.
   5. Decks shall be double sided honeycomb decks with 1/4" replaceable double tempered hardboard.
   6. Maximum weight of one platform shall be less than 63 lbs
   7. Provide FSR-500 solid BLK floor hatch covers as shown on the drawings.

B. Hard closure Fascia construction
   1. Provide 1/8" thick aluminum, closure panels at the stage side of the audience mid riser platform
   2. Fascia panels shall have z-clips to adjacent panels to maintain alignment.
   3. Fascia panels shall be designed to remove in sections. Each section shall match the length of its associated platform.
   4. Finish fascia panels on all sides with black powder coat.

C. Drapery
   1. Provide drapery at stage extension front full height to mask front of platform and all understructure from the audience. Drapery shall clip to platform face.
   2. Provide drapery at the front of the understage lip railing. Velcro drapery to the top of the railing.
   3. Fabric shall be black 26oz velour IFR.
   4. Fabric shall be sew with 100% fullness.

D. Platform support Framing
   1. Audience support system shall be easy to set up and store and shall provide a stable, robust understructure.

2. Supports shall store compactly and shall be unitized. Individual legs or braces shall not be acceptable.
3. Support system shall be assembled without tools by as few as two people.
4. Conical nodes shall guide the corner of one, two, three or four deck(s) into location and proper alignment on a single support column. Without tools, clamps or separate processes, decks shall fasten in place and stage support frames shall interlock with clamps that link the adjacent support frames.
5. Fixed stage deck height shall match height as shown on drawings. Legs shall be capable of 2-1/2" of leveling adjustment. Each screw foot shaft shall have a diameter of no less than 3/4" and have zinc-plated Acme threads. The bottom of the foot shall be molded urethane.
6. Certified, uniformly distributed live-load capacity of 4800 pounds per 4' x 8' section.
7. Provide in quantity and configuration as shown on drawings.
8. Platform frame shall match deck manufacturer listed above.
9. Support legs shall extend or telescope to change between two riser heights without the use of tools.

E. Stage facing Railings
1. Provide railings under the stage lip when in audience seating mode.
2. Railings shall be black finished 1-1/4" dia aluminum tube
3. Railing shall have a quick clamp cam lock system that clamps onto the top and bottom of the platform.
4. Railing shall have 4" kick plate and mid and top railing.
5. Railings shall be code compliant 2013 CBC.

F. Audience aisle railing
1. Provide audience aisle railing on top of platforms
2. Railings shall be black finished 1-1/4" dia aluminum tube
3. Railing shall socket into the tops of the platforms
4. Provide flush cover for when platforms are in stage mode
5. Railings shall be code compliant 2013 CBC

G. Step Lighting
1. Provide LED step lights at audience seating level changes
2. Step lights shall full louvers to keep all light off the stage during backouts.
3. Provide two transformers one for each row.
4. Provide all wire and extension cords to plug into outlets in the pit.

PART 3 - EXECUTION

3.01 PERFORMANCE OF THE WORK

A. The Contractor shall be responsible for storage of stage equipment, tools, and equipment during the period of the installation.

B. Extent: All specified equipment shall be installed by fully trained superintendents and workmen. Equipment shall be installed in a workman like manner, per plans and specifications. Equipment shall be aligned, adjusted, and trimmed for the most efficient operation, the greatest safety and for the best visual appearance.

C. Standards: Installation practices shall be in accordance with OSHA Safety and Health Standards and all local codes. All welding must be performed in full compliance with the latest edition of the Structural Welding Code (ANSI/AWS D1.1).

D. All connection points shall be welded and ground smooth.

E. Fit abutting surfaces closely.

F. Accurately align and adjust various frame members before final anchoring.

G. Erect metal work level, plumb, square and in proper alignment with adjacent work. Deformed components shall be remedied.

H. Attachments: All equipment shall be securely attached to the building structure.

I. Finishes:
   1. All welds must be touched up to match disturbed finishes.
   2. All finishes which are disturbed during shipping and installation shall be touched up to match the original.

3.02 CLEAN UP

A. The Contractor shall be responsible for clean up, including removal of packing materials etc. and the protection of surfaces or equipment provided by other contractors.

3.03 INSPECTION AND TESTING

A. Upon completion of the installation the Contractor shall notify the District's Representative that the system is available for formal checkout. Notification shall be provided in writing. Checkouts shall be scheduled in accordance with the District Representative's schedule.

B. The Contractor shall arrange for access as necessary for inspection of equipment by the District's Representative.

C. In preparation for inspection by the District's Representative system components shall be cleared of dust and debris.

D. Make available for review by the District's Representative:
   1. Access to all components for physical inspection.
   2. All systems shall be complete, and will be operated by the District's Representative for approval.
   3. Spare parts inventory.

E. The Contractor shall be liable for any return visits by the specialty sub-contractor, factory engineer or District's Representative as a result of incomplete or incorrect installation, or erroneous representation that the Systems are complete and ready for the related Contractor or District's Representative to carry out their work.

3.04 TRAINING

A. Upon final approval of the system by the District's Representative, representatives from the Specialty Sub-Contractor shall provide instruction to designated District staff or representatives in the safe use and maintenance of all systems specified herein.

B. Training sessions shall be scheduled in advance to the District staff or representatives' schedules.

C. Provide 3 hours of training, minimum.

END OF SECTION

SECTION 11 61 33

PRODUCTION RIGGING

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:
   1. The Rigging Contractor shall provide all items necessary for a complete, safe, fully functional system as described herein and as shown on drawings, including all tools, scaffolding, labor, and supervision, even though they may not be specifically enumerated.
   2. It shall be under the work in this section to mount and rig the multicable and install hang the connector strip receptacle boxes to battens. Production Lighting Control shall supply the multicable and connector strips.
   3. ~~Stage platform extension system.~~

1.02 RELATED SECTIONS

A. Coordinate with the following sections in carrying out this work:
   1. Division 01 – General Conditions
   2. Division 05 – Metals
   3. Floor and adjacent architectural finishes
   4. Section 11 61 83 – Production Lighting Control
   5. Section 26 05 35 – Production Systems Electrical Installation
   6. Section 27 41 16 – AV Systems
   7. Division 23 1313 – Wet Sprinkler Pipe System
   8. Division 23 – HVAC and Plumbing
   9. Division 26 – Electrical
   10. It shall be under the work in this section to coordinate established clearances to the general contractor and all others trades on the project and maintain necessary clearance requirements for all rigging components and clear zones.
      a. No conduit, raceway, sprinkler pipe, plumbing pipe, duct or any other part of the mechanical systems or any structural component shall be in a rigging clear zone or shall obstruct the operations of the rigging systems or shall be within 6” of a moving rigging component, including lift lines.

1.03 REFERENCES

A. Comply with all national, state and local regulations. In the event of conflict between these specifications and the applicable regulations, the more stringent shall govern.

B. Equipment shall be provided per the related trade and regulatory guidelines including but not limited to UL, CEC, IEEE, and all manufacturer’s recommendations and requirements. Contractor shall be responsible in the event that work under their control voids or jeopardizes manufacturers’ warranties.

C. Labor shall be provided per applicable labor regulations and practices.

1.04 DEFINITIONS

A. Refer to Div. 01 for definitions.

B. District Representative: For the scope in this Section, authorized personnel representing Solano Community College District and The Shalleck Collaborative, Inc., Theatre Consultants.

1.05 SYSTEM DESCRIPTION

A. The remodel of performing arts center for Solano Community College, facility includes a proscenium theatre, black box theatre, and support spaces.

B. The stage will include single purchase, guided counterweighted rigging pipe battens in quantities and configurations as shown on Drawings.

C. Selected battens shall be equipped with manually operating, bi-parting drapery traveler tracks.

1.06 SUBSTITUTIONS

A. All requests for substitutions from the specified materials, assemblies or related services shall be submitted for review by the District's Representative prior to bid. Substitution requests made after bid shall be neither reviewed nor accepted. Requests shall be made in accordance with Division 1 of the specifications, and in a timely fashion so as to not affect the project schedule in either case of the substitution being accepted or rejected.

B. Documentation for the substitution shall be submitted with supporting material and shall including the related information for the item as specified so that equivalence can be demonstrated. The burden of proof rests solely upon the Contractor. The District's Representative shall be the sole evaluator of the fitness of the substitution.

C. All expenses related to the substitution including, but not be limited to, all fees and expenses incurred in the evaluation of the substitution, and any effect on the costs and schedule of other trades whether or not the substitution is accepted, shall be borne by the Contractor.

1.07 SUBMITTALS

A. Submittals shall be made in a timely fashion so as to not affect the project schedule, and shall allow for adequate time for review and resubmittal. Partial submittals shall not be acceptable and shall be returned without review.

B. All submittals shall be made in electronic format.
   1. Provide Hard copies if requested by Architect.
   2. Files shall be in .pdf format, and submitted via email, direct FTP download, USB memory stick, CD or DVD.
      a. Third party website transfer services which require membership shall not be an acceptable means of transmittal.

C. All submittals shall be complete and submitted as a comprehensive package, including finish selection materials (if required) and samples (if requested), all materials listed in this section, including, but not limited to, all shop drawings, product data, relevant calculations (as required) and any other information required to review the systems. Incomplete submittals will be rejected without review.

D. All submittals shall be prepared for review by the CA Division of the State Architect as "deferred approval" items. As such complete shop drawings and relevant calculations shall be fully engineered and bear the stamp of a Structural Engineer licensed in the State of CA.

E. Submittals shall be reviewed and field dimensions verified prior to commencing acquisition for, and fabrication of the work in this section. All services and parts of the work in this section shall be verified through the submittal process. Approval does not relieve the Contractor of the responsibility of providing equipment in accordance with the specifications.

F. Shop Drawings:
   1. Submit component and installation drawings and schedules showing all information necessary to fully explain the design features, appearance, function, fabrication, installation, and use of system components in all phases of operation.
   2. Upon approval by the District's Representative, submit a dedicated set of drawings, product data and test and compliance certifications regarding all aspects of the proscenium fire safety curtain for review by building officials.
   3. Shop drawing plans and section shall be at ¼" scale minimum. Details shall be larger scales to fully explain the component.
   4. Provide clear space on all shop drawings for comments and approval stamps.
   5. Provide full scale, digital color proofs of each screen of rigging control equipment displays.

G. Product Data:
   1. Submit data sheets for all standard component parts, which shall include all information necessary to verify compliance with this Section.

2. Product data shall be properly identify each components intended use. Any options or variations must be clearly noted.

H. Samples:
1. Upon 14 days of request by the District's Representative, submit samples for review. Samples may include, but are not limited to:
   a. Black finished T-bar
   b. Tracks and hardware
   c. Lift line cable termination
   d. Selected drapery materials, 2 bolt yards minimum
   e. Sewing detail sampler demonstrating drapery top, side and bottom.

I. Record Documents:
1. At time of final acceptance, submit regulatory listings and certifications as required by prevailing building codes.
2. Within 30 days, submit three (2) paper copies and six (6) electronic copies , in PDF format, of "as built" submittals including shop drawings, product data, flame certifications and listings, operations and instructions manuals for all products provided, care and maintenance instructions, service line and online contacts and warranty documents. Electronic copies shall be submitted in CD or DVD rom or on a USB storage drive.

1.08 WARRANTY

A. Warranty shall provide coverage of material and product defects and assembly workmanship for a period of three years following the date of acceptance by the District.

B. Items under warranty shall be serviced to the satisfaction of the District with 14 days of notification to the Contractor, except for safety related items, which shall be corrected within 48 hours of notification.

1.09 MAINTENANCE SERVICE:

A. Provide maintenance service for a period of one (1) year after final acceptance of the installation. This service consists of at least one visit to the site for checking and adjusting of equipment. Perform the visit 11 months after the system has been accepted. Time of visit shall be coordinated with District and District Representative's schedule.

1.10 QUALITY ASSURANCE

A. Equipment in this Section shall be provided by specialty suppliers and manufacturers meeting the qualifications listed herein.

B. Specialty suppliers and the individuals responsible for installation in the field shall have been continuously engaged in the sales and integration of rigging equipment similar to that specified herein for a minimum of fifteen years, and shall have completed at least ten installations of this type and scope. The District's Representative shall be the final judge of the suitability of experience.

C. Specialty suppliers shall have at time of bid and continuously maintain throughout the project and warranty period a CA Specialty Contractor's license appropriate for the work in this Section: CA C-61 or D-48 or D34-A license as applicable.

D. Specialty suppliers shall maintain bonds in the amount required for the project.

E. Specialty manufacturers responsible for engineering and manufacturing shall have been continuously engaged in the engineering and manufacturing of rigging equipment similar to that specified herein for a minimum of fifteen years, and shall have provided equipment for at least fifty installations of this type and scope. The District's Representative shall be the final judge of the suitability of experience.

F. All equipment shall be UL listed and bear the appropriate labels.

1.11 DELIVERY, STORAGE AND HANDLING

A. Packing shall prevent damage to the equipment during transit. Costs to repair or replace all equipment damaged during the course of the contract services shall be borne by the Contractor.

B. Do not deliver materials in this Section until building is ready for installation. Contractor is responsible to properly sequence the work and to protect from damage during delivery, handling, storage and installation.

C. Contractor is responsible to coordinate and provide secure and protected storage as required for the execution of the Contract.

D. Draperies shall be packed and shipped in methods and containers that shall prevent crushing of finished goods.

1.12 PROJECT CONDITIONS

A. Defects in the field which may impact the work in this Section shall be reported to the District's Representative and corrected in accordance with the requirements of the applicable Section of work prior to commencement of the work in this Section.

B. Field Conditions: All bidders shall fully inform themselves of the conditions under which the work is to be performed. No additional compensation shall be allowed for any labor or item the bidder could have been fully informed of prior to the bid date.

1.13 MAINTENANCE

A. Provide maintenance stock of User-serviceable components within the system. Maintenance stock shall be packaged in labeled long term storage packaging and turned over to the District at time of system commissioning.

B. Maintenance stock shall include:
   1. For each type in the system provide:
      a. One master traveler track carrier
      b. Four intermediate traveler track carriers.
      c. Four shackles of each type in the system.
      d. Eight thimbles.
      e. Eight wire rope compression sleeves
      f. 1 qt. lubricant of all types included in the system.
      g. Four spare control fuses of each type

PART 2 - PRODUCTS

2.01 SPECIALTY MANUFACTURERS AND SUPPLIERS

A. Requirements: reference section 11061.1.10.

B. The following production systems specialty manufacturers may furnish equipment for the work in this section:

Pook Diemont & Ohl, Inc.
701 E. 132nd Street
Bronx, NY 10454
(718) 402-2677
Contact: Ted Ohl or Barbara Pook

J.R.Clancy
7041 Interstate Island Road
Syracuse, NY 13209
(800) 836-1885
Contact: Marilyn Larsen

H&H Hardware
2203 Edwards Avenue
South El Monte, CA 91733
(800) 221-9995
Contact: Chuck Hart or Allen McKune

Joël Theatrical
375 Watline Ave.
Mississauga, Ontario, L4Z 1P3 Canada
(905) 890-8802
Contact: Van Marineau

Thern Stage Equipment
5712 Industrial Park Road
Winona, MN 55987
(800) 553-2204
Contact: Dave Maxwell

C. The following production systems specialty suppliers may bid the work in this section:

Pook Diemont & Ohl, Inc.
701 E. 132nd Street
Bronx, NY 10454
(718) 402-2677
Contact: Ted Ohl or Barbara Pook

J.R.Clancy
7041 Interstate Island Road
Syracuse, NY 13209
(800) 836-1885
Contact: Marilyn Larsen

LVH Entertainment Systems
300 Irving Drive
Oxnard, CA 93030
(888) 313-2033
Contact: Mike Kunz

Stagecraft Industries, Inc.
5051 North Lagoon Ave
Portland, OR 97217
Tel. (503) 286-1600
Contact: Kevin Shetterly

D. All other manufacturers and installers must be approved prior to bid. Other contractors seeking acceptance must submit the following information at least 2 weeks prior to the bid opening date. Approval of contractors will be by addenda. Failure to submit any of the required information will automatically disqualify the contractor from consideration of approval.
   1. A listing of five equivalent installations including:
      a. Name, address and telephone number of College;
      b. Name, address and telephone number of Theatre Consultant;
      c. Scope of work.

2. A brief written description of the contractor's operation including facilities, financial capabilities, and experience of key personnel.
3. A statement from a bonding company agreeing to provide the required bonds in the amount required for the project.
4. Documentation necessary to show compliance with Quality Assurance, above

2.02 MATERIALS

A. All components supplied under this Section shall be new. Used or factory reconditioned components shall not be acceptable.

B. Materials shall conform to the following ASTM, ANSI and ESTA standard specifications:
1. A-36 – Specification for structural steel
2. A-47 – Specification for malleable iron casting
3. A-48 – Specification for gray iron casting
4. A-120 – Specification for black and hot-dipped zinc-coated (galvanized) steel pipe for ordinary use
5. B18.2.1&2 – Specification for square and hex bolts and nuts
6. B221-02 – Specification for aluminum alloy

C. Materials, devices, assemblies and installation shall meet or exceed applicable ESTA standards.

D. In order to establish minimum standards of safety, the following factors shall be used:
1. Cables and fittings – 8:1 Safety Factor
2. Cable bending ratio – Sheave tread diameter is 30 times cable diameter
3. Tread Pressures – 500 lbs. for cast iron; 900 lbs. for Nylatron; 1000 lbs. for steel
4. Maximum fleet angle – 1-1/2 degrees
5. Steel – Per AISC specifications
6. Bearings – Two times required load at full speed for 2000 hours
7. Bolts – Minimum SAE J429 Grade 5 (ISO R898 Class 8.8), zinc plated

E. All turnbuckles, clips, tracks, chains and other items of incidental hardware shall be furnished plated or painted black.

F. All nuts shall be new lock nuts or shall be provided with lockwashers. No exceptions.

G. Lift Lines:
1. Diameters as noted on drawings or as required, 7 x 19 construction, galvanized wire rope aircraft cable, with the following breaking strengths:
   a. 3/16" diameter: 4,200 lbs.
   b. 1/4" diameter: 7,000 lbs.
   c. 3/8" diameter: 14,400 lbs.
2. Damaged or deformed cable shall not be used. All wire rope rigging shall be installed so as to prevent abrasion of the wire rope against any part of the building construction or other equipment.

H. Sheaves:
1. Sheaves shall be of the following materials:
   a. ASTM A-48 Class 30 grey iron castings or steel, as required to for dead plus live load tread pressures.
2. Diameters shall be as shown on Drawings or as required to meet or exceed the wire rope manufacturer's minimum recommended D/d ratio, assumed herein to be 32x the lift line diameter.
3. Groove depths shall be sufficient to encompass fully the cables and ropes. Grooves shall have sloped sides (8 degree minimum) and conform to rope and cable manufacturers' standards for groove shape and tolerance.

4. Sheaves shall be supported by bearings and a machined steel shaft, which shall be keyed to one side plate to prevent rotation. Proper adjustment of the bearing shall be accomplished by means of a fine thread, self-locking nut on the opposite end of the shaft. Each sheave shall run plumb and true without chafing when rotated.

I. Block mounting clips:
   1. Blocks shall not be welded to structure and shall be clipped to building steel flanges.
   2. Flange mounting clips shall be bent plate min 5/16" thick, hot rolled steel, and min. 50KSI yield strength. The clip shall match the flange thickness of the beam to which the block is mounted. Bolts shall compress clips to base angles so there is full planar contact between the clip face and the beam flange. Bolted clips shall be oriented away from the result force on the blocks.

J. Motor Hoists – General
   1. All winches shall be supported by a sturdy steel base, holding the elements of the winch in proper alignment.

K. Gearmotors and Primary Brakes:
   1. Motors, primary brakes, and gearboxes shall be an integrated unit, with the first stage pinion gear mounted directly on the motor's armature shaft. No couplings will be permitted between the motor, primary brake and gear reducer. Exceptions will be permitted only when special gearing or torque requirements cannot be met with an integrated unit.
   2. Motors shall be totally enclosed fan cooled (TEFC). The motor shall have a minimum AGMA service factor of 1.0 for constant operation.
   3. The gear reducer shall be a combination Helical/Worm reducer. The gear case shall be cast iron for protection against shock damage. The output shaft(s) shall have double lip oil seals to prevent leaks. The gearing service factor shall be a minimum of 1.0 with a mechanical strength service factor of 1.25.
   4. Primary Brake:
      a. For motors of 20 HP or less the primary brake shall be an integral part of the motor, mounted directly on the motor's armature shaft. No couplings will be permitted between the motor and primary brake.
      b. Brakes shall fail to a safe condition ("fail safe") in case of power failure. Brakes shall be spring applied, direct acting, electrically released by energizing the coil simultaneously with the motor winding, and equipped with a manual release. The brake shall an AC / DC electro-magnetic unit with a minimum retarding torque equal to 200% of motor full load torque.

L. Shafts, Keys, and Couplings:
   1. Shafts shall be designed to accommodate the applied loads (including shock and bending loads) in accordance with ANSI B 106.1M, "Design of Transmission Shafting,"
   2. All connections shall be keyed, using keys designed to accommodate the applied loads. Keys shall be in accordance with ANSI B 17.1, "Keys and Keyseats".
   3. Couplings shall be chosen to accommodate the applied loads, including shock and bending loads. Couplings shall accommodate the possible parallel and angular misalignments caused during manufacturing, assembly, and installation, as well as by structural tolerances and structural or equipment deflections.
   4. In the case of line shaft hoists, the couplings in the shafts between the drums shall be universal joints in order to compensate for misalignment and deflections.
   5. Only couplings made of steel and with steel to steel contact surfaces shall be used.

M. Bearings:
   1. Bearings shall be selected to accommodate the applied loads and speeds.
   2. The use of self-aligning flange bearings is preferred. The use of other bearing types shall be in accordance with good engineering practice. Pillow blocks may be used only where they are subject to compressive forces only.

N. Helical Drums:
   1. Provide cast iron or steel drums designed to properly support the required loads.
   2. Each helical drum shall be supported by a rigid steel base, holding the elements of the drum assembly in proper alignment.
   3. Where directly adjacent to a motor, drum shall be directly connected to the output shaft of the integrated motor - brake - gear reducer unit and the outboard end of the drum shall be supported by a self aligning flange bearing.
   4. Where connected to shafting, both ends of each drum shall be supported by a self-aligning flange bearing mounted in a steel plate that fully captures the drum shaft.
   5. Side plates shall hold a minimum of three keepers designed to prevent cross winding of the lift lines on the drums.
   6. Drums shall be helically grooved to accept a single layer of cable accommodating the entire travel distance PLUS three dead wraps PLUS two contingency wraps.
   7. The drum diameter shall meet or exceed the wire rope manufacturer's minimum recommended D/d ratio, assumed herein to be 32x the lift line diameter.
   8. Cables shall enter the drum at a 45 degree angle and shall be retained by a Nicopress stop sleeve.

O. Direct Struck Limit Switches
   1. Direct struck limit switches shall be heavy duty, lever operated rotary head units, and shall have positive opening contacts.
   2. Direct struck limit switches shall be Telmecanique ZCKJ series or Allen Bradley Bulletin 802T.
   3. Mount limit switch strike plate assembly to a Unistrut assembly to allow for 2' minimum of vertical adjustment.

P. Fabrication:
   1. The mechanical fabrication and workmanship shall incorporate best practices for good fit and finish. There shall be no burrs or sharp edges to cause a hazard nor shall there be any sharp corners accessible to personnel.
   2. All moving parts shall have specified tolerances.
   3. All equipment shall be built and installed to facilitate future maintenance and replacement.

Q. Finishes:
   1. Paint shall be the manufacturer's standard finish and color except as noted.
   2. All turnbuckles, clips, tracks, chains and other items of incidental hardware shall be furnished plated or painted black.

R. Recommended Working Load: This specification calls for minimum recommended working loads for hardware. The manufacturer's recommended working load is the maximum load which the manufacturer recommends be applied to properly installed, maintained, and operated new equipment. Manufacturer's recommended working loads shall be determined by calculations by a Licensed Professional Engineer and destructive testing by an independent testing laboratory. These calculations and reports shall be available for review.

2.03 COUNTERWEIGHT SETS

A. System must fit into existing building conditions. The space between loading gallery and wall and stage door and wall are very tight. See drawings.

B. Counterweight sets must meet DSA requirements.

C. It shall be under the work in this section to mount and rig the multicable and install and hang the connector strip receptacle boxes to battens. Production Lighting Control shall supply the multicable and connector strips. Production Rigging shall coordinate the length of multicable required for the linesets and inform Production lighting contractor of the required length to make a function lineset. The mulicable shall not pull the lineset out of alignment with the other linesets.

D. Guide System:
   1. The complete guide system shall consist of vertical flanges, located to receive sets on centers as shown on drawings. The T-bar guides shall be 2" deep x 2" wide x 3/16" black painted steel members.
   2. Guides shall be held in place by clips on each leg of the guide. The clips are bolted to horizontal angles. The clips and guide shall be formed so that they lock together in accurate alignment.
   3. Horizontal wall battens shall be located per drawings, Wall battens shall be unistrut anchored to the wall.
   4. Wall battens shall hold in place wall knees, steel plate formed from 24" x1/4" steel, with factory punched slots to aid in alignment made necessary by irregularities in the wall. Wall knees shall be bolted to wall batten with ½" bolts as shown on the drawings. Wall knees shall be welded to the wall batten after final commissioning and approvals have been given. Wall knees shall be welded to the backing girts provided under structural steel contract.
   5. There shall be a top stop batten, a bottom stop batten and a floor batten, all of which shall be made of 2" x 2" x 1/4" steel angle bolted to each A-guide with 3/8" bolts. The top and bottom stop battens shall each have a 2" x 2" hardwood and 3/8" thick rubber bump stop securely bolted to the stop battens by 3/8" bolts every three sets. Rubber shall be continuously attached to the hardwood with mastic and screws. Bump stops shall be placed to maximize travel.
      a. Single set bump stops shall be installed where required to limit shell batten travel within the limits shell ceiling height.
   6. All other members of the guide system shall be assembled using 5/16" hex head bolts, lock nuts and washers.
   7. All components of the guide system shall be finished flat black. No exceptions.
   8. Guides shall be installed precisely and plumb, and splices shall align. Minor inconsistencies in the guide flanges shall be ground smooth.

E. 10" Tension Floor Block:
   1. The cast iron sheave shall have a 10" outside diameter, and shall be an ASTM A48 Class 30 grey iron casting or steel, with a machined groove for a ¾" rope.
   2. The sheave shall be equipped with a 17 mm diameter machined steel shaft and two sealed, precision ball bearings.
   3. Side plates shall be a minimum of 3/16" steel plate.
   4. The block shall have a minimum weight of 40 lbs. to properly tension the hand line.
   5. A toe kick plate shall be provided to permit adjustment of the rope tension.
   6. The floor block shall be held in place and guided in the A-bar guides by two guide shoe assemblies, each consisting of two UHMW guides, one UHMW spacer, and 5/16" thick steel plates. Each guide shall be secured to the housing by means of two 3/8" hex head bolts and nuts.
      a. Floor block shall be mounted at an angle to the A-bar guides. Floor block guides shall have welded assembly spacer so floor block will be parallel with plaster line. Floor blocks are not perpendicular to the A-bar.

F. Counterweight Arbors:
   1. Arbor shall be lengths as shown on Drawings.
   2. The arbor top shall be a 1/4" steel plate formed into a channel with 3" sides, punched to receive 8 cables. A bolt and spacer shall tie the legs together and provide a tie-off point for the hand line. The front of the arbor top shall carry a 1-½" high white set number.
   3. The arbor bottom shall be of similar construction, with counterweight rests to keep the weights from resting on the inner arbor rod nuts.

4. The top and bottom of the arbor shall be tied together by means of two 3/4" steel arbor rods and a continuous 3/8" x 3" steel back plate. The arbor rods shall have three nuts at each end, the outermost being a lock nut. One rod lock nut at the bottom shall be a forged eye for use as a tie off for a capstan winch.
5. Guide assemblies (two minimum) shall be provided, each comprised of UHMW plates between full width steel backup plates, secured to the arbor by means of two 3/8" hex head bolts and lock nuts.
    a. UHMW spacers shall be sized 1/16” more than A-bar flange thickness. Guides shall be as wide as possible to provide maximum engagement on T-bars.
6. Provide 12-gauge spreader plates (two minimum) on arbor rods so they can be spaced between counterweights on 2 foot centers. Provide a retaining collar on each rod, each with a ¼” screw knob. The front retaining collar shall be welded to the top spreader plate.
7. Provide labels on the steel back plates showing the proper locations for the spreader plates.
8. Provide lineset number at top front of arbor.
9. Arbors shall be finished flat black.
10. Manufacture may elect to supply “brickhouse” arbor, with final approval by college reprehensive.
11. Arbor shall fit into the existing building space allowed.

G. Counterweight:
1. Counterweights shall be steel plate 1” thick x 13-3/4" long and width 2” narrower than the set centers, with U shaped cutouts for the arbor rods. Counterweights shall be flame or laser cut steel. Each piece shall be free from slag and sharp edges. The thickness of counterweights shall not vary more than 1/8" from nominal dimension.
2. Weight shall be primed grey with rust inhibitor.
    a. Dead load weight shall be painted yellow on the edges once installed.
3. Opposite corners shall be notched for ease of handling. Pipe weight dead load shall be stacked with weights alternating to provide finger holds when loading arbors.
4. Provide 35,000 lbs. of live load counterweight PLUS the dead load of pipe weight of all installed sets. Provide an additional 7,000 lbs of live load counterweight for the orchestra shell ceilings.
5. Load all sets for balance at the midpoint of travel and band pipe weight dead load stack with 2 mechanically locked steel straps to arbor.
6. Deliver and distribute live load counterweight in safe and neat stacks at follows:
    a. 10% to the rigging side fly gallery.
    b. 90% to the loading gallery.

H. Operating Line:
1. Operating line shall employ a 3-strand composite construction combining filament and staple/spun polyester wrapped around fibrillated polyolefin.
2. The rope shall hold knots well, be easily spliced and be dense enough to allow it to be clamped in a rope lock without damage. Rope shall not be subject to rotting, mildew, or moisture damage nor shall its length be affected by changes in humidity.
3. Tape ends before cutting. Attach to arbor around rope thimble with two half hitches or bowline and tape end to standing line with rigging tape.
4. Adjust length so tension block is at mid travel at time of checkout.
5. Operating lines shall be Multiline II rope or SureGrip rope as provided by J. R. Clancy, standard white.

I. Locking Rails:
1. Locking rails shall be engineered and installed to resist 350 lbs./ft. upward or downward loads.
2. The locking rail shall be 3” x 3” x 1/4” minimum rectangular steel tube drilled to receive rope locks.

3. Drill 1-1/4” diameter holes for belaying pins at approximately 4’-0” o.c. midway between ropelocks.
4. The onstage face of the rail shall have set numbers painted in 2” high white characters.
5. The top of the rail shall have a continuous 2” high white write-on Plexiglas strip fastened with rivets or self tapping screws. Interrupt at lock pipe flat bars.
6. Lock pipe assembly:
   a. Provide ¼” x 2” steel flat bars with ½” radius rounded top corners and stacked pairs of 1-1/4” inside diameter holes on +/-6’ centers with shaft length. Bars shall allow 1” diameter pipes to be inserted to lock all the rope locks open or closed.
   b. Provide with two complete sets of 1” diameter pipes with a stop welded to one end and holes drilled to accept a pad lock at the other end. Deliver fly gallery lock pipes to fly gallery.
7. Stanchions made from 3” x 3” steel tube and shall be provided on 4 foot maximum centers.
8. At floor level locking rail provide continuous 3” x 3” horizontal engaging tube between stanchions with 1-1/2” clear to finished stage floor for capstan winch.
9. At fly gallery locking rail, provide expanded metal mesh between the stanchions from the top of gallery structure up to 1’-0” below the bottom of the locking rail. The top edge of the expanded metal shall be captured in steel angle for safety and reinforcement.
10. Rails shall be finished flat black.
11. Provide padlocks for both ends of the lock bars all keyed the same. Provide 6 sets of keys.
12. Provide barrier at any gap between rope locks greater than 20”. Barrier shall be bolted to locking rail or attached in a way so that it is removable for installation of future line sets as identified on drawings.
13. Provide two complete locking rail assemblies as shown on Drawings designed to fit into the existing building.

J. Rope Locks:
1. The rope lock shall consist of an ASTM A536 ductile iron housing, cams and handle. The body of the rope lock shall accommodate a padlock, securing the handle in the closed position.
2. There shall be a rubber bumper in the housing to silence the handle when it is opened. Replace standard bumper with larger bumper to keep the handle from hitting the steel tube of the lock rail.
3. Rope lock shall be configured so it will not open if the set is out of balance by 50 lbs. in either direction, and the balance or out of balance condition shall be clearly identifiable.
4. Adjustment for rope shall be from 5/8" to 1" by means of a ½" nylon tipped, socket head adjustment screw with lock nut at the rear of the housing.
5. The handle shall be 9" long with a vinyl dip coating. The handle shall be installed so that it passes two degrees past vertical to lock the hand line. The cam at the lower end of the handle shall be equipped with a steel roller to eliminate sliding friction and promote ease of use.
6. A vinyl dip coated, oval, welded steel ring shall be provided as a safety lock.
7. The rope lock shall mount to the locking rail with four 3/8" hex bolts and lock nuts.
8. Provide rope locks for the complete quantity of A-bar centers as shown on drawings, whether or not every set is installed.
9. Rope locks shall be SureLock as provided by J. R. Clancy.

K. Outrigger Brackets:
1. Angle iron outrigger brackets shall be made of 3/16" x 1- 3/4" x 1-3/4" angle and spaced at the purlin points. The brackets shall be attached to the wall. The brackets shall include clamps for attaching the batten.

2. The outrigger batten shall be made from 1-1/2" I.D. (1.9” Outside diameter), schedule 40 pipe extending the full length of the locking rail. Specifications are the same as other battens.
3. Rails shall be finished flat black.
4. Provide complete outrigger bracket assemblies as shown on drawings at floor level.

L. Index Light:
1. Each index light unit shall consist of a sheet steel housing containing LED lights and wired on two, alternating, separate circuits with leads and junction box at either end. One circuit shall have warm white LEDs (~3000K color temperature matching tungsten light) and one shall have deep blue LEDs..
2. Units shall be constructed so as to light the locking rail and prevent light from spilling on stage. The exterior of the index strip light shall be painted a matte black, the interior shall be white.
3. Units shall mount to outrigger brackets or outrigger pipe and shall not sit proud of the outrigger pipe on the stage center side.
4. Furnish each locking rail length with one control station which can control each circuit individually. Coordinate and deliver to Div. 26 Contractor for connection and installation.
   a. Blue circuit shall be dimmable.
   b. White circuit shall be or dimmable.
5. Provide two continuous lengths and install at the floor level and fly gallery.
6. Provide Dimmable LED “index strip light”.
   a. Fixtures must be capable of dimming to 5% of lumen output, measurable when standing at the locking rail.
   b. Lumen output at locking rail must be 75 foot candles minimum on white circuit and 20 foot candles minimum on blue circuit when at full brightness.

M. Head Blocks:
1. The sheave shall be an ASTM A48 Class 30 grey iron casting or steel with an outer diameter as shown on drawings. The machined rope and cable grooves shall have equal pitch diameters. The sheave shall be equipped with a 1” (for 12” diameter sheaves) or 1-1/2” (for 16” diameter sheaves) diameter machined steel shaft and two tapered roller bearings.
2. Base angles shall be a minimum 2" x 1-½" x 1/4" angle with the short leg turned in. The turned in leg shall be notched to allow clear passage of all cables.
3. Side plates shall be a minimum of 10-gauge (for 12” diameter sheaves) or 7-gauge (for 16” diameter sheaves) steel, and shall fully enclose the sheave. Side plates shall be bolted and welded to the base angles for extra strength. Side plates shall be shaped to overlap the flanges of the head block beams. There shall be a minimum of six bolts with spacers between the side plates, four of which prevent cables from escaping the sheave grooves.
4. The block and associated mounting hardware shall have a recommended working load of at least 3,000 lbs. (for 12” diameter sheaves) or 3,600 lbs. (for 16” diameter sheaves).
5. Block mounting clip per standard specification listed in Section 11061.2.02I. Clips will need to bolt to base angles at an angle to keep head block parallel with plasterline.

N. Loft Blocks:
1. The sheave shall have an outside diameter as shown on drawings, and shall be an ASTM A48 Class 30 grey iron casting or steel, with machined grooves. The sheave shall be equipped with a 17 mm minimum diameter machined steel shaft and two sealed, precision ball bearings.
   a. All loft blocks shall be single line sheaves.
   b. Exception: multicable management lift line locations shall have two grooves.
   c. Exception: short line loft block shall be multi-grooved to carry all lines.
2. Base angles shall be a minimum 1-½" x 1-½" x 3/16" angle.

3. Side plates shall be a minimum of 10-gauge steel, and shall fully enclose the sheave. Side plates shall be bolted to the base angles. There shall be a minimum of seven ¼" bolts with spacers between the side plates, four of which prevent cables from escaping the sheave grooves.
4. The block and associated mounting hardware shall have a recommended working load of at least 500 lbs. minimum for 8-1/2" dia, 700lbs. minimum for 12" dia, and 1400lbs minimum for 16".
5. Block mounting clip per standard specification listed above.

O. Lift Cables:
1. All lift cables shall be diameters as shown on drawings and as specified above.
2. Batten terminations shall be:
   a. Pipe clamp
   b. Turnbuckle
   c. Wire rope thimble
   d. One compression sleeves
   e. Heavy black heat shrink tubing over cable ends
3. Arbor terminations shall be:
   a. Wire rope thimble
   b. One compression sleeves
   c. Heavy black heat shrink tubing over cable ends
   d. Forged and galvanized shackle rated for full working load plus factor of safety, with cotter pin on inward side.
4. Fittings as specified below.
5. Adjust pipes so the pipe is aligned straight.

P. Cable Fittings:
1. Swaged sleeve fittings shall be copper Nicopress. Swaged fittings shall be installed per the fitting manufacturer's instructions, using the appropriate tools, and checked with a "go/no-go gauge".
2. Eyes shall be formed over galvanized wire rope thimbles of correct sizes.

Q. Turnbuckles:
1. Cotter pin jaw-jaw with 6" throw, drop forged and galvanized. Turnbuckles shall be moused after adjustment to prevent loosening.

R. Pipe Clamps:
1. Pipe clamps shall be made of two strips of 12 Ga. by 2" hot rolled steel formed to encompass and clamp the pipe batten to prevent its rotation. Corners shall be rounded.
2. There shall be a 3/8" x 1" hex bolt with lock nut above and below the batten. A 5/8" hole in the top of each clamp half allows the attachment of cable, chain, or other fittings.

S. Multicable Management:
1. For lighting multicables or cable bundles provide cable cradles, blocks and wire rope terminations as indicated on the Drawings.
2. It is under the work in this section to mount lighting cable extension drops to multicable management system and to mount electrical devices to battens.
   a. Cable and batten mounted devices shall be provided under section 116183 Production Lighting.
   b. Coordinate proper lengths to maximize high trim and install multicable on cable cradles as indicated.
   c. Mount lighting receptacle devices to battens as shown on PL drawings and shop drawings.
   d. Electrical terminations to gridiron and batten terminal boxes under Division 26 Electrical work.
3. Cable cradles to be securely bolted to 1/8" thick steel strap hangers on each side of the assembly.

4. Cable cradle strap to include guides of UHMW split blocks drilled vertically for passage of the adjacent lift line at the split. Halves shall be fastened together with countersunk nuts and bolts for ease of installation and removal.
5. Lift line attachment at single purchase cable cradle forged eye and gridiron dead off:
   a. Wire rope thimble
   b. Two compression sleeves
   c. Black heat shrink tubing over cable ends
   d. Forged and galvanized cotter pin shackle rated for full working load plus factor of safety.
6. Provide 8-1/2" diameter sheave with same specifications as for loft blocks, attached to double purchase cable cradle assembly. Lift line to pass through sheave and attach to gridiron.
7. Dead-off at the grid iron shall include an assembly of a 5” yellow painted backing channel with forged eye bolt. Assembly to be J-bolted to the gridiron grating.
8. Provide mounting hardware at rigging beams for multicable strain relief as shown on the Drawings.

T. Two-Pipe Truss Battens:
1. Battens shall be two pipe truss battens as listed on batten schedule in the drawings.
2. All battens shall be welded trusses of two 1-1/2" nominal diameter, schedule 40 black pipes in lengths as shown on the drawings. Space pipes apart with 1-3/4” square mech tube steel, coped and welded, located a maximum of 5 feet apart and welded between the pipes.
   a. There shall be two pieces of square tube, spaced 6” apart, at every lift line termination.
   b. There shall be intermediate square tubes, spaced as required to maintain minimum distance of 5’-0”.
   c. There shall not be square tube on the center line.
3. All edges shall be de-burred.
4. All joints shall be spliced with tight fitting mech tube sleeves held by two 3/8" hex bolts and lock nuts on each side of the joint. Hex bolts shall all be parallel and installed vertically.
5. Battens shall be finished with a suitable rust resistant finish, black.
6. The center of each counterweight pipe batten shall be marked with a 1” wide white stripe enamel painted around the full circumference.
7. Safety yellow end caps at each end, all battens.
   a. 2-1/2” diameter 16GA metal end cap with 1” high minimum black numbers for lineset identification. Cap shall be tack welded to mounting collar. Collar shall be mounted to batten with 1/4” hex head bolt. Numbers shall be on bottom of end cap, visible from the floor when batten is flown out, and on side of end cap. End cap shall be painted black with side face painted yellow. Numbers shall be white on bottom and black on side.
8. The upstage side of each lower pipe shall be marked with 1/4” wide white stripe enamel pained on the upstage side of the pipe only at one foot intervals starting from the center mark going both stage right and stage left. Next to ever other one foot intervals mark the distance from center line starting at 2 feet.
9. Pipes shall be enamel painted flat black.

U. Three-Pipe Truss Battens:
1. For Orchestra Enclosure ceiling support battens, provide trusses as specified above for two-pipe truss battens except with three pipes in configuration as shown on drawings.

V. Counterweight System Labeling:
1. The linesets shall be labeled with the designations indicated on the Drawings in the following locations:
   a. The onstage face of each locking rail.
   b. The upper offstage railing of the loading gallery.

c. The onstage web of the counterweight headblock beam, 6” tall numbers.
d. The grid walking surface channel, next to second, center and far loft blocks.
e. Pipe ends, as specified above.
f. Arbors tops, as specified above.

2. Labels shall be 2” high contrasting color lettering painted with enamel paint on structure by a professional sign painter.

W. System Signage:
1. Provide signage indicating system load data and warnings on downstage wall for each of the following locations:
a. Rigged side stage level.
b. Rigged side fly gallery level.
c. Loading gallery level.
2. System data shall include:
a. Overall live load capacity of general purpose battens.
b. Concentrated live load capacity mid way between pickups on general purpose battens.
c. Weight per each counterweight.
d. Weight per foot of counterweight.
e. System operation safety advisory.
f. Load capacities of tracked multi cable pick-up rigging points
g. Rigging Contractor contact information.
3. Signs shall meet ANSI Z535 standard for warning signs.
4. Mount on wall in plain view.

X. Mobile Capstan Winch:
1. Provide 1 capstan motorized traction drum winch.
2. Hoist components shall be per standard specification list above.
3. Unit to be self contained including rope line diverter block, motor, drum, starter, up/down foot pedal controls power cord. Sled shall include swivel and fixed casters, front lip angle to engage tube on locking rail stanchions, horn cleat, push handle and power cord coil rack.
4. Pull capacity shall be 1,500 lbs. Power shall be 120/208VAC.
5. Provide with 60'-0" extension cord with twistlock male connector. Coordinate and provide female receptacle with faceplate for installation under Division 26 Electrical work.
6. Provide with 150’ of white 1” diameter Multi-Line II or SureGrip rope as provided by J. R. Clancy, standard white, with forged safety hook and whipped and dipped ends.

2.04 SAG BARS

A. Provide liftline sag bars as shown on the drawings
1. Top of the sag bars shall be 1/2” thick UHMW flush countersunk head bolted to the horizontal steel tube every 18” and at all ends.
2. Sag bars shall be constructed from 1-1/2” square tube.
3. Provide vertical frames to support the horizontal tube every 4 feet and at ends.
4. Attach sag bar frames to the grid iron with J-bolts.

2.05 SIDE TAB BATTENS

A. Side tab battens shall be as specified above for Counterweight Sets

B. Mule Blocks
1. Provide mule blocks as shown on drawings.
2. Mule blocks shall be as specified above for multi-grove loft blocks.
3. Mounting structure shall hold blocks at proper angle to accept lift lines from head block without more than 1 degree of fleet angle.

C. Provide multicable management as specified above.

2.06 STRAIGHT LIFT FIRE CURTAIN

A. General Description:
1. Furnish and install a manually operated straight lift type, automatically closing fire safety curtain for the proscenium opening indicated on the drawings. Curtain shall comply with all requirements of the current edition of NFPA 80 or subsequent applicable code.
   a. The curtain shall be arranged to intercept fire and smoke and prevent glow from severe fire on the stage from showing on the auditorium side for at least thirty (30) minutes.
   b. The curtain shall close by gravity due to over-balance of the curtain as specified below. Emergency closing must occur in less than thirty seconds when the fire line is manually released or fusible links separate.
   c. Time of emergency deployment shall be per code.
   d. New track shall be installed.
2. Provide building attachment backing.
   a. As required
3. Fire Safety Curtain material:
   a. The curtain shall be fabricated from tightly woven non-wire inserted, non-asbestos, non-carcinogenic silica based cloth, 12 x 7 weave of .070” thickness weighing at least 40 ounces per square yard. The curtain shall be listed and approved by the State of California Fire Marshall and shall bear a certification label from a nationally recognized listing agency. All strips of fabric shall be in continuous lengths running the full height of the curtain. There shall be no horizontal seams. Each seam shall be sewn with two lines of stitching using fiberglass thread. Top and bottom pockets shall be 6". The bottom pocket shall be equipped with a 3" yield pad filled with fire curtain material.
   b. Acceptable products: Zetex 1210-ZP or equal.
4. Sides of curtain shall have roller guides every 18", securely fastened to a side hem with at least three bolts or rivets through a continuous sheet metal vertical reinforcement assembly per code. Each guide shall have four steel wheels, which properly engage the track in the smoke pocket.
5. Top Smoke Seal:
   a. Provide a smoke seal consisting of a triple layer of folded fabric fastened above the proscenium with a mounting clamp so it rubs the curtain and seals the top of the opening.
   b. The fabric shall be Zetex 800 or equal cloth with a minimum weight of 27 oz. per square yard.
6. Smoke Pockets and Guide Track:
   a. Provide smoke pockets to extend from the stage floor to the height specified in the drawings and per code. Pockets shall consist of channel and ¼” steel plate which shall be bolted to the channels with round head bolts on 2’-0” centers. A 14 ga. steel channel track, entirely enclosed except for a slot in the side, shall be bolted to the side of the smoke pocket to carry the guide rollers. Channels shall be anchored to the walls on 4'-0" centers.
7. Battens
   a. Battens shall be made of 2" I.D., schedule 40 black iron pipe. Fabrication shall be as for standard sets.
8. Lift Cables:
   a. The curtain lift cables shall be 1/4" diameter as specified in section above. The curtain end of each cable shall be attached to the batten using a 3/8" x 6" turnbuckle and pipe clamp.
   b. Cables shall be terminated with corresponding cable thimbles and Nicopress fitting at each end.
9. Safety Chains:

a. Supply one more safety chain than the number of lift cables. 1/4" proof coil chains shall be located between lift cables except at the ends where chains shall be 12" or less from the end of the batten. Chains shall be attached to the top of the curtain with pipe clamps around the top of the batten and screw pin shackles moused with wire to prevent pin unscrewing. (cotter pin shackles are not acceptable) The other end shall be appropriately attached to the strong back channels via a angle iron with forged eye bolt and steel clips.

10. Line Shaft Fire Curtain Winch:
    a. The winch shall consist of a gearmotor assembly, a drum for each lift line, and interconnecting shafts. The gearmotor assembly shall include a brake release and an adjustable hydraulic speed regulator, allowing the curtain to close at a controlled rate of speed when the brake is released by the activation of the fire line. The winch shall have a lifting capacity as required for the curtain assembly and when engaged shall operate at a rate of 25 feet per minute.
11. Gearmotor:
    a. Per standard specification see above.
12. Drums:
    a. Per standard specification.
    b. Alternate drums shall be threaded in opposite directions, to keep the batten from “walking” as its elevation changes.
    c. Drums shall be interconnected by shafts with universal joints at each end.
13. Shafts:
    a. Per standard specification.
14. Rotary Limit Switches:
    a. Rotary limit switch assemblies shall have two or four independently adjustable switch/cam sets as required. Cams shall be driven by a geared assembly.
    b. Switches shall have snap acting contacts.
    c. Rotary limit switches shall be driven directly or by roller chains. If roller chains are used, sprockets shall be pinned to prevent slipping and sized for maximum usable rotation of switch cams. The input shaft and drive chain shall be fully guarded.
    d. Switches shall be mounted to the winch base to allow for easy adjustment of the switch settings.
15. Direct Struck Limit Switch:
    a. A hard limit switch shall be the ultimate indicator of curtain upward overtravel to prevent any carriers from exiting the guide tracks. A hard limit switch shall be mounted on 2 foot length of unistrut for adjustment, and shall be engaged by the top of the fire curtain or an armature mounted at the top of the fire curtain.
    b. Limit switch shall be per standard specification.
    c. In the event an overtravel limit is engaged, the appropriate “primary limit failure” fault indicator shall illuminate.
16. Fixed Speed Starter:
    a. The traction drive winch shall be controlled by a UL 580E compliant, full voltage, self protected, reversing starter. Enclosure shall be NEMA 12 with hinged, latching cover. The interior of the starter cabinet shall be “touch safe” per IEC 204-1 “Protection against direct contact” rules.
    b. The NEMA/IEC, magnetically operated, mechanically and electrically interlocked, reversing starter shall be sized to match the winch motor horsepower and shall be rated for plugging and jogging. Units shall incorporate UL580E Type 2, non-welding, positive break contactors.
    c. Overcurrent protection shall be provided by an IEC Class 10 overload. Short circuit protection shall be provided by a circuit breaker.

d. Starters shall be wired so that operation of the normal end of travel limit switches shall only allow movement away from the limit switch. Operation of an overtravel limit switch shall open the line contactor, and will not allow further movement in either direction. A spring return toggle switch shall be housed inside the starter cabinet to allow override of the overtravel limits for resetting purposes.

17. Control Stations:
    a. Two control stations shall be provided one in wall mounted NEMA 12 enclosures. Each shall contain hold to operate (dead man) Up and Down pushbuttons, a mushroom head emergency stop pushbutton.
    b. One control station shall be wall mounted stage right at stage level. This panel shall also include LED's indicating full travel positions (green) and "primary limit failure" (red). The "primary limit failure" indicators shall illuminate when the ultimate limits are reached on the rotary or hard limit switches. Grid Irion station shall be a stand-alone, surface mounted enclosure mounted near the motor.
18. Fire Line System:
    a. The manual fire line release system shall consist of a 1/8" diameter wire rope, with fusible links rated at 165ºF spaced a maximum 15 feet apart. One or more fusible links shall be spaced no more than 7.5 feet vertical above the finished stage floor.
    b. The fire line shall cross the top of the stage side of the proscenium within 12 inches of the roof support structure.
    c. Provide single side mounting and swivel pulleys to provide a fair lead to all connections. Provide captured fire line tension weight with sheave.
    d. Provide two fire line release devices with red protective enclosures and signage. Signs shall read in English, and Spanish:

       IN CASE OF FIRE
       PULL RING
       TO LOWER FIRE CURTAIN
       AFTER FIRE CURTAIN IS DOWN
       RELEASE SMOKE VENTS

    e. or equivalent to describe the action required on the specific release device.
    f. Arrows shall point to release devices.
    g. Signs shall have 1" high minimum red characters on a white background and shall be professional made signs on wood or plastic. Painted signs shall be protected with a clear Plexiglas cover.
    h. Signs shall be mounted above fire line releases and not behind stage draperies.
    i. Size shall be coordinated with surrounding equipment.
19. Electrical Fire Line Release rate of rise:
    a. The fire curtain shall be equipped with an electro-mechanical fire line release mechanism which is activated by a rate of rise heat detector. A switch shall be mounted in the release mechanism enclosure for testing system operation. Activation of release mechanism shall release tension in the fire line, which, in turn, releases the winch break and the fire curtain to close in the normal manner. The release unit shall incorporate three pulleys to permit its attachment to the fireline at any point and to help prevent accidental release.
    b. The release shall contain an integral battery and charger to provide emergency power during power interruptions. The release shall operate from a 120 VAC power source.
    c. The electrical fire line release shall be UL Listed.

2.07 SCENE SHOP BATTEN

A. Provide rigging system for the hoisting of battens. Unit shall have a hoisting capacity of 2000#, plus factors of safety as specified herein.
    1. Battens will be motorized winch operated with wire guide tracked clue.

2. Coordinate with building steel for proper installation.

B. Batten
   1. battens shall be as specified above for Counterweight Sets
      a. except shall only be a single pipe batten.

C. Guided Clew:
   1. The guided clew shall be a 1/4" thick steel plate with holes for the number of cables in the system and one drive line. Two guide spools shall be provided for ¼" diameter guide cables.
   2. The guided clew shall have a recommended working load of at least 1,500 lbs.

D. Loft blocks and head blocks shall be as specified above.
   1. Batten terminations shall be as specified above.
   2. Except provide batten trim clamp:
      a. JR Clancy 026-23x1.5 or equal.

E. Motorized winch
   1. Per hoist standard specifications above.
   2. Up / Down pushbutton station.
   3. 2000 lb. lifting capacity; 20 fpm lifting speed.
   4. Gearbox with 2 hp electric motor.
   5. Integrated brake motor for reliability.
   6. Direct acting brake is spring applied and electrically released.
   7. Provide hard physically actuated wall mounted limit switches for end of travel and overtravel.
   8. Two 5/16" diameter drive lines
   9. "Push to run" control stations require that a user be at the control station for the hoist to operate.
   10. Key operated switch
   11. D:d ratio of 18:1.
   12. Pushbutton control station with key switch.
   13. Operates on 208 VAC 3 phase.
   14. Provide
      a. JR Clancy Stagehand plus utility hoist
      b. Provide Columbus Mckinnon Corporation Entertainment Technology SW-E Meteor winch
      c. or equal.

2.08 FRONT OF HOUSE LIGHTING BATTEN

A. Line Shaft batten Winch:
   1. The winch shall consist of a gearmotor assembly, a drum for each lift line, and interconnecting shafts. The gearmotor assembly shall include an electric released brake.
   2. The winch shall have a lifting capacity of 2500 lbs.
   3. Shall operate at a rate of 25 feet per minute.
   4. Layout of drums shall avoid existing catwalk wall braces.

B. Double pipe batten
   1. Shall be same as specified above for Counterweight Sets

C. Gearmotor:
   1. Per standard specification see above.

D. Drums:
   1. Per standard specification.
   2. Alternate drums shall be threaded in opposite directions, to keep the batten from “walking” as its elevation changes.
   3. Drums shall be interconnected by shafts with universal joints at each end.

E. Shafts:
   1. Per standard specification.

F. Rotary Limit Switches:
   1. Rotary limit switch assemblies shall have two or four independently adjustable switch/cam sets as required. Cams shall be driven by a geared assembly.
   2. Switches shall have snap acting contacts.
   3. Rotary limit switches shall be driven directly or by roller chains. If roller chains are used, sprockets shall be pinned to prevent slipping and sized for maximum usable rotation of switch cams. The input shaft and drive chain shall be fully guarded.
   4. Switches shall be mounted to the winch base to allow for easy adjustment of the switch settings.

G. Direct Struck Limit Switch:
   1. A hard limit switch shall be the ultimate indicator of curtain upward overtravel to prevent damage. A hard limit switch shall be mounted above the batten to one of the catwalk braces so that the limit switch can engage the top of the batten before hitting the catwalk braces.
   2. Limit switch shall be per standard specification.
   3. In the event an overtravel limit is engaged, the appropriate “primary limit failure” fault indicator shall illuminate.

H. Motor Controllers:
   1. For fire and electrical safety, motor controllers shall conform to the CEC (NFPA 70), be built in accordance with UL Standard 508, and be “touch safe” per IEC 204-1 “Protection against direct contact” rules.
   2. Controllers shall be wired so that operation of the normal end of travel limit switches shall only allow movement away from the limit switch.
   3. The controller shall be sized to match the winch motor horsepower. Overload and overcurrent protection shall conform to UL and CEC requirements.
   4. Controllers shall be wired so that operation of the normal end of travel limit switches shall only allow movement away from the limit switch.
   5. Controllers shall provide under voltage, over voltage, instantaneous over current, overload, and phase loss protection.

I. Control Station:
   1. Control station shall be mounted in the stage left production control rack, and contain hold to operate (dead man) Up and Down pushbuttons for each hoist. A key operated On / Off switch shall be provided.
   2. A red, mushroom head emergency stop pushbutton shall be provided, which will disconnect power to the hoist through a circuit meeting NFPA-79 requirements.
   3. A “Service” indicator shall be provided to alert the user when regular system service is required.
   4. LED lights to indicate limit switch activation.
   5. LED lights to indicate at set limit location.
   6. Panel components (pushbuttons, key switches, switches, indicators, E-stop switches, and the like) shall be industrial grade units.

J. Position Control:
   1. The user shall be able to set four preset stop positions. The hoist shall stop at each preset position, and an “At Target” indicator will illuminate. Releasing and pressing the Up or Down button again will move the load to the next preset position.
   2. Presets positions are set by the user, by moving the load to the desired position, and performing a simple control sequence.
   3. The system shall provide reliable, accurate positioning within 1/16” of the target position.
   4. A solid state position encoder shall be provided.

K. Emergency Stop System:
   1. Provide local Emergency Stops at each hoist location on the stage level locking rail.
   2. The emergency stop system shall meet NFPA-79 (Electrical Standards for Industrial Machinery) and directly remove power by means of electromechanical components, using a UL580E Type 2, non-welding, positive break contactors
   3. The emergency stop circuit shall be a normally closed circuit or a supervised circuit that provides the same or greater level of reliability and security. Its operations shall not depend on software or semiconductors.
   4. Resetting the emergency stop circuit shall not initiate motion.

L. Multicable management
   1. The assembly shall consist of an extruded aluminum wireway: in a “pantograph” configuration that shall manage cables plumb at any batten trim. Systems and installations that allow cables to sway out of alignment with the battens shall be unacceptable.
   2. 3” wide by 1.5” high in cross section containing two cable compartments.
   3. The length of each section to be specified based on the distance between rigging pickup cables and maximum actual travel.
   4. Multi-cable management shall raise and lower the enclosed electrical cable as it travels with the batten, and shall provide a permanent electrical connection for the lighting system circuits.
   5. Install between rigging lift lines and in such a way as to prevent electrical cables from fouling with other hoisting components of mechanism.
   6. Unit housing shall have an electrostatic paint finish in black that is inherently rustproof.
   7. Aluminum wireway shall have a uniform minimum wall thickness of .094.
   8. Festoon cable shall be sized per the applicable sections of CEC with neoprene covered, black, heavy duty SO, SOW or better, provided in the specified number of conductors.
   9. Units shall contain electrically insulated, adjustable pressure pad strain relief devices to hold all cable securely in place.
   10. Unit shall be provide with two pipe clamp mounting devise for attachment to 1-1/2” pipe (1.9” O.D.) batten.
   11. Each hinge section to be provided with a pair of 7 gauge hinge arms and grade 8 attachment hardware.
   12. Unistrut P1001 horizontal stabilization track to be supplied in the specified length.
   13. Trolleys and mounting brackets shall be provided with unit to manage excess cable and shall to attach extruded aluminum wireway to unistrut as required.
   14. End stop plates to be provided to prevent the trolley from exiting the track.
   15. Unit shall provide required circuits and production lighting data cables shown on PL Drawings run from ceiling to batten

2.09 MOTORIZED COUNTERWEIGHT ASSIST HOISTS

A. For sets designated on drawings, provide each with a counterweight arbor with motor assist.
   1. The system shall be able to provide reliable, accurate positioning. The winch shall be of a compact design with all required components integrated into its structure, mounted as shown on drawings.
   2. Each winch assembly shall be less than 12” wide.
   3. The winch and arbor engagement will handle an out of balance load equal to 1,000 lbs.

B. Winches shall operate with the following characteristics:
   1. Fixed batten speed of 25 feet per minute

C. Motor, Gearbox and Brake
   1. Per standard specification listed in above.

D. Drive Medium
   1. The drive medium shall allow the use of a standard head block without modification and shall be positively driven in a manner that will allow repeatable positioning.

2. The drive medium shall have a minimum design factor of 10:1.

E. Limit Switches
1. All winches shall have positively driven mechanical limit switches for normal end of travel indication. These switches shall signal the reversing contactors.

F. Positively driven mechanical limit switches shall be provided for overtravel indication. Actuation of an overtravel limit switch shall use a separate, redundant circuit than the normal end of travel switches, and positively disconnect power from the winch, per NFPA 79, using a UL580E Type 2, non-welding, positive break contactor.

G. Motor Controllers:
1. For fire and electrical safety, motor controllers shall conform to the CEC (NFPA 70), be built in accordance with UL Standard 508, and be “touch safe” per IEC 204-1 “Protection against direct contact” rules.
2. Controllers shall be wired so that operation of the normal end of travel limit switches shall only allow movement away from the limit switch.
3. The controller shall be sized to match the winch motor horsepower. Overload and overcurrent protection shall conform to UL and CEC requirements.
4. Controllers shall be wired so that operation of the normal end of travel limit switches shall only allow movement away from the limit switch.
5. Controllers shall provide under voltage, over voltage, instantaneous over current, overload, and phase loss protection.

H. Control Station:
1. Control stations shall be contained in the hoist assembly, and contain hold to operate (dead man) Up and Down pushbuttons for each hoist. A key operated On / Off switch shall be provided.
2. A red, mushroom head emergency stop pushbutton shall be provided, which will disconnect power to the hoist through a circuit meeting NFPA-79 requirements.
3. A “Service” indicator shall be provided to alert the user when regular system service is required.
4. Panel components (pushbuttons, key switches, switches, indicators, E-stop switches, and the like) shall be industrial grade units.

I. Position Control:
1. The user shall be able to set four preset stop positions. The hoist shall stop at each preset position, and an “At Target” indicator will illuminate. Releasing and pressing the Up or Down button again will move the load to the next preset position.
2. Presets positions are set by the user, by moving the load to the desired position, and performing a simple control sequence.
3. The system shall provide reliable, accurate positioning within 1/16” of the target position.
4. A solid state position encoder shall be provided.

J. Emergency Stop System:
1. Provide local Emergency Stops at each hoist location on the stage level locking rail.
2. The emergency stop system shall meet NFPA-79 (Electrical Standards for Industrial Machinery) and directly remove power by means of electromechanical components, using a UL580E Type 2, non-welding, positive break contactors
3. The emergency stop circuit shall be a normally closed circuit or a supervised circuit that provides the same or greater level of reliability and security. Its operations shall not depend on software or semiconductors.
4. Resetting the emergency stop circuit shall not initiate motion.

2.10 MISCELLANEOUS RIGGING EQUIPMENT

A. Proscenium Safety Rope tie-off
1. Provide proscenium safety rope tie off points as either side of the proscenium.
2. Assembly shall be designed to withstand a horizontal load of 1000# applied to safety rope.

3. Rope shall thread through eyes at smoke pocket as shown on drawings.
4. Provide safety rope
   a. Safety rope shall be 1/2" synthetic rope capable of withstanding the forces listed above.
   b. Rope shall be free of splintering fibers
   c. Rope shall be white with 18" orange cloth ribbons tied and woven at 10'-0" centers.
5. Signage
   a. Provide advisory signs Tie-off points, located as shown on drawing.
   b. Sign shall include text as shown on drawings.
   c. Signs shall meet ANSI Z535 standard for warning signs

B. Belaying Pins
1. Belaying pins shall be machine turned hardwood, hickory or similar, 21” long by 1-5/32” in diameter with a shoulder and handgrip at the top.
2. Quantity: (60)

C. Signage:
1. Provide four (4) manufactured “SAFETY FIRST” signs with 3” high characters minimum to be posted where instructed by the District's Representative.
2. Provide 1 sign at rigging gallery level locking rail, as shown on drawings. This sign shall obstruct operation from this location and shall act as a guardrail compliant with applicable codes.
   a. The sign shall mount by use of two vertical stanchions sized to fit within the belaying pin holes in the locking rail. Top height shall be set by stop collars on the vertical stanchions. stanchions shall be threaded on the bottom and sign shall be secured by nuts on the bottom threads.

2.11 DRAPERY TRACK

A. Drapery Track
1. Provide heavy duty stage traveler curtain tracks in locations as shown on drawings, complete with all necessary accessories.
2. Maximize height of acoustic tracks so top of tracks clear under obstructions by maximum 1/2".
3. Horizontally brace the acoustic tracks in the catwalks to catwalk structure.
4. Provide strong back for acoustic drapery track to span building support locations.
5. Track shall be of 14 gauge galvanized steel construction. Each section of track less than 20 feet shall be in one continuous piece. Splice clamps shall be permitted for section lengths over 20 feet.
6. Track shall have sufficient capacity to carry maximum loaded carrier at minimum spacing.
7. All non-moving/movement bearing parts shall be finished flat black.
8. Carriers:
   a. Carriers shall be constructed of nylon, supported from two heavy-duty neoprene or urethane tired wheels riveted to steel body with shielded ball bearings. Each carrier shall be equipped with a free-moving swivel and sufficient trim chain to accommodate a curtain.
   b. Each carrier shall have rear fold back-pack tabs and rubber washers shall be provided between each back-pack tab and carrier.
   c. Provide one carrier for each 12” of track, plus spares.
   d. Provide master carriers at the leading and training edge of each stage drapes.
   e. The master carrier block shall be constructed of plated steel having two cable clips to clamp the cord to the carrier. Four wheels in pairs identical to the single carrier above shall support the block.
   f. Carriers shall have 25# capacity.
9. Live and dead end pulleys shall 6” diameter, equipped with sealed precision ball bearings on adequately guarded plated steel housings. Provide end stops at each track end.

10. Provide with 6” diameter adjustable, demountable floor pulley.
    a. Fastening to stage floor with threaded inserts and wing bolts for quick removal.
    b. Main drape shall be supplied with sand bag type.
    c. In the catwalks fasten to lower railing horizontal with angle plate, bolts, and U-bolts.
11. Stretch-resistant, cable center operating cord shall be 1/2" in diameter.
12. Track shall be rigged for bi-parting operation with a 48" center overlap. Hanging clamps will be provided for suspension at five foot maximum intervals.
13. Provide track stops as indicated on the drawings
14. Traveler Tracks shall be:
    a. H&H 400 Series for straight tracks
    b. H&H 500 Series for curved tracks
    c. H&H 300 Series for black box drapery track
    d. Or equal

2.12 ACOUSTIC DRAPERIES

A. Fabric:
    1. Fabric shall be as specified below. Weight and color per drape schedule.
        a. “Black” shall be black.
    2. Flame Retardancy: Fabrics must comply with flame retardancy according to the requirements of the National Fire Protection Association’s NFPA #701.

B. Fullness shall be as shown on drapery schedule.
    1. Pleats: Pleats for draperies specified with fullness shall be box sewn on 12" centers.

C. Seams: Seams between strips shall be single stitched without puckers using thread of matching color. Drapes shall be sewn so pile runs in the same direction. Seams shall be arranged to be concealed by Pleats.

D. Top Finish: 3-1/2" black nylon webbing shall be double stitched to the top of the curtain with 1" of face fabric turned under the webbing.
    1. Brass rustproof grommets shall be inserted in pleat centers or on12" centers on flat curtains. Grommets shall be used as follows: #4 grommets - lined velour, heavy weight fabrics. Grommets shall be black.
        a. All drapes shall have two grommets in top corners and spacing shall coordinate with master carrier chains.
    2. Track Mounted curtains shall be supplied with black powder coated carabineers at all grommets to attachment to carrier chain.
    3. Provide a 12” square of face and lining fabric to the rear of a top offstage corner of each panel. This panel shall be available as a cutaway sample for testing of flame retardant characteristics over time.

E. Manufacturer’s contact information, flame certifications, material and drape dimensions shall appear on a label sewn to the rear of a bottom offstage corner of each panel. Label shall be black with white lettering.

F. Drapes shall be provided in sizes and quantities as noted on the drape schedule. Verify in field, maximize height.

G. Fabric
    1. Inherently flame retardant polyester.
    2. Colors, fabric type and weight shall be as noted on the drape schedule.
    3. Acceptable fabrics:
    4. KM Fabrics “Prestige” 26oz. per bolt yard IFR Velour as noted on drapery schedule

H. Sewing
    1. Nap shall be sewn up, unless otherwise noted on schedule.
    2.

3. Bottom Hems:
   a. All full height curtains shall have 6" bottom hems complete with separate interior chain pockets filled with #8 plated jack chain. Chain pockets shall be stitched so that the chain will ride 2" above the finished bottom edge of the curtain.
4. Side Hems:
   a. Side hems shall be 2". Raw edge of fabric shall be turned under the 2" side hem.

I. Acoustic Drapery Schedule:

1.

DESCRIPTION	PANELS	FINISHED DRAPE WIDTH	FINISHED DRAPE HEIGHT	SEWN IN FULLNESS	DRAPE WEIGHT BOLT YARD	COLOR	BI-PART	NOTES
VA - 1A&1B	2	28'-0"	6'-0"	100%	26oz	Black	yes	Velour side toward audience
VA - 2A & 2B	2	30'-0"	5'-0"	100%	26oz	Black	yes	Velour side toward audience
VA - 3	1	20'-0"	13'-0"	100%	26oz	Black	no	
VA - 4	1	36'-0"	7'-0"	100%	26oz	Black	no	

2.13 ~~STAGE EXTENSION AND SEATING PLATFORMS~~

A. ~~Platform decking~~
   1. ~~Deck shall be portable and provide a stable surface when used under the audience seating and as a stage extension in both configurations as shown on the drawings. The platforms shall be equal length~~
   2. ~~Deck shall be a laminate of high-strength outer layers bonded to a honeycomb core for rigidity and light weight. Deck shall be a 3.2" thick laminated composite constructed of phenolic-treated cellulose honeycomb between solid-core fir plywood. Deck edges shall be closed with a 6005-T5 aluminum extrusion that is anodized black. Corner reinforcement shall be made of high-impact, injection-molded polycarbonate.~~
   3. ~~Performance: Certified, uniformly distributed live-load capacity of 4800 pounds per 4' x 8' section (150 pounds per sq. foot) to meet 2013 CBC code.~~
   4. ~~Deck shall attach by molded corner receptacles to scaffold supports without tools, clamps or clips.~~
   5. ~~Decks shall be double sided honeycomb decks with 1/4" replaceable double tempered hardboard.~~
   6. ~~Maximum weight of one platform shall be less than 63 lbs~~
   7. ~~Provide FSR-500 solid BLK floor hatch covers as shown on the drawings.~~

B. ~~Hard closure Fascia construction~~
   1. ~~Provide 1/8" thick aluminum, closure panels at the stage side of the audience mid riser platform~~
   2. ~~Fascia panels shall have z-clips to adjacent panels to maintain alignment.~~
   3. ~~Fascia panels shall be designed to remove in sections. Each section shall match the length of its associated platform.~~
   4. ~~Finish fascia panels on all sides with black powder coat.~~

C. ~~Drapery~~
   1. ~~Provide drapery at stage extension front full height to mask front of platform and all understructure from the audience. Drapery shall clip to platform face.~~
   2. ~~Provide drapery at the front of the understage lip railing. Velcro drapery to the top of the railing.~~
   3. ~~Fabric shall be black 26oz velour IFR.~~
   4. ~~Fabric shall be sew with 100% fullness.~~

D. ~~Platform support Framing~~
   1. ~~Audience support system shall be easy to set up and store and shall provide a stable, robust understructure.~~
   2. ~~Supports shall store compactly and shall be unitized. Individual legs or braces shall not be acceptable.~~
   3. ~~Support system shall be assembled without tools by as few as two people.~~

4. ~~Conical nodes shall guide the corner of one, two, three or four deck(s) into location and proper alignment on a single support column. Without tools, clamps or separate processes, decks shall fasten in place and stage support frames shall interlock with clamps that link the adjacent support frames.~~
5. ~~Fixed stage deck height shall match height as shown on drawings. Legs shall be capable of 2-1/2" of leveling adjustment. Each screw foot shaft shall have a diameter of no less than 3/4" and have zinc-plated Acme threads. The bottom of the foot shall be molded urethane.~~
6. ~~Certified, uniformly distributed live-load capacity of 4800 pounds per 4' x 8' section.~~
7. ~~Provide in quantity and configuration as shown on drawings.~~
8. ~~Platform frame shall match deck manufacturer listed above.~~
9. ~~Support legs shall extend or telescope to change between two riser heights without the use of tools.~~

E. ~~Stage facing Railings~~
1. ~~Provide railings under the stage lip when in audience seating mode.~~
2. ~~Railings shall be black finished 1-1/4" dia aluminum tube~~
3. ~~Railing shall have a quick clamp cam lock system that clamps onto the top and bottom of the platform.~~
4. ~~Railing shall have 4" kick plate and mid and top railing.~~
5. ~~Railings shall be code compliant 2013 CBC.~~

F. ~~Audience aisle railing~~
1. ~~Provide audience aisle railing on top of platforms~~
2. ~~Railings shall be black finished 1-1/4" dia aluminum tube~~
3. ~~Railing shall socket into the tops of the platforms~~
4. ~~Provide flush cover for when platforms are in stage mode~~
5. ~~Railings shall be code compliant 2013 CBC~~

G. ~~Step Lighting~~
1. ~~Provide LED step lights at audience seating level changes~~
2. ~~Step lights shall full louvers to keep all light off the stage during backouts.~~
3. ~~Provide two transformers one for each row.~~
4. ~~Provide all wire and extension cords to plug into outlets in the pit.~~

H. ~~System shall be manufactured by StageRight~~
a. ~~No known equal~~

PART 3 - EXECUTION

3.01 PERFORMANCE OF THE WORK

A. The Rigging Contractor shall be responsible for storage of stage equipment, tools, and equipment during the period of the installation.

B. Extent: All specified equipment shall be installed by fully trained superintendents and workmen. Equipment shall be installed in a workman like manner, per plans and specifications. Equipment shall be aligned, adjusted, and trimmed for the most efficient operation, the greatest safety and for the best visual appearance.

C. Standards: Installation practices shall be in accordance with OSHA Safety and Health Standards and all local codes. All welding must be performed in full compliance with the latest edition of the Structural Welding Code (ANSI/AWS D1.1).

D. Alignment: Mule blocks, cable rollers and guides shall be installed using a precision laser, as required, to provide proper alignment, to maintain minimum fleet angles, and to prevent contact with other surfaces. There shall be no fleet angle where possible, but if required fleet angle shall be no greater than 1½°.

E. Fabricate metal work in accordance with standards of first class workmanship with ornamental work free of blemishes like tool marks, burrs, scars and abrasions. All edges shall be smooth. All points, welds and intersections shall be properly made and fitted to provide a uniform finish.

F. All connection points shall be welded and ground smooth.

G. Provide slotted holes, as needed, in steel members which require accurate alignment.

H. Fit abutting surfaces closely.

I. Accurately align and adjust various frame members before final anchoring.

J. Erect metal work level, plumb, square and in proper alignment with adjacent work. Deformed components shall be remedied.

K. Attachments: All equipment shall be securely attached to the building structure.

L. Finishes:
   1. All welds must be touched up to match disturbed finishes.
   2. All finishes which are disturbed during shipping and installation shall be touched up to match the original.

3.02 CLEAN UP

A. The Contractor shall be responsible for clean up, including removal of packing materials etc. and the protection of surfaces or equipment provided by other contractors.

3.03 INSPECTION AND TESTING

A. Upon completion of the installation, and after allowing the draperies to hang out for 2 weeks minimum, the Contractor shall notify the District's Representative that the system is available for formal checkout. Notification shall be provided in writing. Checkouts shall be scheduled in accordance with the District's Representative's schedule.
   1. The Contractor shall be liable for any return visits by the specialty sub-contractor, factory engineer or District's Representative as a result of incomplete or incorrect installation, or erroneous representation that the Systems are complete and ready for the related Contractor or District's Representative to carry out their work.

B. During the periods where movable systems are operated, the Theatre shall be quiet.

C. Inspection shall include, but shall not be limited to:

D. In preparation for inspection by the District's Representative:
   1. All linesets shall be balanced to pipe weight at mid travel, and drapery or Orchestra Enclosure loads if present at the time of inspection.
   2. All sets flown out to high trim.
   3. Rigging system components cleared of dust and debris.

E. Make available for review by the District's Representative:
   1. Access to all components for physical inspection.
   2. All systems shall be complete, and will be operated by the District's Representative for approval.
   3. Spare parts inventory.

3.04 TRAINING

A. Upon final approval of the system by the District's Representative, representatives from the Rigging Specialty Sub-Contractor shall provide instruct designated District staff or representatives in the safe use and maintenance of all systems specified herein.

B. Schedule training sessions shall be scheduled in advance to the District staff or representatives' schedules.

C. Provide 6 hours of training. Training shall be in two sessions a minimum of 1 week apart.

D. Training shall include, but not be limited to:

1. An overview of the systems and all of its components.
2. Proper and safe operations of all rigging systems including use of counterweight, operation of rigging battens, loading and un-loading of counterweight, safe and proper use of capstan winch, adjustment of lower tension block,
3. Care and maintenance of rigging systems.
4. Care and maintenance of drapes including proper folding and storage
5. Basic system visual inspections

END OF SECTION

SECTION 09 7200
WALL COVERINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation and prime painting.

B. Wall covering .

1.02 RELATED REQUIREMENTS

A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.

B. Section 09 9000 - Painting and Coating: Preparation and priming of substrate surfaces.

1.03 REFERENCE STANDARDS

A. ASTM D1308 - Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes; 2002 (Reapproved 2013).

B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2014.

C. ASTM F793 - Standard Classification of Wallcovering by Use Characteristics; 2010a.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on wall covering and adhesive.

C. Samples: Submit two samples of wall covering, 12_x 12 inch (300 x 300 mm) and one Full width x30" in size illustrating color, finish, and texture.

D. Test Reports: Indicate verification of flame and smoke ratings, when tested by UL.

E. Manufacturer's Installation Instructions: Indicate special procedures.

F. Maintenance Data: Submit data on cleaning, touch-up, and repair of covered surfaces.

G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 01 6000 - Product Requirements, for additional provisions.
   2. Extra Wall Covering Materials: 25 linear feet (8 linear m) of each color and pattern of wall covering; store where directed.
   3. Package and label each roll by manufacturer, color and pattern, and destination room number.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing the type of work specified in this section with minimum three years of experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Inspect roll materials at arrival on site, to verify acceptability.

B. Protect packaged adhesive from temperature cycling and cold temperatures.

C. Do not store roll goods on end.

1.07 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the adhesive or wall covering product manufacturer.

B. Maintain these conditions 24 hours before, during, and after installation of adhesive and wall covering.

PART 2 PRODUCTS

2.01 MATERIALS

A. Wallcovering - Type [WC1]: Product: Koroseal: Arbor Series Flexible Wood Veneer Wallcovering Planked Veneer (multi Species), conforming to the following:
   1. All wallcoverings to be Class A - Flame spread index of 0-25; smoke developed index 0-450 per ASTM E84.
   2. Composition: 5- Ply wood wallcovering consisting of genuine wood veneer, bonded to paper, foil, glue line barrier, and paper, with factory applied protective coating..
   3. Pattern: Per drawings.
   4. Finish: Custom Stain, Submit colors for selection..

B. Wall Covering: Type WC2 and WC 3, Product: Koroseal Walltalkers: Tacwall
   1. Color: refer to drawings..

C. Wall Covering: Type WC4, Carnegie Wallcoverings
   1. Product: Xorel High Performance
   2. Pattern: Meteor 6427W
   3. Color: TBD (Theater)
   4. Width: 52"

D. Wall Covering: Type WC5, Carnegie Wallcoverings
   1. Product: Xorel High Performance
   2. Pattern: Meteor 6427W
   3. Color: TBD (Corridors)
   4. Width: 52"

E. Adhesive: Type recommended by wall covering manufacturer to suit application to substrate.

F. Termination Trim: Aluminum J mold - 1/4", color as selected.

PART 3 EXECUTION

3.01 INSTALLATION

A. Apply adhesive and wall covering in accordance with manufacturer's instructions.

B. Razor trim edges on flat work table. Do not razor cut on gypsum board surfaces.

C. Apply wall covering smooth, without wrinkles, gaps or overlaps. Eliminate air pockets and ensure full bond to substrate surface. Butt edges tightly.

D. Horizontal seams are not acceptable.

E. Do not seam within 2 inches (50 mm) of internal corners or within 6 inches (150 mm) of external corners.

F. Install termination trim.

G. Remove excess adhesive while wet from seam before proceeding to next wall covering sheet. Wipe clean with dry cloth.

3.02 CLEANING

A. Clean wall coverings of excess adhesive, dust, dirt, and other contaminants.

B. Reinstall wall plates and accessories removed prior to work of this section.

3.03 PROTECTION

A. Do not permit construction activities at or near finished wall covering areas.

END OF SECTION

SECTION 14 2010
PASSENGER ELEVATORS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Complete elevator systems.

B. Elevator maintenance.

1.02 RELATED REQUIREMENTS

A. Section 01 5000 - Temporary Facilities and Controls: Temporary power supply.

B. Section 03 3000 - Cast-in-Place Concrete: Includes elevator machine foundation.

C. Section 05 1200 - Structural Steel Framing: Includes hoistway framing.

D. Section 05 5000 - Metal Fabrications: Includes pit ladder, sill supports, divider beams, and overhead hoist beams.

E. Section 07 1400 - Fluid Applied Waterproofing: Waterproofing of elevator pit walls and floor.

F. Section 09 2116 - Gypsum Board Assemblies: Gypsum shaft walls.

G. Section 22 0500 - Plumbing and Utilities

H. Section 22 1313 - Automatic Fire Protection System

I. Section 26 6113 - Fire Alarm System

J. Section 31 0000 - Earthwork and Grading

1.03 REFERENCE STANDARDS

A. AISC 360 - Specification for Structural Steel Buildings; American Institute of Steel Construction, Inc.; 2010.

B. ASME A17.1 - Safety Code for Elevators and Escalators; The American Society of Mechanical Engineers; 2007.

C. ASME A17.2 - Guide for Inspection of Elevators, Escalators, and Moving Walks; The American Society of Mechanical Engineers; 2012.

D. ASME/ANSI A17.7, Safety Code for Elevators and Escalators.

E. CEC - National Electrical Code; National fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

F. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2013.

G. UL (BMD) - Building Materials Directory; Underwriters Laboratories Inc.; current edition.

H. ASNI/UL 10B, Fire Tests of Door Assemblies.

I. CBC 2013, and local building codes.

J. All other local applicable codes.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene a meeting one week prior to starting work.
   1. Review schedule of installation, installation procedures and conditions, and coordination with related work.

B. Construction Use of Elevator: Not permitted.

1.05 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Shop Drawings: Indicate the following information:

1. Locations of Machine Room Equipment: Driving machines, controllers, governors and other components.
2. Hoistway Components: Car, counterweight, sheaves, machine and sheave beams, guide rails, buffers, ropes, and other components.
3. Rail bracket spacing; maximum loads imposed on guide rails requiring load transfer to building structural framing.
4. Individual weight of principal components; load reaction at points of support.
5. Loads on hoisting beams and location of trolley beams.
6. Clearances and over-travel of car and counterweight.
7. Locations in hoistway and machine room of traveling cables and connections for car light.
8. Location and sizes of access doors, doors, and frames.
9. Expected heat dissipation of elevator equipment in machine room.
10. Applicable seismic design data; certified by a licensed Professional Structural Engineer.
11. Electrical characteristics and connection requirements.
12. Show arrangement of equipment in machine room so rotating elements, sheaves, and other equipment can be removed for repairs or replaced without disturbing other components. Arrange equipment for clear passage through access door.

C. Product Data: Provide data on the following items:
1. Signal and operating fixtures, operating panels, indicators.
2. Cab design, dimensions, layout, and components.
3. Cab and hoistway door and frame details.
4. Electrical characteristics and connection requirements.
5. Expected heat dissipation of elevator equipment in hoistway (BTU).
6. Color selection chart for Cab and Entrances.

D. Samples: Submit three samples, 12 x 12 inch (305 x 305 mm) in size illustrating cab floor material.

E. Operations and Maintenance Manuals: Provide manufacturer's standard operations and maintenance manual.

1.06 QUALITY ASSURANCE

A. Perform Work in accordance with applicable code and as supplemented in this section.

B. Designer Qualifications: Design guide rails, brackets, anchors, and machine anchors under direct supervision of a Professional Structural Engineer experienced in design of work of this type and licensed in the State in which the Project is located.

C. Perform structural steel design, fabrication, and installation in accordance with AISC 360, Specification for Structural Steel Buildings. Perform seismic design in accordance with applicable code.

D. Fabricate and install door and frame assemblies in accordance with NFPA 80.

E. Perform electrical work in accordance with CEC.

F. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum ten years documented experience.

G. Installer Qualifications: Company specializing in performing the work of this section and approved by elevator equipment manufacturer.

H. Products Requiring Fire Resistance Rating: Listed and classified by UL.

1.07 WARRANTY

A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

B. Provide one year minimum manufacturer warranty for elevator operating equipment and devices.

C. This Section specifies hydraulic elevators.

D. Work Required:

1. The work required under this section consists of all labor, materials and services required for the complete installation (including operational verification) of all the equipment required for the elevator as herein specified.
2. All work shall be performed in a first class, safe and workmanlike manner.
3. In all cases where a device or part of the equipment is herein referred to in the singular, it is intended that such reference shall apply to as many of such devices or parts as are required to make complete installation.

1.08 MAINTENANCE AND SERVICE

A. Maintenance service consisting of regular examinations and adjustments of the elevator equipment shall be provided by the elevator contractor for a period of twelve (12) months after the elevator has been turned over for the customer's use. This service shall not be subcontracted but shall be performed by the elevator contractor. All work shall be performed by competent employees during regular working hours of regular working days. This service shall not cover adjustments, repairs or replacement of parts due to negligence, misuse, abuse or accidents caused by persons other than the elevator contractor. Only genuine parts and supplies as used in the manufacture and installation of the original equipment shall be provided.

B. The elevator control system must:
   1. Provide in the controller the necessary devices to run the elevator on inspection operation.
   2. Provide on top of the car the necessary devices to run the elevator in inspection operation.
   3. Provide in the controller an emergency stop switch. This emergency stop switch when opened disconnects power from the brake and prevents the motor from running.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Other Acceptable Manufacturers:
   1. ThyssenKrupp Elevator: www.thyssenkruppelevator.com.
   2. Otis Elevator Co; Product Hydro Fit 3500: www.otis.com. (Basis of design)
   3. Schindler Elevator Corp; Schindler 3300 Low-Rise MRL: www.us.schindler.com.
   4. Substitutions: See Section 01 6000 - Product Requirements.

B. All components to be manufactured by same entity, unless otherwise indicated.

2.02 DESIGN AND SPECIFICATIONS

A. Provide holeless hydraulic elevators. The control system and car design based on materials and systems manufactured by Otis Elevator Company. Specifically, the system shall consist of the following components:
   1. The entire hydraulic system and the controller shall be located inside the hoistway. No extra machine room or control closet space is required.
   2. Sleep mode operation for LED ceiling lights and car fan.
   3. LED lighting standard in ceiling lights and elevator fixtures.

2.03 SYSTEM DESCRIPTION

A. Equipment Description: Holeless Hydraulic elevator with Machine-Room application.

B. Equipment Control: Elevonic Control System.

C. Quantity of Elevators: 1

D. Stops: 2

E. Openings: Front

F. Travel (maximum): 26'-6"

G. Rated Capacity: 3500 lb.

H. Rated Speed: 100 fpm

I. Platform Size: 6'-6 3/4" W x 6'-1 1/8" D

J. Clear Inside Dimensions: 6'-5 9/16" W x 5'-5 9/16" D

K. Cab Height: 7'-9"

L. Entrance Type and Width: Single-Slide Door 3'-0" (914mm)

M. Entrance Height: 7'-0"

N. Main Power Supply: 480 Volts, 3-Phase, 60Hz + or - 5% of normal, 3-Phase, with a seperate equipment grounding conductor.

O. Car Lighting Power Supply: 120 Volts, Single-Phase, 15 Amp, 60 Hz.

P. Controller Location: Inside hoistway, accessible by a door in a side hoistway wall on the 1st or 2nd landing. (1st landing only if rear entrance.)

Q. Stopping Accuracy: +/- 1/4" (6.4 mm) under any loading condition or direction of travel.

R. Simplex Collective Operation: Using a microprocessor-based controller, operation shall be automatic by means of the car and hall buttons. If all calls in the system have been answered, the call shall park at the last landing served.

S. Operating Features - Standard
   1. Full Collective Operation.
   2. Fan and Light Protection.
   3. Full Collective Operation.
   4. Firefighters' Service Phase I and Phase II.
   5. Top of Car Inspection.
   6. Relative System Response Dispatching.

T. Door Control Features:
   1. Door control to open doors automatically when car arrives at a landing in response to a normal hall or car call.
   2. Elevator doors shall be provided with a reopening device that will stop and reopen the car door(s) and hoistway door(s) automatically should the door(s) become obstructed by an object or person. Door protection shall consist of a two dimensional, multi-beam array projecting across the car door opening.
   3. Door nudging operation to occur if doors are prevented from closing for an adjustable period of time.

2.04 EQUIPMENT: MACHINE COMPONENTS

A. The hydraulic system shall be of compact design suitable for operation under the required pressure. The control valve shall control flow for up and down directions hydraulically and shall include an integral check valve. A control section including control solenoids shall direct the main valve and control: up and down starting, acceleration, trasition from full speed to leveling speed, up and down stops, pressure relief and manual lowering. All of these functions shall be fully adjustable for maximum smoothness and to meet contract conditions. System to be provided with a low-pressure switch and a shut-off valve.

B. A microprocessor-based controller shall be provided, including necessary starting switches together with all relays, switches, solid-state components adn hardware required for operation, including door operation, as descibed herein. A three (3) phase overload device shall be provided to protect the motor against overloading. The controller shall be located together with the hydraulic system in the hoistway pit and be easily accessible for maintenance through the same access door that is also used for the hydraulic system.

C. A manual lowering feature shall permit lowering the elevator at slow speed in the event of power failure or for adjusting purposes.

D. Pressure Switch

2.05 EQUIPMENT: HOISTWAY COMPONENTS

A. Plunger(s) and Cylinder(s): Each cylinder shall be constructed of steel pipe of sufficient thickness and suitable for the operation pressure. The top of each cylinder shall be equipped with a cylinder head with a drip ring to collect any oil seepage as well as an internal guide ring and self-adjusting packing. Each plunger shall be constructed of selected steel tubing or pipe of

proper diameter machined true and smooth with a fine polished finish. Each plunger shall be provided with a stop ring electrically welded to it to prevent the plunger from leaving the cylinder. Each plunger and cylinder shall be installed plumb and shall operate freely with minimum friction.

B. Car Guide Rails: Tee-section steel rails with brackets and fasteners.

C. Polyurethane type buffers shall be used.

D. Wiring: Wiring for hoistway electrical devices included in scope of the elevator system, hall panels, pit emergency stop switch, and the traveling cable for the elevator car.

E. Hoistway Entrances:

Frames: Entrance frames shall be of bolted construction for complete one-piece unit assembly. All frames shall be securely fastened to fixing angles mounted in the hoistway and shall be of UL fire rated steel.

1. Sills shall be extruded aluminum.
2. Doors: Entrance doors shall be of metal construction with vertical channel reinforcements.
3. Fire Rating: Entrance and doors shall be UL fire rated for 1 hour.
4. Entrance marking plates: Entrance jambs shall be marked with 4" x 4" (102 mm x 102 mm) plated having raised floor markings with Braille located adjacent to the floor marking. Marking plates shall be provided on both sides of the entrance.
5. Sight Guards: Sight guards will be furnished with all doors painted to match with painted doors, painted black for stainless steel and gold satin doors.

2.06 EQUIPMENT: CAR COMPONENTS

A. Cab: Steel Shell Cab with laminated vertical removable panels (DL14SMA).

B. Car Front Finish: Satin Stainless Steel.

C. Car Door Finish: Satin Stainless Steel.

D. Ceiling Type: Flat steel ceiling , Brushed Steel Finish with 6 LED lights.

E. Emergency Car Lighting: An emergency power unit employing a 6-volt sealed rechargeable battery and totally static circuits shall be provided to illuminate the elevator car in the event of building power failure.

F. Fan: A one-speed 120 VAC fan will be mounted to the structural ceiling to facilitate in-car air circulation, meeting A17.1 code requirements. The fan shall be rubber mounted to prevent the transmission of structural vibration and will include a baffle to diffuse audible noise. A switch shall be provided in the car-operating panel to control the fan.

G. Handrail: Handrails shall be provided on the side and rear walls of the car enclosure. Handrails shall be 1 1/2" diameter (38.1 mm) round bar handrail with a Brushed Steel Finish.

H. Threshold: Extruded Aluminum Finish.

I. Emergency Exit Contact: An electrical contact shall be provided on the car-top exit.

J. Guides: Car roller type guides at the top and the bottom.

K. Platform: Car platform shall be constructed of metal.

L. Certificate frame: Provide a Certificate frame with a satin stainless steel finish.

M. The LED ceiling lights and the fan should automatically shut off when the system is not in use and be powered back up after a passenger calls the elevator and pushes a hall button.

2.07 EQUIPMENT: SIGNAL DEVICES AND FIXTURES

A. Car Operating Panel: A car operating panel shall be provided which contains all push buttons, key switches, and message indicators for elevator operation. The car operating panel shall have a satin stainless steel finish.

B. A car operating panel shall be furnished. It shall contain a bank of round stainless steel, mechanical LED illuminated buttons. Flush mounted to the panel and marked to correspond to the landings served. All buttons to have raised numerals and Braille markings with Flat Raised Satin Stainless Steel button with blue LED illuminating halo.

C. The car operating panel shall be equipped with the following features:
   1. Raised markings and Braille to the left hand side of each push-button.
   2. Car Position Indicator at the top of and integral to the car operating panel.
   3. Door open and door close buttons.
   4. Inspection key-switch.
   5. Elevator Data Plate marked with elevator capacity and car number.
   6. Help Button: The help button shall initiate two-way communication between the car and a location inside the building, switching over to another location if the call is unanswered, where personnel are available who can take the appropriate action. Visual indicators are provided for call initiation and call acknowledgement.
   7. Landing Passing Signal: A chime bell shall sound in the car to signal that the car is either stopping at or passing a floor served by the elevator.
   8. In car stop switch.
   9. Firefighter's Phase II Key-switch.
   10. Call Cancel Button.

D. Car Position Indicator: A digital, LED car position indicator shall be integral to the car operating panel.

E. Hall Fixtures: Hall fixtures shall be provided with necessary push buttons and key switches for elevator operation.
   1. Integral Hall fixtures shall feature round stainless steel, mechanical buttons marked to correspond to the landings. Hall fixtures to be located in the entrance frame face. Buttons shall be in vertically mounted fixture. Fixture shall be Satin Stainless Steel Finish.

F. Car Lantern and Chime: A directional lantern visible from the corridor shall be provided in the car entrance. When the car stops and the doors are opening, the lantern shall indicate the direction in which the car is to travel and a chime will sound.

2.08 EMERGENCY POWER

A. Arrange elevator operation to operate under emergency power when normal power supply fails.

B. Emergency Power Supply: Self-contained battery power.

C. Provide operational control circuitry for adapting the change from normal to emergency power.

D. Upon transfer to emergency power, advance to first level landing, stop car, open doors, disable operating circuits, and hold in standby condition.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that hoistway, pit, and machine room are ready for work of this section.

C. Verify hoistway shaft and openings are of correct size and within tolerance.

D. Verify location and size of machine foundation and position of machine foundation bolts.

E. Verify that electrical power is available and of the correct characteristics.

3.02 PREPARATION

A. Arrange for temporary electrical power for installation work and testing of elevator components.

3.03 INSTALLATION

A. Install system components. Connect equipment to building utilities.

B. Provide conduit, boxes, wiring, and accessories.

C. Install hydraulic piping between cylinder and pump unit.

D. Mount machines on vibration and acoustic isolators, on bed plate and concrete pad. Place on structural supports and bearing plates. Securely fasten to building supports. Prevent lateral displacement.

E. Accommodate equipment in space indicated.

F. Install guide rails using threaded bolts with metal shims and lock washers under nuts. Compensate for expansion and contraction movement of guide rails.

G. Accurately machine and align guide rails. Form smooth joints with machined splice plates.

H. Coordinate installation of hoistway wall construction.

I. Install hoistway door sills, frames, and headers in hoistway walls. Grout sills in place. Set entrances in vertical alignment with car openings and aligned with plumb hoistway lines.

J. Structural Metal Surfaces: Clean surfaces of rust, oil or grease; wipe clean with solvent; prime two coats.

K. Machine Room Components: Clean and degrease; prime one coat, finish with one coat of enamel.

L. Adjust equipment for smooth and quiet operation.

3.04 ERECTION TOLERANCES

A. Guide Rail Alignment: Plumb and parallel to each other in accordance with ASME A17.1 .

B. Cab Movement on Aligned Guide Rails: Smooth movement, with no objectionable lateral or oscillating movement or vibration.

3.05 FIELD QUALITY CONTROL

A. Testing and inspection by regulatory agencies will be performed at their discretion.
   1. Schedule tests with agencies and notify Owner and Architect.
   2. Obtain permits required to perform tests.
   3. Document regulatory agency tests and inspections in accordance with the requirements of Section 01 4000.
   4. Perform tests required by regulatory agencies.
   5. Furnish test and approval certificates issued by authorities having jurisdiction.

3.06 ADJUSTING

A. Adjust for smooth acceleration and deceleration of car so not to cause passenger discomfort.

B. Adjust automatic floor leveling feature at each floor to achieve 1/4 inch (6 mm) from flush.

3.07 CLEANING

A. Remove protective coverings from finished surfaces.

B. Clean surfaces and components ready for inspection.

3.08 PROTECTION

A. Do not permit construction traffic within cab after cleaning.

B. Protect installed products until project completion.

C. Touch-up, repair, or replace damaged products before Date of Substantial Completion.

3.09 MAINTENANCE

A. See Section 01 7000 - Execution Requirements, for additional requirements relating to maintenance service.

B. Perform maintenance work using competent and qualified personnel under the supervision and in the direct employ of the elevator manufacturer or original installer.

C. Provide service and maintenance of elevator system and components for one year from Date of Substantial Completion.

D. Examine system components monthly. Clean, adjust, and lubricate equipment.

E. Include systematic examination, adjustment, and lubrication of elevator equipment. Maintain hydraulic fluid levels. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original equipment. Replace wire ropes when necessary to maintain the required factor of safety.

F. Perform work without removing cars during peak traffic periods.

END OF SECTION

SECTION 081213

HOLLOW METAL FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes hollow-metal frames.

B. Related Requirements:

1. Section 081113 "Hollow Metal Doors and Frames" for hollow-metal door and frame assemblies.
2. Section 081416 "Flush Wood Doors" for wood doors installed in hollow-metal frames.

1.3 DEFINITIONS

A. Minimum Thickness: Minimum thickness of base metal without coatings according to NAAMM-HMMA 803 or SDI A250.8.

1.4 COORDINATION

A. Coordinate anchorage installation for hollow-metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

1.5 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at [**Project site**] <**Insert location**>.

1.6 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, [**fire-resistance ratings,**] [**temperature-rise ratings,**] and finishes.

B. Shop Drawings: Include the following:

1. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
2. Locations of reinforcement and preparations for hardware.
3. Details of each different wall opening condition.

4. Details of anchorages, joints, field splices, and connections.
5. Details of moldings, removable stops, and glazing.
6. Details of conduit and preparations for power, signal, and control systems.

C. Samples for Initial Selection: For units with factory-applied color finishes.

D. Samples for Verification: Prepare Samples to demonstrate compliance with requirements for quality of materials and construction. Show profile, corner joint, floor and wall anchors, and silencers. Include separate section showing fixed hollow-metal panels and glazing if applicable.

E. Schedule: Provide a schedule of hollow-metal work prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with final Door Hardware Schedule.

1.7 INFORMATIONAL SUBMITTALS

A. Product Test Reports: For each type of frame assembly, for tests performed by a qualified testing agency.

B. Oversize Construction Certification: For assemblies required to be fire rated and exceeding limitations of labeled assemblies.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver hollow-metal work palletized, packaged, or crated to provide protection during transit and Project-site storage. Do not use nonvented plastic.

1. Provide additional protection to prevent damage to factory-finished units.

B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.

C. Store hollow-metal work vertically under cover at Project site with head up. Place on minimum 4-inch- (102-mm-) high wood blocking. Provide minimum 1/4-inch (6-mm) space between each unit to permit air circulation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Ceco Door Products; an Assa Abloy Group company.
2. Commercial Door & Hardware Inc.
3. North American Door Corp.
4. Titan Metal Products, Inc.

B. Source Limitations: Obtain hollow-metal work from single source from single manufacturer.

2.2 REGULATORY REQUIREMENTS

A. Fire-Rated Assemblies: Complying with NFPA 80 and listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction for fire-protection ratings[**and temperature-rise limits**] indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.

1. Smoke- and Draft-Control Assemblies: Provide an assembly with gaskets listed and labeled for smoke and draft control by a qualified testing agency acceptable to authorities having jurisdiction, based on testing according to UL 1784 and installed in compliance with NFPA 105.

B. Fire-Rated, Borrowed-Light Assemblies: Complying with NFPA 80 and listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction for fire-protection ratings indicated, based on testing according to NFPA 257 or UL 9.

2.3 INTERIOR FRAMES

A. Construct interior frames to comply with the standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.

B. Hollow-Metal Frames: NAAMM-HMMA 860. At locations indicated in the Door and Frame Schedule.

1. Physical Performance: Level A according to SDI A250.4.
2. Materials: Uncoated steel sheet, minimum thickness of 14 gauge.
3. Construction: Full profile welded.
4. Exposed Finish: Prime.

2.4 EXTERIOR HOLLOW-METAL FRAMES

A. Construct exterior frames to comply with the standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.

B. Hollow-Metal Frames: NAAMM-HMMA 860. At locations indicated in the Door and Frame Schedule.

1. Physical Performance: Level A according to ANSI/SDI A250.
2. Materials: Metallic-coated steel sheet, minimum thickness of 12 gauge, with minimum G60 (Z180 or) coating.
3. Construction: Full profile welded.
4. Exposed Finish: Prime.

2.5 FRAME ANCHORS

A. Jamb Anchors:

1. Masonry Type: Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, not less than 0.042 inch (1.0 mm) thick, with corrugated or perforated straps not less than 2 inches (51 mm) wide by 10 inches (254 mm) long; or wire anchors not less than 0.177 inch (4.5 mm) thick.
2. Stud-Wall Type: Designed to engage stud, welded to back of frames; not less than 0.042 inch (1.0 mm) thick.

3. Compression Type for Drywall Slip-on Frames: Adjustable compression anchors.
4. Postinstalled Expansion Type for In-Place Concrete or Masonry: Minimum 3/8-inch- (9.5-mm-) diameter bolts with expansion shields or inserts. Provide pipe spacer from frame to wall, with throat reinforcement plate, welded to frame at each anchor location.

B. Floor Anchors: Formed from same material as frames, minimum thickness of 0.042 inch (1.0 mm), and as follows:

1. Monolithic Concrete Slabs: Clip-type anchors, with two holes to receive fasteners.
2. Separate Topping Concrete Slabs: Adjustable-type anchors with extension clips, allowing not less than 2-inch (51-mm) height adjustment. Terminate bottom of frames at finish floor surface.

2.6 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.

B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.

C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B.

D. Frame Anchors: ASTM A 879/A 879M, Commercial Steel (CS), 04Z (12G) coating designation; mill phosphatized.

1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.

E. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.

F. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hollow-metal frames of type indicated.

G. Grout: ASTM C 476, except with a maximum slump of 4 inches (102 mm), as measured according to ASTM C 143/C 143M.

H. Mineral-Fiber Insulation: ASTM C 665, Type I (blankets without membrane facing); consisting of fibers manufactured from slag or rock wool with 6- to 12-lb/cu. ft. (96- to 192-kg/cu. m) density; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively; passing ASTM E 136 for combustion characteristics.

I. Glazing: Comply with requirements in Section 088000 "Glazing."

J. Bituminous Coating: Cold-applied asphalt mastic, compounded for 15-mil (0.4-mm) dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.

2.7 FABRICATION

A. Fabricate hollow-metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for metal thickness. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.

B. Hollow-Metal Frames: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.

1. **Sidelight and Transom Bar** Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by butt welding.
2. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
3. Grout Guards: Weld guards to frame at back of hardware mortises in frames to be grouted.
4. Floor Anchors: Weld anchors to bottoms of jambs with at least four spot welds per anchor; however, for slip-on drywall frames, provide anchor clips or countersunk holes at bottoms of jambs.
5. Jamb Anchors: Provide number and spacing of anchors as follows:

    a. Masonry Type: Locate anchors not more than 16 inches (406 mm) from top and bottom of frame. Space anchors not more than 32 inches (813 mm) o.c., to match coursing, and as follows:

        1) Two anchors per jamb up to 60 inches (1524 mm) high.
        2) Three anchors per jamb from 60 to 90 inches (1524 to 2286 mm) high.
        3) Four anchors per jamb from 90 to 120 inches (2286 to 3048 mm) high.
        4) Four anchors per jamb plus one additional anchor per jamb for each 24 inches (610 mm) or fraction thereof above 120 inches (3048 mm) high.

    b. Stud-Wall Type: Locate anchors not more than 18 inches (457 mm) from top and bottom of frame. Space anchors not more than 32 inches (813 mm) o.c. and as follows:

        1) Three anchors per jamb up to 60 inches (1524 mm) high.
        2) Four anchors per jamb from 60 to 90 inches (1524 to 2286 mm) high.
        3) Five anchors per jamb from 90 to 96 inches (2286 to 2438 mm) high.
        4) Five anchors per jamb plus one additional anchor per jamb for each 24 inches (610 mm) or fraction thereof above 96 inches (2438 mm) high.

    c. Compression Type: Not less than two anchors in each frame.
    d. Postinstalled Expansion Type: Locate anchors not more than 6 inches (152 mm) from top and bottom of frame. Space anchors not more than 26 inches (660 mm) o.c.

6. Head Anchors: Two anchors per head for frames more than 42 inches (1067 mm) wide and mounted in metal-stud partitions.
7. Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers as follows. Keep holes clear during construction.

    a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
    b. Double-Door Frames: Drill stop in head jamb to receive two door silencers.

8. Terminated Stops: Terminate stops 6 inches (152 mm) above finish floor with a 90-degree angle cut, and close open end of stop with steel sheet closure. Cover opening in extension of frame with welded-steel filler plate, with welds ground smooth and flush with frame.

C. Hardware Preparation: Factory prepare hollow-metal work to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to SDI A250.6, the Door Hardware Schedule, and templates.

1. Reinforce frames to receive nontemplated, mortised, and surface-mounted hardware.
2. Comply with applicable requirements in SDI A250.6 and BHMA A156.115 for preparation of hollow-metal work for hardware.

D. Stops and Moldings: Provide stops and moldings around glazed lites and louvers where indicated. Form corners of stops and moldings with butted or mitered hairline joints.

1. Single Glazed Lites: Provide fixed stops and moldings welded on secure side of hollow-metal work.
2. Multiple Glazed Lites: Provide fixed and removable stops and moldings so that each glazed lite is capable of being removed independently.
3. Provide fixed frame moldings on outside of exterior and on secure side of interior frames.
4. Provide loose stops and moldings on inside of hollow-metal work.
5. Coordinate rabbet width between fixed and removable stops with glazing and installation types indicated.

2.8 STEEL FINISHES

A. Prime Finish: Clean, pretreat, and apply manufacturer's standard primer.

1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with SDI A250.10; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

2.9 ACCESSORIES

A. Mullions and Transom Bars: Join to adjacent members by welding or rigid mechanical anchors.

B. Grout Guards: Formed from same material as frames, not less than 0.016 inch (0.4 mm) thick.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Examine roughing-in for embedded and built-in anchors to verify actual locations before frame installation.

C. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.

B. Drill and tap frames to receive nontemplated, mortised, and surface-mounted hardware.

3.3 INSTALLATION

A. General: Install hollow-metal work plumb, rigid, properly aligned, and securely fastened **in** place. Comply with Drawings and manufacturer's written instructions.

B. Hollow-Metal Frames: Install hollow-metal frames of size and profile indicated. Comply with SDI A250.11 or NAAMM-HMMA 840 as required by standards specified.

1. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.

    a. At fire-rated openings, install frames according to NFPA 80.
    b. Where frames are fabricated in sections because of shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.
    c. Install frames with removable stops located on secure side of opening.
    d. Install door silencers in frames before grouting.
    e. Remove temporary braces necessary for installation only after frames have been properly set and secured.
    f. Check plumb, square, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.
    g. Field apply bituminous coating to backs of frames that will be filled with grout containing antifreezing agents.

2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with postinstalled expansion anchors.

    a. Floor anchors may be set with power-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.

3. Metal-Stud Partitions: Solidly pack mineral-fiber insulation inside frames.
4. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with grout.
5. Concrete Walls: Solidly fill space between frames and concrete with mineral-fiber insulation.
6. In-Place Concrete or Masonry Construction: Secure frames in place with postinstalled expansion anchors. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.
7. In-Place Metal or Wood-Stud Partitions: Secure slip-on drywall frames in place according to manufacturer's written instructions.
8. Installation Tolerances: Adjust hollow-metal door frames for squareness, alignment, twist, and plumb to the following tolerances:

a. Squareness: Plus or minus 1/16 inch (1.6 mm), measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
b. Alignment: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a horizontal line parallel to plane of wall.
c. Twist: Plus or minus 1/16 inch (1.6 mm), measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
d. Plumbness: Plus or minus 1/16 inch (1.6 mm), measured at jambs at floor.

C. Glazing: Comply with installation requirements in Section 088000 "Glazing" and with hollow-metal manufacturer's written instructions.

1. Secure stops with countersunk flat- or oval-head machine screws spaced uniformly not more than 9 inches (230 mm) o.c. and not more than 2 inches (51 mm) o.c. from each corner.

3.4 ADJUSTING AND CLEANING

A. Final Adjustments: Remove and replace defective work, including hollow-metal work that is warped, bowed, or otherwise unacceptable.

B. Remove grout and other bonding material from hollow-metal work immediately after installation.

C. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.

D. Metallic-Coated Surface Touchup: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.

E. Factory-Finish Touchup: Clean abraded areas and repair with same material used for factory finish according to manufacturer's written instructions.

F. Touchup Painting: Cleaning and touchup painting of abraded areas of paint are specified in painting Sections.

END OF SECTION 081213

SECTION 08 4113

ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section Includes Kawneer Architectural Aluminum Storefront Systems, including perimeter trims, stools, accessories, shims and anchors, and perimeter sealing of storefront units.
   1. Types of Kawneer Aluminum Storefront Systems include:
      a. Trifab® 601T Storefront System – 2" x 6" (50.8 mm x 152.4 mm) nominal dimension; Thermal; Center Plane; Screw Spline Fabrication.
      b. Trifab® 450 Storefront System – 2" x 4.5" (50.8 mm x 152.4 mm) nominal dimension; non-Thermal; Center Plane; Screw Spline Fabrication.

B. Related Sections:
   1. Division 079005 “Joint Sealants” for joint sealants installed as part of the aluminum storefront system system

1.03 DEFINITIONS

A. Definitions: For fenestration industry standard terminology and definitions refer to American Architectural Manufactures Association (AAMA) – AAMA Glossary (AAMA AG).

1.04 PERFORMANCE REQUIREMENTS

A. General Performance: Aluminum-framed storefront system shall withstand the effects of the following performance requirements without exceeding performance criteria or failure due to defective manufacture, fabrication, installation, or other defects in construction:
   1. Design Wind Loads: Determine design wind loads applicable to the Project from basic wind speed indicated in miles per hour, according to ASCE 7, Section 6.5, "Method 2-Analytical Procedure," based on mean roof heights above grade indicated on Drawings.

B. Storefront System Performance Requirements:
   1. Wind loads: Provide storefront system; include anchorage, capable of withstanding wind load design pressures of 30 lbs./sq. ft. inward and 30 lbs./sq. ft. outward. The design pressures are based on the2013 CBC Building Code.
   2. Air Infiltration: The test specimen shall be tested in accordance with ASTM E 283. Air infiltration rate shall not exceed 0.06 cfm/ft2 (0.3 l/s · m2) at a static air pressure differential of 6.24 psf (300 Pa) with interior seal, or, rate shall not exceed 0.06 cfm/ft2 (0.3 l/s · m2) at a static air pressure differential of 1.57 psf (75 Pa) without interior seal. CSA A440 Fixed Rating.
   3. Air Exfiltration: The test specimen shall be tested in accordance with ASTM E 283. Air exfiltration rate shall not exceed 0.045 cfm/ft of crack (0.25 l/s · m of crack) at a static air pressure differential of 1.57 psf (75 Pa). CSA A440 Fixed Rating.
   4. Water Resistance: The test specimen shall be tested in accordance with ASTM E 331. There shall be no leakage at a minimum static air pressure differential of 10 psf (500 Pa) as defined in AAMA 501. CSA A440 B5 Rating.
   5. Uniform Load: A static air design load of 30 psf (1437 Pa) shall be applied in the positive and negative direction in accordance with ASTM E 330. There shall be no deflection in excess of L/175 of the span of any framing member. At a structural test load equal to 1.5 times the specified design load, no glass breakage or permanent set in the framing members in excess of 0.2% of their clear spans shall occur. CSA A440 C2 Rating.
   6. Thermal Transmittance (U-factor): When tested to AAMA Specification 1503, the thermal transmittance (U-factor) shall not be more than:

a. Trifab® 601T – 0.35 (low-e) BTU/hr/ft2/°F. As determined per AAMA 507 or NFRC 100.
b. Trifab® 450 – Clear glass no U factor.

7. Condensation Resistance (CRF): When tested to AAMA Specification 1503, the condensation resistance factor shall not be less than:
   a. Trifab® 601T – 69 frame and 70glass (low-e).
8. Condensation Resistance (I): When tested to CSA A-440.2, the condensation index shall not be less than:
   a. 63 frame and 68glass (low-e).
9. Sound Transmission Class (STC) and Outdoor-Indoor Transmission Class (OITC): When tested to AAMA Specification 1801 and in accordance with ASTM E1425 and ASTM E90, the STC and OITC Rating shall not be less than:
   a. Trifab® 601T – 37 (STC) and 31 (OITC)

1.05 SUBMITTALS

A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, hardware, finishes, and installation instructions for each type of aluminum frame storefront system indicated.

B. Shop Drawings: Include plans, elevations, sections, details, hardware, and attachments to other work, operational clearances and installation details.

C. Samples for Verification: For aluminum framed storefront system and components required.

D. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency for each type of aluminum-framed storefront.

E. Fabrication Sample: Of each vertical-to-horizontal intersection of aluminum-framed systems, made from 12” (300 mm) lengths of full-size components and showing details of the following:
   1. Joinery, including concealed welds.
   2. Anchorage.
   3. Expansion provisions.
   4. Glazing.
   5. Flashing and drainage.

F. Other Action Submittals:
   1. Entrance Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of entrance door hardware, as well as procedures and diagrams. Coordinate final entrance door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of entrance door hardware.

1.06 QUALITY ASSURANCE

A. Installer Qualifications: An installer which has had successful experience with installation of the same or similar units required for the project and other projects of similar size and scope.

B. Manufacturer Qualifications: A manufacturer capable of providing aluminum framed storefront system that meet or exceed performance requirements indicated and of documenting this performance by inclusion of test reports, and calculations.

C. Source Limitations: Obtain aluminum framed storefront system through one source from a single manufacturer.

D. Product Options: Drawings indicate size, profiles, and dimensional requirements of aluminum framed storefront system and are based on the specific system indicated. Refer to Division 01 Section "Product Requirements." Do not modify size and dimensional requirements.
   1. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.

E. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Build mockup for type(s) of storefront elevation(s) indicated, in location(s) shown on Drawings.

F. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

G. Structural-Sealant Glazing: Comply with ASTM C 1401, "Guide for Structural Sealant Glazing" for design and installation of structural-sealant-glazed systems.

H. Structural-Sealant Joints: Design reviewed and approved by structural-sealant manufacturer.

1.07 PROJECT CONDITIONS

A. Field Measurements: Verify actual dimensions of aluminum framed storefront openings by field measurements before fabrication and indicate field measurements on Shop Drawings.

1.08 WARRANTY

A. Manufactures Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty.
1. Warranty Period: Two (2) years from Date of Substantial Completion of the project provided however that the Limited Warranty shall begin in no event later than six months from date of shipment by manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Basis-of-Design Product:
1. Kawneer Company Inc.
2. Trifab® 450 (non-Thermal) and Trifab® 601T (thermal) Storefront System Storefront System
3. 2" x 6" and 2"x 4.5" (50.8 mm x 152.4 mm) System Dimensions
4. Doors, 350 Medium, Stile Entrance

B. Substitutions: Refer to Substitutions Section for procedures and submission requirements
1. Pre-Contract (Bidding Period) Substitutions: Submit written requests ten (10) days prior to bid date.
2. Post-Contract (Construction Period) Substitutions: Submit written request in order to avoid storefront installation and construction delays.
3. Product Literature and Drawings: Submit product literature and drawings modified to suit specific project requirements and job conditions.
4. Certificates: Submit certificate(s) certifying substitute manufacturer (1) attesting to adherence to specification requirements for storefront system performance criteria, and (2) has been engaged in the design, manufacturer and fabrication of aluminum storefronts for a period of not less than ten (10) years. (Company Name)
5. Test Reports: Submit test reports verifying compliance with each test requirement required by the project.
6. Samples: Provide samples of typical product sections and finish samples in manufacturer's standard sizes.

C. Substitution Acceptance: Acceptance will be in written form, either as an addendum or modification, and documented by a formal change order signed by the Owner and Contractor.

2.02 MATERIALS

A. Aluminum Extrusions: Alloy and temper recommended by aluminum storefront manufacturer for strength, corrosion resistance, and application of required finish and not less than 0.070" wall thickness at any location for the main frame and complying with ASTM B 221: 6063-T6 alloy and temper.

B. Fasteners: Aluminum, nonmagnetic stainless steel or other materials to be non-corrosive and compatible with aluminum window members, trim hardware, anchors, and other components.

C. Anchors, Clips, and Accessories: Aluminum, nonmagnetic stainless steel, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions or other suitable zinc coating; provide sufficient strength to withstand design pressure indicated.

D. Reinforcing Members: Aluminum, nonmagnetic stainless steel, or nickel/chrome-plated steel complying with ASTM B 456 for Type SC 3 severe service conditions, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions or other suitable zinc coating; provide sufficient strength to withstand design pressure indicated.

E. Sealant: For sealants required within fabricated storefront system, provide permanently elastic, non-shrinking, and non-migrating type recommended by sealant manufacturer for joint size and movement.

F. Tolerances: Reference to tolerances for wall thickness and other cross-sectional dimensions of storefront members are nominal and in compliance with AA Aluminum Standards and Data.

2.03 STOREFRONT FRAMING SYSTEM

A. Thermal Barrier (Trifab® 601T & 601UT):
   1. Trifab® 601T: Kawneer IsoLock® Thermal Break with a nominal 1/4" (6.4 mm) separation consisting of a two-part chemically curing, high-density polyurethane, which is mechanically and adhesively joined to aluminum storefront sections.

B. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.

C. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials. Where exposes shall be stainless steel.

D. Perimeter Anchors: When steel anchors are used, provide insulation between steel material and aluminum material to prevent galvanic action

E. Packing, Shipping, Handling and Unloading: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

F. Storage and Protection: Store materials protected from exposure to harmful weather conditions. Handle storefront material and components to avoid damage. Protect storefront material against damage from elements, construction activities, and other hazards before, during and after storefront installation.

2.04 GLAZING SYSTEMS

A. Glazing: As specified in Division 08 Section "Glazing."

B. Glazing Gaskets: Manufacturer's standard compression types; replaceable, extruded EPDM rubber.

C. Spacers and Setting Blocks: Manufacturer's standard elastomeric type.

D. Bond-Breaker Tape: Manufacturer's standard TFE-fluorocarbon or polyethylene material to which sealants will not develop adhesion.

E. Glazing Sealants: For structural-sealant-glazed systems, as recommended by manufacturer for joint type, and as follows:
   1. Weatherseal Sealant: ASTM C 920 for Type S, Grade NS, Class 25, Uses NT, G, A, and O; single-component neutral-curing formulation that is compatible with structural sealant and other system components with which it comes in contact; recommended by structural-sealant, weatherseal-sealant, and aluminum-framed-system manufacturers for this use.
      a. Color: Matching structural sealant.

2.05 ENTRANCE DOOR SYSTEMS

A. Entrance Doors: As specified in Division 08 41 13 Section "Aluminum Framed Entrances."

B. Entrance Door Hardware: As specified in Division 08 41 13 Section "Door Hardware."

2.06 ACCESSORY MATERIALS

A. Joint Sealants: For installation at perimeter of aluminum-framed systems, as specified in Division 07 Section "Joint Sealants."

2.07 FABRICATION

A. Framing Members, General: Fabricate components that, when assembled, have the following characteristics:
   1. Profiles that are sharp, straight, and free of defects or deformations.
   2. Accurately fit joints; make joints flush, hairline and weatherproof.
   3. Means to drain water passing joints, condensation within framing members, and moisture migrating within the system to exterior.
   4. Physical and thermal isolation of glazing from framing members.
   5. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
   6. Provisions for field replacement of glazing.
   7. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.

B. Mechanically Glazed Framing Members: Fabricate for flush glazing without projecting stops.

C. Structural-Sealant-Glazed Framing Members: Include accommodations for using temporary support device to retain glazing in place while structural sealant cures.

D. Storefront Framing: Fabricate components for assembly using manufactures standard installation instructions.

E. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings.

2.08 ALUMINUM FINISHES

A. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.

B. Factory Finishing:
   1. Kawneer Permanodic® AA-M10C22A31, AAMA 611, Architectural Class II Clear Anodic Coating (Color #17 Clear) (Standard).

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work. Verify rough opening dimensions, levelness of sill plate and operational clearances. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure a coordinated, weather tight framed aluminum storefront system installation.
   1. Wood Frame Walls: Dry, clean, sound, well nailed, free of voids, and without offsets at joints. Ensure that nail heads are driven flush with surfaces in opening and within 3 inches (76 mm) of opening.
   2. Metal Surfaces: Dry; clean; free of grease, oil, dirt, rust, corrosion, and welding slag; without sharp edges or offsets at joints.
   3. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. Comply with Drawings, Shop Drawings, and manufacturer's written instructions for installing aluminum framed storefront system, accessories, and other components.

B. Install aluminum framed storefront system level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction.

C. Set sill members in bed of sealant or with gaskets, as indicated, for weather tight construction.

D. Install aluminum framed storefront system and components to drain condensation, water penetrating joints, and moisture migrating within sliding door to the exterior.

E. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.

3.03 FIELD QUALITY CONTROL

A. Field Tests: Architect shall select storefront units to be tested as soon as a representative portion of the project has been installed, glazed, perimeter caulked and cured. Conduct tests for air infiltration and water penetration with manufacturer's representative present. Tests not meeting specified performance requirements and units having deficiencies shall be corrected as part of the contract amount.

1. Testing: Testing shall be performed by a qualified independent testing agency. Refer to Testing Section for payment of testing and testing requirements. Testing Standard per AAMA 503, including reference to ASTM E 783 for Air Infiltration Test and ASTM E 1105 Water Infiltration Test.
   a. Air Infiltration Tests: Conduct tests in accordance with ASTM E 783. Allowable air infiltration shall not exceed 1.5 times the amount indicated in the performance requirements or 0.09 cfm/ft2, whichever is greater.
   b. Water Infiltration Tests: Conduct tests in accordance with ASTM E 1105. No uncontrolled water leakage is permitted when tested at a static test pressure of two-thirds the specified water penetration pressure but not less than 6.24 psf (300 Pa).

3.04 ADJUSTING, CLEANING, AND PROTECTION

A. Clean aluminum surfaces immediately after installing aluminum framed storefronts. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.

B. Clean glass immediately after installation. Comply with glass manufacturer's written recommendations for final cleaning and maintenance. Remove nonpermanent labels, and clean surfaces.

C. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.

END OF SECTION

HMS, Inc.

HAZARD MANAGEMENT SERVICES, INC.
PO Box 576848
Modesto, CA 95357-6848
(209) 551-2000 • (209) 575-5657 Fax

March 4, 2009

Stan Dobbs, Interim Bond Director
Solano County Community College
4000 Suisun Valley Road
Fairfield, CA 94534

Dear Mr. Dobbs,

This letter contains a report on an asbestos sampling exercise conducted by Hazard Management Services, Inc. at the Theater, Building 1200, on your Solano County Community College campus. You requested that we collect a few cursory samples of various building materials to get an idea about abatement implications associated with an upcoming renovation project. Before any renovation can occur a complete and thorough inspection would be necessary.

This inspection was conducted by James E Sharp and Tina Markley, of HMS, Inc. on 2/25/09. A copy of Mr Sharp's Cal/OSHA certification is attached.

Procedures

At your request we collected samples from only the major components of the building. This included wall and ceiling surfaces, flooring, HVAC tape and sealants, baseboards and acoustic ceiling tiles. Plaster and drywall systems were tested on walls and ceilings, the major type of 2' X 4' false ceiling tiles was tested as well as two types of 12" vinyl floor tiles and mastic. Roofing materials were also collected.

A total of only 13 samples was collected and sent to Forensic Analytical Specialties, Inc. for analysis by polarized light microscopy. Forensic is accredited by the National Voluntary Laboratory Accreditation Program for this type of analysis. A copy of it's documentation is attached.

Results

All drywall samples contained asbestos in the skim coat and joint compound. It must be classified as hazardous, asbestos-contained waste. Floor tiles and most of the tile mastic also contained asbestos. Single samples from plaster, one type of 2' X 4' false ceiling panel, brown baseboard and mastic, three roof samples and two duct tape samples all were negative for asbestos.

As noted before this was not a complete inspection. Additional samples will have to be taken to comply with regulatory requirements. There were numerous small quantity items which will require sampling plus the plaster and the roofing will require some confirmation samples.

367 Civic Drive, #7
Pleasant Hill, CA 94523-2284
(925) 363-3442
(925) 363-7897 Fax

4949 Buckley Way, #108
Bakersfield, CA 93309-4881
(661) 833-0351
(661) 833-0361 Fax

371 E. Bullard Ave., Ste. 109
Fresno, CA 93710-5217
(559) 436-0277
(559) 436-0279 Fax

I did not quantify materials during this evaluation due to its cursory nature. Therefore, I cannot give an estimate of abatement costs. However, if all the drywall and flooring is asbestos-containing, and it probably is, abatement costs will easily exceed $150,000. Of course, if less than all the drywall must be removed costs would be less.

You should also advise all personnel in this building about the drywall and the vinyl floor tile results. Moving the heavy equipment and stage props have damaged some sections of drywall producing some friable materials. Water damage, particularly in the Green Room area, also has produced damaged areas of drywall. It is important to avoid further contact or water problems.

Comments

1. The area shown in picture No. 1 shows water damage to the plaster ceiling in the seating area of the Auditorium. One small piece has already fallen and the plaster was wet from recent rains at the time of our visit. While this plaster does not contain asbestos, the potential for further deterioration increases with each rain storm.

2. The ceiling tiles and the walls above and below the ceiling tiles in the Green Room show damage and mold growth. See picture Nos. 4 and 5. While the saturated ceiling tile may fall the walls are water damaged but are intact.

If you have any questions please call (209) 551-2000.

Sincerely,

James E Sharp
Cal/OSHA 05-3819

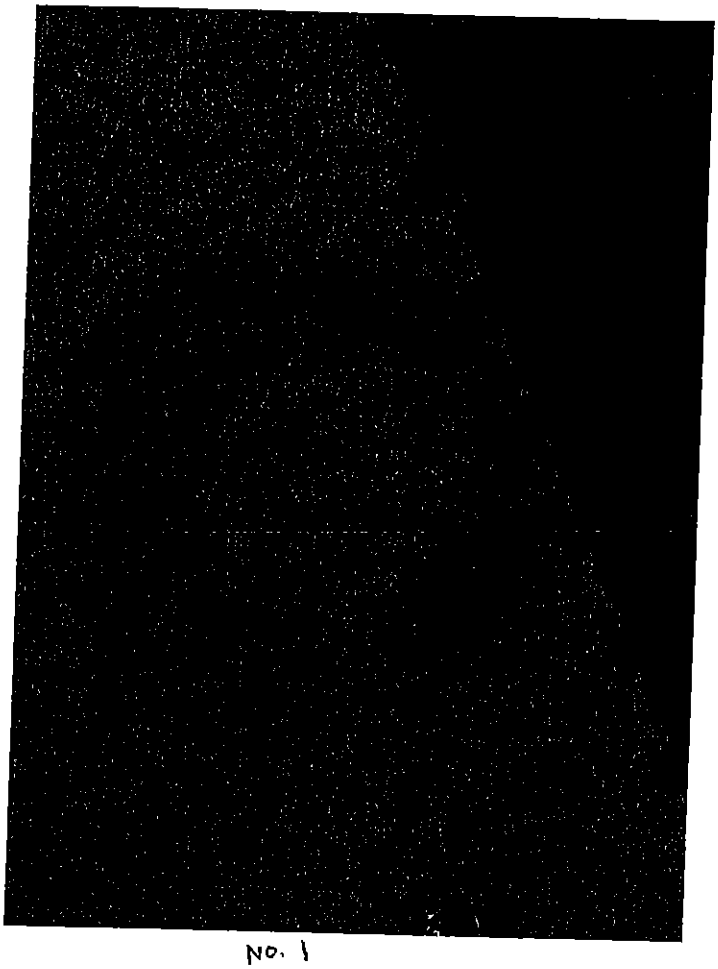
BUILDING 1200
PICTURES LOG

1. Water damage on plaster ceiling in auditorium seating area

2/3. Water damaged drywall next to upstair Control Room

4. Water damaged ceiling tiles and drywall in Green Room next to stage.

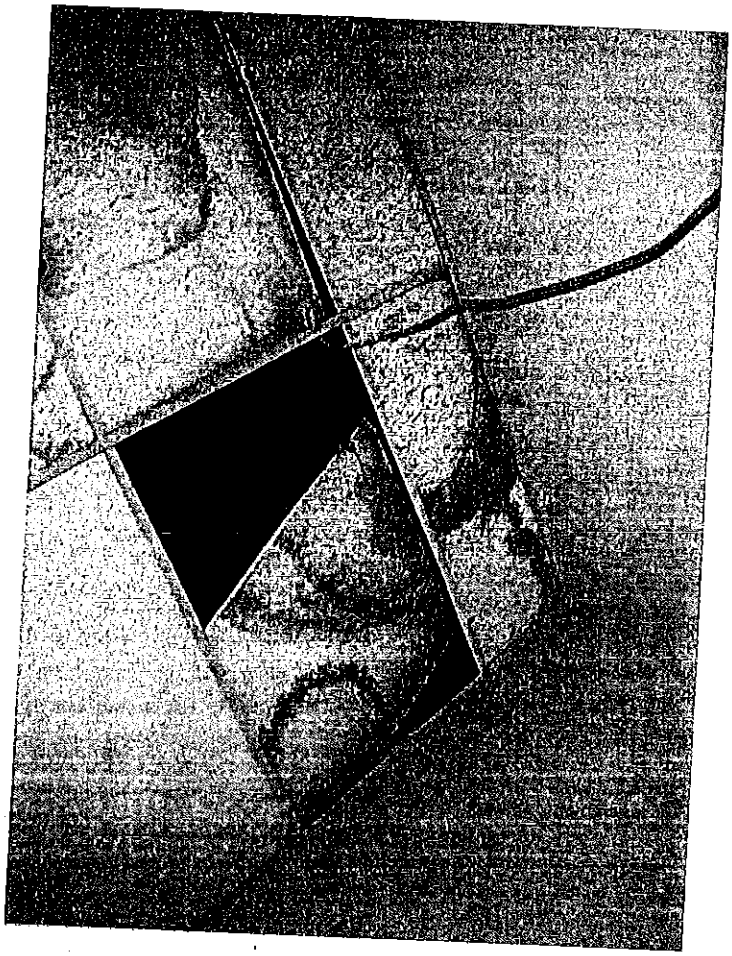
5. Mold growth on walls above water damaged tiles in Green Room.



No. 1

No. 2

No. 3



No.4

No.5

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Hazard Mgmt Services - Modesto
Jim Sharp
PO Box 576848

Modesto, CA 95357-6848

Client ID: 1146
Report Number: B121897
Date Received: 02/27/09
Date Analyzed: 03/02/09
Date Printed: 03/02/09
First Reported: 03/02/09

Job ID/Site: M09-024 - Bldg 1200, Solano County Comm. College

Date(s) Collected: 02/26/2009

FASI Job ID: 1146
Total Samples Submitted: 13
Total Samples Analyzed: 13

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
HMS-M09-024-1	10844625						
Layer: White Drywall			ND				
Layer: Off-White Skimcoat/Joint Compound		Chrysotile	2 %				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		**Asbestos (Trace)**					
Cellulose (20 %) Fibrous Glass (10 %)							
HMS-M09-024-2	10844626						
Layer: White Drywall			ND				
Layer: Off-White Skimcoat/Joint Compound		Chrysotile	2 %				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		**Asbestos (Trace)**					
Cellulose (20 %) Fibrous Glass (10 %)							
HMS-M09-024-3	10844627						
Layer: White Drywall			ND				
Layer: Off-White Skimcoat/Joint Compound		Chrysotile	2 %				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		**Asbestos (Trace)**					
Cellulose (20 %) Fibrous Glass (10 %)							
HMS-M09-024-4	10844628						
Layer: White Tape			ND				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (90 %)							
HMS-M09-024-5	10844629						
Layer: White Tape			ND				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (90 %)							
HMS-M09-024-6	10844630						
Layer: White Plaster			ND				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace)							

Client Name: Hazard Mgmt Services - Modesto

Report Number: B121897
Date Printed: 03/02/09

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
HMS-M09-024-7	10844631						
Layer: Beige Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (35 %) Fibrous Glass (45 %)							
HMS-M09-024-8	10844632						
Layer: Beige Tile		Chrysotile	2 %				
Layer: Black Mastic		Chrysotile	5 %				
Total Composite Values of Fibrous Components:		**Asbestos (2%)**					
Cellulose (Trace)							
HMS-M09-024-9	10844633						
Layer: Beige Tile		Chrysotile	2 %				
Layer: Yellow Mastic			ND				
Total Composite Values of Fibrous Components:		**Asbestos (2%)**					
Cellulose (Trace)							
HMS-M09-024-10	10844634						
Layer: Brown Non-Fibrous Material			ND				
Layer: Brown Mastic			ND				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace)							
HMS-M09-024-11	10844635						
Layer: Stones			ND				
Layer: Black Tar			ND				
Layer: Black Felt			ND				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Fibrous Glass (45 %)							
HMS-M09-024-12	10844636						
Layer: Black Semi-Fibrous Tar			ND				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (20 %) Synthetic (10 %)							
HMS-M09-024-13	10844637						
Layer: Black Tar			ND				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace)							

James Flores, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

HAZARD MANAGEMENT SERVICES, INC.

BULK Material Analysis Request Form

P.O. BOX 576848
MODESTO, CA 95357-6848
(209) 551-2000
FAX (209) 575-5657

Date: 2-26-09

HMS Contact: JIM SHARP

Special Instructions: Please fax results to 209-575-5657

Analysis Requested:

☒ PLM with Dispersion Staining

___2 Hr; ___24 Hr; X 48 Hr; ___Extended

☐ TEM Water (5 Day)

☐ TEM Bulk (5 Day)

Laboratory: Forensic

Collected by: JIM SHARP

Date collected: 2-25-09

Client: Solano County Comm. College

Job Site/Project: BLDG. 1200

Job No.: M09-024

Sample #	Results %	Material Description/ Location
HMS-M09-024-01		DW - FIELD
02		PERIMETER WALL - GREEN AM - BLDG 1200
03		DW & JOINT COMPOUND
04		THEATER - BLDG 1200
05		DW FIELD
06		CONTROL AM - BLDG 1200
07		DUCT TAPE & SEALANT
08		STAGE CATWALK [redacted] BLDG 1200
09		DUCT TAPE WITH SEALANT
10		CONTROL AM VENT DUCTS - BLDG 1200
11		CEILING PLASTER
12		MAIN AUDITORIUM - BLDG 1200
13		2x4 FLP
		GREEN AM CEILING - WET AREA
		VFT + MASTIC
		CONTROL AM STORAGE
		VFT + MASTIC
		STAGE AREA - BLDG 1200
		BROWN BASEBOARD + MASTIC
		CONTROL AM STORAGE
		TAR FOR ROOFING
		BLDG 1200
		PENETRATION MASTIC
		ROOF - BLDG 1200
		ROOF MASTIC
		BLDG 1200

C:\forms\asom\bulkmat.apt 12-20

2/27/09 ETC 1020am THANKS - JSharp

Hazard Management Services, Inc.

This is to confirm that

James E Sharp

has attended the eight-hour

AHERA Refresher Course for Asbestos Contractors and Supervisors

and has completed the requisite training for asbestos accreditation under TSCA Title II

May 13, 2008

Certificate number: HMSCSR07
Valid until: May 13, 2009
Cal/OSHA approval number: CA-025-04

Michael C Sharp
CAC, DHS, I/S/M, MCSE NT 4.0+I
AHERA Training Director
Hazard Management Services, Inc.

Hazard Management Services, Inc.

This is to confirm that

James E Sharp

has attended the four-hour

AHERA Refresher Course for Asbestos Inspectors

and has completed the requisite training for asbestos accreditation under TSCA Title II

January 28, 2008

Certificate number: 58

Valid until: January 28, 2009

Cal/OSHA approval number: CA-025-06

Michael C. Sharp
CAC, DHS I/S/M, MCSE NT 4.0+I
AHERA Training Director
Hazard Management Services, Inc.

STATE OF CALIFORNIA Arnold Schwarzenegger, *Governor*

DEPARTMENT OF INDUSTRIAL RELATIONS
DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
ASBESTOS CONSULTANT and TRAINER APPROVAL UNIT
2211 Park Towne Circle, Suite 1
Sacramento, CA 95825
Tel: (916) 574-2993 Fax: (916) 483-0572

506013819T 279

May 28, 2008

Hazard Management Services
James E Sharp
P. O. Box 576848
Modesto CA 95357-6848

Dear Certified Asbestos Consultant or Technician:

Enclosed is your certification card. **To maintain your certification, please abide by the rules printed on the back of the certification card.**

Your certification is valid for a period of one year. If you wish to renew your certification, you must apply for renewal at least 60 days before the expiration date shown on your card. [8 CCR 341.15(h)(1)].

Please hold and do not send copies of your required AHERA refresher renewal certificates to our office until you apply for renewal of your certification. Certificates must be kept current if you are actively working as a CAC or CSST. The grace period is only for those who are not actively working as a CAC or CSST.

Please inform our office at the above address, fax number or actu@dir.ca.gov of any changes in your contact/mailing information within 15 days of the change.

Sincerely,

Jeff Ferrell
Senior Industrial Hygienist

JF/ms

Attachment: Certification Card
cc: File

(Renewal – Card Attached Revised 8/29/06)

State of California
Division of Occupational Safety and Health
Certified Site Surveillance Technician

James E Sharp
Name

Certification No. 05-3819

Expires on 06/16/09

This certification was issued by the Division of Occupational Safety and Health as authorized by Sections 7180 et seq. of the Business and Professions Code.

NVLAP® National Voluntary Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

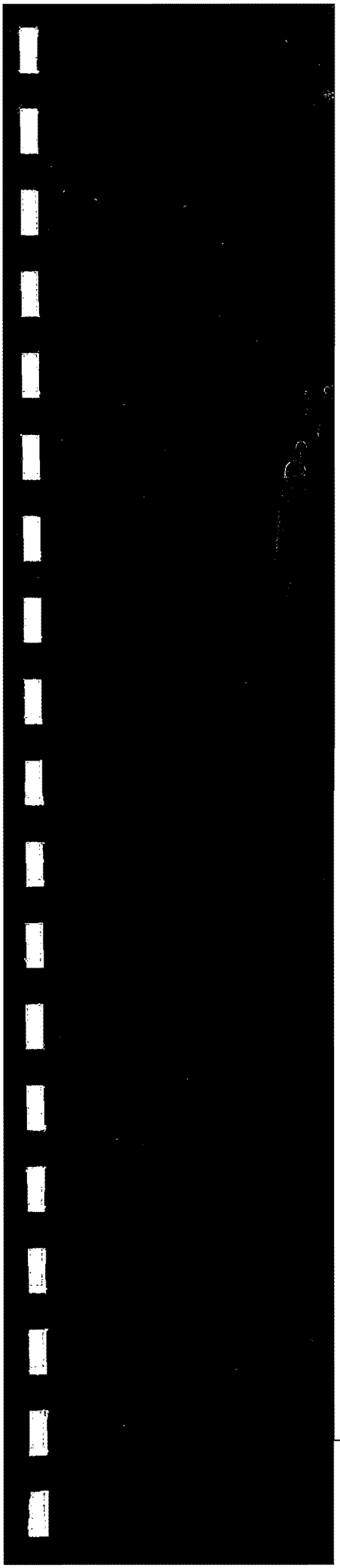
Forensic Analytical Laboratories, Inc.
3777 Depot Road, Suite 409
Hayward, CA 94545-2761
Mr. David Sandusky
Phone: 510-887-8828 Fax: 510-887-4218
E-Mail: Daves@forensica.com
URL: http://www.forensica.com

BULK ASBESTOS FIBER ANALYSIS (PLM) **NVLAP LAB CODE 101459-0**

NVLAP Code	*Designation / Description*
18/A01	EPA-600/M4-82-020: Interim Method for the Determination of Asbestos in Bulk Insulation Samples

2008-07-01 through 2009-06-30
Effective dates

Sally S. Bruce
For the National Institute of Standards and Technology



ASBESTOS AND LEAD BASED PAINT SURVEY REPORT
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

KLEINFELDER
An employee owned company

Wendy Locke

From: Jennifer Gomez [jyoung@kleinfelder.com]
Sent: Tuesday, November 30, 2004 11:45 AM
To: Wendy Locke
Subject: Asbestos Table Info.


Attachment information.


TABLE 1 SCC Corrections 11-30....

Wendy-

Please make the following changes. I went through the table again and found some errors.

* Please change Sample Nos. 44A, 44B and 44C (page 19) to M instead of JJ (This is the one you noticed). There is no II or JJ in the legend and that is right.
* Please change Sample Nos. 120A, 120B and 120C (page 51,52) to BB instead of just B.
* Please change Sample Nos. 1300-5-A and 1300-5-B (page 65, 66) to Z instead of HH and Sample Nos. 1200-5-A and 1200-5-B (page 67) to Z instead of HH.

ASBESTOS AND LEAD BASED PAINT SURVEY REPORT
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

July 20, 2004

KLEINFELDER
An employee owned company

A Report Prepared for:

Mr. Ray Ogden
Solano Community College
4000 Suisun Valley Road
Fairfield, California 94534

ASBESTOS AND LEAD BASED PAINT SURVEY REPORT
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Kleinfelder Job No. 44156
July 20, 2004

Jennifer Gomez
Certified Asbestos Consultant, No. 03-3328
DHS Certified Lead Inspector/Assessor No. 8091

Bradley G. Erskine, PhD
Certified Asbestos Consultant, No. 92-0014
North Bay Regional Environmental Manager

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780 Chadbourne Road, Suite D
Fairfield, California 94534
(707) 429-4070
(707) 429-4162 (facsimile)

TABLE OF CONTENTS

1 EXECUTIVE SUMMARY

This report presents the results of the asbestos and lead-based paint survey conducted on May 21 and June 1-3, 2004 for Solano Community College (SCC) located 4000 Suisun Valley Road in Fairfield, California. The purpose of this survey is to evaluate the location, condition, and quantity asbestos containing materials (ACM) and lead-based paint (LBP) from within the interior and exterior of specified areas of the college where future renovation will be taking place (as per the direction of Mr. Tom Berger of Kitchell and Mr. Ray Ogden of SCC).

The asbestos building material survey consisted of a site reconnaissance to identify suspect ACM, collection of bulk building materials, analysis of samples by Polarized Light Microscopy by a certified laboratory, and a physical assessment of the suspect ACM. The survey was conducted in order to satisfy the regulatory requirements of Federal OSHA, EPA, DHS, Cal-OSHA, and the Bay Area Air Quality Management District (BAAQMD) as they relate to renovation and/or demolition projects.

The lead-based paint survey consisted of conducting a site reconnaissance to identify suspect LBP, screening paints with an X-Ray Fluorescent (XRF) analyzer unit, and collecting of paint chips for negative and inconclusive XRF readings. The collected paint chips were analyzed by Flame Atomic Absorption by a laboratory.

The survey was conducted in general accordance with the United States Environmental Protection Agency (EPA), Department of Health Services (DHS) and California Occupational Safety and Health Administration (Cal-OSHA) standards and protocols.

Results of the Asbestos Survey

A total of 500 bulk samples were collected from SCC for asbestos analysis. The following building materials were identified through laboratory analysis as containing $\geq$1% asbestos and are classified as Regulated Asbestos Containing Material (RACM).

- Sheetrock wall systems and associated drywall texture (Sample Nos. 35A, 35B, 35C, 36A, 36B and 36C) located in Building 2100 (pool pump house). This material was observed in fair condition and encompasses approximately 1,800 square feet.

- White TSI taping and white TSI material (Sample Nos. 64A, 64B and 64C) located in the shower area Building 2112. This material was observed in good condition and encompasses approximately 500 linear feet.

The following building materials were identified through laboratory analysis as containing $\geq$1% asbestos and are classified as Category I non-friable ACM.

- White with red flecks 9" x 9" vinyl floor tile (VFT) and associated black mastic (Sample Nos. 1A, 1B and 1C) located in multiple buildings (e.g. 100, 300, 500, 600, 700, 800, 1500

and 1700). This material was observed in good condition and encompasses approximately 15,000 square feet.

- Green with white fleck 9" x 9" VFT and associated black mastic (Sample Nos. 5A, 5B and 5C) located in the majority of the building surveyed. This material was observed in good condition and encompasses approximately 20,000 square feet.

- Off-white pink and brown streaked 9" x 9" VFT and associated black mastic (Sample Nos. 7A, 7B and 7C) located in the majority of the buildings surveyed. This material was observed in good condition and encompasses approximately 10,000 square feet.

- Beige/yellow HVAC taping (Sample Nos. 13A, 13B, 13C, 44A, 44B and 44C) located in the plenum area of Buildings 300, 500, 600, 700 and 1300. This material was observed in good condition and encompasses approximately 2,000 linear feet.

- Pink with gray streak 9" x 9" VFT and associated black mastic (Sample Nos. 16A, 16B and 16C) located in Building 600. This material was observed in good condition and encompasses approximately 5,000 square feet.

- Off-white with red streaks 9" x 9" VFT and associated black mastic (Sample Nos. 21A, 21B and 21C) located in Building 100. This material was observed in good condition and encompasses approximately 8,000 square feet.

- Off-white with brown streaks 12" x 12" VFT and associated black mastic (Sample Nos. 24A, 24B and 24C) located in Building 100, Room 162. This material was observed in good condition and encompasses approximately 1,500 square feet.

- Multi-color 12" x 12" VFT and associated black mastic (Sample Nos. 32A, 32B and 32C) located in Building 300, Room 306 (small adjacent room). This material was observed in good condition and encompasses approximately 1,000 square feet.

- Gray putty (Sample Nos. 34A, 34B and 34C) associated with the black laboratory sinks located in Building 300, Rooms 304 and 303. This material was observed in good condition and encompasses approximately 50 linear feet.

- Off-white with tan fleck 12" x 12" VFT and associated black mastic (Sample Nos. 39A, 39B and 39C) located in Building 700, Room 714. This material was observed in good condition and encompasses approximately 1,000 square feet.

- White with red streak 12" x 12" VFT and associated black mastic (Sample Nos. 43A, 43B and 43C) located in hallways of Building 700 and in Room 745. This material was observed in good condition and encompasses approximately 5,000 square feet.

- Green 12" x 12" VFT (Sample Nos. 65A, 65B and 65C) located in Building 1900, Room 1902A. This material was observed in good condition and encompasses approximately 400 square feet.

- Beige with green and brown fleck 12" x 12" VFT and associated black mastic (Sample Nos. 68A, 68B and 68C) located in Building 800. This material was observed in good condition and encompasses approximately 6,000 square feet.

- Brown mastic (Sample Nos. 69A, 69B and 69C) associated with the 4" brown baseboard located in Building 800. This material was observed in good condition and encompasses approximately 1,500 linear feet.

- Brown mastic (Sample Nos. 73A, 73B, 73C, 76A, 76B, 76C, 108A, 108B and 108C) associated with the white 12" x 12" (dot pattern) tiles located on the walls and ceilings of Building 800 and ceilings of Building 1300. This material was observed in good condition and encompasses approximately 6,000 square feet.

- Beige 12" x 12" VFT (Sample Nos. 91A, 91B and 91C) located in Building 1101, Room 1101. This material was observed in good condition and encompasses approximately 1, 600 square feet.

- Black mastic (Sample Nos. 93A, 93B and 93C) associated with the green 12" x 12" VFT located in multiple areas of Building 1400. The material was observed in good condition and encompasses approximately 10,000 square feet.

- Black mastic (Sample Nos. 94A, 94B and 94C) associated with the gray 12" x 12" VFT located in the entrance area of Building 1400. The material was observed in good condition and encompasses approximately 2,000 square feet.

- Off-white with brown fleck 12" x 12" VFT and associated black mastic (Sample Nos. 103A, 103B and 103C) located in multiple areas of Building 1300. The material was observed in good condition and encompasses approximately 2,500 square feet.

- Green with off-white 12" x 12" VFT and associated black mastic (Sample Nos. 109A, 109B and 109C) located in Building 1800A. This material was observed in good condition and encompasses approximately 4,500 square feet.

- Black spray material (Sample No. 132A) associated with the stainless steel sink located in Building 1200, Room 1245. This material was observed in good condition and encompasses approximately 10 square feet.

- Green sheet flooring material (Sample Nos. 134A, 134B and 134C) located in Building 900, Room 902. This material was observed in good condition and encompasses approximately 400 square feet.

- Black rolled roofing material (Sample Nos. 500-5-A, 500-5-B, 500-5-C, 1200-3-A, 1200-3-B and 1200-3-C) located within the parapit areas on the roof of the buildings surveyed. The material was observed in good condition and encompasses approximately 10,000 square feet.

- Gray PVC putty (Sample Nos. 700-3-A, 700-3-B and 700-3-C) located on the roof of Building 700 and observed on multiple roofs throughout the buildings surveyed. The material was observed in good condition and encompasses approximately 50 square feet.

- Black asphalt rolled roofing material (Sample Nos. 700-6-A and 700-6-B) located on Building 700 and observed on multiple roofs throughout the buildings surveyed. The material was observed in good condition and encompasses approximately 5,500 square feet.

- Black putty (Sample Nos. 700-8-A and 700-8-B) located on the edge of the roof on Building 700. The material was observed in good condition and encompasses approximately 200 linear feet.

- Black penetration mastic (Sample Nos. 1100-2-A, 1100-2-B, 1100-2-C, 1300-5-A, 1300-5-B, 1200-5-A and 1200-5-B) located on all of the buildings surveyed. The material was observed in good condition and encompasses approximately 1,000 linear feet.

- Black asphalt roofing (Sample Nos. 1200-6-A AND 1200-6-B) observed behind the gray concrete shingles located on multiple roofs surveyed. The material was observed in good condition and encompasses approximately 2,500 square feet.

The following building material is identified through laboratory analysis as containing "trace" asbestos (>0.1% and <1% asbestos) and is classified as ACCM.

- Sheetrock wall systems (Sample Nos. 18A, 18B, 18C, 38A, 38B, 38C, 38D, 38E, 55A, 55B, 55C, 84A, 84B, 84C, 106A, 106B, 106C 120A, 120B, 120C, 128A, 128B, 128C and 131A) located in Buildings 100, 700, 1100 (Rooms 1101, 1102, 1103, 1105 and 1107), 1200, 1300, 1500, 1600, 1700 and 1800A/B (except where specific below). This material was observed in good condition and encompasses approximately 22,000 square feet.

- Brown mastic (Sample Nos. 104A, 104B and 104C) associated with the 4" brown baseboard located in multiple areas of Building 1300. The material was observed in fair condition and encompasses approximately 2,500 linear feet.

- Sheetrock wall systems and associated texture (Sample Nos. 113A, 113B, 113C, 114A, 114B and 114C) located in Building 1800A/B janitors closet and mechanical room. This material was observed in good condition and encompasses approximately 2,500 square feet.

- White 2' x 4' ceiling tiles (Samples Nos. 81A, 81B and 81C) located in Building 1100. This material was observed in good condition and encompasses approximately 5,000 square feet.

The following building materials are presumed to contain asbestos (PACM):

- Gray transite board observed in the fume hoods of Building 300 and in the welding shop of Building 1800B.
- White TSI located in Building 1800A/B.
- Paint booth located in Building 1800B is noted in as-built plans as being constructed of ACM.
- Review Plates 1-19 for notes concerning the structure surveyed and specific building materials not collected due to field conditions. The materials are assumed to contain asbestos until sampling proves otherwise.

Results of the Lead-Based Paint Survey

A total of 4 confirmation paint chip samples were collected from SCC for lead analysis. The following coatings identified through laboratory analysis and/or XRF analysis as being classified as lead-based paint.

- Multi-colored (depending on building) 4" x 4" ceramic wall tile located in the restrooms of all the structures.
- Orange paint located in Building 1800A, Room 1807.
- Dark brown paint located on the exterior trim of Building 1100.

2 INTRODUCTION AND ASBESTOS SURVEY

2.1. INTRODUCTION

This report presents the results of Kleinfelder's asbestos building material survey for SCC. The survey was performed in accordance with our scope of work and cost estimate given within the proposal No. 40-YP4-077 dated April 21, 2004 and the verbal directions of Mr. Tom Berger of Kitchell. The purpose of the survey was to evaluate the location, condition, and quantity of ACM within the specified area.

The survey was restricted to the following buildings scheduled for renovation: Building 100, 300, 500, 600, 700, 800, 900, 1100 (5 structures total), 1200, 1300, 1400, 1500, 1600, 1700, 1800A/B, 1900 (upstairs not included due to recent build), 2000, 2100, and 2112. This survey will include the roof of the following buildings scheduled for renovation: Building 500, 600, 700, 1100, 1200, 1300, 1500, 1700, 1800A/B and 1900. The exterior of Buildings 1500 and 1800A/B are the only exterior surveys being conducted on campus. Any buildings not listed above were not included in this survey, and should be tested if renovation of these materials is planned for the future.

2.2. REGULATORY OVERVIEW FOR ASBESTOS

Regulatory oversight for the management, removal, and disposal of ACM is provided by Federal, State, and local agencies. Both Cal-OSHA and Federal OSHA regulate asbestos as a worker health and safety issue. EPA regulations concerning the identification, handling, management, and abatement of ACM (as found in the Asbestos Hazard Emergency Response Act [AHERA] and National Emission Standards for Hazardous Air Pollutants [NESHAP]) are implemented locally by the BAAQMD. The transportation and disposal of asbestos-containing wastes are overseen by the DTSC. Federal OSHA, the EPA, the DTSC, and the BAAQMD define ACM as materials containing greater than 1- percent asbestos.

There are a variety of regulatory agencies and regulations that relate to asbestos containing materials. There are three primary regulations that govern various activities (e.g., inspection, assessment, abatement, etc.) relating to ACM: AHERA, NESHAP, and the Asbestos Construction Safety Standard OSHA and Cal-OSHA regulations. The following is a description of each regulation and their impact on ACM.

National Emission Standard for Hazardous Air Pollutants (NESHAP)
NESHAP (40 CFR Part 61) is an asbestos standard that protects the general public from asbestos exposure due to renovation or demolition activities. NESHAP requires surveying for suspect materials (as defined above), notifying of intent to renovate or demolish, removal of regulated

ACM (RACM) prior to renovation or demolition, and proper management of asbestos containing wastes. A RACM is defined by NESHAP as follows:

- Any friable ACM;
- A Category I non-friable ACM (such as floor tiles and asphalt roofing products) that have become friable or will be subject to sanding, grinding, cutting, or abrading during renovation or demolition activities; or
- A Category II non-friable ACM (all other non-friable ACM) which has a high probability of becoming friable during demolition or renovation activities.

NESHAP requires that demolition activities be conducted with no visible emissions using wet methods. It should be noted that while NESHAP regulates renovation and demolition activities, it does not protect individual workers conducting asbestos abatement and does not provide instructions for how asbestos abatement projects should be conducted.

Asbestos Standard for the Construction Industry

The Asbestos Standard for the Construction Industry (Federal OSHA, 29 CFR 1926.1101, and California OSHA 8 California Code of Regulations [CCR] 1529) regulates asbestos exposure in the work place. This includes both persons working in a building containing ACM and abatement workers/contractors.

For abatement workers and contractors, the Asbestos Standard for Construction (Construction Standard) regulates the following:

- How workers and the public are to be protected during the removal;
- Provides medical surveillance requirements for workers;
- Provides detailed requirements for how asbestos is to be removed; and
- Defines training requirements for abatement personnel.

Previously noted building materials containing at least 1 percent asbestos are considered ACM and/or Regulated Asbestos Containing Materials (RACM), and should be managed accordingly. However, the California Division of Occupational Safety and Health (DOSH), also known as Cal-OSHA, defines asbestos containing construction material (ACCM) as any building material that contains more than 0.1 percent (one-tenth of one percent) asbestos by weight. In addition, those building materials presumed or known to contain at least trace amounts (less than 1 percent) of asbestos should be considered as ACCM, and should be managed according to Cal-OSHA regulations (as presented in Title 8, CCR, Section 1529).

2.3. ASBESTOS SURVEY METHODS

On May 21 and June 1-3, 2004 Kleinfelder conducted a visual survey and collected bulk samples of building materials from the on-site structures that are suspected to contain asbestos. The

survey was conducted by Ms. Jennifer Gomez, a State of California Certified Asbestos Consultant (CAC No. 03-3328). The survey was completed to satisfy NESHAP requirements, using AHERA as a guideline for sampling procedures.

Survey procedures included the visual observation and identification of building materials suspected of containing asbestos, bulk sample collection, and physical assessment of the suspect materials. Each sample was placed into a plastic bag and labeled with a random sample number and logged onto a chain-of-custody form.

The samples were delivered to Asbestos TEM Laboratory, Berkeley, California. Asbestos TEM is certified through EPA's National Voluntary Laboratory Accreditation Program (NVLAP) and DHS's Environmental Laboratory Accreditation Program (ELAP) to perform asbestos testing by Polarized Light Microscopy (PLM).

Following PLM analysis, six samples were additionally quantified by Point Count analysis, according to methods described in the NESHAP Final Rule, 40 CFR, Part 61. The point counting analysis of the bulk sample was conducted to more accurately assess the concentration of asbestos within these samples, and to comply BAAQMD reporting requirements. The results of point counting supercede the analytical results visual estimation. A summary of building material sample collected, the sample location, asbestos content, condition, friability, and area estimates are summarized on Table 1. Copies of the analytical laboratory reports and chain-of-custody forms are included in Appendix A.

2.4. ASBESTOS SURVEY RESULTS

Kleinfelder collected a total of 500 building material samples from the structures on site. The following is a description of the building materials that were found to contain asbestos (Table 1):

2.4.1. Building Materials Which Contain ≥1% Asbestos, are Regulated by NESHAP and Cal-OSHA and are Classified as RACM:

- Sheetrock wall systems and associated drywall texture (Sample Nos. 35A, 35B, 35C, 36A, 36B and 36C) located in Building 2100 (pool pump house). Sample No. 35A and 36A were reported by the laboratory to contain 1-5% chrysotile asbestos in the joint compound, non-detect for asbestos in the sheetrock, and 1-5% chrysotile asbestos in the drywall texture. Based on EPA's First Positive Sampling Protocol, the remaining samples (Nos. 35B, 35C, 36B and 36C) were not analyzed by the laboratory. This material was observed in fair condition and encompasses approximately 1,800 square feet.

- White TSI taping and white TSI material (Sample Nos. 64A, 64B and 64C) located in the shower area Building 2112. Sample No. 64B was reported by the laboratory to contain 5-10% chrysotile asbestos and Sample No. 64A was reported by the laboratory as non-detect for asbestos. Based on EPA's First Positive Sampling Protocol, the remaining sample (No.

64C) was not analyzed by the laboratory. This material was observed in good condition and encompasses approximately 500 linear feet.

2.4.2. Building Materials Which Contain ≥1% Asbestos, are Regulated by NESHAP and Cal-OSHA and are Classified as Category I Non-friable ACM:

- White with red fleck 9" x 9" VFT and associated black mastic (Sample Nos. 1A, 1B and 1C) located in multiple buildings (e.g. 100, 300, 500, 600, 700, 800, 1500 and 1700). Sample No. 1A was reported by the laboratory to contain <1% chrysotile asbestos in the VFT and 5-10% chrysotile asbestos in the mastic. Based on EPA's First Positive Sampling Protocol, the remaining samples (Nos. 1B and 1C) were not analyzed by the laboratory. This material was observed in good condition and encompasses approximately 15,000 square feet.

- Green with white fleck 9" x 9" VFT and associated black mastic (Sample Nos. 5A, 5B and 5C) located in the majority of the building surveyed. Sample No. 5A was reported by the laboratory to contain <1% chrysotile asbestos in the VFT and 1-5% chrysotile asbestos in the mastic. Based on EPA's First Positive Sampling Protocol, the remaining samples (Nos. 5B and 5C) were not analyzed by the laboratory. This material was observed in good condition and encompasses approximately 20,000 square feet.

- Off-white pink and brown streaked 9" x 9" VFT and associated black mastic (Sample Nos. 7A, 7B and 7C) located in the majority of the buildings surveyed. Sample No. 7A was reported by the laboratory to contain 1-5% chrysotile asbestos in the VFT and 1-5% chrysotile asbestos in the mastic. Based on EPA's First Positive Sampling Protocol, the remaining samples (Nos. 7B and 7C) were not analyzed by the laboratory. This material was observed in good condition and encompasses approximately 10,000 square feet.

- Beige/yellow HVAC taping (Sample Nos. 13A, 13B, 13C, 44A, 44B and 44C) located in Buildings 300, 500, 600, 700 and 1300. Sample Nos. 13A and 44A were reported by the laboratory to contain 5-10% chrysotile asbestos. Based on EPA's First Positive Sampling Protocol, the remaining samples (Nos. 13B, 13C, 44B and 44C) were not analyzed by the laboratory. This material was observed in good condition and encompasses approximately 2,000 linear feet.

- Pink with gray streak 9" x 9" VFT and associated black mastic (Sample Nos. 16A, 16B and 16C) located in Building 600. Sample No. 16A was reported by the laboratory to contain 1-5% chrysotile asbestos in the VFT and 1-5% chrysotile asbestos in the mastic. Based on EPA's First Positive Sampling Protocol, the remaining samples (Nos. 16B and 16C) were not analyzed by the laboratory. This material was observed in good condition and encompasses approximately 5,000 square feet.

- Off-white with red streaks 9" x 9" VFT and associated black mastic (Sample Nos. 21A, 21B and 21C) located in Building 100. Sample No. 21A was reported by the laboratory to contain 1-5% chrysotile asbestos in the VFT and 1-5% chrysotile asbestos in the mastic. Based on

EPA's First Positive Sampling Protocol, the remaining samples (Nos. 21B and 21C) were not analyzed by the laboratory. This material was observed in good condition and encompasses approximately 8,000 square feet.

- Off-white with brown streaks 12" x 12" VFT and associated black mastic (Sample Nos. 24A, 24B and 24C) located in Building 100, Room 162. Sample No. 24A was reported by the laboratory to contain 1-5% chrysotile asbestos in the VFT and 1-5% chrysotile asbestos in the mastic. Based on EPA's First Positive Sampling Protocol, the remaining samples (Nos. 24B and 24C) were not analyzed by the laboratory. This material was observed in good condition and encompasses approximately 1,500 square feet.

- Multi-color 12" x 12" VFT and associated black mastic (Sample Nos. 32A, 32B and 32C) located in Building 300, Room 306 (small adjacent room). Sample No. 32A was reported by the laboratory as non-detect for asbestos in the VFT and 1-5% chrysotile asbestos in the mastic. Based on EPA's First Positive Sampling Protocol, the remaining samples (Nos. 32B and 32C) were not analyzed by the laboratory. This material was observed in good condition and encompasses approximately 1,000 square feet.

- Gray putty (Sample Nos. 34A, 34B and 34C) associated with the black laboratory sinks located in Building 300, Rooms 304 and 303. Sample No. 34A was reported by the laboratory to contain 10-20% chrysotile asbestos. Based on EPA's First Positive Sampling Protocol, the remaining samples (Nos. 34B and 34C) were not analyzed by the laboratory. This material was observed in good condition and encompasses approximately 50 linear feet.

- Off-white with tan fleck 12" x 12" VFT and associated black mastic (Sample Nos. 39A, 39B and 39C) located in Building 700, Room 714. Sample No. 39A was reported by the laboratory to contain 1-5% chrysotile asbestos in the VFT and 5-10% chrysotile asbestos in the mastic. Based on EPA's First Positive Sampling Protocol, the remaining samples (Nos. 34B and 34C) were not analyzed by the laboratory. This material was observed in good condition and encompasses approximately 1,000 square feet.

- White with red streak 12" x 12" VFT and associated black mastic (Sample Nos. 43A, 43B and 43C) located in hallways of Building 700 and in Room 745. Sample No. 43A was reported by the laboratory to contain 1-5% chrysotile asbestos in the VFT and 1-5% chrysotile asbestos in the mastic. Based on EPA's First Positive Sampling Protocol, the remaining samples (Nos. 43B and 43C) were not analyzed by the laboratory. This material was observed in good condition and encompasses approximately 5,000 square feet.

- Green 12" x 12" VFT (Sample Nos. 65A, 65B and 65C) located in Building 1900, Room 1902A. Sample No. 65A was reported by the laboratory to contain 1-5% chrysotile asbestos in the VFT and non-detect for asbestos in the mastic. Based on EPA's First Positive Sampling Protocol, the remaining samples (Nos. 65B and 65C) were not analyzed by the laboratory. This material was observed in good condition and encompasses approximately 400 square feet.

- Beige with green and brown fleck 12" x 12" VFT and associated black mastic (Sample Nos. 68A, 68B and 68C) located in Building 800. Sample No. 68A was reported by the laboratory to contain 1-5% chrysotile asbestos in the VFT and 5-10% chrysotile asbestos in the mastic. Based on EPA's First Positive Sampling Protocol, the remaining samples (Nos. 68B and 68C) were not analyzed by the laboratory. This material was observed in good condition and encompasses approximately 6,000 square feet.

- Brown mastic (Sample Nos. 69A, 69B and 69C) associated with the 4" brown baseboard located in Building 800. Sample No. 69A was reported by the laboratory to contain 1-5% chrysotile asbestos in the mastic and non-detect for asbestos in the baseboard. Based on EPA's First Positive Sampling Protocol, the remaining samples (Nos. 69B and 69C) were not analyzed by the laboratory. This material was observed in good condition and encompasses approximately 1,500 linear feet.

- Brown mastic (Sample Nos. 73A, 73B, 73C, 76A, 76B, 76C, 108A, 108B and 108C) associated with the white 12" x 12" (dot pattern) tiles located on the walls and ceilings of Building 800 and ceilings of Building 1300. Sample Nos. 73A, 76A and 108A were reported by the laboratory to contain 1-5% / 5-10% / 1-5% chrysotile asbestos in the mastic and non-detect for asbestos in the ceiling and wall tiles, respectively. Based on EPA's First Positive Sampling Protocol, the remaining samples (Nos. 73B, 73C, 76B, 76C, 108B and 108C) were not analyzed by the laboratory. This material was observed in good condition and encompasses approximately 6,000 square feet.

- Beige 12" x 12" VFT (Sample Nos. 91A, 91B and 91C) located in Building 1101, Room 1101. Sample No. 91A was reported by the laboratory to contain 1-5% chrysotile asbestos in the VFT and non-detect for asbestos in the mastic. Based on EPA's First Positive Sampling Protocol, the remaining samples (Nos. 91B and 91C) were not analyzed by the laboratory. This material was observed in good condition and encompasses approximately 1, 600 square feet.

- Black mastic (Sample Nos. 93A, 93B and 93C) associated with the green 12" x 12" VFT and yellow mastic located in multiple areas of Building 1400. Sample No. 93A was reported by the laboratory to contain 1-5% chrysotile asbestos in the black mastic and non-detect for asbestos in the VFT and yellow mastic. Based on EPA's First Positive Sampling Protocol, the remaining samples (Nos. 93B and 93C) were not analyzed by the laboratory. The material was observed in good condition and encompasses approximately 10,000 square feet.

- Black mastic (Sample Nos. 94A, 94B and 94C) associated with the gray 12" x 12" VFT located in the entrance area of Building 1400. Sample No. 94A was reported by the laboratory to contain 5-10% chrysotile asbestos in the mastic and non-detect for asbestos in the VFT. Based on EPA's First Positive Sampling Protocol, the remaining samples (Nos. 94B and 94C) were not analyzed by the laboratory. The material was observed in good condition and encompasses approximately 2,000 square feet.

- Off-white with brown fleck 12" x 12" VFT and associated black mastic (Sample Nos. 103A, 103B and 103C) located in multiple areas of Building 1300. Sample No. 103A was reported by the laboratory to contain <1% chrysotile asbestos in the VFT and 10-20% chrysotile asbestos in the mastic. Based on EPA's First Positive Sampling Protocol, the remaining samples (Nos. 103B and 103C) were not analyzed by the laboratory. The material was observed in good condition and encompasses approximately 2,500 square feet.

- Green with off-white 12" x 12" VFT and associated black mastic (Sample Nos. 109A, 109B and 109C) located in Building 1800A. Sample No. 109A was reported by the laboratory to contain 5-10% chrysotile asbestos in the VFT and 5-10% chrysotile asbestos in the mastic. Based on EPA's First Positive Sampling Protocol, the remaining samples (Nos. 109B and 109C) were not analyzed by the laboratory. This material was observed in good condition and encompasses approximately 4,500 square feet.

- Black spray material (Sample No. 132A) associated with the stainless steel sink located in Building 1200, Room 1245. The sample was reported by the laboratory to contain 1-5% chrysotile asbestos. This material was observed in good condition and encompasses approximately 10 square feet.

- Green sheet flooring material (Sample Nos. 134A, 134B and 134C) located in Building 900, Room 902. Sample No. 134A was reported by the laboratory to contain 1-5% chrysotile asbestos. Based on EPA's First Positive Sampling Protocol, the remaining samples (Nos. 134B and 134C) were not analyzed by the laboratory. This material was observed in good condition and encompasses approximately 400 square feet.

- Black rolled roofing material (Sample Nos. 500-5-A, 500-5-B, 500-5-C, 1200-3-A, 1200-3-B and 1200-3-C) located within the parapit areas on the roof of the buildings surveyed. Sample Nos. 500-5-A and 1200-3-A were reported by the laboratory to contain 10-20% and 5-10% chrysotile asbestos, respectively. In addition, the silver paint associated with the black rolled roofing in Sample Nos. 1200-3A, 1200-3-B and 1200-3-C were reported by the laboratory as non-detect for asbestos. Based on EPA's First Positive Sampling Protocol, the remaining black rolled roofing samples (Nos. 500-5-B, 500-5-C, 1200-3-B and 1200-3-C) were not analyzed by the laboratory. The material was observed in good condition and encompasses approximately 10,000 square feet.

- Gray PVC putty (Sample Nos. 700-3-A, 700-3-B and 700-3-C) located on the roof of Building 700 and observed on multiple roofs throughout the buildings surveyed. Sample No. 700-3-A was reported by the laboratory to contain 30-40% chrysotile asbestos. Based on EPA's First Positive Sampling Protocol, the remaining samples (Nos. 700-3-B and 700-3-C) were not analyzed by the laboratory. The material was observed in good condition and encompasses approximately 50 square feet.

- Black asphalt rolled roofing material (Sample Nos. 700-6-A and 700-6-B) located on Building 700 and observed on multiple roofs throughout the buildings surveyed. Sample No. 700-6-A was reported by the laboratory to contain 10-20% chrysotile asbestos. Based on

EPA's First Positive Sampling Protocol, the remaining sample (No. 700-6-B) was not analyzed by the laboratory. The material was observed in good condition and encompasses approximately 5,500 square feet.

- Black putty (Sample Nos. 700-8-A and 700-8-B) located on the edge of the roof on Building 700. Sample No. 700-8-A was reported by the laboratory to contain 10-20% chrysotile asbestos. Based on EPA's First Positive Sampling Protocol, the remaining sample (No. 700-6-B) was not analyzed by the laboratory. The material was observed in good condition and encompasses approximately 200 linear feet.

- Black penetration mastic (Sample Nos. 1100-2-A, 1100-2-B, 1100-2-C, 1300-5-A, 1300-5-B, 1200-5-A and 1200-5-B) located on all of the buildings surveyed. Sample Nos. 1100-2-A, 1300-5-A and 1200-5-A were reported by the laboratory to contain 5-10% chrysotile asbestos. Based on EPA's First Positive Sampling Protocol, the remaining samples (Nos. 1100-2-B, 1100-2-C, 1300-5-B and 1200-5-B) were not analyzed by the laboratory. The material was observed in good condition and encompasses approximately 1,000 linear feet.

- Black asphalt roofing (Sample Nos. 1200-6-A AND 1200-6-B) observed behind the gray concrete shingles located on multiple surveyed roofs. Sample No. 1200-6-A was reported by the laboratory to contain 5-10% chrysotile asbestos in the black asphalt roofing and non-detect for asbestos in the gray concrete shingles. Based on EPA's First Positive Sampling Protocol, the remaining sample (No. 1220-6-B) was not analyzed by the laboratory. The material was observed in good condition and encompasses approximately 2,500 square feet.

2.4.3. Building Materials Which Contain <1% Asbestos and are Regulated by Cal-OSHA:

- Sheetrock wall systems (Sample Nos. 18A, 18B, 18C, 38A, 38B, 38C, 38D, 38E, 55A, 55B, 55C, 84A, 84B, 84C, 106A, 106B, 106C, 120A, 120B, 120C, 128A, 128B, 128C and 131A) located in Buildings 100, 700, 1100 (Rooms 1102, 1105 and 1107), 1200, 1300, 1500, 1600, 1700 and 1800A/B (except where specified below). The samples were reported by the laboratory to contain 1-5% and <1% (Sample Nos. 128A) chrysotile asbestos in the joint compound and non-detect for asbestos in the sheetrock. Kleinfelder then requested the laboratory to re-analyze the Sample Nos. 84A, 120A and 128A as a composite via point count analysis using Chalkley Point Array over 400 non-empty paints. The samples were reported to contain 0.0045%, <0.020% and 0.0038% chrysotile asbestos, respectively. This material was observed in good condition and encompasses approximately 22,000 square feet.

- White 2' x 4' ceiling tiles (Samples Nos. 81A, 81B and 81C) located in Building 1100. The samples were reported by the laboratory to contain 1-5% chrysotile asbestos. Kleinfelder then requested the laboratory to re-analyze the Sample No. 81A via point count analysis using Chalkley Point Array over 400 non-empty paints. The sample was reported to contain 0.20% chrysotile asbestos. This material was observed in good condition and encompasses approximately 5,000 square feet.

- Brown mastic (Sample Nos. 104A, 104B and 104C) associated with the 4" brown baseboard located in multiple areas of Building 1300. Sample Nos. 104A, 104B (mastic only) and 104C (mastic only) were reported by the laboratory to contain <1% chrysotile asbestos in the mastic and non-detect for asbestos in the baseboard. Based on EPA's First Positive Sampling Protocol, the remaining samples (Nos. 104B and 104C) were not analyzed for the mastic by the laboratory. Kleinfelder then requested the laboratory to re-analyze the Sample No. 104A as a composite, via point count analysis using Chalkley Point Array over 400 non-empty paints. The sample was reported to contain 0.15% chrysotile asbestos. The material was observed in fair condition and encompasses approximately 2,500 linear feet.

- Sheetrock wall systems and associated texture (Sample Nos. 113A, 113B, 113C, 114A, 114B and 114C) located in Building 1800A/B janitors closet and mechanical room. The samples were reported by the laboratory to contain <1% chrysotile asbestos in the joint compound, non-detect for asbestos in the sheetrock and <1% in the drywall texture material. Kleinfelder then requested the laboratory to re-analyze the Sample No. 113A (as a composite), 114A and 114C via point count analysis using Chalkley Point Array over 400 non-empty paints. The samples were reported to contain 0.035%, 0.23% and 0.14%chrysotile asbestos, respectively. This material was observed in good condition and encompasses approximately 2,500 square feet.

2.4.4. Presumed ACM (PACM)

- Gray transite board observed in the fume hoods of Building 300 and in the welding shop of Building 1800B.

- White TSI located in Building 1800A/B.

- Paint booth located in Building 1800B is noted in as-built plans as being constructed of ACM.

- Review Plates 1-19 for notes concerning the structure surveyed and specific building materials not collected due to field conditions. The materials are assumed to contain asbestos until sampling proves otherwise.

3 LEAD-BASED PAINT SURVEY

3.1. INTRODUCTION

This report presents the results of Kleinfelder's lead-based paint survey for SCC. The survey was performed in accordance with our scope of work and cost estimate given within the proposal No. 40-YP4-077 dated April 21, 2004 and the verbal directions of Mr. Tom Berger of Kitchell. The purpose of the survey was to evaluate the location, condition, and quantity of LBP within the specified area.

The survey was restricted to the following buildings scheduled for renovation: Building 100, 300, 500, 600, 700, 800, 900, 1100 (5 structures total), 1200, 1300, 1400, 1500, 1600, 1700, 1800A/B, 1900 (upstairs not included due to recent build), 2000, 2100, and 2112. The exterior of Buildings 1500 and 1800A/B are the only exterior surveys being conducted on campus. Any buildings not listed above were not included in this survey, and should be tested if renovation of these materials is planned for the future.

3.2. REGULATORY OVERVIEW FOR LEAD-BASED PAINTS

The U. S. EPA, HUD, and the California Department of Health Services (DHS) define Lead Based Paints as paints containing greater than 0.5% lead by weight or 5,000-mg/kg total lead (equivalent to 1.0 mg/cm^2 lead via XRF). OSHA and Cal-OSHA regulations (Lead Construction Standard) do not provide a definition for "lead-based paint", but rather provide a Permissible Exposure Limit (PEL) for worker exposure to airborne lead particles of 50 micrograms per cubic meter of air (50 $\mu g/m^3$ for an 8-hour time-weighted average). The OSHA Lead Construction Standard also lists an Action Level of 30 $\mu g/m^3$ for an 8-hour time-weighted average.

Based upon the results of laboratory analysis, two of the paint chip samples collected and analyzed contain greater than 5,000 mg/kg, and therefore are classified as LBP, as defined by the U. S. EPA, HUD, and the California DHS. According to correspondence from Cal-OSHA, employers may assume that disturbance of coatings or materials shown to contain less than 600 mg/kg will not result in exposures above the applicable Action Level of 30 $\mu g/m^3$, as long as all unique materials have been sampled and analyzed, and workers are not performing any of the designated trigger tasks (such as building demolition, manual sanding or scraping, and abrasive blasting, et al).

The concentrations of airborne lead generated by disturbing the paints at the site would vary based upon several factors, including the type of activity (including "trigger tasks") and the severity of disturbance to the building materials. Determination of airborne lead concentrations would require air monitoring during building material disturbance by a trained lead professional.

3.3. LEAD-BASED PAINT SURVEY METHODS

Predominant interior and exterior painted surfaces were tested for the presence of lead utilizing a RMD LP-1 portable X-Ray Fluorescent (XRF) analyzer unit. The XRF allows for non-destructive/non-intrusive measurements of paints up to 3/8 of an inch thick. Measurements of painted surfaces by the XRF were recorded electronically and on field notations.

In accordance with EPA, HUD and DHS protocol as a guideline, Kleinfelder collected paint chip samples down to the substrate. Four (4) paint chip samples were collected and placed into pre-labeled containers. The paint chip samples were given their own identification number. The samples were then submitted to Asbestos TEM Laboratory, Berkeley, California, for analysis using Flame Atomic Absorption Spectroscopy (Flame AA) in accordance with the EPA's Standard Operating Procedures for Lead in Paint by Atomic Absorption Spectroscopy (AAS). Asbestos TEM participates in an extensive quality assurance/quality control program including sample spiking and analysis duplication, and successfully participates in the Department of Health & Human Services Proficiency Analytical Testing (PAT) for the analysis of lead.

3.4. LEAD-BASED PAINT SURVEY RESULTS

On May 21 and June 1-3, 2004 Kleinfelder's DHS certified lead inspector/assessor, Ms. Jennifer Gomez (No. 8091), conducted a visual survey and collected two hundred and ten (210) measurements of painted components suspected to contain lead from the NVLA. The painted components sampled by Kleinfelder exhibited some damage, including deterioration and peeling. The approximate locations of the paint readings and sampling locations are depicted on Plates 1 though 19. A summary of the paint readings, substrate, component, room equivalent, and condition is provided on Table 2, Appendix A. A summary of the lead content, substrate, component, room equivalent, and condition is provided on Table 3, Appendix A. Based on the results of the XRF readings and/or paint chip analysis of the painted components listed below are classified as a LBP:

- XRF analysis of the multi-colored 4"x4" ceramic wall tiles located on the walls of the restrooms present throughout the campus indicated that they contain >9.9 mg/cm^2. The ceramic wall tiles were observed to be in good condition.

- XRF of the orange paint located on in Building 1800A, Room 1807 produced an inconclusive result. The analysis of a paint chip sample (Sample No. P-6) indicate that the orange paint contains 7,300-ppm of lead. The orange paint was observed to be in good condition.

- The dark brown paint located on the exterior trim of Building 1100 was observed to be in fair condition. AA analysis of a paint chip sample (Sample No. P-2) indicate that the dark brown paint contains 5,600-ppm of lead.

4 CONCLUSIONS AND RECOMMENDATIONS

4.1. ASBESTOS CONCLUSIONS AND RECOMMENDATIONS

Based upon our visual observations and subsequent laboratory analysis of building materials, thirty-four (34) RACM, ACM, ACCM and PACM are present at the SCC.

In general, the RACM, ACM, ACCM and PACM appear to be in good condition. Notification of the presence of RACM, ACM, ACCM and PACM to tenants, employees and subcontractors is necessary within 15 days of receiving this information. Prior to building renovation or demolition, abatement of RACM, ACM, ACCM and PACM should be conducted by a California licensed abatement contractor, in accordance with applicable Federal, State, and local requirements. RACM, ACM and PACM removal is required under NESHAP for demolition and renovation. Removal of ACCM is not required but is regulated by Cal-OSHA.

Demolition or renovation activities that could disturb the RACM, ACM, ACCM and PACM either directly or indirectly should be performed by properly trained and qualified personnel only, and in accordance with applicable Federal, State, and local regulations, as implemented by Cal-OSHA, Federal OSHA, U.S. EPA, the California Department of Toxic Substance Control (DTSC), and the BAAQMD. Prior to any future demolition or renovation work, Kleinfelder recommends that the following actions be taken:

- A California Certified Asbestos Consultant should prepare a specification for the abatement of the identified RACM, ACM, ACCM and PACM;
- A State of California licensed asbestos abatement contractor should be retained to perform the asbestos abatement of the RACM, ACM, ACCM and PACM noted at the site. The general contractor for the demolition project may be a source for local licensed abatement contractors. Kleinfelder can also provide names of licensed and qualified abatement contractors in the area on your request;
- Ten **working** days prior to the initiation of the abatement work, the abatement contractor must complete a *Notification of Demolition or Asbestos Removal* form and submit it to the Bay Area Air Quality Management District (BAAQMD) for all RACM and VFT/mastic (VFT/mastic being removed by mechanical means). The BAAQMD will return the Notification form with a "notification number" to the abatement contractor;
- The building owner or its representative should obtain a building demolition permit from the BAAQMD (if applicable);

- The owner of the building should provide notification to employees, contractors, and subcontractors of the building as to the presence of RACM, ACM, ACCM and PACM at the site;

- Contractors which are not certified, cannot perform work that disturbs RACM, ACM, ACCM and/or PACM. Contractors which are certified to disturb asbestos should implement appropriate work practices in accordance with applicable Cal-OSHA worker exposure regulations.

4.2. LEAD-BASED PAINT CONCLUSIONS AND RECOMMENDATIONS

Based upon our visual observations and subsequent analysis of XRF readings and/or paint chip samples, there are three LBPs present within the various painted components associated with the structures on site.

The LBP were observed in good to fair condition with small amounts of observed deterioration and peeling. The LBP noted are not considered to pose a lead exposure hazard if they remain in good condition and are not disturbed by future activities.

Any future renovation, or paint repair/abatement activities which could disturb the lead containing paints should be performed by properly trained and qualified personnel only, and in accordance with all Federal, State and local regulations, as implemented by Cal-OSHA, Federal OSHA, U. S. EPA, the California Department of Toxic Substances Control (DTSC), and the local air quality management district. Because LBP will be involved in the renovation of the structure on-site, Kleinfelder recommends the following actions be taken:

- A State of California licensed lead abatement contractor should be retained to perform the abatement of the LBP. The general contractor for the renovation work can be a source for local licensed abatement contractors. Kleinfelder can also provide names of licensed and qualified abatement contractors upon request;

- Contractors performing work that disturbs painted components at the site should implement appropriate work practices in accordance with applicable Cal-OSHA worker exposure regulations;

- The owner of the building should provide notification to employees, contractors, and subcontractors of the building as to the presence of LBP associated with the campus within 15 days of receiving this information;

- Any repainting or renovation/demolition activities should be conducted in a cautious manner, using methods that minimize the disturbance of LBP. Practices used should not cause airborne concentrations of lead to exceed the applicable OSHA PEL for airborne lead. In particular, any cutting, torching, grinding, or dry sanding of the painted components covered by the LBP should not be performed, as these activities

could contribute to airborne lead concentrations above the applicable PEL. Personal air monitoring of renovation workers could be conducted to assess airborne lead concentrations during work activities that disturb the LBP or lead containing paints.

5 LIMITATIONS

Kleinfelder performed this survey in accordance with generally accepted standards of care practiced by other members of our profession in Solano County at the time the work was completed. The completed survey was limited to the areas sampled and the number of samples collected. Our findings are limited to the conditions and results reported for the time the survey was completed. No warranty, expressed or implied, is made.

Estimated amounts of ACM and LBP have been provided as rough estimates only, actual amounts of each material must be measured by the abatement contractor hired to remove the asbestos prior to submitting a bid. The findings of this asbestos building material survey report is not intended to be used as an asbestos abatement specification, and should not be used as such.

The scope of services described here is not intended to be inclusive, to identify all potential concerns, or to eliminate the possibility of other environmental problems. Within current technology, no level of assessment can show conclusively that a property or its structures are completely free of hazardous substances. Therefore, Kleinfelder cannot offer a certification that the property is free of environmental liability. Kleinfelder will assume no responsibility or liability whatsoever for any claim, loss of property value, damage, or injury which results from pre-existing hazardous materials being encountered or present on the project site, or from the discovery of such hazardous materials.

Kleinfelder offers a range of investigative and engineering services to suit the varying needs of our clients. Although risk can never be eliminated, more detailed and extensive investigations yield more information, which may help understand and manage the degree of risk. Since such detailed services involve greater expense, our clients participate in determining the level of service which provide adequate information for their purposes at an acceptable level of risk.

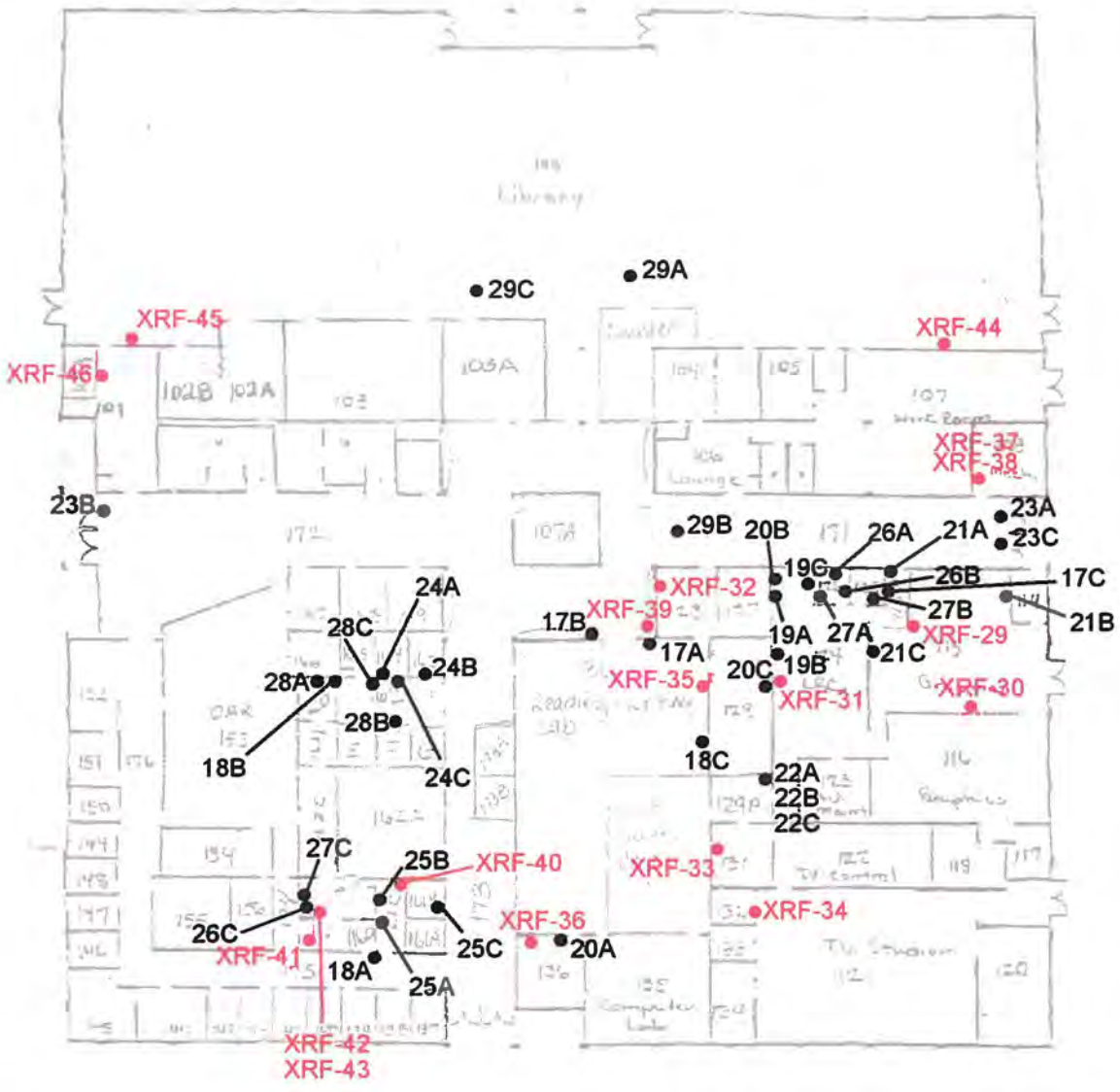
NOTES: BUILDING MATERIALS WHICH CONTAIN ASBESTOS INCLUDE THE FOLLOWING: SHEETROCK WALL SYSTEMS THROUGHOUT THE BUILDING AND 9" x 9"/12" x 12" VFT AND MASTIC.

DUE TO FIELD CONDITIONS THE FOLLOWING MATERIALS WERE NOT SAMPLED AND ARE ASSUMED TO CONTAIN ASBESTOS: 12" x 12" CEILING TILES, SPRAY ACOUSTICAL CEILING MATERIAL IN LIBRARY, TACK BOARD AND ASSOCIATED MASTIC IN ROOM 121.

THE TSI OBSERVED IN THE MECHANICAL ROOM CONSISTED OF FIBERGLASS. IF DURING THE RENOVATION HARD PACKED TSI IS OBSERVE, THIS MATERIAL CONTAINS ASBESTOS AND MUST BE REMOVED AS SUCH.

EXPLANATION

- ● ASBESTOS SAMPLE LOCATIONS
- ● XRF SAMPLE LOCATIONS



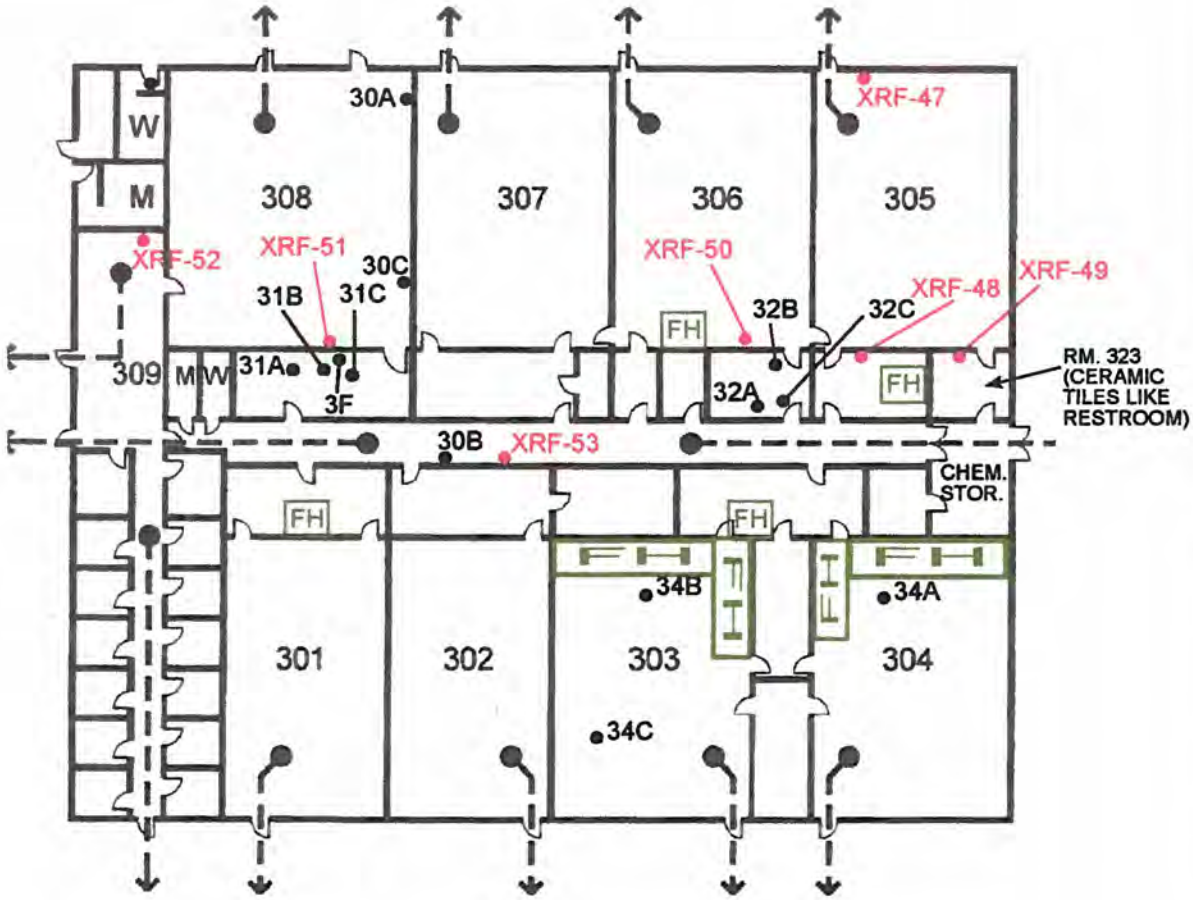
NOT TO SCALE

Source: Solano Community College

KLEINFELDER		SAMPLE LOCATION MAP SOLANO COMMUNITY COLLEGE LIBRARY COMPLEX - 100 FAIRFIELD, CALIFORNIA	PLATE NO. 1
DRAFTED BY: J GOMEZ	FILE NO: Plate 1- Bldg. 100		
PROJECT NO: 44156	DATE: 04-29-2004		

EXPLANATION	
●	ASBESTOS SAMPLE LOCATIONS
●	XRF SAMPLE LOCATIONS
FH	TRANSITE FUME HOOD

NOTES: BUILDING MATERIALS WHICH CONTAIN ASBESTOS INCLUDE THE FOLLOWING: GRAY PUTTY ASSOCIATED WITH THE BLACK LAB SINKS, TRANSITE PANELS WITHIN THE SPECIFIED FUME HOODS, BEIGE HVAC TAPING LOCTED IN THE PLENUM AREA, AND ALL 9"x9" / 12"x12" VFT AND MASTIC.



NOT TO SCALE

Source: Solano Community College

KLEINFELDER		SAMPLE LOCATION MAP SOLANO COMMUNITY COLLEGE SCIENCE BUILDING - 300 FAIRFIELD, CALIFORNIA	PLATE NO. 2
DRAFTED BY: J GOMEZ	FILE NO: Plate 2-Bldg. 300		
PROJECT NO: 44156	DATE: 04-29-2004		

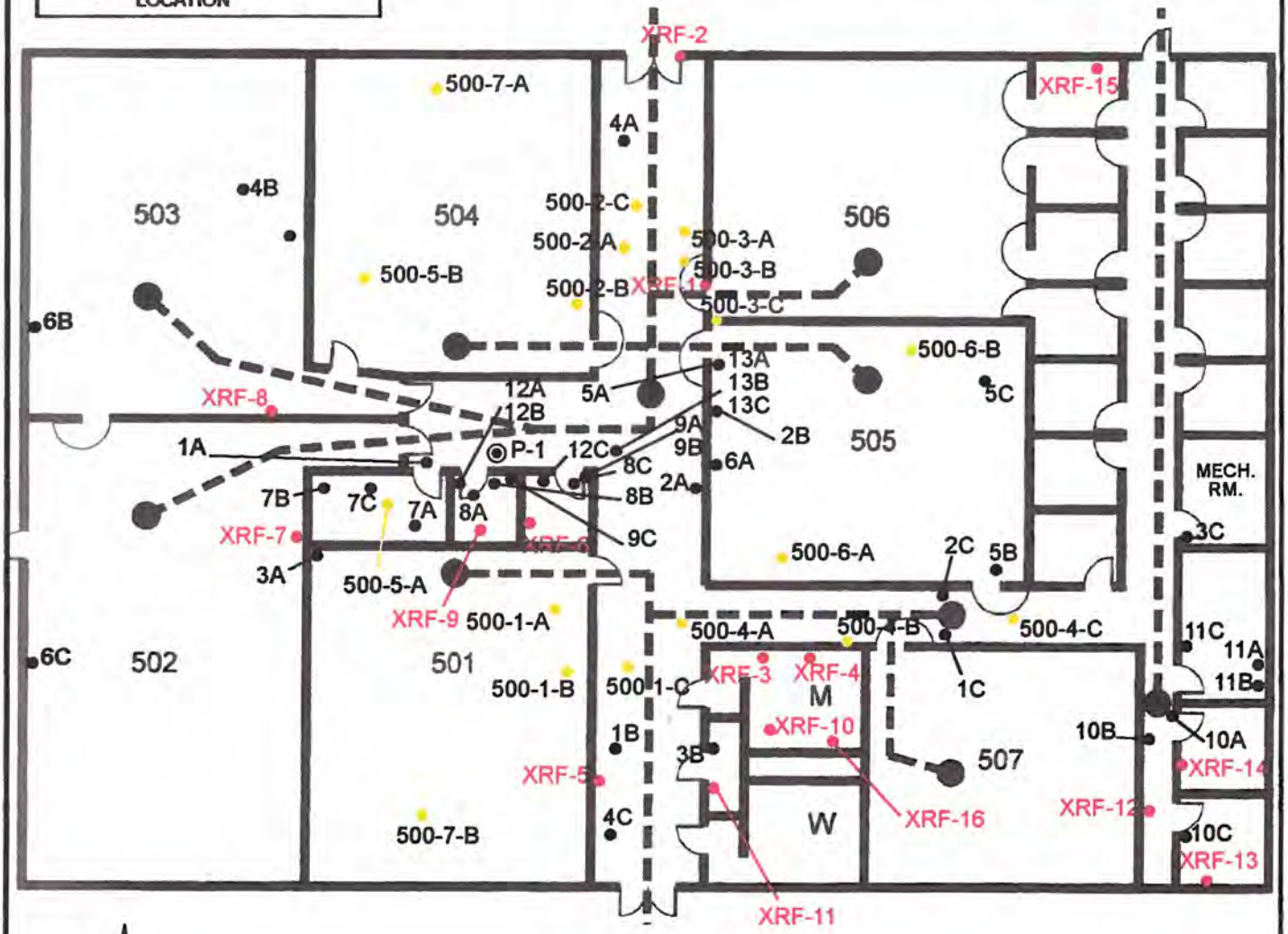
NOTES: BUILDING MATERIALS WHICH CONTAIN ASBESTOS INCLUDE THE FOLLOWING: ALL 9"x9"/12"x12" VFT/MASTIC AND BEIGE HVAC PUTTY LOCATED IN THE PLENUM AREA. ASBESTOS CONTAINING MATERIALS ON THE ROOF CONSIST OF THE BLACK ROLLED ROOFING MATERIAL LOCATED IN THE PARAPIT.

THE TSI OBSERVED IN THE MECHANICAL ROOM CONSISTED OF FIBERGLASS. IF DURING RENOVATION HARD PACKED TSI IS OBSERVED, THIS MATERIAL CONTAINS ASBESTOS AND MUST BE REMOVED AS SUCH.

THE WALKWAY OVERHANG BETWEEN BUILDING 500 AND 600 WAS BUILT IN 1988, THEREFORE SAMPLES WERE NOT COLLECTED.

EXPLANATION

- XRF SAMPLE LOCATIONS
- ASBESTOS SAMPLE LOCATIONS
- ASBESTOS SAMPLE LOCATIONS (ROOF)
- PAINT CHIP SAMPLE LOCATION



NOT TO SCALE

Source: Solano Community College

KLEINFELDER		SAMPLE LOCATION MAP SOLANO COMMUNITY COLLEGE BUSINESS EDUCATION BUILDING - 500 FAIRFIELD, CALIFORNIA	PLATE NO. 3
DRAFTED BY: J GOMEZ	FILE NO: Plate 3-Bldg. 500		
PROJECT NO: 44156	DATE: 04-29-2004		

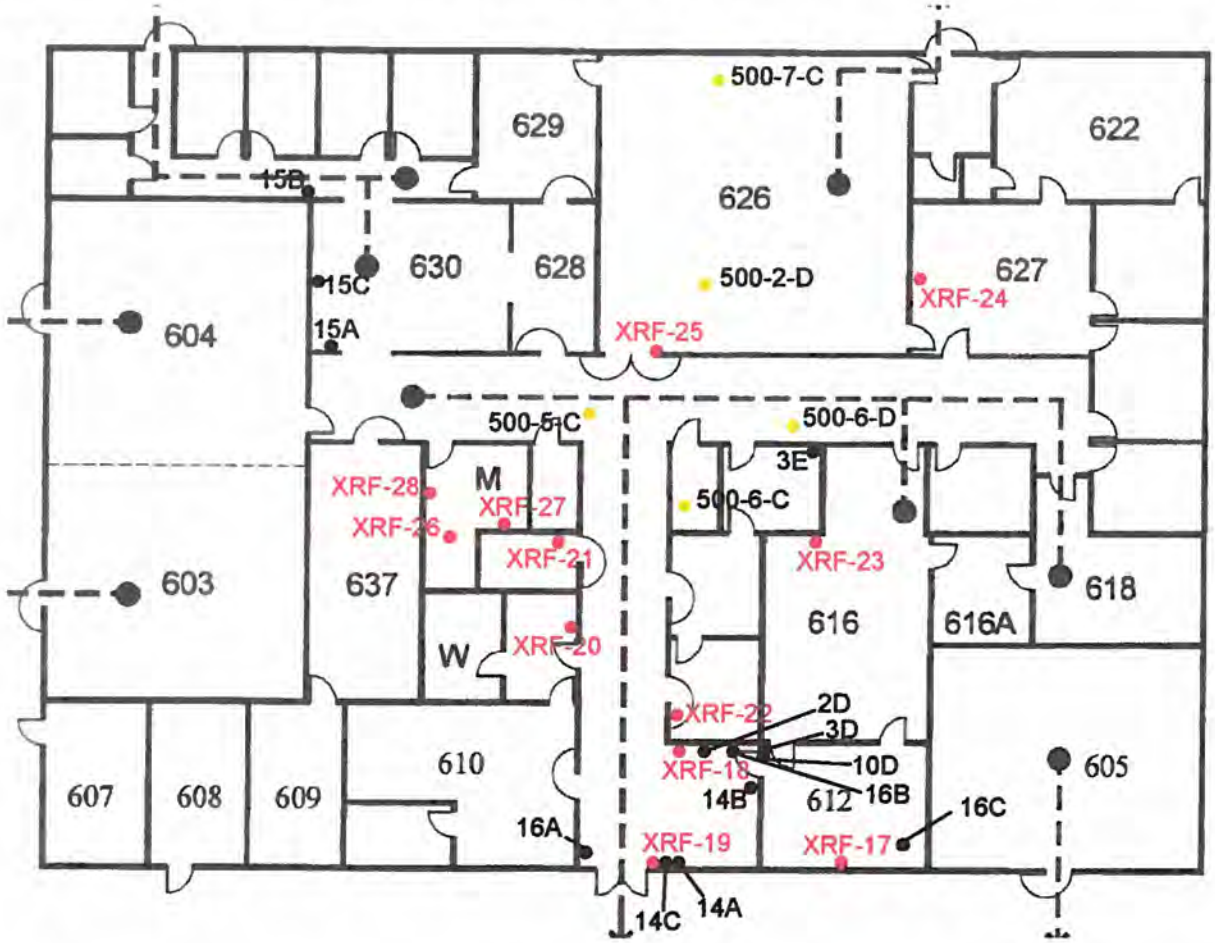
NOTES: BUILDING MATERIALS WHICH CONTAIN ASBESTOS INCLUDE THE FOLLOWING: ALL 9"x9"/ 12"x12" VFT/MASTIC AND BEIGE HVAC PUTTY LOCATED IN PLENUM AREA. ASBESTOS CONTAINING MATERIALS ON THE ROOF CONSIST OF THE BLACK ROLLED ROOFING MATERIAL LOCATED IN THE PARAPIT.

DUE TO FIELD CONDITIONS THE FOLLOWING MATERIALS WERE NOT SAMPLED AND ARE ASSUMED TO CONTAIN ASBESTOS: WOOD WALL SIDING LOCATED IN ROOM 616 AND 626.

IN ADDITION, THE WALKWAY OVERHANG BETWEEN BUILDING 500 AND 600 WAS BUILT IN 1988, THEREFORE, SAMPLES WERE NOT COLLECTED.

EXPLANATION

- XRF SAMPLE LOCATIONS
- ASBESTOS SAMPLE LOCATIONS
- ASBESTOS SAMPLE LOCATIONS (ROOF)



NOT TO SCALE

Source: Solano Community College

KLEINFELDER

DRAFTED BY: J GOMEZ	FILE NO: Plate 4-Bldg. 600
PROJECT NO: 44156	DATE: 12-17-2003

SAMPLE LOCATION MAP
SOLANO COMMUNITY COLLEGE
ADMINISTATION BUILDING - 600
FAIRFIELD, CALIFORNIA

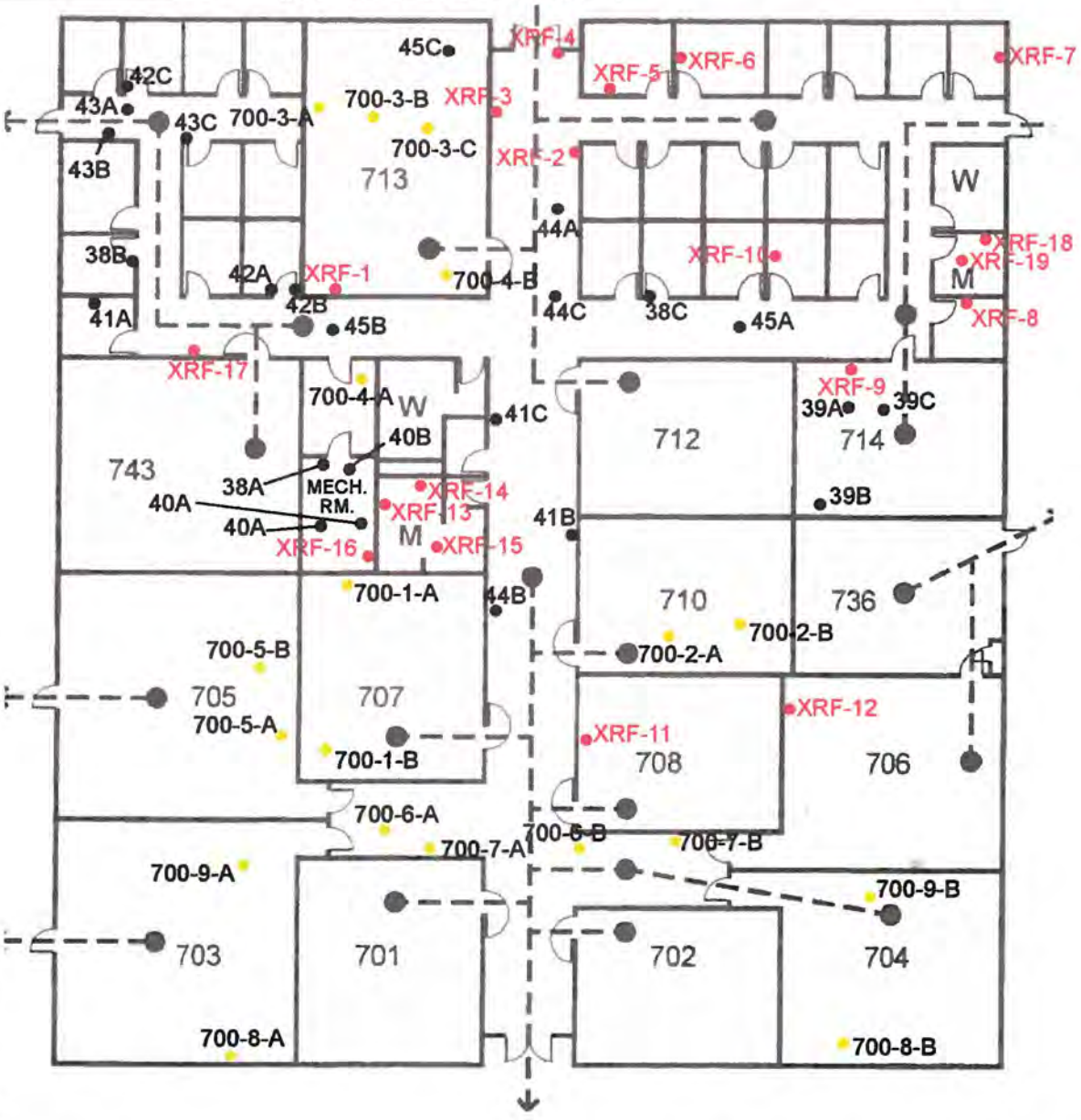
PLATE NO.

4

EXPLANATION
XRF SAMPLE LOCATIONS
ASBESTOS SAMPLE LOCATIONS
ASBESTOS SAMPLE LOCATIONS (ROOF)

NOTES: BUILDING MATERIALS WHICH CONTAIN ASBESTOS INCLUDE THE FOLLOWING: ALL 9"x9"/12"x12" VFT/MASTIC AND SHEETROCK WALL SYSTEMS. ASBESTOS CONTAINING MATERIALS ON THE ROOF CONSIST OF THE BLACK ROLLED ROOFING MATERIAL LOCATED IN THE PARAPIT, GRAY PVC PUTTY LOCATED IN THE PARAPIT, BLACK ASPHALT ROLLED ROOFING MATERIAL AND BLACK PUTTY LOCATED ON THE EDGE OF THE BUILDING.

THE TSI OBSERVED IN THE MECHANICAL ROOM CONSISTED OF FIBERGLASS. IF DURING RENOVATION HARD PACKED TSI IS OBERVED THIS MATERIAL CONTAINS ASBESTOS AND MUST BE REMOVED AS SUCH.



NOT TO SCALE

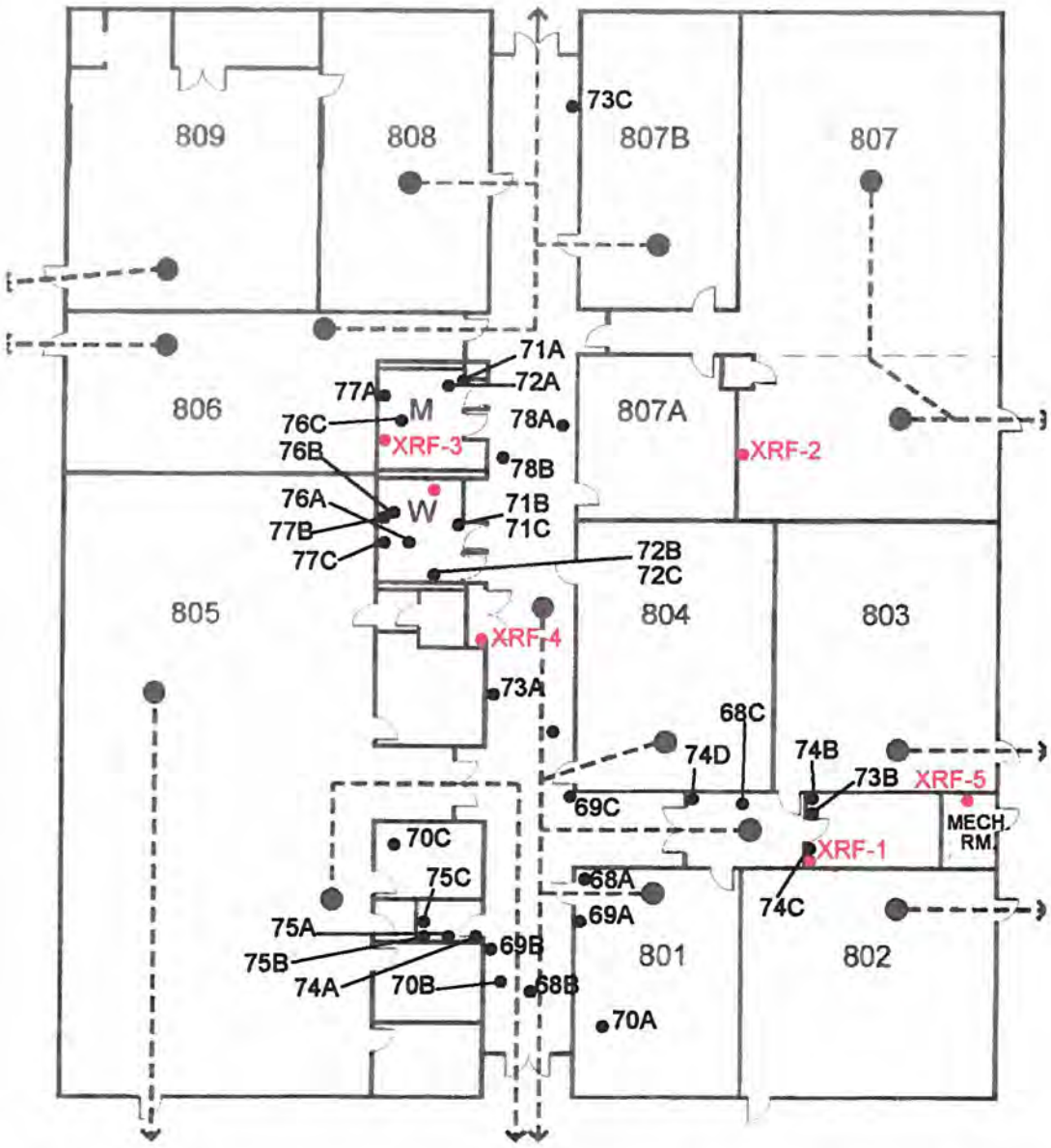
Source: Solano Community College

KLEINFELDER	SAMPLE LOCATION MAP SOLANO COMMUNITY COLLEGE HUMANITIES BUILDING - 700 FAIRFIELD, CALIFORNIA	PLATE NO. 5
DRAFTED BY: J GOMEZ	FILE NO: Plate 5- Bldg. 700	
PROJECT NO: 44156	DATE: 04-29-2004	

EXPLANATION
XRF SAMPLE LOCATIONS
ASBESTOS SAMPLE LOCATIONS

NOTES: BUILDING MATERIALS WHICH CONTAIN ASBESTOS INCLUDE THE FOLLOWING: ALL 9"x9"/ 12"x12" VFT/MASTIC, BROWN MASTIC ASSOCIATED WITH THE WHITE 12"x12" CEILING AND WALL TILES, AND BROWN MASTIC ASSOCIATED WITH THE 4" BASEBOARD IN BUILDING.

DUE TO FIELD CONDITIONS THE FOLLOWING MATERIALS WERE NOT SAMPLED AND ARE ASSUMED TO CONTAIN ASBESTOS: POSSIBLE MASTIC BEHIND WALL BOARD LOCATED IN ROOM 805.



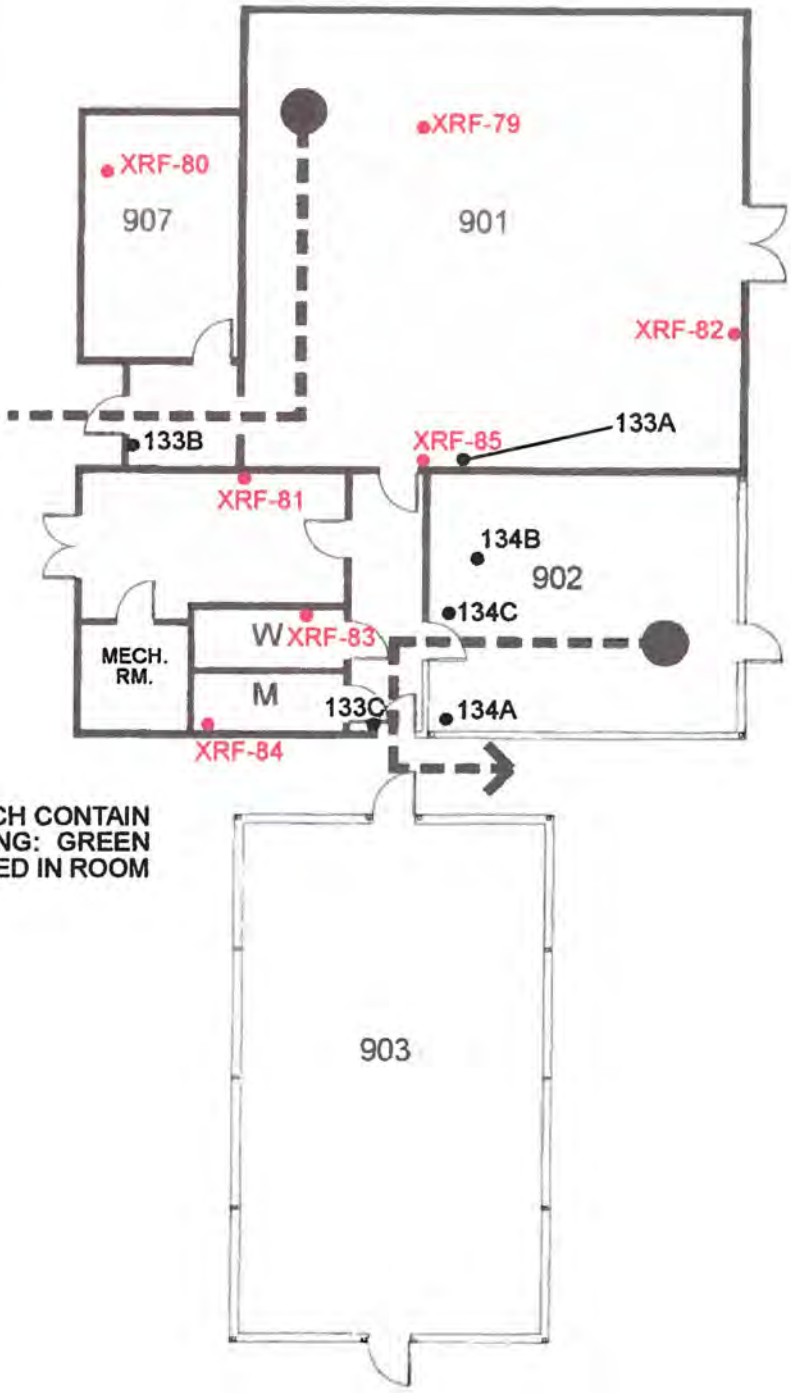
NOT TO SCALE

Source: Solano Community College

KLEINFELDER		SAMPLE LOCATION MAP SOLANO COMMUNITY COLLEGE MULTIDISCIPLINE BUILDING - 800 FAIRFIELD, CALIFORNIA	PLATE NO. 6
DRAFTED BY: J GOMEZ	FILE NO: Plate 6- Bldg. 800		
PROJECT NO: 44156	DATE: 04-29-2004		

EXPLANATION

- XRF SAMPLE LOCATIONS
- ASBESTOS SAMPLE LOCATIONS



NOTES: BUILDING MATERIALS WHICH CONTAIN ASBESTOS INCLUDE THE FOLLOWING: GREEN SHEET FLOORING MATERIAL LOCATED IN ROOM 902.

NOT TO SCALE

Source: Solano Community College

KLEINFELDER

DRAFTED BY: J GOMEZ	FILE NO: Plate 7- Bldg. 900
PROJECT NO: 44156	DATE: 04-29-2004

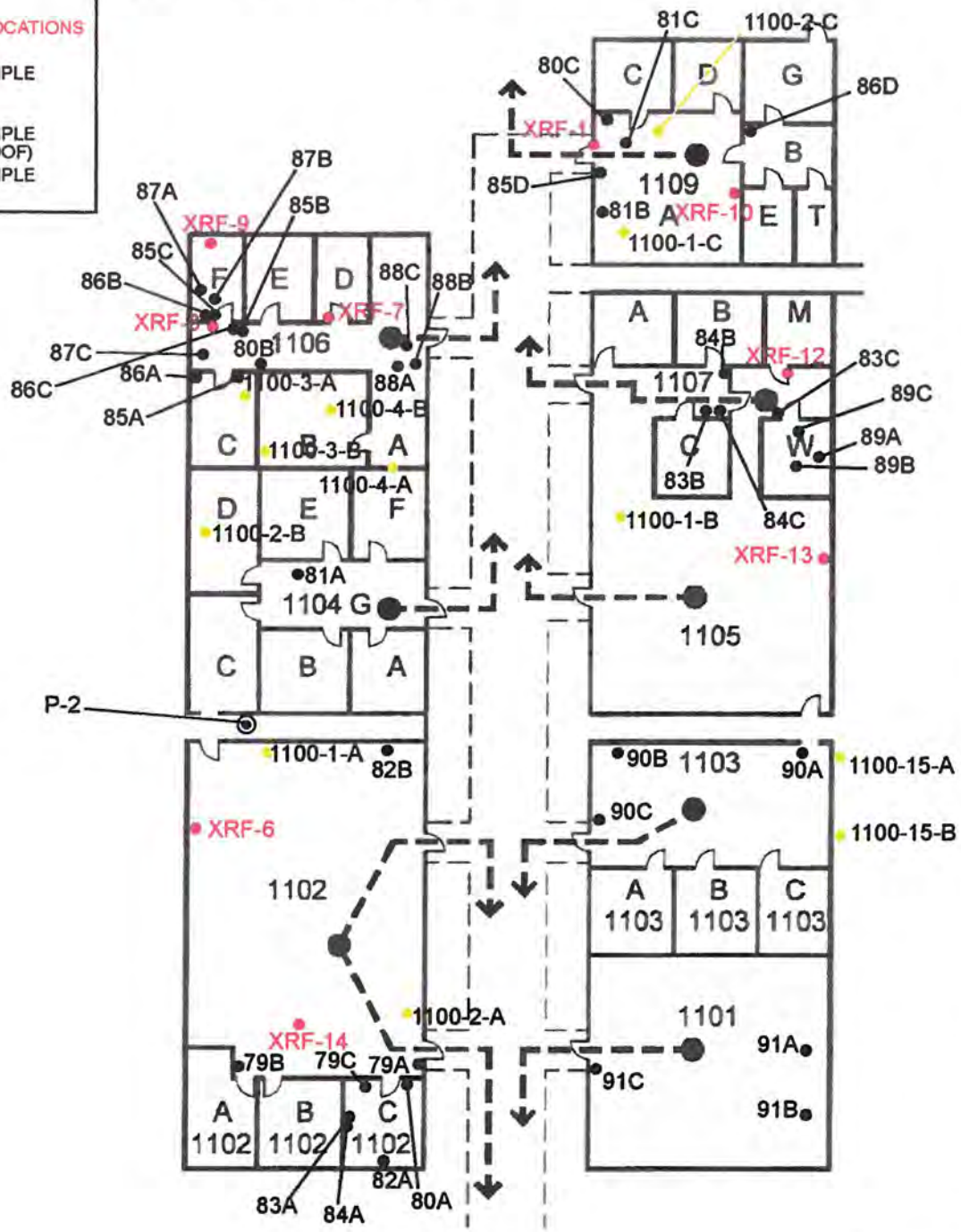
SAMPLE LOCATION MAP
SOLANO COMMUNITY COLLEGE
HORTICULTURE BUILDING - 900
FAIRFIELD, CALIFORNIA

PLATE NO.
7

NOTES: BUILDING MATERIALS WHICH CONTAIN ASBESTOS INCLUDE THE FOLLOWING: SHEETROCK WALL SYSTEMS LOCATED IN ROOM 1101/1103/1102A-C/1105/1107, 2'x4' WHITE CEILING TILES, BEIGE 12"x12" VFT LOCATED IN ROOM 1101. ASBESTOS CONTAINING MATERIALS ON THE ROOF CONSIST OF BLACK PENETRATION MASTIC.

EXPLANATION

- XRF SAMPLE LOCATIONS
- ASBESTOS SAMPLE LOCATIONS
- ASBESTOS SAMPLE LOCATIONS (ROOF)
- PAINT CHIP SAMPLE LOCATION



NOT TO SCALE

Source: Solano Community College

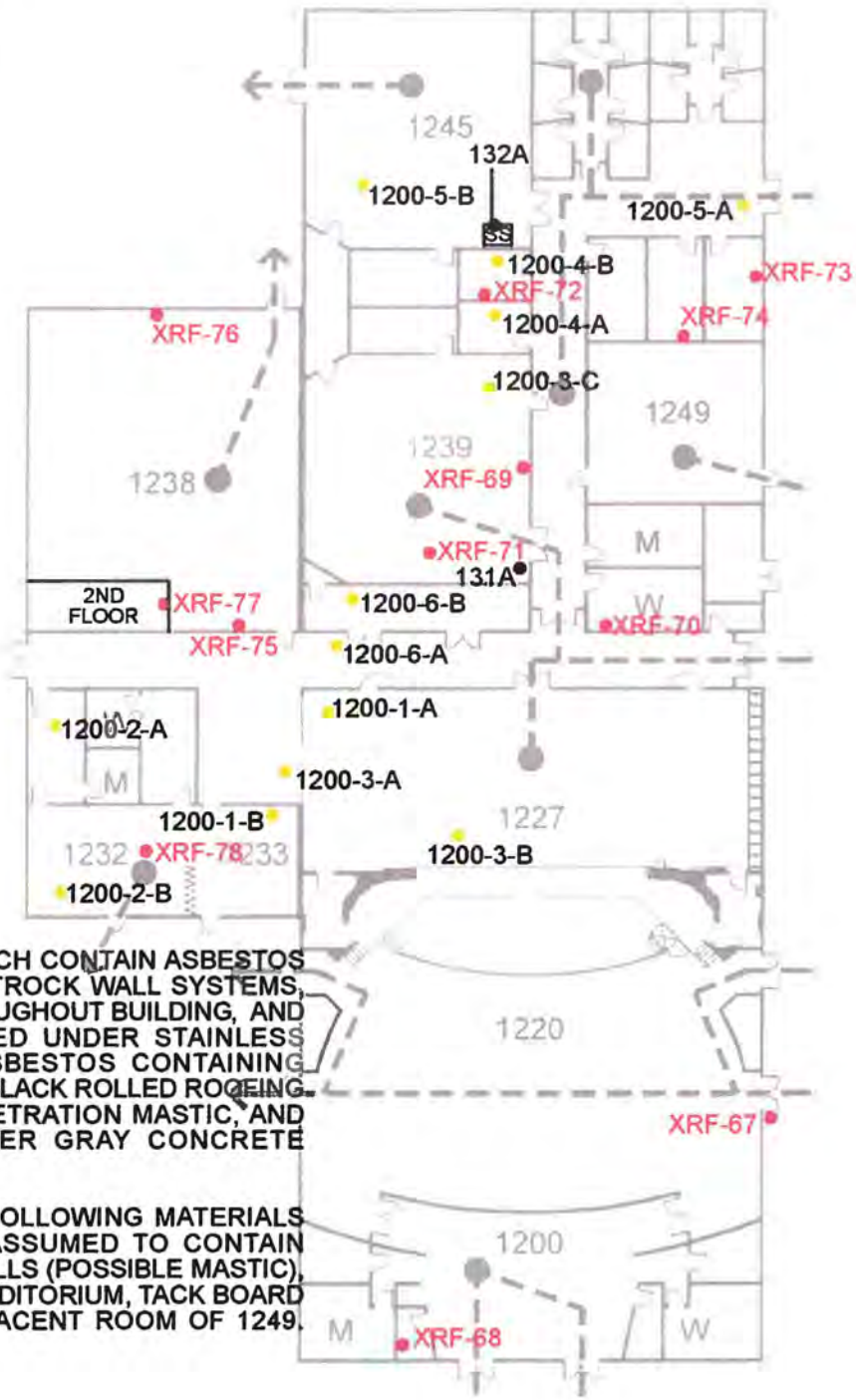
KLEINFELDER

DRAFTED BY: J GOMEZ	FILE NO: Plate 8- Bldg. 1100
PROJECT NO: 44156	DATE: 04-29-2004

SAMPLE LOCATION MAP
SOLANO COMMUNITY COLLEGE
PORTABLE BUILDING COMPLEX - 1100
FAIRFIELD, CALIFORNIA

PLATE NO. 8

EXPLANATION
XRF SAMPLE LOCATIONS
ASBESTOS SAMPLE LOCATIONS
ASBESTOS SAMPLE LOCATIONS (ROOF)



NOTES: BUILDING MATERIALS WHICH CONTAIN ASBESTOS INCLUDE THE FOLLOWING: SHEETROCK WALL SYSTEMS, 9"x9"/12"x12" VFT AND MASTIC THROUGHOUT BUILDING, AND BLACK SPRAY MATERIAL LOCATED UNDER STAINLESS STEEL SINK IN ROOM 1245. ASBESTOS CONTAINING MATERIALS ON ROOF CONSIST OF BLACK ROLLED ROOFING LOCATED IN PARAPIT, BLACK PENETRATION MASTIC, AND BLACK ASPHALT ROOFING UNDER GRAY CONCRETE SHINGLES.

DUE TO FIELD CONDITIONS THE FOLLOWING MATERIALS WERE NOT SAMPLED AND ARE ASSUMED TO CONTAIN ABSBESTOS: WOOD SIDING ON WALLS (POSSIBLE MASTIC), PLASTER CEILING IN FOYER AND AUDITORIUM, TACK BOARD LOCATED IN ROOM 1245 AND ADJACENT ROOM OF 1249.

N

NOT TO SCALE

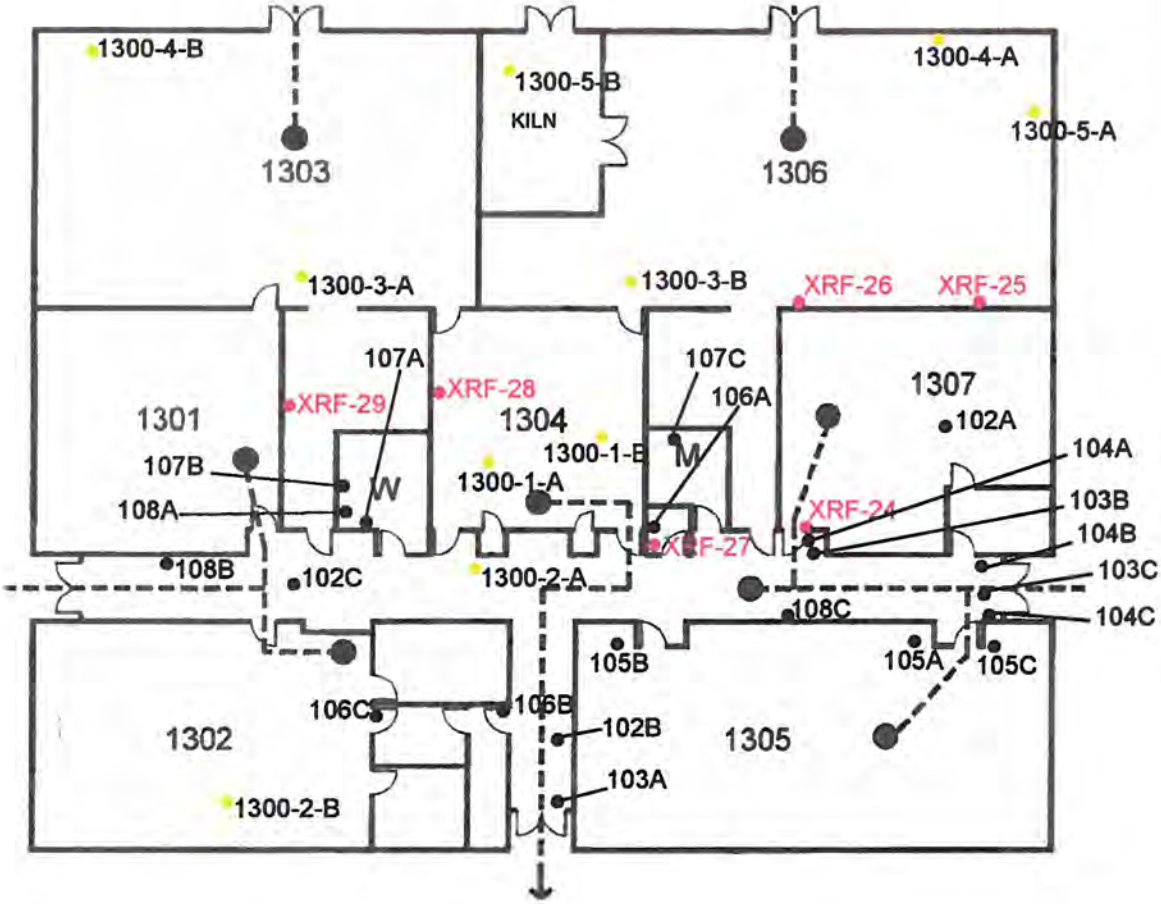
Source: Solano Community College

KLEINFELDER		SAMPLE LOCATION MAP SOLANO COMMUNITY COLLEGE MUSIC & THEATER ARTS BUILDING - 1200 FAIRFIELD, CALIFORNIA	PLATE NO. 9
DRAFTED BY: J GOMEZ	FILE NO: Plate 9- Bldg. 1200		
PROJECT NO: 44156	DATE: 04-29-2004		

EXPLANATION
XRF SAMPLE LOCATIONS
ASBESTOS SAMPLE LOCATIONS
ASBESTOS SAMPLE LOCATIONS (ROOF)

NOTES: BUILDING MATERIALS WHICH CONTAIN ASBESTOS INCLUDE THE FOLLOWING: OFF-WHITE WITH BROWN FLECK 12"x12" VFT/BLACK MASTIC LOCATED IN ROOMS 1301/1303 (ADJ. ROOM)/1306 (ADJ. ROOM)/1302/1304, BROWN MASTIC ASSOCIATED WITH THE 4" BROWN BASEBOARD, SHEETROCK WALL SYSTEMS, BEIGE HVAC TAPING LOCATED IN THE PLENUM, AND BROWN MASTIC ASSOCIATED WITH THE 12"x12" WALL AND CEILING TILES. ASBESTOS CONTAINING MATERIALS ON ROOF CONSIST OF BLACK ROLLED ROOFING LOCATED IN THE PARAPIT AND PENETRATION MASTIC.

DUE TO FIELD CONDITIONS THE FOLLOWING MATERIALS WERE NOT SAMPLED AND ARE ASSUMED TO CONTAIN ABESTOS: WOOD PANELING IN ROOMS 1306 AND 1302 (POSSIBLE MASTIC), 4'x4' CEILING PANELS IN ROOM 1306, AND BRICKS IN KILN.



NOT TO SCALE

Source: Solano Community College

KLEINFELDER

DRAFTED BY: J GOMEZ	FILE NO: Plate 10- Bldg. 1300
PROJECT NO: 44156	DATE: 04-29-2004

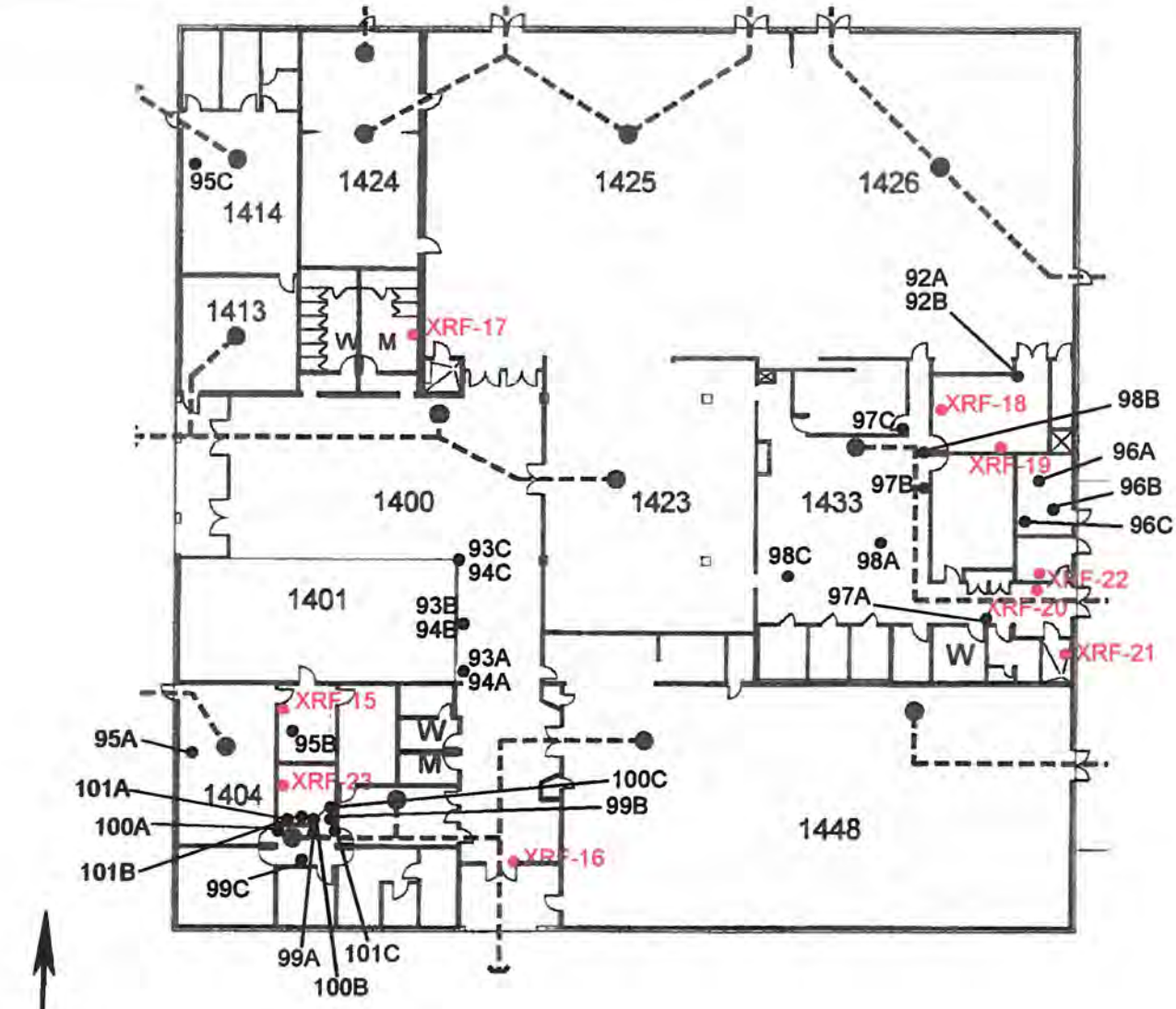
SAMPLE LOCATION MAP
SOLANO COMMUNITY COLLEGE
FINE ARTS BUILDING - 1300
FAIRFIELD, CALIFORNIA

PLATE NO.
10

EXPLANATION
XRF SAMPLE LOCATIONS
ASBESTOS SAMPLE LOCATIONS

NOTES: BUILDING MATERIALS WHICH CONTAIN ASBESTOS INCLUDE THE FOLLOWING: WHITE TSI (HARD PACK) LOCATED IN IN MECHANICAL ROOM AND 9"x9"/12"x12" VFT/MASTIC.

DUE TO FIELD CONDITIONS THE FOLLOWING MATERIALS WERE NOT SAMPLED AND ARE ASSUMED TO CONTAIN ASBESTOS: WALL BOARD (POSSIBLE MASTIC) LOCATED IN ROOM 1404/1424, AND BROWN MASTIC ASSOCIATED WITH THE 12"x12" WHITE CEILING AND WALL TILES.



NOT TO SCALE

Source: Solano Community College

KLEINFELDER

DRAFTED BY: J GOMEZ	FILE NO: Plate 11- Bldg. 1400
PROJECT NO: 44156	DATE: 04-29-2004

SAMPLE LOCATION MAP
SOLANO COMMUNITY COLLEGE
STUDENT CENTER BUILDING - 1400
FAIRFIELD, CALIFORNIA

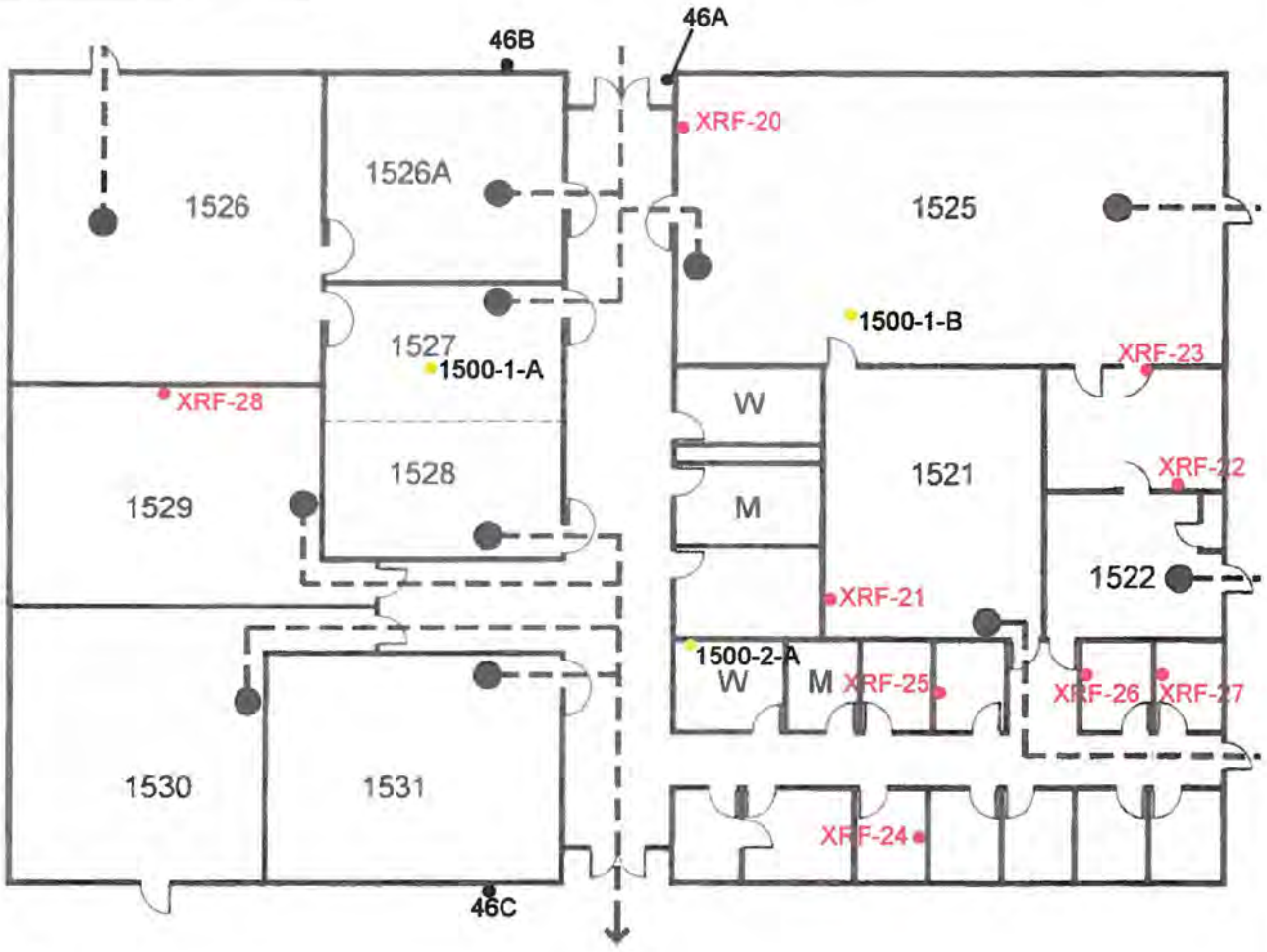
PLATE NO.
11

NOTES: BUILDING MATERIALS WHICH CONTAIN ASBESTOS INCLUDE THE FOLLOWING: ALL 9"x9"/12"x12" VFT/MASTIC AND SHEETROCK WALL SYSTEMS. ASBESTOS CONTAINING MATERIALS ON TH ROOF CONSIST OF THE BLACK ROLLED ROOFING MATERIAL LOCATED IN THE PARAPIT, GRAY PVC PUTTY LOCATED IN THE PARAPIT, BLACK ASPHALT ROLLED ROOFING MATERIAL AND BLACK PUTTY LOCATED ON THE EDGE OF THE BUILDING.

DUE TO FIELD CONDITIONS THE FOLLOWING MATERIALS WERE NOT SAMPLED AND ARE ASSUMED TO CONTAIN ASBESTOS: WALL BOARD (POSSIBLE MASTIC) LOCATED IN ROOMS 1511/1526 (WEST WALL).

EXPLANATION

- XRF SAMPLE LOCATIONS
- ASBESTOS SAMPLE LOCATIONS
- ASBESTOS SAMPLE LOCATIONS (ROOF)



NOT TO SCALE

Source: Solano Community College

KLEINFELDER

DRAFTED BY: J GOMEZ	FILE NO: Plate 12- Bldg. 1500
PROJECT NO: 44156	DATE: 04-29-2004

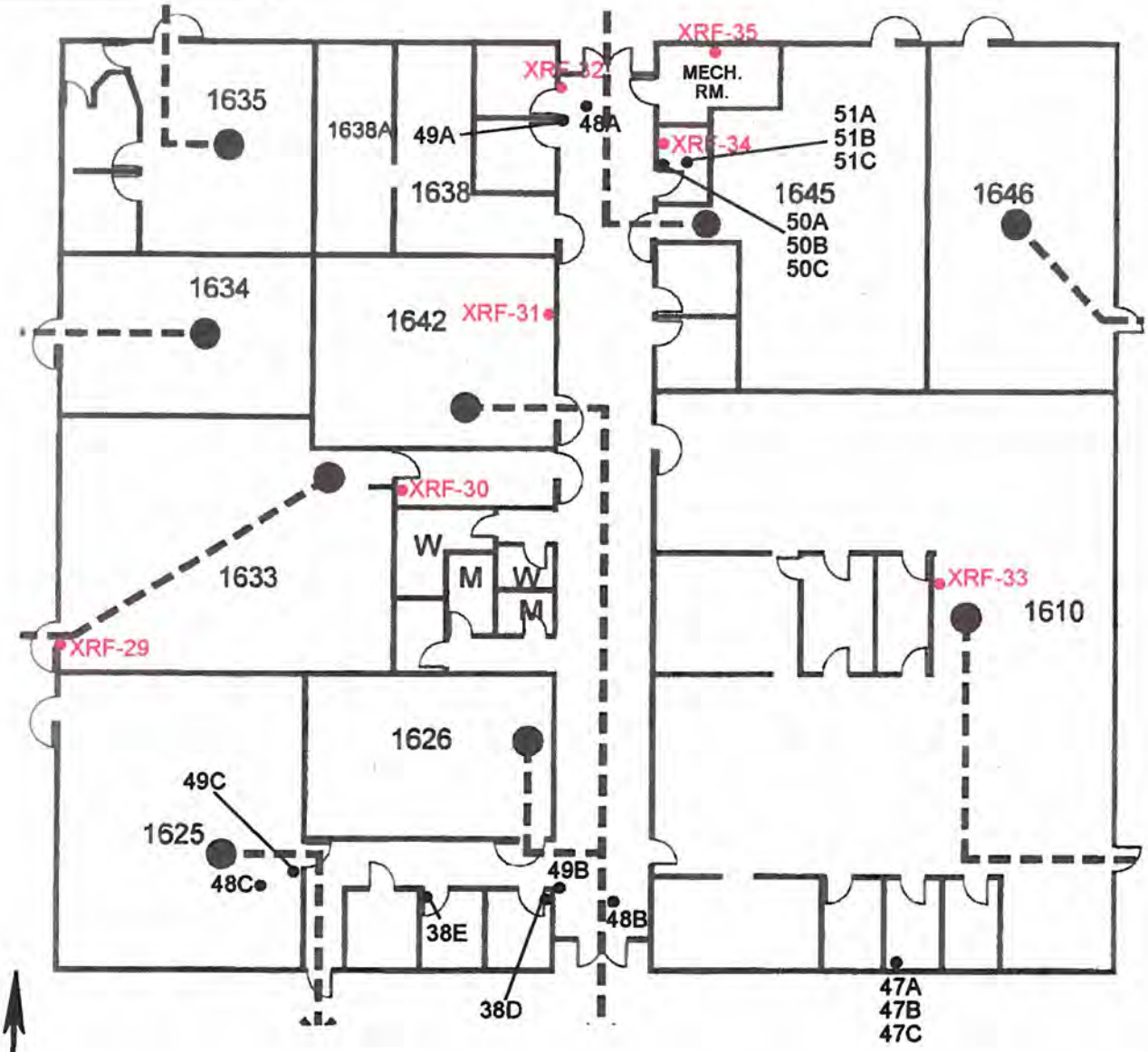
SAMPLE LOCATION MAP
SOLANO COMMUNITY COLLEGE
MATHEMATICS/ENGINEERING BUILDING - 1500
FAIRFIELD, CALIFORNIA

PLATE NO. 12

EXPLANATION
XRF SAMPLE LOCATIONS
ASBESTOS SAMPLE LOCATIONS

NOTES: BUILDING MATERIALS WHICH CONTAIN ASBESTOS INCLUDE THE FOLLOWING: ALL 9"x9"/12"x12" VFT/MASTIC AND SHEETROCK WALL SYSTEMS.

THE TSI OBSERVED IN THE MECHANICAL ROOM CONSISTED OF FIBERGLASS. IF DURING RENOVATION HARD PACKED TSI IS OBSERVED, THIS MATERIAL CONTAINS ASBESTOS AND MUST BE REMOVED AS SUCH.



NOT TO SCALE

Source: Solano Community College

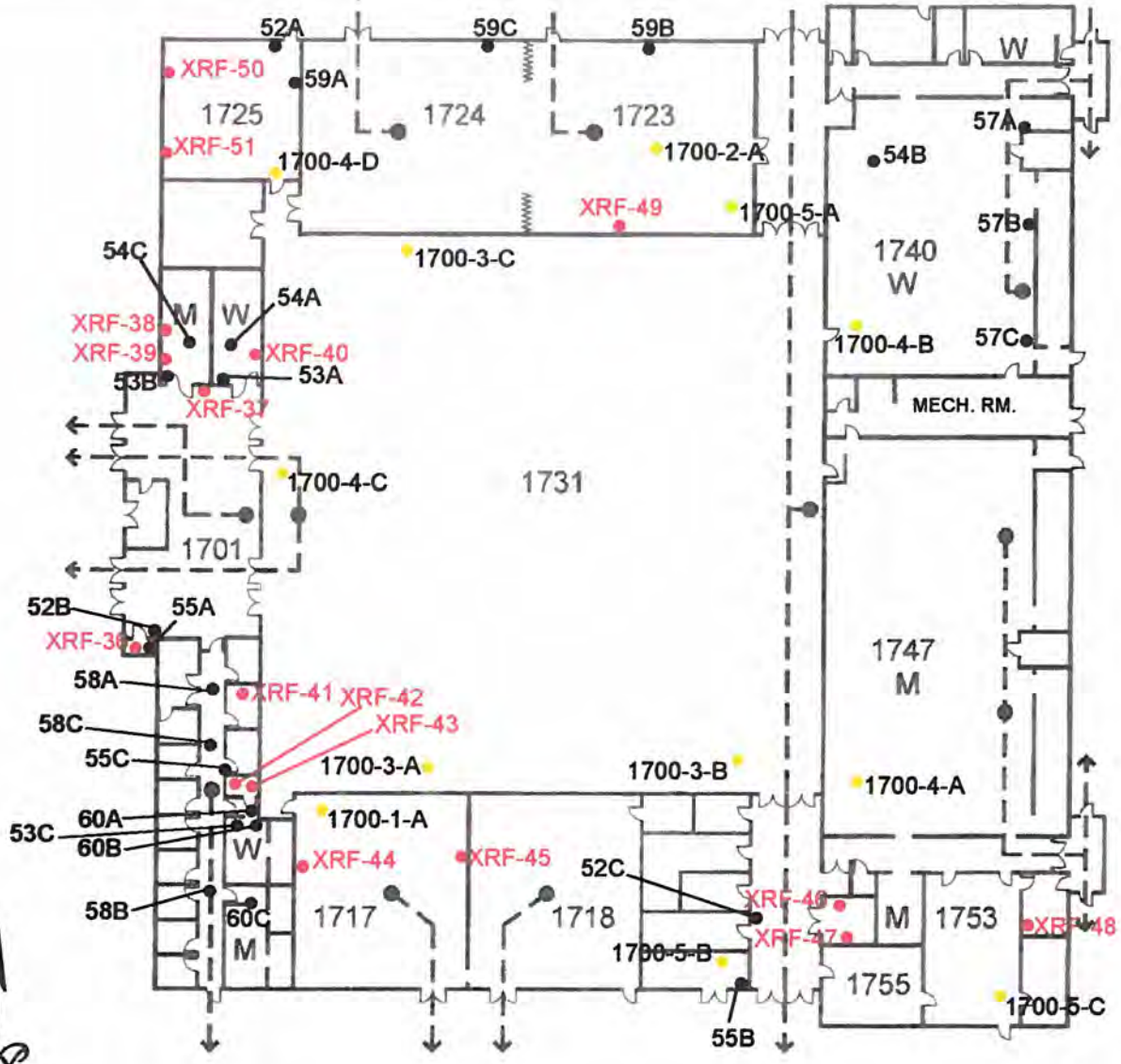
KLEINFELDER		SAMPLE LOCATION MAP SOLANO COMMUNITY COLLEGE VOCATIONAL ARTS BUILDING - 1600 FAIRFIELD, CALIFORNIA	PLATE NO. 13
DRAFTED BY: J GOMEZ	FILE NO: Plate 13- Bldg. 1600		
PROJECT NO: 44156	DATE: 04-29-2004		

NOTES: BUILDING MATERIALS WHICH CONTAIN ASBESTOS INCLUDE THE FOLLOWING: SHEETROCK WALL SYSTEMS, 9"x9"/12"x12" VFT/MASTIC, AND WHITE TSI ELBOWS IN MECHANICAL ROOM.

DUE TO FIELD CONDITIONS THE FOLLOWING MATERIALS WERE NOT SAMPLED AND ARE ASSUMED TO CONTAIN ASBESTOS: WALL BOARD (POSSIBLE MASTIC) LOCATED IN ROOM 1718, WOOD SIDING (POSSIBLE MASTIC) LOCATED IN ROOMS1723/1724/1731.

EXPLANATION

- XRF SAMPLE LOCATIONS
- ASBESTOS SAMPLE LOCATIONS
- ASBESTOS SAMPLE LOCATIONS (ROOF)



NOT TO SCALE

Source: Solano Community College

KLEINFELDER

DRAFTED BY: J GOMEZ	FILE NO: Plate 14- Bldg. 1700
PROJECT NO: 44156	DATE: 04-29-2004

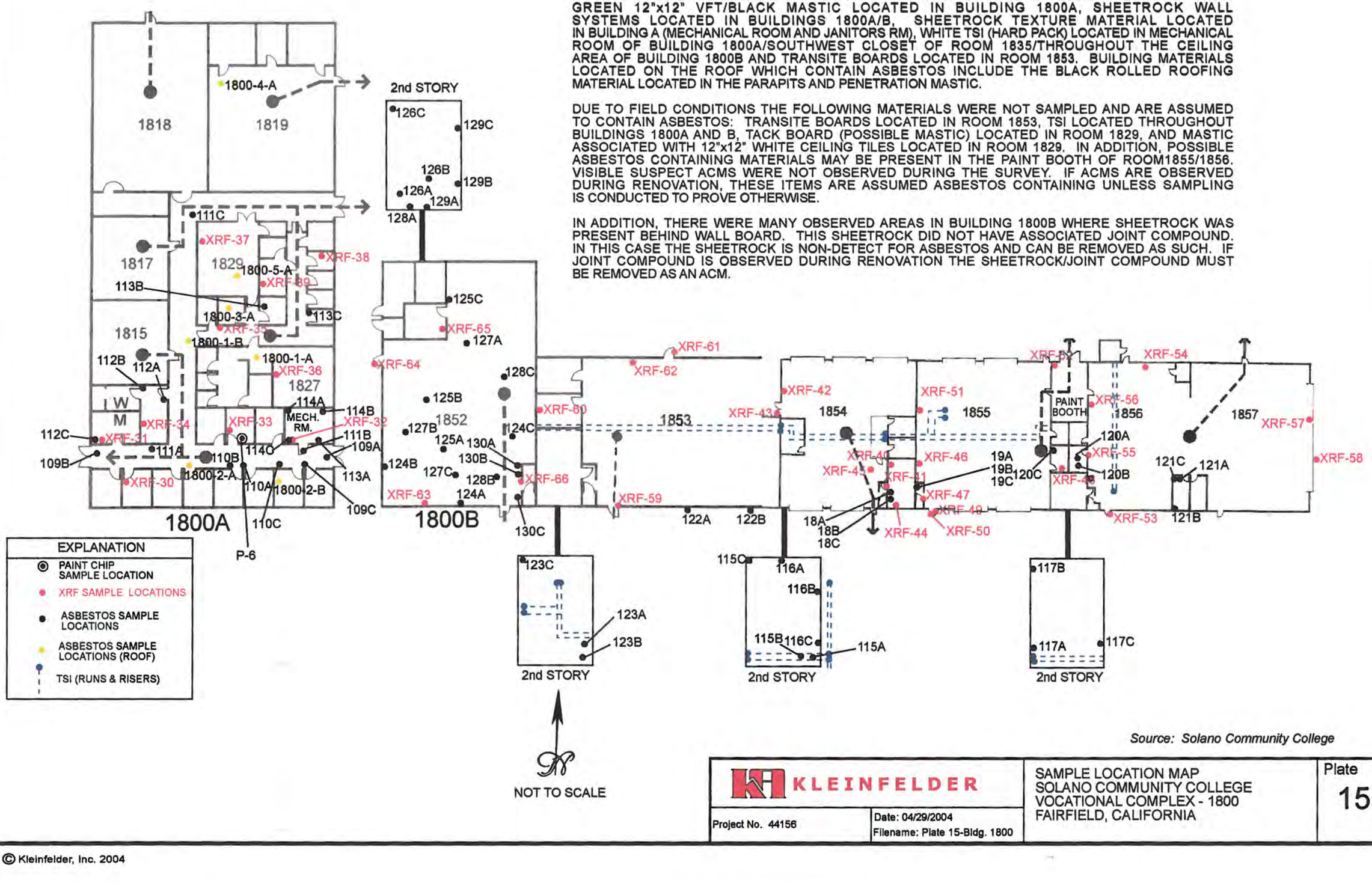
SAMPLE LOCATION MAP
SOLANO COMMUNITY COLLEGE
PHYSICAL EDUCATION BUILDING - 1700
FAIRFIELD, CALIFORNIA

PLATE NO
14

NOTES: BUILDING MATERIALS WHICH CONTAIN ASBESTOS INCLUDE THE FOLLOWING: GREEN 12"x12" VFT/BLACK MASTIC LOCATED IN BUILDING 1800A, SHEETROCK WALL SYSTEMS LOCATED IN BUILDINGS 1800A/B, SHEETROCK TEXTURE MATERIAL LOCATED IN BUILDING A (MECHANICAL ROOM AND JANITORS RM), WHITE TSI (HARD PACK) LOCATED IN MECHANICAL ROOM OF BUILDING 1800A/SOUTHWEST CLOSET OF ROOM 1835/THROUGHOUT THE CEILING AREA OF BUILDING 1800B AND TRANSITE BOARDS LOCATED IN ROOM 1853. BUILDING MATERIALS LOCATED ON THE ROOF WHICH CONTAIN ASBESTOS INCLUDE THE BLACK ROLLED ROOFING MATERIAL LOCATED IN THE PARAPITS AND PENETRATION MASTIC.

DUE TO FIELD CONDITIONS THE FOLLOWING MATERIALS WERE NOT SAMPLED AND ARE ASSUMED TO CONTAIN ASBESTOS: TRANSITE BOARDS LOCATED IN ROOM 1853, TSI LOCATED THROUGHOUT BUILDINGS 1800A AND B, TACK BOARD (POSSIBLE MASTIC) LOCATED IN ROOM 1829, AND MASTIC ASSOCIATED WITH 12"x12" WHITE CEILING TILES LOCATED IN ROOM 1829. IN ADDITION, POSSIBLE ASBESTOS CONTAINING MATERIALS MAY BE PRESENT IN THE PAINT BOOTH OF ROOM1855/1856. VISIBLE SUSPECT ACMS WERE NOT OBSERVED DURING THE SURVEY. IF ACMS ARE OBSERVED DURING RENOVATION, THESE ITEMS ARE ASSUMED ASBESTOS CONTAINING UNLESS SAMPLING IS CONDUCTED TO PROVE OTHERWISE.

IN ADDITION, THERE WERE MANY OBSERVED AREAS IN BUILDING 1800B WHERE SHEETROCK WAS PRESENT BEHIND WALL BOARD. THIS SHEETROCK DID NOT HAVE ASSOCIATED JOINT COMPOUND. IN THIS CASE THE SHEETROCK IS NON-DETECT FOR ASBESTOS AND CAN BE REMOVED AS SUCH. IF JOINT COMPOUND IS OBSERVED DURING RENOVATION THE SHEETROCK/JOINT COMPOUND MUST BE REMOVED AS AN ACM.



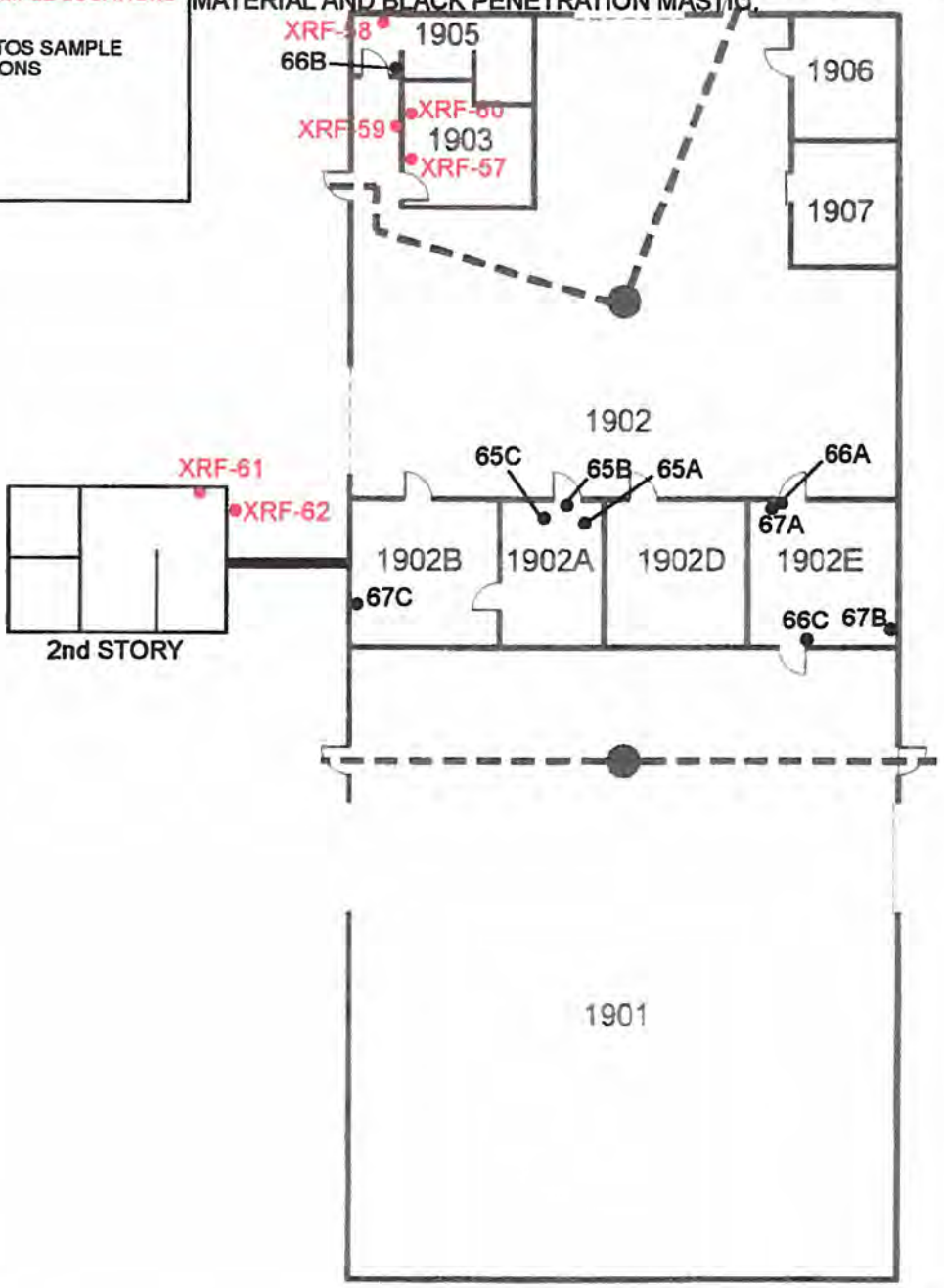
Source: Solano Community College

KLEINFELDER		SAMPLE LOCATION MAP SOLANO COMMUNITY COLLEGE VOCATIONAL COMPLEX - 1800 FAIRFIELD, CALIFORNIA
Project No. 44156	Date: 04/29/2004 Filename: Plate 15-Bldg. 1800	Plate 15

NOTES: BUILDING MATERIALS WHICH CONTAIN ASBESTOS INCLUDE THE FOLLOWING: GREEN 12"x12" VFT LOCATED IN ROOM 1902A (MASTIC IS NON-DETECT FOR ASBESTOS) AND OFF-WHITE 9"x9" VFT AND MASTIC IN ROOM 1903. KLEINFELDER DID NOT OBSERVE SPECIFIC BUILDING MATERIALS ON THE ROOF. HOWEVER, THE FOLLOWING ACMS WERE FOUND IN THE OTHER STRUCTURES WITH THE SAME CONSTRUCTION DATE AND CONSIST OF THE FOLLOWING: BLACK ROLLED ROOFING MATERIAL LOCATED IN PARAPIT, BLACK ASPHALT ROLLED ROOFING MATERIAL AND BLACK PENETRATION MASTIC.

EXPLANATION

- XRF SAMPLE LOCATIONS
- ASBESTOS SAMPLE LOCATIONS



NOT TO SCALE

Source: Solano Community College

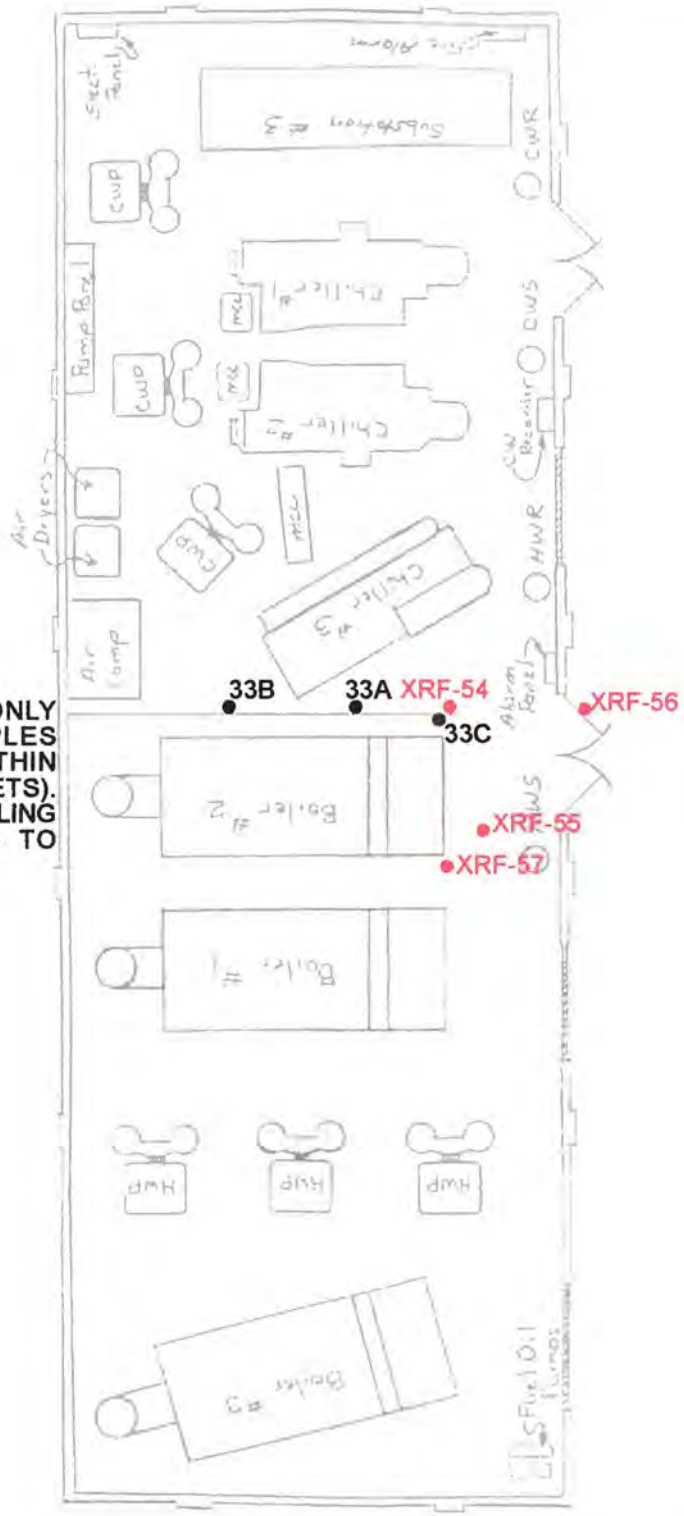
KLEINFELDER

DRAFTED BY: J GOMEZ	FILE NO: Plate 16- Bldg. 1900
PROJECT NO: 44156	DATE: 04-29-2004

SAMPLE LOCATION MAP
SOLANO COMMUNITY COLLEGE
WAREHOUSE BUILDING
FAIRFIELD, CALIFORNIA

PLATE NO.
16

EXPLANATION
● XRF SAMPLE LOCATIONS
● ASBESTOS SAMPLE LOCATIONS



NOTES: NO VISIBLE TSI (HARD PACK) ONLY TSI MADE OF FIBERGLASS. NO SAMPLES COLLECTED OF WORKING PARTS (I.E. WITHIN BOILER, WITHIN CHILLER, VIBRATION GASKETS). IF THESE ITEMS ARE TO BE RENOVATED SAMPLING WILL NEED TO BE CONDUCTED PRIOR TO CONTRACTOR DISTURBANCE.

NOT TO SCALE

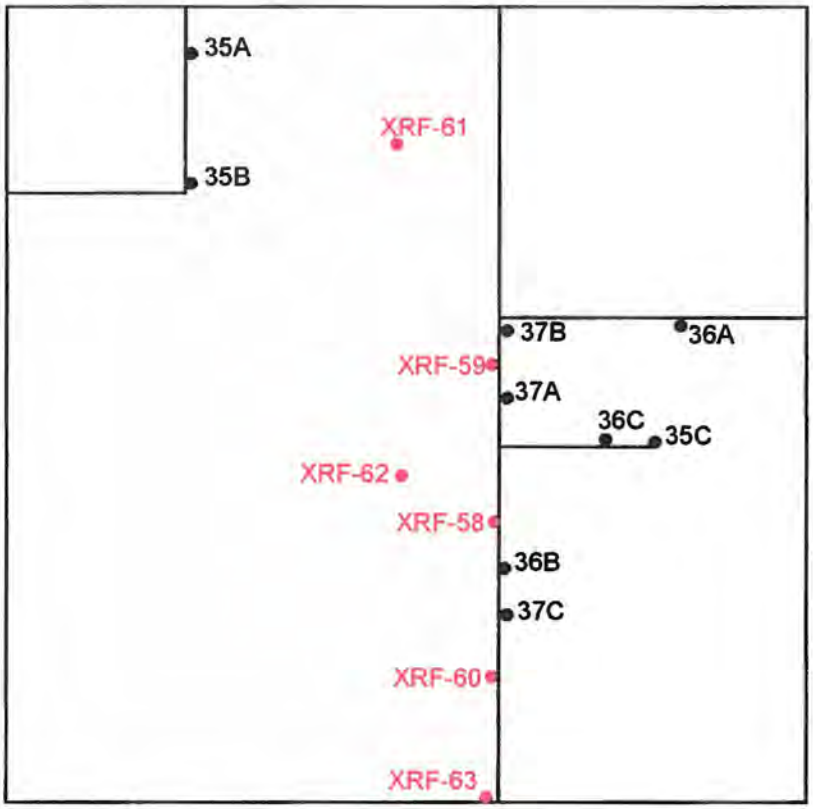
Source: Solano Community College

KLEINFELDER		SAMPLE LOCATION MAP SOLANO COMMUNITY COLLEGE CENTRAL PLANT - 2000 FAIRFIELD, CALIFORNIA	PLATE NO. 17
DRAFTED BY: J GOMEZ	FILE NO: Plate 17- Bldg. 2000		
PROJECT NO: 44156	DATE: 04-29-2004		

EXPLANATION
XRF SAMPLE LOCATIONS
ASBESTOS SAMPLE LOCATIONS

NOTES: BUILDING MATERIALS WHICH CONTAIN ASBESTOS INCLUDE THE FOLLOWING: SHEETROCK WALL SYSTEMS AND ASSOCIATED DRYWALL TEXTURE MATERIAL.

TSI OBSERVED CONSISTED OF FIBERGLASS. IF DURING RENOVATION HARD PACK TSI IS OBSERVED THIS MATERIAL IS ASSUMED TO CONTAIN ASBESTOS AND MUST BE REMOVED AS SUCH.



NOT TO SCALE

Source: Solano Community College

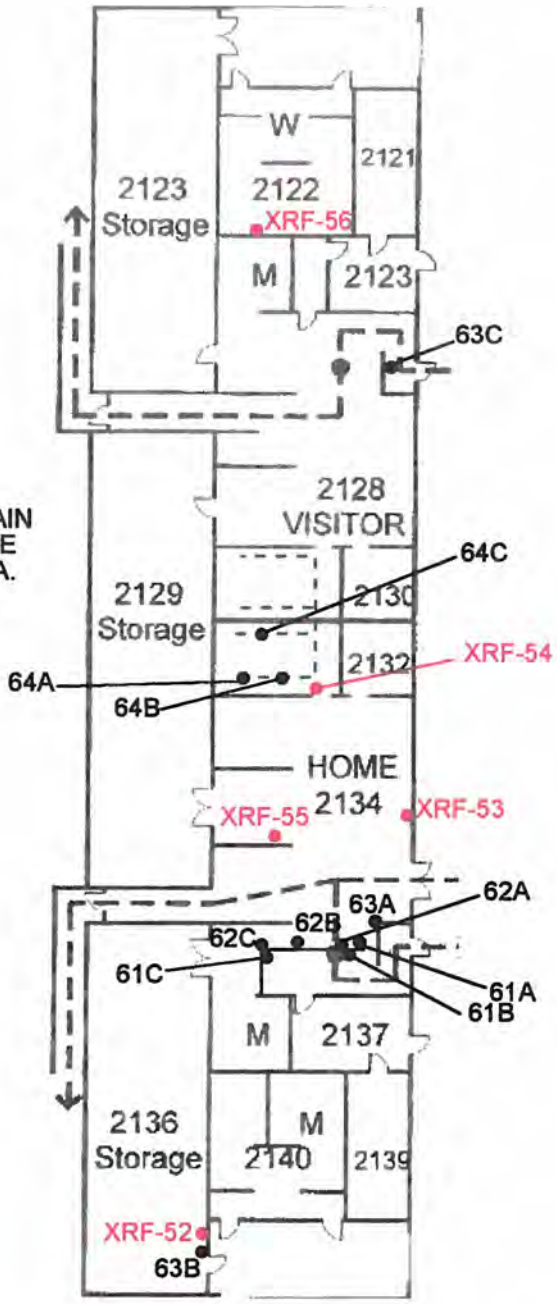
KLEINFELDER

DRAFTED BY: J GOMEZ	FILE NO: Plate 18- Bldg. 2100
PROJECT NO: 44156	DATE: 04-29-2004

SAMPLE LOCATION MAP
SOLANO COMMUNITY COLLEGE
POOL PUMP HOUSE - 2100
FAIRFIELD, CALIFORNIA

PLATE NO.
18

EXPLANATION
XRF SAMPLE LOCATIONS
ASBESTOS SAMPLE LOCATIONS



NOTES: BUILDING MATERIALS WHICH CONTAIN ASBESTOS INCLUDE THE FOLLOWING: WHITE TSI MATERIAL LOCTED IN THE SHOWER AREA.

NOT TO SCALE

Source: Solano Community College

KLEINFELDER		SAMPLE LOCATION MAP SOLANO COMMUNITY COLLEGE STADIUM BUILDING - 2112 FAIRFIELD, CALIFORNIA	PLATE NO. 19
DRAFTED BY: J GOMEZ	FILE NO: Plate 19- Bldg. 2112		
PROJECT NO: 44156	DATE: 04-29-2004		

TABLE 1
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
1A	White with red fleck 9" x 9" VFT / black mastic	Floor	Building 500, Hallway	<1 / 5-10	NF*	15,000
1B	White with red fleck 9" x 9" VFT / black mastic	Floor	Building 500, Hallway	FP	NF*	A
1C	White with red fleck 9" x 9" VFT / black mastic	Floor	Building 500, Hallway	FP	NF*	A
2A	Brown 4" baseboard / white mastic / brown mastic	Wall	Building 500, Hallway	ND / ND	N/A	N/A
2B	Brown 4" baseboard / brown mastic	Wall	Building 500, Room 505	ND / ND	N/A	N/A
2C	Brown 4" baseboard / brown mastic	Wall	Building 500, Hallway	ND / ND	N/A	N/A
2D	Brown 4" baseboard / brown mastic	Wall	Building 600, Room 612	ND / ND	N/A	N/A

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
3A	White sheetrock / white joint compound	Wall	Building 500, Room 501	ND / ND	N/A	N/A
3B	White sheetrock / white joint compound	Wall	Building 500, Janitors Closet	ND / ND	N/A	N/A
3C	White sheetrock / white joint compound	Wall	Building 500, Mechanical Rm.	ND / ND	N/A	N/A
3D	White sheetrock / white joint compound	Wall	Building 600, Room 612	ND / ND	N/A	N/A
3E	White sheetrock / white joint compound	Wall	Building 600, Room 615	ND / ND	N/A	N/A
3F	White sheetrock / white joint compound	Wall	Building 300, Ceiling	ND / ND	N/A	N/A
4A	White 2' x 4' ceiling tile	Ceiling	Building 500, Hallway	ND	N/A	N/A

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
4B	White 2' x 4' ceiling tile	Ceiling	Building 500, Room 503	ND	N/A	N/A
4C	White 2' x 4' ceiling tile	Ceiling	Building 500, Hallway	ND	N/A	N/A
5A	Green with white fleck 9" x 9" VFT / black mastic	Floor	Building 500, Room 505	<1 / 1-5	NF*	20,000
5B	Green with white fleck 9" x 9" VFT / black mastic	Floor	Building 500, Room 505	FP	NF*	B
5C	Green with white fleck 9" x 9" VFT / black mastic	Floor	Building 500, Room 505	FP	NF*	B
6A	White 12" x 12" wall tile / brown mastic	Wall	Building 500, Room 505	ND / ND	N/A	N/A
6B	White 12" x 12" wall tile / brown mastic	Wall	Building 500, Room 503	ND / ND	N/A	N/A

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
6C	White 12" x 12" wall tile / brown mastic	Wall	Building 500, Room 502	ND / ND	N/A	N/A
7A	Off-white pink and brown streaked 9" x 9" VFT / black mastic	Floor	Building 500, Room 530	1-5 / 1-5	NF*	10,000
7B	Off-white pink and brown streaked 9" x 9" VFT / black mastic	Floor	Building 500, Room 530	FP	NF*	C
7C	Off-white pink and brown streaked 9" x 9" VFT / black mastic	Floor	Building 500, Room 530	FP	NF*	C
8A	Pink or brown 2" x 2" ceramic tile / gray grout	Floor	Building 500, Room 528 (RR)	ND / ND	N/A	N/A
8B	Pink or brown 2" x 2" ceramic tile / gray grout	Floor	Building 500, Room 528 (RR)	ND / ND	N/A	N/A
8C	Pink or brown 2" x 2" ceramic tile / gray grout	Floor	Building 500, Room 529 (RR)	ND / ND	N/A	N/A

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
9A	White 4" x 4" ceramic tile / white grout / gray grout	Wall	Building 500, Room 529 (RR)	ND / ND / ND	N/A	N/A
9B	White 4" x 4" ceramic tile / white grout / gray grout	Wall	Building 500, Room 529 (RR)	ND / ND / ND	N/A	N/A
9C	White 4" x 4" ceramic tile / white grout / gray grout	Wall	Building 500, Room 528 (RR)	ND / ND / ND	N/A	N/A
10A	White drywall texture	Wall	Building 500, Hallway	ND	N/A	N/A
10B	White drywall texture	Wall	Building 500, Hallway	ND	N/A	N/A
10C	White drywall texture	Wall	Building 500, Room 510	ND	N/A	N/A
10D	White drywall texture	Wall	Building 600, Room 612	ND	N/A	N/A

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
11A	White drywall texture	Wall	Building 500, Room 508	ND	N/A	N/A
11B	White drywall texture	Wall	Building 500, Room 508	ND	N/A	N/A
11C	White drywall texture	Wall	Building 500, Room 508	ND	N/A	N/A
12A	White stucco (skim coat) / gray plaster	Wall	Building 500, Room 529	ND / ND	N/A	N/A
12B	White stucco (skim coat) / gray plaster	Wall	Building 500, Room 529	ND / ND	N/A	N/A
12C	White stucco (skim coat)	Wall	Building 500, Room 528	ND	N/A	N/A
13A	Beige HVAC putty	Plenum	Building 500	5-10	NF	2,000 lin. ft.

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
13B	Beige HVAC putty	Plenum	Building 500	FP	NF	M
13C	White HVAC putty	Plenum	Building 500	FP	NF	M
14A	White drywall texture-gray paper	Wall	Building 600, Foyer	ND	N/A	N/A
14B	White drywall texture-gray paper	Wall	Building 600, Foyer	ND	N/A	N/A
14C	White drywall texture-gray paper	Wall	Building 600, Foyer	ND	N/A	N/A
15A	White drywall texture	Wall	Building 600, Room 630	ND	N/A	N/A
15B	White drywall texture	Wall	Building 600, Hallway	ND	N/A	N/A

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
15C	White drywall texture	Wall	Building 600, Room 630	ND	N/A	N/A
16A	Pink with gray streak 9" x 9" VFT / black mastic	Floor	Building 600, Foyer	1-5 / 1-5	NF*	5,000
16B	Pink with gray streak 9" x 9" VFT / black mastic	Floor	Building 600, Foyer	FP	NF*	D
16C	Blue with white streak 9" x 9" VFT / black mastic	Floor	Building 600, Room 612	FP	NF*	D
17A	Brown 4" baseboard / brown mastic	Wall	Building 100, Room 130	ND / ND	N/A	N/A
17B	Brown 4" baseboard / brown mastic	Wall	Building 100, Hallway	ND / ND	N/A	N/A
17C	Brown 4" baseboard / brown mastic / yellow mastic	Wall	Building 100, Room 115	ND / ND / ND	N/A	N/A

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
18A	White sheetrock / white joint compound	Wall	Building 100, Room 161C	ND / 1-5	ND	22,000
18B	White sheetrock / white joint compound	Wall	Building 100, Room 162	ND / FP	NF	J
18C	White sheetrock / white joint compound	Wall	Building 100, Room 130	ND / FP	NF	J
19A	Gray 4" baseboard / brown mastic / yellow mastic	Wall	Building 100, Room 124	ND / ND / ND	N/A	N/A
19B	Gray 4" baseboard / brown mastic / yellow mastic	Wall	Building 100, Room 124	ND / ND / ND	N/A	N/A
19C	Gray 4" baseboard / brown mastic / yellow mastic	Wall	Building 100, Room 124	ND / ND / ND	N/A	N/A
20A	White 12" x 12" tile / brown mastic	Wall	Building 100, Room 136	ND / ND	N/A	N/A

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
20B	White 12" x 12" tile / brown mastic	Wall	Building 100, Room 124	ND / ND	N/A	N/A
20C	White 12" x 12" tile / brown mastic	Wall	Building 100, Room 129	ND / ND	N/A	N/A
21A	Off-white 9" x 9" with red streaks VFT / black mastic	Floor	Building 100, Room 115	1-5 / 1-5	NF*	8,000
21B	Off-white 9" x 9" with red streaks VFT / black mastic	Floor	Building 100, Room 115	FP	NF*	E
21C	Off-white 9" x 9" with red streaks VFT / black mastic	Floor	Building 100, Room 115	FP	NF*	E
22A	White drywall texture	Wall	Building 100, Room 129A	ND	N/A	N/A
22B	White drywall texture	Wall	Building 100, Room 129A	ND	N/A	N/A

TABLE 1(cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
22C	White drywall texture	Wall	Building 100, Room 129A	ND	N/A	N/A
23A	Brown 12" x 12" VFT / yellow mastic	Floor	Building 100, East Entrance	ND / ND	N/A	N/A
23B	Brown 12" x 12" VFT / yellow mastic	Floor	Building 100, West Entrance	ND / ND	N/A	N/A
23C	Brown 12" x 12" VFT / yellow mastic	Floor	Building 100, East Entrance	ND / ND	N/A	N/A
24A	Off-white with brown streaks 12" x 12" VFT / black mastic	Floor	Building 100, Room 162	1-5 / 1-5	NF*	1,500
24B	Off-white with brown streaks 12" x 12" VFT / black mastic	Floor	Building 100, Room 162	FP	NF*	F
24C	Off-white with brown streaks 12" x 12" VFT / black mastic	Floor	Building 100, Room 162	FP	NF*	F

TABLE 1(cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
25A	White drywall texture	Wall	Building 100, Hallway 161C	ND	N/A	N/A
25B	White drywall texture	Wall	Building 100, Hallway 161C	ND	N/A	N/A
25C	White drywall texture	Wall	Building 100, Room 161B	ND	N/A	N/A
26A	Yellow or Green 2" x 2" ceramic tile / gray grout	Floor	Building 100, Rm. 126 (WRR)	ND / ND	N/A	N/A
26B	Yellow or Green 2" x 2" ceramic tile / gray grout	Floor	Building 100, Rm. 126 (WRR)	ND / ND	N/A	N/A
26C	Yellow or Green 2" x 2" ceramic tile / gray grout	Floor	Building 100, Hall 174 RR	ND / ND	N/A	N/A
27A	Yellow or Beige 4" x 4" ceramic tile / white grout	Wall	Building 100, Rm. 126 WRR	ND / ND	N/A	N/A
27B	Yellow or Beige 4" x 4" ceramic tile / white grout	Wall	Building 100, Rm. 125 MRR	ND / ND	N/A	N/A

TABLE 1(cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
27C	Yellow or Beige 4" x 4" ceramic tile / white grout	Wall	Building 100, Hall 174 RR	ND / ND	N/A	N/A
28A	White drywall texture	Wall	Building 100, Room 162	ND	N/A	N/A
28B	White drywall texture	Wall	Building 100, Room 162	ND	N/A	N/A
28C	White drywall texture	Wall	Building 100, Room 162	ND	N/A	N/A
29A	White 2' x 4' ceiling tile	Ceiling	Building 100, Room 100	ND	N/A	N/A
29B	White 2' x 4' ceiling tile	Ceiling	Building 100, Hallway 171	ND	N/A	N/A
29C	White 2' x 4' ceiling tile	Ceiling	Building 100, Room 100	ND	N/A	N/A

TABLE 1(cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
30A	Brown 4" baseboard / brown mastic	Wall	Building 300, Room 308	ND / ND	N/A	N/A
30B	Brown 4" baseboard / brown mastic	Wall	Building 300, Main Hallway	ND / ND	N/A	N/A
30C	Brown 4" baseboard / brown mastic	Wall	Building 300, Room 308	ND / ND	N/A	N/A
31A	White 12" x 12" tile / brown mastic	Ceiling	Building 300, Rom 308	ND / ND	N/A	N/A
31B	White 12" x 12" tile / brown mastic	Ceiling	Building 300, Rom 308	ND / ND	N/A	N/A
31C	White 12" x 12" tile / brown mastic	Ceiling	Building 300, Rom 308	ND / ND	N/A	N/A
32A	Multi-color 12" x 12" VFT / black mastic	Floor	Building 300, Room 306	ND / 1-5	NF*	1,000

TABLE 1(cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
32B	Multi-color 12" x 12" VFT / black mastic	Floor	Building 300, Room 306	FP	NF*	G
32C	Multi-color 12" x 12" VFT / black mastic	Floor	Building 300, Room 306	FP	NF*	G
33A	Brown 6" baseboard / white mastic	Wall	Building 2000	ND / ND	N/A	N/A
33B	Brown 6" baseboard / white mastic	Wall	Building 2000	ND / ND	N/A	N/A
33C	Brown 6" baseboard / white mastic	Wall	Building 2000	ND / ND	N/A	N/A
34A	Gray putty	Black sinks	Building 300, Room 304	10-20	NF	500 lin. ft.
34B	Gray putty	Black sinks	Building 300, Room 303	FP	NF	H
34C	Gray putty	Black sinks	Building 300, Room 303	FP	NF	H

TABLE 1(cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
35A	White sheetrock / white joint compound / composite	Wall	Building 2100	ND / 1-5 / <1	NF	1,800
35B	White sheetrock / white joint compound / composite	Wall	Building 2100	FP	NF	I
35C	White sheetrock / white joint compound / composite	Wall	Building 2100	FP	NF	I
36A	White drywall texture	Wall	Building 2100	1-5	FR	I
36B	White drywall texture	Wall	Building 2100	FP	FR	I
36C	White drywall texture	Wall	Building 2100	FP	FR	I
37A	White 12" x 12" tile / tan mastic	Ceiling	Building 2100	ND / ND	N/A	N/A
37B	White 12" x 12" tile / tan mastic	Ceiling	Building 2100	ND / ND	N/A	N/A
37C	White 12" x 12" tile / tan mastic	Ceiling	Building 2100	ND / ND	N/A	N/A
38A	White sheetrock / white joint compound	Wall	Building 700, Room 742	ND / 1-5 / <1	NF	J

TABLE 1(cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
38B	White sheetrock / white joint compound	Wall	Building 700, Room 747	ND / 1-5 / <1	NF	J
38C	White sheetrock / white joint compound	Wall	Building 700, Room 716	ND / 1-5 / <1	NF	J
38D	White sheetrock / white joint compound	Wall	Building 1600, Room 1620	ND / 1-5 / <1	NF	J
38E	White sheetrock / white joint compound	Wall	Building 1600, Room 1620	ND / 1-5 / <1	NF	J
39A	Off-white with tan fleck 12" x 12" VFT / black mastic	Floor	Building 700, Room 714	1-5 / 5-10	NF*	1,000
39B	Off-white with tan fleck 12" x 12" VFT / black mastic	Floor	Building 700, Room 714	FP	NF*	K
39C	Off-white with tan fleck 12" x 12" VFT / black mastic	Floor	Building 700, Room 714	FP	NF*	K

TABLE 1(cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
40A	White TSI putty (joint)	Piping	Building 700, Room 742	ND	N/A	N/A
40B	White TSI putty (joint)	Piping	Building 700, Room 742	ND	N/A	N/A
40C	White TSI putty (joint)	Piping	Building 700, Room 742	ND	N/A	N/A
41A	Brown 4" baseboard / brown mastic	Wall	Building 700, Room 746	ND / ND	N/A	N/A
41B	Brown 4" baseboard / brown mastic	Wall	Building 700, Hallway	ND / ND	N/A	N/A
41C	Brown 4" baseboard / brown mastic	Wall	Building 700, Hallway	ND / ND	N/A	N/A
42A	Gray 4" baseboard / brown mastic	Wall	Building 700, Room 744	ND / ND	N/A	N/A

TABLE 1(cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
42B	Gray 4" baseboard / brown mastic	Wall	Building 700, Room 744	ND / ND	N/A	N/A
42C	Gray 4" baseboard / brown mastic	Wall	Building 700, Room 750	ND / ND	N/A	N/A
43A	White with red streak 12" x 12" VFT / black mastic	Floor	Building 700, NW Hallway	1-5 / 1-5	NF*	5,000
43B	White with red streak 12" x 12" VFT / black mastic	Floor	Building 700, NW Hallway	FP	NF*	L
43C	White with red streak 12" x 12" VFT / black mastic	Floor	Building 700, NW Hallway	FP	NF*	L
44A	Yellow HVAC putty	Plenum	Building 700, Hallway	5-10	NF	JJ
44B	Yellow HVAC putty	Plenum	Building 700, Hallway	FP	NF	JJ

TABLE 1(cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
44C	Yellow HVAC putty	Plenum	Building 700, Hallway	FP	NF	
45A	White 2' x 4' tile	Ceiling	Building 700, Hallway	ND	N/A	N/A
45B	White 2' x 4' tile	Ceiling	Building 700, Hallway	ND	N/A	N/A
45C	White 2' x 4' tile	Ceiling	Building 700, Room 713	ND	N/A	N/A
46A	Brown stucco material	Wall	Building 1500, Exterior	ND	N/A	N/A
46B	Brown stucco material	Wall	Building 1500, Exterior	ND	N/A	N/A
46C	Brown stucco material	Wall	Building 1500, Exterior	ND	N/A	N/A

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
47A	White 4" x 4" ceramic tile / gray grout / white grout	Wall	Building 1600, Room 1613 RR	ND / ND / ND	N/A	N/A
47B	White 4" x 4" ceramic tile / gray grout / white grout	Wall	Building 1600, Room 1613 RR	ND / ND / ND	N/A	N/A
47C	White 4" x 4" ceramic tile / gray grout / white grout	Wall	Building 1600, Room 1613 RR	ND / ND / ND	N/A	N/A
48A	White with beige fleck 12" x 12" VFT / yellow mastic / gray grout	Floor	Building 1600, North Hall	ND / ND / ND	N/A	N/A
48B	White with beige fleck 12" x 12" VFT / yellow mastic / gray grout	Floor	Building 1600, South Hall	ND / ND / ND	N/A	N/A
48C	White with beige fleck 12" x 12" VFT / yellow mastic / gray grout	Floor	Building 1600, Room 1625	ND / ND / ND	N/A	N/A
49A	Beige 4" baseboard / white mastic	Wall	Building 1600, North Hall	ND / ND	N/A	N/A

TABLE 1(cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
49B	Beige 4" baseboard / white mastic	Wall	Building 1600, South Hall	ND / ND	N/A	N/A
49C	Beige 4" baseboard / white mastic	Wall	Building 1600, Room 1625	ND / ND	N/A	N/A
50A	White 2" x 2" ceramic tile / white grout / yellow glue	Wall	Building 1600, Room 1641 RR	ND / ND / ND	N/A	N/A
50B	White 2" x 2" ceramic tile / white grout / yellow glue	Wall	Building 1600, Room 1641 RR	ND / ND / ND	N/A	N/A
50C	White 2" x 2" ceramic tile / white grout / yellow glue	Wall	Building 1600, Room 1641 RR	ND / ND / ND	N/A	N/A
51A	Brown 2" x 2" ceramic tile / gray grout	Floor	Building 1600, Room 1641 RR	ND / ND	N/A	N/A
51B	Brown 2" x 2" ceramic tile / gray grout	Floor	Building 1600, Room 1641 RR	ND / ND	N/A	N/A
51C	Brown 2" x 2" ceramic tile / gray grout	Floor	Building 1600, Room 1641 RR	ND / ND	N/A	N/A

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
52A	Brown 4" baseboard / brown mastic	Wall	Building 1700, Room 1725	ND / ND	N/A	N/A
52B	Brown 4" baseboard / brown mastic	Wall	Building 1700, West Foyer 1701	ND / ND	N/A	N/A
52C	Brown 4" baseboard / brown mastic	Wall	Building 1700, South Hall	ND / ND	N/A	N/A
53A	Beige 4" x 4" ceramic tile / gray grout / white grout	Wall	Building 1700, Foyer RR 1701	ND / ND / ND	N/A	N/A
53B	Beige 4" x 4" ceramic tile / gray grout / white grout	Wall	Building 1700, Foyer RR 1701	ND / ND / ND	N/A	N/A
53C	Beige 4" x 4" ceramic tile / gray grout / white grout	Wall	Building 1700, Southwest RR	ND / ND / ND	N/A	N/A
54A	Yellow or Brown 2" x 2" ceramic tile	Floor	Building 1700, Foyer RR 1701	ND	N/A	N/A

TABLE 1(cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
54B	Yellow or Brown 2" x 2" ceramic tile	Floor	Building 1700, W Locker 1740	ND	N/A	N/A
54C	Yellow or Brown 2" x 2" ceramic tile	Floor	Building 1700, Foyer RR 1701	ND	N/A	N/A
55A	White sheetrock / white joint compound / composite	Wall	Building 1700, 1701 Jan. Closet	ND / 1-5 / <1	NF	J
55B	White sheetrock / white joint compound / composite	Wall	Building 1700, South Hallway	FP	NF	J
55C	White sheetrock / white joint compound / composite	Wall	Building 1700, Room 1714	FP	NF	J
57A	Off-white 12" x 6" ceramic tile / white grout / gray grout	Wall	Building 1700, W Locker 1740	ND / ND / ND	N/A	N/A
57B	Off-white 12" x 6" ceramic tile / white grout / gray grout	Wall	Building 1700, W Locker 1740	ND / ND / ND	N/A	N/A

TABLE 1(cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
57C	Off-white 12" x 6" ceramic tile / white grout / gray grout	Wall	Building 1700, W Locker 1740	ND / ND / ND	N/A	N/A
58A	White 2' x 4' tiles	Ceiling	Building 1700, Southwest Hall	ND	N/A	N/A
58B	White 2' x 4' tiles	Ceiling	Building 1700, Southwest Hall	ND	N/A	N/A
58C	White 2' x 4' tiles	Ceiling	Building 1700, Southwest Hall	ND	N/A	N/A
59A	White 12" x 12" tile / brown mastic	Wall	Building 1700, Room 1725	ND / ND	N/A	N/A
59B	White 12" x 12" tile / brown mastic	Wall	Building 1700, Room 1723	ND / ND	N/A	N/A
59C	White 12" x 12" tile / brown mastic	Wall	Building 1700, Room 1724	ND / ND	N/A	N/A

TABLE 1(cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
60A	Gray grout	Wall	Building 1700, Room 1716 RR	ND	N/A	N/A
60B	Off-white stucco / gray grout	Wall	Building 1700, Room 1716 RR	ND / ND	N/A	N/A
60C	Off-white stucco / gray grout	Wall	Building 1700, Room 1717 RR	ND / ND	N/A	N/A
61A	White sheetrock / white joint compound	Wall	Building 2112, Room 2134	ND / ND	N/A	N/A
61B	White sheetrock / white joint compound	Wall	Building 2112, Room 2134	ND / ND	N/A	N/A
61C	White sheetrock / white joint compound	Wall	Building 2112, Room 2134	ND / ND	N/A	N/A
62A	White drywall texture	Wall	Building 2112, Room 2134	ND	N/A	N/A

TABLE 1(cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
62B	White drywall texture	Wall	Building 2112, Room 2134	ND	N/A	N/A
62C	White drywall texture	Wall	Building 2112, Room 2134	ND	N/A	N/A
63A	Gray stucco material	Wall	Building 2112, Room 2134	ND	N/A	N/A
63B	Gray stucco material	Wall	Building 2112, Room 2136	ND	N/A	N/A
63C	Gray stucco material	Wall	Building 2112, Room 2128	ND	N/A	N/A
64A	White TSI taping / white TSI	Piping	Building 2112, Showers	ND	FR	500 lin. ft.
64B	White TSI taping / white TSI (joint)	Piping	Building 2112, Showers	5-10	FR	N
64C	White TSI taping / white TSI	Piping	Building 2112, Showers	FP	FR	N

TABLE 1(cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
65A	Green 12" x 12" VFT / yellow mastic	Floor	Building 1900, Room 1902A	1-5 / ND	NF*	400
65B	Green 12" x 12" VFT / yellow mastic	Floor	Building 1900, Room 1902A	FP	NF*	O
65C	Green 12" x 12" VFT / yellow mastic	Floor	Building 1900, Room 1902A	FP	NF*	O
66A	White sheetrock / white joint compound	Wall	Building 1900, Room 1902E	ND / ND	N/A	N/A
66B	White sheetrock / white joint compound	Wall	Building 1900, Room 1902E	ND / ND	N/A	N/A
66C	White sheetrock / white joint compound	Wall	Building 1900, Room 1902E	ND / ND	N/A	N/A
67A	White drywall texture	Wall	Building 1900, Room 1902E	ND	N/A	N/A

TABLE 1(cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
67B	White drywall texture	Wall	Building 1900, Room 1902E	ND	N/A	N/A
67C	White drywall texture	Wall	Building 1900, Room 1902B	ND	N/A	N/A
68A	Beige with green and brown fleck 12" x 12" VFT / black mastic	Floor	Building 800, Room 801	1-5 / 5-10	NF*	6,000
68B	Beige with green and brown fleck 12" x 12" VFT / black mastic	Floor	Building 800, Hallway	FP	NF*	P
68C	Beige with green and brown fleck 12" x 12" VFT / black mastic	Floor	Building 800, Hallway	FP	NF*	P
69A	Brown 4" baseboard / brown mastic	Wall	Building 800, Room 801	ND / 1-5	NF	1500 lin. ft.
69B	Brown 4" baseboard / brown mastic	Wall	Building 800, Hallway	FP	NF	Q

TABLE 1(cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
69C	Brown 4" baseboard / brown mastic	Wall	Building 800, Hallway	FP	NF	Q
70A	White 2' x 4' tile	Ceiling	Building 800, Room 801	ND	N/A	N/A
70B	White 2' x 4' tile	Ceiling	Building 800, Hallway	ND	N/A	N/A
70C	White 2' x 4' tile	Ceiling	Building 800, Room 805D	ND	N/A	N/A
71A	Brown 4" x 4" ceramic tile / white grout / gray grout	Wall	Building 800, MRR	ND / ND / ND	N/A	N/A
71B	Green 4" by 4" ceramic tile / white grout / gray grout	Wall	Building 800, WRR	ND / ND / ND	N/A	N/A
71C	Green 4" by 4" ceramic tile / white grout / gray grout	Wall	Building 800, WRR	ND / ND / ND	N/A	N/A

TABLE 1(cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
72A	Brown 1" x 1" ceramic tile / gray grout	Floor	Building 800, MRR	ND / ND	N/A	N/A
72B	Green 1" x 1" ceramic tile / gray grout	Floor	Building 800, WRR	ND / ND	N/A	N/A
72C	Green 1" x 1" ceramic tile / gray grout	Floor	Building 800, WRR	ND / ND	N/A	N/A
73A	White 12" x 12" tile / brown mastic	Wall	Building 800, Central Hallway	ND / 5-10	NF	6,000
73B	White 12" x 12" tile / brown mastic	Wall	Building 800, Room 803A	FP	NF	R
73C	White 12" x 12" tile / brown mastic	Wall	Building 800, North Hallway	FP	NF	R
74A	White sheetrock / white joint compound	Wall	Building 800, Janitors Closet	ND / ND	N/A	N/A

TABLE 1(cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
74B	White sheetrock / white joint compound	Wall	Building 800, Room 803A	ND / ND	N/A	N/A
74C	White sheetrock / white joint compound	Wall	Building 800, Room 803A	ND / ND	N/A	N/A
74D	White sheetrock / white joint compound	Wall	Building 800, Southeast Hall	ND / ND	N/A	N/A
75A	White drywall texture	Wall	Building 800, Janitors Closet	ND	N/A	N/A
75B	White drywall texture	Wall	Building 800, Janitors Closet	ND	N/A	N/A
75C	White drywall texture	Wall	Building 800, Janitors Closet	ND	N/A	N/A
76A	White 12" x 12" tile / brown mastic	Ceiling	Building 800, WRR	ND / 5-10	NF	R

TABLE 1(cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
76B	White 12" x 12" tile / brown mastic	Ceiling	Building 800, WRR	FP	NF	R
76C	White 12" x 12" tile / brown mastic	Ceiling	Building 800, MRR	FP	NF	R
77A	Gray stucco material	Wall	Building 800, MRR	ND	N/A	N/A
77B	Gray stucco material	Wall	Building 800, WRR	ND	N/A	N/A
77C	Gray stucco material	Wall	Building 800, WRR	ND	N/A	N/A
78A	White HVAC putty	Plenum	Building 800, Hallway	ND	N/A	N/A
78B	White HVAC putty	Plenum	Building 800, Hallway	ND	N/A	N/A

TABLE 1(cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
79A	White sheetrock (no joint compound)	Wall	Building 1100, Room 1102	ND	N/A	N/A
79B	White sheetrock (no joint compound)	Wall	Building 1100, Room 1102	ND	N/A	N/A
79C	White sheetrock (no joint compound)	Wall	Building 1100, Room 1102C	ND	N/A	N/A
80A	Brown 4" baseboard / brown mastic	Wall	Building 1100, Room 1102C	ND / ND	N/A	N/A
80B	Brown 4" baseboard / brown mastic	Wall	Building 1100, Room 1106	ND / ND	N/A	N/A
80C	Brown 4" baseboard / brown mastic	Wall	Building 1100, Room 1109A	ND / ND	N/A	N/A
81A	White 2' x 4' tile	Ceiling	Building 1100, Room 1104G	1-5 / 0.2 PC	NF	5,000

TABLE 1(cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
81B	White 2' x 4' tile	Ceiling	Building 1100, Room 1109A	1-5	NF	S
81C	White 2' x 4' tile	Ceiling	Building 1100, Room 1109A	1-5	NF	S
82A	Tan 12" x 12" tile	Ceiling	Building 1100, Room 1102C	ND	N/A	N/A
82B	Tan 12" x 12" tile	Ceiling	Building 1100, Room 1102	ND	N/A	N/A
83A	White drywall texture	Wall	Building 1100, Room 1102C	ND	N/A	N/A
83B	White drywall texture	Wall	Building 1100, Room 1107	ND	N/A	N/A
83C	White drywall texture	Wall	Building 1100, Room 1107	ND	N/A	N/A

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
84A	White sheetrock / white joint compound / composite	Wall	Building 1100, Room 1102C	ND / 1-5 / 0.0045 PC	NF	J
84B	White sheetrock / white joint compound / composite	Wall	Building 1100, Room 1107	FP	NF	J
84C	White sheetrock / white joint compound / composite	Wall	Building 1100, Room 1107	FP	NF	J
85A	White drywall texture	Wall	Building 1100, Room 1106C	ND	N/A	N/A
85B	White drywall texture	Wall	Building 1100, Room 1106	ND	N/A	N/A
85C	White drywall texture	Wall	Building 1106, Room 1106F	ND	N/A	N/A
85D	White drywall texture	Wall	Building 1100, Room 1109	ND	N/A	N/A

TABLE 1(cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
86A	White sheetrock / white joint compound	Wall	Building 1100, Room 1106	ND / ND	N/A	N/A
86B	White sheetrock / white joint compound	Wall	Building 1100, Room 1106F	ND / ND	N/A	N/A
86C	White sheetrock / white joint compound	Wall	Building 1100, Room 1106	ND / ND	N/A	N/A
86D	White sheetrock / white joint compound	Wall	Building 1100, Room 1109B	ND / ND	N/A	N/A
87A	Gray sheet flooring / gray paper / brown mastic	Floor	Building 1100, Room 1106F	ND / ND / ND	N/A	N/A
87B	Gray sheet flooring / gray paper / brown mastic	Floor	Building 1100, Room 1106F	ND / ND / ND	N/A	N/A
87C	Gray sheet flooring / gray paper	Floor	Building 1100, Room 1106	ND / ND	N/A	N/A

TABLE 1(cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
88A	White with blue streak 12" x 12" VFT / yellow mastic	Floor	Building 1100, Foyer 1106	ND / ND	N/A	N/A
88B	White with blue streak 12" x 12" VFT / yellow mastic	Floor	Building 1100, Foyer 1106	ND / ND	N/A	N/A
88C	White with blue streak 12" x 12" VFT / yellow mastic	Floor	Building 1100, Foyer 1106	ND / ND	N/A	N/A
89A	Beige rock pattern sheet flooring / gray paper / black mastic / white leveling compound	Floor	Building 1100, Room 1107 WRR	ND / ND / ND / ND	N/A	N/A
89B	Beige rock pattern sheet flooring / gray paper / black mastic / white leveling compound	Floor	Building 1100, Room 1107 WRR	ND / ND / ND / ND	N/A	N/A
89C	Beige rock pattern sheet flooring / gray paper / black mastic / white leveling compound	Floor	Building 1100, Room 1107 WRR	ND / ND / ND / ND	N/A	N/A

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
90A	Blue sheet flooring / gray paper / yellow mastic	Floor	Building 1100, Room 1103	ND / ND / ND	N/A	N/A
90B	Blue sheet flooring / gray paper / yellow mastic	Floor	Building 1100, Room 1103	ND / ND / ND	N/A	N/A
90C	Blue sheet flooring / gray paper / yellow mastic	Floor	Building 1100, Room 1103	ND / ND / ND	N/A	N/A
91A	Beige 12" x 12" VFT / orange mastic	Floor	Building 1100, Room 1101	1-5 / ND	NF*	1,600
91B	Beige 12" x 12" VFT / orange mastic	Floor	Building 1100, Room 1101	FP	NF*	U
91C	Beige 12" x 12" VFT / orange mastic	Floor	Building 1100, Room 1101	FP	NF*	U
92A	Yellow mastic	Wall Board	Building 1400, Room 1428	ND	N/A	N/A

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
92B	Yellow mastic	Wall Board	Building 1400, Room 1428	ND	N/A	N/A
93A	Green 12" x 12" VFT / yellow mastic / black mastic	Floor	Building 1400, Room 1401	ND / ND / 1-5	NF*	10,000
93B	Green 12" x 12" VFT / yellow mastic / black mastic	Floor	Building 1400, Room 1401	FP	NF*	V
93C	Green 12" x 12" VFT / yellow mastic / black mastic	Floor	Building 1400, Room 1401	FP	NF*	V
94A	Gray 12" x 12" VFT / black mastic	Floor	Building 1400, Room 1401	ND / 5-10	NF*	2,000
94B	Gray 12" x 12" VFT / black mastic	Floor	Building 1400, Room 1401	FP	NF*	W
94C	Gray 12" x 12" VFT / black mastic	Floor	Building 1400, Room 1401	FP	NF*	W

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
95A	White 2' x 4' tile	Ceiling	Building 1400, Room 1404	ND	N/A	N/A
95B	White 2' x 4' tile	Ceiling	Building 1400, 1404 Hallway	ND	N/A	N/A
95C	White 2' x 4' tile	Ceiling	Building 1400, Room 1414	ND	N/A	N/A
96A	White HVAC putty	HVAC	Building 1400, Mech. Room	ND	N/A	N/A
96B	White HVAC putty	HVAC	Building 1400, Mech. Room	ND	N/A	N/A
96C	White HVAC putty	HVAC	Building 1400, Mech. Room	ND	N/A	N/A
97A	White skim coat / gray plaster	Wall	Building 1400, Room 1433	ND / ND	N/A	N/A

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
97B	White skim coat / gray plaster	Wall	Building 1400, Room 1433	ND / ND	N/A	N/A
97C	White skim coat / gray plaster	Wall	Building 1400, Room 1433	ND / ND	N/A	N/A
98A	Brown 4" x 4" ceramic tile / gray grout	Floor	Building 1400, Room 1433	ND / ND	N/A	N/A
98B	Brown 4" x 4" ceramic tile / gray grout	Floor	Building 1400, Room 1433	ND / ND	N/A	N/A
98C	Brown 4" x 4" ceramic tile / gray grout	Floor	Building 1400, Room 1433	ND / ND	N/A	N/A
99A	Brown 4" baseboard / white mastic	Wall	Building 1400, Room 1404	ND / ND	N/A	N/A
99B	Brown 4" baseboard / white mastic	Wall	Building 1400, Room 1404	ND / ND	N/A	N/A

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
99C	Brown 4" baseboard / white mastic	Wall	Building 1400, Room 1404	ND / ND	N/A	N/A
100A	White sheetrock / white joint compound	Wall	Building 1400, Room 1404	ND / ND	N/A	N/A
100B	White sheetrock / white joint compound	Wall	Building 1400, Room 1404	ND / ND	N/A	N/A
100C	White sheetrock / white joint compound	Wall	Building 1400, Room 1404	ND / ND	N/A	N/A
101A	White drywall texture	Wall	Building 1400, Room 1404	ND	N/A	N/A
101B	White drywall texture	Wall	Building 1400, Room 1404	ND	N/A	N/A
101C	White drywall texture	Wall	Building 1400, Room 1404	ND	N/A	N/A

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability / AHERA Classification / Damage Assessment	Area (sq. ft.)
102A	White 2' x 4' tile	Ceiling	Building 1300, Room 1307	ND	N/A	N/A
102B	White 2' x 4' tile	Ceiling	Building 1300, Hallway	ND	N/A	N/A
102C	White 2' x 4' tile	Ceiling	Building 1300, Hallway	ND	N/A	N/A
103A	Off-white with brown fleck 12" x 12" VFT / black mastic	Floor	Building 1300, Hallway	<1 / 10-20	NF*	2,500
103B	Off-white with brown fleck 12" x 12" VFT / black mastic	Floor	Building 1300, Hallway	FP	NF*	X
103C	Off-white with brown fleck 12" x 12" VFT / black mastic	Floor	Building 1300, Hallway	FP	NF*	X
104A	Brown 4" baseboard / brown mastic	Wall	Building 1300, Hallway	ND / <1 / 0.15 PC	NF	2,500

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
104B	Brown 4" baseboard / brown mastic	Wall	Building 1300, Hallway	ND / FP	NF	Y
104C	Brown 4" baseboard / brown mastic	Wall	Building 1300, Hallway	ND / FP	NF	Y
105A	White with brown fleck 12" x 12" VFT / yellow mastic	Floor	Building 1300, Room 1305	ND / ND	N/A	N/A
105B	White with brown fleck 12" x 12" VFT / yellow mastic	Floor	Building 1300, Room 1305	ND / ND	N/A	N/A
105C	White with brown fleck 12" x 12" VFT / yellow mastic	Floor	Building 1300, Room 1305	ND / ND	N/A	N/A
106A	White sheetrock / white joint compound	Wall	Building 1300, Janitors Closet	ND / 1-5 / 0.60 PC	NF	J
106B	White sheetrock / white joint compound	Wall	Building 1300, Room 1302 area	ND / FP	NF	J

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
106C	White sheetrock / white joint compound	Wall	Building 1300, Room 1302 area	NF / FP	NF	J
107A	White skim coat-plaster	Wall	Building 1300, WRR	ND	N/A	N/A
107B	White skim coat-white plaster	Wall	Building 1300, WRR	ND	N/A	N/A
107C	White skim coat-white plaster	Wall	Building 1300, MRR	ND	N/A	N/A
108A	White 12" x 12" tile / brown mastic	Ceiling	Building 1300, WRR	ND / 1-5	NF	R
108B	White 12" x 12" tile / brown mastic	Ceiling	Building 1300, Hallway	FP	NF	R
108C	White 12" x 12" tile / brown mastic	Ceiling	Building 1300, Hallway	FP	NF	R

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
109A	Green with off-white fleck 12" x 12" VFT / black mastic	Floor	Building 1800A, Hallway	5-10 / 5-10	NF*	4,500
109B	Green with off-white fleck 12" x 12" VFT / black mastic	Floor	Building 1800A, Hallway	FP	NF*	AA
109C	Green with off-white fleck 12" x 12" VFT / black mastic	Floor	Building 1800A, Hallway	FP	NF*	AA
110A	Brown 4" baseboard / brown mastic	Wall	Building 1800A, Hallway	ND / ND	N/A	N/A
110B	Brown 4" baseboard / brown mastic	Wall	Building 1800A, Hallway	ND / ND	N/A	N/A
110C	Brown 4" baseboard / brown mastic	Wall	Building 1800A, Hallway	ND / ND	N/A	N/A
111A	White 2' x 4' tile	Ceiling	Building 1800A, Hallway	ND	N/A	N/A

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
111B	White 2' x 4' tile	Ceiling	Building 1800A, Hallway	ND	N/A	N/A
111C	White 2' x 4' tile	Ceiling	Building 1800A, Hallway	ND	N/A	N/A
112A	White skim coat / gray plaster	Wall	Building 1800A, WRR	ND / ND	N/A	N/A
112B	Gray plaster	Wall	Building 1800A, WRR	ND	N/A	N/A
112C	Gray plaster	Wall	Building 1800A, MRR	ND	N/A	N/A
113A	White sheetrock / white joint compound / composite	Wall	Building 1800A, Mech. Room	ND / <1 / 0.035 PC	NF	6,500
113B	White sheetrock / white joint compound	Wall	Building 1800A, Janitors Closet	ND / ND	NF	BB

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability / AHERA Classification / Damage Assessment	Area (sq. ft.)
113C	White sheetrock / white joint compound	Wall	Building 1800A, Janitors Closet	ND / <1	NF	BB
114A	White drywall texture	Wall	Building 1800A, Mech. Room	<1 / 0.23 PC	NF	BB
114B	White drywall texture	Wall	Building 1800A, Mech. Room	<1	NF	BB
114C	White drywall texture	Wall	Building 1800A, Mech. Room	<1 / 0.14 PC	NF	BB
115A	Pink 12" x 12" VFT / black mastic	Floor	Building 1800B, Upstairs 1854	ND / ND	N/A	N/A
115B	Pink 12" x 12" VFT / black mastic	Floor	Building 1800B, Upstairs 1854	ND / ND	N/A	N/A
115C	Pink 12" x 12" VFT / black mastic	Floor	Building 1800B, Upstairs 1854	ND / ND	N/A	N/A

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability / AHERA Classification / Damage Assessment	Area (sq. ft.)
116A	Brown 4" baseboard / brown mastic	Wall	Building 1800B, Upstairs 1854	ND / ND	N/A	N/A
116B	Brown 4" baseboard / brown mastic	Wall	Building 1800B, Upstairs 1854	ND / ND	N/A	N/A
116C	Brown 4" baseboard / brown mastic	Wall	Building 1800B, Upstairs 1854	ND / ND	N/A	N/A
117A	Gray 12" x 12" VFT / yellow mastic	Floor	Building 1800B, Upstairs 1855	ND / ND	N/A	N/A
117B	Gray 12" x 12" VFT / yellow mastic	Floor	Building 1800B, Upstairs 1855	ND / ND	N/A	N/A
117C	Gray 12" x 12" VFT / yellow mastic	Floor	Building 1800B, Upstairs 1855	ND / ND	N/A	N/A
118A	Beige 4" x 4" ceramic tiles / white grout / gray grout	Wall	Building 1800B, Rm 1854 Locker	ND / ND / ND	N/A	N/A

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability / AHERA Classification / Damage Assessment	Area (sq. ft.)
118B	Beige 4" x 4" ceramic tiles / white grout / gray grout	Wall	Building 1800B, Rm 1854 Locker	ND / ND / ND	N/A	N/A
118C	Beige 4" x 4" ceramic tiles / white grout / gray grout	Wall	Building 1800B, Rm 1854 Locker	ND / ND / ND	N/A	N/A
119A	Brown 2" x 2" ceramic tile / gray grout / yellow mastic / black mastic	Floor	Building 1800B, Rm 1854 Locker	ND / ND / ND / ND	N/A	N/A
119B	Brown 2" x 2" ceramic tile / gray grout / yellow mastic / black mastic	Floor	Building 1800B, Rm 1854 Locker	ND / ND / ND / ND	N/A	N/A
119C	Brown 2" x 2" ceramic tile / gray grout / yellow mastic / black mastic	Floor	Building 1800B, Rm 1854 Locker	ND / ND / ND / ND	N/A	N/A
120A	White sheetrock / white joint compound	Wall	Building 1800B, Room 1856	ND / 1-5 / 0.020 PC	NF	B B 6,500
120B	White sheetrock / white joint compound	Wall	Building 1800B, Room 1856	FP	NF	B B 6,500

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability / AHERA Classification / Damage Assessment	Area (sq. ft.)
120C	White sheetrock / white joint compound	Wall	Building 1800B, Room 1855	FP	NF	B B 6,500
121A	Off-white 12" x 12" VFT / yellow mastic	Floor	Building 1800B, Room 1856	ND / ND	N/A	N/A
121B	Off-white 12" x 12" VFT / yellow mastic	Floor	Building 1800B, Room 1856	ND / ND	N/A	N/A
121C	Off-white 12" x 12" VFT / yellow mastic	Floor	Building 1800B, Room 1856	ND / ND	N/A	N/A
122A	Brown stucco material	Wall	Building 1800B, Ext. Wall	ND	N/A	N/A
122B	Brown stucco material	Wall	Building 1800B, Ext. Wall	ND	N/A	N/A
123A	Green 12" x 12" VFT / yellow mastic	Floor	Building 1800B, Upstairs 1853	ND / ND	N/A	N/A

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
123B	Green 12" x 12" VFT / yellow mastic	Floor	Building 1800B, Upstairs 1853	ND / ND	N/A	N/A
123C	Green 12" x 12" VFT / yellow mastic	Floor	Building 1800B, Upstairs 1853	ND / ND	N/A	N/A
124A	Black 4" baseboard / white glue / white skim coat	Wall	Building 1800B, Room 1852	ND / ND / ND	N/A	N/A
124B	Black 4" baseboard / white glue	Wall	Building 1800B, Room 1852	ND / ND	N/A	N/A
124C	Black 4" baseboard / white glue	Wall	Building 1800B, Room 1852	ND / ND	N/A	N/A
125A	White 12" x 12" VFT / yellow mastic	Floor	Building 1800B, 1852	ND / ND	N/A	N/A
125B	White 12" x 12" VFT / yellow mastic	Floor	Building 1800B, 1852	ND / ND	N/A	N/A

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
125C	White 12" x 12" VFT / yellow mastic	Floor	Building 1800B, 1852	ND / ND	N/A	N/A
126A	Off-white with brown fleck 12" x 12" VFT / orange mastic	Floor	Building 1800B, Upstairs 1852	ND / ND	N/A	N/A
126B	Off-white with brown fleck 12" x 12" VFT / orange mastic	Floor	Building 1800B, Upstairs 1852	ND / ND	N/A	N/A
126C	Off-white with brown fleck 12" x 12" VFT / orange mastic	Floor	Building 1800B, Upstairs 1852	ND / ND	N/A	N/A
127A	White 2' x 4' tile	Ceiling	Building 1800B, Room 1852	ND	N/A	N/A
127B	White 2' x 4' tile	Ceiling	Building 1800B, Room 1852	ND	N/A	N/A
127C	White 2' x 4' tile	Ceiling	Building 1800B, Room 1852	ND	N/A	N/A

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
128A	White drywall / white joint compound	Wall	Building 1800B, Upstairs 1852	ND / <1 / 0.0038 PC	NF	BB 6,500
128B	White drywall / white joint compound	Wall	Building 1800B, Room 1852	ND / ND	NF	BB
128C	White drywall / white joint compound	Wall	Building 1800B, Room 1852	ND / ND	NF	BB
129A	White drywall texture	Wall	Building 1800B, Upstairs 1852	ND	N/A	N/A
129B	White drywall texture	Wall	Building 1800B, Upstairs 1852	ND	N/A	N/A
129C	White drywall texture	Wall	Building 1800B, Upstairs 1852	ND	N/A	N/A
130A	White skim coat	Wall	Building 1800B, Room 1852	ND	N/A	N/A

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
130B	White skim coat	Wall	Building 1800B, Room 1852	ND	N/A	N/A
130C	White skim coat	Wall	Building 1800B, Room 1852	ND	N/A	N/A
131A	White joint compound	Wall	Building 1200, Room 1239	1-5	NF	J
132A	Black spray material	Under sink	Building 1200, Room 1245	1-5	NF	10
133A	Gray stucco material	Wall	Building 900, Room 901	ND	N/A	N/A
133B	Gray stucco material	Wall	Building 900, Room 907	ND	N/A	N/A
133C	Gray stucco material	Wall	Building 900, Room Hallway	ND	N/A	N/A

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: May 21, 2004 & June 1-3, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
134A	Green sheet flooring	Floor	Building 900, Room 902	1-5	NF	400
134B	Green sheet flooring	Floor	Building 900, Room 902	FP	NF	CC
134C	Green sheet flooring	Floor	Building 900, Room 902	FP	NF	CC
500-1-A	Black glue	Roof	Building 500	ND	N/A	N/A
500-1-B	Black glue	Roof	Building 500	ND	N/A	N/A
500-1-C	Black glue	Roof	Building 500	ND	N/A	N/A
500-2-A	White TSI taping (joint)	Roof	Building 500	ND	N/A	N/A
500-2-B	White TSI taping (joint)	Roof	Building 500	ND	N/A	N/A
500-2-C	White TSI taping (joint)	Roof	Building 500	ND	N/A	N/A
500-2-D	White TSI taping (joint)	Roof	Building 600	ND	N/A	N/A

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: May 21, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
500-3-A	Black bria	Roof	Building 500	ND	N/A	N/A
500-3-B	Black bria	Roof	Building 500	ND	N/A	N/A
500-3-C	Black bria	Roof	Building 500	ND	N/A	N/A
500-4-A	White HVAC taping	Roof	Building 500	ND	N/A	N/A
500-4-B	White HVAC taping	Roof	Building 500	ND	N/A	N/A
500-4-C	White HVAC taping	Roof	Building 500	ND	N/A	N/A
500-5-A	Silver paint-black rolled roofing material	Roof	Building 500	10-20	NF	10,000
500-5-B	Silver paint-black rolled roofing material	Roof	Building 500	FP	NF	DD
500-5-C	Silver paint-black rolled roofing material	Roof	Building 600	FP	NF	DD
500-6-A	Black tar / brown stucco material	Roof	Building 500	ND	N/A	N/A

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: May 21, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
500-6-B	Black tar / brown stucco material	Roof	Building 500	ND	N/A	N/A
500-6-C	Black tar / brown stucco material	Roof	Building 600	ND	N/A	N/A
500-6-D	Black tar / brown stucco material	Roof	Building 600	ND	N/A	N/A
500-7-A	Black asphalt roofing shingles	Roof	Building 500	ND	N/A	N/A
500-7-B	Black asphalt roofing shingles	Roof	Building 500	ND	N/A	N/A
500-7-C	Black asphalt roofing shingles	Roof	Building 600	ND	N/A	N/A
700-1-A	Silver paint / black bria	Roof	Building 700	ND	N/A	N/A
700-1-B	Silver paint / black bria	Roof	Building 700	ND	N/A	N/A
700-2-A	Off-white HVAC taping	Roof	Building 700	ND	N/A	N/A
700-2-B	Off-white HVAC taping	Roof	Building 700	ND	N/A	N/A
700-3-A	Gray PVC putty	Roof	Building 700	30-40	NF	50
700-3-B	Gray PVC putty	Roof	Building 700	FP	NF	EE

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: May 21, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
700-3-C	Gray PVC putty	Roof	Building 700	FP	NF	EE
700-4-A	Black rolled roofing material / white paper	Roof	Building 700	ND	N/A	N/A
700-4-B	Black rolled roofing material / white paper	Roof	Building 700	ND	N/A	N/A
700-5-A	White skim coat / tan stucco	Roof	Building 700	ND	N/A	N/A
700-5-B	White skim coat / tan stucco	Roof	Building 700	ND	N/A	N/A
700-6-A	Black asphalt rolled roofing material	Roof	Building 700	10-20	NF	5,500
700-6-B	Black asphalt rolled roofing material	Roof	Building 700	FP	NF	FF
700-7-A	Black concrete shingles	Roof	Building 700	ND	N/A	N/A
700-7-B	Black concrete shingles	Roof	Building 700	ND	N/A	N/A
700-8-A	Black putty (edge of building)	Roof	Building 700	10-20	NF	200 lin. ft.

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: May 21, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
700-8-B	Black putty (edge of building)	Roof	Building 700	10-20	NF	GG
700-9-A	Black asphalt rolled roofing / black tar	Roof	Building 700	ND	N/A	N/A
700-9-B	Black asphalt rolled roofing / black tar	Roof	Building 700	ND	N/A	N/A
1700-1-A	Silver paint / white HVAC taping	Roof	Building 1700	ND	N/A	N/A
1700-2-A	White HVAC taping / white glue	Roof	Building 1700	ND	N/A	N/A
1700-3-A	Black asphalt rolled roofing material	Roof	Building 1700	ND	N/A	N/A
1700-3-B	Black asphalt rolled roofing material	Roof	Building 1700	ND	N/A	N/A
1700-3-C	Black asphalt rolled roofing material	Roof	Building 1700	ND	N/A	N/A

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: May 21, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
1700-4-A	Black asphalt rolling roofing / black penetration mastic	Roof	Building 1700	ND / ND	N/A	N/A
1700-4-B	Black asphalt rolling roofing	Roof	Building 1700	ND	N/A	N/A
1700-4-C	Black asphalt rolling roofing	Roof	Building 1700	ND	N/A	N/A
1700-4-D	Black asphalt rolling roofing	Roof	Building 1700	ND	N/A	N/A
1700-5-A	Black rolled roofing / silver paint	Roof (parapit)	Building 1700	ND	N/A	N/A
1700-5-B	Black rolled roofing / silver paint	Roof (parapit)	Building 1700	ND	N/A	N/A
1700-5-C	Black rolled roofing / silver paint	Roof (parapit)	Building 1700	ND	N/A	N/A
1500-1-A	White skim coat / tan stucco material	Roof	Building 1500	ND	N/A	N/A
1500-1-B	White skim coat / tan stucco material	Roof	Building 1500	ND	N/A	N/A

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: May 21, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
1500-2-A	Silver paint / white TSI taping / black tar	Roof	Building 1500	ND	N/A	N/A
1100-1-A	Black and white asphalt rolled roofing material	Roof	Building 1100	ND	N/A	N/A
1100-1-B	Black and white asphalt rolled roofing material	Roof	Building 1100	ND	N/A	N/A
1100-1-C	Black and white asphalt rolled roofing material	Roof	Building 1100	ND	N/A	N/A
1100-2-A	Black penetration mastic	Roof	Building 1100	5-10	NF	1,000 lin. ft.
1100-2-B	Black penetration mastic	Roof	Building 1100	FP	NF	Z
1100-2-C	Black penetration mastic	Roof	Building 1100	FP	NF	Z
1100-3-A	Gray mastic / silver HVAC taping	Roof	Building 100	ND / ND	N/A	N/A
1100-3-B	Gray mastic / silver HVAC taping	Roof	Building 100	ND / ND	N/A	N/A

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: May 21, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
1100-4-A	Black roofing patch (rolled roofing)	Roof	Building 1100	ND	N/A	N/A
1100-4-B	Black roofing patch (rolled roofing)	Roof	Building 1100	ND	N/A	N/A
1100-15-A	White HVAC mastic	Roof	Building 1100	ND	N/A	N/A
1100-15-B	White HVAC mastic	Roof	Building 1100	ND	N/A	N/A
1800-1-A	Silver paint / white HVAC taping	Roof	Building 1800	ND	N/A	N/A
1800-1-B	Silver paint / white HVAC taping	Roof	Building 1800	ND	N/A	N/A
1800-2-A	Black and white asphalt shingles	Roof	Building 1800	ND	N/A	N/A
1800-2-B	Black and white asphalt shingles	Roof	Building 1800	ND	N/A	N/A
1800-3-A	Black rolled roofing material / white mastic	Roof	Building 1800	ND / ND	N/A	N/A
1800-4-A	White TSI taping	Roof	Building 1800	ND	N/A	N/A

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: May 21, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
1800-5-A	Silver and black HVAC tape	Roof	Building 1800	ND	N/A	N/A
1300-1-A	Silver paint / white TSI taping / white TSI	Roof	Building 1300	ND	N/A	N/A
1300-1-B	Silver paint / white TSI taping / white TSI	Roof	Building 1300	ND	N/A	N/A
1300-2-A	Black and white rolled asphalt roofing	Roof	Building 1300	ND	N/A	N/A
1300-2-B	Black and white rolled asphalt roofing	Roof	Building 1300	ND	N/A	N/A
1300-3-A	Gray concrete shingles	Roof	Building 1300	ND	N/A	N/A
1300-3-B	Gray concrete shingles	Roof	Building 1300	ND	N/A	N/A
1300-4-A	Black felt (edge of building)	Roof	Building 1300	ND	N/A	N/A
1300-4-B	Black felt (edge of building)	Roof	Building 1300	ND	N/A	N/A
1300-5-A	Black penetration mastic	Roof	Building 1300	5-10	NF	HH

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: May 21, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
1300-5-B	Black penetration mastic	Roof	Building 1300	FP	NF	HH
1200-1-A	White HVAC taping	Roof	Building 1200	ND	N/A	N/A
1200-1-B	White putty / white HVAC taping	Roof	Building 1200	ND	N/A	N/A
1200-2-A	Black TSI wrap	Roof	Building 1200	ND	N/A	N/A
1200-2-B	Black TSI wrap	Roof	Building 1200	ND	N/A	N/A
1200-3-A	Silver paint / black rolled roofing material (parapit)	Roof	Building 1200	ND / 5-10	NF	DD
1200-3-B	Silver paint / black rolled roofing material (parapit)	Roof	Building 1200	ND / FP	NF	DD
1200-3-C	Silver paint / black rolled roofing material (parapit)	Roof	Building 1200	ND / FP	NF	DD
1200-4-A	White TSI taping / black mastic	Roof	Building 1200	ND / ND	N/A	N/A
1200-4-B	White TSI taping / black mastic	Roof	Building 1200	ND / ND	N/A	N/A

TABLE 1 (cont'd)
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA

Sampling Date: May 21, 2004

Sample No.	Sample Description	Sample Location	Functional Space	Asbestos Content (%)	Friability	Area (sq. ft.)
1200-5-A	Black penetration mastic	Roof	Building 1200	5-10	NF	HH
1200-5-B	Black penetration mastic	Roof	Building 1200	FP	NF	HH
1200-6-A	Gray concrete shingles / black asphalt roofing	Roof	Building 1200	ND / 5-10	NF	2,500
1200-6-B	Gray concrete shingles / black asphalt roofing	Roof	Building 1200	ND / FP	NF	T

FR = Friable; NF = Non-friable
ND = None detected
Lin. ft. = Linear feet.
N/A = Not applicable because no asbestos was detected in sample.
PC = This sample was analyzed by point count method.
FP = This sample was not analyzed due to a first positive reading on a previous sample of the same material.
* = This ACM is classified as non-friable unless the floor tile and/or mastic are removed by mechanical means. The ACM then is classified as a friable material by Bay Area Air Quality Management District, BAAQMD notification must be given.

A = The approximate amount of 9" x 9" white VFT and mastic is included under Sample No. 1A.
B = The approximate amount of 9" x 9" green VFT and black mastic is included under Sample No. 5A.
C = The approximate amount of 9" x 9" off-white VFT and black mastic is included under Sample No. 7A.
D = The approximate amount of the 9" x 9" pink VFT and black mastic is included under Sample No. 16A.
E = The approximate amount of 9" x 9" off-white VFT and black mastic is included under Sample No. 21A.
F = The approximate amount of 12" x 12" off-white VFT and mastic is included under Sample No. 24A.
G = The approximate amount of black mastic is included under Sample No. 32A.

H = The approximate amount of gray putty is included under Sample No. 34A.
I = The approximate amount of sheetrock wall systems is included under Sample No. 35A.
J = The approximate amount of sheetrock wall systems is included under Sample No. 18A.
K = The approximate amount of 12" x 12" off-white VFT and mastic is included under Sample No. 39A.
L = The approximate amount of 12" x 12" white VFT and mastic is included under Sample No. 43A.
M = The approximate amount of beige HVAC putty is included under Sample No. 13A.
N = The approximate amount of white TSI taping and TSI material is included under Sample No. 64A.
O = The approximate amount of 12" x 12" green VFT and mastic is included under Sample No. 65A.
P = The approximate amount of 12" x 12" beige VFT and mastic is included under Sample No. 68A.
Q = The approximate amount of brown mastic is included under Sample No. 69A.
R = the approximate amount of 12" x 12" white ceiling tiles and brown mastic is included under Sample No. 73A.
S = The approximate amount of white 2' x 4' ceiling tiles is included under Sample No. 81A.
T = The approximate amount of black asphalt roofing is included under Sample No. 1200-6-A.
U = The approximate amount of 12" x 12" beige VFT is included under Sample No. 91A.
V = The approximate amount of black mastic is included under Sample No. 93A.
W = The approximate amount of black mastic is included under Sample No. 94A.
X = The approximate amount of 12" x 12" off-white VFT and mastic is included under Sample No. 103A.
Y = The approximate amount of brown mastic is included under Sample No. 104A.
Z = The approximate amount of black penetration mastic is included under Sample No. 1100-2-A.
AA = The approximate amount of 12" x 12" green VFT and mastic is included under Sample No. 109A.
BB = The approximate amount of sheetrock wall systems is included under Sample No. 113A.
CC = The approximate amount of green sheet flooring is included under Sample No. 134A.
DD = The approximate amount of black rolled roofing material is included under Sample No. 500-5-A.
EE = The approximate amount of gray PVC putty is included under Sample No. 700-3-A.
FF = The approximate amount of black asphalt rolled roofing material is included under Sample No. 700-6-A.
GG = The approximate amount of black putty is included under Sample No. 700-8-A.

TABLE 2

XRF LEAD BASED PAINT SURVEY SUMMARY
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA
SAMPLING DATE: JUNE 1, 2004

All analytical results were taken with a RMD LP-1 portable X-Ray Fluorescent (XRF) Analyzer Unit. All lead concentrations have been expressed as milligram per kilogram (parts per million).

Sample No.	Building Number	Room Equivalent	Component / Substrate	Sample Description	XRF Reading	Condition
XRF-1	500	Hallway	Door frame / metal	Dark brown paint	0.3	G
XRF-2	500	Hallway	Ext. door frame / metal	Dark brown paint	-0.9	G
XRF-3	500	MRR	Wall / ceramic tiles	White ceramic tiles	**>9.9**	G
XRF-4	500	MRR	Wall / plaster	Light beige paint	-0.1	G
XRF-5	500	Hallway	Wall / sheetrock	Off-white paint	-0.1	G
XRF-6	500	528	Wall / plaster	Green paint	0.2	G
XRF-7	500	502	Wall / sheetrock	Peach paint	0.0	G
XRF-8	500	503	Wall / sheetrock	Peach paint	-0.1	G
XRF-9	500	529	Floor / ceramic tiles	Gray-Pink ceramic tiles	-0.7	G
XRF-10	500	MRR	Floor / ceramic tiles	Gray-brown ceramic tiles	-0.4	G
XRF-11	500	Jan. Closet	Wall / sheetrock	White paint	-0.0	F
XRF-12	500	SE Hall	Wall / sheetrock	Yellow paint	-0.4	G
XRF-13	500	510	Wall / sheetrock	Off-white paint	0.1	G

TABLE 2 (con't)
XRF LEAD BASED PAINT SURVEY SUMMARY
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA
SAMPLING DATE: JUNE 1, 2004

All analytical results were taken with a RMD LP-1 portable X-Ray Fluorescent (XRF) Analyzer Unit. All lead concentrations have been expressed as milligram per kilogram (parts per million).

Sample No.	Building Number	Room Equivalent	Component / Substrate	Sample Description	XRF Reading	Condition
XRF-14	500	509	Wall / sheetrock	Dark brown paint	-0.1	G
XRF-15	500	519	Wall / sheetrock	Baby blue paint	-0.3	G
XRF-16	500	MRR	Ceiling / plaster	Light green paint	0.1	G
XRF-17	600	612	Wall / sheetrock	White paint	-0.1	G
XRF-18	600	S. Foyer	Wall / sheetrock	Blue paint	-0.1	G
XRF-19	600	S. Foyer	Wall / sheetrock	Pink paint	-0.3	G
XRF-20	600	640	Wall / plaster	Pink paint	-0.2	G
XRF-21	600	639	Wall / sheetrock	Tan paint	-0.2	G
XRF-22	600	613	Wall / sheetrock	White paint	-0.1	G
XRF-23	600	616	Wall / sheetrock	Pink paint	-0.5	G
XRF-24	600	627	Wall / sheetrock	Gray paint	-0.1	G
XRF-25	600	626	Door frame / metal	Dark gray paint	-0.3	G
XRF-26	600	MRR	Floor / ceramic tiles	Brown-tan ceramic tiles	-0.1	G

TABLE 2 (con't)
XRF LEAD BASED PAINT SURVEY SUMMARY
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA
SAMPLING DATE: JUNE 1, 2004

All analytical results were taken with a RMD LP-1 portable X-Ray Fluorescent (XRF) Analyzer Unit. All lead concentrations have been expressed as milligram per kilogram (parts per million).

Sample No.	Building Number	Room Equivalent	Component / Substrate	Sample Description	XRF Reading	Condition
XRF-27	600	MRR	Wall / ceramic tiles	Off-white ceramic tiles	**>9.9**	G
XRF-28	600	MRR	Wall / plaster	Teal paint	-0.1	G
XRF-29	100	115	Wall / sheetrock	Tan paint	-0.0	G
XRF-30	100	115	Wall / sheetrock	Light yellow paint	-0.5	G
XRF-31	100	124	Wall / sheetrock	Pink paint	-0.3	G
XRF-32	100	123	Wall / sheetrock	Teal paint	-0.1	G
XRF-33	100	131	Wall / sheetrock	Light yellow paint	-0.0	G
XRF-34	100	132	Door / metal	Green paint	0.0	G
XRF-35	100	130	Wall / sheetrock	Light blue paint	-0.6	G
XRF-36	100	136	Wall / sheetrock	Pink paint	-0.4	G
XRF-37	100	108	Wall / sheetrock	Light beige paint	0.1	G
XRF-38	100	108	Floor / concrete	Gray paint	-0.2	G
XRF-39	100	Adj. 130	Wall / sheetrock	White paint	0.1	G

TABLE 2 (con't)
XRF LEAD BASED PAINT SURVEY SUMMARY
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA
SAMPLING DATE: JUNE 1, 2004

All analytical results were taken with a RMD LP-1 portable X-Ray Fluorescent (XRF) Analyzer Unit. All lead concentrations have been expressed as milligram per kilogram (parts per million).

Sample No.	Building Number	Room Equivalent	Component / Substrate	Sample Description	XRF Reading	Condition
XRF-40	100	161C	Wall / sheetrock	Light yellow paint	-0.1	G
XRF-41	100	MRR	Floor / ceramic tiles	Light tan-gray ceramic tiles	-0.2	G
XRF-42	100	WRR	Floor / ceramic tiles	Gray-yellow ceramic tiles	-0.5	G
XRF-43	100	WRR	Wall / ceramic tiles	Beige ceramic tiles	**6.5**	G
XRF-44	100	100	Wall / sheetrock	Light gray paint	-0.1	G
XRF-45	100	100	Wall / sheetrock	Dark gray paint	-0.2	G
XRF-46	100	101	Wall / sheetrock	Light pink paint	-0.2	G
XRF-47	300	305	Wall / sheetrock	Tan paint	-0.4	G
XRF-48	300	305	Wall / sheetrock	Green paint	-0.1	G
XRF-49	300	323	Wall / sheetrock	Lime green paint	-0.1	G
XRF-50	300	306	Wall / sheetrock	Light green paint	-0.2	G
XRF-51	300	308	Wall / sheetrock	Beige paint	-0.3	G
XRF-52	300	309	Wall / sheetrock	Light brown paint	-0.2	G

TABLE 2 (con't)
XRF LEAD BASED PAINT SURVEY SUMMARY
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA
SAMPLING DATE: JUNE 1, 2004

All analytical results were taken with a RMD LP-1 portable X-Ray Fluorescent (XRF) Analyzer Unit. All lead concentrations have been expressed as milligram per kilogram (parts per million).

Sample No.	Building Number	Room Equivalent	Component / Substrate	Sample Description	XRF Reading	Condition
XRF-53	500	Hallway	Wall / sheetrock	Tan paint	-0.1	G
XRF-54	2000	Int. Wall	Wall / sheetrock	Off-white paint	0.0	G
XRF-55	2000	Int. Floor	Floor / concrete	Gray paint	-0.1	G
XRF-56	2000	Int. door	Door / metal	Light gray paint	-0.0	G
XRF-57	2000	Boiler Pad	Slab / concrete	Red paint	0.0	G
XRF-58	2100	Interior	Wall / sheetrock	White paint	-0.2	G
XRF-59	2100	Office	Wall / sheetrock	Beige paint	-0.3	G
XRF-60	2100	Office	Door / metal	Dark beige paint	-0.2	G
XRF-61	2100	Interior	Floor / concrete	Gray paint	0.6	G
XRF-62	2100	Interior	Floor / concrete	Gray paint	-0.1	G
XRF-63	2100	Interior	Wall / CMU block	White paint	-0.2	G

TABLE 2
XRF LEAD BASED PAINT SURVEY SUMMARY
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA
SAMPLING DATE: JUNE 2, 2004

All analytical results were taken with a RMD LP-1 portable X-Ray Fluorescent (XRF) Analyzer Unit. All lead concentrations have been expressed as milligram per kilogram (parts per million).

Sample No.	Building Number	Room Equivalent	Component / Substrate	Sample Description	XRF Reading	Condition
XRF-1	700	713	Wall / sheetrock	Light blue paint	0.2	G
XRF-2	700	Hallway	Wall / sheetrock	Light tan paint	-0.6	G
XRF-3	700	Hallway	Wall / sheetrock	Teal paint	-0.0	G
XRF-4	700	Hallway	Door / metal	Brown paint	-0.9	G
XRF-5	700	729	Wall / sheetrock	Pink paint	-0.3	G
XRF-6	700	730	Wall / sheetrock	Light gray paint	-0.2	G
XRF-7	700	734	Wall / sheetrock	Pink paint	-0.6	G
XRF-8	700	721	Wall / sheetrock	Yellow paint	-0.1	G
XRF-9	700	714	Wall / sheetrock	Magenta paint	0.0	G
XRF-10	700	718	Wall / sheetrock	Baby blue paint	-0.0	G
XRF-11	700	708	Wall / sheetrock	Dark green paint	-0.3	G
XRF-12	700	706	Wall / sheetrock	Light green paint	-0.0	G
XRF-13	700	MRR	Wall / plaster	Off-white paint	-0.2	G

TABLE 2 (con't)
XRF LEAD BASED PAINT SURVEY SUMMARY
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA
SAMPLING DATE: JUNE 2, 2004

All analytical results were taken with a RMD LP-1 portable X-Ray Fluorescent (XRF) Analyzer Unit. All lead concentrations have been expressed as milligram per kilogram (parts per million).

Sample No.	Building Number	Room Equivalent	Component / Substrate	Sample Description	XRF Reading	Condition
XRF-14	700	MRR	Wall / ceramic tile	White ceramic tile	**>9.9**	G
XRF-15	700	MRR	Floor / ceramic tile	Tan-brown ceramic tile	-0.2	G
XRF-16	700	742	Wall / sheetrock	Off-white paint	-0.2	G
XRF-17	700	NW Hall	Wall / sheetrock	Light gray paint	-0.4	G
XRF-18	700	722	Wall / ceramic tile	White ceramic tile	**>9.9**	G
XRF-19	700	722	Floor / ceramic tile	Brown-tan ceramic tile	-0.1	G
XRF-20	1500	1525	Wall / sheetrock	Beige paint	-0.2	G
XRF-21	1500	1521	Wall / sheetrock	Pure white paint	-0.0	G
XRF-22	1500	1524	Wall / sheetrock	Off-white paint	-0.1	G
XRF-23	1500	1524	Door frame / metal	Brown paint	-0.1	G
XRF-24	1500	1506	Wall / sheetrock	Beige paint	-0.1	G
XRF-25	1500	1514	Wall / sheetrock	Baby blue paint	-0.2	G
XRF-26	1500	1512	Wall / sheetrock	White paint	-0.6	G

TABLE 2 (con't)
XRF LEAD BASED PAINT SURVEY SUMMARY
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA
SAMPLING DATE: JUNE 2, 2004

All analytical results were taken with a RMD LP-1 portable X-Ray Fluorescent (XRF) Analyzer Unit. All lead concentrations have been expressed as milligram per kilogram (parts per million).

Sample No.	Building Number	Room Equivalent	Component / Substrate	Sample Description	XRF Reading	Condition
XRF-27	1500	1511	Wall / sheetrock	Green paint	-0.6	G
XRF-28	1500	1529	Wall / sheetrock	Teal paint	-0.1	G
XRF-29	1600	1633	Door frame / metal	Green paint	-0.0	G
XRF-30	1600	Hallway	Wall / sheetrock	Off-white paint	-0.0	G
XRF-31	1600	1642	Wall / sheetrock	White paint	-0.0	G
XRF-32	1600	Hallway	Door / metal	Brown paint	-0.5	G
XRF-33	1600	1610	Wall / sheetrock	Light gray paint	-0.1	G
XRF-34	1600	1641	Wall / ceramic tile	Beige ceramic tile	-0.3	G
XRF-35	1600	1658	Wall / sheetrock	Off-white paint	-0.1	G
XRF-36	1700	1761	Wall / sheetrock	Dark brown paint	-0.1	G
XRF-37	1700	1701	Wall / sheetrock	White paint	-0.5	G
XRF-38	1700	MRR	Wall / ceramic tile	Beige-tan ceramic tile	**>9.9**	G
XRF-39	1700	MRR	Wall / plaster	Beige paint	-0.2	G

TABLE 2 (con't)
XRF LEAD BASED PAINT SURVEY SUMMARY
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA
SAMPLING DATE: JUNE 2, 2004

All analytical results were taken with a RMD LP-1 portable X-Ray Fluorescent (XRF) Analyzer Unit. All lead concentrations have been expressed as milligram per kilogram (parts per million).

Sample No.	Building Number	Room Equivalent	Component / Substrate	Sample Description	XRF Reading	Condition
XRF-40	1700	WRR	Wall / ceramic tiles	Beige ceramic tiles	**7.5**	G
XRF-41	1700	1713	Wall / sheetrock	Off-white paint	-0.1	G
XRF-42	1700	1715	Wall / sheetrock	Yellow paint	-0.1	G
XRF-43	1700	1715	Wall / sheetrock	Green paint	0.3	G
XRF-44	1700	1717	Wall / sheetrock	Blue paint	-0.2	G
XRF-45	1700	1717	Wall / sheetrock	Teal paint	-0.1	G
XRF-46	1700	1757	Wall / sheetrock	Beige paint	-0.1	G
XRF-47	1700	1757	Wall / sheetrock	Brown paint	0.0	G
XRF-48	1700	1756	Wall / sheetrock	Light blue paint	-0.3	G
XRF-49	1700	1723	Wall /sheetrock	Off-white paint	-0.2	G
XRF-50	1700	1725	Wall / drywall	Mural	-0.1	G
XRF-51	1700	1725	Wall / drywall	Mural	-0.5	G
XRF-52	2112	2136	Wall / plaster	White paint	0.3	G

TABLE 2 (con't)
XRF LEAD BASED PAINT SURVEY SUMMARY
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA
SAMPLING DATE: JUNE 2, 2004

All analytical results were taken with a RMD LP-1 portable X-Ray Fluorescent (XRF) Analyzer Unit. All lead concentrations have been expressed as milligram per kilogram (parts per million).

Sample No.	Building Number	Room Equivalent	Component / Substrate	Sample Description	XRF Reading	Condition
XRF-53	2112	2134	Wall / concrete	White paint	-0.2	G
XRF-54	2112	2134/Sh.	Wall / concrete	Off-white paint	-0.1	G
XRF-55	2112	2134	Wall / concrete	Blue paint	0.1	G
XRF-56	2112	2122	Wall / concrete	Yellow paint	-0.1	G
XRF-57	1900	1903	Wall / sheetrock	Beige paint	-0.3	G
XRF-58	1900	1905	Wall / ceramic tiles	White ceramic tiles	**>9.9**	G
XRF-59	1900	Entry	Wall / sheetrock	Off-white paint	-0.2	G
XRF-60	1900	1903	Wall / sheetrock	Off-white paint	-0.2	G
XRF-61	1900	Upstairs	Wall / sheetrock	Off-white paint	-0.4	G
XRF-62	1900	Upstairs	Wall / sheetrock	Beige paint	-0.4	G

TABLE 2
XRF LEAD BASED PAINT SURVEY SUMMARY
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA
SAMPLING DATE: JUNE 3, 2004

All analytical results were taken with a RMD LP-1 portable X-Ray Fluorescent (XRF) Analyzer Unit. All lead concentrations have been expressed as milligram per kilogram (parts per million).

Sample No.	Building Number	Room Equivalent	Component / Substrate	Sample Description	XRF Reading	Condition
XRF-1	800	803A	Wall / sheetrock	Beige paint	-0.0	G
XRF-2	800	807	Wall / sheetrock	Beige paint	-0.2	G
XRF-3	800	800D	Wall / ceramic tile	Tan ceramic tile	-0.2	G
XRF-4	800	800B	Wall / sheetrock	Yellow paint	-0.4	G
XRF-5	800	810	Wall / sheetrock	Yellow paint	-0.3	G
XRF-6	1100	1102	Wall / sheetrock	Off-white paint	-0.1	G
XRF-7	1100	1106A	Wall / sheetrock	White paint	-0.2	G
XRF-8	1100	1106F	Door frame / wood	White paint	-0.3	G
XRF-9	1100	1106F	Wall / sheetrock	White paint	-0.1	G
XRF-10	1100	1109A	Wall / sheetrock	Gray paint	-0.2	G
XRF-11	1100	1109A	Door frame / wood	Gray paint	-0.3	G
XRF-12	1100	1107	Door / metal	Brown paint	-0.1	G
XRF-13	1100	1105	Wall / sheetrock	Light blue paint	-0.5	G

TABLE 2 (con't)
XRF LEAD BASED PAINT SURVEY SUMMARY
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA
SAMPLING DATE: JUNE 3, 2004

All analytical results were taken with a RMD LP-1 portable X-Ray Fluorescent (XRF) Analyzer Unit. All lead concentrations have been expressed as milligram per kilogram (parts per million).

Sample No.	Building Number	Room Equivalent	Component / Substrate	Sample Description	XRF Reading	Condition
XRF-14	1100	1102	Ceiling beam / wood	Dark brown paint	-0.1	G
XRF-15	1400	1404	Door frame / metal	Gray paint	-0.1	G
XRF-16	1400	S. Entry	Door / metal	Dark brown paint	-0.8	G
XRF-17	1400	1425	Wall / plaster	Beige paint	-0.2	G
XRF-18	1400	1428	Wall / sheetrock	Yellow paint	-0.2	G
XRF-19	1400	1428	Wall / sheetrock	Beige paint	-0.7	G
XRF-20	1400	1433	Wall / plaster	White paint	0.2	G
XRF-21	1400	1438	Wall / plaster	White paint	-0.2	G
XRF-22	1400	1431	Wall / plaster	Yellow paint	-0.0	G
XRF-23	1400	1403	Wall / sheetrock	Pink paint	-0.2	G
XRF-24	1300	1307	Door frame / metal	Brown paint	-0.2	G
XRF-25	1300	1306	Wall / sheetrock	Red paint	-0.3	G
XRF-26	1300	1306	Wall / sheetrock	White paint	-0.4	G

TABLE 2 (con't)
XRF LEAD BASED PAINT SURVEY SUMMARY
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA
SAMPLING DATE: JUNE 3, 2004

All analytical results were taken with a RMD LP-1 portable X-Ray Fluorescent (XRF) Analyzer Unit. All lead concentrations have been expressed as milligram per kilogram (parts per million).

Sample No.	Building Number	Room Equivalent	Component / Substrate	Sample Description	XRF Reading	Condition
XRF-27	1300	Jan. Closet	Wall / sheetrock	Beige paint	-0.1	G
XRF-28	1300	1304	Wall / sheetrock	White paint	-0.0	G
XRF-29	1300	1303	Wall / sheetrock	Orange paint	-0.3	G
XRF-30	1800A	1801	Wall / sheetrock	White paint	0.3	G
XRF-31	1800A	1813	Wall / ceramic tile	Tan ceramic tile	**>9.9**	G
XRF-32	1800A	1812	Wall / concrete	Silver paint	-0.2	G
XRF-33	1800A	1807	Wall / sheetrock	Orange paint	**Inconclusive**	G
XRF-34	1800A	1814	Wall / plaster	Light green paint	-0.1	G
XRF-35	1800A	Hallway	Wall / sheetrock	Off-white paint	-0.1	G
XRF-36	1800A	1827	Wall / wood	Green paint	-0.3	G
XRF-37	1800A	1829	Door / metal	Light brown paint	-0.1	G
XRF-38	1800A	1822	Wall / sheetrock	Black paint	-0.3	G
XRF-39	1800A	1824	Wall / sheetrock	Off-white paint	-0.2	G

TABLE 2 (con't)
XRF LEAD BASED PAINT SURVEY SUMMARY
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA
SAMPLING DATE: JUNE 3, 2004

All analytical results were taken with a RMD LP-1 portable X-Ray Fluorescent (XRF) Analyzer Unit. All lead concentrations have been expressed as milligram per kilogram (parts per million).

Sample No.	Building Number	Room Equivalent	Component / Substrate	Sample Description	XRF Reading	Condition
XRF-40	1800B	1854	Wall / ceramic tile	Tan ceramic tile	**>9.9**	G
XRF-41	1800B	1854	Door frame / metal	Green paint	-0.0	G
XRF-42	1800B	1854	Wall / concrete	Beige paint	-0.2	G
XRF-43	1800B	1854	Door / metal	Light brown paint	0.1	G
XRF-44	1800B	1854	Wall / concrete	White paint	-0.1	G
XRF-45	1800B	1854	Stair railing / metal	Black paint	-0.2	G
XRF-46	1800B	1855	Wall / concrete	White paint	-0.2	G
XRF-47	1800B	1855	Door frame / metal	Dark brown paint	-0.3	G
XRF-48	1800B	1855	Wall / ceramic tile	Beige ceramic tile	**>9.9**	G
XRF-49	1800B	1855	Door frame / metal	Gray paint	-0.1	G
XRF-50	1800B	1855	Door / metal	Tan paint	-0.2	G
XRF-51	1800B	1855	Wall / concrete	White paint	-0.2	G
XRF-52	1800B	1855	Wall / concrete	White paint	-0.3	G

TABLE 2 (con't)
XRF LEAD BASED PAINT SURVEY SUMMARY
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA
SAMPLING DATE: JUNE 3, 2004

All analytical results were taken with a RMD LP-1 portable X-Ray Fluorescent (XRF) Analyzer Unit. All lead concentrations have been expressed as milligram per kilogram (parts per million).

Sample No.	Building Number	Room Equivalent	Component / Substrate	Sample Description	XRF Reading	Condition
XRF-53	1800B	1856	Door / metal	Tan paint	-0.1	G
XRF-54	1800B	1856	Wall / ceramic tile	Beige ceramic tiles	**>9.9**	G
XRF-55	1800B	1856	Door frame / metal	Gray paint	-0.1	G
XRF-56	1800B	1856	Wall / concrete	Off-white paint	-0.4	G
XRF-57	1800B	1857	Roll up door / metal	Brown paint	-0.0	G
XRF-58	1800B	1857	Ext. roll up door / metal	Gray paint	-0.2	G
XRF-59	1800B	1853	Door frame / metal	Gray paint	-0.0	G
XRF-60	1800B	1853	Wall / sheetrock	Green paint	-0.1	G
XRF-61	1800B	1853	Door / metal	Tan paint	-0.2	G
XRF-62	1800B	1853	Wall / concrete	White paint	-0.1	G
XRF-63	1800B	1852	Wall / concrete	White paint	-0.1	G
XRF-64	1800B	1852	Door / metal	Gray paint	-0.1	G
XRF-65	1800B	1852	Wall / wall board	Off-white paint	-0.3	G

TABLE 2 (con't)
XRF LEAD BASED PAINT SURVEY SUMMARY
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA
SAMPLING DATE: JUNE 3, 2004

All analytical results were taken with a RMD LP-1 portable X-Ray Fluorescent (XRF) Analyzer Unit. All lead concentrations have been expressed as milligram per kilogram (parts per million).

Sample No.	Building Number	Room Equivalent	Component / Substrate	Sample Description	XRF Reading	Condition
XRF-66	1800B	1852	Door frame / metal	Gray paint	-0.2	G
XRF-67	1200	1220	Door / metal	Brown paint	-0.1	G
XRF-68	1200	1200	Wall / concrete	Yellow paint	-0.1	G
XRF-69	1200	1239	Wall / sheetrock	Pink paint	-0.0	G
XRF-70	1200	WRR	Wall / ceramic tile	Baby blue ceramic tile	-0.4	G
XRF-71	1200	1239	Floor / concrete	Brick red paint	-0.1	G
XRF-72	1200	1241	Wall / sheetrock	Green paint	0.2	G
XRF-73	1200	1252	Wall / sheetrock	Orange paint	-0.1	G
XRF-74	1200	1251	Wall / sheetrock	Green paint	-0.1	G
XRF-75	1200	1238	Wall / metal	Brown paint	-0.2	G
XRF-76	1200	1238	Wall / concrete	Yellow paint	-0.1	G
XRF-77	1200	1238	Door / wood	White paint	-0.6	G
XRF-78	1200	1232	Wall / sheetrock	Pink paint	-0.5	G

TABLE 2 (con't)
XRF LEAD BASED PAINT SURVEY SUMMARY
SOLANO COMMUNITY COLLEGE
4000 SUISUN VALLEY ROAD
FAIRFIELD, CALIFORNIA
SAMPLING DATE: JUNE 3, 2004

All analytical results were taken with a RMD LP-1 portable X-Ray Fluorescent (XRF) Analyzer Unit. All lead concentrations have been expressed as milligram per kilogram (parts per million).

Sample No.	Building Number	Room Equivalent	Component / Substrate	Sample Description	XRF Reading	Condition
XRF-79	900	901	Floor / concrete	Brick red paint	-0.2	G
XRF-80	900	907	Floor / concrete	Brick red paint	-0.2	G
XRF-81	900	906	Wall / plaster	Yellow paint	0.1	G
XRF-82	900	901	Wall / plaster	Green paint	0.2	G
XRF-83	900	WRR	Wall / ceramic tile	Yellow ceramic tile	**2.3**	G
XRF-84	900	MRR	Wall / ceramic tile	Blue ceramic tile	**2.0**	G
XRF-85	900	901	Door frame / metal	Beige paint	0.0	G

Note: Bold XRF readings indicate that the paint is classified as lead-based paint either by an XRF reading or paint chip sample.

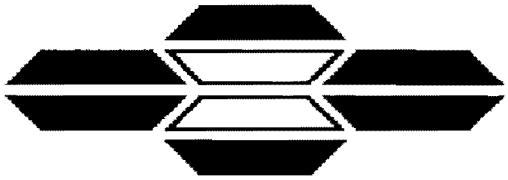
TABLE 3
LEAD-BASED PAINT SURVEY SUMMARY
NVLA
2700 KILBURN AVENUE
NAPA, CALIFORNIA
SAMPLING DATE: DECEMBER 26, 2003

All concentrations for lead content have been expressed as milligram per kilogram (parts per million).

Sample No.	Room Equivalent	Component / Substrate	Sample Description	Lead Content	Condition
P-1	Building 500 Roof	Roof / Rolled roofing	Silver paint	79	G
P-2	Building 1100	Building trim / Wood	Brown paint	**5,600**	F
P-4	Building 1500	Ext. Wall / Stucco	Brown paint	21	G
P-6	Building 1800A, Room 1807	Wall / Wall board	Orange paint	**7,300**	G

Appendix A

1-6



ASBESTOS TEM LABORATORIES, INC.

EPA Interim Method
Polarized Light Microscopy
Analytical Report

Laboratory Job # 543-00048

1409 Fifth Street
Berkeley, CA 94710
(510) 528-0108
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ASBESTOS TEM LABORATORIES, INC

Accredited by
U.S. Dept. of Commerce
NVLAP
CA DOHS ELAP

Jun-21-04

Ms. Jennifer Gomez
Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

RE: LABORATORY JOB # 543-00048
Polarized light microscopy analytical results for 19 bulk sample(s) with 15 sample split(s)
Job Site: Solano College
Job No.: 44156

Enclosed please find the bulk material analytical results for one or more samples submitted for asbestos analysis. The analyses were performed in accordance with EPA Method 600/R-93/116 or 600/M4-82-020 for the determination of asbestos in bulk building materials by polarized light microscopy (PLM). Please note that while PLM analysis is commonly performed on non-friable and fine grained materials such as floor tiles and dust, the EPA method recognizes that PLM is subject to limitations. In these situations, accurate results may only be obtainable through the use of more sophisticated and accurate techniques such as transmission electron microscopy (TEM) or X-ray diffraction (XRD).

Prior to analysis, samples are logged-in and all data pertinent to the sample recorded. The samples are checked for damage or disruption of any chain-of-custody seals. A unique laboratory ID number is assigned to each sample. A hard copy log-in sheet containing all pertinent information concerning the sample is generated. This and all other relevant paper work are kept with the sample throughout the analytical procedures to assure proper analysis.

Each sample is opened in a class 100 HEPA negative air hood. A representative sampling of the material is selected and placed onto a glass microscope slide containing a drop of refractive index oil. The glass slide is placed under a polarizing light microscope where standard mineralogical techniques are used to analyze and quantify the various materials present, including asbestos. The data is then compiled into standard report format and subjected to a thorough quality assurance check before the information is released to the client.

Sincerely Yours,

Stephen A Shaffer

Lab Manager
ASBESTOS TEM LABORATORIES, INC.

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 22
Reg. Samples Analyzed: 19
Split Layers Analyzed: 15

Job Site / No. Solano College
44156

Report No. **044279**
Date Submitted: Jun-07-04
Date Reported: Jun-21-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
1A	<1%	Chrysotile	1) None Detected 2) 100-100% Calc, Opq, Bndr, Other m.p.	* White-Red 9"x9" VFT / Black Mastic (Hall)
Lab ID # 543-00048-001A			3) Jun-01-04 4) Jun-21-04	Floor Tile-White-Red
1A	5-10%	Chrysotile	1) 1-5% Cellulose 2) 85-94% Calc, Tar, Opq, Other m.p.	* White-Red 9"x9" VFT / Black Mastic (Hall)
Lab ID # 543-00048-001B			3) 4) Jun-18-04	Mastic-Black
1B		Not Analyzed	1) 2)	* White-Red 9"x9" VFT / Black Mastic (Hall)
Lab ID # 543-00048-002			3) Jun-01-04 4) Jun-18-04	
1C		Not Analyzed	1) 2)	* White-Red 9"x9" VFT / Black Mastic (507)
Lab ID # 543-00048-003			3) Jun-01-04 4) Jun-18-04	
2A		None Detected	1) None Detected 2) 99-100% Calc, Qtz, Bndr, Other m.p.	* Brown 4" BB/Wht + Brown Mastic (Hall)
Lab ID # 543-00048-004A			3) Jun-01-04 4) Jun-18-04	Baseboard-Brown
2A		None Detected	1) None Detected 2) 99-100% Calc, Qtz, Bndr, Other m.p.	* Brown 4" BB/Wht + Brown Mastic (Hall)
Lab ID # 543-00048-004B			3) 4) Jun-18-04	Mastic-Off-White
2B.		None Detected	1) None Detected 2) 99-100% Calc, Qtz, Bndr, Other m.p.	brown 4 bb/brown mastic
Lab ID # 543-00048-005A			3) Jun-01-04 4) Jun-18-04	Baseboard-Brown
2B.		None Detected	1) 1-5% Wollast 2) 95-99% Calc, Qtz, Other m.p.	brown 4 bb/brown mastic
Lab ID # 543-00048-005B			3) 4) Jun-18-04	Mastic-Brown
2C		None Detected	1) None Detected 2) 99-100% Calc, Qtz, Bndr, Other m.p.	* Brown 4" BB/Brown Mastic (Hall)
Lab ID # 543-00048-006A			3) Jun-01-04 4) Jun-18-04	Baseboard-Brown
2C		None Detected	1) 1-5% Wollast 2) 95-99% Calc, Qtz, Other m.p.	
Lab ID # 543-00048-006B			3) 4) Jun-18-04	Mastic-Brown

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

ASBESTOS TEM LABORATORIES, INC. **1409 FIFTH STREET, BERKELEY, CA 94710** **(510) 528-0108**
www.asbestostemlabs.com *With Offices in Reno, NV (775) 359-3377*

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 22
Reg. Samples Analyzed: 19
Split Layers Analyzed: 15

Job Site / No. Solano College
44156

Report No. **044279**
Date Submitted: Jun-07-04
Date Reported: Jun-21-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
2D	None Detected	1)None Detected 2)99-100% Calc, Qtz, Bndr, Other m.p.	* Brown 4" BB/Brown Mastic (612)
Lab ID # 543-00048-007A		3)Jun-01-04 4)Jun-18-04	Baseboard-Brown
2D	None Detected	1)1-5% Wollast 2)95-99% Calc, Qtz, Other m.p.	
Lab ID # 543-00048-007B		3) 4)Jun-18-04	Mastic-Brown
3A	None Detected	1)2-10% Cellulose,Fiberglass 2)90-98% Gyp, Mica, Qtz, Other m.p.	White Drywall / White Joint Compound (501)
Lab ID # 543-00048-008A		3)Jun-01-04 4)Jun-18-04	Dry wall-White
3A	None Detected	1)1-5% Cellulose 2)95-99% Calc, Mica, Bndr, Other m.p.	White Drywall / White Joint Compound (501)
Lab ID # 543-00048-008B		3) 4)Jun-18-04	JointCom/Text-White
3B	None Detected	1)2-10% Cellulose,Fiberglass 2)90-98% Gyp, Mica, Qtz, Other m.p.	White Drywall / White Joint Compound (Janitor's closet)
Lab ID # 543-00048-009A		3)Jun-01-04 4)Jun-18-04	Dry wall-White
3B	None Detected	1)1-5% Cellulose 2)95-99% Calc, Mica, Bndr, Other m.p.	
Lab ID # 543-00048-009B		3) 4)Jun-18-04	JointCom/Text-White
3C	None Detected	1)2-10% Cellulose,Fiberglass 2)90-98% Gyp, Mica, Qtz, Other m.p.	White Drywall / White Joint Compound (Mech. Rm)
Lab ID # 543-00048-010A		3)Jun-01-04 4)Jun-18-04	Dry wall-White
3C	None Detected	1)1-5% Cellulose 2)95-99% Calc, Mica, Bndr, Other m.p.	
Lab ID # 543-00048-010B		3) 4)Jun-18-04	JointCom/Text-White
3D	None Detected	1)2-10% Cellulose,Fiberglass 2)90-98% Gyp, Mica, Qtz, Other m.p.	White Drywall / White Joint Compound (612)
Lab ID # 543-00048-011A		3)Jun-01-04 4)Jun-18-04	Dry wall-White
3D	None Detected	1)1-5% Cellulose 2)95-99% Calc, Mica, Bndr, Other m.p.	
Lab ID # 543-00048-011B		3) 4)Jun-18-04	JointCom/Text-White

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 22
Reg. Samples Analyzed: 19
Split Layers Analyzed: 15

Job Site / No. Solano College
44156

Report No. **044279**
Date Submitted: Jun-07-04
Date Reported: Jun-21-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
3E		None Detected	1) 2-10% Cellulose, Fiberglass 2) 90-98% Gyp, Mica, Qtz, Other m.p.	White Drywall / White Joint Compound (615)
Lab ID # 543-00048-012A			3) Jun-01-04 4) Jun-18-04	Dry wall-White
3E		None Detected	1) 1-5% Cellulose 2) 95-99% Calc, Mica, Bndr, Other m.p.	
Lab ID # 543-00048-012B			3) 4) Jun-18-04	JointCom/Text-White
3F		None Detected	1) 2-10% Cellulose, Fiberglass 2) 90-98% Gyp, Mica, Qtz, Other m.p.	White Drywall / White Joint Compound (308 Ceiling)
Lab ID # 543-00048-013A			3) Jun-01-04 4) Jun-18-04	Dry wall-White
3F		None Detected	1) 1-5% Cellulose 2) 95-99% Calc, Mica, Bndr, Other m.p.	
Lab ID # 543-00048-013B			3) 4) Jun-18-04	JointCom/Text-White
4A		None Detected	1) 81-95% Mineral Wool, Cellulose 2) 5-19% Qtz, Paint, Other m.p.	* White 2'x4' Ceiling Tile (Hall)
Lab ID # 543-00048-014			3) Jun-01-04 4) Jun-18-04	Ceiling Tile-White
4B		None Detected	1) 81-95% Mineral Wool, Cellulose 2) 5-19% Qtz, Paint, Other m.p.	* White 2'x4' Ceiling Tile (503)
Lab ID # 543-00048-015			3) Jun-01-04 4) Jun-18-04	Ceiling Tile-White
4C		None Detected	1) 81-95% Mineral Wool, Cellulose 2) 5-19% Qtz, Paint, Other m.p.	* White 2'x4' Ceiling Tile (Hall)
Lab ID # 543-00048-016			3) Jun-01-04 4) Jun-18-04	Ceiling Tile-White
5A	<1%	Chrysotile	1) <1% Cellulose 2) 100-100% Calc, Opq, Bndr, Other m.p.	* Green-White 9"x9" VFT / Black Mastic (505)
Lab ID # 543-00048-017A			3) Jun-01-04 4) Jun-21-04	Floor Tile-Green-White
5A	1-5%	Chrysotile	1) None Detected 2) 95-99% Calc, Tar, Opq, Other m.p.	* Green-White 9"x9" VFT / Black Mastic (505)
Lab ID # 543-00048-017B			3) 4) Jun-18-04	Mastic-Brown
5B		Not Analyzed	1) 2)	* Green-White 9"x9" VFT / Black Mastic (505)
Lab ID # 543-00048-018			3) Jun-01-04 4) Jun-18-04	

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 22
Reg. Samples Analyzed: 19
Split Layers Analyzed: 15

Job Site / No. Solano College
44156

Report No. **044279**
Date Submitted: Jun-07-04
Date Reported: Jun-21-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
5C Lab ID # 543-00048-019	**Not Analyzed**	1) 2) 3) Jun-01-04 4) Jun-18-04	* Green-White 9"x9" VFT / Black Mastic (505)
6A Lab ID # 543-00048-020A	**None Detected**	1) 90-95% Cellulose 2) 5-10% Other m.p. 3) Jun-01-04 4) Jun-18-04	* Tan 12"x12" Ceiling Tile / Brown Mastic (528) Ceiling Tile-Tan
6A Lab ID # 543-00048-020B	**None Detected**	1) <1% Wollast 2) 100-100% Calc, Bndr, Other m.p. 3) 4) Jun-18-04	* Tan 12"x12" Ceiling Tile / Brown Mastic (528) Mastic-Brown
6B Lab ID # 543-00048-021A	**None Detected**	1) 90-95% Cellulose 2) 5-10% Other m.p. 3) Jun-01-04 4) Jun-18-04	* Tan 12"x12" Ceiling Tile / Brown Mastic (503) Ceiling Tile-Tan
6B Lab ID # 543-00048-021B	**None Detected**	1) <1% Wollast 2) 100-100% Calc, Bndr, Other m.p. 3) 4) Jun-18-04	Mastic-Brown
6C Lab ID # 543-00048-022A	**None Detected**	1) 90-95% Cellulose 2) 5-10% Other m.p. 3) Jun-01-04 4) Jun-18-04	* Tan 12"x12" Ceiling Tile / Brown Mastic (502) Ceiling Tile-Tan
6C Lab ID # 543-00048-022B	**None Detected**	1) <1% Wollast 2) 100-100% Calc, Bndr, Other m.p. 3) 4) Jun-18-04	Mastic-Brown
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

ASBESTOS TEM LABORATORIES, INC. **1409 FIFTH STREET, BERKELEY, CA 94710** **(510) 528-0108**
www.asbestostemlabs.com *With Offices in Reno, NV (775) 359-3377*

(1)

KLEINFELDER

PROJECT NO.	PROJECT NAME
44156	SOLANO COLLEGE

L.P. NO. (P.O. NO.)

SAMPLERS: (Signature/Number) Jennifer Gomez

RECEIVING LAB: ASBESTOS TEM

INSTRUCTIONS/REMARKS: * FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS PLM	
* 1	6/1/04		1A		1		X	WHITE-RED 9"x9" VFT / BLACK MASTIC (Hall)
2			1B				X	(Hall)
3			1C				X	(507)
* 4			2A				X	BROWN 4" BB/WHT.+ BROWN MASTIC (Hall)
5			2B				X	BROWN 4" BB/ BROWN MASTIC (505)
6			2C				X	(Hall)
7			2D				X	(612)
8			3A				X	WHITE DRYWALL / WHITE TEXT COMPOUND (501)
9			3B				X	(JANITORS CLOSET)
10			3C				X	(MECH RM)
11			3D				X	(612)
12			3E				X	(615)
13			3F				X	(508/CEILING)
* 14			4A				X	WHITE 2'x4' CEILING TILE (Hall)
15			4B				X	(503)
16			4C				X	(Hall)
* 17			5A				X	GREEN-WHITE 9"x9" VFT / BLACK MASTIC (505)
18			5B				X	
19			5C				X	
* 20			6A				X	TAN 12"x12" CEILING TILE / BROWN MASTIC (528)

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	6/3/04	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
		[signature]
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)

Instructions/Remarks: 3-5 days

Send Results To:

KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-9643~~ 94534
(707) 429-4070

Attn: JENNIFER GOMEZ

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

№ 0346

(2)

KLEINFELDER

PROJECT NO.	PROJECT NAME
44156	Solano College
L.P. NO. (P.O. NO.)	SAMPLERS: (Signature/Number)
	Jennifer Gomez

RECEIVING LAB: Asbestos TEM

INSTRUCTIONS/REMARKS: *FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS PLM	INSTRUCTIONS/REMARKS
1	6/1/04		6B		1		X	TAN 12"x12" CEILING TILE/ BROWN MASTIC (503)
2			6C				X	(502)
3			7A				X	OFF-WHITE-PINK 9"x9" VFT/ BLACK MASTIC (530)
4			7B				X	
5			7C				X	
6			8A				X	GRAY 3"x2" CERAMIC GRAY TILE (528)
7			8B				X	"
8			8C				X	(529)
9			9A				X	WHITE 4"x4" CERAMIC WALL TILE/WHITE GROUT/GRAY MORTAR (528)
10			9B				X	"
11			9C				X	(529)
12			10A				X	WHITE DRYWALL TEXTURE (Rm 509/510)
13			10B				X	"
14			10C				X	"
15			10D				X	(Rm 612)
16			11A				X	WHITE DRYWALL TEXTURE (508)
17			11B				X	
18			11C				X	
19			12A				X	WHITE SPACKLE/ GRAY PLASTER (529)
20			12B				X	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	6/3/04	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
		ATTEM
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
		06-07-04A09:03 RCVD

Instructions/Remarks: 3-5 days

Send Results To:

KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-9643~~ 94534
(707) 429-4070

Attn: JENNIFER GOMEZ

M-60 White - Sampler Canary - Return Copy To Shipper Pink - Lab Copy

CHAIN OF CUSTODY

№ 0347

7-12

ASBESTOS TEM LABORATORIES, INC.

EPA Method 600/R-93/116
Polarized Light Microscopy
Analytical Report

Laboratory Job # 890-002
Report No. 102165

1016 Greg Street
Sparks, NV 89431
(775) 359-3377
FAX (775) 359-2798

With Main Office Located At:
1409 Fifth Street, Berkeley, CA 94710
Ph. (510) 528-0108 Fax (510) 528-0109

ASBESTOS TEM LABORATORIES, INC

Accredited by
U.S. Dept. of Commerce
NVLAP
NVLAP Lab Code 200104-0

Jun-22-04

Ms. Jennifer Gomez
Kleinfelder - Fairfield
780 Chadbourne Road, Suite D
Fairfield, CA 94534

RE: LABORATORY JOB # 890-002
Polarized light microscopy analytical results for 17 bulk sample(s) with 9 sample split(s)
Job Site: Solano College
Job No.: 44156
Report No.: 102165

Enclosed please find the bulk material analytical results for one or more samples submitted for asbestos analysis. The analyses were performed in accordance with EPA Method 600/R-93/116 or 600/M4-82-020 for the determination of asbestos in bulk building materials by polarized light microscopy (PLM). Please note that while PLM analysis is commonly performed on non-friable and fine grained materials such as floor tiles and dust, the EPA method recognizes that PLM is subject to limitations. In these situations, accurate results may only be obtainable through the use of more sophisticated and accurate techniques such as transmission electron microscopy (TEM) or X-ray diffraction (XRD).

Prior to analysis, samples are logged-in and all data pertinent to the sample recorded. The samples are checked for damage or disruption of any chain-of-custody seals. A unique laboratory ID number is assigned to each sample. A hard copy log-in sheet containing all pertinent information concerning the sample is generated. This and all other relevant paper work are kept with the sample throughout the analytical procedures to assure proper analysis.

Each sample is opened in a class 100 HEPA negative air hood. A representative sampling of the material is selected and placed onto a glass microscope slide containing a drop of refractive index oil. The glass slide is placed under a polarizing light microscope where standard mineralogical techniques are used to analyze and quantify the various materials present, including asbestos. The data is then compiled into standard report format and subjected to a thorough quality assurance check before the information is released to the client.

For possible future reference, samples are normally kept on file for one year.

Sincerely Yours,

C. Neil Upchurch

Lab Manager
ASBESTOS TEM LABORATORIES, INC.

Accredited by
U.S. Dept. of Commerce
NVLAP
NVLAP Lab Code 200104-0

POLARIZED LIGHT MICROSCOPY ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder - Fairfield
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 19
Reg. Samples Analyzed: 17
Split Layers Analyzed: 9

Job Site / No. Solano College
44156

Report No. 102165
Date Submitted: Jun-22-04
Date Reported: Jun-22-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
7A.	1-5%	Chrysotile	1)None Detected 2)95-99% Calc, Bndr, Other m.p.	Off-White-Pink 9"x9" VFT/Black Mastic (530)
Lab ID # 890-00002-001A			3) 4) Jun-22-04	Floor Tile-Off-White
7A.	1-5%	Chrysotile	1)None Detected 2)95-99% Tar, Bndr, Calc, Other m.p.	Off-White-Pink 9"x9" VFT/Black Mastic (530)
Lab ID # 890-00002-001B			3) 4) Jun-22-04	Mastic-Black
7B.		Not Analyzed	1) 2)	Off-White-Pink 9"x9" VFT/Black Mastic (530)
Lab ID # 890-00002-002			3) 4) Jun-22-04	
7C.		Not Analyzed	1) 2)	Off-White-Pink 9"x9" VFT/Black Mastic (530)
Lab ID # 890-00002-003			3) 4) Jun-22-04	
8A.		None Detected	1)None Detected 2)99-100% Silica Glass, Opq, Other m.p.	Gray 2"x2" Ceramic Gray Tile (528)
Lab ID # 890-00002-004			3) 4)Jun-22-04	Creamic Tile-Grey
8B.		None Detected	1)None Detected 2)99-100% Silica Glass, Opq, Other m.p.	Gray 2"x2" Ceramic Gray Tile (528)
Lab ID # 890-00002-005			3) 4) Jun-22-04	Creamic Tile-Grey
8C.		None Detected	1)None Detected 2)99-100% Silica Glass, Opq, Other m.p.	Gray 2"x2" Ceramic Gray Tile (528)
Lab ID # 890-00002-006			3) 4)Jun-22-04	Creamic Tile-Grey
9A.		None Detected	1)None Detected 2)99-100% Silica Glass, Qtz, Other m.p.	White 4"x4" Ceramic Wall Tile / White Grout / Gray Grout (528)
Lab ID # 890-00002-007A			3) 4)Jun-22-04	Creamic Tile-Grey
9A.		None Detected	1)None Detected 2)99-100% Calc, Opq	White 4"x4" Ceramic Wall Tile / White Grout / Gray Grout (528)
Lab ID # 890-00002-007B			3) 4)Jun-22-04	Grout-White
9A.		None Detected	1)None Detected 2)99-100% Qtz, Calc, Other m.p.	White 4"x4" Ceramic Wall Tile / White Grout / Gray Grout (528)
Lab ID # 890-00002-007C			3) 4)Jun-22-04	Grout-Grey

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab Manager C. Neil Upchurch Analyst C. Neil Upchurch

ASBESTOS TEM LABORATORIES, INC. 1016 GREG STREET, SPARKS, NV 89431 (775) 359-3377
With Main Office in Berkley, CA (510) 528-0108

Accredited by
U.S. Dept. of Commerce
NVLAP
NVLAP Lab Code 200104-0

POLARIZED LIGHT MICROSCOPY ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder - Fairfield
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 19
Reg. Samples Analyzed: 17
Split Layers Analyzed: 9

Job Site / No. Solano College
44156

Report No. 102165
Date Submitted: Jun-22-04
Date Reported: Jun-22-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD	DESCRIPTION LAB
9B.	None Detected		1)None Detected 2)99-100% Silica Glass, Qtz, Other m.p.	White 4"x4" Ceramic Wall Tile / White Grout / Gray Grout (528)	
Lab ID # 890-00002-008A			3) 4) Jun-22-04		Creamic Tile-Grey
9B.	None Detected		1)None Detected 2)99-100% Calc, Opq	White 4"x4" Ceramic Wall Tile / White Grout / Gray Grout (528)	
Lab ID # 890-00002-008B			3) 4) Jun-22-04		Grout-White
9B.	None Detected		1)None Detected 2)99-100% Qtz, Calc, Other m.p.	White 4"x4" Ceramic Wall Tile / White Grout / Gray Grout (528)	
Lab ID # 890-00002-008C			3) 4)Jun-22-04		Grout-Grey
9C.	None Detected		1)None Detected 2)99-100% Silica Glass, Qtz, Other m.p.	White 4"x4" Ceramic Wall Tile / White Grout / Gray Grout (528)	
Lab ID # 890-00002-009A			3) 4)Jun-22-04		Creamic Tile-Grey
9C.	None Detected		1)None Detected 2)99-100% Calc, Opq	White 4"x4" Ceramic Wall Tile / White Grout / Gray Grout (528)	
Lab ID # 890-00002-009B			3) 4)Jun-22-04		Grout-White
9C.	None Detected		1)None Detected 2)99-100% Qtz, Calc, Other m.p.	White 4"x4" Ceramic Wall Tile / White Grout / Gray Grout (528)	
Lab ID # 890-00002-009C			3) 4)Jun-22-04		Grout-Grey
10A.	None Detected		1)1-5% Wollast 2)95-99% Calc, Mica, Other m.p.	White Drywall Texture (Room 509/510)	
Lab ID # 890-00002-010			3) 4)Jun-22-04		Texture-White
10B.	None Detected		1)1-5% Wollast 2)95-99% Calc, Mica, Other m.p.	White Drywall Texture (Room 509/510)	
Lab ID # 890-00002-011			3) 4)Jun-22-04		Texture-White
10C.	None Detected		1)1-5% Wollast 2)95-99% Calc, Mica, Other m.p.	White Drywall Texture (Room 509/510)	
Lab ID # 890-00002-012			3) 4)Jun-22-04		Texture-White
10D.	None Detected		1)None Detected 2)99-100% Calc, Mica, Other m.p.	White Drywall Texture (Room 612)	
Lab ID # 890-00002-013			3) 4)Jun-22-04		Texture-White

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab Manager C. Neil Upchurch **Analyst** C. Neil Upchurch

ASBESTOS TEM LABORATORIES, INC. 1016 GREG STREET, SPARKS, NV 89431 (775) 359-3377
With Main Office in Berkley, CA (510) 528-0108

Accredited by
U.S. Dept. of Commerce
NVLAP
NVLAP Lab Code 200104-0

POLARIZED LIGHT MICROSCOPY ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder - Fairfield
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 19
Reg. Samples Analyzed: 17
Split Layers Analyzed: 9

Job Site / No. Solano College
44156

Report No. 102165
Date Submitted: Jun-22-04
Date Reported: Jun-22-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA (1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
11A.	None Detected	1)None Detected 2)99-100% Calc, Mica, Other m.p.	White Drywall Texture (508)
Lab ID # 890-00002-014		3) 4) Jun-22-04	Texture-White
11B.	None Detected	1)None Detected 2)99-100% Calc, Mica, Other m.p.	White Drywall Texture (508)
Lab ID # 890-00002-015		3) 4) Jun-22-04	Texture-White
11C.	None Detected	1)None Detected 2)99-100% Calc, Mica, Other m.p.	White Drywall Texture (508)
Lab ID # 890-00002-016		3) 4)Jun-22-04	Texture-White
12A.	None Detected	1)5-10% Anhydrite 2)90-95% Calc, Qtz, Gyp	White Stucco / Gray Plaster (529)
Lab ID # 890-00002-017A		3) 4)Jun-22-04	Stucco (Skim Coat)-White
12A.	None Detected	1)None Detected 2)99-100% Calc, Qtz, Other m.p.	White Stucco / Gray Plaster (529)
Lab ID # 890-00002-017B		3) 4)Jun-22-04	Plaster-Grey
12B.	None Detected	1)5-10% Anhydrite 2)90-95% Calc, Qtz, Gyp	White Stucco / Gray Plaster (529)
Lab ID # 890-00002-018A		3) 4)Jun-22-04	Stucco (Skim Coat)-White
12B.	None Detected	1)None Detected 2)99-100% Calc, Qtz, Other m.p.	White Stucco / Gray Plaster (529)
Lab ID # 890-00002-018B		3) 4)Jun-22-04	Plaster-Grey
12C.	None Detected	1)5-10% Anhydrite 2)90-95% Calc, Qtz, Gyp	White Stucco / Gray Plaster (529)
Lab ID # 890-00002-019		3) 4)Jun-22-04	Stucco (Skim Coat)-White
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab Manager C. Neil Upchurch Analyst C. Neil Upchurch

ASBESTOS TEM LABORATORIES, INC. 1016 GREG STREET, SPARKS, NV 89431 (775) 359-3377
With Main Office in Berkley, CA (510) 528-0108

(2)

KLEINFELDER

PROJECT NO.	PROJECT NAME
44156	Solano College

L.P. NO. (P.O. NO.) —

SAMPLERS: (Signature/Number) Jennifer Gomez

RECEIVING LAB: Asbestos TEM

INSTRUCTIONS/REMARKS: *FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS PLM	
1	6/1/04		6B		1		X	TRAY 12"x12" CEILING TILE/ BROWN MASTIC (503)
2			6C				X	2 (502)
* 3			7A				X	OFF-WHITE-PINK 9"x9" VFT/ BLACK MASTIC (530)
4			7B				X	2
5			7C				X	
* 6			8A				X	GRAY 3"x2" CERAMIC GRAY TILE/ (528)
7			8B				X	"
8			8C				X	(529)
* 9			9A				X	WHITE 4"x4" CERAMIC WALL TILE/WHITE GROUT (528)
10			9B				X	"
11			9C				X	(529)
12			10A				X	WHITE DRYWALL TEXTURE (Rm 509/510)
13			10B				X	"
14			10C				X	"
15			10D				X	(Rm 612)
16			11A				X	WHITE DRYWALL TEXTURE (508)
17			11B				X	2
18			11C				X	
* 19			12A				X	WHITE STUCCO/ GRAY PLASTER (529)
20			12B				X	2

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	6/3/04	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
		[signature] ITEM
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
		06-07-04A09:03 RCVD

Instructions/Remarks: 3-5 days

Send Results To:

KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-3643~~ 94534
(707) 429-4070
Attn: JENNIFER GOMEZ

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

№ 0347

(3)

KLEINFELDER

PROJECT NO.	PROJECT NAME
44156	Solano College

L.P. NO. (P.O. NO.)	SAMPLERS: (Signature/Number)
	Jennifer Gomez

RECEIVING LAB: Asbestos TEM

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS PCM	INSTRUCTIONS/REMARKS
								* FIRST POSITIVE
1	6/1/04		12C		1		X	WHITE STUCCO / GRAY PLASTER (528)
2			13A				X	BEIGE HVAC PUTTY / ~~YELLOW HVAC~~ (PLENUM)
3			13B				X	WHITE HVAC PUTTY "
4			13C				X	"
5			14A				X	WHITE DRYWALL TEXTURE / GRAY PAPER (609 (WHITE)
6			14B				X	
7			14C				X	
8			15A				X	WHITE DRYWALL TEXTURE (630)
9			15B				X	
10			15C				X	
11			16A				X	PINK-GRAY VFT / BLACK MASTIC (Hall)
12			16B				X	(Gomez)
13			16C				X	(Hall)
14			17A				X	BROWN 4" BB / BROWN MASTIC (80)
15			17B				X	(Hall)
16			17C				X	BROWN 4" BB / BROWN MASTIC / YELLOW MASTIC (115)
17			18A				X	WHITE DRYWALL / WHITE JOINT COMPOUND (162)
18			18B				X	
19			18C				X	
20			19A				X	GRAY 4" BB / BROWN MASTIC / YELLOW MASTIC (654)

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Jennifer Gomez	6/3/04	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
		06-07-04A09:03 RCVD

Instructions/Remarks: 3-5 days

Send Results To:

KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-9643~~ 94534
(707) 429-4070
Attn: JENNIFER GOMEZ

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

№ 0348

Accredited by
U.S. Dept. of Commerce
NVLAP
NVLAP Lab Code 200104-0

POLARIZED LIGHT MICROSCOPY ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder - Fairfield
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 21
Reg. Samples Analyzed: 17
Split Layers Analyzed: 12

Job Site / No. Solano College
44156

Report No. 102166
Date Submitted: Jun-22-04
Date Reported: Jun-23-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
13A. Lab ID # 890-00003-001	5-10%	Chrysotile	1) None Detected 2) 90-95% Bndr, Opq, Calc, Other m.p. 3) 4) Jun-22-04	Beige HVAC Putty (Plenum) Soft Coating-Beige
13B. Lab ID # 890-00003-002		Not Analyzed	1) 2) 3) 4) Jun-22-04	White HVAC Putty (Plenum)
13C. Lab ID # 890-00003-003		Not Analyzed	1) 2) 3) 4) Jun-22-04	White HVAC Putty (Plenum)
14A. Lab ID # 890-00003-004		None Detected	1) None Detected 2) 99-100% Calc, Qtz, Other m.p. 3) 4) Jun-22-04	White Drywall Textured (600 Entrance) Gray Paper Texture-White
14B. Lab ID # 890-00003-005		None Detected	1) None Detected 2) 99-100% Calc, Qtz, Other m.p. 3) 4) Jun-22-04	White Drywall Textured (600 Entrance) Gray Paper Texture-White
14C. Lab ID # 890-00003-006		None Detected	1) None Detected 2) 99-100% Calc, Qtz, Other m.p. 3) 4) Jun-22-04	White Drywall Textured (600 Entrance) Gray Paper Texture-White
15A. Lab ID # 890-00003-007		None Detected	1) None Detected 2) 99-100% Calc, Gyp, Other m.p. 3) 4) Jun-23-04	White Drywall Texture (630) Texture-White
15B. Lab ID # 890-00003-008		None Detected	1) None Detected 2) 99-100% Calc, Gyp, Other m.p. 3) 4) Jun-23-04	White Drywall Texture (630) Texture-White
15C. Lab ID # 890-00003-009		None Detected	1) None Detected 2) 99-100% Calc, Gyp, Other m.p. 3) 4) Jun-23-04	White Drywall Texture (630) Texture-White
16A. Lab ID # 890-00003-010A	1-5%	Chrysotile	1) None Detected 2) 95-99% Calc, Bndr, Other m.p. 3) 4) Jun-23-04	Pink Gray VFT / Black Mastic (Hall) Floor Tile-Pink & Grey

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab Manager C. Neil Upchurch Analyst C. Neil Upchurch

ASBESTOS TEM LABORATORIES, INC. 1016 GREG STREET, SPARKS, NV 89431 (775) 359-3377
With Main Office in Berkley, CA (510) 528-0108

Accredited by
U.S. Dept. of Commerce
NVLAP
NVLAP Lab Code 200104-0

POLARIZED LIGHT MICROSCOPY ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder - Fairfield
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 21
Reg. Samples Analyzed: 17
Split Layers Analyzed: 12

Job Site / No. Solano College
44156

Report No. 102166
Date Submitted: Jun-22-04
Date Reported: Jun-23-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed)	DESCRIPTION FIELD	DESCRIPTION LAB
16A. Lab ID # 890-00003-010B	1-5%	Chrysotile	1)None Detected 2) 95-99% Tar, Bndr, Calc, Other m.p. 3) 4) Jun-23-04	Pink Gray VFT / Black Mastic (Hall)	Mastic-Black
16B. Lab ID # 890-00003-011		Not Analyzed	1) 2) 3) 4) Jun-23-04	Pink Gray VFT / Black Mastic (Hall)	
16C. Lab ID # 890-00003-012		Not Analyzed	1) 2) 3) 4) Jun-23-04	Pink Gray VFT / Black Mastic (Hall)	
17A. Lab ID # 890-00003-013A		None Detected	1)None Detected 2) 99-100% Bndr, Calc, Opq 3) 4) Jun-23-04	Brown 4" BB/Brown Mastic (130)	Baseboard-Brown
17A. Lab ID # 890-00003-013B		None Detected	1) 1-5% Wollast,Talc 2) 95-99% Bndr, Opq, Other m.p. 3) 4) Jun-23-04	Brown 4" BB/Brown Mastic (130)	Mastic-Brown
17B. Lab ID # 890-00003-014A		None Detected	1)None Detected 2) 99-100% Bndr, Calc, Opq 3) 4) Jun-23-04	Brown 4" BB/Brown Mastic (130)	Baseboard-Brown
17B. Lab ID # 890-00003-014B		None Detected	1)None Detected 2) 99-100% Bndr, Opq, Other m.p. 3) 4) Jun-23-04	Brown 4" BB/Brown Mastic (130)	Mastic-Brown
17C. Lab ID # 890-00003-015A		None Detected	1)None Detected 2) 99-100% Bndr, Opq, Calc 3) 4) Jun-23-04	Brown 4" BB/Brown Yellow Mastic (115)	Baseboard-Brown
17C. Lab ID # 890-00003-015B		None Detected	1) 2-10% Wollast,Talc 2) 90-98% Bndr, Opq, Other m.p. 3) 4) Jun-23-04	Brown 4" BB/Brown Yellow Mastic (115)	Mastic-Brown
17C. Lab ID # 890-00003-015C		None Detected	1)None Detected 2) 99-100% Bndr, Calc, Opq 3) 4) Jun-23-04	Brown 4" BB/Brown Yellow Mastic (115)	Mastic-Yellow

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab Manager C. Neil Upchurch Analyst C. Neil Upchurch

ASBESTOS TEM LABORATORIES, INC. 1016 GREG STREET, SPARKS, NV 89431 (775) 359-3377
With Main Office in Berkley, CA (510) 528-0108

Accredited by
U.S. Dept. of Commerce
NVLAP
NVLAP Lab Code 200104-0

POLARIZED LIGHT MICROSCOPY ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder - Fairfield
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 21
Reg. Samples Analyzed: 17
Split Layers Analyzed: 12

Job Site / No. Solano College
44156

Report No. 102166
Date Submitted: Jun-22-04
Date Reported: Jun-23-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
18A.		None Detected	1) 1-5% Fiberglass 2) 95-99% Gyp, Other m.p.	White Drywall White Joint Compound (162)
Lab ID # 890-00003-016A			3) 4) Jun-23-04	Sheetrock-White
18A.	1-5%	Chrysotile	1) None Detected 2) 95-99% Calc, Mica, Other m.p.	White Drywall White Joint Compound (162)
Lab ID # 890-00003-016B			3) 4) Jun-23-04	Mud-White
18B.		None Detected	1) 1-5% Fiberglass,Cellulose 2) 95-99% Gyp, Other m.p.	White Drywall White Joint Compound (162)
Lab ID # 890-00003-017			3) 4) Jun-23-04	Sheetrock-Off-White
18C.		None Detected	1) 1-5% Fiberglass,Cellulose 2) 95-99% Gyp, Other m.p.	White Drywall White Joint Compound (162)
Lab ID # 890-00003-018			3) 4) Jun-23-04	Sheetrock-Off-White
19A.		None Detected	1) None Detected 2) 99-100% Calc, Bndr, Other m.p.	Gray 4" BB/Brown Mastic, Yellow Mastic (124)
Lab ID # 890-00003-019A			3) 4) Jun-23-04	Baseboard-Grey
19A.		None Detected	1) 2-10% Wollast,Talc 2) 90-98% Bndr, Opq, Other m.p.	Gray 4" BB/Brown Mastic, Yellow Mastic (124)
Lab ID # 890-00003-019B			3) 4) Jun-23-04	Mastic-Brown
19A.		None Detected	1) None Detected 2) 99-100% Bndr, Calc, Opq	Gray 4" BB/Brown Mastic, Yellow Mastic (124)
Lab ID # 890-00003-019C			3) 4) Jun-23-04	Mastic-Yellow
19B.		None Detected	1) None Detected 2) 99-100% Calc, Bndr, Other m.p.	Gray 4" BB/Brown Mastic, Yellow Mastic (124)
Lab ID # 890-00003-020A			3) 4) Jun-23-04	Baseboard-Grey
19B.		None Detected	1) 2-10% Wollast,Talc 2) 90-98% Bndr, Opq, Other m.p.	Gray 4" BB/Brown Mastic, Yellow Mastic (124)
Lab ID # 890-00003-020B			3) 4) Jun-23-04	Mastic-Brown
19B.		None Detected	1) None Detected 2) 99-100% Bndr, Calc, Opq	Gray 4" BB/Brown Mastic, Yellow Mastic (124)
Lab ID # 890-00003-020C			3) 4) Jun-23-04	Mastic-Yellow

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab Manager C. Neil Upchurch Analyst C. Neil Upchurch

ASBESTOS TEM LABORATORIES, INC. 1016 GREG STREET, SPARKS, NV 89431 (775) 359-3377
With Main Office in Berkley, CA (510) 528-0108

Accredited by
U.S. Dept. of Commerce
NVLAP
NVLAP Lab Code 200104-0

POLARIZED LIGHT MICROSCOPY ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez
Address: Kleinfelder - Fairfield
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 21
Reg. Samples Analyzed: 17
Split Layers Analyzed: 12
Job Site / No. Solano College 44156

Report No. 102166
Date Submitted: Jun-22-04
Date Reported: Jun-23-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
19C.	None Detected	1) None Detected 2) 99-100% Calc, Bndr, Other m.p.	Gray 4" BB/Brown Mastic, Yellow Mastic (124)
Lab ID # 890-00003-021A		3) 4) Jun-23-04	Baseboard-Grey
19C.	None Detected	1) 2-10% Wollast,Talc 2) 90-98% Bndr, Opq, Other m.p.	Gray 4" BB/Brown Mastic, Yellow Mastic (124)
Lab ID # 890-00003-021B		3) 4) Jun-23-04	Mastic-Brown
19C.	None Detected	1) None Detected 2) 99-100% Bndr, Calc, Opq	Gray 4" BB/Brown Mastic, Yellow Mastic (124)
Lab ID # 890-00003-021C		3) 4) Jun-23-04	Mastic-Yellow
		1) 2)	
Lab ID #		3) 4)	
		1) 2)	
Lab ID #		3) 4)	
		1) 2)	
Lab ID #		3) 4)	
		1) 2)	
Lab ID #		3) 4)	
		1) 2)	
Lab ID #		3) 4)	
		1) 2)	
Lab ID #		3) 4)	
		1) 2)	
Lab ID #		3) 4)	

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab Manager C. Neil Upchurch Analyst C. Neil Upchurch

ASBESTOS TEM LABORATORIES, INC. 1016 GREG STREET, SPARKS, NV 89431 (775) 359-3377
With Main Office in Berkley, CA (510) 528-0108

(3)

KLEINFELDER

PROJECT NO.	PROJECT NAME	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS	RECEIVING LAB:
44156	Solano College			PLM	Asbestos TEM
L.P. NO. / P.O. NO.	SAMPLERS: (Signature/Number) Jennifer Gomez				INSTRUCTIONS/REMARKS: * FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX			
1	6/1/04		12C		1		WHITE SKIM COAT / GRAY PLASTER (528)
* 2			13A				BEIGE HVAC PUTTY (PLENUM)
3			13B				WHITE HVAC PUTTY "
4			13C				
* 5			14A				WHITE DRYWALL TEXTURE / GRAY PAPER (630 WOVEN)
6			14B				
7			14C				
* 8			15A				WHITE DRYWALL TEXTURE (630)
9			15B				
10			15C				
* 11			16A				PINK GRAY VFT / BLACK MASTIC (Hall)
12			16B				(Foyer)
13			16C				(Hall)
* 14			17A				BROWN 4" BB / BROWN MASTIC (130)
15			17B				(Hall)
16			17C				BROWN 4" BB / BROWN MASTIC / YELLOW MASTIC (115)
* 17			18A				WHITE DRYWALL / WHITE JOINT COMPOUND (162)
18			18B				
19			18C				
* 20			19A				GRAY 4" BB / BROWN MASTIC / YELLOW MASTIC (104)

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	6/3/04	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
		[signature]
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
		06-07-04A09:03 RCVD

Instructions/Remarks:

35 days

Send Results To:

KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-9643~~ 94534
(707) 429-4070
Attn: JENNIFER GOMEZ

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

NO. 0248

07/01/2004 10:47 5105280109 ASBESTOS TEM LABS PAGE 11/16

(4)

KLEINFELDER

PROJECT NO.	PROJECT NAME	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS	RECEIVING LAB:
44156	SOLANO COLLEGE			PLM	ASBESTOS TEM
L.P. NO. (P.O. NO.)	SAMPLERS: (Signature/Number) Jennifer Gomez				INSTRUCTIONS/REMARKS: *FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX				
1	6/1/04		19B		1		X	GRAY 9"x9" FT/ BROWN MASTIC / YELLOW MASTIC (124)
2			19C				X	↓
3			20A				X	TAN 12"x12" FT/ BROWN MASTIC (136)
4			20B				X	(124)
5			20C				X	↓ (129)
6			21A				X	OFF-WHITE TILE 9"x9" VFT/ BLACK MASTIC (115)
7			21B				X	↓
8			21C				X	
9			22A				X	WHITE DRYWALL TEXTURE 129/A
10			22B				X	"
11			22C				X	↓ "
12			23A				X	BROWN 12"x12" VFT/ YELLOW MASTIC (ENT)
13			23B				X	↓
14			23C				X	
15			24A				X	OFF-WHITE-BROWN 12"x12" VFT/ BLACK MASTIC (161)
16			24B				X	(163)
17			24C				X	(161)
18			25A				X	WHITE DRYWALL TEXTURE (Hall)
19			25B				X	↓ "
20			25C				X	↓ (161B)

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Instructions/Remarks:	Send Results To:
[signature]	6/3/04		3-5 days	KLEINFELDER 780 CHADBOURNE, ROAD SUITE D FAIRFIELD, CA ~~94585-3643~~ 94534 (707) 429-4070
Relinquished by: (Signature)	Date/Time	Received by: (Signature)		
		QC/ATEM		
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)		Attn: JENNIFER GOMEZ
		06-07-04A09:03 RCVD		

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY NO. 0240

07/01/2004 10:47 5105280109 ASBESTOS TEM LABS PAGE 12/16

20-25

ASBESTOS TEM LABORATORIES, INC.

EPA Method 600/R-93/116
Polarized Light Microscopy
Analytical Report

Laboratory Job # 890-004

Report No. 102167

1016 Greg Street
Sparks, NV 89431
(775) 359-3377
FAX (775) 359-2798

With Main Office Located At:
1409 Fifth Street, Berkeley, CA 94710
Ph. (510) 528-0108 Fax (510) 528-0109

ASBESTOS TEM LABORATORIES, INC

Accredited by
U.S. Dept. of Commerce
NVLAP
NVLAP Lab Code 200104-0

Jun-23-04

Ms. Jennifer Gomez
Kleinfelder - Fairfield
780 Chadbourne Road, Suite D
Fairfield, CA 94534

RE: LABORATORY JOB # 890-004
Polarized light microscopy analytical results for 14 bulk sample(s) with 8 sample split(s)
Job Site: Solano College
Job No.: 44156
Report No.: 102167

Enclosed please find the bulk material analytical results for one or more samples submitted for asbestos analysis. The analyses were performed in accordance with EPA Method 600/R-93/116 or 600/M4-82-020 for the determination of asbestos in bulk building materials by polarized light microscopy (PLM). Please note that while PLM analysis is commonly performed on non-friable and fine grained materials such as floor tiles and dust, the EPA method recognizes that PLM is subject to limitations. In these situations, accurate results may only be obtainable through the use of more sophisticated and accurate techniques such as transmission electron microscopy (TEM) or X-ray diffraction (XRD).

Prior to analysis, samples are logged-in and all data pertinent to the sample recorded. The samples are checked for damage or disruption of any chain-of-custody seals. A unique laboratory ID number is assigned to each sample. A hard copy log-in sheet containing all pertinent information concerning the sample is generated. This and all other relevant paper work are kept with the sample throughout the analytical procedures to assure proper analysis.

Each sample is opened in a class 100 HEPA negative air hood. A representative sampling of the material is selected and placed onto a glass microscope slide containing a drop of refractive index oil. The glass slide is placed under a polarizing light microscope where standard mineralogical techniques are used to analyze and quantify the various materials present, including asbestos. The data is then compiled into standard report format and subjected to a thorough quality assurance check before the information is released to the client.

For possible future reference, samples are normally kept on file for one year.

Sincerely Yours,

C. Neil Upchurch

Lab Manager
ASBESTOS TEM LABORATORIES, INC.

Accredited by
U.S. Dept. of Commerce
NVLAP
NVLAP Lab Code 200104-0

POLARIZED LIGHT MICROSCOPY ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder - Fairfield
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 18
Reg. Samples Analyzed: I4
Split Layers Analyzed: 8

Job Site / No. Solano College
44156

Report No. 102167
Date Submitted: Jun-22-04
Date Reported: Jun-23-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
20A.		None Detected	1)90-95% Cellulose 2)5-10% Glue, Opq	Tan 12"x12" Ceiling Tile / Brown Mastic (136)
Lab ID # 890-00004-001A			3) 4) Jun-23-04	Ceiling Tile-Tan
20A.		None Detected	1)2-10% Wollast,Talc 2)90-98% Bndr, Opq, Other m.p.	Tan 12"x12" Ceiling Tile / Brown Mastic (136)
Lab ID # 890-00004-001B			3) 4) Jun-23-04	Mastic-Brown
20B.		None Detected	1)90-95% Cellulose 2)5-10% Glue, Opq	Tan 12"x12" Ceiling Tile / Brown Mastic (124)
Lab ID # 890-00004-002A			3) 4)Jun-23-04	Ceiling Tile-Tan
20B.		None Detected	1)2-10% Wollast,Talc 2)90-98% Bndr, Opq, Other m.p.	Tan 12"x12" Ceiling Tile / Brown Mastic (124)
Lab ID # 890-00004-002B			3) 4)Jun-23-04	Mastic-Brown
20C.		None Detected	1)90-95% Cellulose 2)5-10% Glue, Opq	Tan 12"x12" Ceiling Tile / Brown Mastic (129)
Lab ID # 890-00004-003A			3) 4)Jun-23-04	Ceiling Tile-Tan
20C.		None Detected	1)2-10% Wollast,Talc 2)90-98% Bndr, Opq, Other m.p.	Tan 12"x12" Ceiling Tile / Brown Mastic (129)
Lab ID # 890-00004-003B			3) 4)Jun-23-04	Mastic-Brown
21A.	1-5%	Chrysotile	1)None Detected 2)95-99% Calc, Bndr, Other m.p.	Off-White-Red 9"x9" VFT / Black Mastic (115)
Lab ID # 890-00004-004A			3) 4)Jun-23-04	Floor Tile-Off-White & Red
21A.	1-5%	Chrysotile	1)None Detected 2)95-99% Tar, Bndr, Calc, Other m.p.	Off-White-Red 9"x9" VFT / Black Mastic (115)
Lab ID # 890-00004-004B			3) 4)Jun-23-04	Mastic-Black
21B.		Not Analyzed	1) 2)	Off-White-Red 9"x9" VFT / Black Mastic (115)
Lab ID # 890-00004-005			3) 4)Jun-23-04	
21C.		Not Analyzed	1) 2)	Off-White-Red 9"x9" VFT / Black Mastic (115)
Lab ID # 890-00004-006			3) 4)Jun-23-04	

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab Manager C. Neil Upchurch Analyst C. Neil Upchurch

ASBESTOS TEM LABORATORIES, INC. 1016 GREG STREET, SPARKS, NV 89431 (775) 359-3377
With Main Office in Berkley, CA (510) 528-0108

Accredited by
U.S. Dept. of Commerce
NVLAP
NVLAP Lab Code 200104-0

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder - Fairfield
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 18
Reg. Samples Analyzed: 14
Split Layers Analyzed: 8

Job Site / No. Solano College
44156

Report No. 102167
Date Submitted: Jun-22-04
Date Reported: Jun-23-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD LAB
22A.	None Detected		1)None Detected 2)99-100% Calc, Mica, Other m.p.	White Drywall Texture 129/A
Lab ID # 890-00004-007			3) 4) Jun-23-04	Texture-White
22B.	None Detected		1)None Detected 2)99-100% Calc, Mica, Other m.p.	White Drywall Texture 129/A
Lab ID # 890-00004-008			3) 4) Jun-23-04	Texture-White
22C.	None Detected		1)None Detected 2)99-100% Calc, Mica, Other m.p.	White Drywall Texture 129/A
Lab ID # 890-00004-009			3) 4) Jun-23-04	Texture-White
23A.	None Detected		1)None Detected 2)99-100% Calc, Bndr, Other m.p.	Brown 12" x 12" VFT /Yellow Mastic (Ent.)
Lab ID # 890-00004-010A			3) 4) Jun-23-04	Floor Tile-Brown
23A.	None Detected		1)<1% Cellulose 2) 100-100% Bndr, Opq, Calc, Other m.p.	Brown 12" x 12" VFT /Yellow Mastic (Ent.)
Lab ID # 890-00004-010B			3) 4) Jun-23-04	Mastic-Yellow
23B.	None Detected		1)None Detected 2)99-100% Calc, Bndr, Other m.p.	Brown 12" x 12" VFT /Yellow Mastic (Ent.)
Lab ID # 890-00004-011A			3) 4) Jun-23-04	Floor Tile-Brown
23B.	None Detected		1)<1% Cellulose 2) 100-100% Bndr, Opq, Calc, Other m.p.	Brown 12" x 12" VFT /Yellow Mastic (Ent.)
Lab ID # 890-00004-011B			3) 4) Jun-23-04	Mastic-Yellow
23C.	None Detected		1)None Detected 2)99-100% Calc, Bndr, Other m.p.	Brown 12" x 12" VFT /Yellow Mastic (Ent.)
Lab ID # 890-00004-012A			3) 4) Jun-23-04	Floor Tile-Brown
23C.	None Detected		1)<1% Cellulose 2) 100-100% Bndr, Opq, Calc, Other m.p.	Brown 12" x 12" VFT /Yellow Mastic (Ent.)
Lab ID # 890-00004-012B			3) 4) Jun-23-04	Mastic-Yellow
24A.	1-5%	Chrysotile	1)None Detected 2)95-99% Calc, Bndr, Other m.p.	Off-White-Brown 12" x 12" VFT /Black Mastic (161)
Lab ID # 890-00004-013A			3) 4) Jun-23-04	Floor Tile-Off-White & Brown

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab Manager C. Neil Upchurch **Analyst** C. Neil Upchurch

ASBESTOS TEM LABORATORIES, INC. 1016 GREG STREET, SPARKS, NV 89431 (775) 359-3377
With Main Office in Berkley, CA (510) 528-0108

Accredited by
U.S. Dept. of Commerce
NVLAP
NVLAP Lab Code 200104-0

POLARIZED LIGHT MICROSCOPY ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder - Fairfield
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 18
Reg. Samples Analyzed: 14
Split Layers Analyzed: 8

Job Site / No. Solano College
44156

Report No. 102167
Date Submitted: Jun-22-04
Date Reported: Jun-23-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
24A.	1-5%	Chrysotile	1) None Detected 2) 95-99% Tar, Bndr, Calc, Other m.p.	Off-White-Brown 12" x 12" VFT /Black Mastic (161)
Lab ID # 890-00004-013B			3) 4) Jun-23-04	Mastic-Black
24B.		Not Analyzed	1) 2)	Off-White-Brown 12" x 12" VFT /Black Mastic (161)
Lab ID # 890-00004-014			3) 4) Jun-23-04	
24C.		Not Analyzed	1) 2)	Off-White-Brown 12" x 12" VFT /Black Mastic (161)
Lab ID # 890-00004-015			3) 4) Jun-23-04	
25A.		None Detected	1) None Detected 2) 99-100% Calc, Mica, Other m.p.	White Drywall Texture (Hall)
Lab ID # 890-00004-016			3) 4) Jun-23-04	Texture-White
25B.		None Detected	1) None Detected 2) 99-100% Calc, Mica, Other m.p.	White Drywall Texture (Hall)
Lab ID # 890-00004-017			3) 4) Jun-23-04	Texture-White
25C.		None Detected	1) None Detected 2) 99-100% Calc, Mica, Other m.p.	White Drywall Texture (161B)
Lab ID # 890-00004-018			3) 4) Jun-23-04	Texture-White
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab Manager C. Neil Upchurch Analyst C. Neil Upchurch

ASBESTOS TEM LABORATORIES, INC. 1016 GREG STREET, SPARKS, NV 89431 (775) 359-3377
With Main Office in Berkley, CA (510) 528-0108

(4)

KLEINFELDER

PROJECT NO.	PROJECT NAME
44156	SOLANO COLLEGE
L.P. NO. (P.O. NO.)	SAMPLERS: (Signature/Number) Jennifer Gomez

RECEIVING LAB: ASBESTOS TEM

INSTRUCTIONS/REMARKS: *FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CON-TAINERS	TYPE OF CON-TAINERS	ANALYSIS PLM	
1	6/1/04		19B		1		X	GRAY 9"x9" VFT/ BROWN MASTIC / YELLOW MASTIC (124)
2			19C				X	
3			20A				X	TAN 12"x12" LINOLEUM / BROWN MASTIC (136)
4			20B				X	(124)
5			20C				X	(129)
6			21A				X	OFF-WHITE-TAN 9"x9" VFT / BLACK MASTIC (161)
7			21B				X	
8			21C				X	
9			22A				X	WHITE DRYWALL TEXTURE 129/4
10			22B				X	"
11			22C				X	"
12			23A				X	BROWN 12"x12" VFT / YELLOW MASTIC (ENT.)
13			23B				X	
14			23C				X	
15			24A				X	OFF-WHITE-BROWN 12"x12" VFT / BLACK MASTIC (161)
16			24B				X	(163)
17			24C				X	(161)
18			25A				X	WHITE DRYWALL TEXTURE (Hall)
19			25B				X	"
20			25C				X	(161B)

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Jennifer Gomez	6/3/04	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
		QC/ATEM
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
		06-07-04A09:03 RCVD

Instructions/Remarks: 3-5 days

Send Results To:

KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-9043~~ 94534
(707) 429-4070

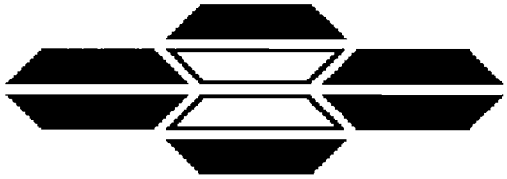
Attn: JENNIFER GOMEZ

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

№ 0349

26-39



ASBESTOS TEM LABORATORIES, INC.

EPA Interim Method
Polarized Light Microscopy
Analytical Report

Laboratory Job # 543-00052

1409 Fifth Street
Berkeley, CA 94710
(510) 528-0108
FAX (510) 528-0109
www.asbestostemlabs.com

With Branch Offices Located At:
1016 GREG STREET, SPARKS, NV 89431
Ph. (775) 359-3377

ASBESTOS TEM LABORATORIES, INC

Accredited by
U.S. Dept. of Commerce
NVLAP
CA DOHS ELAP

Jun-18-04

Ms. Jennifer Gomez
Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

RE: LABORATORY JOB # 543-00052
Polarized light microscopy analytical results for 14 bulk sample(s) with 8 sample split(s)
Job Site: Solano College
Job No.: 44156

Enclosed please find the bulk material analytical results for one or more samples submitted for asbestos analysis. The analyses were performed in accordance with EPA Method 600/R-93/116 or 600/M4-82-020 for the determination of asbestos in bulk building materials by polarized light microscopy (PLM). Please note that while PLM analysis is commonly performed on non-friable and fine grained materials such as floor tiles and dust, the EPA method recognizes that PLM is subject to limitations. In these situations, accurate results may only be obtainable through the use of more sophisticated and accurate techniques such as transmission electron microscopy (TEM) or X-ray diffraction (XRD).

Prior to analysis, samples are logged-in and all data pertinent to the sample recorded. The samples are checked for damage or disruption of any chain-of-custody seals. A unique laboratory ID number is assigned to each sample. A hard copy log-in sheet containing all pertinent information concerning the sample is generated. This and all other relevant paper work are kept with the sample throughout the analytical procedures to assure proper analysis.

Each sample is opened in a class 100 HEPA negative air hood. A representative sampling of the material is selected and placed onto a glass microscope slide containing a drop of refractive index oil. The glass slide is placed under a polarizing light microscope where standard mineralogical techniques are used to analyze and quantify the various materials present, including asbestos. The data is then compiled into standard report format and subjected to a thorough quality assurance check before the information is released to the client.

Sincerely Yours,

Stephen O Shaffer

Lab Manager
ASBESTOS TEM LABORATORIES, INC.

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 20
Reg. Samples Analyzed: 14
Split Layers Analyzed: 8

Job Site / No. Solano College
44156

Report No. **044291**
Date Submitted: Jun-07-04
Date Reported: Jun-18-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
26A.	None Detected	1) None Detected 2) 99-100% Calc, Qtz, Other m.p.	yellow green 2x2 ceramic floor tile gray grout.(126wrr)
Lab ID # 543-00052-001A		3) Jun-01-04 4) Jun-18-04	Floor Tile-Off-White
26A.	None Detected	1) 1-5% Cellulose 2) 95-99% Gyp, Calc, Mica, Other m.p.	yellow green 2x2 ceramic floor tile gray grout.(126wrr)
Lab ID # 543-00052-001B		3) 4) Jun-18-04	Grout-Grey
26B.	None Detected	1) None Detected 2) 99-100% Calc, Qtz, Other m.p.	yellow green 2x2 ceramic floor tile gray grout. (126 wrr)
Lab ID # 543-00052-002A		3) Jun-01-04 4) Jun-18-04	Floor Tile-Off-White
26B.	None Detected	1) 1-5% Cellulose 2) 95-99% Gyp, Calc, Mica, Other m.p.	
Lab ID # 543-00052-002B		3) 4) Jun-18-04	Grout-Grey
26C.	None Detected	1) None Detected 2) 99-100% Calc, Qtz, Other m.p.	yellow green 2x2 ceramic floor tile gray grout. (124 wrr)
Lab ID # 543-00052-003A		3) Jun-01-04 4) Jun-18-04	Floor Tile-Off-White
26C.	None Detected	1) 1-5% Cellulose 2) 95-99% Gyp, Calc, Mica, Other m.p.	
Lab ID # 543-00052-003B		3) 4) Jun-18-04	Grout-Grey
28A.	None Detected	1) None Detected 2) 99-100% Bndr, Calc, Mica	white drywall texture (162)
Lab ID # 543-00052-004		3) Jun-01-04 4) Jun-18-04	Texture-White
28B.	None Detected	1) None Detected 2) 99-100% Bndr, Calc, Mica	white drywall texture (162)
Lab ID # 543-00052-005		3) Jun-01-04 4) Jun-18-04	Texture-White
28C.	None Detected	1) None Detected 2) 99-100% Bndr, Calc, Mica	white drywall texture (162)
Lab ID # 543-00052-006		3) Jun-01-04 4) Jun-18-04	Texture-White
27A.	None Detected	1) None Detected 2) 99-100% Calc, Qtz, Other m.p.	yellow beige 4x4 ceramic wall tile white grout. (wrr)
Lab ID # 543-00052-007A		3) Jun-01-04 4) Jun-18-04	Wall Tile-Beige

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

ASBESTOS TEM LABORATORIES, INC. **1409 FIFTH STREET, BERKELEY, CA 94710** **(510) 528-0108**
www.asbestostemlabs.com *With Offices in Reno, NV (775) 359-3377*

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 20
Reg. Samples Analyzed: 14
Split Layers Analyzed: 8

Job Site / No. Solano College
44156

Report No. **044291**
Date Submitted: Jun-07-04
Date Reported: Jun-18-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
27A.		None Detected	1) 1-5% Cellulose 2) 95-99% Calc, Bndr, Mica, Other m.p.	yellow beige 4x4 ceramic wall tile white grout. (wrr)
Lab ID # 543-00052-007B			3) 4) Jun-18-04	JointCom/Text-White
27B.		None Detected	1) None Detected 2) 99-100% Calc, Qtz, Other m.p.	yellow beige 4x4 ceramic wall tile white grout. (mrr)
Lab ID # 543-00052-008A			3) Jun-01-04 4) Jun-18-04	Wall Tile-Beige
27B.		None Detected	1) 1-5% Cellulose 2) 95-99% Calc, Bndr, Mica, Other m.p.	
Lab ID # 543-00052-008B			3) 4) Jun-18-04	JointCom/Text-White
27C.		None Detected	1) None Detected 2) 99-100% Calc, Qtz, Other m.p.	yellow beige 4x4 ceramic wall tile white grout. (174wrr)
Lab ID # 543-00052-009A			3) Jun-01-04 4) Jun-18-04	Wall Tile-Beige
27C.		None Detected	1) 1-5% Cellulose 2) 95-99% Calc, Bndr, Mica, Other m.p.	
Lab ID # 543-00052-009B			3) 4) Jun-18-04	JointCom/Text-White
29A.		None Detected	1) 95-99% Mineral Wool 2) 1-5% Other m.p.	white 2x4 ceiling tile (lir)
Lab ID # 543-00052-010			3) Jun-01-04 4) Jun-18-04	Ceiling Tile-Grey
29B.		None Detected	1) 95-99% Mineral Wool 2) 1-5% Other m.p.	white 2x4 ceiling tile (hall)
Lab ID # 543-00052-011			3) Jun-01-04 4) Jun-18-04	Ceiling Tile-Grey
29C.		None Detected	1) 95-99% Mineral Wool 2) 1-5% Other m.p.	white 2x4 ceiling tile (lib)
Lab ID # 543-00052-012			3) Jun-01-04 4) Jun-18-04	Ceiling Tile-Grey
38A.		None Detected	1) 1-5% Cellulose 2) 95-99% Gyp, Other m.p.	white drywall white joint compund (700 mech rm)
Lab ID # 543-00052-013A			3) Jun-01-04 4) Jun-18-04	Sheetrock-White
38A.	1-5%	Chrysotile	1) None Detected 2) 95-99% Calc, Mica, Other m.p.	white drywall white joint compund (700 mech rm)
Lab ID # 543-00052-013B			3) 4) Jun-18-04	JointCom/Text-White

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer_____ **Analyst**_____

ASBESTOS TEM LABORATORIES, INC. **1409 FIFTH STREET, BERKELEY, CA 94710** **(510) 528-0108**
www.asbestostemlabs.com
With Offices in Reno, NV (775) 359-3377

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 20
Reg. Samples Analyzed: 14
Split Layers Analyzed: 8

Job Site / No. Solano College
44156

Report No. **044291**
Date Submitted: Jun-07-04
Date Reported: Jun-18-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
38B.		Not Analyzed	1) 2)	white drywall white joint compound (747)
Lab ID # 543-00052-014			3) Jun-01-04 4) Jun-18-04	
38C.		Not Analyzed	1) 2)	white drywall white joint compound (716)
Lab ID # 543-00052-015			3) Jun-01-04 4) Jun-18-04	
38D.		Not Analyzed	1) 2)	white drywall white joint compound (1620)
Lab ID # 543-00052-016			3) Jun-01-04 4) Jun-18-04	
38E.		Not Analyzed	1) 2)	white drywall white joint compound (1621)
Lab ID # 543-00052-017			3) Jun-01-04 4) Jun-18-04	
39A.	1-5%	Chrysotile	1) None Detected 2) 95-99% Bndr, Calc, Other m.p.	off white tan 12x12 VFT black mastic (714)
Lab ID # 543-00052-018A			3) Jun-01-04 4) Jun-18-04	Floor Tile-Tan
39A.	5-10%	Chrysotile	1) None Detected 2) 90-95% Tar, Bndr, Calc, Other m.p.	off white tan 12x12 VFT black mastic (714)
Lab ID # 543-00052-018B			3) 4) Jun-18-04	Mastic-Black
39B.		Not Analyzed	1) 2)	off white tan 12x12 VFT black mastic (714)
Lab ID # 543-00052-019			3) Jun-01-04 4) Jun-18-04	
39C.		Not Analyzed	1) 2)	off white tan 12x12 VFT black mastic (714)
Lab ID # 543-00052-020			3) Jun-01-04 4) Jun-18-04	
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

ASBESTOS TEM LABORATORIES, INC. **1409 FIFTH STREET, BERKELEY, CA 94710** **(510) 528-0108**
www.asbestostemlabs.com *With Offices in Reno, NV (775) 359-3377*

(5)

KLEINFELDER

PROJECT NO.	PROJECT NAME
44156	Solano College

L.P. NO. (P.O. NO.)

SAMPLERS: (Signature/Number) Jennifer Gomez

RECEIVING LAB: ASBESTOS TEM

INSTRUCTIONS/REMARKS: **FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS PLM	
* 1	6/1/04		26A		1		X	YELLOW GREEN 2"x2" CERAMIC FLOOR TILE/GRAY GROUT (126 (WRR)
2			26B				X	(WRR)
3			26C				X	(174 (WRR)
* 4			~~27A~~ 28A				X	WHITE DRYWALL TEXTURE (162)
5			~~27B~~ 28B				X	
6			~~27C~~ 28C				X	
* 7			~~28A~~ 27A				X	YELLOW-BEIGE 4"x4" CERAMIC WALL TILE/WHITE GROUT (WRR)
8			~~28B~~ 27B				X	(WRR)
9			~~28C~~ 27C				X	(174 WRR)
* 10			29A				X	WHITE 2'x4' CEILING TILE (LIB)
11			29B				X	(Hall)
12			29C				X	(Lib)
13			38A				X	WHITE DRYWALL/WHITE JOINT COMPOUND (700 (MEET. RM)
14			38B				X	(747)
15			38C				X	(716)
16			38D				X	(1620)
17			38E				X	(1621)
* 18			39A				X	OFF-WHITE-TAN 12"x12" VFT/BLACK MASTIC (714)
19			39B				X	
20			39C				X	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	6/3/04	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
		[signature]
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
		06-07-04 [illegible]

Instructions/Remarks: 3-5 days

Send Results To:

KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-0643~~ 94534
(707) 429-4070

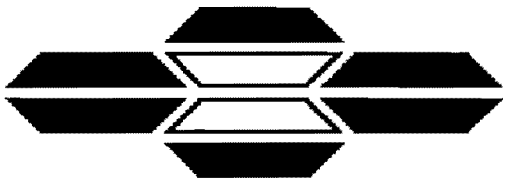
Attn: JENNIFER GOMEZ

M-60 White - Sampler Canary - Return Copy To Shipper Pink - Lab Copy

CHAIN OF CUSTODY

№ 0350

30-37



ASBESTOS TEM LABORATORIES, INC.

EPA Interim Method
Polarized Light Microscopy
Analytical Report

Laboratory Job # 543-00047

1409 Fifth Street
Berkeley, CA 94710
(510) 528-0108
FAX (510) 528-0109
www.asbestostemlabs.com

With Branch Offices Located At:
1016 GREG STREET, SPARKS, NV 89431
Ph. (775) 359-3377

ASBESTOS TEM LABORATORIES, INC

Accredited by
U.S. Dept. of Commerce
NVLAP
CA DOHS ELAP

Jun-08-04

Ms. Jennifer Gomez
Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

RE: LABORATORY JOB # 543-00047
Polarized light microscopy analytical results for 16 bulk sample(s) with 14 sample split(s)
Job Site: Solano College
Job No.: 44156

Enclosed please find the bulk material analytical results for one or more samples submitted for asbestos analysis. The analyses were performed in accordance with EPA Method 600/R-93/116 or 600/M4-82-020 for the determination of asbestos in bulk building materials by polarized light microscopy (PLM). Please note that while PLM analysis is commonly performed on non-friable and fine grained materials such as floor tiles and dust, the EPA method recognizes that PLM is subject to limitations. In these situations, accurate results may only be obtainable through the use of more sophisticated and accurate techniques such as transmission electron microscopy (TEM) or X-ray diffraction (XRD).

Prior to analysis, samples are logged-in and all data pertinent to the sample recorded. The samples are checked for damage or disruption of any chain-of-custody seals. A unique laboratory ID number is assigned to each sample. A hard copy log-in sheet containing all pertinent information concerning the sample is generated. This and all other relevant paper work are kept with the sample throughout the analytical procedures to assure proper analysis.

Each sample is opened in a class 100 HEPA negative air hood. A representative sampling of the material is selected and placed onto a glass microscope slide containing a drop of refractive index oil. The glass slide is placed under a polarizing light microscope where standard mineralogical techniques are used to analyze and quantify the various materials present, including asbestos. The data is then compiled into standard report format and subjected to a thorough quality assurance check before the information is released to the client.

Sincerely Yours,

Stephen A Shaffer

Lab Manager
ASBESTOS TEM LABORATORIES, INC.

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 24
Reg. Samples Analyzed: 16
Split Layers Analyzed: 14

Job Site / No. Solano College
44156

Report No. **044254**
Date Submitted: Jun-04-04
Date Reported: Jun-08-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD LAB
30A	None Detected	1)None Detected 2)99-100% Calc, Bndr, Other m.p.	* 4" Brown Baseboard / Brown Mastic (Rm 308)
Lab ID # 543-00047-001A		3) Jun-02-04 4) Jun-08-04	Baseboard-Brown
30A	None Detected	1)5-10% Wollast 2)90-95% Glue, Other m.p.	* 4" Brown Baseboard / Brown Mastic (Rm 308)
Lab ID # 543-00047-001B		3) 4) Jun-08-04	Mastic-Brown
30B	None Detected	1)None Detected 2)99-100% Calc, Bndr, Other m.p.	* 4" Brown Baseboard / Brown Mastic (Hall)
Lab ID # 543-00047-002A		3) Jun-02-04 4) Jun-08-04	Baseboard-Brown
30B	None Detected	1)5-10% Wollast 2)90-95% Glue, Other m.p.	
Lab ID # 543-00047-002B		3) 4) Jun-08-04	Mastic-Brown
30C	None Detected	1)None Detected 2)99-100% Calc, Bndr, Other m.p.	* 4" Brown Baseboard / Brown Mastic (Rm 308)
Lab ID # 543-00047-003A		3) Jun-02-04 4)Jun-08-04	Baseboard-Brown
30C	None Detected	1)5-10% Wollast 2)90-95% Glue, Other m.p.	
Lab ID # 543-00047-003B		3) 4) Jun-08-04	Mastic-Brown
31A	None Detected	1)99-100% Cellulose 2)<1% Other m.p.	* 12" sq. White Ceiling Tiles / Brown Mastic (Room 308)
Lab ID # 543-00047-004A		3) Jun-02-04 4)Jun-08-04	Ceiling Tile-Brown
31A	None Detected	1)None Detected 2)99-100% Woll, Glue, Other m.p.	* 12" sq. White Ceiling Tiles / Brown Mastic (Room 308)
Lab ID # 543-00047-004B		3) 4)Jun-08-04	Mastic-Brown
31B	None Detected	1)99-100% Cellulose 2)<1% Other m.p.	* 12" sq. White Ceiling Tiles / Brown Mastic (Room 308)
Lab ID # 543-00047-005A		3) Jun-02-04 4)Jun-08-04	Ceiling Tile-Brown
31B	None Detected	1)None Detected 2)99-100% Woll, Glue, Other m.p.	* 12" sq. White Ceiling Tiles / Brown Mastic (Room 308)
Lab ID # 543-00047-005B		3) 4)Jun-08-04	Mastic-Brown

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

ASBESTOS TEM LABORATORIES, INC. **1409 FIFTH STREET, BERKELEY, CA 94710** **(510) 528-0108**
www.asbestostemlabs.com *With Offices in Reno, NV (775) 359-3377*

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 24
Reg. Samples Analyzed: 16
Split Layers Analyzed: 14

Job Site / No. Solano College
44156

Report No. **044254**
Date Submitted: Jun-04-04
Date Reported: Jun-08-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD LAB
31C		None Detected	1) 99-100% Cellulose 2) <1% Other m.p.	* 12" sq. White Ceiling Tiles / Brown Mastic (Room 308)
Lab ID # 543-00047-006A			3) Jun-02-04 4) Jun-08-04	Ceiling Tile-Brown
31C		None Detected	1) None Detected 2) 99-100% Woll, Glue, Other m.p.	* 12" sq. White Ceiling Tiles / Brown Mastic (Room 308)
Lab ID # 543-00047-006B			3) 4) Jun-08-04	Mastic-Brown
32A		None Detected	1) 1-5% Cellulose 2) 95-99% Calc, Bndr, Other m.p.	* 12" sq. Multicolor VFT / Black Mastic (Room 307)
Lab ID # 543-00047-007A			3) Jun-02-04 4) Jun-08-04	Floor Tile-Off-White
32A	1-5%	Chrysotile	1) 10-20% Cellulose 2) 75-89% Tar, Bndr, Qtz, Other m.p.	* 12" sq. Multicolor VFT / Black Mastic (Room 307)
Lab ID # 543-00047-007B			3) 4) Jun-08-04	Mastic-Black
32B		Not Analyzed	1) 2)	* 12" sq. Multicolor VFT / Black Mastic (Room 307)
Lab ID # 543-00047-008			3) Jun-02-04 4) Jun-08-04	
32C		Not Analyzed	1) 2)	* 12" sq. Multicolor VFT / Black Mastic (Room 307)
Lab ID # 543-00047-009			3) Jun-02-04 4) Jun-08-04	
33A		None Detected	1) None Detected 2) 99-100% Calc, Bndr, Other m.p.	* 6" sq. Brown Baseboard / White Mastic (Bldg. 2000)
Lab ID # 543-00047-010A			3) Jun-02-04 4) Jun-08-04	Baseboard-Brown
33A		None Detected	1) None Detected 2) 99-100% Calc, Bndr, Other m.p.	* 6" sq. Brown Baseboard / White Mastic (Bldg. 2000)
Lab ID # 543-00047-010B			3) 4) Jun-08-04	Mastic-White
33B		None Detected	1) None Detected 2) 99-100% Calc, Bndr, Other m.p.	* 6" sq. Brown Baseboard / White Mastic (Bldg. 2000)
Lab ID # 543-00047-011A			3) Jun-02-04 4) Jun-08-04	Baseboard-Brown
33B		None Detected	1) None Detected 2) 99-100% Calc, Bndr, Other m.p.	
Lab ID # 543-00047-011B			3) 4) Jun-08-04	Mastic-White

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer_____ **Analyst**_____

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 24
Reg. Samples Analyzed: 16
Split Layers Analyzed: 14

Job Site / No. Solano College
44156

Report No. **044254**
Date Submitted: Jun-04-04
Date Reported: Jun-08-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD LAB
33C		None Detected	1)None Detected 2)99-100% Calc, Bndr, Other m.p.	* 6" sq. Brown Baseboard / White Mastic (Bldg. 2000)
Lab ID # 543-00047-012A			3) Jun-02-04 4) Jun-08-04	Baseboard-Brown
33C		None Detected	1)None Detected 2)99-100% Calc, Bndr, Other m.p.	
Lab ID # 543-00047-012B			3) 4) Jun-08-04	Mastic-White
34A	10-20%	Chrysotile	1)None Detected 2)80-90% Bndr, Calc, Other m.p.	* Gray putty (lab sinks) (Rm 304)
Lab ID # 543-00047-013			3) Jun-02-04 4) Jun-08-04	Putty-Grey
34B		Not Analyzed	1) 2)	* Gray putty (lab sinks) (Rm 303)
Lab ID # 543-00047-014			3) Jun-02-04 4) Jun-08-04	
34C		Not Analyzed	1) 2)	* Gray putty (lab sinks) (Rm 303)
Lab ID # 543-00047-015			3) Jun-02-04 4)Jun-08-04	
35A		None Detected	1)None Detected 2)99-100% Other m.p.	White drywall / white joint compound (Bldg 2100)
Lab ID # 543-00047-016A			3) Jun-02-04 4) Jun-08-04	Wallboard-White
35A	1-5%	Chrysotile	1)None Detected 2)95-99% Calc, Gyp, Mica	White drywall / white joint compound (Bldg 2100)
Lab ID # 543-00047-016B			3) 4)Jun-08-04	JointCom/Text-Off-White
35B		Not Analyzed	1) 2)	White drywall / white joint compound (Bldg 2100)
Lab ID # 543-00047-017			3) Jun-02-04 4)Jun-08-04	
35C		Not Analyzed	1) 2)	White drywall / white joint compound (Bldg 2100)
Lab ID # 543-00047-018			3) Jun-02-04 4)Jun-08-04	
36A	1-5%	Chrysotile	1)None Detected 2)95-99% Calc, Mica, Other m.p.	White drywall texture (Bldg 2100)
Lab ID # 543-00047-019			3) Jun-02-04 4)Jun-08-04	Texture-Off-White

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

ASBESTOS TEM LABORATORIES, INC. **1409 FIFTH STREET, BERKELEY, CA 94710** **(510) 528-0108**
www.asbestostemlabs.com *With Offices in Reno, NV (775) 359-3377*

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 24
Reg. Samples Analyzed: 16
Split Layers Analyzed: 14

Job Site / No. Solano College
44156

Report No. **044254**
Date Submitted: Jun-04-04
Date Reported: Jun-08-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
36B	Not Analyzed	1) 2)	White drywall texture (Bldg 2100)
Lab ID # 543-00047-020		3) Jun-02-04 4) Jun-08-04	
36C	Not Analyzed	1) 2)	White drywall texture (Bldg 2100)
Lab ID # 543-00047-021		3) Jun-02-04 4) Jun-08-04	
37A	None Detected	1) 99-100% Cellulose 2) <1% Other m.p.	* 12" sq. White Ceiling Tile / Tan Mastic Bldg 2100
Lab ID # 543-00047-022A		3) Jun-02-04 4) Jun-08-04	Ceiling Tile-Brown
37A	None Detected	1) None Detected 2) 99-100% Glue, Opq, Calc, Qtz	* 12" sq. White Ceiling Tile / Tan Mastic Bldg 2100
Lab ID # 543-00047-022B		3) 4) Jun-08-04	Glue-Yellow
37B	None Detected	1) 99-100% Cellulose 2) <1% Other m.p.	* 12" sq. White Ceiling Tile / Tan Mastic Bldg 2100
Lab ID # 543-00047-023A		3) Jun-02-04 4) Jun-08-04	Ceiling Tile-Brown
37B	None Detected	1) None Detected 2) 99-100% Glue, Opq, Calc, Qtz	* 12" sq. White Ceiling Tile / Tan Mastic Bldg 2100
Lab ID # 543-00047-023B		3) 4) Jun-08-04	Glue-Yellow
37C	None Detected	1) 99-100% Cellulose 2) <1% Other m.p.	* 12" sq. White Ceiling Tile / Tan Mastic Bldg 2100
Lab ID # 543-00047-024A		3) Jun-02-04 4) Jun-08-04	Ceiling Tile-Brown
37C	None Detected	1) None Detected 2) 99-100% Glue, Opq, Calc, Qtz	* 12" sq. White Ceiling Tile / Tan Mastic Bldg 2100
Lab ID # 543-00047-024B		3) 4) Jun-08-04	Mastic-Yellow
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer_____ **Analyst**_____

ASBESTOS TEM LABORATORIES, INC. **1409 FIFTH STREET, BERKELEY, CA 94710** **(510) 528-0108**
www.asbestostemlabs.com *With Offices in Reno, NV (775) 359-3377*

KLEINFELDER

(1)

PROJECT NO.	PROJECT NAME	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS	RECEIVING LAB:
44156	Solano College			PLM	Asbestos TEM
L.P. NO. (P.O. NO.)	SAMPLERS: (Signature/Number) Jennifer Gomez				INSTRUCTIONS/REMARKS: *FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX			
* 1	6-2-04		30A		1		X 4" BROWN BASEBOARD/BROWN MASTIC (Rm 306 (Hall
2			30B				X (Rm 30
3			30C				X
* 4			31A				X 12"sq WHITE CEILING TILES/BROWN MAS (ROOF
5			31B				X
6			31C				X
* 7			32A				X 12"sq MULTICOLOR VFT/BLACK MASTIC (Rm 307
8			32B				X
9			32C				X
* 10			33A				X 6" BROWN BASEBOARD/WHITE MASTIC (BLDG 2000)
11			33B				X
12			33C				X
* 13			34A				X GRAY PUTTY (LAB SINKS) (Rm 304
14			34B				X (Rm 303
15			34C				X (Rm 303)
* 16			35A				X WHITE DRYWALL/WHITE JOINT COMPOUND (BLDG 2100)
17			35B				X
18			35C				X
* 19			36A				X WHITE DRYWALL TEXTURE (BLDG 2100
20			36B				X

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Instructions/Remarks:	Send Results To:
[signature]	6/3/04			KLEINFELDER 780 CHADBOURNE, ROAD SUITE D FAIRFIELD, CA ~~94585-9648~~ 94534 (707) 429-4070
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	3-5 day	Attn: JENNIFER GOMEZ
	6/4/4 8:31	[signature]		
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)		

M-60 White - Sampler Canary - Return Copy To Shipper Pink - Lab Copy

CHAIN OF CUSTODY

№ 0299

KLEINFELDER

(2)

PROJECT NO.	PROJECT NAME	RECEIVING LAB:
44156	Solano College	Asbestos TEM

L.P. NO. (P.O. NO.)	SAMPLERS: (Signature/Number)
	Jennifer Gomez

ANALYSIS: PLM

INSTRUCTIONS/REMARKS: *FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CON-TAINERS	TYPE OF CON-TAINERS	PLM	INSTRUCTIONS/REMARKS
1	6-2-04		36C		1		X	↓
* 2	↓		37A		↓		X	12"sq white CERAMIC TILE / TAN BLK MASTIC 2:00
3	↓		37B		↓		X	↓
4	↓		37C		↓		X	↓
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	6/3/04	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	6-14-04 8:31	[signature]
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)

Instructions/Remarks: 3-5 days

Send Results To:
KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-9843~~ 94534
(707) 429-4070
Attn: JENNIFER GOMEZ

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

№ 0340

KLEINFELDER

(6)

PROJECT NO.	PROJECT NAME	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS	RECEIVING LAB:
44156	Solano College			PLM	Asbestos TEM
L.P. NO. (P.O. NO.)	SAMPLERS: (Signature/Number) Jennifer Gomez				INSTRUCTIONS/REMARKS: *FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX			
* 1	6/1/04		40A		1		WHITE TSI PUTTY (JOINT) (741)
2			40B				
3			40C				
* 4			41A				BROWN 4" BB / BROWN MASTIC (746)
5			41B				(Hall)
6			41C				(Hall)
* 7			42A				GRAY 4" BB / BROWN MASTIC (744)
8			42B				(744)
9			42C				(750)
* 10			43A				WHITE-RED 12"x12" VFT / BLACK MASTIC (Hall)
11			43B				" "
12			43C				" "
* 13			44A				YELLOW HVAC PUTTY (Plenum)
14			44B				
15			44C				
* 16			45A				WHITE 2'x4' CEILING TILES (Hall)
17			45B				
18			45C				
* 19			46A				BROWN STUCCO MATERIAL (EXT. 1500)
20			46B				

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Instructions/Remarks:	Send Results To:
[signature]	6/3/04		3-5 days	KLEINFELDER 780 CHADBOURNE, ROAD SUITE D FAIRFIELD, CA ~~94585-3643~~ 94534 (707) 429-4070 Attn: Jennifer Gomez
Relinquished by: (Signature)	Date/Time	Received by: (Signature) [signature] ATEN		
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature) 06-07-04A09:03 RCVD		

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY NO. 0254

07/08/2004 09:47 5105280109 ASBESTOS TEM LABS PAGE 02/07

40-46

(7)

KLEINFELDER

PROJECT NO.	PROJECT NAME	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS	RECEIVING LAB:
44156	Solano College			PLM	Asbestos TEM
L.P. NO. (P.O. NO.)	SAMPLERS: (Signature/Number) Tomfor Gomez				INSTRUCTIONS/REMARKS: * FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX				
1	6/2/04		46C		1		X	BROWN STUCCO MATERIAL (EXT. 1500)
2			47A				X	WHITE 4"x4" CERAMIC (RR 1670) WALL TILE/GRAY GROUT/TAN GROUT
3			47B				X	
4			47C				X	
5			48A				X	WHITE-BEIGE 12"x12" VFT/ YELLOW MASTIC/gray grout (Hall)
6			48B				X	(Hall)
7			48C				X	VFT/YELLOW MASTIC (1625)
8			49A				X	BEIGE 4" BB/WHITE MASTIC (Hall)
9			49B				X	(Hall)
10			49C				X	(1625)
11			50A				X	WHITE 2"x2" WALL TILE/WHITE GROUT/YELLOW GLUE (RR)
12			50B				X	
13			50C				X	
14			51A				X	BROWN 2"x2" CERAMIC FLOOR TILE/GRAY GROUT (RR)
15			51B				X	
16			51C				X	
17			52A				X	BROWN 4" BB/ BROWN MASTIC (1725)
18			52B				X	(Foyer [70])
19			52C				X	(S. HALL)
20			53A				X	BEIGE 4"x4" CERAMIC (RR FOYER) WALL TILE/BEIGE GROUT/WHITE GROUT

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Instructions/Remarks:	Send Results To:
[signature]	6/3/04		3-5 days	KLEINFELDER 780 CHADBOURNE, ROAD SUITE D FAIRFIELD, CA ~~94585-9643~~ 94534 (707) 429-4070 Attn: Tomfor Gomez
Relinquished by: (Signature)	Date/Time	Received by: (Signature) [signature]/ARCM		
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature) 06-07-04A09:03 RCVD		

AT-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY NO 03[illegible]

Accredited by
U.S. Dept. of Commerce
NVLAP
NVLAP Lab Code 200104-0

POLARIZED LIGHT MICROSCOPY ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez
Address: Kleinfelder - Fairfield
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 21
Reg. Samples Analyzed: 17
Split Layers Analyzed: 10
Job Site / No. Solano College 44156

Report No. 102193
Date Submitted: Jun-25-04
Date Reported: Jun-25-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
40A.	None Detected	1) 1-5% Fiberglass,Synthetics 2) 95-99% Bndr, Calc, Qtz	White TSI Putty Joint (741)
Lab ID # 890-00006-001A		3) 4) Jun-25-04	Less Fibrous Layer-Beige
40A.	None Detected	1) 10-20% Synthetics,Cellulose 2) 80-90% Bndr, Calc, Foil, Plastic	White TSI Putty Joint (741)
Lab ID # 890-00006-001B		3) 4)	More Fibrous Layer-Beige
40B.	None Detected	1) 1-5% Fiberglass,Synthetics 2) 95-99% Bndr, Calc, Qtz	White TSI Putty Joint (741)
Lab ID # 890-00006-002A		3) 4) Jun-25-04	Less Fibrous Layer-Beige
40B.	None Detected	1) 10-20% Synthetics,Cellulose 2) 80-90% Bndr, Calc, Foil, Plastic	White TSI Putty Joint (741)
Lab ID # 890-00006-002B		3) 4) Jun-25-04	More Fibrous Layer-Beige
40C.	None Detected	1) 1-5% Fiberglass,Synthetics 2) 95-99% Bndr, Calc, Qtz	White TSI Putty Joint (741)
Lab ID # 890-00006-003A		3) 4) Jun-25-04	Less Fibrous Layer-Beige
40C.	None Detected	1) 10-20% Synthetics,Cellulose 2) 80-90% Bndr, Calc, Foil, Plastic	White TSI Putty Joint (741)
Lab ID # 890-00006-003B		3) 4) Jun-25-04	More Fibrous Layer-Beige
41A.	None Detected	1) None Detected 2) 99-100% Bndr, Opq, Other m.p.	Brown BB / Brown Mastic (746)
Lab ID # 890-00006-004A		3) 4) Jun-25-04	Baseboard-Brown
41A.	None Detected	1) 2-10% Wollast,Talc 2) 90-98% Bndr, Opq, Other m.p.	Brown BB / Brown Mastic (746)
Lab ID # 890-00006-004B		3) 4) Jun-25-04	Mastic-Brown
41B.	None Detected	1) None Detected 2) 99-100% Bndr, Opq, Other m.p.	Brown BB / Brown Mastic (half)
Lab ID # 890-00006-005A		3) 4) Jun-25-04	Baseboard-Brown
41B.	None Detected	1) 2-10% Wollast,Talc 2) 90-98% Bndr, Opq, Other m.p.	Brown BB / Brown Mastic (half)
Lab ID # 890-00006-005B		3) 4) Jun-25-04	Mastic-Brown

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab Manager C. Neil Upchurch Analyst C. Neil Upchurch

ASBESTOS TEM LABORATORIES, INC. 1016 GREG STREET, SPARKS, NV 89431 (775) 359-3377
With Main Office in Berkley, CA (510) 528-0108

Accredited by
U.S. Dept. of Commerce
NVLAP
NVLAP Lab Code 200104-0

POLARIZED LIGHT MICROSCOPY ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder - Fairfield
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 21
Reg. Samples Analyzed: 17
Split Layers Analyzed: 10

Job Site / No. Solano College
44156

Report No. 102193
Date Submitted: Jun-25-04
Date Reported: Jun-25-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD	DESCRIPTION LAB
41C.		None Detected	1) None Detected 2) 99-100% Bndr, Opq, Other m.p.	Brown BB / Brown Mastic (hall)	
Lab ID # 890-00006-006A			3) 4) Jun-25-04	Baseboard-Brown	
41C.		None Detected	1) 2-10% Wollast,Talc 2) 90-98% Bndr, Opq, Other m.p.	Brown BB / Brown Mastic (hall)	
Lab ID # 890-00006-006B			3) 4) Jun-25-04	Mastic-Brn, Aged Yellow	
42A.		None Detected	1) None Detected 2) 99-100% Bndr, Opq, Other m.p.	Gray 4" BB / Brown Mastic (744)	
Lab ID # 890-00006-007A			3) 4) Jun-25-04	Baseboard-Grey	
42A.		None Detected	1) 2-10% Wollast,Talc 2) 90-98% Bndr, Opq, Other m.p.	Gray 4" BB / Brown Mastic (744)	
Lab ID # 890-00006-007B			3) 4) Jun-25-04	Mastic-Brown	
42B.		None Detected	1) None Detected 2) 99-100% Bndr, Opq, Other m.p.	Gray 4" BB / Brown Mastic (744)	
Lab ID # 890-00006-008A			3) 4) Jun-25-04	Baseboard-Grey	
42B.		None Detected	1) 2-10% Wollast,Talc 2) 90-98% Bndr, Opq, Other m.p.	Gray 4" BB / Brown Mastic (744)	
Lab ID # 890-00006-008B			3) 4) Jun-25-04	Mastic-Brown	
42C.		None Detected	1) None Detected 2) 99-100% Bndr, Opq, Other m.p.	Gray 4" BB / Brown Mastic (750)	
Lab ID # 890-00006-009A			3) 4) Jun-25-04	Baseboard-Grey	
42C.		None Detected	1) 2-10% Wollast,Talc 2) 90-98% Bndr, Opq, Other m.p.	Gray 4" BB / Brown Mastic (750)	
Lab ID # 890-00006-009B			3) 4) Jun-25-04	Mastic-Brown	
43A.	1-5%	Chrysotile	1) None Detected 2) 95-99% Calc, Bndr, Other m.p.	White Red 12 x 12 VFT Black Mastic (hall)	
Lab ID # 890-00006-010A			3) 4) Jun-25-04	Floor Tile-White, Red Streaks	
43A.	1-5%	Chrysotile	1) None Detected 2) 95-99% Tar, Bndr, Calc, Other m.p.	White Red 12 x 12 VFT Black Mastic (hall)	
Lab ID # 890-00006-010B			3) 4) Jun-25-04	Mastic-Black	

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab Manager C. Neil Upchurch Analyst C. Neil Upchurch

ASBESTOS TEM LABORATORIES, INC. 1016 GREG STREET, SPARKS, NV 89431 (775) 359-3377
With Main Office in Berkley, CA (510) 528-0108

Accredited by U.S. Dept. of Commerce
NVLAP
NVLAP Lab Code 200104-0

POLARIZED LIGHT MICROSCOPY ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

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SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
43B. Lab ID # 890-00006-011		Not Analyzed	1) 2) 3) 4) Jun-25-04	White Red 12 x 12 VFT Black Mastic (hall)
43C. Lab ID # 890-00006-012		Not Analyzed	1) 2) 3) 4) Jun-25-04	White Red 12 x 12 VFT Black Mastic (hall)
44A. Lab ID # 890-00006-013	5-10%	Chrysotile	1) <1% Fiberglass 2) 90-95% Bndr, Opq, Calc, Other m.p. 3) 4) Jun-25-04	Yellow HVAC Putty (Plenum) / Soft, Gummy Coating-Beige
44B. Lab ID # 890-00006-014		Not Analyzed	1) 2) 3) 4) Jun-25-04	Yellow HVAC Putty (plenum)
44C. Lab ID # 890-00006-015		Not Analyzed	1) 2) 3) 4) Jun-25-04	Yellow HVAC Putty (plenum)
45A. Lab ID # 890-00006-016		None Detected	1) 60-80% Cellulose, Fiberglass 2) 20-40% Bndr, PlastFoam 3) 4) Jun-25-04	White 2x4 Ceiling Tiles (hall) / Ceiling Tile-Grey Interior
45B. Lab ID # 890-00006-017		None Detected	1) 60-80% Cellulose, Fiberglass 2) 20-40% Bndr, PlastFoam 3) 4) Jun-25-04	White 2x4 Ceiling Tiles (hall) / Ceiling Tile-Grey Interior
45C. Lab ID # 890-00006-018		None Detected	1) 60-80% Cellulose, Fiberglass 2) 20-40% Bndr, PlastFoam 3) 4) Jun-25-04	White 2x4 Ceiling Tiles (hall) / Ceiling Tile-Grey Interior
46A. Lab ID # 890-00006-019		None Detected	1) None Detected 2) 99-100% Qtz, Calc, Opq, Other m.p. 3) 4) Jun-25-04	Brown Stucco Material (ext 1500) / Stucco-Brown
46B. Lab ID # 890-00006-020		None Detected	1) None Detected 2) 99-100% Qtz, Calc, Opq, Other m.p. 3) 4) Jun-25-04	Brown Stucco Material (ext 1500) / Stucco-Brown

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

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POLARIZED LIGHT MICROSCOPY ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

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Split Layers Analyzed: 10

Job Site / No. Solano College
44156

Report No. 102193
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Date Reported: Jun-25-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
46C.	None Detected	1) None Detected 2) 99-100% Qtz, Calc, Opq, Other m.p.	Brown Stucco Material (ext 1500)
Lab ID # 890-00006-021		3) 4) Jun-25-04	Stucco-Brown
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab Manager C. Neil Upchurch Analyst C. Neil Upchurch

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With Main Office in Berkley, CA (510) 528-0108

4f-53

ASBESTOS TEM LABORATORIES, INC.

EPA Method 600/R-93/116
Polarized Light Microscopy
Analytical Report

Laboratory Job # 890-005

Report No. 102177

1016 Greg Street
Sparks, NV 89431
(775) 359-3377
FAX (775) 359-2798

With Main Office Located At:
1409 Fifth Street, Berkeley, CA 94710
Ph. (510) 528-0108 Fax (510) 528-0109

ASBESTOS TEM LABORATORIES, INC

Accredited by
U.S. Dept. of Commerce
NVLAP
NVLAP Lab Code 200104-0

Jun-23-04

Ms. Jennifer Gomez
Kleinfelder - Fairfield
780 Chadbourne Road, Suite D
Fairfield, CA 94534

RE: LABORATORY JOB # 890-005
Polarized light microscopy analytical results for 21 bulk sample(s) with 34 sample split(s)
Job Site: Solano College
Job No.: 44156
Report No.: 102177

Enclosed please find the bulk material analytical results for one or more samples submitted for asbestos analysis. The analyses were performed in accordance with EPA Method 600/R-93/116 or 600/M4-82-020 for the determination of asbestos in bulk building materials by polarized light microscopy (PLM). Please note that while PLM analysis is commonly performed on non-friable and fine grained materials such as floor tiles and dust, the EPA method recognizes that PLM is subject to limitations. In these situations, accurate results may only be obtainable through the use of more sophisticated and accurate techniques such as transmission electron microscopy (TEM) or X-ray diffraction (XRD).

Prior to analysis, samples are logged-in and all data pertinent to the sample recorded. The samples are checked for damage or disruption of any chain-of-custody seals. A unique laboratory ID number is assigned to each sample. A hard copy log-in sheet containing all pertinent information concerning the sample is generated. This and all other relevant paper work are kept with the sample throughout the analytical procedures to assure proper analysis.

Each sample is opened in a class 100 HEPA negative air hood. A representative sampling of the material is selected and placed onto a glass microscope slide containing a drop of refractive index oil. The glass slide is placed under a polarizing light microscope where standard mineralogical techniques are used to analyze and quantify the various materials present, including asbestos. The data is then compiled into standard report format and subjected to a thorough quality assurance check before the information is released to the client.

For possible future reference, samples are normally kept on file for one year.

Sincerely Yours,

C. Neil Upchurch

Lab Manager
ASBESTOS TEM LABORATORIES, INC.

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POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder - Fairfield
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 21
Reg. Samples Analyzed: 21
Split Layers Analyzed: 34

Job Site / No. Solano College
44156

Report No. 102177
Date Submitted: Jun-23-04
Date Reported: Jun-23-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
47A. Lab ID # 890-00005-001A	None Detected	1)None Detected 2) 3) 4)	White 4"x4" Ceramic (RR 1610) Wall Tile / Gray Grout / White Grout Ceramic Tile-White
47A. Lab ID # 890-00005-001B	None Detected	1)None Detected 2)99-100% Calc, Opq, Other m.p. 3) 4) Jun-23-04	White 4"x4" Ceramic (RR 1610) Wall Tile / Gray Grout / White Grout Grout-White
47A. Lab ID # 890-00005-001C	None Detected	1)None Detected 2)99-100% Qtz, Calc, Other m.p. 3) 4)Jun-23-04	White 4"x4" Ceramic (RR 1610) Wall Tile / Gray Grout / White Grout Grout-Grey
47B. Lab ID # 890-00005-002A	None Detected	1)None Detected 2) 3) 4)Jun-23-04	White 4"x4" Ceramic (RR 1610) Wall Tile / Gray Grout / White Grout Ceramic Tile-White
47B. Lab ID # 890-00005-002B	None Detected	1)None Detected 2)99-100% Calc, Opq, Other m.p. 3) 4)Jun-23-04	White 4"x4" Ceramic (RR 1610) Wall Tile / Gray Grout / White Grout Grout-White
47B. Lab ID # 890-00005-002C	None Detected	1)None Detected 2)99-100% Qtz, Calc, Other m.p. 3) 4)Jun-23-04	White 4"x4" Ceramic (RR 1610) Wall Tile / Gray Grout / White Grout Grout-Grey
47C. Lab ID # 890-00005-003A	None Detected	1)None Detected 2) 3) 4)Jun-23-04	White 4"x4" Ceramic (RR 1610) Wall Tile / Gray Grout / White Grout Ceramic Tile-White
47C. Lab ID # 890-00005-003B	None Detected	1)None Detected 2)99-100% Calc, Opq, Other m.p. 3) 4)Jun-23-04	White 4"x4" Ceramic (RR 1610) Wall Tile / Gray Grout / White Grout Grout-White
47C. Lab ID # 890-00005-003C	None Detected	1)None Detected 2)99-100% Qtz, Calc, Other m.p. 3) 4)Jun-23-04	White 4"x4" Ceramic (RR 1610) Wall Tile / Gray Grout / White Grout Grout-Grey
48A. Lab ID # 890-00005-004A	None Detected	1)None Detected 2)99-100% Calc, Bndr, Other m.p. 3) 4)Jun-23-04	White-Beige 12"x12" VFT / Yellow Mastic / Gray Grout (Hall) Floor Tile-White

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab Manager C. Neil Upchurch Analyst C. Neil Upchurch

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EPA Method 600/R-93/116 or 600/M4-82-020

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SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
48A.	None Detected	1)None Detected 2)99-100% Bndr, Calc, Other m.p.	White-Beige 12"x12" VFT / Yellow Mastic / Gray Grout (Hall)
Lab ID # 890-00005-004B		3) 4) Jun-23-04	Mastic-Yellow
48A.	None Detected	1)None Detected 2)99-100% Qtz, Calc, Other m.p.	White-Beige 12"x12" VFT / Yellow Mastic / Gray Grout (Hall)
Lab ID # 890-00005-004C		3) 4) Jun-23-04	Grout-Grey
48B.	None Detected	1)None Detected 2)99-100% Calc, Bndr, Other m.p.	White-Beige 12"x12" VFT / Yellow Mastic / Gray Grout (Hall)
Lab ID # 890-00005-005A		3) 4) Jun-23-04	Floor Tile-White
48B.	None Detected	1)None Detected 2)99-100% Bndr, Calc, Other m.p.	White-Beige 12"x12" VFT / Yellow Mastic / Gray Grout (Hall)
Lab ID # 890-00005-005B		3) 4) Jun-23-04	Mastic-Yellow
48B.	None Detected	1)None Detected 2)99-100% Qtz, Calc, Other m.p.	White-Beige 12"x12" VFT / Yellow Mastic / Gray Grout (Hall)
Lab ID # 890-00005-005C		3) 4) Jun-23-04	Grout-Grey
48C.	None Detected	1)None Detected 2)99-100% Calc, Bndr, Other m.p.	VFT Yellow Mastic (1625)
Lab ID # 890-00005-006A		3) 4) Jun-23-04	Floor Tile-White
48C.	None Detected	1)None Detected 2)99-100% Bndr, Calc, Other m.p.	VFT Yellow Mastic (1625)
Lab ID # 890-00005-006B		3) 4) Jun-23-04	Mastic-Yellow
48C.	None Detected	1)None Detected 2)99-100% Qtz, Calc, Other m.p.	VFT Yellow Mastic (1625)
Lab ID # 890-00005-006C		3) 4) Jun-23-04	Grout-Grey
49A.	None Detected	1)None Detected 2)99-100% Calc, Bndr, Other m.p.	Beige 4" BB/ White Mastic (Hall)
Lab ID # 890-00005-007A		3) 4) Jun-23-04	Floor Tile-White
49A.	None Detected	1)None Detected 2)99-100% Bndr, Calc, Other m.p.	Beige 4" BB/ White Mastic (Hall)
Lab ID # 890-00005-007B		3) 4) Jun-23-04	Mastic-Yellow

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

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49A.	None Detected	1)None Detected 2)99-100% Qtz, Calc, Other m.p.	Beige 4" BB/ White Mastic (Hall)
Lab ID # 890-00005-007C		3) 4) Jun-23-04	Grout-Grey
49B.	None Detected	1)None Detected 2)99-100% Bndr, Opq, Calc	Beige 4" BB/ White Mastic (Hall)
Lab ID # 890-00005-008A		3) 4) Jun-23-04	Baseboard-Beige
49B.	None Detected	1)None Detected 2)99-100% Bndr, Calc, Gyp, Other m.p.	Beige 4" BB/ White Mastic (Hall)
Lab ID # 890-00005-008B		3) 4) Jun-23-04	Mastic-White
49C.	None Detected	1)None Detected 2)99-100% Bndr, Opq, Calc	Beige 4" BB/ White Mastic (1625)
Lab ID # 890-00005-009A		3) 4) Jun-23-04	Baseboard-Beige
49C.	None Detected	1)None Detected 2)99-100% Bndr, Calc, Gyp, Other m.p.	Beige 4" BB/ White Mastic (1625)
Lab ID # 890-00005-009B		3) 4) Jun-23-04	Mastic-White
50A.	None Detected	1)None Detected 2)99-100% Silica Glass, Opq, Other m.p.	White 2"x2" Wall Tile / White Grout /Yellow Glue (NRR)
Lab ID # 890-00005-010A		3) 4) Jun-23-04	Ceramic Tile-White
50A.	None Detected	1)None Detected 2)99-100% Qtz, Calc, Other m.p.	White 2"x2" Wall Tile / White Grout /Yellow Glue (NRR)
Lab ID # 890-00005-010B		3) 4) Jun-23-04	Grout-White
50A.	None Detected	1)None Detected 2)99-100% Bndr, Calc, Other m.p.	White 2"x2" Wall Tile / White Grout /Yellow Glue (NRR)
Lab ID # 890-00005-010C		3) 4) Jun-23-04	Mastic-Yellow
50B.	None Detected	1)None Detected 2)99-100% Silica Glass, Opq, Other m.p.	White 2"x2" Wall Tile / White Grout /Yellow Glue (NRR)
Lab ID # 890-00005-011A		3) 4) Jun-23-04	Ceramic Tile-White
50B.	None Detected	1)None Detected 2)99-100% Qtz, Calc, Other m.p.	White 2"x2" Wall Tile / White Grout /Yellow Glue
Lab ID # 890-00005-011B		3) 4) Jun-23-04	Grout-White

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50B.	None Detected	1)None Detected 2)99-100% Bndr, Calc, Other m.p.	White 2"x2" Wall Tile / White Grout /Yellow Glue
Lab ID # 890-00005-011C		3) 4) Jun-23-04	Mastic-Yellow
50C.	None Detected	1)None Detected 2)99-100% Silica Glass, Opq, Other m.p.	White 2"x2" Wall Tile / White Grout /Yellow Glue (NRR)
Lab ID # 890-00005-012A		3) 4) Jun-23-04	Ceramic Tile-White
50C.	None Detected	1)None Detected 2)99-100% Qtz, Calc, Other m.p.	White 2"x2" Wall Tile / White Grout /Yellow Glue
Lab ID # 890-00005-012B		3) 4) Jun-23-04	Grout-White
50C.	None Detected	1)None Detected 2)99-100% Bndr, Calc, Other m.p.	White 2"x2" Wall Tile / White Grout /Yellow Glue
Lab ID # 890-00005-012C		3) 4) Jun-23-04	Mastic-Yellow
51A.	None Detected	1)None Detected 2)99-100% Silica Glass, Opq, Other m.p.	Brown 2"x2" Ceramic Floor Tile / Gray Grout (RR)
Lab ID # 890-00005-013A		3) 4)Jun-23-04	Ceramic Tile-Brown Spots
51A.	None Detected	1)None Detected 2)99-100% Qtz, Calc, Opq, Other m.p.	Brown 2"x2" Ceramic Floor Tile / Gray Grout (RR)
Lab ID # 890-00005-013B		3) 4) Jun-23-04	Grout-Dark Brown
51B.	None Detected	1)None Detected 2)99-100% Silica Glass, Opq, Other m.p.	Brown 2"x2" Ceramic Floor Tile / Gray Grout (RR)
Lab ID # 890-00005-014A		3) 4)Jun-23-04	Ceramic Tile-Brown Spots
51B.	None Detected	1)None Detected 2)99-100% Qtz, Calc, Opq, Other m.p.	Brown 2"x2" Ceramic Floor Tile / Gray Grout (RR)
Lab ID # 890-00005-014B		3) 4)Jun-23-04	Grout-Dark Brown
51C.	None Detected	1)None Detected 2)99-100% Silica Glass, Opq, Other m.p.	Brown 2"x2" Ceramic Floor Tile / Gray Grout (RR)
Lab ID # 890-00005-015A		3) 4)Jun-23-04	Ceramic Tile-Brown Spots
51C.	None Detected	1)None Detected 2)99-100% Qtz, Calc, Opq, Other m.p.	Brown 2"x2" Ceramic Floor Tile / Gray Grout (RR)
Lab ID # 890-00005-015B		3) 4)Jun-23-04	Grout-Dark Brown

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab Manager C. Neil Upchurch **Analyst** C. Neil Upchurch

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52A.	None Detected	1)None Detected 2)99-100% Calc, Bndr, Other m.p.	Brown 4" BB / Brown Mastic (1725)
Lab ID # 890-00005-016A		3) 4) Jun-23-04	Baseboard-Brown
52A.	None Detected	1)2-10% Wollast,Talc 2)90-98% Bndr, Opq, Other m.p.	Brown 4" BB / Brown Mastic (1725)
Lab ID # 890-00005-016B		3) 4) Jun-23-04	Mastic-Brown
52B.	None Detected	1)None Detected 2)99-100% Calc, Bndr, Other m.p.	Brown 4" BB / Brown Mastic (South Hall)
Lab ID # 890-00005-017A		3) 4) Jun-23-04	Baseboard-Brown
52B.	None Detected	1)2-10% Wollast,Talc 2)90-98% Bndr, Opq, Other m.p.	Brown 4" BB / Brown Mastic (South Hall)
Lab ID # 890-00005-017B		3) 4) Jun-23-04	Mastic-Brown
52C.	None Detected	1)None Detected 2)99-100% Calc, Bndr, Other m.p.	Brown 4" BB / Brown Mastic (South Hall)
Lab ID # 890-00005-018A		3) 4)Jun-23-04	Baseboard-Brown
52C.	None Detected	1)2-10% Wollast,Talc 2)90-98% Bndr, Opq, Other m.p.	Brown 4" BB / Brown Mastic (South Hall)
Lab ID # 890-00005-018B		3) 4) Jun-23-04	Mastic-Brown
53A.	None Detected	1)None Detected 2)99-100% Silica Glass, Opq, Other m.p.	Beige 4" x 4" Ceramic (WRR Foyer) Wall Tile /Gray Grout /White Grout
Lab ID # 890-00005-019A		3) 4)Jun-23-04	Ceramic Tile-Beige Surface
53A.	None Detected	1)20-30% Wollast 2)70-80% Calc, Opq, Other m.p.	Beige 4" x 4" Ceramic (WRR Foyer) Wall Tile /Gray Grout /White Grout
Lab ID # 890-00005-019B		3) 4)Jun-23-04	Grout-Grey
53A.	None Detected	1)None Detected 2)99-100% Qtz, Calc, Other m.p.	Beige 4" x 4" Ceramic (WRR Foyer) Wall Tile /Gray Grout /White Grout
Lab ID # 890-00005-019C		3) 4)Jun-23-04	Grout-White
53B.	None Detected	1)None Detected 2)99-100% Silica Glass, Opq, Other m.p.	Beige 4" x 4" Ceramic (MRR Foyer) Wall Tile /Gray Grout /White Grout
Lab ID # 890-00005-020A		3) 4)Jun-23-04	Ceramic Tile-Beige Surface

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab Manager C. Neil Upchurch **Analyst** C. Neil Upchurch

Accredited by
U.S. Dept. of Commerce
NVLAP
NVLAP Lab Code 200104-0

POLARIZED LIGHT MICROSCOPY ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder - Fairfield
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 21
Reg. Samples Analyzed: 21
Split Layers Analyzed: 34

Job Site / No. Solano College
44156

Report No. 102177
Date Submitted: Jun-23-04
Date Reported: Jun-23-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
53B.		None Detected	1)20-30% Wollast 2)70-80% Calc, Opq, Other m.p.	Beige 4" x 4" Ceramic (MRR Foyer) Wall Tile /Gray Grout /White Grout
Lab ID # 890-00005-020B			3) 4) Jun-23-04	Grout-Grey
53B.		None Detected	1)None Detected 2)99-100% Qtz, Calc, Other m.p.	Beige 4" x 4" Ceramic (MRR Foyer) Wall Tile /Gray Grout /White Grout
Lab ID # 890-00005-020C			3) 4) Jun-23-04	Grout-White
53C.		None Detected	1)None Detected 2)99-100% Silica Glass, Opq, Other m.p.	Beige 4" x 4" Ceramic (WRR Foyer) Wall Tile /Gray Grout /White Grout
Lab ID # 890-00005-021A			3) 4) Jun-23-04	Ceramic Tile-Beige Surface
53C.		None Detected	1)20-30% Wollast 2)70-80% Calc, Opq, Other m.p.	Beige 4" x 4" Ceramic (WRR Foyer) Wall Tile /Gray Grout /White Grout
Lab ID # 890-00005-021B			3) 4) Jun-23-04	Grout-Grey
53C.		None Detected	1)None Detected 2)99-100% Qtz, Calc, Other m.p.	Beige 4" x 4" Ceramic (WRR Foyer) Wall Tile /Gray Grout /White Grout
Lab ID # 890-00005-021C			3) 4)Jun-23-04	Grout-White
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab Manager C. Neil Upchurch **Analyst** C. Neil Upchurch

ASBESTOS TEM LABORATORIES, INC. 1016 GREG STREET, SPARKS, NV 89431 (775) 359-3377
With Main Office in Berkley, CA (510) 528-0108

KLEINFELDER

(4)

PROJECT NO.	PROJECT NAME
44156	Solano College

L.P. NO. (P.O. NO.):

SAMPLERS: (Signature/Number) Jennifer Gomez

RECEIVING LAB: Asbestos TEM

INSTRUCTIONS/REMARKS: *FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS PLM	
1	6/2/04		46C		1		X	BROWN STUCCO MATRIX (EXT-500)
* 2			47A				X	WHITE 4"x4" CERAMIC WALL TILE/GRAY GROUT/WHITE GROUT (RR 1610)
3			47B				X	
4			47C				X	
* 5			48A				X	WHITE-BEIGE 2"x12" VFT/YELLOW MASTIC/gray grout (Hall)
6			48B				X	(Hall)
7			48C				X	VFT/YELLOW MASTIC (1625)
* 8			49A				X	BEIGE 4" BB/WHITE MASTIC (Hall)
9			49B				X	(Hall)
10			49C				X	(1625)
* 11			50A				X	WHITE 2"x2" WALL TILE/WHITE GROUT/YELLOW GLUE (RR)
12			50B				X	
13			50C				X	
* 14			51A				X	BROWN 2"x2" CERAMIC FLOOR TILE/GRAY GROUT (RR)
15			51B				X	
16			51C				X	
* 17			52A				X	BROWN 4" BB/BROWN MASTIC (1725)
18			52B				X	(Foyer 170)
19			52C				X	(S. HALL)
20			53A				X	BEIGE 4"x4" CERAMIC (RR FOYER) WALL TILE/GRAY GROUT/WHITE GROUT

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Jennifer Gomez	6/3/04	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
		GC / ARCH
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
		06-07-04A09:03 RCVD

Instructions/Remarks: 3-5 days

Send Results To:

KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-9043~~ 94534
(707) 429-4070

Attn: Jennifer Gomez

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

№ 0352

(8)

KLEINFELDER

PROJECT NO.	PROJECT NAME	RECEIVING LAB:
44156	Solano College	Asbestos TEM
L.P. NO. (P.O. NO.)	SAMPLERS: (Signature/Number)	INSTRUCTIONS/REMARKS
	Jennifer Gomez	*FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CON-TAINERS	TYPE OF CON-TAINERS	ANALYSIS PLM	
1	6/2/04		53B		1		X	BEIGE 4"x4" CERAMIC WALL TILE/GRAY GROUT/TAN GROUT (CARR FOYER
2			53C				X	(CARR FOYER)
* 3			54A				X	YELLOW BROWN 2"x2" CERAMIC FLOOR TILE (CARR foyer)
4			54B				X	"
5			54C				X	(CARR foyer
6			55A				X	WHITE SHEETROCK/WHITE JOINT COMPOUND (JANITOR CLOSET)
7			55B				X	(SE Hall)
8			55C				X	(SW hall)
* 9			58A				X	WHITE 2'x4' CERAMIC TILES (SW Hall)
10			58B				X	
11			58C				X	
* 12			57A				X	GRAY 12"x6" CERAMIC WALL TILE/WHITE GROUT/GRAY GROUT (WOMEN'S
13			57B				X	
14			57C				X	
* 15			59A				X	~~WHITE~~ TAN 12"x12" WALL TILE/BROWN MATIC (1725)
16			59B				X	(1723)
17			59C				X	(1724)
* 18			60A				X	WHITE STUCCO/GRAY GROUT (FAC WKR)
19			60B				X	
20			60C				X	(FAC MAR)

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	6/3/04	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
		QC ITEM
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
		06-07-04 A09:03 RCVD

Instructions/Remarks:

3-5 days

Send Results To:

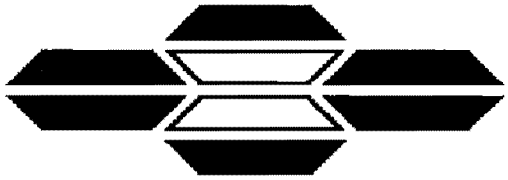
KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-9643~~ 94534
(707) 429-4070
Attn: JENNIFER GOMEZ

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

№ 0353

54-60



ASBESTOS TEM LABORATORIES, INC.

EPA Interim Method
Polarized Light Microscopy
Analytical Report

Laboratory Job # 543-00055

1409 Fifth Street
Berkeley, CA 94710
(510) 528-0108
FAX (510) 528-0109
www.asbestostemlabs.com

With Branch Offices Located At:
1016 GREG STREET, SPARKS, NV 89431
Ph. (775) 359-3377

ASBESTOS TEM LABORATORIES, INC

Accredited by
U.S. Dept. of Commerce
NVLAP
CA DOHS ELAP

Jun-18-04

Ms. Jennifer Gomez
Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

RE: LABORATORY JOB # 543-00055
Polarized light microscopy analytical results for 16 bulk sample(s) with 13 sample split(s)
Job Site: Solano College
Job No.: 44156

Enclosed please find the bulk material analytical results for one or more samples submitted for asbestos analysis. The analyses were performed in accordance with EPA Method 600/R-93/116 or 600/M4-82-020 for the determination of asbestos in bulk building materials by polarized light microscopy (PLM). Please note that while PLM analysis is commonly performed on non-friable and fine grained materials such as floor tiles and dust, the EPA method recognizes that PLM is subject to limitations. In these situations, accurate results may only be obtainable through the use of more sophisticated and accurate techniques such as transmission electron microscopy (TEM) or X-ray diffraction (XRD).

Prior to analysis, samples are logged-in and all data pertinent to the sample recorded. The samples are checked for damage or disruption of any chain-of-custody seals. A unique laboratory ID number is assigned to each sample. A hard copy log-in sheet containing all pertinent information concerning the sample is generated. This and all other relevant paper work are kept with the sample throughout the analytical procedures to assure proper analysis.

Each sample is opened in a class 100 HEPA negative air hood. A representative sampling of the material is selected and placed onto a glass microscope slide containing a drop of refractive index oil. The glass slide is placed under a polarizing light microscope where standard mineralogical techniques are used to analyze and quantify the various materials present, including asbestos. The data is then compiled into standard report format and subjected to a thorough quality assurance check before the information is released to the client.

Sincerely Yours,

Stephen A Shaffer

Lab Manager
ASBESTOS TEM LABORATORIES, INC.

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 18
Reg. Samples Analyzed: 16
Split Layers Analyzed: 13

Job Site / No. Solano College
44156

Report No. **044311**
Date Submitted: Jun-07-04
Date Reported: Jun-18-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD LAB
54A. Lab ID # 543-00055-001		None Detected	1)None Detected 2)99-100% Calc, Qtz, Other m.p. 3) Jun-02-04 4) Jun-18-04	yellow brown 2x2 ceramic floor tile (wrr foyer) Floor Tile-Off-White
54B. Lab ID # 543-00055-002		None Detected	1)None Detected 2)99-100% Calc, Qtz, Other m.p. 3) Jun-02-04 4) Jun-18-04	yellow brown 2x2 ceramic floor tile (wrr foyer) Floor Tile-Off-White
54C. Lab ID # 543-00055-003		None Detected	1)None Detected 2)99-100% Calc, Qtz, Other m.p. 3) Jun-02-04 4) Jun-18-04	yellow brown 2x2 ceramic floor tile (wrr foyer) Floor Tile-Off-White
55A. Lab ID # 543-00055-004A		None Detected	1)1-5% Cellulose 2)95-99% Gyp, Other m.p. 3) Jun-02-04 4) Jun-18-04	white sheetrock white joint compound (janitor closet) Sheetrock-White
55A. Lab ID # 543-00055-004B	1-5%	Chrysotile	1)None Detected 2)95-99% Calc, Bndr, Mica, Other m.p. 3) 4)Jun-18-04	white sheetrock white joint compound (janitor closet) JointCom/Text-White
55B. Lab ID # 543-00055-005		Not Analyzed	1) 2) 3) Jun-02-04 4) Jun-18-04	white sheetrock white joint compound (janitor closet)
55C. Lab ID # 543-00055-006		Not Analyzed	1) 2) 3) Jun-02-04 4)Jun-18-04	white sheetrock white joint compound (janitor closet)
58A. Lab ID # 543-00055-007		None Detected	1)96-100% Cellulose,Mineral Wool 2)<1% Other m.p. 3) Jun-02-04 4)Jun-18-04	white 2x2 ceiling tiles (sw hall) Ceiling Tile-Grey
58B. Lab ID # 543-00055-008		None Detected	1)96-100% Cellulose,Mineral Wool 2)<1% Other m.p. 3) Jun-02-04 4)Jun-18-04	white 2x2 ceiling tiles (sw hall) Ceiling Tile-Grey
58C. Lab ID # 543-00055-009		None Detected	1)96-100% Cellulose,Mineral Wool 2)<1% Other m.p. 3) Jun-02-04 4)Jun-18-04	white 2x2 ceiling tiles (sw hall) Ceiling Tile-Grey

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 18
Reg. Samples Analyzed: 16
Split Layers Analyzed: 13

Job Site / No. Solano College
44156

Report No. **044311**
Date Submitted: Jun-07-04
Date Reported: Jun-18-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD LAB
57A. Lab ID # 543-00055-010A	None Detected	1)None Detected 2)99-100% Calc, Qtz, Other m.p. 3) Jun-02-04 4) Jun-18-04	gray 12x6 ceramic wall tile white grout, (w locker gray grout) Wall Tile-Grey
57A. Lab ID # 543-00055-010B	None Detected	1)None Detected 2)99-100% Calc, Qtz, Other m.p. 3) 4) Jun-18-04	gray 12x6 ceramic wall tile white grout, (w locker gray grout) Underlayer-Tan
57A. Lab ID # 543-00055-010C	None Detected	1)None Detected 2)99-100% Calc, Qtz, Other m.p. 3) 4) Jun-18-04	gray 12x6 ceramic wall tile white grout, (w locker gray grout) Grout-White
57B. Lab ID # 543-00055-011A	None Detected	1)None Detected 2)99-100% Calc, Qtz, Other m.p. 3) Jun-02-04 4) Jun-18-04	gray 12x6 ceramic wall tile white grout, (w locker gray grout) Wall Tile-Grey
57B. Lab ID # 543-00055-011B	None Detected	1)None Detected 2)99-100% Calc, Qtz, Other m.p. 3) 4)Jun-18-04	 Underlayer-Tan
57B. Lab ID # 543-00055-011C	None Detected	1)None Detected 2)99-100% Calc, Qtz, Other m.p. 3) 4) Jun-18-04	 Grout-White
57C. Lab ID # 543-00055-012A	None Detected	1)None Detected 2)99-100% Calc, Qtz, Other m.p. 3) Jun-02-04 4)Jun-18-04	gray 12x6 ceramic wall tile white grout, (w locker gray grout) Wall Tile-Grey
57C. Lab ID # 543-00055-012B	None Detected	1)None Detected 2)99-100% Calc, Qtz, Other m.p. 3) 4)Jun-18-04	 Underlayer-Tan
57C. Lab ID # 543-00055-012C	None Detected	1)None Detected 2)99-100% Calc, Qtz, Other m.p. 3) 4)Jun-18-04	 Grout-White
59A. Lab ID # 543-00055-013A	None Detected	1)95-99% Cellulose 2)1-5% Other m.p., Other m.p. 3) Jun-02-04 4)Jun-18-04	tan 12x12 wall tile brown mastic Wall Tile-Brown

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer_____ **Analyst**_____

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 18
Reg. Samples Analyzed: 16
Split Layers Analyzed: 13

Job Site / No. Solano College
44156

Report No. **044311**
Date Submitted: Jun-07-04
Date Reported: Jun-18-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD LAB
59A.	**None Detected**	1) 5-10% Wollast 2) 90-95% Glue, Other m.p.	tan 12x12 wall tile brown mastic
Lab ID # 543-00055-013B		3) 4) Jun-18-04	Mastic-Brown
59B.	**None Detected**	1) 95-99% Cellulose 2) 1-5% Other m.p., Other m.p.	tan 12x12 wall tile brown mastic
Lab ID # 543-00055-014A		3) Jun-02-04 4) Jun-18-04	Wall Tile-Brown
59B.	**None Detected**	1) 5-10% Wollast 2) 90-95% Glue, Other m.p.	
Lab ID # 543-00055-014B		3) 4) Jun-18-04	Mastic-Brown
59C.	**None Detected**	1) 95-99% Cellulose 2) 1-5% Other m.p., Other m.p.	tan 12x12 wall tile brown mastic
Lab ID # 543-00055-015A		3) Jun-02-04 4) Jun-18-04	Wall Tile-Brown
59C.	**None Detected**	1) 5-10% Wollast 2) 90-95% Glue, Other m.p.	
Lab ID # 543-00055-015B		3) 4) Jun-18-04	Mastic-Brown
60A.	**None Detected**	1) None Detected 2) 99-100% Calc, Mica, Qtz, Other m.p.	white stucco gray grout (fac wrr)
Lab ID # 543-00055-016A		3) Jun-02-04 4) Jun-18-04	Stucco-Off-White
60A.	**None Detected**	1) None Detected 2) 99-100% Calc, Mica, Qtz, Other m.p.	white stucco gray grout (fac wrr)
Lab ID # 543-00055-016B		3) 4) Jun-18-04	Grout-Grey
60B.	**None Detected**	1) None Detected 2) 99-100% Calc, Mica, Qtz, Other m.p.	white stucco gray grout (fac wrr)
Lab ID # 543-00055-017A		3) Jun-02-04 4) Jun-18-04	Stucco-Off-White
60B.	**None Detected**	1) None Detected 2) 99-100% Calc, Mica, Qtz, Other m.p.	
Lab ID # 543-00055-017B		3) 4) Jun-18-04	Grout-Grey
60C.	**None Detected**	1) None Detected 2) 99-100% Calc, Mica, Qtz, Other m.p.	white stucco gray grout (fac wrr)
Lab ID # 543-00055-018A		3) Jun-02-04 4) Jun-18-04	Stucco-Off-White

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 18
Reg. Samples Analyzed: 16
Split Layers Analyzed: 13

Job Site / No. Solano College
44156

Report No. **044311**
Date Submitted: Jun-07-04
Date Reported: Jun-18-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD LAB
60C. Lab ID # 543-00055-018B	None Detected	1) None Detected 2) 99-100% Calc, Mica, Qtz, Other m.d. 3) 4) Jun-18-04	Grout-Grey
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

ASBESTOS TEM LABORATORIES, INC. **1409 FIFTH STREET, BERKELEY, CA 94710** **(510) 528-0108**
www.asbestostemlabs.com *With Offices in Reno, NV (775) 359-3377*

KLEINFELDER

(8)

PROJECT NO.	PROJECT NAME	RECEIVING LAB:
44156	Solano College	Asbestos TEM
L.P. NO. (P.O. NO.)	SAMPLERS: (Signature/Number) Jennifer Gomez	INSTRUCTIONS/REMARKS: *FIRST POSITIVE

		DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CON-TAINERS	TYPE OF CON-TAINERS	ANALYSIS PLM	INSTRUCTIONS/REMARKS
	1	6/2/04		53B		1		X	BEIGE 4"x4" CERAMIC WALL TILE/GRAY GROUT/WHITE GROUT (WRR FOYER)
	2			53C				X	(WRR Foyer)
*	3			54A				X	YELLOW-BROWN 2"x2" CERAMIC FLOOR TILE (WRR foyer)
	4			54B				X	"
	5			54C				X	(MRR foyer)
	6			55A				X	WHITE SHEETROCK/WHITE JOINT COMPOUND (JANITOR CLOSET)
	7			55B				X	(SE Hall)
	8			55C				X	(SW hall)
*	9			58A				X	WHITE 2'x4' CEILING TILES (SW Hall)
	10			58B				X	
	11			58C				X	
*	12			57A				X	GRAY 12"x6" CERAMIC WALL TILE/WHITE GROUT/GRAY GROUT (W LOCKER)
	13			57B				X	
	14			57C				X	
*	15			59A				X	~~WHITE~~ TAN 12"x12" WALL TILE/BROWN MASTIC (1725)
	16			59B				X	(1723)
	17			59C				X	(1724)
*	18			60A				X	WHITE STUCCO/GRAY GROUT (Fac WRR)
	19			60B				X	
	20			60C				X	(Fac MRR)

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Jennifer Gomez	6/2/04	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
		EMSL TEM
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)

Instructions/Remarks: 3-5 days

Send Results To:

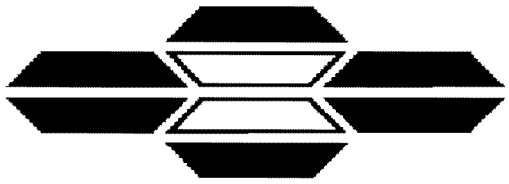
KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-0643~~ 94534
(707) 429-4070

Attn: JENNIFER GOMEZ

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

№ 0353



ASBESTOS TEM LABORATORIES, INC.

EPA Interim Method
Polarized Light Microscopy
Analytical Report

Laboratory Job # 543-00056

1409 Fifth Street
Berkeley, CA 94710
(510) 528-0108
FAX (510) 528-0109
www.asbestostemlabs.com

With Branch Offices Located At:
1016 GREG STREET, SPARKS, NV 89431
Ph. (775) 359-3377

ASBESTOS TEM LABORATORIES, INC

Accredited by
U.S. Dept. of Commerce
NVLAP
CA DOHS ELAP

Jun-18-04

Ms. Jennifer Gomez
Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

RE: LABORATORY JOB # 543-00056
Polarized light microscopy analytical results for 18 bulk sample(s) with 7 sample split(s)
Job Site: Solano College
Job No.: 44156

Enclosed please find the bulk material analytical results for one or more samples submitted for asbestos analysis. The analyses were performed in accordance with EPA Method 600/R-93/116 or 600/M4-82-020 for the determination of asbestos in bulk building materials by polarized light microscopy (PLM). Please note that while PLM analysis is commonly performed on non-friable and fine grained materials such as floor tiles and dust, the EPA method recognizes that PLM is subject to limitations. In these situations, accurate results may only be obtainable through the use of more sophisticated and accurate techniques such as transmission electron microscopy (TEM) or X-ray diffraction (XRD).

Prior to analysis, samples are logged-in and all data pertinent to the sample recorded. The samples are checked for damage or disruption of any chain-of-custody seals. A unique laboratory ID number is assigned to each sample. A hard copy log-in sheet containing all pertinent information concerning the sample is generated. This and all other relevant paper work are kept with the sample throughout the analytical procedures to assure proper analysis.

Each sample is opened in a class 100 HEPA negative air hood. A representative sampling of the material is selected and placed onto a glass microscope slide containing a drop of refractive index oil. The glass slide is placed under a polarizing light microscope where standard mineralogical techniques are used to analyze and quantify the various materials present, including asbestos. The data is then compiled into standard report format and subjected to a thorough quality assurance check before the information is released to the client.

Sincerely Yours,

Stephen A Shaffer

Lab Manager
ASBESTOS TEM LABORATORIES, INC.

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 21
Reg. Samples Analyzed: 18
Split Layers Analyzed: 7

Job Site / No. Solano College
44156

Report No. **044313**
Date Submitted: Jun-07-04
Date Reported: Jun-18-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
61A.	None Detected	1) 1-5% Cellulose 2) 95-99% Gyp, Other m.p.	white sheetrock white joint compound (home lr)
Lab ID # 543-00056-001A		3) Jun-02-04 4) Jun-18-04	Sheetrock-White
61A.	None Detected	1) 1-5% Cellulose 2) 95-99% Gyp, Calc, Mica, Other m.p.	white sheetrock white joint compound (home lr)
Lab ID # 543-00056-001B		3) 4) Jun-18-04	JointCom/Text-Off-White
61B.	None Detected	1) 1-5% Cellulose 2) 95-99% Gyp, Other m.p.	white sheetrock white joint compound (home lr)
Lab ID # 543-00056-002A		3) Jun-02-04 4) Jun-18-04	Sheetrock-White
61B.	None Detected	1) 1-5% Cellulose 2) 95-99% Gyp, Calc, Mica, Other m.p.	white sheetrock white joint compound (home lr)
Lab ID # 543-00056-002B		3) 4) Jun-18-04	JointCom/Text-Off-White
61C.	None Detected	1) 1-5% Cellulose 2) 95-99% Gyp, Other m.p.	white sheetrock white joint compound (home lr)
Lab ID # 543-00056-003A		3) Jun-02-04 4) Jun-18-04	Sheetrock-White
61C.	None Detected	1) 1-5% Cellulose 2) 95-99% Gyp, Calc, Mica, Other m.p.	white sheetrock white joint compound (home lr)
Lab ID # 543-00056-003B		3) 4) Jun-18-04	JointCom/Text-Off-White
62A.	None Detected	1) None Detected 2) 99-100% Bndr, Calc, Gyp, Mica	white drywall texture (homelr)
Lab ID # 543-00056-004		3) Jun-02-04 4) Jun-18-04	Texture-White
62B.	None Detected	1) None Detected 2) 99-100% Bndr, Calc, Gyp, Mica	white drywall texture (homelr)
Lab ID # 543-00056-005		3) Jun-02-04 4) Jun-18-04	Texture-White
62C.	None Detected	1) None Detected 2) 99-100% Bndr, Calc, Gyp, Mica	white drywall texture (homelr)
Lab ID # 543-00056-006		3) Jun-02-04 4) Jun-18-04	Texture-White
63A.	None Detected	1) None Detected 2) 99-100% Calc, Mica, Qtz, Other m.p.	gray stucco material (home lr)
Lab ID # 543-00056-007		3) Jun-02-04 4) Jun-18-04	Stucco-Grey

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

ASBESTOS TEM LABORATORIES, INC. **1409 FIFTH STREET, BERKELEY, CA 94710** **(510) 528-0108**
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POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 21
Reg. Samples Analyzed: 18
Split Layers Analyzed: 7

Job Site / No. Solano College
44156

Report No. **044313**
Date Submitted: Jun-07-04
Date Reported: Jun-18-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
63B.		None Detected	1)None Detected 2)99-100% Calc, Mica, Qtz, Other m.p.	gray stucco material (store 1)
Lab ID # 543-00056-008			3) Jun-02-04 4) Jun-18-04	Stucco-Grey
63C.		None Detected	1)None Detected 2)99-100% Calc, Mica, Qtz, Other m.p.	gray stucco material (visitor lr)
Lab ID # 543-00056-009			3) Jun-02-04 4) Jun-18-04	Stucco-Grey
64A.		None Detected	1)80-100% Fiberglass,Mineral Wool 2)<1% Other m.p.	white TSI taping wite TSI (home)
Lab ID # 543-00056-010			3) Jun-02-04 4) Jun-18-04	Tape-White
64B.	5-10%	Chrysotile	1)5-10% Cellulose 2)80-90% Calc, Gyp	white TSI taping wite TSI (joint home)
Lab ID # 543-00056-011			3) Jun-02-04 4) Jun-18-04	Tape-Off-White
64C.		Not Analyzed	1) 2)	white TSI taping wite TSI (visitor)
Lab ID # 543-00056-012			3) Jun-02-04 4)Jun-18-04	
65A.	1-5%	Chrysotile	1)None Detected 2)95-99% Bndr, Calc	green 12x1 VFT yellow mastic (1902A)
Lab ID # 543-00056-013A			3) Jun-02-04 4) Jun-18-04	Floor Tile-Off-White
65A.		None Detected	1)None Detected 2)99-100% Glue, Opq, Calc, Qtz	green 12x1 VFT yellow mastic (1902A)
Lab ID # 543-00056-013B			3) 4)Jun-18-04	Glue-Yellow
65B.		Not Analyzed	1) 2)	green 12x1 VFT yellow mastic (1902A)
Lab ID # 543-00056-014			3) Jun-02-04 4)Jun-18-04	
65C.		Not Analyzed	1) 2)	green 12x1 VFT yellow mastic (1902A)
Lab ID # 543-00056-015			3) Jun-02-04 4)Jun-18-04	
66A.		None Detected	1)1-5% Cellulose 2)95-99% Gyp, Other m.p.	white sheetrock white joint compound (1902E)
Lab ID # 543-00056-016A			3) Jun-02-04 4)Jun-18-04	Sheetrock-White

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 21
Reg. Samples Analyzed: 18
Split Layers Analyzed: 7

Job Site / No. Solano College
44156

Report No. **044313**
Date Submitted: Jun-07-04
Date Reported: Jun-18-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD LAB
66A.	None Detected	1) None Detected 2) 99-100% Calc, Bndr, Mica, Other m.p.	white sheetrock white joint compound (1902E)
Lab ID # 543-00056-016B		3) 4) Jun-18-04	JointCom/Text-Off-White
66B.	None Detected	1) 1-5% Cellulose 2) 95-99% Gyp, Other m.p.	white sheetrock white joint compound (1905)
Lab ID # 543-00056-017A		3) Jun-02-04 4) Jun-18-04	Sheetrock-White
66B.	None Detected	1) None Detected 2) 99-100% Calc, Bndr, Mica, Other m.p.	
Lab ID # 543-00056-017B		3) 4) Jun-18-04	JointCom/Text-Off-White
66C.	None Detected	1) 1-5% Cellulose 2) 95-99% Gyp, Other m.p.	white sheetrock white joint compound (1902E)
Lab ID # 543-00056-018A		3) Jun-04-00 4) Jun-18-04	Sheetrock-White
66C.	None Detected	1) None Detected 2) 99-100% Calc, Bndr, Mica, Other m.p.	
Lab ID # 543-00056-018B		3) 4) Jun-18-04	JointCom/Text-Off-White
67A.	None Detected	1) None Detected 2) 99-100% Calc, Bndr, Mica	white drywall texture (1902E)
Lab ID # 543-00056-019		3) Jun-02-04 4) Jun-18-04	Texture-White
67B.	None Detected	1) None Detected 2) 99-100% Calc, Bndr, Mica	white drywall texture (1902E)
Lab ID # 543-00056-020		3) Jun-02-04 4) Jun-18-04	Texture-White
67C.	None Detected	1) None Detected 2) 99-100% Calc, Bndr, Mica	white drywall texture (1902B)
Lab ID # 543-00056-021		3) Jun-02-04 4) Jun-18-04	Texture-White
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

ASBESTOS TEM LABORATORIES, INC. **1409 FIFTH STREET, BERKELEY, CA 94710** **(510) 528-0108**
www.asbestostemlabs.com *With Offices in Reno, NV (775) 359-3377*

(9)

KLEINFELDER

PROJECT NO.	PROJECT NAME
44156	Solano College

L.P. NO. (P.O. NO.):

SAMPLERS: (Signature/Number) Jennifer Gomez

RECEIVING LAB: Asbestos TEM

INSTRUCTIONS/REMARKS: *FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS PLM	
1	6/2/04		60A		1		X	WHITE SHEETROCK / WHITE JOINT COMPOUND (HOME LR)
2			60B				X	↓
3			60C				X	
4			62A				X	WHITE DRYWALL TEXTURE (HOME LR)
5			62B				X	
6			62C				X	↓
*7			63A				X	GRAY STUCCO MATERIAL (HOME LR)
8			63B				X	(SDR. 1)
9			63C				X	↓ (VISITOR LR)
*10			64A				X	WHITE TSI TAPING / WHITE TSI (Home)
11			64B				X	↓ (Joint (Home)
12			64C				X	(Visitor)
*13			65A				X	GREEN 12"x12" VFT / YELLOW MASTIC (1902A)
14			65B				X	↓
15			65C				X	
16			66A				X	WHITE SHEETROCK / WHITE JOINT COMPOUND (1902E)
17			66B				X	(1905)
18			66C				X	↓ (1902E)
19			67A		↓		X	WHITE DRYWALL TEXTURE (1902E)
20			67B				X	↓ (1902E)

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Jennifer Gomez	6/4/04	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
		90 / ATEM
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
		06-07-04 09:03

Instructions/Remarks: 3-5 days

Send Results To:

KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-9648~~ 94534
(707) 429-4070

Attn: JENNIFER GOMEZ

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

№ 0354

(15)

KLEINFELDER

PROJECT NO.	PROJECT NAME	RECEIVING LAB:
44156	Solano College	Asbestos TEM

L.P. NO. (P.O. NO.): | SAMPLERS: (Signature/Number): Jennifer Gomez

INSTRUCTIONS/REMARKS: *FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS: PLM	
1	6/2/04		67C		1		X	WHITE DRYWALL TEXTURE (1902B)
* 2	~~6/2/04~~		~~67A~~				X	~~BEIGE-BROWN 12"x12" VET~~ / BLACK MASTIC (601)
3			~~67B~~				X	
4			68C				X	
* 5			69A				X	4"x4" BROWN BB / BROWN MASTIC (601)
6			69B				X	(Hall)
7			69C				X	(Hall)
* 8			102A				X	WHITE 2'x4' CEILING TILE (1307)
9			102B				X	(Hall)
10			102C				X	(Hall)
* 11			103A				X	OFF-WHITE-BROWN 12"x12" VET / BLACK MASTIC (Hall
12			103B				X	(Hall 307)
13			103C				X	(Hall)
* 14			104A				X	BROWN 4" BB / BROWN MASTIC (Hall 307)
15			104B				X	(Hall)
16			104C				X	(Hall)
* 17			105A				X	WHITE-BROWN 12"x12" VET / YELLOW MASTIC (1305)
18			105B				X	
19			105C				X	
20			106A				X	WHITE SHEETROCK + WHITE JOINT COMPOUND (JANITOR CLOSET)

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
		ITEM

Instructions/Remarks: 35 days

Send Results To:

KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-9640~~ 94534
(707) 429-4070

Attn: JENNIFER GOMEZ

M-60 White - Sampler 06-07-04A09:04 RCVD Canary - Return Copy To Shipper Pink - Lab Copy

CHAIN OF CUSTODY

№ 0355

70-76

ASBESTOS TEM LABORATORIES, INC.

EPA Interim Method
Polarized Light Microscopy
Analytical Report

Laboratory Job # 543-00057

1409 Fifth Street
Berkeley, CA 94710
(510) 528-0108
FAX (510) 528-0109
www.asbestostemlabs.com

With Branch Offices Located At:
1016 GREG STREET, SPARKS, NV 89431
Ph. (775) 359-3377

ASBESTOS TEM LABORATORIES, INC

Accredited by
U.S. Dept. of Commerce
NVLAP
CA DOHS ELAP

Jun-20-04

Ms. Jennifer Gomez
Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

RE: LABORATORY JOB # 543-00057
Polarized light microscopy analytical results for 18 bulk sample(s) with 14 sample split(s)
Job Site: Solano College
Job No.: 44156

Enclosed please find the bulk material analytical results for one or more samples submitted for asbestos analysis. The analyses were performed in accordance with EPA Method 600/R-93/116 or 600/M4-82-020 for the determination of asbestos in bulk building materials by polarized light microscopy (PLM). Please note that while PLM analysis is commonly performed on non-friable and fine grained materials such as floor tiles and dust, the EPA method recognizes that PLM is subject to limitations. In these situations, accurate results may only be obtainable through the use of more sophisticated and accurate techniques such as transmission electron microscopy (TEM) or X-ray diffraction (XRD).

Prior to analysis, samples are logged-in and all data pertinent to the sample recorded. The samples are checked for damage or disruption of any chain-of-custody seals. A unique laboratory ID number is assigned to each sample. A hard copy log-in sheet containing all pertinent information concerning the sample is generated. This and all other relevant paper work are kept with the sample throughout the analytical procedures to assure proper analysis.

Each sample is opened in a class 100 HEPA negative air hood. A representative sampling of the material is selected and placed onto a glass microscope slide containing a drop of refractive index oil. The glass slide is placed under a polarizing light microscope where standard mineralogical techniques are used to analyze and quantify the various materials present, including asbestos. The data is then compiled into standard report format and subjected to a thorough quality assurance check before the information is released to the client.

Sincerely Yours,

Stephen A Shaffer

Lab Manager
ASBESTOS TEM LABORATORIES, INC.

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 22
Reg. Samples Analyzed: 18
Split Layers Analyzed: 14

Job Site / No. Solano College
44156

Report No. **044331**
Date Submitted: Jun-07-04
Date Reported: Jun-20-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
70A		None Detected	1) 80-100% Cellulose, Mineral Wool 2) <1% Other m.p.	* 2'x4' White Ceiling Tiles (Rm 801)
Lab ID # 543-00057-001			3) Jun-03-04 4) Jun-20-04	Ceiling Tile-Grey
70B		None Detected	1) 80-100% Cellulose, Mineral Wool 2) <1% Other m.p.	* 2'x4' White Ceiling Tiles (Rm 801)
Lab ID # 543-00057-002			3) Jun-03-04 4) Jun-20-04	Ceiling Tile-Grey
70C		None Detected	1) 80-100% Cellulose, Mineral Wool 2) <1% Other m.p.	* 2'x4' White Ceiling Tiles (Office/805)
Lab ID # 543-00057-003			3) Jun-03-04 4) Jun-20-04	Ceiling Tile-Grey
71A		None Detected	1) None Detected 2) 99-100% Qtz, Calc	* Brown 4"x4" Wall Tile / Wht Grout / Gray Grout (Men's RR)
Lab ID # 543-00057-004A			3) Jun-03-04 4) Jun-20-04	Wall Tile-White
71A		None Detected	1) None Detected 2) 99-100% Qtz, Calc, Opq, Other m.p.	* Brown 4"x4" Wall Tile / Wht Grout / Gray Grout (Men's RR)
Lab ID # 543-00057-004B			3) 4) Jun-20-04	Grout-White
71A		None Detected	1) None Detected 2) 99-100% Qtz, Calc, Opq, Other m.p.	* Brown 4"x4" Wall Tile / Wht Grout / Gray Grout (Men's RR)
Lab ID # 543-00057-004C			3) 4) Jun-20-04	Grout-Grey
71B		None Detected	1) None Detected 2) 99-100% Qtz, Calc	* Green 4"x4" Wall Tile / Wht Grout / Gray Grout (Women's RR)
Lab ID # 543-00057-005A			3) Jun-03-04 4) Jun-20-04	Wall Tile-White
71B		None Detected	1) None Detected 2) 99-100% Qtz, Calc, Opq, Other m.p.	
Lab ID # 543-00057-005B			3) 4) Jun-20-04	Grout-White
71B		None Detected	1) None Detected 2) 99-100% Qtz, Calc, Opq, Other m.p.	
Lab ID # 543-00057-005C			3) 4) Jun-20-04	Grout-Grey
71C		None Detected	1) None Detected 2) 99-100% Qtz, Calc	* Green 4"x4" Wall Tile / Wht Grout / Gray Grout (Women's RR)
Lab ID # 543-00057-006A			3) Jun-03-04 4) Jun-20-04	Wall Tile-White

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 22
Reg. Samples Analyzed: 18
Split Layers Analyzed: 14

Job Site / No. Solano College
44156

Report No. **044331**
Date Submitted: Jun-07-04
Date Reported: Jun-20-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
71C		**None Detected**	1)None Detected 2)99-100% Qtz, Calc, Opq, Other m.p.	
Lab ID # 543-00057-006B			3) 4) Jun-20-04	Grout-White
71C		**None Detected**	1)None Detected 2)99-100% Qtz, Calc, Opq, Other m.p.	
Lab ID # 543-00057-006C			3) 4) Jun-20-04	Grout-Grey
72A		**None Detected**	1)None Detected 2)99-100% Qtz, Calc, Opq, Other m.p.	* Brown 1"x1" Floor Tile / Gray Grout (Men's RR)
Lab ID # 543-00057-007A			3) Jun-03-04 4) Jun-20-04	Floor Tile-Brown
72A		**None Detected**	1)None Detected 2)99-100% Qtz, Calc, Opq, Other m.p.	* Brown 1"x1" Floor Tile / Gray Grout (Men's RR)
Lab ID # 543-00057-007B			3) 4) Jun-20-04	Grout-Grey
72B		**None Detected**	1)None Detected 2)99-100% Qtz, Calc, Opq, Other m.p.	* Green 1"x1" Brown Floor Tile / Gray Grout (Women's RR)
Lab ID # 543-00057-008A			3) Jun-03-04 4)Jun-20-04	Floor Tile-White
72B		**None Detected**	1)None Detected 2)99-100% Qtz, Calc, Opq, Other m.p.	* Green 1"x1" Brown Floor Tile / Gray Grout (Women's RR)
Lab ID # 543-00057-008B			3) 4) Jun-20-04	Grout-Grey
72C		**None Detected**	1)None Detected 2)99-100% Qtz, Calc, Opq, Other m.p.	* Green 1"x1" Brown Floor Tile / Gray Grout (Women's RR)
Lab ID # 543-00057-009A			3) Jun-03-04 4)Jun-20-04	Floor Tile-White
72C		**None Detected**	1)None Detected 2)99-100% Qtz, Calc, Opq, Other m.p.	
Lab ID # 543-00057-009B			3) 4)Jun-20-04	Grout-Grey
73A		**None Detected**	1)95-99% Cellulose 2)1-5% Other m.p.	* Tan 12"x12" Wall Tile / Brown Mastic (Hallway)
Lab ID # 543-00057-010A			3) Jun-03-04 4)Jun-20-04	Wall Tile-Brown
73A	5-10%	**Chrysotile**	1)None Detected 2)90-95% Glue, Other m.p.	* Tan 12"x12" Wall Tile / Brown Mastic (Hallway)
Lab ID # 543-00057-010B			3) 4)Jun-20-04	Mastic-Brown

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer_____ **Analyst**_____

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 22
Reg. Samples Analyzed: 18
Split Layers Analyzed: 14

Job Site / No. Solano College
44156

Report No. **044331**
Date Submitted: Jun-07-04
Date Reported: Jun-20-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
73B	**Not Analyzed**	1) 2)	* Tan 12"x12" Wall Tile / Brown Mastic (SE Hallway)
Lab ID # 543-00057-011		3) Jun-03-04 4) Jun-20-04	
73C	**Not Analyzed**	1) 2)	* Tan 12"x12" Wall Tile / Brown Mastic (N Hallway)
Lab ID # 543-00057-012		3) Jun-03-04 4) Jun-20-04	
74A	**None Detected**	1) 1-5% Cellulose 2) 95-99% Gyp, Other m.p.	White Sheetrock / White Joint Compound (Ext. Rm 805)
Lab ID # 543-00057-013A		3) Jun-03-04 4) Jun-20-04	Sheetrock-White
74A	**None Detected**	1) None Detected 2) 99-100% Calc, Bndr, Mica, Other m.p.	White Sheetrock / White Joint Compound (Ext. Rm 805)
Lab ID # 543-00057-013B		3) 4) Jun-20-04	JointCom/Text-Off-White
74B	**None Detected**	1) 1-5% Cellulose 2) 95-99% Gyp, Other m.p.	White Sheetrock / White Joint Compound (SE Hallway)
Lab ID # 543-00057-014A		3) Jun-03-04 4) Jun-20-04	Sheetrock-White
74B	**None Detected**	1) None Detected 2) 99-100% Calc, Bndr, Mica, Other m.p.	
Lab ID # 543-00057-014B		3) 4) Jun-20-04	JointCom/Text-Off-White
74C	**None Detected**	1) 1-5% Cellulose 2) 95-99% Gyp, Other m.p.	White Sheetrock / White Joint Compound (SE Hallway)
Lab ID # 543-00057-015		3) Jun-03-04 4) Jun-20-04	Sheetrock-White
74C	**None Detected**	1) None Detected 2) 99-100% Calc, Bndr, Mica, Other m.p.	
Lab ID # 543-00057-015B		3) 4) Jun-20-04	JointCom/Text-Off-White
74D	**None Detected**	1) 1-5% Cellulose 2) 95-99% Gyp, Other m.p.	White Sheetrock / White Joint Compound (SE Hallway)
Lab ID # 543-00057-016A		3) Jun-03-04 4) Jun-20-04	Sheetrock-White
74D	**None Detected**	1) 1-5% Cellulose 2) 95-99% Gyp, Calc, Mica, Other m.p.	White Sheetrock / White Joint Compound (SE Hallway)
Lab ID # 543-00057-016B		3) 4) Jun-20-04	JointCom/Text-Off-White

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

ASBESTOS TEM LABORATORIES, INC. **1409 FIFTH STREET, BERKELEY, CA 94710** **(510) 528-0108**
www.asbestostemlabs.com *With Offices in Reno, NV (775) 359-3377*

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 22
Reg. Samples Analyzed: 18
Split Layers Analyzed: 14

Job Site / No. Solano College
44156

Report No. **044331**
Date Submitted: Jun-07-04
Date Reported: Jun-20-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
75A		None Detected	1) 1-5% Cellulose 2) 95-99% Gyp, Calc, Mica, Other m.p.	* White Drywall Texture (Janitor's Closet)
Lab ID # 543-00057-017			3) Jun-03-04 4) Jun-20-04	JointCom/Text-Off-White
75B		None Detected	1) 1-5% Cellulose 2) 95-99% Gyp, Calc, Mica, Other m.p.	* White Drywall Texture (Janitor's Closet)
Lab ID # 543-00057-018			3) Jun-03-04 4) Jun-20-04	JointCom/Text-Off-White
75C		None Detected	1) 1-5% Cellulose 2) 95-99% Gyp, Calc, Mica, Other m.p.	* White Drywall Texture (Janitor's Closet)
Lab ID # 543-00057-019			3) Jun-03-04 4) Jun-20-04	JointCom/Text-Off-White
76A		None Detected	1) 95-99% Cellulose 2) 1-5% Other m.p.	* Tan 12"x12" Ceiling Tile / Brown Mastic (Women's RR)
Lab ID # 543-00057-020A			3) Jun-03-04 4) Jun-20-04	Ceiling Tile-Brown
76A	5-10%	Chrysotile	1) None Detected 2) 90-95% Glue, Other m.p.	* Tan 12"x12" Ceiling Tile / Brown Mastic (Women's RR)
Lab ID # 543-00057-020B			3) 4) Jun-20-04	Mastic-Brown
76B		Not Analyzed	1) 2)	* Tan 12"x12" Ceiling Tile / Brown Mastic (Women's RR)
Lab ID # 543-00057-021			3) Jun-03-04 4) Jun-20-04	
76C		Not Analyzed	1) 2)	* Tan 12"x12" Ceiling Tile / Brown Mastic (Men's RR)
Lab ID # 543-00057-022			3) Jun-03-04 4) Jun-20-04	
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

ASBESTOS TEM LABORATORIES, INC. **1409 FIFTH STREET, BERKELEY, CA 94710** **(510) 528-0108**
www.asbestostemlabs.com *With Offices in Reno, NV (775) 359-3377*

(10)

KLEINFELDER

PROJECT NO.	PROJECT NAME
44156	Solano College

L.P. NO. (P.O. NO.) | SAMPLERS: (Signature/Number) Jennifer Gomez

RECEIVING LAB: Asbestos TEM

INSTRUCTIONS/REMARKS: *FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS PLM	
* 1	6-3-04		70A		1		X	2'x4' WHITE CEILING TILES (KmPOL)
2			70B				X	(Hallway)
3			70C				X	(Office/BOS)
* 4			71A				X	BROWN 4"x4" WALL TILE/WHT GROUT/GRAY GROUT (MENS RR)
5			71B				X	GREEN 4"x4" WALL TILE/WHT GROUT/GRAY GROUT (WOMENS RR)
6			71C				X	
* 7			72A				X	BROWN 1"x1" FLOOR TILE/GRAY GROUT (MENS RR)
8			72B				X	GREEN 1"x1" BROWN FLOOR TILE/GRAY GROUT (WOMENS RR)
9			72C				X	
* 10			73A				X	TAN 12"x12" WALL TILE/BROWN MASTIC (HALLWAY)
11			73B				X	(SE HALLWAY)
12			73C				X	(N HALLWAY)
13			74A				X	WHITE SHEETROCK/WHITE JOINT COMPOUND (EXT. BOS)
14			74B				X	(SE HALLWAY)
15			74C				X	(SE HALLWAY)
16			74D				X	(SE HALLWAY)
* 17			75A				X	WHITE DRYWALL TEXTURE (JANITORS CLOSET)
18			75B				X	
19			75C				X	
* 20			76A		✓		X	TAN 12"x12" CEILING TILE/BROWN MASTIC (WOMENS RR)

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Jennifer Gomez	6/3/04	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
		ATEN
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
		06-07-04 9:07

Instructions/Remarks: 3-5 days

Send Results To:

KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-0643~~ 94534
(707) 429-4070

Attn: JENNIFER GOMEZ

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

№ 0341

(11)

KLEINFELDER

PROJECT NO.	PROJECT NAME
44156	Solano College

L.P. NO. (P.O. NO.)

SAMPLERS: (Signature/Number) JENNIFER GOMEZ

RECEIVING LAB: ASBESTOS TEM

INSTRUCTIONS/REMARKS: *FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CON-TAINERS	TYPE OF CON-TAINERS	ANALYSIS PLM	
1	6/3/04		76B		1		X	TAN 12"x12" CEILING TILE/WHITE BROWN MASTIC
2			76C				X	(MENS RR)
* 3			77A				X	GRAY STUCCO MATERIAL (MENS RR)
4			77B				X	(WOMENS RR)
5			77C				X	"
* 6			78A				X	WHITE HVAC PUTTY (PLENUM)
7			78B				X	"
* 8			79A				X	WHITE SHEETROCK (Rm 1102)
9			79B				X	"
10			79C				X	(Rm 1102C)
* 11			80A				X	BROWN 4" BB/WHITE MASTIC (Rm 1102C)
12			80B				X	(Rm 1106)
13			80C				X	(Rm 1109)
* 14			81A				X	WHITE 2'x4' CEILING TILES (Rm 1104)
15			81B				X	(Rm 1109)
16			81C				X	(Rm 1109)
17			82A				X	WHITE DRYWALL TEXTURE (1102C)
18			82B				X	(1107)
19			83C				X	(1107)
20			84A				X	WHITE SHEETROCK/WHITE JOINT COMPOUND (1102C)

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	6/3/04	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
		QC/ATEM
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
		06-07-04 A 9:03 RCVD

Instructions/Remarks: 3-5 days

Send Results To:

KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-0643~~ 94534
(707) 429-4070
Attn: JENNIFER GOMEZ

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

№ 0342

77-84

ASBESTOS TEM LABORATORIES, INC.

EPA Interim Method
Polarized Light Microscopy
Revised Analytical Report

Laboratory Job # 543-00058

1409 Fifth Street
Berkeley, CA 94710
(510) 528-0108
FAX (510) 528-0109
www.asbestostemlabs.com

With Branch Offices Located At:
1016 GREG STREET, SPARKS, NV 89431
Ph. (775) 359-3377

ASBESTOS TEM LABORATORIES, INC

Accredited by
U.S. Dept. of Commerce
NVLAP
CA DOHS ELAP

Jul-06-04

Ms. Jennifer Gomez
Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

RE: LABORATORY JOB # 543-00058
Revised Polarized light microscopy analytical results for 20 bulk sample(s) with 6 sample split(s)
Job Site: Solano College
Job No.: 44156

Enclosed please find the bulk material analytical results for one or more samples submitted for asbestos analysis. The analyses were performed in accordance with EPA Method 600/R-93/116 or 600/M4-82-020 for the determination of asbestos in bulk building materials by polarized light microscopy (PLM). Please note that while PLM analysis is commonly performed on non-friable and fine grained materials such as floor tiles and dust, the EPA method recognizes that PLM is subject to limitations. In these situations, accurate results may only be obtainable through the use of more sophisticated and accurate techniques such as transmission electron microscopy (TEM) or X-ray diffraction (XRD).

Prior to analysis, samples are logged-in and all data pertinent to the sample recorded. The samples are checked for damage or disruption of any chain-of-custody seals. A unique laboratory ID number is assigned to each sample. A hard copy log-in sheet containing all pertinent information concerning the sample is generated. This and all other relevant paper work are kept with the sample throughout the analytical procedures to assure proper analysis.

Each sample is opened in a class 100 HEPA negative air hood. A representative sampling of the material is selected and placed onto a glass microscope slide containing a drop of refractive index oil. The glass slide is placed under a polarizing light microscope where standard mineralogical techniques are used to analyze and quantify the various materials present, including asbestos. The data is then compiled into standard report format and subjected to a thorough quality assurance check before the information is released to the client.

Sincerely Yours,

Lab Manager
ASBESTOS TEM LABORATORIES, INC.

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 20
Reg. Samples Analyzed: 20
Split Layers Analyzed: 6

Job Site / No. Solano College
44156

Report No. **044344**
Date Submitted: Jun-07-04
Date Reported: Jul-06-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD LAB
77A	None Detected	1)None Detected 2)99-100% Calc, Qtz, Other m.p.	* Gray Stucco Material (Men's RR)
Lab ID # 543-00058-001		3) Jun-03-04 4) Jun-10-04	Stucco-Grey
77B	None Detected	1)None Detected 2)99-100% Calc, Qtz, Other m.p.	* Gray Stucco Material (Women's RR)
Lab ID # 543-00058-002		3) Jun-03-04 4) Jun-10-04	Stucco-Grey
77C	None Detected	1)None Detected 2)99-100% Calc, Qtz, Other m.p.	* Gray Stucco Material (Women's RR)
Lab ID # 543-00058-003		3) Jun-03-04 4) Jun-10-04	Stucco-Grey
78A	None Detected	1)70-80% Cellulose 2)20-30% Calc, Other m.p.	* White HVAC Putty (Plenum)
Lab ID # 543-00058-004		3) Jun-03-04 4) Jun-10-04	Tape-Off-White
78B	None Detected	1)70-80% Cellulose 2)20-30% Calc, Other m.p.	* White HVAC Putty (Plenum)
Lab ID # 543-00058-005		3) Jun-03-04 4)Jun-10-04	Tape-Off-White
79A	None Detected	1)1-5% Cellulose 2)95-99% Gyp, Other m.p.	* White Sheetrock (Rm 1102)
Lab ID # 543-00058-006		3) Jun-03-04 4) Jun-10-04	Sheetrock-White
79B	None Detected	1)1-5% Cellulose 2)95-99% Gyp, Other m.p.	* White Sheetrock (Rm 1102)
Lab ID # 543-00058-007		3) Jun-03-04 4)Jun-10-04	Sheetrock-White
79C	None Detected	1)1-5% Cellulose 2)95-99% Gyp, Other m.p.	* White Sheetrock (Rm 1102C)
Lab ID # 543-00058-008		3) Jun-03-04 4)Jun-10-04	Sheetrock-White
80A	None Detected	1)1-5% Cellulose 2)95-99% Calc, Bndr, Other m.p.	* Brown 4" BB / White Mastic (Rm 1102C)
Lab ID # 543-00058-009A		3) Jun-03-04 4)Jun-10-04	Baseboard-Brown
80A	None Detected	1)1-5% Cellulose 2)95-99% Calc, Bndr, Other m.p.	* Brown 4" BB / White Mastic (Rm 1102C)
Lab ID # 543-00058-009B		3) 4)Jun-10-04	Mastic-White

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer_____ **Analyst**_____

ASBESTOS TEM LABORATORIES, INC. **1409 FIFTH STREET, BERKELEY, CA 94710** **(510) 528-0108**
www.asbestostemlabs.com *With Offices in Reno, NV (775) 359-3377*

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 20
Reg. Samples Analyzed: 20
Split Layers Analyzed: 6

Job Site / No. Solano College
44156

Report No. **044344**
Date Submitted: Jun-07-04
Date Reported: Jul-06-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD LAB
80B		None Detected	1) 1-5% Cellulose 2) 95-99% Calc, Bndr, Other m.p.	* Brown 4" BB / White Mastic (Rm 1106)
Lab ID # 543-00058-010A			3) Jun-03-04 4) Jun-10-04	Baseboard-Brown
80B		None Detected	1) 1-5% Cellulose 2) 95-99% Calc, Bndr, Other m.p.	
Lab ID # 543-00058-010B			3) 4) Jun-10-04	Mastic-White
80C		None Detected	1) 1-5% Cellulose 2) 95-99% Calc, Bndr, Other m.p.	* Brown 4" BB / White Mastic (Rm 1109)
Lab ID # 543-00058-011A			3) Jun-03-04 4) Jun-10-04	Baseboard-Brown
80C		None Detected	1) 1-5% Cellulose 2) 95-99% Calc, Bndr, Other m.p.	
Lab ID # 543-00058-011B			3) 4) Jun-10-04	Mastic-White
81A	1-5%	Chrysotile	1) 85-100% Mineral Wool,Cellulose 2) <1% Other m.p.	* White 2'x4' Ceiling Tiles (Rm 1104)
Lab ID # 543-00058-012			3) Jun-03-04 4) Jun-10-04	Ceiling Tile-Grey
81B	1-5%	Chrysotile	1) 95-100% Mineral Wool,Cellulose 2) <1% Paint, Other m.p.	* White 2'x4' Ceiling Tiles (Rm 1109)
Lab ID # 543-00058-013			3) Jun-03-04 4) Jul-06-04	Ceiling Tile-Grey
81C	1-5%	Chrysotile	1) 95-100% Mineral Wool,Cellulose 2) <1% Other m.p.	* White 2'x4' Ceiling Tiles (Rm 1109)
Lab ID # 543-00058-014			3) Jun-03-04 4) Jul-02-04	Ceiling Tile-Grey
82A		None Detected	1) 99-100% Cellulose 2) <1% Other m.p.	Ceiling Tile (1102C)
Lab ID # 543-00058-015			3) Jun-03-04 4) Jun-10-04	Ceiling Tile-Brown
82B		None Detected	1) 99-100% Cellulose 2) <1% Other m.p.	White Drywall Texture (1107)
Lab ID # 543-00058-016			3) Jun-03-04 4) Jun-10-04	Ceiling Tile-Brown
83C		None Detected	1) None Detected 2) 99-100% Calc, Qtz, Other m.p.	White Drywall Texture (1107)
Lab ID # 543-00058-017			3) Jun-03-04 4) Jun-10-04	Texture-White

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer_____ **Analyst**_____

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 20
Reg. Samples Analyzed: 20
Split Layers Analyzed: 6

Job Site / No. Solano College
44156

Report No. **044344**
Date Submitted: Jun-07-04
Date Reported: Jul-06-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
84A		**None Detected**	1) 1-5% Cellulose 2) 95-99% Gyp, Other m.p.	White Sheetrock / White Joint compound (1102C)
Lab ID # 543-00058-018A			3) Jun-03-04 4) Jun-10-04	Sheetrock-White
84A	1-5%	**Chrysotile**	1) None Detected 2) 95-99% Calc, Qtz, Other m.p.	White Sheetrock / White Joint compound (1102C)
Lab ID # 543-00058-018B			3) 4) Jun-10-04	JointCom/Text-Off-White
84B		**None Detected**	1) 1-5% Cellulose 2) 95-99% Gyp, Other m.p.	White Sheetrock / White Joint compound (1107)
Lab ID # 543-00058-019A			3) Jun-03-04 4) Jul-02-04	Sheetrock-White
84B		**None Detected**	1) None Detected 2) 99-100% Calc, Mica, Qtz, Qtz	White Sheetrock / White Joint compound (1107)
Lab ID # 543-00058-019B			3) 4) Jul-02-04	Joint Compound-White
84C		**None Detected**	1) 1-5% Cellulose 2) 95-99% Gyp, Other m.p.	White Sheetrock / White Joint compound (1107)
Lab ID # 543-00058-020A			3) Jun-03-04 4) Jul-02-04	Sheetrock-White
84C		**None Detected**	1) None Detected 2) 99-100% Calc, Mica, Qtz	White Sheetrock / White Joint compound (1107)
Lab ID # 543-00058-020B			3) 4) Jul-02-04	Joint Compound-White
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

ASBESTOS TEM LABORATORIES, INC. **1409 FIFTH STREET, BERKELEY, CA 94710** **(510) 528-0108**
www.asbestostemlabs.com *With Offices in Reno, NV (775) 359-3377*

KLEINFELDER

(11)

PROJECT NO.	PROJECT NAME
44156	Solano College

L.P. NO. (P.O. NO.)	SAMPLERS: (Signature/Number)
	JENNIFER GOMEZ

RECEIVING LAB: ASBESTOS TEM

INSTRUCTIONS/REMARKS: *FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CON-TAINERS	TYPE OF CON-TAINERS	ANALYSIS PLM	
1	6/3/04		76B		1		X	TAN 12"x12" CEILING TILE/(WMS RK
2			76C				X	BROWN MASTIC (MENS RR)
* 3			77A				X	GRAY STUCCO MATERIAL (WMENS RR)
4			77B				X	"
5			77C				X	
* 6			78A				X	WHITE HVAC PUTTY (PLENUM)
7			78B				X	"
* 8			79A				X	WHITE SHEETROCK (Rm 1102)
9			79B				X	"
10			79C				X	(Rm 1102C)
* 11			80A				X	BROWN 9"x9" BB/WHITE MASTIC (Rm 1102C)
12			80B				X	(Rm 1106)
13			80C				X	(Rm 1109)
* 14			81A				X	WHITE 2'x4' CEILING TILES (Rm 1104)
15			81B				X	(Rm 1109)
16			81C				X	(Rm 1109)
17			82A				X	WHITE DRYWALL TEXTURE (1102C)
18			82B				X	(1107)
19			83C				X	(1107)
20			84A				X	WHITE SHEETROCK/ WHITE JOINT COMPOUND (1102C)

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	6/3/04	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
		QC/ATEM
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
		06-07-04A09:03 RCVD

Instructions/Remarks: 3-5 days

Send Results To:

KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-9642~~ 94534
(707) 429-4070 ~~9~~

Attn: JENNIFER GOMEZ

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

№ 0342

(12)

KLEINFELDER

PROJECT NO.	PROJECT NAME	RECEIVING LAB:
44156	Solano College	Asbestos TEM

L.P. NO. (P.O. NO.): | SAMPLERS: (Signature/Number): Jennifer Gomez

INSTRUCTIONS/REMARKS: *FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS PLM	
1	6/3/04		84B		1		X	WHITE SHEETROCK/WHITE JOINT COMPOUND (1107)
2			84C				X	(1107)
3			85A				X	WHITE DRYWALL TEXTURE (1106C)
4			85B				X	(Halloway)
5			85C				X	(1106F)
6			85D				X	(1109)
7			86A				X	WHITE SHEETROCK/WHITE JOINT COMPOUND (Halloway)
8			86B				X	(1106F)
9			86C				X	(Halloway)
10			86D				X	(1109B)
* 11			87A				X	GRAY SHEET FLOORING/GRAY PAPER/BROWN MASTIC (1106F)
12			87B				X	(1106F)
13			87C				X	GRAY SHEET FLOORING/GRAY PAPER (Hall)
* 14			88A				X	WHITE 12"x12" VFT/YELLOW MASTIC (FOYER 1106)
15			88B				X	
16			88C				X	
* 17			89A				X	BEIGE TRUCK 11 SHEET FLOORING/GRAY PAPER/BLK. YELLOW GLUE (1109) WHITE JOINT COMPOUND
18			89B				X	"
19			89C				X	"
* 20			90A				X	BLUE SHEET FLOORING/GRAY PAPER/YELLOW GLUE (1103)

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Instructions/Remarks:	Send Results To:
[signature]	6/3/04		3-5 days	KLEINFELDER 780 CHADBOURNE, ROAD SUITE D FAIRFIELD, CA ~~94585-3643~~ 94534 (707) 429-4070 Attn: JENNIFER GOMEZ
Relinquished by: (Signature)	Date/Time	Received by: (Signature)		
		[signature]		
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)		
		06-07-04A09:03 RCVD		

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

№ 0343

85-90

ASBESTOS TEM LABORATORIES, INC.

EPA Interim Method
Polarized Light Microscopy
REVISED Analytical Report

Laboratory Job # 543-00059

1409 Fifth Street
Berkeley, CA 94710
(510) 528-0108
FAX (510) 528-0109
www.asbestostemlabs.com

With Branch Offices Located At:
1016 GREG STREET, SPARKS, NV 89431
Ph. (775) 359-3377

ASBESTOS TEM LABORATORIES, INC

Accredited by
U.S. Dept. of Commerce
NVLAP
CA DOHS ELAP

Jul-06-04

Ms. Jennifer Gomez
Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

RE: LABORATORY JOB # 543-00059
Revised Polarized light microscopy analytical results for 20 bulk sample(s) with 27 sample split(s)
Job Site: Solano College
Job No.: 44156

Enclosed please find the bulk material analytical results for one or more samples submitted for asbestos analysis. The analyses were performed in accordance with EPA Method 600/R-93/116 or 600/M4-82-020 for the determination of asbestos in bulk building materials by polarized light microscopy (PLM). Please note that while PLM analysis is commonly performed on non-friable and fine grained materials such as floor tiles and dust, the EPA method recognizes that PLM is subject to limitations. In these situations, accurate results may only be obtainable through the use of more sophisticated and accurate techniques such as transmission electron microscopy (TEM) or X-ray diffraction (XRD).

Prior to analysis, samples are logged-in and all data pertinent to the sample recorded. The samples are checked for damage or disruption of any chain-of-custody seals. A unique laboratory ID number is assigned to each sample. A hard copy log-in sheet containing all pertinent information concerning the sample is generated. This and all other relevant paper work are kept with the sample throughout the analytical procedures to assure proper analysis.

Each sample is opened in a class 100 HEPA negative air hood. A representative sampling of the material is selected and placed onto a glass microscope slide containing a drop of refractive index oil. The glass slide is placed under a polarizing light microscope where standard mineralogical techniques are used to analyze and quantify the various materials present, including asbestos. The data is then compiled into standard report format and subjected to a thorough quality assurance check before the information is released to the client.

Sincerely Yours,

Lab Manager
ASBESTOS TEM LABORATORIES, INC.

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 20
Reg. Samples Analyzed: 20
Split Layers Analyzed: 27

Job Site / No. Solano College
44156

Report No. **044363**
Date Submitted: Jun-07-04
Date Reported: Jul-06-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
85A Lab ID # 543-00059-001	None Detected	1) None Detected 2) 99-100% Calc, Mica, Gyp 3) Jun-03-04 4) Jun-17-04	White Drywall Texture (1106C) Texture-White
85B Lab ID # 543-00059-002	None Detected	1) None Detected 2) 99-100% Calc, Mica, Gyp 3) Jun-03-04 4) Jun-17-04	White Drywall Texture (Hallway) Texture-White
85C Lab ID # 543-00059-003	None Detected	1) None Detected 2) 99-100% Calc, Mica, Gyp 3) Jun-03-04 4) Jun-17-04	White Drywall Texture (1106F) Texture-White
85D Lab ID # 543-00059-004	None Detected	1) None Detected 2) 99-100% Calc, Mica, Gyp 3) Jun-03-04 4) Jun-17-04	White Drywall Texture (1109) Texture-White
86A Lab ID # 543-00059-005A	None Detected	1) 1-5% Cellulose 2) 95-99% Gyp, Other m.p. 3) Jun-03-04 4) Jun-17-04	White Sheetrock / White Joint Compound (Hallway) Sheetrock-White
86A Lab ID # 543-00059-005B	None Detected	1) 1-5% Cellulose 2) 95-99% Gyp, Calc, Mica, Other m.p. 3) 4) Jun-17-04	White Sheetrock / White Joint Compound (Hallway) JointCom/Text-White
86B Lab ID # 543-00059-006A	None Detected	1) 1-5% Cellulose 2) 95-99% Gyp, Other m.p. 3) Jun-03-04 4) Jun-17-04	White Sheetrock / White Joint Compound (1106F) Sheetrock-White
86B Lab ID # 543-00059-006B	None Detected	1) 1-5% Cellulose 2) 95-99% Gyp, Calc, Mica, Other m.p. 3) 4) Jun-17-04	White Sheetrock / White Joint Compound (1106F) JointCom/Text-White
86C Lab ID # 543-00059-007A	None Detected	1) 1-5% Cellulose 2) 95-99% Gyp, Other m.p. 3) Jun-03-04 4) Jun-17-04	White Sheetrock / White Joint Compound (Hallway) Sheetrock-White
86C Lab ID # 543-00059-007B	None Detected	1) 1-5% Cellulose 2) 95-99% Gyp, Calc, Mica, Other m.p. 3) 4) Jun-17-04	White Sheetrock / White Joint Compound (Hallway) JointCom/Text-White

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

ASBESTOS TEM LABORATORIES, INC. **1409 FIFTH STREET, BERKELEY, CA 94710** **(510) 528-0108**
www.asbestostemlabs.com *With Offices in Reno, NV (775) 359-3377*

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 20
Reg. Samples Analyzed: 20
Split Layers Analyzed: 27

Job Site / No. Solano College
44156

Report No. **044363**
Date Submitted: Jun-07-04
Date Reported: Jul-06-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD LAB
86D		None Detected	1) 1-5% Cellulose 2) 95-99% Gyp, Other m.p.	White Sheetrock / White Joint Compound (1109B)
Lab ID # 543-00059-008A			3) Jun-03-04 4) Jun-17-04	Sheetrock-White
86D		None Detected	1) 1-5% Cellulose 2) 95-99% Gyp, Calc, Mica, Other m.p.	White Sheetrock / White Joint Compound (1109B)
Lab ID # 543-00059-008B			3) 4) Jun-17-04	JointCom/Text-White
87A		None Detected	1) 1-5% Cellulose 2) 95-99% Bndr, Calc, Other m.p.	* Gray Sheet Flooring / Graypaper (1106F)
Lab ID # 543-00059-009A			3) Jun-03-04 4) Jul-06-04	Sheet Floor/Backing-Grey
87A		None Detected	1) 30-40% Cellulose 2) 60-70% Bndr, Calc	* Gray Sheet Flooring / Graypaper (1106F)
Lab ID # 543-00059-009B			3) 4) Jun-17-04	Backing-Grey
87A		None Detected	1) 1-5% Cellulose 2) 95-99% Glue, Other m.p.	* Gray Sheet Flooring / Graypaper (1106F)
Lab ID # 543-00059-009C			3) 4) Jul-06-04	Mastic-Brown
87B		None Detected	1) 1-5% Cellulose 2) 95-99% Calc, Bndr, Other m.p.	* Gray Sheet Flooring / Graypaper (1106F)
Lab ID # 543-00059-010A			3) Jun-03-04 4) Jun-17-04	Sheet Floor/Backing-Grey
87B		None Detected	1) 30-40% Cellulose 2) 60-70% Bndr, Calc	* Gray Sheet Flooring / Graypaper (1106F)
Lab ID # 543-00059-010B			3) 4) Jun-17-04	Backing-Grey
87B		None Detected	1) 1-5% Cellulose 2) 95-99% Other m.p., Glue	* Gray Sheet Flooring / Graypaper (1106F)
Lab ID # 543-00059-010C			3) 4) Jul-06-04	Mastic-Brown
87C		None Detected	1) 1-5% Cellulose 2) 95-99% Calc, Bndr, Other m.p.	* Gray Sheet Flooring / Graypaper (Hall)
Lab ID # 543-00059-011A			3) Jun-03-04 4) Jun-17-04	Sheet Floor/Backing-Grey
87C		None Detected	1) 30-40% Cellulose 2) 60-70% Calc, Bndr	* Gray Sheet Flooring / Graypaper (Hall)
Lab ID # 543-00059-011B			3) 4) Jun-17-04	Backing-Grey

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 20
Reg. Samples Analyzed: 20
Split Layers Analyzed: 27

Job Site / No. Solano College
44156

Report No. **044363**
Date Submitted: Jun-07-04
Date Reported: Jul-06-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
88A	None Detected	1) 1-5% Cellulose 2) 95-99% Calc, Bndr, Other m.p.	* White 12"x12" VFT / Yellow Mastic (Foyer 1106)
Lab ID # 543-00059-012		3) Jun-03-04 4) Jun-17-04	Floor Tile-White
88A	None Detected	1) None Detected 2) 99-100% Glue, Opq, Calc, Qtz	* White 12"x12" VFT / Yellow Mastic (Foyer 1106)
Lab ID # 543-00059-012C		3) 4) Jun-17-04	Glue-Yellow
88B	None Detected	1) None Detected 2) 99-100% Calc, Bndr, Other m.p.	* White 12"x12" VFT / Yellow Mastic (Foyer 1106)
Lab ID # 543-00059-013		3) Jun-03-04 4) Jun-17-04	Floor Tile-White
88B	None Detected	1) None Detected 2) 99-100% Glue, Opq, Calc, Qtz	* White 12"x12" VFT / Yellow Mastic (Foyer 1106)
Lab ID # 543-00059-013C		3) 4) Jun-17-04	Glue-Yellow
88C	None Detected	1) None Detected 2) 99-100% Calc, Bndr, Other m.p.	* White 12"x12" VFT / Yellow Mastic (Foyer 1106)
Lab ID # 543-00059-014		3) Jun-03-04 4) Jun-17-04	Floor Tile-White
88C	None Detected	1) None Detected 2) 99-100% Glue, Opq, Calc, Qtz	* White 12"x12" VFT / Yellow Mastic (Foyer 1106)
Lab ID # 543-00059-014C		3) 4) Jun-17-04	Glue-Yellow
89A	None Detected	1) 10-20% Cellulose 2) 80-90% Bndr, Calc, Other m.p.	* Beige "Rock" Sheet Flooring / Gray Paper / Blk. Yellow Glue / White Leveling Compound (WRR 1107)
Lab ID # 543-00059-015A		3) Jun-03-04 4) Jun-17-04	Sheet Flooring-Grey
89A	None Detected	1) 30-40% Cellulose 2) 60-70% Bndr, Calc	* Beige "Rock" Sheet Flooring / Gray Paper / Blk. Yellow Glue / White Leveling Compound (WRR 1107)
Lab ID # 543-00059-015B		3) 4) Jun-17-04	Backing-Grey
89A	None Detected	1) None Detected 2) 99-100% Tar, Opq, Qtz, Other m.p.	* Beige "Rock" Sheet Flooring / Gray Paper / Blk. Yellow Glue / White Leveling Compound (WRR 1107)
Lab ID # 543-00059-015C		3) 4) Jun-17-04	Mastic-Black
89A	None Detected	1) 1-5% Cellulose 2) 95-99% Calc, Gyp, Other m.p.	* Beige "Rock" Sheet Flooring / Gray Paper / Blk. Yellow Glue / White Leveling Compound (WRR 1107)
Lab ID # 543-00059-015D		3) 4) Jun-17-04	LevelCmpd-White

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 20
Reg. Samples Analyzed: 20
Split Layers Analyzed: 27

Job Site / No. Solano College
44156

Report No. **044363**
Date Submitted: Jun-07-04
Date Reported: Jul-06-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
89B	None Detected	1) 1-5% Cellulose 2) 95-99% Calc, Bndr, Other m.p.	* Beige "Rock" Sheet Flooring / Gray Paper / Blk. Yellow Glue / White Leveling Compound (WRR 1107)
Lab ID # 543-00059-016A		3) Jun-03-04 4) Jun-17-04	Sheet Floor/Backing-Grey
89B	None Detected	1) 20-30% Cellulose 2) 70-80% Bndr, Calc	* Beige "Rock" Sheet Flooring / Gray Paper / Blk. Yellow Glue / White Leveling Compound (WRR 1107)
Lab ID # 543-00059-016B		3) 4) Jun-17-04	Backing-Grey
89B	None Detected	1) 5-10% Cellulose 2) 90-95% Tar, Bndr, Calc, Other m.p.	* Beige "Rock" Sheet Flooring / Gray Paper / Blk. Yellow Glue / White Leveling Compound (WRR 1107)
Lab ID # 543-00059-016C		3) 4) Jun-17-04	Mastic-Black
89B	None Detected	1) None Detected 2) 99-100% Other m.p.	* Beige "Rock" Sheet Flooring / Gray Paper / Blk. Yellow Glue / White Leveling Compound (WRR 1107)
Lab ID # 543-00059-016D		3) 4) Jun-17-04	LevelCmpd-White
89C	None Detected	1) 1-5% Cellulose 2) 95-99% Calc, Bndr, Other m.p.	* Beige "Rock" Sheet Flooring / Gray Paper / Blk. Yellow Glue / White Leveling Compound (WRR 1107)
Lab ID # 543-00059-017A		3) Jun-03-04 4) Jun-17-04	Sheet Floor/Backing-Grey
89C	None Detected	1) 20-30% Cellulose 2) 70-80% Bndr, Calc	
Lab ID # 543-00059-017B		3) 4) Jun-17-04	Backing-Grey
89C	None Detected	1) 5-10% Cellulose 2) 90-95% Tar, Bndr, Calc, Other m.p.	
Lab ID # 543-00059-017C		3) 4) Jun-17-04	Mastic-Black
89C	None Detected	1) None Detected 2) 99-100% Other m.p.	
Lab ID # 543-00059-017D		3) 4) Jun-17-04	LevelCmpd-White
90A	None Detected	1) None Detected 2) 99-100% Other m.p.	* Blue Sheet Flooring / Gray Paper / Yellow Glue (1103)
Lab ID # 543-00059-018A		3) Jun-03-04 4) Jun-17-04	Sheet Floor/Backing-Blue
90A	None Detected	1) 30-40% Cellulose 2) 60-70% Calc, Bndr	* Blue Sheet Flooring / Gray Paper / Yellow Glue (1103)
Lab ID # 543-00059-018B		3) 4) Jun-17-04	Backing-Grey

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 20
Reg. Samples Analyzed: 20
Split Layers Analyzed: 27

Job Site / No. Solano College
44156

Report No. **044363**
Date Submitted: Jun-07-04
Date Reported: Jul-06-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
90A	None Detected	1) None Detected 2) 99-100% Glue, Opq, Calc, Qtz	* Blue Sheet Flooring / Gray Paper / Yellow Glue (1103)
Lab ID # 543-00059-018C		3) 4) Jun-17-04	Glue-Yellow
90B	None Detected	1) None Detected 2) 99-100% Other m.p.	* Blue Sheet Flooring / Gray Paper / Yellow Glue (1103)
Lab ID # 543-00059-019A		3) Jun-03-04 4) Jun-17-04	Sheet Floor/Backing-Blue
90B	None Detected	1) 30-40% Cellulose 2) 60-70% Calc, Bndr	
Lab ID # 543-00059-019B		3) 4) Jun-17-04	Backing-Grey
90B	None Detected	1) None Detected 2) 99-100% Glue, Opq, Calc, Qtz	
Lab ID # 543-00059-019C		3) 4) Jun-17-04	Glue-Yellow
90C	None Detected	1) None Detected 2) 99-100% Calc, Bndr, Other m.p.	* Blue Sheet Flooring / Gray Paper / Yellow Glue (1103)
Lab ID # 543-00059-020A		3) Jun-03-04 4) Jun-17-04	Sheet Floor/Backing-Grey
90C	None Detected	1) 30-40% Cellulose 2) 60-70% Bndr, Calc	* Blue Sheet Flooring / Gray Paper / Yellow Glue (1103)
Lab ID # 543-00059-020B		3) 4) Jun-17-04	Backing-Grey
90C	None Detected	1) None Detected 2) 99-100% Glue, Opq, Calc, Qtz	* Blue Sheet Flooring / Gray Paper / Yellow Glue (1103)
Lab ID # 543-00059-020C		3) 4) Jun-17-04	Glue-Yellow
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

ASBESTOS TEM LABORATORIES, INC. **1409 FIFTH STREET, BERKELEY, CA 94710** **(510) 528-0108**
www.asbestostemlabs.com *With Offices in Reno, NV (775) 359-3377*

KLEINFELDER

(12)

PROJECT NO.	PROJECT NAME	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS: PLM	RECEIVING LAB: Asbestos TEM
44156	Solano College				
L.P. NO. (P.O. NO.)	SAMPLERS: (Signature/Number) Jennifer Gomez				INSTRUCTIONS/REMARKS: *FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS: PLM	INSTRUCTIONS/REMARKS: *FIRST POSITIVE
1	6/3/04		~~84~~B		1		X	WHITE SHEETROCK/ WHITE JOINT COMPOUND (1107)
2			84C				X	(1107)
3			85A				X	WHITE DRYWALL TEXTURE (1106C)
4			85B				X	(Halloway)
5			85C				X	(1106F)
6			85D				X	(1109)
7			86A				X	WHITE SHEETROCK/ WHITE JOINT COMPOUND (Halloway)
8			86B				X	(1106F)
9			86C				X	(Halloway)
10			86D				X	(1109B)
* 11			87A				X	GRAY SHEET FLOORING/ GRAY/PAPER/BROWN MASTIC (1106F)
12			87B				X	(1106F)
13			87C				X	GRAY SHEET FLOORING/ GRAY PAPER (Hall)
* 14			88A				X	WHITE 12"x12" VFT/YELLOW MASTIC (FOYER 1106)
15			88B				X	
16			88C				X	
* 17			89A				X	BEIGE ROCK/SHEET FLOORING/ GRAY PAPER/BLK. YELLOW GLUE (1107) WHITE JOINT COMPOUND
18			89B				X	
19			89C				X	"
* 20			90A				X	BLUE SHEET FLOORING/ GRAY PAPER/YELLOW GLUE (1103)

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Jennifer Gomez	6/3/04	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
		06-07-04A09:03 RCVD

Instructions/Remarks:

3-5 days

Send Results To:

KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-8013~~ 94534
(707) 429-4070

Attn: JENNIFER GOMEZ

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

No. 0343

KLEINFELDER

(13)

PROJECT NO.	PROJECT NAME
44156	SOLANO COLLEGE

L.P. NO. (P.O. NO.):

SAMPLERS: (Signature/Number) JENNIFER GOMEZ

RECEIVING LAB: ASBESTOS TEM

INSTRUCTIONS/REMARKS: 4 FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CON-TAINERS	TYPE OF CON-TAINERS	ANALYSIS: PLM	
1	6/3/04		90B		1		X	BLUE SHEET FLOORING/GRAY PAPER/YELLOW GLUE (1103)
2			90C				X	
3			91A				X	BEIGE GLUE 12"x12" VFT / ORANGE (1102)
4			91B				X	
5			91C				X	
6			92A				X	ORANGE GLUE (STORAGE 1426)
7			92B				X	
8			93A				X	GREEN 12"x12" VFT/YELLOW + BLACK GLUE (140)
9			93B				X	
10			93C				X	
11			94A				X	GRAY 12"x12" VFT / YELLOW GLUE BLACK GLUE (1401)
12			94B				X	
13			94C				X	
14			95A				X	WHITE 2'x4' CEILING TILE (1404)
15			95B				X	(HALL)
16			95C				X	(1414)
17			96A				X	WHITE PUTTY HVAC (MACHINE ROOM)
18			96B				X	
19			96C				X	
20			97A				X	WHITE STUCCO/GRAY PLASTER (1433)

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	6/3/04	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
		[signature]
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
		06-07-04A09:03 IN VO

Instructions/Remarks: 3-5 days

Send Results To:

KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-9043~~ 94534
(707) 429-4070 4934
Attn: JENNIFER GOMEZ

M-60 White – Sampler Canary – Return Copy to Shipper Pink – Lab Copy

CHAIN OF CUSTODY

№ 0344

98-101
68-69

ASBESTOS TEM LABORATORIES, INC.
FACSIMILE TRANSMISSION

Date: Jul/06/2004 **Total Pages (including Cover Sheet):** 5

Attention: Ms. Jennifer Gomez **FAX #:** 707-429-4162

Company: Kleinfelder

CONCERNING ANALYTICAL RESULTS FOR:

Job Name: Solano College

Job #: 44156

Comments: *REVISED* PRELIMINARY Polarized Light Microscopy Bulk Sample Analytical Results

Become a registered user and take advantage of our 24-hour, 7 day-a-week internet reporting system. Final laboratory analysis reports and invoices are now available at <www.AsbestosTEMLabs.com> within two business days of this fax. In order to activate this service, please contact us with a "User Name" and "Password" in mind.

1409 Fifth Street, Suite C · Berkeley, CA 94710 · Ph. (510) 528-0108 · FAX (510) 528-0109
www.asbestostemlabs.com *With Offices in Reno, NV (775) 359-3377*

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 nr 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 18
Reg. Samples Analyzed: 14
Split Layers Analyzed: 11

Job Site / No. Solano College
44156

Report No. 044375
Date Submitted: Jun-07-04
Date Reported: Jul-06-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
98A	None Detected	1)None Detected 2)99-100% Qtz, Opq, Other m.p.	* Brown 4"x4" Floor Tile / Gray Grout (1433)
Lab ID # 543-00061-001A		3) Jun-03-04 4) Jun-10-04	Floor Tile-Brown
98A	None Detected	1)None Detected 2)99-100% Qtz, Calc, Other m.p.	* Brown 4"x4" Floor Tile / Gray Grout (1433)
Lab ID # 543-00061-001B		3) 4) Jun-10-04	Grout-Grey
98B	None Detected	1)None Detected 2)99-100% Qtz, Opq, Other m.p.	* Brown 4"x4" Floor Tile / Gray Grout (1433)
Lab ID # 543-00061-002A		3) Jun-03-04 4) Jun-10-04	Floor Tile-Brown
98B	None Detected	1)None Detected 2)99-100% Qtz, Calc, Other m.p.	
Lab ID # 543-00061-002B		3) 4) Jun-10-04	Grout-Grey
98C	None Detected	1)None Detected 2)99-100% Qtz, Opq, Other m.p.	* Brown 4"x4" Floor Tile / Gray Grout (1433)
Lab ID # 543-00061-003A		3) Jun-03-04 4) Jun-10-04	Floor Tile-Brown
98C	None Detected	1)None Detected 2)99-100% Qtz, Calc, Other m.p.	
Lab ID # 543-00061-003B		3) 4) Jun-10-04	Grout-Grey
99A	None Detected	1)1-5% Cellulose 2)95-99% Calc, Bndr, Other m.p.	* Brown 4" BB / White Mastic (1404)
Lab ID # 543-00061-004A		3) Jun-03-04 4) Jun-10-04	Baseboard-Brown
99A	None Detected	1)1-5% Cellulose 2)95-99% Calc, Bndr, Other m.p.	* Brown 4" BB / White Mastic (1404)
Lab ID # 543-00061-004B		3) 4) Jun-10-04	Mastic-Off-White
99B	None Detected	1)1-5% Cellulose 2)95-99% Calc, Bndr, Other m.p.	* Brown 4" BB / White Mastic (1404)
Lab ID # 543-00061-005A		3) Jun-03-04 4) Jun-10-04	Baseboard-Brown
99B	None Detected	1)1-5% Cellulose 2)95-99% Calc, Bndr, Other m.p.	
Lab ID # 543-00061-005B		3) 4) Jun-10-04	Mastic-Off-White

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ Analyst _____

PRELIMINARY

ASBESTOS TEM LABORATORIES, INC. 1405 HEARST STREET BERKELEY, CA 94710 (510) 528-0108
www.asbestostemlabs.com
With Offices in Reno, NV (775) 359-3377

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 18
Reg. Samples Analyzed: 14
Split Layers Analyzed: 11

Job Site / No. Solano College
44156

Report No. 044375
Date Submitted: Jun-07-04
Date Reported: Jul-06-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
99C	None Detected	1)1-5% Cellulose 2)95-99% Calc, Bndr, Other m.p.	* Brown 4" BB / White Mastic (1404)
Lab ID # 543-00061-006A		3) Jun-03-04 4) Jun-10-04	Baseboard-Brown
99C	None Detected	1)1-5% Cellulose 2)95-99% Calc, Bndr, Other m.p.	
Lab ID # 543-00061-006B		3) 4) Jun-10-04	Mastic-Off-White
100A	None Detected	1)1-5% Cellulose 2)95-99% Gyp, Other m.p.	White Drywall / White Joint Compound (1404 area)
Lab ID # 543-00061-007A		3) Jun-03-04 4) Jun-10-04	Sheetrock-White
100A	None Detected	1)1-5% Cellulose 2)95-99% Gyp, Calc, Mica, Other m.p.	White Drywall / White Joint Compound (1404 area)
Lab ID # 543-00061-007B		3) 4) Jun-10-04	JointCom/Text-Off-White
100B	None Detected	1)1-5% Cellulose 2)95-99% Gyp, Other m.p.	White Drywall / White Joint Compound (1404 area)
Lab ID # 543-00061-008A		3) Jun-03-04 4) Jun-10-04	Sheetrock-White
100B	None Detected	1)1-5% Cellulose 2)95-99% Gyp, Calc, Mica, Other m.p.	
Lab ID # 543-00061-008B		3) 4) Jun-10-04	JointCom/Text-Off-White
100C	None Detected	1)1-5% Cellulose 2)95-99% Gyp, Other m.p.	White Drywall / White Joint Compound (1404 area)
Lab ID # 543-00061-009A		3) Jun-03-04 4) Jun-10-04	Sheetrock-White
100C	None Detected	1)1-5% Cellulose 2)95-99% Gyp, Calc, Mica, Other m.p.	
Lab ID # 543-00061-009B		3) 4) Jun-10-04	JointCom/Text-Off-White
101A	None Detected	1)None Detected 2)99-100% Calc, Qtz, Other m.p.	White Drywall Texture (1404 area)
Lab ID # 543-00061-010		3) Jun-03-04 4) Jun-10-04	Texture-Off-White
101B	None Detected	1)None Detected 2)99-100% Calc, Qtz, Other m.p.	White Drywall Texture (1404 area)
Lab ID # 543-00061-011		3) Jun-03-04 4) Jun-10-04	Texture-Off-White

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ Analyst _____

PRELIMINARY

ASBESTOS TEM LABORATORIES, INC. 1409 FIFTH STREET BERKELEY, CA 94710 (510) 528-0108
www.asbestostemlabs.com
With Offices in Reno, NV (775) 359-3377

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 18
Reg. Samples Analyzed: 14
Split Layers Analyzed: 11

Job Site / No. Solano College
44156

Report No. 044375
Date Submitted: Jun-07-04
Date Reported: Jul-06-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD	DESCRIPTION LAB
101C		None Detected	1)None Detected 2)99-100% Calc, Qtz, Other m.p.	White Drywall Texture (1404 area)	
Lab ID # 543-00061-012			3)Jun-03-04 4)Jun-10-04	Texture-Off-White	
68A	1-5%	Chrysotile	1)None Detected 2)95-99% Bndr, Calc, Other m.p.	* Beige 12"x12" VFT / Black Mastic (801)	
Lab ID # 543-00061-013A			3) Jun-03-04 4) Jul-06-04	Floor Tile-Beige	
68A	5-10%	Chrysotile	1)None Detected 2)90-95% Tar, Bndr, Calc, Other m.p.	* Beige 12"x12" VFT / Black Mastic (801)	
Lab ID # 543-00061-013B			3) 4)Jul-06-04	Mastic-Black	
68B		Not Analyzed	1) 2)	* Beige 12"x12" VFT / Black Mastic (Hall)	
Lab ID # 543-00061-014			3)Jun-03-04 4)Jun-10-04		
68C		Not Analyzed	1) 2)	* Beige 12"x12" VFT / Black Mastic (Hall)	
Lab ID # 543-00061-015			3) Jun-03-04 4)Jun-10-04		
69A		None Detected	1)1-5% Cellulose 2)95-99% Calc, Bndr, Other m.p.	* Brown 4" BB / Brown Mastic (801)	
Lab ID # 543-00061-016A			3)Jun-03-04 4)Jun-10-04	Baseboard-Brown	
69A	1-5%	Chrysotile	1)None Detected 2)95-99% Bndr, Glue, Other m.p.	* Brown 4" BB / Brown Mastic (801)	
Lab ID # 543-00061-016B			3) 4)Jun-10-04	Mastic-Brown	
69B		Not Analyzed	1) 2)	* Brown 4" BB / Brown Mastic (Hall)	
Lab ID # 543-00061-017			3) Jun-03-04 4)Jun-10-04		
69C		Not Analyzed	1) 2)	* Brown 4" BB / Brown Mastic (Hall)	
Lab ID # 543-00061-018			3) Jun-03-04 4)Jun-10-04		
Lab ID #			1) 2) 3) 4)		

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ Analyst _____

PRELIMINARY

ASBESTOS TEM LABORATORIES, INC. 1405 FIFTH STREET, BERKELEY, CA 94710 (510) 528-0108
www.asbestostemlabs.com
With Offices in Reno, NV (775) 359-3377

KLEINFELDER

(14)

PROJECT NO.	PROJECT NAME	RECEIVING LAB:
44156	Solano College	ASBESTOS TEM
L.P. NO. (P.O. NO.)	SAMPLERS: (Signature/Number) Jennifer Gomez	INSTRUCTIONS/REMARKS: *FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS PLM	
1	6/3/04		97B		1		X	WHITE STUCCO/GREY PLASTER (1433)
2			97C				X	
* 3			98A				X	BROWN 4" VAN FLOOR TILE/ BROWN/BLACK (1433)
4			98B				X	
5			98C				X	
* 6			99A				X	BROWN 4" BB/WHITE MASTIC (1434)
7			99B				X	
8			99C				X	
* 9			100A				X	WHITE DRYWALL/WHITE JOINT COMPOUND (1404 ALL)
10			100B				X	
11			100C				X	
12			101A				X	WHITE DRYWALL TEXTURE (1404 ALL)
13			101B				X	
14			101C				X	
* 15			68A				X	BEIGE 12" VFT/BLACK MASTIC (801)
16			68B				X	(Hall)
17			68C				X	(Hall)
* 18			69A				X	BROWN 4" BB/BROWN MASTIC (801)
19			69B				X	(Hall)
20			69C				X	(Hall)

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Instructions/Remarks:	Send Results To:
[signature]	6/3/04		3-5 days	KLEINFELDER 780 CHADBOURNE, ROAD SUITE D FAIRFIELD, CA 94585-8043 (707) 429-4070 94534
Relinquished by: (Signature)	Date/Time	Received by: (Signature)		
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)		Attn: JENNIFER GOMEZ
		06-07-04A09:04 RCVD		

NI-60 White - Sampler Canary - Return Copy to Shipper Pink - Lab Copy

CHAIN OF CUSTODY

№ 0345

102-106

ASBESTOS TEM LABORATORIES, INC.

EPA Interim Method
Polarized Light Microscopy
Analytical Report

Laboratory Job # 543-00062

1409 Fifth Street
Berkeley, CA 94710
(510) 528-0108
FAX (510) 528-0109
www.asbestostemlabs.com

With Branch Offices Located At:
1016 GREG STREET, SPARKS, NV 89431
Ph. (775) 359-3377

ASBESTOS TEM LABORATORIES, INC

Accredited by
U.S. Dept. of Commerce
NVLAP
CA DOHS ELAP

Jun-21-04

Ms. Jennifer Gomez
Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

RE: LABORATORY JOB # 543-00062
Polarized light microscopy analytical results for 13 bulk sample(s) with 6 sample split(s)
Job Site: Solano College
Job No.: 44156

Enclosed please find the bulk material analytical results for one or more samples submitted for asbestos analysis. The analyses were performed in accordance with EPA Method 600/R-93/116 or 600/M4-82-020 for the determination of asbestos in bulk building materials by polarized light microscopy (PLM). Please note that while PLM analysis is commonly performed on non-friable and fine grained materials such as floor tiles and dust, the EPA method recognizes that PLM is subject to limitations. In these situations, accurate results may only be obtainable through the use of more sophisticated and accurate techniques such as transmission electron microscopy (TEM) or X-ray diffraction (XRD).

Prior to analysis, samples are logged-in and all data pertinent to the sample recorded. The samples are checked for damage or disruption of any chain-of-custody seals. A unique laboratory ID number is assigned to each sample. A hard copy log-in sheet containing all pertinent information concerning the sample is generated. This and all other relevant paper work are kept with the sample throughout the analytical procedures to assure proper analysis.

Each sample is opened in a class 100 HEPA negative air hood. A representative sampling of the material is selected and placed onto a glass microscope slide containing a drop of refractive index oil. The glass slide is placed under a polarizing light microscope where standard mineralogical techniques are used to analyze and quantify the various materials present, including asbestos. The data is then compiled into standard report format and subjected to a thorough quality assurance check before the information is released to the client.

Sincerely Yours,

Stephen O Shaffer

Lab Manager
ASBESTOS TEM LABORATORIES, INC.

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 15
Reg. Samples Analyzed: 13
Split Layers Analyzed: 6

Job Site / No. Solano College
44156

Report No. **044379**
Date Submitted: Jun-07-04
Date Reported: Jun-21-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
102A.		None Detected	1)80-100% Cellulose,Mineral Wool 2)<1% Other m.p.	white 2x4 ceiling tile. (1307)
Lab ID # 543-00062-001			3) Jun-02-04 4) Jun-18-04	Ceiling Tile-White
102B.		None Detected	1)80-100% Cellulose,Mineral Wool 2)<1% Other m.p.	white 2x4 ceiling tile. (hall)
Lab ID # 543-00062-002			3) Jun-02-04 4) Jun-18-04	Ceiling Tile-White
102C.		None Detected	1)80-100% Cellulose,Mineral Wool 2)<1% Other m.p.	white 2x4 ceiling tile. (hall)
Lab ID # 543-00062-003			3) Jun-02-04 4) Jun-18-04	Ceiling Tile-White
103A.	<1%	Chrysotile	1)<1% Fiberglass 2) 100-100% Calc, Bndr, Other m.p.	of white brown 12x12 VFT black mastic, (hall)
Lab ID # 543-00062-004A			3) Jun-02-04 4) Jun-21-04	Floor Tile-Off-White
103A.	10-20%	Chrysotile	1)None Detected 2) 80-90% Calc, Tar, Opq, Other m.p.	of white brown 12x12 VFT black mastic, (hall)
Lab ID # 543-00062-004B			3) 4) Jun-18-04	Mastic-Black
103B		Not Analyzed	1) 2)	of white brown 12x12 VFT black mastic, (hall 1307)
Lab ID # 543-00062-005			3) Jun-02-04 4) Jun-18-04	
103C		Not Analyzed	1) 2)	of white brown 12x12 VFT black mastic, (hall)
Lab ID # 543-00062-006			3) Jun-02-04 4) Jun-18-04	
104A		None Detected	1)<1% Cellulose 2) 100-100% Calc, Bndr, Qtz, Other m.p.	brown 4 bb brown mastic (hall1307)
Lab ID # 543-00062-007A			3) Jun-02-04 4) Jun-18-04	Baseboard-Brown
104A	<1%	Chrysotile	1)<1% Cellulose 2) 100-100% Calc, Bndr, Other m.p.	brown 4 bb brown mastic (hall1307)
Lab ID # 543-00062-007B			3) 4) Jun-21-04	Mastic-Brown
104B		None Detected	1)<1% Cellulose 2) 100-100% Calc, Bndr, Qtz, Other m.p.	brown 4 bb brown mastic (hall)
Lab ID # 543-00062-008A			3) Jun-02-04 4) Jun-18-04	Baseboard-Brown

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

ASBESTOS TEM LABORATORIES, INC. **1409 FIFTH STREET, BERKELEY, CA 94710** **(510) 528-0108**
www.asbestostemlabs.com *With Offices in Reno, NV (775) 359-3377*

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 15
Reg. Samples Analyzed: 13
Split Layers Analyzed: 6

Job Site / No. Solano College
44156

Report No. **044379**
Date Submitted: Jun-07-04
Date Reported: Jun-21-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
104B	Not Analyzed	1) 2)	
Lab ID # 543-00062-008B		3) 4) Jun-21-04	
104C	None Detected	1) <1% Cellulose 2) 100-100% Calc, Bndr, Qtz, Other m.p.	brown 4 bb brown mastic (hall)
Lab ID # 543-00062-009A		3) Jun-02-04 4) Jun-18-04	Baseboard-Brown
104C	Not Analyzed	1) 2)	
Lab ID # 543-00062-009B		3) 4) Jun-21-04	
105A	None Detected	1) None Detected 2) 99-100% Calc, Bndr, Opq, Other m.p.	white brown 12x12 vft yelllow mastic (1305)
Lab ID # 543-00062-010A		3) Jun-02-04 4) Jun-18-04	Floor Tile-White Brown
105A	None Detected	1) <1% Cellulose 2) 100-100% Calc, Qtz, Bndr, Other m.p.	white brown 12x12 vft yelllow mastic (1305)
Lab ID # 543-00062-010B		3) 4) Jun-18-04	Mastic-Yellow
105B	None Detected	1) None Detected 2) 99-100% Calc, Bndr, Opq, Other m.p.	white brown 12x12 vft yelllow mastic (1305)
Lab ID # 543-00062-011A		3) Jun-02-04 4) Jun-18-04	Floor Tile-White Brown
105B	None Detected	1) <1% Cellulose 2) 100-100% Calc, Qtz, Bndr, Other m.p.	
Lab ID # 543-00062-011B		3) 4) Jun-18-04	Mastic-Yellow
105C	None Detected	1) None Detected 2) 99-100% Calc, Bndr, Opq, Other m.p.	white brown 12x12 vft yelllow mastic (1305)
Lab ID # 543-00062-012A		3) Jun-02-01 4) Jun-18-04	Floor Tile-White Brown
105C	None Detected	1) <1% Cellulose 2) 100-100% Calc, Qtz, Bndr, Other m.p.	
Lab ID # 543-00062-012B		3) 4) Jun-18-04	Mastic-Yellow
106A	None Detected	1) 1-5% Cellulose, Fiberglass 2) 95-99% Gyp, Qtz, Other m.p.	white sheetrock white joint compund (janitors closet)
Lab ID # 543-00062-013A		3) Jun-02-04 4) Jun-18-04	Sheetrock-White

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

ASBESTOS TEM LABORATORIES, INC. **1409 FIFTH STREET, BERKELEY, CA 94710** **(510) 528-0108**
www.asbestostemlabs.com *With Offices in Reno, NV (775) 359-3377*

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 15
Reg. Samples Analyzed: 13
Split Layers Analyzed: 6

Job Site / No. Solano College
44156

Report No. **044379**
Date Submitted: Jun-07-04
Date Reported: Jun-21-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD	DESCRIPTION LAB
106A	1-5%	Chrysotile	1) 1-5% Cellulose 2) 90-98% Calc, Mica, Other m.p.	white sheetrock white joint compund (janitors closet)	
Lab ID # 543-00062-013B			3) 4) Jun-21-04		Joint Compound-White
106B		None Detected	1) 1-5% Cellulose,Fiberglass 2) 95-99% Gyp, Qtz, Other m.p.	white sheetrock white joint compund (1302)	
Lab ID # 543-00062-014A			3) Jun-02-04 4) Jun-18-04		Sheetrock-White
106B		Not Analyzed	1) 2)		
Lab ID # 543-00062-014B			3) 4) Jun-21-04		
106C		None Detected	1) 1-5% Cellulose,Fiberglass 2) 95-99% Gyp, Qtz, Other m.p.	white sheetrock white joint compund (1302)	
Lab ID # 543-00062-015A			3) Jun-02-04 4) Jun-18-04		Sheetrock-White
106C		Not Analyzed	1) 2)		
Lab ID # 543-00062-015B			3) 4) Jun-21-04		
			1) 2)		
Lab ID #			3) 4)		
			1) 2)		
Lab ID #			3) 4)		
			1) 2)		
Lab ID #			3) 4)		
			1) 2)		
Lab ID #			3) 4)		
			1) 2)		
Lab ID #			3) 4)		

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

KLEINFELDER

15

PROJECT NO.	PROJECT NAME	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS	RECEIVING LAB:
44156	Solano College			PLM	Asbestos ITEM
L.P. NO. (P.O. NO.)	SAMPLERS: (Signature/Number)				INSTRUCTIONS/REMARKS
	Tennifer Gomez				*FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX				
1	6/2/04		67C		1		X	WHITE DRYWALL TEXTURE (190B)
2	~~6/2/04~~		~~68A~~				X	~~BLACK MASTIC~~ BLACK MASTIC (201)
3			~~68B~~				X	
4			68C				X	
5			69A				X	HARD WHITE/BROWN MASTIC (201)
6			69B				X	(Hall)
7			69C				X	(Hall)
8			102A				X	WHITE 2'X4' CEILING TILE (307)
9			102B				X	(Hall)
10			102C				X	(Hall)
11			103A				X	OFF-WHITE-BROWN 12"x12" VET/BLACK MASTIC (Hall)
12			103B				X	(Hall 307)
13			103C				X	(Hall)
14			104A				X	BROWN 9"x9" FF/BROWN MASTIC (Hall 307)
15			104B				X	(Hall)
16			104C				X	(Hall)
17			105A				X	WHITE-BROWN 12"x12" VET/YELLOW MASTIC (305)
18			105B				X	
19			105C				X	
20			106A				X	WHITE SHEETROCK + JOINT COMPOUND (PAINTED) (CEMENT)

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Instructions/Remarks:	Send Results To:
	6/3/04		3-5 days	KLEINFELDER 780 CHADBOURNE, ROAD SUITE D FAIRFIELD, CA ~~94585-9849~~ 94534 (707) 429-4070 Attn: JENNIFER GOMEZ
Relinquished by: (Signature)	Date/Time	Received by: (Signature)		
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)		
		QC / ITEM		

M-60 White – Sampler 06-07-04A09:04 RCVD Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

№ 0355

KLEINFELDER

(16)

PROJECT NO. 44156 | PROJECT NAME Solano College

L.P. NO. (P.O. NO.) | SAMPLERS: (Signature/Number) Jennifer Gomez

RECEIVING LAB: Asbestos TEM

INSTRUCTIONS/REMARKS: **FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CON-TAINERS	TYPE OF CON-TAINERS	ANALYSIS: PLM	
1	6/3/04		106B		1		X	WHITE SHEETROCK/WHITE JOINT COMPOUND (1302 comp)
2			106C				X	2
* 3			107A				X	WHITE STUCCO/GRAY PLASTER (WRR)
4			107B				X	(WRR)
5			107C				X	(WRR)
* 6			108A				X	TAN 12"x12" CEILING TILE/BROWN MASTIC (WRR ceiling)
7			108B				X	(Hall)
8			108C				X	(Hall)
* 9			109A				X	GREEN-OR WHITE 12"x12" VFT/BLACK MASTIC (Hall)
10			109B				X	
11			109C				X	
* 12			110A				X	BROWN 9"x9" SB/BROWN MASTIC (Hall)
13			110B				X	
14			110C				X	
* 15			111A				X	WHITE 2'x4' CEILING TILE (Hall)
16			111B				X	
17			111C				X	
* 18			112A				X	WHITE PLASTER/GRAY PLASTER (WRR)
19			112B		✓		X	WHITE PLASTER (WRR)
20	✓		112C				X	2 (WRR)

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Jennifer Gomez	6/3/04	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
		06-07-04A09:04 RCVD

Instructions/Remarks: 3-5 days

Send Results To:
KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-3643~~ 94534
(707) 429-4070
Attn: JENNIFER GOMEZ

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

№ 0356

107-112

ASBESTOS TEM LABORATORIES, INC.
FACSIMILE TRANSMISSION

Date: Jun/20/2004 **Total Pages (including Cover Sheet):** 5

Attention: Ms. Jenniefer Gomez **FAX #:** 707-429-4162

Company: Kleinfelder

CONCERNING ANALYTICAL RESULTS FOR:

Job Name: Solano College

Job #: 44156

Comments: PRELIMINARY Polarized Light Microscopy Bulk Sample Analytical Results

Become a registered user and take advantage of our 24-hour, 7 day-a-week internet reporting system. Final laboratory analysis reports and invoices are now available at <www.AsbestosTEMLabs.com> within two business days of this fax. In order to activate this service, please contact us with a "User Name" and "Password" in mind.

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POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020 Page: 1 of 3

Contact: Ms. Jenniefer Gomez
Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 18
Reg. Samples Analyzed: 14
Split Layers Analyzed: 6

Job Site / No. Solano College 44156

Report No. 044380
Date Submitted: Jun-07-04
Date Reported: Jun-20-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
107A.		None Detected	1)None Detected 2)99-100% Calc, Bndr, Qtz	white stucco gray plaster. (wrr)
Lab ID # 543-00063-001			3)Jun-03-04 4)Jun-20-04	Plaster-Grey
107B.		None Detected	1)None Detected 2)99-100% Calc, Bndr, Qtz	white stucco gray plaster. (wrr)
Lab ID # 543-00063-002			3) Jun-03-04 4) Jun-20-04	Plaster-Grey
107C.		None Detected	1)None Detected 2)99-100% Calc, Bndr, Qtz	white stucco gray plaster. (mrr)
Lab ID # 543-00063-003			3) Jun-03-04 4) Jun-20-04	Plaster-Grey
108A.		None Detected	1)95-99% Cellulose 2)1-5% Other m.p.	tan 12x12 ceiling tile brown mastic (wrr ceiling)
Lab ID # 543-00063-004A			3) Jun-03-04 4) Jun-20-04	Ceiling Tile-Brown
108A.	1-5%	Chrysotile	1)None Detected 2)95-99% Glue, Other m.p.	tan 12x12 ceiling tile brown mastic (wrr ceiling)
Lab ID # 543-00063-004B			3) 4)Jun-20-04	Mastic-Brown
108B.		Not Analyzed	1) 2)	tan 12x12 ceiling tile brown mastic (hall)
Lab ID # 543-00063-005			3) Jun-03-04 4) Jun-20-04	
108C.		Not Analyzed	1) 2)	tan 12x12 ceiling tile brown mastic (hall)
Lab ID # 543-00063-006			3) Jun-03-04 4)Jun-20-04	
109A.	5-10%	Chrysotile	1)None Detected 2)90-95% Bndr, Calc	green off white tile 12x12 vft black mastic (hall)
Lab ID # 543-00063-007A			3) Jun-03-04 4)Jun-20-04	Floor Tile-Grey
109A.	5-10%	Chrysotile	1)None Detected 2)90-95% Tar, Bndr, Calc, Other m.p.	green off white tile 12x12 vft black mastic (hall)
Lab ID # 543-00063-007B			3) 4)Jun-20-04	Mastic-Black
109B.		Not Analyzed	1) 2)	green off white tile 12x12 vft black mastic (hall)
Lab ID # 543-00063-008			3) Jun-03-04 4)Jun-20-04	

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ Analyst _____

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PRELIMINARY

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jenniefer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 18
Reg. Samples Analyzed: 14
Split Layers Analyzed: 6

Job Site / No. Solano College
44156

Report No. 044380
Date Submitted: Jun-07-04
Date Reported: Jun-20-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
109C.	Not Analyzed	1) 2)	green off white tile 12x12 vft black mastic (hall)
Lab ID # 543-00063-009		3) Jun-03-04 4) Jun-20-04	
110A.	None Detected	1) None Detected 2) 99-100% Bndr, Calc	brown 4 bb brown mastic (hall)
Lab ID # 543-00063-010A		3) Jun-03-04 4) Jun-20-04	Baseboard-Brown
110A.	None Detected	1) 10-20% Wollast 2) 80-90% Glue, Other m.p.	brown 4 bb brown mastic (hall)
Lab ID # 543-00063-010B		3) 4) Jun-20-04	Mastic-Brown
110B.	None Detected	1) None Detected 2) 99-100% Bndr, Calc	brown 4 bb brown mastic (hall)
Lab ID # 543-00063-011A		3) Jun-03-04 4) Jun-20-04	Baseboard-Brown
110B.	None Detected	1) 10-20% Wollast 2) 80-90% Glue, Other m.p.	
Lab ID # 543-00063-011B		3) 4) Jun-20-04	Mastic-Brown
110C.	None Detected	1) None Detected 2) 99-100% Bndr, Calc	brown 4 bb brown mastic (hall)
Lab ID # 543-00063-012A		3) Jun-03-04 4) Jun-20-04	Baseboard-Brown
110C.	None Detected	1) 10-20% Wollast 2) 80-90% Glue, Other m.p.	
Lab ID # 543-00063-012B		3) 4) Jun-20-04	Mastic-Brown
111A.	None Detected	1) 80-100% Cellulose, Mineral Wool 2) <1% Other m.p.	white 2x4 ceiling tile (hall)
Lab ID # 543-00063-013A		3) Jun-03-04 4) Jun-20-04	Ceiling Tile-Grey
111B.	None Detected	1) 80-100% Cellulose, Mineral Wool 2) <1% Other m.p.	white 2x4 ceiling tile (hall)
Lab ID # 543-00063-014		3) Jun-03-04 4) Jun-20-04	Ceiling Tile-Grey
111C.	None Detected	1) 80-100% Cellulose, Mineral Wool 2) <1% Other m.p.	white 2x4 ceiling tile (hall)
Lab ID # 543-00063-015		3) Jun-03-04 4) Jun-20-04	Ceiling Tile-Grey

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ Analyst _____

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With Offices in Reno, NV (775) 359-3377

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jenniefer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 18
Reg. Samples Analyzed: 14
Split Layers Analyzed: 6

Job Site / No. Solano College
44156

Report No. 044380
Date Submitted: Jun-07-04
Date Reported: Jun-20-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
112A. Lab ID # 543-00063-016A	None Detected	1) None Detected 2) 99-100% Calc, Qtz 3) Jun-03-04 4) Jun-20-04	white plaster gray plaster (wrr) / Plaster-Grey
112A. Lab ID # 543-00063-016B	None Detected	1) None Detected 2) 99-100% Calc, Qtz 3) 4) Jun-20-04	white plaster gray plaster (wrr) / Plaster-White
112B. Lab ID # 543-00063-017	None Detected	1) None Detected 2) 99-100% Calc, Qtz 3) Jun-03-04 4) Jun-20-04	white plaster (wrr) / Plaster-White
112C. Lab ID # 543-00063-018	None Detected	1) None Detected 2) 99-100% Calc, Qtz 3) Jun-03-04 4) Jun-20-04	white plaster (mrr) / Plaster-White
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ Analyst _____

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PRELIMINARY

(10)

KLEINFELDER

PROJECT NO.	PROJECT NAME	RECEIVING LAB:
44156	Solano College	Asbestos TEM

L.P. NO. (P.O. NO.):

SAMPLERS: (Signature/Number) Jennifer Gomez

ANALYSIS: PLM

INSTRUCTIONS/REMARKS: *FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CONTAINERS	TYPE OF CONTAINERS	PLM	INSTRUCTIONS/REMARKS
1	6/3/04		106B		1		X	WHITE SHEETROCK – WHITE JOINT COMPOUND (B/D2cna)
2			106C				X	
* 3			107A				X	WHITE STUCCO/ GRAY PLASTER (WRR)
4			107B				X	(WRR)
5			107C				X	(WRR)
* 6			108A				X	TAN 12"x12" CEILING TILE/BROWN MASTIC (WRR ceiling)
7			108B				X	(Hall)
8			108C				X	(Hall)
* 9			109A				X	GREEN-OFF WHITE 12"x12" VFT/BLACK MASTIC (Hall)
10			109B				X	
11			109C				X	
* 12			110A				X	BROWN 4" SB/BROWN MASTIC (Hall)
13			110B				X	
14			110C				X	
* 15			111A				X	WHITE 2'x4' CEILING TILE (Hall)
16			111B				X	
17			111C				X	
* 18			112A				X	WHITE PLASTER/GRAY PLASTER (WRR)
19			112B				X	WHITE PLASTER (WRR)
20			112C				X	(WRR)

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Instructions/Remarks:	Send Results To:
[signature]	6/3/04		3-5 days	KLEINFELDER 780 CHADBOURNE, ROAD SUITE D FAIRFIELD, CA ~~94585-3643~~ 94534 (707) 429-4070 Attn: JENNIFER GOMEZ
Relinquished by: (Signature)	Date/Time	Received by: (Signature)		
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature) [signature] 06-07-04A09:04 RCVD		

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№ 0356

113-119

ASBESTOS TEM LABORATORIES, INC.
FACSIMILE TRANSMISSION

Date: Jun/20/2004 **Total Pages (including Cover Sheet):** 8

Attention: Ms. Jennifer Gomez **FAX #:** 707-429-4162

Company: Kleinfelder

CONCERNING ANALYTICAL RESULTS FOR:

Job Name: Solano College

Job #: 44156

Comments: PRELIMINARY Polarized Light Microscopy Bulk Sample Analytical Results

Become a registered user and take advantage of our 24-hour, 7 day-a-week internet reporting system. Final laboratory analysis reports and invoices are now available at <www.AsbestosTEMLabs.com> within two business days of this fax. In order to activate this service, please contact us with a "User Name" and "Password" in mind.

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POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020 Page: 1 of 5

Contact: Ms. Jennifer Gomez
Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 21
Reg. Samples Analyzed: 21
Split Layers Analyzed: 27

Job Site / No. Solano College
44156

Report No. 044404
Date Submitted: Jun-07-04
Date Reported: Jun-20-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
113A		None Detected	1) 1-5% Cellulose 2) 95-99% Gyp, Other m.p.	White Sheetrock / White Joint Compound (Mech Rm.)
Lab ID # 543-00064-001A			3) Jun-03-04 4) Jun-20-04	Sheetrock-White
113A	<1%	Chrysotile	1) None Detected 2) 100-100% Calc, Mica, Other m.p.	White Sheetrock / White Joint Compound (Mech Rm.)
Lab ID # 543-00064-001B			3) 4) Jun-20-04	JointCom/Text-White
113B		None Detected	1) 1-5% Cellulose 2) 95-99% Gyp, Other m.p.	White Sheetrock / White Joint Compound (Jan. Closet)
Lab ID # 543-00064-002A			3) Jun-03-04 4) Jun-20-04	Sheetrock-White
113B		None Detected	1) <1% Polyethelene 2) 100-100% Calc, Other m.p.	White Sheetrock / White Joint Compound (Jan. Closet)
Lab ID # 543-00064-002B			3) 4) Jun-20-04	JointCom/Text-White
113C		None Detected	1) 1-5% Cellulose 2) 95-99% Gyp, Other m.p.	White Sheetrock / White Joint Compound (Jan. Closet)
Lab ID # 543-00064-003A			3) Jun-03-04 4) Jun-20-04	Sheetrock-White
113C	<1%	Chrysotile	1) None Detected 2) 100-100% Calc, Mica, Other m.p.	White Sheetrock / White Joint Compound (Jan. Closet)
Lab ID # 543-00064-003B			3) 4) Jun-20-04	JointCom/Text-White
114A	<1%	Chrysotile	1) 1-5% Cellulose 2) 95-99% Gyp, Calc, Mica, Qtz, Opq	White Drywall Texture (Mech. Rm)
Lab ID # 543-00064-004			3) Jun-03-04 4) Jun-20-04	JointCom/Text-Off-White
114B	<1%	Chrysotile	1) 1-5% Cellulose 2) 95-99% Gyp, Calc, Mica, Qtz, Opq	White Drywall Texture (Mech. Rm)
Lab ID # 543-00064-005			3) Jun-03-04 4) Jun-20-04	JointCom/Text-Off-White
114C	<1%	Chrysotile	1) 1-5% Cellulose 2) 95-99% Gyp, Calc, Mica, Qtz, Opq	White Drywall Texture (Mech. Rm)
Lab ID # 543-00064-006			3) Jun-03-04 4) Jun-20-04	JointCom/Text-Off-White
115A		None Detected	1) None Detected 2) 99-100% Calc, Bndr, Other m.p.	* Pink VFT / Black Mastic (Upstairs 1854)
Lab ID # 543-00064-007A			3) Jun-03-04 4) Jun-20-04	Floor Tile-Pink

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ Analyst _____

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POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 21
Reg. Samples Analyzed: 21
Split Layers Analyzed: 27

Job Site / No. Solano College
44156

Report No. 044404
Date Submitted: Jun-07-04
Date Reported: Jun-20-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
115A Lab ID # 543-00064-007B	None Detected	1)5-10% Polyethylene 2)90-95% Tar, Other m.p. 3) 4) Jun-20-04	* Pink VFT / Black Mastic (Upstairs 1854) Mastic-Black
115B Lab ID # 543-00064-008A	None Detected	1)None Detected 2)99-100% Calc, Bndr, Other m.p. 3) Jun-03-04 4) Jun-20-04	* Pink VFT / Black Mastic (Upstairs 1854) Floor Tile-Pink
115B Lab ID # 543-00064-008B	None Detected	1)5-10% Polyethylene 2)90-95% Tar, Other m.p. 3) 4) Jun-20-04	* Pink VFT / Black Mastic (Upstairs 1854) Mastic-Black
115C Lab ID # 543-00064-009A	None Detected	1)None Detected 2)99-100% Calc, Bndr, Other m.p. 3) Jun-03-04 4) Jun-20-04	* Pink VFT / Black Mastic (Upstairs 1854) Floor Tile-Pink
115C Lab ID # 543-00064-009B	None Detected	1)5-10% Polyethylene 2)90-95% Tar, Other m.p. 3) 4) Jun-20-04	* Pink VFT / Black Mastic (Upstairs 1854) Mastic-Black
116A Lab ID # 543-00064-010A	None Detected	1)None Detected 2)99-100% Calc, Bndr, Other m.p. 3) Jun-03-04 4) Jun-20-04	* Brown 4" BB / Brown Mastic (Upstairs 1854) Baseboard-Brown
116A Lab ID # 543-00064-010B	None Detected	1)None Detected 2)99-100% Woll, Glue, Other m.p. 3) 4) Jun-20-04	* Brown 4" BB / Brown Mastic (Upstairs 1854) Mastic-Brown
116B Lab ID # 543-00064-011A	None Detected	1)None Detected 2)99-100% Calc, Bndr, Other m.p. 3) Jun-03-04 4) Jun-20-04	* Brown 4" BB / Brown Mastic (Upstairs 1854) Baseboard-Brown
116B Lab ID # 543-00064-011B	None Detected	1)None Detected 2)99-100% Woll, Glue, Other m.p. 3) 4) Jun-20-04	 Mastic-Brown
116C Lab ID # 543-00064-012A	None Detected	1)None Detected 2)99-100% Calc, Bndr, Other m.p. 3) Jun-03-04 4) Jun-20-04	* Brown 4" BB / Brown Mastic (Upstairs 1854) Baseboard-Brown

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ Analyst _____

PRELIMINARY

ASBESTOS TEM LABORATORIES, INC.
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With Offices in Reno, NV (775) 359-3377

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 21
Reg. Samples Analyzed: 21
Split Layers Analyzed: 27

Job Site / No. Solano College
44156

Report No. 044404
Date Submitted: Jun-07-04
Date Reported: Jun-20-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
116C Lab ID # 543-00064-012B	None Detected	1)None Detected 2)99-100% Wall, Glue, Other m.p. 3) 4) Jun-20-04	 Mastic-Brown
117A Lab ID # 543-00064-013A	None Detected	1)None Detected 2)99-100% Calc, Bndr, Other m.p. 3) Jun-03-04 4) Jun-20-04	* Gray 12"x12" VFT / Yellow Mastic (2nd 1855) Floor Tile-Grey
117A Lab ID # 543-00064-013B	None Detected	1)None Detected 2)99-100% Glue, Opq, Calc, Qtz 3) 4) Jun-20-04	* Gray 12"x12" VFT / Yellow Mastic (2nd 1855) Glue-Yellow
117B Lab ID # 543-00064-014A	None Detected	1)None Detected 2)99-100% Calc, Bndr, Other m.p. 3) Jun-03-04 4) Jun-20-04	* Gray 12"x12" VFT / Yellow Mastic (2nd 1855) Floor Tile-Grey
117B Lab ID # 543-00064-014B	None Detected	1)None Detected 2)99-100% Glue, Opq, Calc, Qtz 3) 4) Jun-20-04	 Glue-Yellow
117C Lab ID # 543-00064-015A	None Detected	1)None Detected 2)99-100% Calc, Bndr, Other m.p. 3) Jun-03-04 4) Jun-20-04	* Gray 12"x12" VFT / Yellow Mastic (2nd 1855) Floor Tile-Grey
117C Lab ID # 543-00064-015B	None Detected	1)None Detected 2)99-100% Glue, Opq, Calc, Qtz 3) 4) Jun-20-04	 Glue-Yellow
118A Lab ID # 543-00064-016A	None Detected	1)None Detected 2)99-100% Calc, Qtz, Other m.p. 3) Jun-03-04 4) Jun-20-04	* Beige 4"x4" Ceramic Walltile / White Grout / Gray Grout (Locker Rm.) Wall Tile-White
118A Lab ID # 543-00064-016B	None Detected	1)None Detected 2)99-100% Qtz, Calc, Opq, Other m.p. 3) 4) Jun-20-04	* Beige 4"x4" Ceramic Walltile / White Grout / Gray Grout (Locker Rm.) Grout-White
118A Lab ID # 543-00064-016C	None Detected	1)None Detected 2)99-100% Qtz, Calc, Opq, Other m.p. 3) 4) Jun-20-04	* Beige 4"x4" Ceramic Walltile / White Grout / Gray Grout (Locker Rm.) Grout-Grey

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ Analyst _____

PRELIMINARY

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POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 21
Reg. Samples Analyzed: 21
Split Layers Analyzed: 27

Job Site / No. Solano College
44156

Report No. **044404**
Date Submitted: Jun-07-04
Date Reported: Jun-20-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
118B Lab ID # 543-00064-017A	None Detected	1)None Detected 2)99-100% Calc, Qtz, Other m.p. 3) Jun-03-04 4) Jun-20-04	* Beige 4"x4" Ceramic Walltile / White Grout / Gray Grout (Locker Rm.) Wall Tile-White
118B Lab ID # 543-00064-017B	None Detected	1)None Detected 2)99-100% Qtz, Calc, Opq, Other m.p. 3) 4) Jun-20-04	Grout-White
118B Lab ID # 543-00064-017C	None Detected	1)None Detected 2)99-100% Qtz, Calc, Opq, Other m.p. 3) 4) Jun-20-04	Grout-Grey
118C Lab ID # 543-00064-018A	None Detected	1)None Detected 2)99-100% Calc, Qtz, Other m.p. 3) Jun-03-04 4) Jun-20-04	* Beige 4"x4" Ceramic Walltile / White Grout / Gray Grout (Locker Rm.) Wall Tile-White
118C Lab ID # 543-00064-018B	None Detected	1)None Detected 2)99-100% Qtz, Calc, Opq, Other m.p. 3) 4)Jun-20-04	Grout-White
118C Lab ID # 543-00064-018C	None Detected	1)None Detected 2)99-100% Qtz, Calc, Opq, Other m.p. 3) 4) Jun-20-04	Grout-Grey
119A Lab ID # 543-00064-019A	None Detected	1)None Detected 2)99-100% Calc, Qtz 3) Jun-03-04 4)Jun-20-04	* Brown 2"x2" Ceramic Floortile / Gray Grout / Blk & Yellow Material (Locker Rm.) Floor Tile-Brown
119A Lab ID # 543-00064-019B	None Detected	1)None Detected 2)99-100% Qtz, Calc, Opq, Other m.p. 3) 4)Jun-20-04	* Brown 2"x2" Ceramic Floortile / Gray Grout / Blk & Yellow Material (Locker Rm.) Grout-Grey
119A Lab ID # 543-00064-019C	None Detected	1)95-99% Cellulose 2)1-5% Other m.p. 3) 4)Jun-20-04	* Brown 2"x2" Ceramic Floortile / Gray Grout / Blk & Yellow Material (Locker Rm.) Backing-Yellow
119A Lab ID # 543-00064-019D	None Detected	1)None Detected 2)99-100% Bndr 3) 4)Jun-20-04	* Brown 2"x2" Ceramic Floortile / Gray Grout / Blk & Yellow Material (Locker Rm.) Mastic-Black

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ Analyst _____

PRELIMINARY

ASBESTOS TEM LABORATORIES, INC. 1409 FIFTH STREET, BERKELEY, CA 94710 — (510) 528-0108
www.asbestostemlabs.com
With Offices in Reno, NV (775) 359-5577

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 21
Reg. Samples Analyzed: 21
Split Layers Analyzed: 27

Job Site / No. Solano College
44156

Report No. 044404
Date Submitted: Jun-07-04
Date Reported: Jun-20-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
119B	None Detected	1)None Detected 2)99-100% Calc, Qtz	* Brown 2"x2" Ceramic Floortile / Gray Grout / Blk & Yellow Material (Locker Rm.)
Lab ID # 543-00064-020A		3) Jun-03-04 4) Jun-20-04	Floor Tile-Brown
119B	None Detected	1)None Detected 2)99-100% Qtz, Calc, Opq, Other m.p.	
Lab ID # 543-00064-020B		3) 4) Jun-20-04	Grout-Grey
119B	None Detected	1)95-99% Cellulose 2) 1-5% Other m.p.	
Lab ID # 543-00064-020C		3) 4) Jun-20-04	Backing-Yellow
119B	None Detected	1)None Detected 2)99-100% Bndr	
Lab ID # 543-00064-020D		3) 4) Jun-20-04	Mastic-Black
119C	None Detected	1)None Detected 2)99-100% Calc, Qtz	* Brown 2"x2" Ceramic Floortile / Gray Grout / Blk & Yellow Material (Locker Rm.)
Lab ID # 543-00064-021A		3) Jun-03-04 4) Jun-20-04	Floor Tile-Brown
119C	None Detected	1)None Detected 2)99-100% Qtz, Calc, Opq, Other m.p.	
Lab ID # 543-00064-021B		3) 4) Jun-20-04	Grout-Grey
119C	None Detected	1)95-99% Cellulose 2) 1-5% Other m.p.	
Lab ID # 543-00064-021C		3) 4) Jun-20-04	Backing-Yellow
119C	None Detected	1)None Detected 2)99-100% Bndr	
Lab ID # 543-00064-021D		3) 4) Jun-20-04	Mastic-Black
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ Analyst _____

ASBESTOS TEM LABORATORIES, INC. 1419 TECH STREET, BERKELEY, CA 94710 (510) 528-0108
www.asbestostemlabs.com With Offices in Reno, NV (775) 359-3337

PRELIMINARY

(17)

KLEINFELDER

PROJECT NO.	PROJECT NAME	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS	RECEIVING LAB:
44156	Solano College			PLM	Asbestos TEM
L.P. NO. (P.O. NO.	SAMPLERS: (Signature/Number) Jennifer Gomez				INSTRUCTIONS/REMARKS: * FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS	
1	6/3/04		1BA		1		X	WHITE SHEETROCK / WHITE JOINT COMPOUND (MECH. RM. JAN. CLOSET)
2			1BB				X	
3			1BC				X	
4			1C4A				X	WHITE DRYWALL TEXTURE (MECH. RM.)
5			1C4B				X	
6			1C4C				X	
* 7			1C5A				X	PINK VFT / BLACK MASTIC (UPSTAIRS 1854)
8			1C5B				X	
9			1C5C				X	
* 10			1C6A				X	BROWN 4"x4" BB / BROWN MASTIC (UPSTAIRS 1854)
11			1C6B				X	
12			1C6C				X	
* 13			1C7A				X	GRAY 12"x12" VFT / YELLOW MASTIC (2ND 1855)
14			1C7B				X	
15			1C7C				X	
* 16			1C8A				X	BEIGE 4"x4" CERAMIC (LOCKER RM WALL TILE / WHITE GROUT / GRAY GROUT
17			1C8B				X	
18			1C8C				X	
* 19			1C9A				X	BROWN 2"x2" CERAMIC (LOCKER RM FLOOR TILE / GRAY GROUT / BLACK VFT / YELLOW MASTIC)
20			1C9B				X	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	6/3/04	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]		[signature] / FEDEX
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
		06-07-04A09:04 RCVD

Instructions/Remarks:

3-5 days

Send Results To:

KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-0643~~ 94534
(707) 429-4070
Attn: JENNIFER GOMEZ

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

NO. 0355

(18)

KLEINFELDER

PROJECT NO.	PROJECT NAME	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS	RECEIVING LAB:
44156	Solano College			PCM	AS LASTRS TEAM
L.P. NO. (P.O. NO.	SAMPLERS: (Signature/Number) Jennifer Gomez				INSTRUCTIONS/REMARKS: * FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX			
1	6/3/04		119C				X
2			120A				X
3			120B				X
4			120C				X
* 5			121A				X
6			121B				X
7			121C				X
* 8			122A				X
9			122B				X
* 10			123A				X
11			123B				X
12			123C				X
* 13			124A				X
14			124B				X
15			124C				X
* 16			125A				X
17			125B				X
18			125C				X
* 19			126A				X
20			126B				X

WHITE DRYWALL/WHITE JOINT COMPOUND (OFFICE 1856)

(OFFICE 1855)

OFF-WHITE RED 12"x12" VFT/BROWN MASTIC (OFFICE 1857)

BROWN+GREY STUCCO (EXTERIOR)

GREEN 12"x12" VFT/YELLOW MASTIC (2nd FL 1853)

BLACK 4" BB/WHITE GLUE/WHITE SKIM COAT (1852)

BLACK 4" BB/WHITE GLUE (1852)

WHITE 12"x12" VFT/YELLOW MASTIC (1852)

OFF-WHITE-BROWN 12"x12" VFT/ORANGE MASTIC (2nd FL 1852)

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	6/3/04	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
		06-07-04 A09:04 RCVD

Instructions/Remarks: 3-5 days

Send Results To:

KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-9643~~ 94534
(707) 429-4070
Attn: JENNIFER GOMEZ

1-80 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

No 03nn

12U-1XP

ASBESTOS TEM LABORATORIES, INC.

EPA Interim Method
Polarized Light Microscopy
Analytical Report

Laboratory Job # 543-00065

1409 Fifth Street
Berkeley, CA 94710
(510) 528-0108
FAX (510) 528-0109
www.asbestostemlabs.com

With Branch Offices Located At:
1016 GREG STREET, SPARKS, NV 89431
Ph. (775) 359-3377

ASBESTOS TEM LABORATORIES, INC

Accredited by
U.S. Dept. of Commerce
NVLAP
CA DOHS ELAP

Jun-18-04

Ms. Jennifer Gomez
Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

RE: LABORATORY JOB # 543-00065
Polarized light microscopy analytical results for 18 bulk sample(s) with 20 sample split(s)
Job Site: Solano College
Job No.: 44156

Enclosed please find the bulk material analytical results for one or more samples submitted for asbestos analysis. The analyses were performed in accordance with EPA Method 600/R-93/116 or 600/M4-82-020 for the determination of asbestos in bulk building materials by polarized light microscopy (PLM). Please note that while PLM analysis is commonly performed on non-friable and fine grained materials such as floor tiles and dust, the EPA method recognizes that PLM is subject to limitations. In these situations, accurate results may only be obtainable through the use of more sophisticated and accurate techniques such as transmission electron microscopy (TEM) or X-ray diffraction (XRD).

Prior to analysis, samples are logged-in and all data pertinent to the sample recorded. The samples are checked for damage or disruption of any chain-of-custody seals. A unique laboratory ID number is assigned to each sample. A hard copy log-in sheet containing all pertinent information concerning the sample is generated. This and all other relevant paper work are kept with the sample throughout the analytical procedures to assure proper analysis.

Each sample is opened in a class 100 HEPA negative air hood. A representative sampling of the material is selected and placed onto a glass microscope slide containing a drop of refractive index oil. The glass slide is placed under a polarizing light microscope where standard mineralogical techniques are used to analyze and quantify the various materials present, including asbestos. The data is then compiled into standard report format and subjected to a thorough quality assurance check before the information is released to the client.

Sincerely Yours,

Stephen A Shaffer

Lab Manager
ASBESTOS TEM LABORATORIES, INC.

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 20
Reg. Samples Analyzed: 18
Split Layers Analyzed: 20

Job Site / No. Solano College
44156

Report No. **044427**
Date Submitted: Jun-07-04
Date Reported: Jun-18-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD LAB
120A		None Detected	1) 1-5% Cellulose 2) 95-99% Gyp, Other m.p.	White Drywall / White Joint Compound (Office 1856)
Lab ID # 543-00065-001A			3) Jun-03-04 4) Jun-18-04	Sheetrock-White
120A	1-5%	Chrysotile	1) None Detected 2) 95-99% Calc, Mica, Gyp	White Drywall / White Joint Compound (Office 1856)
Lab ID # 543-00065-001B			3) 4) Jun-18-04	JointCom/Text-White
120B		Not Analyzed	1) 2)	White Drywall / White Joint Compound (Office 1856)
Lab ID # 543-00065-002			3) Jun-03-04 4) Jun-18-04	
120C		Not Analyzed	1) 2)	White Drywall / White Joint Compound (Office 1855)
Lab ID # 543-00065-003			3) Jun-03-04 4) Jun-18-04	
121A		None Detected	1) 1-5% Cellulose 2) 95-99% Calc, Bndr, Other m.p.	* Offwhite - Red 12"x12" VFT / Brown Mastic (Office 1857)
Lab ID # 543-00065-004A			3) Jun-03-04 4) Jun-18-04	Floor Tile-Off-White
121A		None Detected	1) None Detected 2) 99-100% Glue, Opq, Calc, Qtz	* Offwhite - Red 12"x12" VFT / Brown Mastic (Office 1857)
Lab ID # 543-00065-004B			3) 4) Jun-18-04	Glue-Yellow
121B		None Detected	1) None Detected 2) 99-100% Calc, Bndr, Other m.p.	* Offwhite - Red 12"x12" VFT / Brown Mastic (Office 1857)
Lab ID # 543-00065-005A			3) Jun-03-04 4) Jun-18-04	Floor Tile-Off-White
121B		None Detected	1) None Detected 2) 99-100% Glue, Opq, Calc, Qtz	* Offwhite - Red 12"x12" VFT / Brown Mastic (Office 1857)
Lab ID # 543-00065-005B			3) 4) Jun-18-04	Glue-Yellow
121C		None Detected	1) None Detected 2) 99-100% Calc, Bndr, Other m.p.	* Offwhite - Red 12"x12" VFT / Brown Mastic (Office 1857)
Lab ID # 543-00065-006A			3) Jun-03-04 4) Jun-18-04	Floor Tile-Off-White
121C		None Detected	1) None Detected 2) 99-100% Glue, Opq, Calc, Qtz	* Offwhite - Red 12"x12" VFT / Brown Mastic (Office 1857)
Lab ID # 543-00065-006B			3) 4) Jun-18-04	Glue-Yellow

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

ASBESTOS TEM LABORATORIES, INC. **1409 FIFTH STREET, BERKELEY, CA 94710** **(510) 528-0108**
www.asbestostemlabs.com *With Offices in Reno, NV (775) 359-3377*

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 20
Reg. Samples Analyzed: 18
Split Layers Analyzed: 20

Job Site / No. Solano College
44156

Report No. **044427**
Date Submitted: Jun-07-04
Date Reported: Jun-18-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
122A	None Detected	1) None Detected 2) 99-100% Calc, Mica, Qtz, Other m.p.	* Brown & Grey Stucco (Ext 1800B)
Lab ID # 543-00065-007A		3) Jun-03-04 4) Jun-18-04	Stucco-Grey
122A	None Detected	1) None Detected 2) 99-100% Calc, Mica, Qtz, Other m.p.	* Brown & Grey Stucco (Ext 1800B)
Lab ID # 543-00065-007B		3) 4) Jun-18-04	Stucco-Brown
122B	None Detected	1) None Detected 2) 99-100% Calc, Mica, Qtz, Other m.p.	* Brown & Grey Stucco (Ext 1800B)
Lab ID # 543-00065-008A		3) Jun-03-04 4) Jun-18-04	Stucco-Grey
122B	None Detected	1) None Detected 2) 99-100% Calc, Mica, Qtz, Other m.p.	* Brown & Grey Stucco (Ext 1800B)
Lab ID # 543-00065-008B		3) 4) Jun-18-04	Stucco-Brown
123A	None Detected	1) None Detected 2) 99-100% Calc, Bndr, Other m.p.	* Green 12"x12" VFT / Yellow Mastic (2nd Fl 1853)
Lab ID # 543-00065-009A		3) Jun-03-04 4) Jun-18-04	Floor Tile-Grey
123A	None Detected	1) None Detected 2) 99-100% Tar, Opq, Qtz, Other m.p.	* Green 12"x12" VFT / Yellow Mastic (2nd Fl 1853)
Lab ID # 543-00065-009B		3) 4) Jun-18-04	Mastic-Black
123B	None Detected	1) None Detected 2) 99-100% Calc, Bndr, Other m.p.	* Green 12"x12" VFT / Yellow Mastic (2nd Fl 1853)
Lab ID # 543-00065-010A		3) Jun-03-04 4) Jun-18-04	Floor Tile-Grey
123B	None Detected	1) None Detected 2) 99-100% Tar, Opq, Qtz, Other m.p.	* Green 12"x12" VFT / Yellow Mastic (2nd Fl 1853)
Lab ID # 543-00065-010B		3) 4) Jun-18-04	Mastic-Black
123C	None Detected	1) None Detected 2) 99-100% Calc, Bndr, Other m.p.	* Green 12"x12" VFT / Yellow Mastic (2nd Fl 1853)
Lab ID # 543-00065-011A		3) Jun-03-04 4) Jun-18-04	Floor Tile-Grey
123C	None Detected	1) None Detected 2) 99-100% Tar, Opq, Qtz, Other m.p.	* Green 12"x12" VFT / Yellow Mastic (2nd Fl 1853)
Lab ID # 543-00065-011B		3) 4) Jun-18-04	Mastic-Black

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer_____ **Analyst**_____

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 20
Reg. Samples Analyzed: 18
Split Layers Analyzed: 20

Job Site / No. Solano College
44156

Report No. **044427**
Date Submitted: Jun-07-04
Date Reported: Jun-18-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD LAB
124A	None Detected	1) None Detected 2) 99-100% Calc, Bndr, Other m.p.	* Black 4" BB / White Glue / White Skim Coat (1852)
Lab ID # 543-00065-012A		3) Jun-03-04 4) Jun-18-04	Baseboard-Black
124A	None Detected	1) None Detected 2) 99-100% Glue, Opq, Calc, Qtz	* Black 4" BB / White Glue / White Skim Coat (1852)
Lab ID # 543-00065-012B		3) 4) Jun-18-04	Glue-Yellow
124A	None Detected	1) None Detected 2) 99-100% Calc, Bndr, Other m.p.	* Black 4" BB / White Glue / White Skim Coat (1852)
Lab ID # 543-00065-012C		3) 4) Jun-18-04	Skim Coat-White
124B	None Detected	1) None Detected 2) 99-100% Calc, Bndr, Other m.p.	* Black 4" BB / White Glue (1852)
Lab ID # 543-00065-013A		3) Jun-03-04 4) Jun-18-04	Baseboard-Black
124B	None Detected	1) None Detected 2) 99-100% Glue, Opq, Calc, Qtz	* Black 4" BB / White Glue (1852)
Lab ID # 543-00065-013B		3) 4) Jun-18-04	Glue-Yellow
124C	None Detected	1) None Detected 2) 99-100% Calc, Bndr, Other m.p.	* Black 4" BB / White Glue (1852)
Lab ID # 543-00065-014A		3) Jun-03-04 4) Jun-18-04	Baseboard-Black
124C	None Detected	1) None Detected 2) 99-100% Glue, Opq, Calc, Qtz	* Black 4" BB / White Glue (1852)
Lab ID # 543-00065-014B		3) 4) Jun-18-04	Glue-Yellow
125A	None Detected	1) None Detected 2) 99-100% Calc, Bndr, Other m.p.	* White 12"x12" VFT / Yellow Mastic (1852)
Lab ID # 543-00065-015A		3) Jun-03-04 4) Jun-18-04	Floor Tile-White
125A	None Detected	1) None Detected 2) 99-100% Glue, Opq, Calc, Qtz	* White 12"x12" VFT / Yellow Mastic (1852)
Lab ID # 543-00065-015B		3) 4) Jun-18-04	Glue-Yellow
125B	None Detected	1) None Detected 2) 99-100% Calc, Bndr, Other m.p.	* White 12"x12" VFT / Yellow Mastic (1852)
Lab ID # 543-00065-016A		3) Jun-03-04 4) Jun-18-04	Floor Tile-White

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 20
Reg. Samples Analyzed: 18
Split Layers Analyzed: 20

Job Site / No. Solano College
44156

Report No. **044427**
Date Submitted: Jun-07-04
Date Reported: Jun-18-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
125B	None Detected	1)None Detected 2)99-100% Glue, Opq, Calc, Qtz	* White 12"x12" VFT / Yellow Mastic (1852)
Lab ID # 543-00065-016B		3) 4) Jun-18-04	Glue-Yellow
125B	None Detected	1)None Detected 2)99-100% Bndr, Calc, Qtz	* White 12"x12" VFT / Yellow Mastic (1852)
Lab ID # 543-00065-016C		3) 4) Jun-18-04	Underlayer-Grey
125C	None Detected	1)None Detected 2)99-100% Calc, Bndr, Other m.p.	* White 12"x12" VFT / Yellow Mastic (1852)
Lab ID # 543-00065-017A		3) Jun-03-04 4) Jun-18-04	Floor Tile-White
125C	None Detected	1)None Detected 2)99-100% Glue, Opq, Calc, Qtz	* White 12"x12" VFT / Yellow Mastic (1852)
Lab ID # 543-00065-017B		3) 4) Jun-18-04	Glue-Yellow
126A	None Detected	1)None Detected 2)99-100% Calc, Bndr, Other m.p.	* Off-white-brown 12"x12" VFT / Orange Mastic (2nd 1852)
Lab ID # 543-00065-018A		3) Jun-03-04 4)Jun-18-04	Floor Tile-White
126A	None Detected	1)None Detected 2)99-100% Glue, Opq, Calc, Qtz	* Off-white-brown 12"x12" VFT / Orange Mastic (2nd 1852)
Lab ID # 543-00065-018B		3) 4) Jun-18-04	Glue-Yellow
126B	None Detected	1)None Detected 2)99-100% Calc, Bndr, Other m.p.	* Off-white-brown 12"x12" VFT / Orange Mastic (2nd 1852)
Lab ID # 543-00065-019A		3) Jun-03-04 4)Jun-18-04	Floor Tile-White
126B	None Detected	1)None Detected 2)99-100% Glue, Opq, Calc, Qtz	* Off-white-brown 12"x12" VFT / Orange Mastic (2nd 1852)
Lab ID # 543-00065-019B		3) 4)Jun-18-04	Glue-Yellow
126C	None Detected	1)None Detected 2)99-100% Calc, Bndr, Other m.p.	* Off-white-brown 12"x12" VFT / Orange Mastic (2nd 1852)
Lab ID # 543-00065-020A		3) Jun-03-04 4)Jun-18-04	Floor Tile-White
126C	None Detected	1)None Detected 2)99-100% Glue, Opq, Calc, Qtz	* Off-white-brown 12"x12" VFT / Orange Mastic (2nd 1852)
Lab ID # 543-00065-020B		3) 4)Jun-18-04	Glue-Yellow

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

ASBESTOS TEM LABORATORIES, INC. **1409 FIFTH STREET, BERKELEY, CA 94710** **(510) 528-0108**
www.asbestostemlabs.com *With Offices in Reno, NV (775) 359-3377*

KLEINFELDER

(18)

PROJECT NO.	PROJECT NAME
44156	Solano College

L.P. NO. (P.O. NO.)	SAMPLERS: (Signature/Number)
	Jennifer Gomez

RECEIVING LAB: Kiff Labs TEM

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CON-TAINERS	TYPE OF CON-TAINERS	ANALYSIS PLM	INSTRUCTIONS/REMARKS
								* FIRST POSITIVE
1	6/3/04		119C				X	
2			120A				X	WHITE CRYWALL / WHITE JOINT COMPOUND (A 18
3			120B				X	
4			120C				X	(OFF 185
* 5			121A				X	OFF-WHITE RED 12"x12" VFT / BROWN MASTIC (OFF 18
6			121B				X	
7			121C				X	
* 8			122A				X	BROWN + GREY STUCCO (EXT
9			122B				X	
* 10			123A				X	GREEN 12"x12" VFT / YELLOW MASTIC (DRY 185
11			123B				X	
12			123C				X	
* 13			124A				X	BLACK 411 BB / WHITE GLUE / WHITE SEAL COAT (1
14			124B				X	BLACK 411 BB / WHITE GLUE (18
15			124C				X	
* 16			125A				X	WHITE 12"x12" VFT / YELLOW MASTIC (185
17			125B				X	
18			125C				X	
* 19			126A				X	OFF-WHITE-BROWN 12"x12" VFT / ORANGE MASTIC (2ND 185
20			126B				X	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Jennifer Gomez	6/3/04	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
		6-07-04 0:04

Instructions/Remarks:

3-5 days

Send Results To:

KLEINFELDER
780 CHADBOURNE, ROAD SUITE
FAIRFIELD, CA ~~94585-9643~~
(707) 429-4070 7434

Attn: JENNIFER GOMEZ

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

№ 0358

KLEINFELDER

PROJECT NO.	PROJECT NAME
44156	Solano College
L.P. NO. (P.O NO.)	SAMPLERS: (Signature/Number)
	Jennifer Gomez

RECEIVING LAB: [redacted] Asbestos RFM

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CON-TAINERS	TYPE OF CON-TAINERS	ANALYSIS PLM	INSTRUCTIONS/REMARKS
1	6/3/04		126C		1		X	**FIRST POSITIVE**
2			127A				X	WHITE 2X4 CEILING TILE (185
3			127B				X	
4			127C				X	
5			128A				X	WHITE DRYWALL (2X4 & 18 WHITE JOINT COMPOUND
6			128B				X	
7			128C				X	
8			129A				X	WHITE DRYWALL TEXTURE (185
9			129B				X	
10			129C				X	
11			130A				X	WHITE SKIM COAT (185
12			130B				X	
13			130C				X	
14			131A				X	WHITE JOINT COMPOUND (123
15			132A				X	BLACK SPRAY MATERIAL (124
16			133A				X	WHITE STUCCO/ GRAY PLASTER (901
17			133B				X	Cathy
18			133C				X	Hall
19			134A				X	GRAY SHEET FLOORING (902
20			134B				X	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	6/3/04	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
		[signature]
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
		06-07-04A09:04 RCVD

Instructions/Remarks:

3-5 days.

Send Results To:

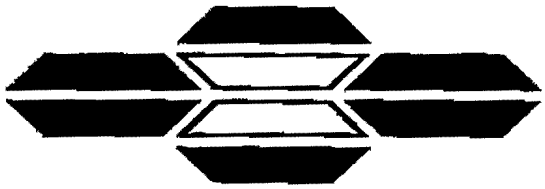
KLEINFELDER
780 CHADBOURNE, ROAD SUITE
FAIRFIELD, CA ~~94585-0643~~ 94534
(707) 429-4070
Attn: Jennifer Gomez

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

№ 0359

127-134
+ Roof (500)



ASBESTOS TEM LABORATORIES, INC.
FACSIMILE TRANSMISSION

Date: Jun/20/2004 **Total Pages (including Cover Sheet):** 6

Attention: Ms. Jennifer Gomez **FAX #:** 707-429-4162

Company: Kleinfelder

CONCERNING ANALYTICAL RESULTS FOR:

Job Name: Solano College

Job #: 44156

Comments: PRELIMINARY Polarized Light Microscopy Bulk Sample Analytical Results

Become a registered user and take advantage of our 24-hour, 7 day-a-week internet reporting system. Final laboratory analysis reports and invoices are now available at <www.AsbestosTEMLabs.com> within two business days of this fax. In order to activate this service, please contact us with a "User Name" and "Password" in mind.

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www.asbestostemlabs.com *With Offices in Reno, NV (775) 359-3377*

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 23
Reg. Samples Analyzed: 21
Split Layers Analyzed: 4

Job Site / No. Solano College
44156

Report No. 044525
Date Submitted: Jun-07-04
Date Reported: Jun-20-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD	DESCRIPTION LAB
127A		None Detected	1)80-100% Cellulose,Mineral Wool 2)<1% Other m.p.	* White 2'x4' ceiling tiles (1852)	
Lab ID # 543-00066-001			3) Jun-03-04 4) Jun-20-04		Ceiling Tile-Grey
127B		None Detected	1)80-100% Cellulose,Mineral Wool 2)<1% Other m.p.	* White 2'x4' ceiling tiles (1852)	
Lab ID # 543-00066-002			3) Jun-03-04 4) Jun-20-04		Ceiling Tile-Grey
127C		None Detected	1)80-100% Cellulose,Mineral Wool 2)<1% Other m.p.	* White 2'x4' ceiling tiles (1852)	
Lab ID # 543-00066-003			3) Jun-03-04 4) Jun-20-04		Ceiling Tile-Grey
128A		None Detected	1)1-5% Cellulose 2)95-99% Gyp, Other m.p.	White Drywall - White Joint Compound (2nd 1852)	
Lab ID # 543-00066-004A			3) Jun-03-04 4) Jun-20-04		Sheetrock-White
128A	<1%	Chrysotile	1)None Detected 2)100-100% Calc, Mica, Other m.p.	White Drywall - White Joint Compound (2nd 1852)	
Lab ID # 543-00066-004B			3) 4) Jun-20-04		JointCom/Text-Off-White
128B		None Detected	1)1-5% Cellulose 2)95-99% Gyp, Other m.p.	White Drywall - White Joint Compound (2nd 1852)	
Lab ID # 543-00066-005A			3) Jun-03-04 4) Jun-20-04		Sheetrock-White
128B		None Detected	1)1-5% Cellulose 2)95-99% Gyp, Calc, Mica, Other m.p.	White Drywall - White Joint Compound (2nd 1852)	
Lab ID # 543-00066-005B			3) 4) Jun-20-04		JointCom/Text-White
128C		None Detected	1)1-5% Cellulose 2)95-99% Gyp, Other m.p.	White Drywall - White Joint Compound (2nd 1852)	
Lab ID # 543-00066-006A			3) Jun-03-04 4) Jun-20-04		Sheetrock-White
128C		None Detected	1)1-5% Cellulose 2)95-99% Gyp, Calc, Mica, Other m.p.	White Drywall - White Joint Compound (2nd 1852)	
Lab ID # 543-00066-006B			3) 4) Jun-20-04		JointCom/Text-White
129A		None Detected	1)None Detected 2)99-100% Bndr, Calc, Qtz	White Drywall Texture (1852)	
Lab ID # 543-00066-007			3) Jun-03-04 4) Jun-20-04		Texture-White

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ Analyst _____

PRELIMINARY

ASBESTOS TEM LABORATORIES, INC. 1129 FIFTH STREET, BERKELEY, CA 94710 (510) 528-0108
www.asbestostemlabs.com Main Offices in Reno, NV (775) 359-3377

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 23
Reg. Samples Analyzed: 21
Split Layers Analyzed: 4

Job Site / No. Solano College
44156

Report No. 044525
Date Submitted: Jun-07-04
Date Reported: Jun-20-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD LAB
129B		None Detected	1)None Detected 2)99-100% Bndr, Calc, Qtz	White Drywall Texture (1852)
Lab ID # 543-00066-008			3)Jun-03-04 4)Jun-20-04	Texture-White
129C		None Detected	1)None Detected 2)99-100% Bndr, Calc, Qtz	White Drywall Texture (1852)
Lab ID # 543-00066-009			3) Jun-03-04 4) Jun-20-04	Texture-White
130A		None Detected	1)1-5% Cellulose 2)95-99% Gyp, Calc, Mica, Other m.p.	* White Skim Coat (1852)
Lab ID # 543-00066-010			3) Jun-03-04 4)Jun-20-04	Skim Coat-White
130B		None Detected	1)1-5% Cellulose 2)95-99% Gyp, Calc, Mica, Other m.p.	* White Skim Coat (1852)
Lab ID # 543-00066-011			3) Jun-03-04 4)Jun-20-04	Skim Coat-White
130C		None Detected	1)1-5% Cellulose 2)95-99% Gyp, Calc, Mica, Other m.p.	* White Skim Coat (1852)
Lab ID # 543-00066-012			3) Jun-03-04 4)Jun-20-04	Skim Coat-White
131A	1-5%	Chrysotile	1)None Detected 2)95-99% Calc, Bndr, Mica, Other m.p.	White Joint Compound (1239)
Lab ID # 543-00066-013A			3) Jun-03-04 4)Jun-20-04	JointCom/Text-White
131A		None Detected	1)None Detected 2)99-100% Glue, Opq, Calc, Qtz	White Joint Compound (1239)
Lab ID # 543-00066-013B			3) 4)Jun-20-04	Glue-Yellow
132A	1-5%	Chrysotile	1)None Detected 2)95-99% Calc, Tar, Other m.p.	Black spray Material (1245)
Lab ID # 543-00066-014			3) Jun-03-04 4)Jun-20-04	Spray-Black
133A		None Detected	1)None Detected 2)99-100% Qtz, Calc, Opq, Other m.p.	* White stucco / Gray plaster (901)
Lab ID # 543-00066-015			3) Jun-03-04 4)Jun-20-04	Stucco-Grey
133B		None Detected	1)None Detected 2)99-100% Qtz, Calc, Opq, Other m.p.	* White stucco / Gray plaster (Entry)
Lab ID # 543-00066-016			3) Jun-03-04 4)Jun-20-04	Stucco-Grey

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ Analyst _____

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 23
Reg. Samples Analyzed: 21
Split Layers Analyzed: 4

Job Site / No. Solano College
44156

Report No. 044525
Date Submitted: Jun-07-04
Date Reported: Jun-20-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
133C		None Detected	1) None Detected 2) 99-100% Qtz, Calc, Opq, Other m.p.	* White stucco / Gray plaster (Hall)
Lab ID # 543-00066-017			3) Jun-03-04 4) Jun-20-04	Stucco-Grey
134A	1-5%	Chrysotile	1) None Detected 2) 95-99% Bndr, Calc, Tar, Qtz	* Gray sheet Flooring (902)
Lab ID # 543-00066-018			3) Jun-03-04 4) Jun-20-04	Sheet Flooring-Grey
134B		Not Analyzed	1) 2)	* Gray sheet Flooring (902)
Lab ID # 543-00066-019			3) Jun-03-04 4) Jun-20-04	
134C		Not Analyzed	1) 2)	* Gray sheet Flooring (902)
Lab ID # 543-00066-020			3) Jun-03-04 4) Jun-20-04	
500-7A		None Detected	1) 10-20% Fiberglass 2) 80-90% Tar, Other m.p.	Black asphalt roof shingles (500)
Lab ID # 543-00066-021			3) Jun-03-04 4) Jun-20-04	Roofing-Black
500-7B		None Detected	1) 10-20% Fiberglass 2) 80-90% Tar, Other m.p.	Black asphalt roof shingles (500)
Lab ID # 543-00066-022			3) Jun-03-04 4) Jun-20-04	Roofing-Black
500-7C		None Detected	1) 10-20% Fiberglass 2) 80-90% Tar, Other m.p.	Black asphalt roof shingles (600)
Lab ID # 543-00066-023			3) Jun-03-04 4) Jun-20-04	Roofing-Black
			1) 2)	
Lab ID #			3) 4)	
			1) 2)	
Lab ID #			3) 4)	
			1) 2)	
Lab ID #			3) 4)	

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ Analyst _____

PRELIMINARY

ASBESTOS TEM LABORATORIES, INC. 1409 FIFTH STREET BERKELEY, CA 94710 (510) 528-0108
www.asbestostemlabs.com
With Offices in Reno, NV (775) 359-3377

KLEINFELDER

(19)

PROJECT NO.	PROJECT NAME	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS PLM	RECEIVING LAB: [redacted] Asbestos RFM
44156	Solano College				
L.P. NO. / P.O. NO.	SAMPLERS: (Signature/Number) Jennifer Gomez				INSTRUCTIONS/REMARKS: **FIRST POSITIVE**

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX			
1	6/3/04		126C		1		X
2			127A				X
3			127B				X
4			127C				X
5			128A				X
6			128B				X
7			128C				X
8			129A				X
9			129B				X
10			129C				X
11			130A				X
12			130B				X
13			130C				X
14			131A				X
15			132A				X
16			133A				X
17			133B				X
18			133C				X
19			134A				X
20			134B				X

WHITE 2X4 CEILING TILE (1852)

WHITE DRYWALL — (2nd 1852)
WHITE JOINT COMPOUND

WHITE DRYWALL TEXTURE (1852)

WHITE SKIM COAT (1852)

WHITE JOINT COMPOUND (1239)

BLACK SPRAY MATERIAL (1245)

WHITE STUCCO/GRAY PLASTER (901)

(Entry)

(Hall)

GRAY SHEET FLOORING (902)

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	6/3/04	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
		[signature]
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
		06-07-04A09:04 RCVD

Instructions/Remarks:

3-5 days

Send Results To:

KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-9643~~ 94534
(707) 429-4070
Attn: Jennifer Gomez

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

NO. 0250

KLEINFELDER

PROJECT NO.	PROJECT NAME	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS	RECEIVING LAB:
44156	Solano College			PCM TEM	Asbestos TEM
L.P. NO. P.O. NO.	SAMPLERS: (Signature/Number) Jennifer Gomez				INSTRUCTIONS/REMARKS: * FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS	INSTRUCTIONS/REMARKS
1	6/3/04		B4C				X	*
2	6/2/04		500-7A				X	BLACK ASPHALT ROOF SHINGLES (500)
3	"		500-7B				X	"
4	"		500-7C				X	(500)
5	6/3/04		P-4				X	BROWN PAINT
6	"		P-5				X	ORANGE PAINT (1500)
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	6/3/04	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
		06-07-04A09:04 RCV

Instructions/Remarks:

3-5 days

Send Results To:

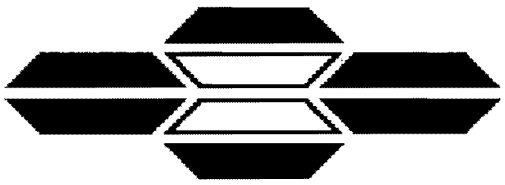
KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-9643~~ 94534
(707) 429-4070
Attn: JENNIFER GOMEZ

M-60 White – Sample Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

No 03

K00F



ASBESTOS TEM LABORATORIES, INC.

EPA Interim Method
Polarized Light Microscopy
Analytical Report

Laboratory Job # 543-00045

1409 Fifth Street
Berkeley, CA 94710
(510) 528-0108
FAX (510) 528-0109
www.asbestostemlabs.com

With Branch Offices Located At:
1016 GREG STREET, SPARKS, NV 89431
Ph. (775) 359-3377

ASBESTOS TEM LABORATORIES, INC

Accredited by
U.S. Dept. of Commerce
NVLAP
CA DOHS ELAP

Jun-02-04

Ms. Jennifer Gomez
Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

RE: LABORATORY JOB # 543-00045
Polarized light microscopy analytical results for 38 bulk sample(s) with 15 sample split(s)
Job Site: Solano College Survey
Job No.: 441561001

Enclosed please find the bulk material analytical results for one or more samples submitted for asbestos analysis. The analyses were performed in accordance with EPA Method 600/R-93/116 or 600/M4-82-020 for the determination of asbestos in bulk building materials by polarized light microscopy (PLM). Please note that while PLM analysis is commonly performed on non-friable and fine grained materials such as floor tiles and dust, the EPA method recognizes that PLM is subject to limitations. In these situations, accurate results may only be obtainable through the use of more sophisticated and accurate techniques such as transmission electron microscopy (TEM) or X-ray diffraction (XRD).

Prior to analysis, samples are logged-in and all data pertinent to the sample recorded. The samples are checked for damage or disruption of any chain-of-custody seals. A unique laboratory ID number is assigned to each sample. A hard copy log-in sheet containing all pertinent information concerning the sample is generated. This and all other relevant paper work are kept with the sample throughout the analytical procedures to assure proper analysis.

Each sample is opened in a class 100 HEPA negative air hood. A representative sampling of the material is selected and placed onto a glass microscope slide containing a drop of refractive index oil. The glass slide is placed under a polarizing light microscope where standard mineralogical techniques are used to analyze and quantify the various materials present, including asbestos. The data is then compiled into standard report format and subjected to a thorough quality assurance check before the information is released to the client.

Sincerely Yours,

Stephen O Shaffer

Lab Manager
ASBESTOS TEM LABORATORIES, INC.

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 42
Reg. Samples Analyzed: 38
Split Layers Analyzed: 15

Job Site / No. Solano College Survey
441561001

Report No. **044116**
Date Submitted: May-25-04
Date Reported: Jun-02-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
1300-1-A.	None Detected	1) 11-25% Fiberglass,Mineral Wool 2) 75-89% Paint, GlassFrags, Other m.p.	silver paint/wh: TSI wrap wh: TSI
Lab ID # 543-00045-001		3) May-21-0 11:35 4) Jun-01-04	Wrap-Silver/White
1300-1-B.	None Detected	1) 11-25% Fiberglass,Mineral Wool 2) 75-89% Paint, GlassFrags, Other m.p.	silver paint/wh: TSI wrap wh: TSI
Lab ID # 543-00045-002		3) May-21-0 11:37 4) Jun-01-04	Wrap-Silver/White
1300-2-A.	None Detected	1) 5-10% Fiberglass 2) 90-95% Tar, Calc, Qtz, Other m.p.	blk / wh: RR asphalt
Lab ID # 543-00045-003A		3) 4) Jun-01-04	Asphalt-Black
1300-2-A.	None Detected	1) None Detected 2) 99-100% Qtz, Other m.p.	blk / wh: RR asphalt
Lab ID # 543-00045-003B		3) 4) Jun-01-04	Bulk-Off-White
1300-2-B.	None Detected	1) 5-10% Fiberglass 2) 90-95% Tar, Calc, Qtz, Other m.p.	blk / wh: RR asphalt
Lab ID # 543-00045-004A		3) May-21-0 11:41 4) Jun-01-04	Asphalt-Black
1300-2-B.	None Detected	1) None Detected 2) 99-100% Qtz, Other m.p.	
Lab ID # 543-00045-004B		3) 4) Jun-01-04	Bulk-Off-White
1300-3-A.	None Detected	1) None Detected 2) 99-100% Qtz, Calc, Other m.p.	grey concrete shingles
Lab ID # 543-00045-005		3) May-21-0 11:42 4) Jun-01-04	Shingles-Grey
1300-3-B.	None Detected	1) None Detected 2) 99-100% Qtz, Calc, Other m.p.	grey concrete shingles
Lab ID # 543-00045-006		3) May-21-0 11:44 4) Jun-01-04	Shingles-Grey
1300-4-A.	None Detected	1) 30-40% Fiberglass 2) 60-70% GlassFrags, Calc, Bndr, Otz	blk felt C edge of bldg
Lab ID # 543-00045-007		3) May-21-0 11:46 4) Jun-01-04	Felt-Black
1300-4-B.	None Detected	1) 30-40% Fiberglass 2) 60-70% GlassFrags, Calc, Bndr, Otz	blk felt C edge of bldg
Lab ID # 543-00045-008		3) May-21-0 11:49 4) Jun-01-04	Felt-Black

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

ASBESTOS TEM LABORATORIES, INC. **1409 FIFTH STREET, BERKELEY, CA 94710** **(510) 528-0108**
www.asbestostemlabs.com *With Offices in Reno, NV (775) 359-3377*

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 42
Reg. Samples Analyzed: 38
Split Layers Analyzed: 15

Job Site / No. Solano College Survey
441561001

Report No. **044116**
Date Submitted: May-25-04
Date Reported: Jun-02-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
1300-5-A.	5-10%	Chrysotile	1)None Detected 2)90-95% Tar, Bndr, Calc, Other m.p.	blk penatration mastic
Lab ID # 543-00045-009			3)May-21-0 11:51 4) Jun-01-04	Mastic-Black
1300-5-B.		Not Analyzed	1) 2)	blk penatration mastic
Lab ID # 543-00045-010			3) May-21-0 11:52 4) Jun-01-04	
1100-15-A		None Detected	1)1-5% Synthetics 2)95-99% Qtz, Calc, Other m.p.	white H- vac/mastic
Lab ID # 543-00045-011			3) May-21-0 11:56 4) Jun-01-04	Mastic-Off-White
1100-15-B		None Detected	1)1-5% Synthetics 2)95-99% Qtz, Calc, Other m.p.	white H- vac/mastic
Lab ID # 543-00045-012			3) May-21-0 11:58 4) Jun-01-04	Mastic-Off-White
1200-1-A		None Detected	1)21-35% Cellulose,Synthetics 2)65-79% Qtz, Calc, Other m.p.	white H- vac
Lab ID # 543-00045-013			3) May-21-0 2:17 4)Jun-01-04	H - Vac-White
1200-1-B		None Detected	1)21-35% Cellulose,Synthetics 2)65-79% Qtz, Calc, Other m.p.	white putty / whi H-Vac
Lab ID # 543-00045-014			3) May-21-0 2:21 4) Jun-01-04	Putty/Tape-Off-White
1200-2-A		None Detected	1)20-30% Synthetics 2)70-80% Calc, Other m.p.	blk TSI wrap
Lab ID # 543-00045-015			3) May-21-0 2:24 4)Jun-01-04	Wrap-Black
1200-2-B		None Detected	1)20-30% Synthetics 2)70-80% Calc, Other m.p.	blk TSI wrap
Lab ID # 543-00045-016			3) May-21-0 2:25 4)Jun-01-04	Wrap-Black
1200-3-A		None Detected	1)None Detected 2)99-100% Calc, Bndr, Other m.p.	blk rolled roofing in parapit
Lab ID # 543-00045-017A			3) May-21-0 2:27 4)Jun-02-04	Coating-White
1200-3-A	5-10%	Chrysotile	1)None Detected 2)90-95% Tar, Calc, Bndr, Other m.p.	blk rolled roofing in parapit
Lab ID # 543-00045-017B			3) 4)Jun-01-04	Roofing (Top)-Black

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 42
Reg. Samples Analyzed: 38
Split Layers Analyzed: 15

Job Site / No. Solano College Survey
441561001

Report No. **044116**
Date Submitted: May-25-04
Date Reported: Jun-02-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA (1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
1200-3-A Lab ID # 543-00045-017C	5-10% Chrysotile	1)None Detected 2)90-95% Tar, Calc, Bndr, Other m.p. 3) 4) Jun-01-04	blk rolled roofing in parapit Roofing (Bottom)-Black
1200-3-B Lab ID # 543-00045-018A	None Detected	1)None Detected 2)99-100% Calc, Bndr, Other m.p. 3) May-21-0 2:30 4) Jun-02-04	blk rolled roofing in parapit Coating-White
1200-3-B Lab ID # 543-00045-018B	Not Analyzed	1) 2) 3) 4) Jun-02-04	blk rolled roofing in parapit
1200-3-B Lab ID # 543-00045-018C	Not Analyzed	1) 2) 3) 4) Jun-02-04	blk rolled roofing in parapit
1200-3-C Lab ID # 543-00045-019A	None Detected	1)None Detected 2)99-100% Calc, Bndr, Other m.p. 3) May-21-0 2:31 4)Jun-02-04	blk rolled roofing in parapit Coating-White
1200-3-C Lab ID # 543-00045-019B	Not Analyzed	1) 2) 3) 4) Jun-02-04	blk rolled roofing in parapit
1200-3-C Lab ID # 543-00045-019C	Not Analyzed	1) 2) 3) 4) Jun-02-04	blk rolled roofing in parapit
1200-4-A Lab ID # 543-00045-020A	None Detected	1)31-45% Cellulose,Fiberglass 2)55-69% Qtz, Calc, Bndr, Other m.p. 3) May-21-0 2:33 4)Jun-01-04	whi TSI tape/blk mastic Tape-Off-White
1200-4-A Lab ID # 543-00045-020B	None Detected	1)20-30% Fiberglass 2)70-80% Calc, Qtz, Other m.p. 3) 4)Jun-01-04	whi TSI tape/blk mastic Mastic-Off-White
1200-4-B Lab ID # 543-00045-021A	None Detected	1)31-45% Cellulose,Fiberglass 2)55-69% Qtz, Calc, Bndr, Other m.p. 3) May-21-0 2:36 4)Jun-01-04	whi TSI tape/blk mastic Tape-Off-White

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

ASBESTOS TEM LABORATORIES, INC. **1409 FIFTH STREET, BERKELEY, CA 94710** **(510) 528-0108**
www.asbestostemlabs.com *With Offices in Reno, NV (775) 359-3377*

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 42
Reg. Samples Analyzed: 38
Split Layers Analyzed: 15

Job Site / No. Solano College Survey
441561001

Report No. **044116**
Date Submitted: May-25-04
Date Reported: Jun-02-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
1200-4-B		None Detected	1) 20-30% Fiberglass 2) 70-80% Calc, Qtz, Other m.p.	
Lab ID # 543-00045-021B			3) 4) Jun-01-04	Mastic-Off-White
1200-5-A	5-10%	Chrysotile	1) None Detected 2) 90-95% Tar, Bndr, Calc, Other m.p.	blk penetration mastic
Lab ID # 543-00045-022			3) May-21-0 2:39 4) Jun-01-04	Mastic-Black
1200-5-B		Not Analyzed	1) 2)	blk penetration mastic
Lab ID # 543-00045-023			3) May-21-0 2:41 4) Jun-02-04	
1200-6-A		None Detected	1) None Detected 2) 99-100% Qtz, Calc, Other m.p.	grey concrete shingles
Lab ID # 543-00045-024A			3) May-21-0 2:43 4) Jun-01-04	Shingles-Grey
1200-6-A	5-10%	Chrysotile	1) 5-10% Cellulose 2) 80-90% Tar, Qtz, Calc, Other m.p.	grey concrete shingles
Lab ID # 543-00045-024B			3) 4) Jun-01-04	Roofing-Black
1200-6-A		None Detected	1) None Detected 2) 99-100% Qtz, Calc, Other m.p.	grey concrete shingles
Lab ID # 543-00045-024C			3) 4) Jun-01-04	Grains-Off-White
1200-6-B		None Detected	1) None Detected 2) 99-100% Qtz, Calc, Other m.p.	blk asphalt roofing shingles
Lab ID # 543-00045-025A			3) May-21-0 2:45 4) Jun-01-04	Shingles-Grey
1200-6-B		Not Analyzed	1) 2)	blk asphalt roofing shingles
Lab ID # 543-00045-025B			3) 4) Jun-01-04	
1200-6-B		None Detected	1) None Detected 2) 99-100% Qtz, Calc, Other m.p.	blk asphalt roofing shingles
Lab ID # 543-00045-025C			3) 4) Jun-01-04	Grains-Off-White
1100-1-A		None Detected	1) 5-10% Fiberglass 2) 90-95% Tar, Bndr, Calc, Qtz	blk/whi rolled roofing
Lab ID # 543-00045-026A			3) May-21-0 11:04 4) Jun-02-04	Roofing Felt/Tar-Black

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

ASBESTOS TEM LABORATORIES, INC. **1409 FIFTH STREET, BERKELEY, CA 94710** **(510) 528-0108**
www.asbestostemlabs.com *With Offices in Reno, NV (775) 359-3377*

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 42
Reg. Samples Analyzed: 38
Split Layers Analyzed: 15

Job Site / No. Solano College Survey
441561001

Report No. **044116**
Date Submitted: May-25-04
Date Reported: Jun-02-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
1100-1-A		None Detected	1) None Detected 2) 99-100% Calc, Qtz, Other m.p.	blk/whi rolled roofing
Lab ID # 543-00045-026B			3) 4) Jun-02-04	Grains-Off-White
1100-1-B		None Detected	1) 5-10% Fiberglass 2) 90-95% Tar, Bndr, Calc, Qtz	blk/whi rolled roofing
Lab ID # 543-00045-027A			3) May-21-0 11:06 4) Jun-02-04	Roofing Felt/Tar-Black
1100-1-B		None Detected	1) None Detected 2) 99-100% Calc, Qtz, Other m.p.	
Lab ID # 543-00045-027B			3) 4) Jun-02-04	Grains-Off-White
1100-1-C		None Detected	1) 5-10% Fiberglass 2) 90-95% Tar, Bndr, Calc, Qtz	blk/whi rolled roofing
Lab ID # 543-00045-028A			3) May-21-0 11:08 4) Jun-02-04	Roofing Felt/Tar-Black
1100-1-C		None Detected	1) None Detected 2) 99-100% Calc, Qtz, Other m.p.	
Lab ID # 543-00045-028B			3) 4) Jun-02-04	Grains-Off-White
1100-2-A	5-10%	Chrysotile	1) None Detected 2) 90-95% Tar, Bndr, Calc, Other m.p.	blk penetration mastic
Lab ID # 543-00045-029			3) May-21-0 11:10 4) Jun-02-04	Mastic-Black
1100-2-B		Not Analyzed	1) 2)	blk penetration mastic
Lab ID # 543-00045-030			3) May-21-0 11:12 4) Jun-02-04	
1100-2-C		Not Analyzed	1) 2)	blk penetration mastic
Lab ID # 543-00045-031			3) May-21-0 11:15 4) Jun-02-04	
1100-3-A		None Detected	1) 20-30% Cellulose 2) 70-80% Calc, Bndr, Other m.p.	grey/blu mastic / silver H Vac tape
Lab ID # 543-00045-032A			3) May-21-0 11:19 4) Jun-02-04	Mastic-Grey
1100-3-A		None Detected	1) None Detected 2) 99-100% Calc, Other m.p.	grey/blu mastic / silver H Vac tape
Lab ID # 543-00045-032B			3) 4) Jun-02-04	Tape-Silver

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 42
Reg. Samples Analyzed: 38
Split Layers Analyzed: 15

Job Site / No. Solano College Survey
441561001

Report No. **044116**
Date Submitted: May-25-04
Date Reported: Jun-02-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
1100-3-B	None Detected	1)20-30% Cellulose 2)70-80% Calc, Bndr, Other m.p.	grey/blu mastic / silver H Vac tape
Lab ID # 543-00045-033A		3)May-21-0 11:23 4) Jun-02-04	Mastic-Grey
1100-3-B	None Detected	1)None Detected 2)99-100% Calc, Other m.p.	grey/blu mastic / silver H Vac tape
Lab ID # 543-00045-033B		3) 4) Jun-02-04	Tape-Silver
1100-4-A	None Detected	1)1-5% Synthetics 2)95-99% Tar, Calc, Bndr, Other m.p.	blk rof patch rolled roofing
Lab ID # 543-00045-034		3) Apr-21-0[illegible] 11:26 4)Jun-02-04	Roofing-Black
1100-4-B	None Detected	1)1-5% Synthetics 2)95-99% Tar, Calc, Bndr, Other m.p.	blk rof patch rolled roofing
Lab ID # 543-00045-035		3) May-21-0 11:28 4)Jun-02-04	Roofing-Black
1800-1-A	None Detected	1)10-20% Cellulose 2)80-90% Calc, Glue, Paint, Other m.p.	silver paint / white HVAC tape
Lab ID # 543-00045-036		3) May-21-0 12:49 4)Jun-02-04	Tape-Off-White
1800-1-B	None Detected	1)10-20% Cellulose 2)80-90% Calc, Glue, Paint, Other m.p.	silver paint / white HVAC tape
Lab ID # 543-00045-037		3) May-21-0 12:52 4)Jun-02-04	Tape-Off-White
1800-2-A	None Detected	1)10-20% Fiberglass 2)80-90% Tar, Calc, Qtz, Other m.p.	blk/wht asphalt shingles
Lab ID # 543-00045-038		3) May-21-0 12:54 4)Jun-02-04	Shingles-Black
1800-2-B	None Detected	1)10-20% Fiberglass 2)80-90% Tar, Calc, Qtz, Other m.p.	blk/wht asphalt shingles
Lab ID # 543-00045-039		3) May-21-0 12:56 4)Jun-02-04	Shingles-Black
1800-3-A	None Detected	1)None Detected 2)99-100% Calc, Bndr, Qtz, Other m.p.	blk rolled roofing parapit/wht coating
Lab ID # 543-00045-040A		3) May-21-0 12:59 4)Jun-02-04	Coating-White
1800-3-A	None Detected	1)5-10% Fiberglass 2)90-95% Tar, Bndr, Calc, Qtz	blk rolled roofing parapit/wht coating
Lab ID # 543-00045-040B		3) 4)Jun-02-04	Roofing Felt/Tar-Black

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

ASBESTOS TEM LABORATORIES, INC. **1409 FIFTH STREET, BERKELEY, CA 94710** **(510) 528-0108**
www.asbestostemlabs.com *With Offices in Reno, NV (775) 359-3377*

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 42
Reg. Samples Analyzed: 38
Split Layers Analyzed: 15

Job Site / No. Solano College Survey
441561001

Report No. **044116**
Date Submitted: May-25-04
Date Reported: Jun-02-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
1800-4-A	None Detected	1) 20-30% Cellulose 2) 70-80% Calc, Bndr, Qtz, Other m.p.	wht TSI tape
Lab ID # 543-00045-041		3) May-21-0 1 4) Jun-02-04	Tape-Off-White
1800-5-A	None Detected	1) None Detected 2) 99-100% Calc, Bndr, Other m.p.	silver / blk HVAC tape
Lab ID # 543-00045-042		3) May-21-0 13:04 4) Jun-02-04	Tape-Silver
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

ASBESTOS TEM LABORATORIES, INC. **1409 FIFTH STREET, BERKELEY, CA 94710** **(510) 528-0108**
www.asbestostemlabs.com *With Offices in Reno, NV (775) 359-3377*

KLEINFELDER

PROJECT NO.	PROJECT NAME	RECEIVING LAB:
44156/001	Solano College Survey	Asbestos TEM
L.P. NO. (P.O. NO.)	SAMPLERS: (Signature/Number)	INSTRUCTIONS/REMARKS
	Jennifer Gomez	*PRIOR POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CON-TAINERS	TYPE OF CON-TAINERS	ANALYSIS PLM	
1	5/2/04	11:35	1300-1-A	MISC.	1	BAG	X	Silver Paint / Wht TSI w/mastic
2		11:37	1300-1-B				X	Wht TSI /
3		11:40	1300-2-A				X	Blk/Wht RR Asphalt
4		11:41	1300-2-B				X	
5		11:42	1300-3-A				X	Grey Concrete Shingles
6		11:44	1300-3-B				X	
7		11:46	1300-4-A				X	Blk felt (Edge of Building)
8		11:49	1300-4-B				X	
9		11:51	1300-5-A				X	Blk Penetration Mastic
10		11:52	1300-5-B				X	
11		11:56	1100-15-A				X	White H-Va/mastic
12		11:58	1100-15-B				X	
13								
14								
15								
16								
17								
18								
19								
20								

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Instructions/Remarks:	Send Results To:
[signature]	5/4/04 600		3-5 days	KLEINFELDER 780 CHADBOURNE, ROAD SUITE D FAIRFIELD, CA ~~94585-9043~~ 94534 (707) 429-4070 Attn: JENNIFER GOMEZ
Relinquished by: (Signature)	Date/Time	Received by: (Signature)		
		[signature] MON		
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)		

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

№ 0322

KLEINFELDER

PROJECT NO.	PROJECT NAME	RECEIVING LAB:
44156/001	Solano College Survey	Asbestos Tech

L.P. NO. (P.O. NO.):

SAMPLERS: (Signature/Number): Jennifer Gomez

INSTRUCTIONS/REMARKS: * PRIOR POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS (PLM)	
* 1	5/21/14	2:17	1200-1-A	MISC	1	BAG	X	Whi H Vactape
2		2:21	1200-1-B				X	White Putty/Whi H Vact
* 3		2:24	1200-2-A				X	Blk TSI Wrap
4		2:25	1200-2-B				X	
* 5		2:27	1200-3-A				X	Blk Rmvd Roofing In ~~Parapit Tara Fill~~
6		2:30	1200-3-B				X	
7		2:31	1200-3-C				X	
* 8		2:33	1200-4-A				X	Whi TSI tape/Blk Mastic
9		2:36	1200-4-B				X	
* 10		2:39	1200-5-A				X	Blk ~~Pt Mastic~~ Penetration mastic
11		2:41	1200-5-B				X	
* 12		2:43	1200-6-A				X	Grey Concrete Shingles/
13		2:45	1200-6-B				X	Blk Asphault Roofing
14								
15								
16								
17								
18								
19								
20								

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Instructions/Remarks:	Send Results To:
[signature]	5/21/14 1600		3-5 days	KLEINFELDER 780 CHADBOURNE, ROAD SUITE D FAIRFIELD, CA ~~94585-9643~~ 94534 (707) 429-4070 Attn: JENNIFER GOMEZ
Relinquished by: (Signature)	Date/Time	Received by: (Signature) 05-22-14 A09:33 RCVD		
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)		

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

№ 0326

KLEINFELDER

PROJECT NO.	PROJECT NAME
44156.1001	Solano College Survey

L.P. NO. (P.O. NO.):

SAMPLERS: (Signature/Number): JENNIFER GOMEZ

RECEIVING LAB: Asbestos TEM

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS PLM	INSTRUCTIONS/REMARKS
								* PRIOR POSITIVE *
* 1	5-21-04	11:04	1100-1-A	MISC.	1	BAGS	X	Blk/Wht Rolled Roofing
2		11:06	1100-1-B				X	↓
3		11:08	1100-1-C				X	
* 4		11:10	1100-2-A				X	Blk Penetration Mastic
5		11:12	1100-2-B				X	↓
6		11:15	1100-2-C				X	Silver
* 7		11:19	1100-3-A				X	Gry Blu Mastic / HVac tape
8		11:23	1100-3-B				X	↓
* 9		11:26	1100-4-A				X	Blk Patch (ROLLED ROOFING)
10		11:28	1100-4-B				X	↓
* 11		12:49	1800-1-A				X	SILVER PAINT / Wht tape
12		12:52	1800-1-B				X	↓
13		12:54	1800-2-A				X	Blk/Wht Asphalt Shingles
14		12:56	1800-2-B				X	↓
15		12:59	1800-3-A				X	Blk Rolled Roofing (Gravel pt) / WHT COATING
16		13:02	1800-4-A				X	Wht TSI TAPE
17		13:04	1800-5-A				X	Silver/Blk HVAC tape
18								
19								
20								

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Jennifer Gomez	5/24/04 1545	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
		[illegible]
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)

Instructions/Remarks:

3-5 day turnaround

Send Results To:

KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-0643~~ 94535
(707) 429-4070

Attn: JENNIFER GOMEZ

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

№ 0323

ROOF

ASBESTOS TEM LABORATORIES, INC.
FACSIMILE TRANSMISSION

Date: Jun/02/2004 **Total Pages (including Cover Sheet):** 11

Attention: Ms. Jennifer Gomez **FAX #:** 707-429-4162

Company: Kleinfelder

CONCERNING ANALYTICAL RESULTS FOR:

Job Name: Solano College Survey

Job #: 441561001

Comments: PRELIMINARY Polarized Light Microscopy Bulk Sample Analytical Results

Become a registered user and take advantage of our 24-hour, 7 day-a-week internet reporting system. Final laboratory analysis reports and invoices are now available at <www.AsbestosTEMLabs.com> within two business days of this fax. In order to activate this service, please contact us with a "User Name" and "Password" in mind.

1409 Fifth Street, Suite C · Berkeley, CA 94710 · Ph. (510) 528-0108 · FAX (510) 528-0109
www.asbestostemlabs.com *With Offices in Reno, NV (775) 359-3377*

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 42
Reg. Samples Analyzed: 38
Split Layers Analyzed: 15

Job Site / No. Solano College Survey
441561001

Report No. 044116
Date Submitted: May-25-04
Date Reported: Jun-02-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
1300-1-A.	None Detected	1)11-25% Fiberglass,Mineral Wool 2)75-89% Paint, GlassFrags, Other m.p.	silver paint/wh: TSI wrap wh: TSI
Lab ID # 543-00045-001		3)May-21-0 11:35 4)Jun-01-04	Wrap-Silver/White
1300-1-B.	None Detected	1)11-25% Fiberglass,Mineral Wool 2)75-89% Paint, GlassFrags, Other m.p.	silver paint/wh: TSI wrap wh: TSI
Lab ID # 543-00045-002		3) May-21-0 11:37 4)Jun-01-04	Wrap-Silver/White
1300-2-A.	None Detected	1)5-10% Fiberglass 2)90-95% Tar, Calc, Qtz, Other m.p.	blk / wh: RR asphalt
Lab ID # 543-00045-003A		3) 4)Jun-01-04	Asphalt-Black
1300-2-A.	None Detected	1)None Detected 2)99-100% Qtz, Other m.p.	blk / wh: RR asphalt
Lab ID # 543-00045-003B		3) 4)Jun-01-04	Bulk-Off-White
1300-2-B.	None Detected	1)5-10% Fiberglass 2)90-95% Tar, Calc, Qtz, Other m.p.	blk / wh: RR asphalt
Lab ID # 543-00045-004A		3) May-21-0 11:41 4)Jun-01-04	Asphalt-Black
1300-2-B.	None Detected	1)None Detected 2)99-100% Qtz, Other m.p.	
Lab ID # 543-00045-004B		3) 4)Jun-01-04	Bulk-Off-White
1300-3-A.	None Detected	1)None Detected 2)99-100% Qtz, Calc, Other m.p.	grey concrete shingles
Lab ID # 543-00045-005		3) May-21-0 11:42 4)Jun-01-04	Shingles-Grey
1300-3-B.	None Detected	1)None Detected 2)99-100% Qtz, Calc, Other m.p.	grey concrete shingles
Lab ID # 543-00045-006		3) May-21-0 11:44 4)Jun-01-04	Shingles-Grey
1300-4-A.	None Detected	1)30-40% Fiberglass 2)60-70% GlassFrags, Calc, Bndr, Qtz	blk felt C edge of bldg
Lab ID # 543-00045-007		3) May-21-0 11:46 4)Jun-01-04	Felt-Black
1300-4-B.	None Detected	1)30-40% Fiberglass 2)60-70% GlassFrags, Calc, Bndr, Qtz	blk felt C edge of bldg
Lab ID # 543-00045-008		3) May-21-0 11:49 4)Jun-01-04	Felt-Black

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ Analyst _____

PRELIMINARY

ASBESTOS TEM LABORATORIES, INC. 1429 6TH STREET, BERKELEY, CA 94710 (510) 528-0108
www.asbestostemlabs.com
With Offices in Reno, NV (775) 359-3377

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020 **Page: 2 of 7**

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 42
Reg. Samples Analyzed: 38
Split Layers Analyzed: 15

Job Site / No. Solano College Survey
441561001

Report No. **044116**
Date Submitted: May-25-04
Date Reported: Jun-02-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
1300-5-A.	5-10%	Chrysotile	1)None Detected 2)90-95% Tar, Bndr, Calc, Other m.p.	blk penatration mastic
Lab ID # 543-00045-009			3)May-21-0 11:51 4)Jun-01-04	Mastic-Black
1300-5-B.		Not Analyzed	1) 2)	blk penatration mastic
Lab ID # 543-00045-010			3) May-21-0 11:52 4)Jun-01-04	
1100-15-A		None Detected	1)1-5% Synthetics 2)95-99% Qtz, Calc, Other m.p.	white H- vac/mastic
Lab ID # 543-00045-011			3) May-21-0 11:56 4)Jun-01-04	Mastic-Off-White
1100-15-B		None Detected	1)1-5% Synthetics 2)95-99% Qtz, Calc, Other m.p.	white H- vac/mastic
Lab ID # 543-00045-012			3) May-21-0 11:58 4)Jun-01-04	Mastic-Off-White
1200-1-A		None Detected	1)21-35% Cellulose,Synthetics 2)65-79% Qtz, Calc, Other m.p.	white H- vac
Lab ID # 543-00045-013			3) May-21-0 2:17 4)Jun-01-04	H - Vac-White
1200-1-B		None Detected	1)21-35% Cellulose,Synthetics 2)65-79% Qtz, Calc, Other m.p.	white putty / whi H-Vac
Lab ID # 543-00045-014			3) May-21-0 2:21 4)Jun-01-04	Putty/Tape-Off-White
1200-2-A		None Detected	1)20-30% Synthetics 2)70-80% Calc, Other m.p.	blk TSI wrap
Lab ID # 543-00045-015			3) May-21-0 2:24 4)Jun-01-04	Wrap-Black
1200-2-B		None Detected	1)20-30% Synthetics 2)70-80% Calc, Other m.p.	blk TSI wrap
Lab ID # 543-00045-016			3) May-21-0 2:25 4)Jun-01-04	Wrap-Black
1200-3-A		None Detected	1)None Detected 2)99-100% Calc, Bndr, Other m.p.	blk rolled roofing in parapit
Lab ID # 543-00045-017A			3) May-21-0 2:27 4)Jun-02-04	Coating-White
1200-3-A	5-10%	Chrysotile	1)None Detected 2)90-95% Tar, Calc, Bndr, Other m.p.	blk rolled roofing in parapit
Lab ID # 543-00045-017B			3) 4)Jun-01-04	Roofing (Top)-Black

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ Analyst _____

PRELIMINARY

ASBESTOS TEM LABORATORIES, INC. 1405 FIELD STREET, BERKELEY, CA 94710 (510) 528-0108
www.asbestostemlabs.com *With Offices in Reno, NV (775) 359-3377*

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 42
Reg. Samples Analyzed: 38
Split Layers Analyzed: 15

Job Site / No. Solano College Survey
441561001

Report No. **044116**
Date Submitted: May-25-04
Date Reported: Jun-02-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD LAB
1200-3-A Lab ID # 543-00045-017C	5-10%	Chrysotile	1)None Detected 2)90-95% Tar, Calc, Bndr, Other m.p. 3) 4) Jun-01-04	blk rolled roofing in parapit Roofing (Bottom)-Black
1200-3-B Lab ID # 543-00045-018A		None Detected	1)None Detected 2)99-100% Calc, Bndr, Other m.p. 3) May-21-0 2:30 4) Jun-02-04	blk rolled roofing in parapit Coating-White
1200-3-B Lab ID # 543-00045-018B		Not Analyzed	1) 2) 3) 4) Jun-02-04	blk rolled roofing in parapit
1200-3-B Lab ID # 543-00045-018C		Not Analyzed	1) 2) 3) 4) Jun-02-04	blk rolled roofing in parapit
1200-3-C Lab ID # 543-00045-019A		None Detected	1)None Detected 2)99-100% Calc, Bndr, Other m.p. 3) May-21-0 2:31 4) Jun-02-04	blk rolled roofing in parapit Coating-White
1200-3-C Lab ID # 543-00045-019B		Not Analyzed	1) 2) 3) 4) Jun-02-04	blk rolled roofing in parapit
1200-3-C Lab ID # 543-00045-019C		Not Analyzed	1) 2) 3) 4) Jun-02-04	blk rolled roofing in parapit
1200-4-A Lab ID # 543-00045-020A		None Detected	1)31-45% Cellulose,Fiberglass 2)55-69% Qtz, Calc, Bndr, Other m.p. 3) May-21-0 2:33 4) Jun-01-04	whi TSI tape/blk mastic Tape-Off-White
1200-4-A Lab ID # 543-00045-020B		None Detected	1)20-30% Fiberglass 2)70-80% Calc, Qtz, Other m.p. 3) 4) Jun-01-04	whi TSI tape/blk mastic Mastic-Off-White
1200-4-B Lab ID # 543-00045-021A		None Detected	1)31-45% Cellulose,Fiberglass 2)55-69% Qtz, Calc, Bndr, Other m.p. 3) May-21-0 2:36 4) Jun-01-04	whi TSI tape/blk mastic Tape-Off-White

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ Analyst _____

PRELIMINARY

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 42
Reg. Samples Analyzed: 38
Split Layers Analyzed: 15

Job Site / No. Solano College Survey
441561001

Report No. 044116
Date Submitted: May-25-04
Date Reported: Jun-02-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
1200-4-B		None Detected	1)20-30% Fiberglass 2)70-80% Calc, Qtz, Other m.p.	
Lab ID # 543-00045-021B			3) 4) Jun-01-04	Mastic-Off-White
1200-5-A	5-10%	Chrysotile	1)None Detected 2)90-95% Tar, Bndr, Calc, Other m.p.	blk penetration mastic
Lab ID # 543-00045-022			3) May-21-0 2:39 4) Jun-01-04	Mastic-Black
1200-5-B		Not Analyzed	1) 2)	blk penetration mastic
Lab ID # 543-00045-023			3) May-21-0 2:41 4) Jun-02-04	
1200-6-A		None Detected	1)None Detected 2)99-100% Qtz, Calc, Other m.p.	grey concrete shingles
Lab ID # 543-00045-024A			3) May-21-0 2:43 4) Jun-01-04	Shingles-Grey
1200-6-A	5-10%	Chrysotile	1)5-10% Cellulose 2)80-90% Tar, Qtz, Calc, Other m.p.	grey concrete shingles
Lab ID # 543-00045-024B			3) 4) Jun-01-04	Roofing-Black
1200-6-A		None Detected	1)None Detected 2)99-100% Qtz, Calc, Other m.p.	grey concrete shingles
Lab ID # 543-00045-024C			3) 4) Jun-01-04	Grains-Off-White
1200-6-B		None Detected	1)None Detected 2)99-100% Qtz, Calc, Other m.p.	blk asphalt roofing shingles
Lab ID # 543-00045-025A			3) May-21-0 2:45 4) Jun-01-04	Shingles-Grey
1200-6-B		Not Analyzed	1) 2)	blk asphalt roofing shingles
Lab ID # 543-00045-025B			3) 4) Jun-01-04	
1200-6-B		None Detected	1)None Detected 2)99-100% Qtz, Calc, Other m.p.	blk asphalt roofing shingles
Lab ID # 543-00045-025C			3) 4) Jun-01-04	Grains-Off-White
1100-1-A		None Detected	1)5-10% Fiberglass 2)90-95% Tar, Bndr, Calc, Qtz	blk/whi rolled roofing
Lab ID # 543-00045-026A			3) May-21-0 11:04 4) Jun-02-04	Roofing Felt/Tar-Black

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ Analyst _____

PRELIMINARY

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 42
Reg. Samples Analyzed: 38
Split Layers Analyzed: 15

Job Site / No. Solano College Survey
441561001

Report No. 044116
Date Submitted: May-25-04
Date Reported: Jun-02-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD	DESCRIPTION LAB
1100-1-A		None Detected	1)None Detected 2)99-100% Calc, Qtz, Other m.p.	blk/whi rolled roofing	
Lab ID # 543-00045-026B			3) 4) Jun-02-04	Grains-Off-White	
1100-1-B		None Detected	1)5-10% Fiberglass 2)90-95% Tar, Bndr, Calc, Qtz	blk/whi rolled roofing	
Lab ID # 543-00045-027A			3) May-21-0 11:06 4) Jun-02-04	Roofing Felt/Tar-Black	
1100-1-B		None Detected	1)None Detected 2)99-100% Calc, Qtz, Other m.p.		
Lab ID # 543-00045-027B			3) 4) Jun-02-04	Grains-Off-White	
1100-1-C		None Detected	1)5-10% Fiberglass 2)90-95% Tar, Bndr, Calc, Qtz	blk/whi rolled roofing	
Lab ID # 543-00045-028A			3) May-21-0 11:08 4) Jun-02-04	Roofing Felt/Tar-Black	
1100-1-C		None Detected	1)None Detected 2)99-100% Calc, Qtz, Other m.p.		
Lab ID # 543-00045-028B			3) 4) Jun-02-04	Grains-Off-White	
1100-2-A	5-10%	Chrysotile	1)None Detected 2)90-95% Tar, Bndr, Calc, Other m.p.	blk penetration mastic	
Lab ID # 543-00045-029			3) May-21-0 11:10 4) Jun-02-04	Mastic-Black	
1100-2-B		Not Analyzed	1) 2)	blk penetration mastic	
Lab ID # 543-00045-030			3) May-21-0 11:12 4) Jun-02-04		
1100-2-C		Not Analyzed	1) 2)	blk penetration mastic	
Lab ID # 543-00045-031			3) May-21-0 11:15 4) Jun-02-04		
1100-3-A		None Detected	1)20-30% Cellulose 2)70-80% Calc, Bndr, Other m.p.	grey/blu mastic / silver H Vac tape	
Lab ID # 543-00045-032A			3) May-21-0 11:19 4) Jun-02-04	Mastic-Grey	
1100-3-A		None Detected	1)None Detected 2)99-100% Calc, Other m.p.	grey/blu mastic / silver H Vac tape	
Lab ID # 543-00045-032B			3) 4) Jun-02-04	Tape-Silver	

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ Analyst _____

PRELIMINARY

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POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 42
Reg. Samples Analyzed: 38
Split Layers Analyzed: 15

Job Site / No. Solano College Survey
441561001

Report No. 044116
Date Submitted: May-25-04
Date Reported: Jun-02-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
1100-3-B	None Detected	1)20-30% Cellulose 2)70-80% Calc, Bndr, Other m.p.	grey/blu mastic / silver H Vac tape
Lab ID # 543-00045-033A		3)May-21-0 11:23 4) Jun-02-04	Mastic-Grey
1100-3-B	None Detected	1)None Detected 2)99-100% Calc, Other m.p.	grey/blu mastic / silver H Vac tape
Lab ID # 543-00045-033B		3) 4) Jun-02-04	Tape-Silver
1100-4-A	None Detected	1)1-5% Synthetics 2)95-99% Tar, Calc, Bndr, Other m.p.	blk rof patch rolled roofing
Lab ID # 543-00045-034		3) Apr-21-04 11:26 4) Jun-02-04	Roofing-Black
1100-4-B	None Detected	1)1-5% Synthetics 2)95-99% Tar, Calc, Bndr, Other m.p.	blk rof patch rolled roofing
Lab ID # 543-00045-035		3) May-21-0 11:28 4) Jun-02-04	Roofing-Black
1800-1-A	None Detected	1)10-20% Cellulose 2)80-90% Calc, Glue, Paint, Other m.p.	silver paint / white HVAC tape
Lab ID # 543-00045-036		3) May-21-0 12:49 4)Jun-02-04	Tape-Off-White
1800-1-B	None Detected	1)10-20% Cellulose 2)80-90% Calc, Glue, Paint, Other m.p.	silver paint / white HVAC tape
Lab ID # 543-00045-037		3) May-21-0 12:52 4) Jun-02-04	Tape-Off-White
1800-2-A	None Detected	1)10-20% Fiberglass 2)80-90% Tar, Calc, Qtz, Other m.p.	blk/wht asphalt shingles
Lab ID # 543-00045-038		3) May-21-0 12:54 4)Jun-02-04	Shingles-Black
1800-2-B	None Detected	1)10-20% Fiberglass 2)80-90% Tar, Calc, Qtz, Other m.p.	blk/wht asphalt shingles
Lab ID # 543-00045-039		3) May-21-0 12:56 4)Jun-02-04	Shingles-Black
1800-3-A	None Detected	1)None Detected 2)99-100% Calc, Bndr, Qtz, Other m.p.	blk rolled roofing parapit/wht coating
Lab ID # 543-00045-040A		3) May-21-0 12:59 4)Jun-02-04	Coating-White
1800-3-A	None Detected	1)5-10% Fiberglass 2)90-95% Tar, Bndr, Calc, Qtz	blk rolled roofing parapit/wht coating
Lab ID # 543-00045-040B		3) 4)Jun-02-04	Roofing Felt/Tar-Black

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ Analyst _____

PRELIMINARY

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With Offices in Reno, NV (775) 359-3377

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 42
Reg. Samples Analyzed: 38
Split Layers Analyzed: 15

Job Site / No. Solano College Survey
441561001

Report No. 044116
Date Submitted: May-25-04
Date Reported: Jun-02-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
1800-4-A Lab ID # 543-00045-041		None Detected	1) 20-30% Cellulose 2) 70-80% Calc, Bndr, Qtz, Other m.p. 3) May-21-0 1 4) Jun-02-04	wht TSI tape Tape-Off-White
1800-5-A Lab ID # 543-00045-042		None Detected	1) None Detected 2) 99-100% Calc, Bndr, Other m.p. 3) May-21-0 13:04 4) Jun-02-04	silver / blk HVAC tape Tape-Silver
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ Analyst _____

PRELIMINARY

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With Offices in Reno, NV (775) 359-3377

KLEINFELDER

PROJECT NO.	PROJECT NAME	RECEIVING LAB:
44156/001	Solano College Survey	Asbestos TEM

L.P. NO. (P.O. NO.):

SAMPLERS: (Signature/Number) Jennifer Gomez

INSTRUCTIONS/REMARKS: *PRIOR POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS PLM	
1	5/2/04	11:35	1300-1-A	MISC.	1	BAG	X	Silver Paint / Wh. TSI w/
2		11:37	1300-1-B				X	Wh. TSI /
3		11:40	1300-2-A				X	Blk/Wh. BP Asphalt
4		11:41	1300-2-B				X	Grey Concrete Shingles
5		11:42	1300-3-A				X	Blk felt (Edge of Building)
6		11:44	1300-3-B				X	Blk Penatration Mastic
7		11:46	1300-4-A				X	White H-Vap/mastic
8		11:49	1300-4-B				X	
9		11:51	1300-5-A				X	
10		11:52	1300-5-B				X	
11		11:56	1100-15-A				X	
12		11:58	1100-15-B				X	
13								
14								
15								
16								
17								
18								
19								
20								

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
Relinquished by: (Signature)	Date/Time	

Instructions/Remarks: 3-5 days

Send Results To:

KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-9643~~ 94534
(707) 429-4070

Attn: JENNIFER GOMEZ

M-60 White - Sampler Canary - Return Copy To Shipper Pink - Lab Copy

CHAIN OF CUSTODY

№ 0322

KLEINFELDER

PROJECT NO.	PROJECT NAME	RECEIVING LAB:
44156/001	Solano College Survey	Asbestos TEM
L.P. NO. / P.O. NO.	SAMPLERS: (Signature/Number)	
	Jennifer Gomez	

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS PLM	INSTRUCTIONS/REMARKS
								* PRIOR POSITIVE
1	5/21/04	2:17	1200-1-A	MISC	1	BAG	X	Whi H Vac tape
2		2:21	1200-1-B				X	White ♥ Putty/Whi H-Vact
3		2:24	1200-2-A				X	Blk TSI Wrap
4		2:25	1200-2-B				X	
5		2:27	1200-3-A				X	Blk Rubberized Roofing (In ~~Parapit Fill~~)
6		2:30	1200-3-B				X	
7		2:31	1200-3-C				X	
8		2:33	1200-4-A				X	Whi TSI tape/Blk Mastic
9		2:36	1200-4-B				X	
10		2:39	1200-5-A				X	Blk ~~Put Mastic~~ Penetration mastic
11		2:41	1200-5-B				X	
12		2:43	1200-6-A				X	Grey Concrete Shingles/
13		2:45	1200-6-B				X	Blk Asphault Roofing/
14								
15								
16								
17								
18								
19								
20								

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Instructions/Remarks:	Send Results To:
[signature]	5/21/04 1600		3-5 days	KLEINFELDER 780 CHADBOURNE, ROAD SUITE D FAIRFIELD, CA 94585-9648 (707) 429-4070 7453 Attn: JENNIFER GOMEZ
Relinquished by: (Signature)	Date/Time	Received by: (Signature)		
		Received for Laboratory by: (Signature)		

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

No. 0

K___NF__DER

PROJECT NO.	PROJECT NAME
44156/001	Solano College Survey

L.P. NO. / P.O. NO.:

SAMPLERS: (Signature/Number) JENNIFER GOMEZ

RECEIVING LAB: Asbestos TEM

INSTRUCTIONS/REMARKS: *PRIOR POSITIVE*

	DATE MM/DD/YY	SAMPLE I.D. TIME HR-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS PLM	
1	5-21-04	~~11:04~~ 11:04	1100-1-A	MISC.	1	BAGS	X	Blk/Wht Rolled Roofing
2		11:06	1100-1-B				X	↓
3		11:08	1100-1-C				X	Blk Penetration Mastic
4		11:10	1100-2-A				X	↓
5		11:12	1100-2-B				X	Gry Blu Mastic / Silver HVac Tape
6		11:15	1100-2-C				X	↓
7		11:19	1100-3-A				X	Blk Roof Patch (ROLLED ROOFING)
8		11:23	1100-3-B				X	↓
9		11:26	1100-4-A				X	SILVER PAINT / White HVAC tape
10		11:28	1100-4-B				X	↓
11		12:49	1800-1-A				X	Blk/Wht Asphalt Shingles
12		12:52	1800-1-B				X	↓
13		12:54	1800-2-A				X	Blk Rolled Roofing (Gauze pt) / WHT PAINTING
14		12:56	1800-2-B				X	Wht TSI TAPE
15		12:59	1800-3-A				X	Silver/Blk HVAC tape
16		13:02	1800-4-A				X	
17		13:04	1800-5-A				X	
18								
19								
20								

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Jennifer Gomez	5/24 1545	
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
		[illegible]
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)

Instructions/Remarks: 3-5 day turnaround

Send Results To:

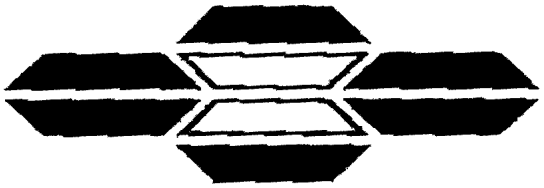
KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-0643~~
(707) 429-4070 94535

Attn: JENNIFER GOMEZ

M-80 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

№ 0323



ASBESTOS TEM LABORATORIES, INC.

FACSIMILE TRANSMISSION

Date: _____ **Total Pages (including Cover Sheet):** 3

Attention: Ms. Jennifer Gomez **FAX #:** 707-429-4162
707-429-4162

Company: Kleinfelder

CONCERNING ANALYTICAL RESULTS FOR:

Job Name: Solano College

Job #: 44156

Comments: PRELIMINARY Atomic Absorption Spectroscopy Metals Analysis Results

1409 Fifth Street, Suite C · Berkeley, CA 94710 · Ph. (510) 528-0108 · FAX (510) 528-0109
With Offices in Reno (775) 359-3377

ATOMIC ABSORPTION SPECTROSCOPY
SOLID WASTE METALS ANALYSIS REPORT
EPA 3050A Digestion / EPA 7420 Analysis Methods

Contact: Ms. Jennifer Gomez
Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Submitted: 2
Samples Analyzed: 2
Job Site / No. Solano College 44156

Report No.: 044538
Date Submitted: Jun-07-04
Date Reported: Jun-18-04

SAMPLE ID	METAL	SAMPLE RESULT	DETECTION LIMIT	LOCATION / DESCRIPTION		
P-4	Pb	21 mg/kg 0.002 %	9.9 mg/kg 0.001 %	Brown Paint		
Lab ID # 543-00067-001				Sampling Date: Jun-03-04	Analysis Date: Jun-18-04	Analyzed Weight (g): 1.008
P-6	Pb	7300 mg/kg 0.730 %	11 mg/kg 0.001 %	Orange Paint (1800A)		
Lab ID # 543-00067-002				Sampling Date: Jun-03-04	Analysis Date: Jun-18-04	Analyzed Weight (g): 0.9478
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)

µg - micrograms 1% = 10,000 ppm 1ppm = 1 mg/Kg **Detection Limit is calculated based on LSU**

Lab QC Reviewer _____ **Analyst** _____

KLEINFELDER

PROJECT NO. 44156

PROJECT NAME Solano Collage

L.P. NO. (P.O. NO.)

SAMPLERS: (Signature/Number) Jennifer Gomez

RECEIVING LAB: Asbestos TEM

INSTRUCTIONS/REMARKS * FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CON-TAINERS	TYPE OF CON-TAINERS	ANALYSIS: PLM	AA	INSTRUCTIONS/REMARKS
1	6/3/04		134C				X		
2	6/2/04		500-7A				X		BLACK ASPHALT ROOF SHINGLES (500)
3			500-7-B				X		"
4			500-7-C				X		
5	6/3/04		P-4					X	BROWN PAINT (600)
6			P-5					X	ORANGE PAINT (1800A)
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	6/3/04	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
		[signature]
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature) 06-07-04A09:04 RCV

Instructions/Remarks: 3-5 days

Send Results To:

KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-9643~~ 94534
(707) 429-4070

Attn: JENNIFER GOMEZ

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY NO. 8360

ROOF

ASBESTOS TEM LABORATORIES, INC.

EPA Interim Method
Polarized Light Microscopy
Analytical Report

Laboratory Job # 543-00046

1409 Fifth Street
Berkeley, CA 94710
(510) 528-0108
FAX (510) 528-0109
www.asbestostemlabs.com

With Branch Offices Located At:
1016 GREG STREET, SPARKS, NV 89431
Ph. (775) 359-3377

ASBESTOS TEM LABORATORIES, INC

Accredited by
U.S. Dept. of Commerce
NVLAP
CA DOHS ELAP

Jun-03-04

Ms. Jennifer Gomez
Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

RE: LABORATORY JOB # 543-00046
Polarized light microscopy analytical results for 49 bulk sample(s) with 1 sample split(s)
Job Site: Solano College Survey
Job No.: 44156/001

Enclosed please find the bulk material analytical results for one or more samples submitted for asbestos analysis. The analyses were performed in accordance with EPA Method 600/R-93/116 or 600/M4-82-020 for the determination of asbestos in bulk building materials by polarized light microscopy (PLM). Please note that while PLM analysis is commonly performed on non-friable and fine grained materials such as floor tiles and dust, the EPA method recognizes that PLM is subject to limitations. In these situations, accurate results may only be obtainable through the use of more sophisticated and accurate techniques such as transmission electron microscopy (TEM) or X-ray diffraction (XRD).

Prior to analysis, samples are logged-in and all data pertinent to the sample recorded. The samples are checked for damage or disruption of any chain-of-custody seals. A unique laboratory ID number is assigned to each sample. A hard copy log-in sheet containing all pertinent information concerning the sample is generated. This and all other relevant paper work are kept with the sample throughout the analytical procedures to assure proper analysis.

Each sample is opened in a class 100 HEPA negative air hood. A representative sampling of the material is selected and placed onto a glass microscope slide containing a drop of refractive index oil. The glass slide is placed under a polarizing light microscope where standard mineralogical techniques are used to analyze and quantify the various materials present, including asbestos. The data is then compiled into standard report format and subjected to a thorough quality assurance check before the information is released to the client.

Sincerely Yours,

Stephen A Shaffer

Lab Manager
ASBESTOS TEM LABORATORIES, INC.

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 54
Reg. Samples Analyzed: 49
Split Layers Analyzed: 1

Job Site / No. Solano College Survey
44156/001

Report No. 044117
Date Submitted: May-25-04
Date Reported: Jun-03-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
500-1-A.	None Detected	1) None Detected 2) 99-100% Glue, Other m.p.	silver paint / blk glue
Lab ID # 543-00046-001		3) May-21-0 9:10 4) Jun-02-04	Glue-Black
500-1-B.	None Detected	1) None Detected 2) 99-100% Glue, Other m.p.	silver paint / blk glue
Lab ID # 543-00046-002		3) May-21-0 9:10 4) Jun-02-04	Glue-Black
500-1-C.	None Detected	1) None Detected 2) 99-100% Glue, Other m.p.	silver paint / blk glue
Lab ID # 543-00046-003		3) May-21-0 9:12 4) Jun-02-04	Glue-Black
500-2-A.	None Detected	1) 70-80% Cellulose 2) 20-30% Calc, Other m.p.	white TSI joint tape
Lab ID # 543-00046-004		3) May-21-0 9:13 4) Jun-02-04	Tape-Off-White
500-2-B.	None Detected	1) 70-80% Cellulose 2) 20-30% Calc, Other m.p.	white TSI joint tape
Lab ID # 543-00046-005		3) May-21-0 9:15 4) Jun-02-04	Tape-Off-White
500-2-C.	None Detected	1) 70-80% Cellulose 2) 20-30% Calc, Other m.p.	white TSI joint tape
Lab ID # 543-00046-006		3) May-21-0 9:18 4) Jun-02-04	Tape-Off-White
500-3-A.	None Detected	1) None Detected 2) 99-100% Tar, Glue, Calc, Other m.p.	silver paint/black bria
Lab ID # 543-00046-007		3) May-21-0 9:19 4) Jun-02-04	Tar Felt-Black
500-3-B.	None Detected	1) None Detected 2) 99-100% Tar, Glue, Calc, Other m.p.	silver paint/black bria
Lab ID # 543-00046-008		3) May-21-0 9:21 4) Jun-02-04	Tar Felt-Black
500-3-C.	None Detected	1) None Detected 2) 99-100% Tar, Glue, Calc, Other m.p.	silver paint/black bria
Lab ID # 543-00046-009		3) May-21-0 9:23 4) Jun-02-04	Tar Felt-Black
500-4-A.	None Detected	1) 70-80% Cellulose 2) 20-30% Calc, Other m.p.	silver paint/white H VAC
Lab ID # 543-00046-010		3) May-21-0 9:23 4) Jun-02-04	Tape-Grey

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 54
Reg. Samples Analyzed: 49
Split Layers Analyzed: 1

Job Site / No. Solano College Survey
44156/001

Report No. **044117**
Date Submitted: May-25-04
Date Reported: Jun-03-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD LAB
500-4-B.		**None Detected**	1)70-80% Cellulose 2)20-30% Calc, Other m.p.	silver paint/white H VAC
Lab ID # 543-00046-011			3) May-21-0 9:26 4) Jun-02-04	Tape-Grey
500-4-C.		**None Detected**	1)70-80% Cellulose 2)20-30% Calc, Other m.p.	silver paint/white H VAC
Lab ID # 543-00046-012			3) May-21-0 9:27 4) Jun-02-04	Tape-Grey
500-5-A.	**10-20%**	**Chrysotile**	1)30-50% Cellulose,Fiberglass 2)30-60% Tar, Calc, Other m.p.	silver paint/black roll
Lab ID # 543-00046-013			3) May-21-0 9:28 4) Jun-02-04	Roofing Felt/Tar-Black
500-5-B.		**Not Analyzed**	1) 2)	roofing shingle -n- tar
Lab ID # 543-00046-014			3) May-21-0 9:29 4) Jun-03-04	
500-5-C.		**Not Analyzed**	1) 2)	bldg 8600
Lab ID # 543-00046-015			3) May-21-0 9:30 4)Jun-03-04	
500-6-A.		**None Detected**	1)None Detected 2)99-100% Tar, Qtz, Calc, Other m.p.	blk tar brown stucco
Lab ID # 543-00046-016			3) May-21-0 9:32 4) Jun-03-04	Stucco-Black
500-6-B.		**None Detected**	1)None Detected 2)99-100% Tar, Qtz, Calc, Other m.p.	blk tar brown stucco
Lab ID # 543-00046-017			3) May-21-0 9:33 4)Jun-03-04	Stucco-Black
500-6-C.		**None Detected**	1)None Detected 2)99-100% Tar, Qtz, Calc, Other m.p.	blk tar brown stucco bldg 600
Lab ID # 543-00046-018			3) May-21-0 9:33 4)Jun-03-04	Stucco-Black
500-6-D.		**None Detected**	1)None Detected 2)99-100% Qtz, Calc, Opq, Other m.p.	blk tar brown stucco bldg 600
Lab ID # 543-00046-019			3) May-21-0 9:52 4)Jun-03-04	Stucco-Grey
500-2-D.		**None Detected**	1)20-30% Cellulose 2)70-80% Tar, Mica, Calc, Other m.p.	bldg 600
Lab ID # 543-00046-020			3) May-21-0 9:55 4)Jun-03-04	Tar-Black

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 54
Reg. Samples Analyzed: 49
Split Layers Analyzed: 1

Job Site / No. Solano College Survey
44156/001

Report No. **044117**
Date Submitted: May-25-04
Date Reported: Jun-03-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed)	DESCRIPTION FIELD / LAB
700-1-A.		**None Detected**	1)None Detected 2)99-100% Tar, Bndr, Calc, Other m.p.	silver paint black bria
Lab ID # 543-00046-021			3) May-21-0 10:20 4) Jun-03-04	Tar-Black
700-1-B.		**None Detected**	1)None Detected 2)99-100% Tar, Bndr, Calc, Other m.p.	silver paint black bria
Lab ID # 543-00046-022			3) May-21-0 10:21 4) Jun-03-04	Tar-Black
700-2-A.		**None Detected**	1)70-80% Cellulose 2)20-30% Calc, Other m.p.	silver paint white H VAC tape
Lab ID # 543-00046-023			3) May-21-0 10:24 4) Jun-03-04	Tape-Off-White
700-2-B.		**None Detected**	1)70-80% Cellulose 2)20-30% Calc, Other m.p.	silver paint white H VAC tape
Lab ID # 543-00046-024			3) May-21-0 10:26 4) Jun-03-04	Tape-Off-White
700-3-A.	**30-40%**	**Chrysotile**	1)None Detected 2)60-70% Bndr, Calc, Other m.p.	gray PVC putty
Lab ID # 543-00046-025			3) May-21-0 10:27 4)Jun-03-04	Putty-Off-White
700-3-B.		**Not Analyzed**	1) 2)	gray PVC putty
Lab ID # 543-00046-026			3) May-21-0 10:27 4) Jun-03-04	
700-3-C.		**Not Analyzed**	1) 2)	gray PVC putty
Lab ID # 543-00046-027			3) May-21-0 10:27 4)Jun-03-04	
700-4-A.		**None Detected**	1)None Detected 2)99-100% Tar, Bndr, Calc, Other m.p.	black rolled roofing / wht paper
Lab ID # 543-00046-028			3) May-21-0 10:30 4)Jun-03-04	Roofing Felt/Tar-Black
700-4-B.		**None Detected**	1)None Detected 2)99-100% Tar, Bndr, Calc, Other m.p.	black rolled roofing / wht paper
Lab ID # 543-00046-029			3) May-21-0 10:34 4)Jun-03-04	Roofing Felt/Tar-Black
700-5-A.		**None Detected**	1)None Detected 2)99-100% Qtz, Calc, Bndr, Other m.p.	white coating / tan stucco
Lab ID # 543-00046-030			3) May-21-0 10:36 4)Jun-03-04	Stucco-Tan

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer_____ **Analyst**_____

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 54
Reg. Samples Analyzed: 49
Split Layers Analyzed: 1

Job Site / No. Solano College Survey
44156/001

Report No. **044117**
Date Submitted: May-25-04
Date Reported: Jun-03-04

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
700-5-B.		**None Detected**	1)None Detected 2)99-100% Qtz, Calc, Bndr, Other m.p.	white coating / tan stucco
Lab ID # 543-00046-031			3) May-21-0 10:37 4) Jun-03-04	Stucco-Tan
700-6-A.	**10-20%**	**Chrysotile**	1)20-40% Cellulose,Fiberglass 2)40-70% Tar, Bndr, Calc, Other m.p.	blk asphalt rolled roofing under concrete shingles
Lab ID # 543-00046-032			3) May-21-0 10:42 4) Jun-03-04	Roofing Felt/Tar-Black
700-6-B.		**Not Analyzed**	1) 2)	blk asphalt rolled roofing under concrete shingles
Lab ID # 543-00046-033			3) May-21-0 10:42 4) Jun-03-04	
700-7-A.		**None Detected**	1)None Detected 2)99-100% Qtz, Calc, Opq, Other m.p.	concrete shingles
Lab ID # 543-00046-034			3) May-21-0 10:48 4) Jun-03-04	Concrete-Red
700-7-B.		**None Detected**	1)None Detected 2)99-100% Qtz, Calc, Opq, Other m.p.	concrete shingles
Lab ID # 543-00046-035			3) May-21-0 10:50 4)Jun-03-04	Concrete-Red
700-8-A	**10-20%**	**Chrysotile**	1)10-20% Fiberglass 2)60-80% Tar, Calc, Bndr, Other m.p.	black putty edge of bldg
Lab ID # 543-00046-036			3) May-21-0 10:55 4) Jun-03-04	Tar-Black
700-8-B.	**10-20%**	**Chrysotile**	1)10-20% Fiberglass 2)60-80% Tar, Calc, Bndr, Other m.p.	black putty edge of bldg
Lab ID # 543-00046-037			3) May-21-0 10:57 4)Jun-03-04	Tar-Black
700-9-A.		**None Detected**	1)20-30% Cellulose 2)70-80% Tar, Qtz, Other m.p.	black asphalt rolled roofing black tar
Lab ID # 543-00046-038			3) May-21-0 10:58 4)Jun-03-04	Roofing Felt/Tar-Black
700-9-B.		**None Detected**	1)20-30% Cellulose 2)70-80% Tar, Qtz, Other m.p.	black asphalt rolled roofing black tar
Lab ID # 543-00046-039			3) May-21-0 11:00 4)Jun-03-04	Roofing Felt/Tar-Black
1700-1-A.		**None Detected**	1)20-30% Cellulose 2)70-80% Tar, Qtz, Other m.p.	sil / whi paint H VAC tape
Lab ID # 543-00046-040			3) May-21-0 1:10 4)Jun-03-04	Tape-White

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 54
Reg. Samples Analyzed: 49
Split Layers Analyzed: 1

Job Site / No. Solano College Survey
44156/001

Report No. **044117**
Date Submitted: May-25-04
Date Reported: Jun-03-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
1700-2-A.	**None Detected**	1) 20-30% Cellulose 2) 70-80% Tar, Qtz, Other m.p.	whi H VAC tape whi glue
Lab ID # 543-00046-041		3) May-21-0 1:12 4) Jun-03-04	Tape-Off-White
1700-3-A.	**None Detected**	1) 20-30% Fiberglass 2) 70-80% Tar, Calc, Other m.p.	blk asphalt rr under concrete tiles
Lab ID # 543-00046-042		3) May-21-0 1:15 4) Jun-03-04	Roofing Felt/Tar-Black
1700-3-B.	**None Detected**	1) 20-30% Fiberglass 2) 70-80% Tar, Calc, Other m.p.	blk asphalt rr under concrete tiles
Lab ID # 543-00046-043		3) May-21-0 1:17 4) Jun-03-04	Roofing Felt/Tar-Black
1700-3-C.	**None Detected**	1) 20-30% Fiberglass 2) 70-80% Tar, Calc, Other m.p.	blk asphalt rr under concrete tiles
Lab ID # 543-00046-044		3) May-21-0 1:20 4) Jun-03-04	Roofing Felt/Tar-Black
1700-4-A.	**None Detected**	1) 20-30% Fiberglass 2) 70-80% Tar, Bndr, Other m.p.	blk / whi rr asphalt blk pn mastic blk/wht asphalt
Lab ID # 543-00046-045A		3) May-21-0 1:23 4) Jun-03-04	Roofing Felt/Tar-Black
1700-4-A.	**None Detected**	1) 5-10% Cellulose 2) 90-95% Tar, Bndr, Calc, Other m.p.	blk / whi rr asphalt blk pn mastic blk/wht asphalt
Lab ID # 543-00046-045B		3) 4) Jun-03-04	Tar-Black
1700-4-B.	**None Detected**	1) 20-30% Fiberglass 2) 70-80% Tar, Bndr, Other m.p.	blk / whi rr asphalt blk pn mastic blk/wht asphalt
Lab ID # 543-00046-046		3) May-21-0 1:25 4) Jun-03-04	Roofing Felt/Tar-Black
1700-4-C.	**None Detected**	1) 20-30% Fiberglass 2) 70-80% Tar, Bndr, Other m.p.	blk / whi rr asphalt blk pn mastic blk/wht asphalt
Lab ID # 543-00046-047		3) May-21-0 1:28 4) Jun-03-04	Roofing Felt/Tar-Black
1700-4-D.	**None Detected**	1) 20-30% Fiberglass 2) 70-80% Tar, Bndr, Other m.p.	blk whi rr asphalt blk pn mastic blk wht asphalt
Lab ID # 543-00046-048		3) May-21-0 1:30 4) Jun-03-04	Roofing Felt/Tar-Black
1700-5-A.	**None Detected**	1) 20-40% Cellulose, Synthetics 2) 60-80% Tar, Bndr, Other m.p.	blk rr para pitt silver paint
Lab ID # 543-00046-049		3) May-21-0 1:33 4) Jun-03-04	Roofing Felt/Tar-Black

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Indicated: 54
Reg. Samples Analyzed: 49
Split Layers Analyzed: 1

Job Site / No. Solano College Survey
44156/001

Report No. **044117**
Date Submitted: May-25-04
Date Reported: Jun-03-04

SAMPLE ID	ASBESTOS % TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
1700-5-B.	**None Detected**	1) 20-40% Cellulose, Synthetics 2) 60-80% Tar, Bndr, Other m.p.	blk rr para pitt silver paint
Lab ID # 543-00046-050		3) May-21-0 1:40 4) Jun-03-04	Roofing Felt/Tar-Black
1700-5-C	**None Detected**	1) 30-50% Cellulose, Synthetics 2) 50-70% Tar, Bndr, Other m.p.	blk rr para pitt silver paint
Lab ID # 543-00046-051		3) May-21-0 1:45 4) Jun-03-04	Roofing Felt/Tar-Black
1500-1-A	**None Detected**	1) None Detected 2) 99-100% Qtz, Calc, Opq, Other m.p.	whi coating tan stucco
Lab ID # 543-00046-052		3) May-21-0 1:48 4) Jun-03-04	Stucco-Red
1500-1-B	**None Detected**	1) None Detected 2) 99-100% Qtz, Calc, Opq, Other m.p.	whi coating tan stucco
Lab ID # 543-00046-053		3) May-21-0 1:48 4) Jun-03-04	Stucco-Red
1500-2-A.	**None Detected**	1) 70-80% Cellulose 2) 20-30% Calc, Other m.p.	sil paint / white TSi tape joint blk tar
Lab ID # 543-00046-054		3) May-21-0 1:52 4) Jun-03-04	Tape-Off-White
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	
Lab ID #		1) 2) 3) 4)	

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Lab QC Reviewer _____ **Analyst** _____

KLEINFELDER

PROJECT NO.	PROJECT NAME
44156/001	Solano College Survey

L.P. NO. (P.O. NO.)

SAMPLERS: (Signature/Number) Jennifer Gomez

RECEIVING LAB: ASBESTOS TEM

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CON-TAINERS	TYPE OF CON-TAINERS	ANALYSIS PLM	INSTRUCTIONS/REMARKS
								* PRIOR POSITIVE *
* 1	5-21-04	9:10	500-1-A	MISC.	1	PLAS. BAGS	X	Silver Paint / Black Glue
2		9:10	500-1-B				X	↓
3		9:12	500-1-C				X	↓
* 4		9:13	500-2-A				X	White TSI Joint Tape
5		9:15	500-2-B				X	↓
6		9:18	500-2-C				X	↓
* 7		9:19	500-3-A				X	Silver Paint / Black Bria
8		9:21	500-3-B				X	↓
9		9:23	500-3-C				X	↓
* 10		9:23	500-4-A				X	Silver Paint / White
11		9:26	500-4-B				X	[redacted] H-Vac
12		9:27	500-4-C				X	↓
* 13		9:28	500-5-A				X	Silver Paint / Blk Roll
14		9:29	500-5-B				X	roofing / Felt w/ Tar
15		9:30	500-5-C				X	~~Black Tar / B~~ Bldg 600
* 16		9:32	500-6-A				X	Black Tar / Brown Stucco
17		9:33	500-6-B				X	↓
18		9:33	500-6-C				X	~~Building~~ ↓ ~~600~~
19		9:52	500-6-D				X	↓ Bldg 600
20	↓	9:55	500-2-D	↓	↓	↓	X	Building 600

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Jennifer Gomez	5/21/04 1545	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
		05-25-04 09:34 CHRON
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)

Instructions/Remarks:

3-5 day turnaround

Send Results To:

KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-9643~~ 94534
(707) 429-4070

Attn: JENNIFER GOMEZ

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

№ 0327

KLEINFELDER

PROJECT NO.	PROJECT NAME
44156/001	Solano Collage survey

L.P. NO. (P.O. NO.):

SAMPLERS: (Signature/Number): Jennifer Gomez

RECEIVING LAB: Asbestos Tem

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CON-TAINERS	TYPE OF CON-TAINERS	ANALYSIS P.L.M.	INSTRUCTIONS/REMARKS
								Prior Positive
1	5/21/04	10:20am	700-1-A	misc.	1	BAGS	X	Silver Paint / Black Bria
2		10:21	700-1-B				X	↓ ↓
3		10:24	700-2-A				X	Silver Paint / White HavacTape
4		10:26	700-2-B				X	↓
5		10:27	700-3-A				X	Gray PVC Putty
6		10:27	700-3-B				X	↓
7		10:27	700-3-C				X	
8		10:30	700-4-A				X	Black Rolled Roofing WHT. PAPER
9		10:34	700-4-B				X	~~White Paper~~ ↓
10		10:36	700-5-A				X	White coating / Tan Stucco
11		10:37	700-5-B				X	↓ ↓
12		10:42	700-6-A				X	BLK Asphalt Rolled Roofing
13		10:45	700-6-B				X	↓ (under concrete shingles)
14		10:48	700-7-A				X	~~Rolled~~ Concrete Shingles
15		10:50	700-7-B				X	↓
16		10:55	700-8-A				X	Black Putty (edge of Building)
17		10:57	700-8-B				X	↓
18		10:58	700-9-A				X	Black Asphalt Rolled Roofing
19		11:00	700-9-B				X	Black Tar ↓
20								

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Jennifer Gomez	5/26/04 545	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)

Instructions/Remarks: 3-5 DAYS

Send Results To:

KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-9643~~ 94534
(707) 429-4070

Attn: JENNIFER GOMEZ

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

№ 0321

KLEINFELDER

PROJECT NO.	PROJECT NAME
44156/001	Solano College Survey

L.P. NO. (P.O. NO.):

SAMPLERS: (Signature/Number): Jennifer Gomez

RECEIVING LAB: Asbestos TEM

INSTRUCTIONS/REMARKS: *PRIOR POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS PLM	
1	5/21/04	1:10	1700-1-A	MISC.	1	BAG	X	Sil/Whi Paint H-Var Tape
2		1:12	1700-2-A				X	Whi H-Var Tape/Whi Glue
3		1:15	1700-3-A				X	Blk Asphalt RP /
4		1:17	1700-3-B				X	(under concrete Tiles)
5		1:20	1700-3-C				X	↓
6		1:23	1700-4-A				X	Blk/Whi RP Asphault/Blk
7		1:25	1700-4-B				X	PN Mastic Blk/wht asphalt/
8		1:28	1700-4-C				X	↓
9		1:30	1700-4-D				X	
10		1:33	1700-5-A				X	Blk RR (Para Pitt)/Silver
11		1:37	1700-5-B				X	Paint
12		1:40	1700-5-C				X	↓
13		1:45	1500-1-A				X	Whi coating, Tan Stucko
14		1:48	1500-1-B		↓	↓	X	
15		1:52	1500-2-A		↓	↓	X	Sil Paint/ White TSI tape (Joint)
16								Blk Tar
17								
18								
19								
20								

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	5/21/04 1600	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
		5-22-04 9:54
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
		[signature]

Instructions/Remarks: 3-5 days

Send Results To:

KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-0643~~ 94534
(707) 429-4070

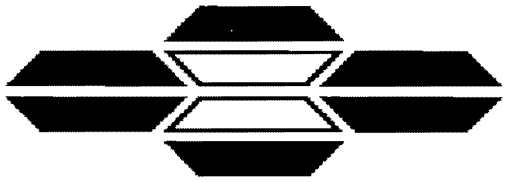
Attn: JENNIFER GOMEZ

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

№ 0325

Lead



ASBESTOS TEM LABORATORIES, INC.

EPA Method 3050A / 7000
Atomic Absorption Spectroscopy
Metals Analysis Report

Laboratory Job # 543-00068

1409 Fifth Street
Berkeley, CA 94710
(510) 528-0108
FAX (510) 528-0109

ASBESTOS TEM LABORATORIES, INC

Accredited by
U.S. Dept. of Commerce
NVLAP
CA DOHS ELAP

Jul/07/2004

Ms. Jennifer Gomez
Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

RE: LABORATORY JOB # 543-00068
Atomic Absorption Spectroscopy analytical results for 2 solid waste sample(s).
Job Site: Solano College
Job No.: 44156

Enclosed please find results for the atomic absorption spectroscopy (AA) metals analysis of one or more solid waste samples. Sample preparation procedures were performed according to EPA Method SW-846 3050A - Acid Digestion of Sediments, Sludges, and Soils. Sample analysis was performed by EPA Method SW-846 7420 direct aspiration flame method.

Prior to analysis, samples are checked for damage and disruption of the chain-of-custody seal. Samples are then logged-in, each given a unique laboratory number, and a hard copy containing all pertinent information is generated. This, and all other relevant paper work are kept with each sample throughout the analytical procedures to assure proper analysis.

A portion of each solid waste sample is weighed such that a sample aliquot weight of 1 to 2 grams is obtained. The weighed sample material is then placed into a glass beaker, transferred to a fume hood, heated at ~95 Deg. C, refluxed with nitric acid to solubilize the contained metals, and treated with Hydrogen Peroxide to oxidize any organic binder present in the sample material. High purity water is added to make a 50 ml volume for each sample in a volumetric flask.

AA analysis is performed on a microprocessor controlled Perkin Elmer 3100 atomic absorption spectrophotometer, operating in the flame mode. Samples are diluted as needed to allow reading of concentrations in the calibration range. QC analyses are prepared and performed along with each sample batch to ensure accurate analytical determinations. Data is compiled into a standard report format and subjected to a thorough quality assurance check before the information is released to the client. Note: Sample results are not corrected for contamination based on the field blank(s) or other analytical blank(s).

Sincerely Yours,

Stephen A Shaffer
ASBESTOS TEM LABORATORIES, INC.

ATOMIC ABSORPTION SPECTROSCOPY
SOLID WASTE METALS ANALYSIS REPORT
EPA 3050A Digestion / EPA 7420 Analysis Methods

Contact: Ms. Jennifer Gomez
Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Submitted: 2
Samples Analyzed: 2
Job Site / No. Solano College
44156

Report No.: **044899**
Date Submitted: Jul-01-04
Date Reported: Jul-07-04

SAMPLE ID	METAL	SAMPLE RESULT	DETECTION LIMIT	LOCATION / DESCRIPTION		
P-1. Lab ID # 543-00068-001	Pb	**79 mg/kg** 0.008 %	**46 mg/kg** 0.005 %	Sampling Date May-21-04	Analysis Date Jul-07-04	Analyzed Weight (g) 0.2154
P-2. Lab ID # 543-00068-002	Pb	**5600 mg/kg** 0.560 %	**61 mg/kg** 0.006 %	Sampling Date May-21-74	Analysis Date Jul-07-04	Analyzed Weight (g) 0.1627
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)

?g - micrograms 1% = 10,000 ppm 1ppm = 1 mg/Kg Detection Limit is calculated based on LSU

Lab QC Reviewer ____________ **Analyst** ____________

KLEINFELDER

PROJECT NO.	PROJECT NAME	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS	RECEIVING LAB:
94156	Solano Comm. College				McCampbell
P.O. NO.	SAMPLERS: (Signature/Number) Jennifer Gomez 2921				INSTRUCTIONS/REMARKS

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CONTAINERS	TYPE OF CONTAINERS	PCA										
1	5-21-04		P-1				X										
2	"		P-2				X										
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	
16																	
17																	
18																	
19																	
20																	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Instructions/Remarks:	Send Results To:
Jennifer Gomez	6/30/2004		$ 3-5 days	KLEINFELDER 760 CHADBOURNE, ROAD SUITE D FAIRFIELD, CA 94585-9643 (707) 429-4070 94534
Relinquished by: (Signature)	Date/Time	Received by: (Signature) 07-01-04 AT 1:18 RCVD		Attn: JENNIFER GOMEZ
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)		

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

№ 0364

Point Counts

ASBESTOS TEM LABORATORIES, INC.

Polarized Light Microscopy
Analytical Report
(EPA Gravimetric Point Count Protocol)

Laboratory Job # 543-00069

1409 Fifth Street
Berkeley, CA 94710
(510) 528-0108
FAX (510) 528-0109

ASBESTOS TEM LABORATORIES, INC

Accredited by
U.S. Dept. of Commerce
NVLAP
CA DOHS ELAP

Jul/09/2004

Ms. Jennifer Gomez
Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

RE: LABORATORY JOB # 543-00069
Polarized light microscopy analytical results for 9 bulk sample(s).
Job Site: Solano College
Job No.: 44156

Enclosed please find the bulk material analytical results for one or more samples submitted for asbestos analysis. The analyses were performed in accordance with EPA Method 600/R-93/116 or 600/M4-82-020 for the determination of asbestos in bulk building materials by polarized light microscopy (PLM) using the point counting technique to determine asbestos concentration. Please note that while PLM analysis is commonly performed on non-friable and fine grained materials such as floor tiles and dust, the EPA method recognizes that PLM is subject to limitations. In these situations, accurate results may only be obtainable through the use of more sophisticated and accurate techniques such as transmission electron microscopy (TEM) or X-ray diffraction (XRD).

Prior to analysis, samples are logged-in and all data pertinent to the sample recorded. The samples are checked for damage or disruption of any chain-of-custody seals. A unique laboratory ID number is assigned to each sample. A hard copy log-in sheet containing all pertinent information concerning the sample is generated. This and all other relevant paper work are kept with the sample throughout the analytical procedures to assure proper analysis.

Each sample is opened in a class 100 HEPA negative air hood. An aliquot of the material is separated from the sample, weighed, placed into a ceramic crucible of known weight, and ashed in a muffle furnace at ~480 Deg. C for a minumum of 4 hours. The ashed material is reweighed to determine the amount of material lost on ignition. Acidified water is added to the sample to dissolve any calcareous materials, and the sample is placed into a pyrex beaker with additional distilled water and ultrasonicated to break up the solid material as much as possible. The reamining particulate in the beaker is emplaced onto a 0.22um pore size filter of know weight using a vacuum filtration process. The filter is dried and then wighed to determine the remaining undissolved mass of particulate. The filter residue is then analyzed by PLM as described below.

A representative sampling of the material is selected and placed onto a glass microscope slide containing a drop of refractive index oil. The glass slide is placed under a polarizing light microscope where standard mineralogical techniques are used to analyze the various materials present, including asbestos. Quantitation of asbestos is made via counting of a minimum of 400 semi-random particles using a Chalkey reticle. The data is then compiled into standard report format and subjected to a thorough quality assurance check before the information is released to the client.

Sincerely Yours,

Stephen A Shaffer
Lab Manager
ASBESTOS TEM LABORATORIES, INC.

POLARIZED LIGHT MICROSCOPY
POINT COUNT ANALYTICAL REPORT

Contact: Ms. Jennifer Gomez

Address: Kleinfelder
780 Chadbourne Road, Suite D
Fairfield, CA 94534

Samples Submitted: 9

Samples Analyzed: 9

Job Site / No. Solano College
44156

Report No. 044955

Date Submitted: Jul-02-04

Date Reported: Jul-09-04

SAMPLE ID	POINTS COUNTED	ASBESTOS %	ASBESTOS TYPE	LOCATION / DESCRIPTION
81A.	2	0.20%	chrysotile	white 2x4 ceiling tiles. (rm 1104)
Lab ID # 543-00069-001	410 - Total Points			
84A.	2	0.0045%	chrysotile	white sheetrock white joint compound (rm 1102C)
Lab ID # 543-00069-002	405 - Total Points			
104A.	1	0.15%	chrysotile	brown 4" bb/brown mastic, (hall 1307)
Lab ID # 543-00069-003	401 - Total Points			
106A.	20	0.60%	chrysotile	white sheetrock and white joint compound (janitors closet)
Lab ID # 543-00069-004	401 - Total Points			
128A.	1	0.0038%	chrysotile	white drywall white joint compound (2nd 1852)
Lab ID # 543-00069-005	407 - Total Points			
113A.	1	0.035%	chrysotile	white sheetrock white joint compound (mech rm)
Lab ID # 543-00069-006	408 - Total Points			
114A.	4	0.23%	chrysotile	white drywall texture (mech rm 1854)
Lab ID # 543-00069-007	406 - Total Points			
114C.	3	0.14%	chrysotile	white drywall texture (mech rm)
Lab ID # 543-00069-008	403 - Total Points			
120A.	0	<0.020%	chrysotile	white drywall / white joint compound (office 1856
Lab ID # 543-00069-009	403 - Total Points			
Lab ID #	- Total Points			

Lab Manager_____ **Analyst**_____

KLEINFELDER

(IV)

PROJECT NO.	PROJECT NAME	RECEIVING LAB:
44156	Solano College	ASBESTOS TEM
L.P. NO. (P.O. NO.)	SAMPLERS: (Signature/Number) JENNIFER GOMEZ	INSTRUCTIONS/REMARKS: *FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS: PLM	
1	6/3/04		76B		1		X	TAN 12"x12" CEILING TILE/WHITE BROWN MASTIC (CR)
2			76C				X	(ROOM CR)
* 3			77A				X	GRAY STUCCO MATERIAL (ROOM CR)
4			77B				X	(WOMENS RR)
5			77C				X	"
* 6			78A				X	WHITE HVAC PUTTY (PLENUM)
7			78B				X	"
* 8			79A				X	WHITE SHEETROCK (RM 1102)
9			79B				X	"
10			79C				X	(RM 1102C)
* 11			80A				X	BROWN 4"x4" BB/WHITE MASTIC (RM 1102C)
12			80B				X	(RM 1106)
13			80C				X	(RM 1109)
* 14			81A				X	WHITE 2'x4' CEILING TILES (RM 1104)
15			81B				X	(RM 1109)
16			81C				X	(RM 1109)
17			82A				X	WHITE ORANGE PEEL TEXTURE (1102C)
18			82B				X	(1107)
19			83C				X	(1107)
20			84A				X	WHITE SHEETROCK/WHITE JOINT COMPOUND (1102C)

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	6/3/04	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
		[signature] KLEIN
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
		06-07-04A09:03 RCVD

Instructions/Remarks:

3-5 days

Send Results To:

KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-9643~~ 94534
(707) 429-4070
Attn: JENNIFER GOMEZ

M-50 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

№ 0342

KLEINFELDER

(1)

PROJECT NO.	PROJECT NAME
44156	Solano College

L.P. NO. (P.O. NO.)	SAMPLERS: (Signature/Number)
	Jennifer Gomez

RECEIVING LAB: Asbestos TEM

INSTRUCTIONS/REMARKS: *FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CONTAINERS	TYPE OF CONTAINERS	ANALYSIS: PLM	
1	6/2/04		67C		1		X	WHITE DRYWALL TEXTURE (1902B)
* 2	6/2/04		68A				X	BLACK MASTIC (601)
3			68B				X	
4			68C				X	
* 5			69A				X	BROWN 4"BB/BROWN MASTIC (601)
6			69B				X	(Hall)
7			69C				X	(Hall)
* 8			102A				X	WHITE 2'X4' CEILING TILE (307)
9			102B				X	(Hall)
10			102C				X	(Hall)
* 11			103A				X	OFF-WHITE-BROWN 12"x12" VET/BLACK MASTIC (Hall
12			103B				X	(Hall 307)
13			103C				X	(Hall)
* 14			104A				X	BROWN 4"BB/BROWN MASTIC (Hall 307)
15			104B				X	(Hall)
16			104C				X	(Hall)
* 17			105A				X	WHITE-BROWN 12"x12" VET/YELLOW MASTIC (305)
18			105B				X	
19			105C				X	
20			106A				X	WHITE SHEETROCK + (JOINT COMPOUND (CORE)

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
		ITEM

06-07-04A09:34 RCVD

Instructions/Remarks: 3-5 days

Send Results To:

KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-0640~~ 94534
(707) 429-4070

Attn: JENNIFER GOMEZ

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

№ 0355

KLEINFELDER

PROJECT NO. 44156 | PROJECT NAME Solano College

L.P. NO. (P.O. NO.) | SAMPLERS: (Signature/Number) Jennifer Gomez

RECEIVING LAB: [redacted] Asbestos RJM

INSTRUCTIONS/REMARKS: ~~*~~ FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CON-TAINERS	TYPE OF CON-TAINERS	ANALYSIS PLM	
1	6/3/04		126C		1		X	↓
* 2			127A				X	WHITE 2X4 CEILING TILE (1852)
3			127B				X	↓
4			127C				X	↓
5			128A				X	WHITE DRYWALL — (1852) WHITE JOINT COMPOUND
6			128B				X	↓
7			128C				X	↓
8			129A				X	WHITE DRYWALL TEXTURE (1852)
9			129B				X	↓
10			129C				X	↓
* 11			130A				X	WHITE SKIM COAT (1852)
12			130B				X	↓
13			130C				X	↓
14			131A				X	WHITE JOINT COMPOUND (1239)
15			132A				X	BLACK SPRAY MATERIAL (1245)
* 16			133A				X	WHITE SPRAY ON ACOUSTIC (901)
17			133B				X	(Entry)
18			133C				X	(Hall)
* 19			134A		↓		X	GRAY SHEET FLOORING (902)
20			134B				X	↓

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	6/3/04	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
		[signature]
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
		06-07-04A09:04 RCVD

Instructions/Remarks: 3-5 days

Send Results To:

KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-0643~~ 94534
(707) 429-4070
Attn: Jennifer Gomez

M-60 White - Sampler Canary - Return Copy To Shipper Pink - Lab Copy

CHAIN OF CUSTODY

№ 0359

KLEINFELDER

PROJECT NO.	PROJECT NAME	L.P. NO. (P.O. NO.)	SAMPLERS: (Signature/Number)
44156	Solano College		Jennifer Gomez

RECEIVING LAB: Asbestos TEM

INSTRUCTIONS/REMARKS: *FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CON-TAINERS	TYPE OF CON-TAINERS	ANALYSIS PLM	
1	6/3/04		113A		1		X	WHITE SHEETROCK/WHITE JOINT COMPOUND (MACH. RM. SAN JOSE)
2			113B				X	"
3			113C				X	"
4			114A				X	WHITE DRYWALL TEXTURE (MACH. RM.)
5			114B				X	"
6			114C				X	"
7			115A				X	PINK VFT/BLACK MASTIC (UPSTAIRS 1854)
8			115B				X	"
9			115C				X	"
10			116A				X	BROWN 4"x4" BB/BROWN MASTIC (UPSTAIRS 1854)
11			116B				X	"
12			116C				X	"
13			117A				X	GRAY 12"x12" VFT/YELLOW MASTIC (2ND 1855)
14			117B				X	"
15			117C				X	"
16			118A				X	BEIGE 4"x4" CERAMIC (LOCKER RM WALL TILE/WHITE GROUT/GRAY GROUT
17			118B				X	"
18			118C				X	"
19			119A				X	BROWN 2"x2" CERAMIC (LOCKER RM FLOOR TILE/GRAY GROUT/BLUE/YELLOW MASTIC)
20			119B				X	"

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	6/3/04	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
		[signature]
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
		06-07-04A09:04 RCVD

Instructions/Remarks: 3-5 days

Send Results To:

KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA ~~94585-9643~~ 94534
(707) 429-4070
Attn: JENNIFER GOMEZ

M-60 White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

№ 0357

(18)

KLEINFELDER

PROJECT NO.	PROJECT NAME
44156	Solano College
L.P. NO. (P.O. NO.)	SAMPLERS: (Signature/Number) Jennifer Gomez

RECEIVING LAB: Asbestos TEM

INSTRUCTIONS/REMARKS: * FIRST POSITIVE

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CON-TAINERS	TYPE OF CON-TAINERS	ANALYSIS PLM	
1	6/3/04		119C				X	
2			120A				X	WHITE DRYWALL / WHITE JOINT COMPOUND (OFFICE 1856)
3			120B				X	"
4			120C				X	(OFFICE 1855)
* 5			121A				X	OFF-WHITE RED 12"x12" VFT / BROWN MASTIC (OFFICE 1857)
6			121B				X	
7			121C				X	
* 8			122A				X	BROWN+GREEN STUCCO (EXTERIOR)
9			122B				X	
* 10			123A				X	GREEN 12"x12" VFT / YELLOW MASTIC (2nd FL 1853)
11			123B				X	
12			123C				X	
* 13			124A				X	BLACK 4" BB / WHITE GLUE / WHITE SELF LEVEL COAT (1852)
14			124B				X	BLACK 4" BB / WHITE GLUE (1852)
15			124C				X	
* 16			125A				X	WHITE 12"x12" VFT / YELLOW MASTIC (1852)
17			125B				X	
18			125C				X	
* 19			126A				X	off-white-brown 12"x12" VFT / ORANGE MASTIC (2nd FL 1852)
20			126B				X	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature) 06-07-04A09:04 RCVD

Instructions/Remarks: 3-5 days

Send Results To:

KLEINFELDER
780 CHADBOURNE, ROAD SUITE D
FAIRFIELD, CA 94585-9643
(707) 429-4070 7439

Attn: JENNIFER GOMEZ

White - Sampler | Canary - Return Copy To Shipper | Pink - Lab Copy

CHAIN OF CUSTODY

№ 0358

HMS, Inc.
HAZARD MANAGEMENT SERVICES, INC.
PO Box 576848
Modesto, CA 95357-6848
(209) 551-2000 • (209) 575-5657 Fax

March 4, 2009

Stan Dobbs, Interim Bond Director
Solano County Community College
4000 Suisun Valley Road
Fairfield, CA 94534

Dear Mr. Dobbs,

This reports lists the results of an exercise to determine mold spore populations in various locations of Building 1200. Several members of the college staff had reported odors in the buildings, and, since some water intrusion was apparent, the possibility of mold concentrations was an issue. On 2/25/09 James E Sharp and Tina Markley of Hazard Management Services, Inc. collected mold spore trap samples in an effort to determine the extent of mold contamination.

Observations

The ventilation system for the building was operating and the average temperature inside the building was 68°F. The outside temperature was about 60°F. Outside conditions were mostly sunny with a 10-15 mph wind. The samples were collected between 10:00 AM and noon. The Control Room attic where two samples were collected was very dusty but no particular odors were detected. Air movement was detectable. The seating area was very clean with no detectable water intrusion on the floors and walls. There was a six to eight foot diameter water damaged area on the ceiling area in the back of the seating area. The Green Room had a substantial water leak in one corner of the room. Three 2' X 4' false ceiling panels were saturated from the recent rain. The walls above the ceiling panels were wet and there was a water stain on the wall under the level of the panels. See Picture No. 1. There was a detectable musty odor at the ceiling level. Mold growth was seen on a wall above the panels but due to the geometry of the area a tape-lift sample could not be safely collected.

Procedures

A high volume vacuum pump was used to aspirate air through Zefon Air-O-Cell cassettes. The cassettes are designed to capture mold spores, pollen, dust and other particulates. The pump was calibrated at 10.0 liters of air per minute and each sample ran for exactly 15 minutes so that a total of 150 liters of air passed through each cassette.

One sample was set up on a ventilation duct in the Control Room attic near the damaged plaster shown in Picture No. 3. Another sample was also collected in the Control Room attic but was placed near the center edge of this level close to the edge. A sample was also set up in the auditorium area, stage left. The last interior sample was taken at the level of the ceiling panels in the Green Room.

Two outside samples were taken for comparative purposes. One was taken outside the backstage area. It was collected prior to the interior samples. Another outside sample was collected outside an emergency exit door in the seating area. It was taken after the interior samples were collected.

All samples were uniquely identified and were sent along with a Chain of Custody to Forensic Analytical Specialties, Inc. for analysis by FASI Method IAQ 101. See attached laboratory accreditations.

Results
Following is a table which lists the results from each location.

Location	Spores/Cubic Meter of Air
Attic above Control Room - near leak	96
Stage left- seating area	260
Center - Control Room Attic	73
Outside- Backstage area	3300
Outside-Auditorium emergency exit	3600
Green Room -at false ceiling panels	820

The average outside total mold spore level was 3450 spores per cubic meter of air. The two samples collected in the Control Room attic and the one in the seating area were all very low when compared to outside levels. The sample taken in the Green Room was low when compared to outside levels but was about 5.7 times higher than the average of the other three interior samples.It also contained a couple of species (Ascospores and Penicillium/Aspergillus) that were not seen in the other interior samples although they were found in the outside samples.

When evaluating mold spore sample results it is a common practice to look at two issues. First, the interior samples should not significantly exceed outside levels. In this evaluation interior samples were significantly lower than outside spore levels.

The second means to evaluate results is to compare species found inside and outside. If there are populations of given species found inside that are not also found outside there is a possibility for a reservoir of growth inside. In this evaluation there were no significant species found inside that were not also found outside.

Conclusion

Except for the fact that the Green Room sample was significantly higher than the other interior samples, there is no evidence of a current mold problem. However, the two major water leaks detected and shown in the attached pictures are conditions of concern. Mold spore levels will undoubtedly increase as the drywall and ceiling panels provide nutrient sources. In saturated areas dryrot of wood may also occur. It is imperative that water intrusion, which is apparently caused by roof leaks, be stopped or mold levels will undoubtedly increase.

If you have any questions please call (209) 551-2000.

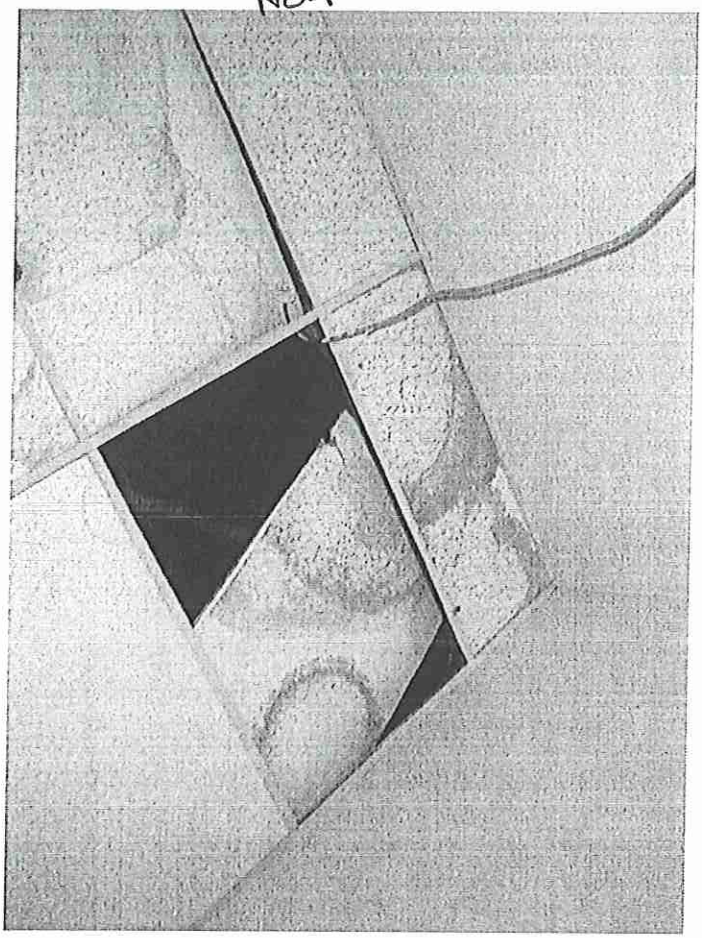
Sincerely,

James E Sharp
Cal/OSHA 05-3819

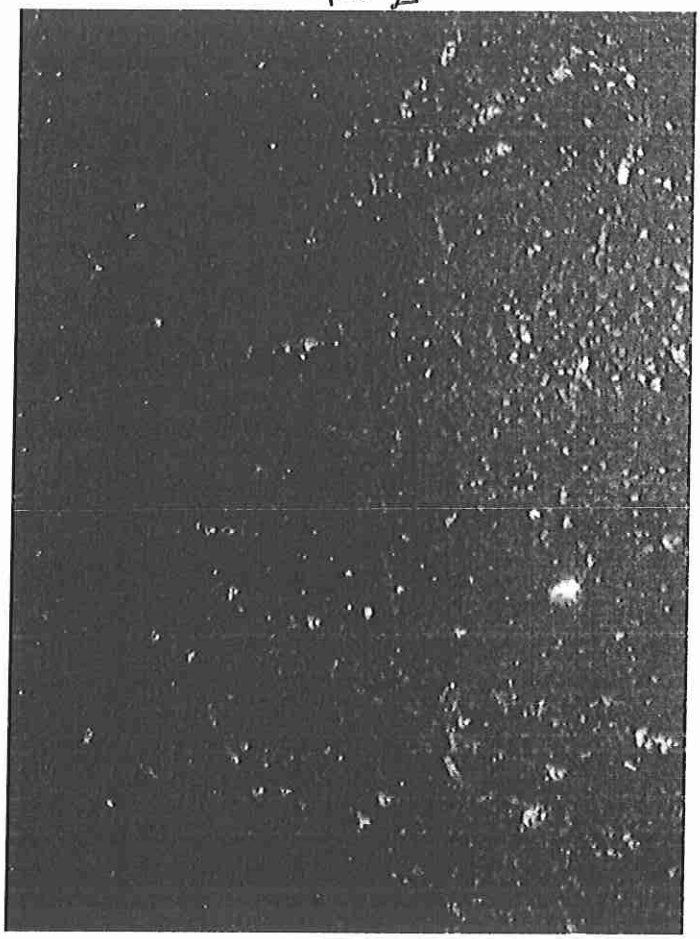
PICTURE LOG

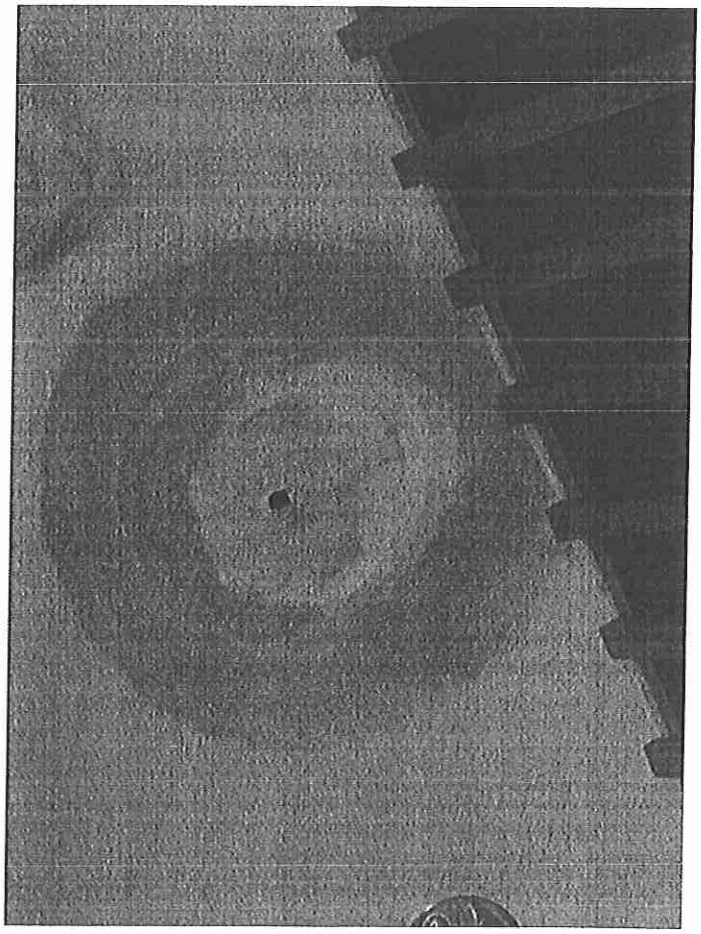
No. 1	Water damaged ceiling tiles in Green Room
No. 2	Mold growth on wall above ceiling panels in Green Room
No. 3	Water damage to plaster in Auditorium seating area.
No. 4/5	Two views of water pooling on roof near area where plaster ceiling is water damaged.

NO. 1

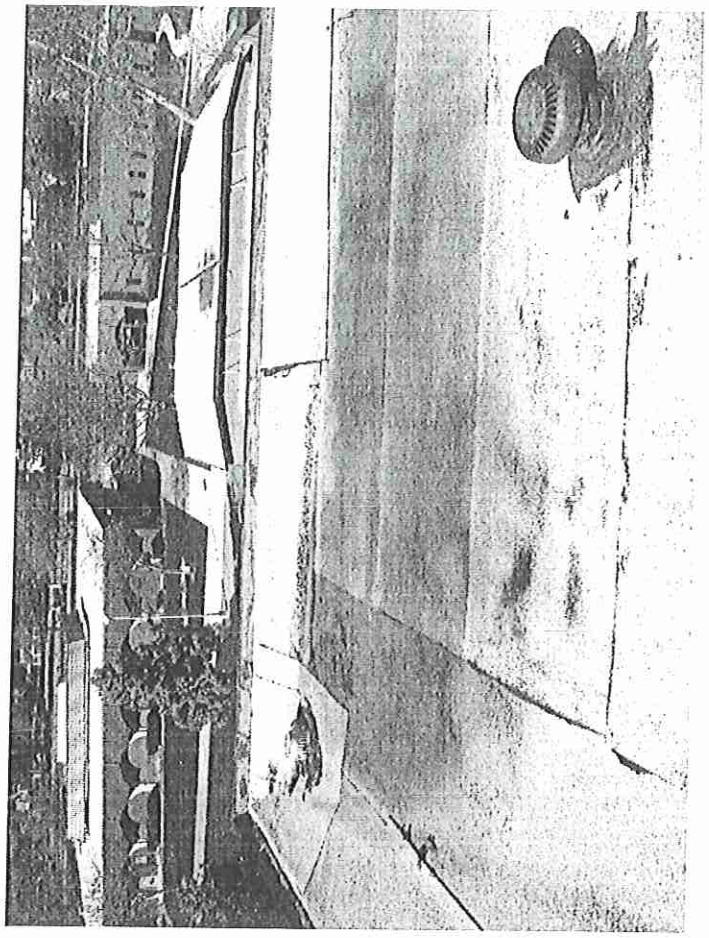


NO. 2





NO. 3



No.4

No.5

Forensic Analytical

Final Report

Non-Viable Air Fungal Analysis

Hazard Mgmt Services - Modesto
Mike Sharp
PO Box 576848

Modesto, CA 95357-6848

Client ID: 1146
Report Number: F077710
FASI Job ID: 1146
Date Received: 02/27/09
Date Analyzed: 03/02/09
Date Printed: 03/03/09
First Reported: 03/03/09

Sample Type: Zefon Sampler
Analysis: Direct Microscopy; FASI Method IAQ 101
Job ID / Site: Solano County Community College, Bldg. 1200 - Auditorium

Lab Number	40097381				40097382				40097383			
Sample ID	HMS M09-024-01				HMS M09-024-02				HMS M09-024-03			
Location	Attic above control rm				Stage left - seating area				Center - control rm attic			
Sample Date	02/25/09				02/25/09				02/25/09			
Volume	150.0 L				150.0 L				150.0 L			
Organism	Spores[+]	%	LOD	S/m^3	Spores[+]	%	LOD	S/m^3	Spores[+]	%	LOD	S/m^3
Alternaria	-	-	-	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-	-	-	-
Basidiospores	5	93	18	89	3	20.2	18	53	2	48.5	18	36
Bipolaris / Dreschlera	-	-	-	-	-	-	-	-	-	-	-	-
Botrytis	-	-	-	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	1	9.1	6.7	6.7
Cladosporium	-	-	-	-	10	67.2	18	180	1	24.2	18	18
Epicoccum	-	-	-	-	1	2.5	6.7	6.7	-	-	-	-
HYPHAL FRAGMENTS *	-	-	-	-	3	-	18	53	1	-	18	18
Oidium	-	-	-	-	-	-	-	-	-	-	-	-
Penicillium / Aspergillus	-	-	-	-	-	-	-	-	-	-	-	-
Rusts/smuts/myxomycetes	-	-	-	-	4	10.1	6.7	27	2	18.2	6.7	13
Ulocladium	1	7	6.7	6.7	-	-	-	-	-	-	-	-
Total	6			96	18			260	6			73
Particulate Density	Minor				Abundant				Major			
Comments												

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Forensic Analytical

Non-Viable Air Fungal Analysis

Hazard Mgmt Services - Modesto
Mike Sharp
PO Box 576848

Modesto, CA 95357-6848

Client ID: 1146
Report Number: F077710
FASI Job ID: 1146
Date Received: 02/27/09
Date Analyzed: 03/02/09
Date Printed: 03/03/09
First Reported: 03/03/09

Sample Type: Zefon Sampler
Analysis: Direct Microscopy; FASI Method IAQ 101
Job ID / Site: Solano County Community College, Bldg. 1200 - Auditorium

Lab Number	40097384				40097385				40097386			
Sample ID	HMS M09-024-04				HMS M09-024-05				HMS M09-024-06			
Location	Outside - backstage area				Outside - emergency exit				Green Rm ceiling - wet area			
Sample Date	02/25/09				02/25/09				02/25/09			
Volume	150.0 L				150.0 L				150.0 L			
Organism	Spores*	%	LOD	S/m³	Spores*	%	LOD	S/m³	Spores*	%	LOD	S/m³
Alternaria	1	0.2	6.7	6.7	-	-	-	-	-	-	-	-
Ascospores	21	11.4	18	370	31	15.3	18	550	3	6.5	18	53
Basidiospores	106	57.3	18	1,900	133	65.5	18	2,400	25	54.4	18	440
Bipolaris / Dreschlera	-	-	-	-	1	0.2	6.7	6.7	-	-	-	-
Botrytis	1	0.5	18	18	1	0.5	18	18	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-	-	-	-
Cladosporium	47	25.4	18	840	34	16.8	18	600	12	26.1	18	210
Epicoccum	-	-	-	-	-	-	-	-	-	-	-	-
HYPHAL FRAGMENTS *	-	-	-	-	-	-	-	-	1	-	18	18
Oidium	6	1.2	6.7	40	1	0.2	6.7	6.7	-	-	-	-
Penicillium / Aspergillus	7	3.8	18	120	3	1.5	18	53	6	13	18	110
Rusts/smuts/myxomycetes	-	-	-	-	-	-	-	-	-	-	-	-
Ulocladium	1	0.2	6.7	6.7	-	-	-	-	-	-	-	-
Total	190			3,300	204			3,600	46			820
Particulate Density	Minor				Trace				Minor			
Comments												

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Non-Viable Air Fungal Analysis

Hazard Mgmt Services - Modesto
Mike Sharp
PO Box 576848

Modesto, CA 95357-6848

Client ID: 1146
Report Number: F077710
FASI Job ID: 1146
Date Received: 02/27/09
Date Analyzed: 03/02/09
Date Printed: 03/03/09
First Reported: 03/03/09

Sample Type: Zefon Sampler
Analysis: Direct Microscopy; FASI Method IAQ 101
Job ID / Site: Solano County Community College, Bldg. 1200 - Auditorium

Explanations:

Spores[+]	Actual number of spores counted in portion of sample examined
%	Percent of Total
LOD	Limit of Detection (Units are the same as result units)
S/m^3	Spores per cubic meter of air sampled
Spores/S	Number of spores per sample
*	Not included in Totals Calculations
TNTC	Too Numerous To Count
ND	None Detected
Particulate Density	Amount of background particulate present

Background Particulate Density Estimated As Follows:

Trace	Very little present
Minor	Present but not in large quantity
Major	Present in most of sample
Abundant	Covering almost entire sample
Overloaded	Covering entire sample

Guidelines For Interpretation:

No accepted quantitative regulatory standards currently exist by which to assess the health risks related to mold exposure. Molds have been associated with a variety of health effects and sensitivity varies from person to person.

Several organizations, including: the American Conference of Governmental Industrial Hygienists (ACGIH); the American Industrial Hygiene Association (AIHA); the Indoor Air Quality Association (IAQA); the United States Environmental Protection Agency (USEPA); the Centers for Disease Control (CDC), as well as the California Department of Health Services (CADHS), have all published guidelines for assessment and interpretation of mold resulting from water intrusion in buildings.

FALI reports soley the organisms observed on the sample(s). This is not an inclusive list of the fungal types identified in the microbiology laboratory.

Melissa Piercey, Microbiology Laboratory Supervisor, Hayward Laboratory

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Forensic Analytical

Microbial Analysis Request Form

Company: HMS, Inc. Client ID#:

Street: P.O. Box 576848 City: Modesto State: CA Zip: 95357-6848

Contact: Jim Sharp Phone #: 209-551-2000 Fax #: 209-575-5657

Site: BLDG. 1200 - Auditorium Job: Solano County Community College

Comments: As for results when completed

P.O. #: Date: 2-26-09

Turn Around Time: 48 hr. Extended:

DUE DATE: 3-3-09 DUE TIME: 12:00 noon, please

Sample ID (HMS)	Date/ Time	Sample Location/Substrate	FOR AIR SAMPLES ONLY: Time On/Off	Avg. LPM	Total Time, min	Sample Area or Air Volume, liters	Analysis Requested (See Codes on Back)	Media Type (MEA, DG18, Cellulose, CMA, Other)
M09-024-01	1-25 AM	Attic Above Control Rm		10.0	15	150.0	Non-viable	Zefon
M09-024-02	" " "	Stage Left - Seating Area		10.0	15	150.0	" "	
M09-024-03	" " "	Center - Control Rm Attic		10.0	15	150.0	" "	
M09-024-04	" " "	Outside - Back Stage Area		10.0	15	150.0	" "	
M09-024-05	" " "	Outside - Emergency Exit		10.0	15	150.0	" "	
M09-024-06	" " "	Green Rm ceiling - wet area		10.0	15	150.0	" "	

Sampled by: Jim SHARP Date: 2-26-09 Time: 1000 - 6200

Shipped via: (X) Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by:	Relinquished by:	Relinquished by:
Date / Time:	Date / Time:	Date / Time:
Condition Acceptable? ☐ Yes ☐ No	Condition Acceptable? ☐ Yes ☐ No	Condition Acceptable? ☐ Yes ☐ No
Received by: DK FIE	Received by:	Received by:
Date / Time: 2/27/09 1020am	Date / Time:	Date / Time:
Condition Acceptable? ✓ Yes ☐ No	Condition Acceptable? ☐ Yes ☐ No	Condition Acceptable? ☐ Yes ☐ No

San Francisco Office: 3777 Depot Road, Suite 409, Hayward, California 94545-2761 / Telephone: (510)887-8828 * (800)827-3274 / Fax: (510)887-4218
Los Angeles Office: 2959 Pacific Commerce Drive, Rancho Dominguez, California 90221 / Telephone: (310)763-7374 * (888)813-9417 / Fax: (310)763-8684
Las Vegas Office: 3900 Paradise Road, Suite 181, Las Vegas, Nevada 89109 / Telephone: (702)784-0040 / Fax: (503)784-0030

REQUEST FOR INFORMATION (RFI)

3965 West Post Road
Las Vegas, NV
89118
(M) 702-806-3441
(O) 702-888-0470

DATE:	8/11/2015	CONTI RFI NO.:	1	DISTRIBUTION:
ATTENTION:	Eric Van Pelt	JOB NO.:	14-014	
JOB NAME:	Solano Community College	LOCATION:	Fairfield, CA	
RESPONSE REQUESTED BY FOLLOWING DATE:	ASAP			
REFERENCE SPECIFICATION/DRAWINGS:	Listed			

REQUEST: Product Substitutions

Line Reference			
26VI	Extron DA 6V EQ-Retired	Replacement	Extron DA 12V/6V Dual EQ
18AV	Crown PZM-11-LL-Old Model	Replacement	AKG PZM-11-LL
43MA	Lab Gruppen FP-3400-Retired	Replacement	Lab Gruppen FP-4000
24AV	Samsung 400FP3-Retired	Replacement	Samsung LH40DBEPLGA/GO
4AV	Lab Gruppen E 10:4X-Wrong Model	Replacement	Lab Gruppen C 10:4X
28VI	Chief LTMU	Are Displays OFOI? No indications in RFP, no displays	
29VI	Chief XTMU	Are Displays OFOI? No indications in RFP, no displays	

REQUEST: Model Clarification (OFOI)

Line Reference	
1AV	Need projector model number for mount to be supplied by contractor

REPLY:
-ALL SUBSTITUTIONS ARE ACCEPTABLE.
-DISPLAYS ARE OFOI.
-PROJECTOR MODEL TBD NEAR END OF PROJECT CONSTRUCTION.
BY: TheSC, IDH, 8/11/2015

REPLY BY:		DATE:	
PREPARED BY:	Chris Walden	DATE:	8/11/2015

Solano College Bldg. 1200 Theater Renovation, Sub Request 003

Krista McCord

From: Tom Hall
Sent: Monday, August 10, 2015 4:00 PM
To: Krista McCord
Subject: FW: Solano CC substitution request

Please add to section for substitutions.

Thanks.

Tom Hall, AIA
Project Architect
LEED AP

LPAS Architecture + Design

Sacramento 916 443 0335 | San Francisco 415 213 0335
LPAS.com Making Buildings Together

[x] NO EXCEPTION TAKEN
[ ] MAKE CORRECTIONS NOTED [ ] SUBMIT SPECIFIED ITEM
[ ] REVISE AND RESUBMIT [X] REJECTED

Checking is only for general conformance with the design concept of the project and general compliance with the information given in the contract documents. Any action shown is subject to the requirements of the plans and specifications. Contractor is responsible for dimensions which shall be confirmed and correlated at the job site, fabrication process and techniques of construction, coordination of his work with that of all other trades and satisfactory performance of his work.

LPAS, INC.
2484 Natomas Park Drive Ste. 100
Sacramento, California 95833

7640002	Substitution Request 003
PROJECT NO.	SUBMITTAL NO.
08/11/2015	Tom Hall
DATE	BY

Pit filler substitution is rejected. All others are approved. See comments below.

Tentatively approved, pending line by line comparison.

From: Ian Hunter [mailto:ian@shalleck.com]
Sent: Monday, August 10, 2015 3:48 PM
To: Tom Hall
Cc: Eric Van Pelt ; Eric Spielman
Subject: RE: Solano CC substitution request

Hi Tom-

Our response to Wenger:

1- We have split the production rigging system and pit filler platform system into two separate sections, see Addendum 03. This will remove any conflict regarding rigging system vs. pit filler platform.

2- Wenger may provide a bid for fixed seating. The substituted product must meet or exceed the specification in all ways. Wenger must provide a line-by-line spreadsheet showing the specified chair, and how the Wenger product meets/exceeds each item in the specification. Lack of this memo will result in disqualification.

3- The proposed pit filler substitution "Wenger Strata" is not acceptable and is not an equal substitute for the specified product. The proposed substitution does not have a unitized base assembly, nor does it allow for multiple levels without several additional parts.

4- It is acceptable to submit the production rigging system bid under the Wenger name, but note product will be supplied by JR Clancy.

Thanks-

Ian Hunter, CTS-D
Principal
The Shalleck Collaborative, Inc.
Direct Tel. 415/814-1564

From: Tom Hall [mailto:thall@lpas.com]
Sent: Monday, August 10, 2015 9:32 AM
To: Ian Hunter <ian@shalleck.com>
Cc: Eric Van Pelt <eric@vpcsonline.com>; Eric Spielman <espielman@lpas.com>
Subject: FW: Solano CC substitution request

Ian,

Please review attached Substitution request.

Thanks.

Tom Hall, AIA
Project Architect
LEED AP

LPAS Architecture + Design

Sacramento 916 443 0335 | San Francisco 415 213 0335
LPAS.com Making Buildings Together

From: Eric Van Pelt [mailto:eric@vpcsonline.com]
Sent: Monday, August 10, 2015 8:40 AM
To: Tom Hall <thall@lpas.com>
Subject: Fwd: Solano CC substitution request

See attached substitution request

Eric Van Pelt
VPCS

Sent from my iPhone

Begin forwarded message:

> **From:** Jennifer Blevins <Jennifer.Blevins@WengerCorp.com>
> **Date:** August 7, 2015 at 2:25:38 PM PDT
> **To:** "eric@vpcsonline.com" <eric@vpcsonline.com>
> **Subject: Solano CC substitution request**
>
> Hi Eric,
>
> Wenger Corporation would like to submit a substitution request for the Fixed Audience Seating and the Orchestra Pit Filler for Solano CC. See attached tech sheets and specifications for each of the two products that we are requesting approval to quote.
>
> JR Clancy is an approved supplier and rigger for the rigging section. JR Clancy is owned by Wenger Corporation. We are one company with two names. Is it ok for us to submit the pricing for the bids under the Wenger name? We don't want this to create any issues, so I thought I would double check.
>
> We would like to submit a quote for the rigging section (provided by JR Clancy), including the pit filler (provided by Wenger), and provide a price for the fixed audience seating (by Wenger). We want to offer

a bundled discount for purchasing all three of these products together from Wenger-JR Clancy and feel that we can save the school money by providing this package deal.

The pit filler is included in the rigging section, and it lists a competitors pit filler as the basis of design and also states 'no known equal'. This puts Wenger/JR Clancy at a disadvantage as we cannot provide a complete price for the rigging section without the pit filler. Since we doubt our competitor will give us a price for the pit filler, our only option is to request that our pit filler be approved as a substitution. I have reached out to the consultant and advised them that we would be submitting a request. We work with them regularly on projects and they are familiar with our products.

For both the pit filler and the seating, we have reviewed the bid documents and are confident that we can meet the overall intent of the specification with our products. Using either will not require any extra costs or changes to the project as designed. There are slight manufacturer differences, but none that we feel will impact the project in a negative way.

If you need me to fill out any formal paperwork for the substitution request, can you please forward that to me? I sorted through the documentation in the bid documents but did not see an actual form to fill out. Perhaps I overlooked it?

Thanks!

Jennifer Blevins

Jennifer Blevins | Regional Sales Manager- California & Hawaii
jennifer.blevins@wengercorp.com
Mobile: 813.546.7361 | 800.4WENGER (493.6437)
WENGER CORPORATION

ducharme

Solano College Bldg. 1200 Theater Renovation, Substitution Request 004

9275, RUE LE ROYER, SAINT-LÉONARD
(QUÉBEC) CANADA H1P 3H7
T 514.328.2772 F 514.328.4645
WWW.SIEGESDUCHARME.COM

Tentatively approved, pending line by line comparison with specified product.

Symphony Seat Specification Sheet

☐ NO EXCEPTION TAKEN
☒ MAKE CORRECTIONS NOTED ☐ SUBMIT SPECIFIED ITEM
☐ REVISE AND RESUBMIT ☐ REJECTED

Checking is only for general conformance with the design concept of the project and general compliance with the information given in the contract documents. Any action shown is subject to the requirements of the plans and specifications. Contractor is responsible for dimensions which shall be confirmed and correlated at the job site, fabrication process and techniques of construction, coordination of his work with that of all other trades and satisfactory performance of his work.

LPAS, INC.
2484 Natomas Park Drive Ste. 100
Sacramento, California 95833

7640002	Sub Request 004
PROJECT NO.	SUBMITTAL NO.
08/11/2015	Tom Hall
DATE	BY

PRODUCT DESCRIPTION

Acceptable manufacturer: *Ducharme Seating*, Symphony Seat.
The Symphony seat has been designed for theatres and auditoriums.

The seat and the backrest are composed of comfortable and pleasantly shaped foam. The sleek lines of the seat and back aligned in a harmonious position that gives the seat all the lateral and longitudinal rigidity needed for its use without compromising comfort and durability.

The seat can be adjusted to three possible backrest angle and six different widths.
Backrest angle positions: 15, 17 & 19°
Seat and backrest widths: 19, 20, 21, 22, 23 & 24" [483, 508, 533, 559, 584 & 610 mm]
The seat has an automatic and long lasting uplift counterweight seat mechanism that comes with a lifetime warranty.

Standards

All standards are made from rectangular tubular steel shapes 1" x 2" [25,4 mm x 50,8mm].

The standards can be designed to fit any kind of floor angle. The standard is welded in one continuous bead against an anchor plate and fixed to the floor with an appropriate anchoring system.
Each is fixed to the floor by means of two anchors per standard (Ø3/8"-16 x 1.5" L. [Ø M10 x 1.5 x 38 mm L]- bolts, nuts and HDI inserts for concrete) (Composition of floor may change the anchoring system)
A riser mounted version is also available.

The standards are supplied with 1/4" & 1/8 " [6,35 mm & 3,2mm] welded-on steel attachment brackets to which seat, backrest and armrests are screwed and bolted. The steel anchor plate at the base of the standards overall dimensions are: 2.5" x 7.75" x 0.25" [63,5 mm x 197mm x 6,35]
The aisle standards have an entrance at the base of the tube to allow the access of electricity wiring. (If lightning is required)

After been clean of stain, all standards are painted with an epoxy finished type paint, applied by electrostatic process.
Standards are available according to our standard color chart, however custom colors may be also available (additional charges may apply).

SEAT and BACKREST

SEAT (FULLY UPHOLSTERED CONFIGURATION)

The seat is composed of an interior wood seat structure made of 3/8" [10 mm] thick, 7-ply hardwood plywood.
The seat foam has 1.75" [45 mm] of thickness and is glued to the wood seat's internal structure with an incombustible adhesive. The internal structure of the back of the seat is covered by a ¼" [6,35 mm] thick polyurethane membrane. All these components are completely upholstered with a fabric covering. The attachment brackets 1/8" [3,2 mm] thick and pivot pins Ø3/4" [Ø19 mm] of seat are made of steel.

EXTERIOR WOOD SEAT PANEL (VISIBLE EXTERIOR WOOD SEAT CONFIGURATION)

The exterior seat wood panel is made selected face 7 plies, 5/8" [16 mm] thick with a wooden veneer on all visible surfaces.
This part is easy to remove from the rest of the seat sub-assembly due to a unique cam slide in-out blocking system.
Curved and flatten panel configuration are available.

SEAT UPLIFT MECHANISM

The automatic uplift mechanism is carried out by a noiseless counterweight titling mechanism that is fixed to the seat wood structure without any visible hardware. The rotating moving joint is mounted on a highly reliable friction free nylon bushings. While the seat pivots, the automatic uplift mechanism is design so that no piece of metal is in contact against each other. Rubber stoppers have been strategically placed to eliminate the sound when the seat pivots.

BACK

The outside back is composed of selected face ply panels,
(See details below on named bullet: EXTERIOR WOOD BACKREST PANEL…)
The interior wood structure is made of 3/8" [10 mm] thick 7-ply hardwood plywood, mounting brackets are fixed to the backrest against the standard and the exterior wood backrest panel.

With an incombustible adhesive, foam are glued on the interior wood structure to perfectly match the shape of the molded plywood, Horizontal lumbar vertebra supports are added to the foam part, adding up a total thickness of 2" [50 mm] to guarantee optimal comfort.
The backrest is completely upholstered with fabric.

EXTERIOR WOOD BACKREST PANEL (OTHER POSSIBLE CONFIGURATION)

The backrest wood panel is made out selected face ply panels, 5/8" [16 mm] thick, with wooden veneer on all visible surfaces (as an option) with maple solid wood.
Also possible configuration for this item, curved or flatten panel.

This part is easy to remove from the rest of the backrest sub-assembly by a unique cam slide in-out blocking system and two (2) wood screws for maintenance purposes.

UPHOLSTERY COVER

The upholstery seat/backrest cover shall be of side panel construction, back-stitched at the seam ends and stapled to tighten the cover over the foam. No upholstery clips will be used
The cover shall have the ability to be removed and reupholstered using only a flat head screwdriver.
Seat/backrest back shall be upholstered using staples and/or glue.
After upholstering, the cover shall be free of wrinkles, gaps or defects of any kind

FOAMS

All the foams are made from polyurethane HR, self flame-retardant, without additive (in accordance to the car industry Std CMVSS-302), anti-allergen, odorless and resist to mold.
Foams are in accordance with other standards as following;
Density: 40 to 43,2 kg/m ^{3}
Compression: (25%) from 15,9 to 18,1 kg
Maximum compression of: 7%
Impact strength elasticity minimum bounced: 69%
Modulus of: 2,8
Loss of 25% of compression resistance equal to 9,5 kg (ILD)
Loss of 65% of compression resistance equal to 28,5 kg (ILD)
*Other Densities are available upon request

ARMRESTS

Solid and unblemished hardwood armrests are 13.5" x 3" [343mm x 76mm] and 11.75" x 2" [299mm x 51mm] for center armrest, have well rounded corners. Hardwood can be natural or stain finished. Armrest are fixed on the top of the standard by mean of two wood screws

HARDWARE

All our hexagonal bolts, machine screws, nylon lock nuts and washers are electroplated with a zinc or black jet finish.

OPTIONS

- Lettering & numbering identification plates
- Aisle lighting (under armrest)
- Decorative wood aisle panel
- Aisle lighting (integrated to wood aisle panel)
- Cup holder armrest
- Removable sled base section
- Writing tablet
- ADA compliant

MICOM LABORATOIRES · LABORATORIES 15 ANNÉES YEARS

TEST REPORT

Testing as per ASTM-F851-87
Of
SYMPHONY WOOD SEAT

SIÈGES DUCHARME
9275 rue Le Royer
St-Léonard, Québec
H1P 3H7

Attention of
Raymond Cyr

Report No.
MI-13-6360-1

Report Date
July 22, 2013

Prepared by

Mark-Jayson Ng Yow Chow, B.Eng.
Laboratory Manager

Approved by

Michel Comtois, M.Sc.
President

556 Avenue Lépine, Dorval, Québec, Canada, H9P 2V6, email : info@micomlab.com
Phone : 514-633-0078, fax : 514-633-7188

PRODUCT TESTED: SYMPHONY WOOD SEAT

TEST METHOD: ASTM-F851-87

TEST PERFORMED: Seat Lift Cyclic

(See appended photograph #1)

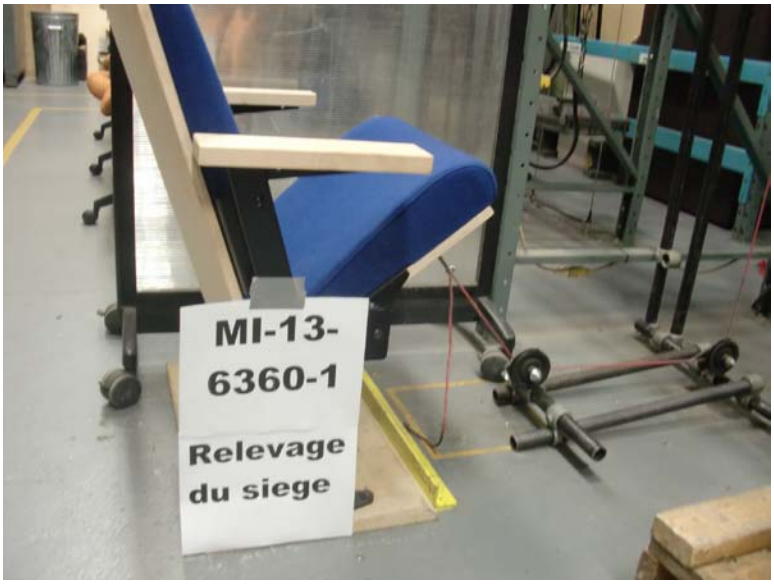
DATE OF TEST: June 11, 2013

TEST PARAMETERS:

Cycles per minute	16
Number of cycles achieved	350,000

COMPLIANCE STATUS:

No loss of serviceability PASS



Photograph #1

556 Avenue Lépine, Dorval, Québec, Canada, H9P 2V6, email: info@micomlab.com
Phone : 514-633-0078, fax : 514-633-7188

PRODUCT TESTED: SYMPHONY WOOD SEAT

TEST METHOD: ASTM-F851-87

TEST PERFORMED: Seat Load Static

(See appended photograph #2)

DATE OF TEST: July 19, 2013

TEST PARAMETERS:

Static Load – 600 lbs

COMPLIANCE STATUS:

No loss of serviceability PASS

Photograph #2

556 Avenue Lépine, Dorval, Québec, Canada, H9P 2V6, email: info@micomlab.com
Phone : 514-633-0078, fax : 514-633-7188

PRODUCT TESTED: SYMPHONY WOOD SEAT

TEST METHOD: ASTM-F851-87

TEST PERFORMED: Seat Backrest Static Load

(See appended photograph #3)

DATE OF TEST: July 19, 2013

TEST PARAMETERS:

Static Load – 450 lbs

COMPLIANCE STATUS:

No loss of serviceability PASS

Photograph #3

556 Avenue Lépine, Dorval, Québec, Canada, H9P 2V6, email: info@micomlab.com
Phone : 514-633-0078, fax : 514-633-7188

Test Report

Mechanical Testing According To ANSI/BIFMA X5.4-2012
of

SYMPHONY WOOD SEAT

SIÈGES DUCHARME
9275 rue Le Royer
St-Léonard, Québec
H1P 3H7

À l'attention de
Raymond Cyr

Report No.
MI-13-6360-2

Report Date
July 22, 2013

Prepared by

Approved by

Mark-Jayson Ng Yow Chow, B.Eng.
Laboratory Manager

Michel Comtois, M.Sc.
President

556 Avenue Lépine, Dorval, Québec, Canada, H9P 2V6, Email: info@micomlab.com
Phone: 514-633-0078, Fax: 514-633-7188

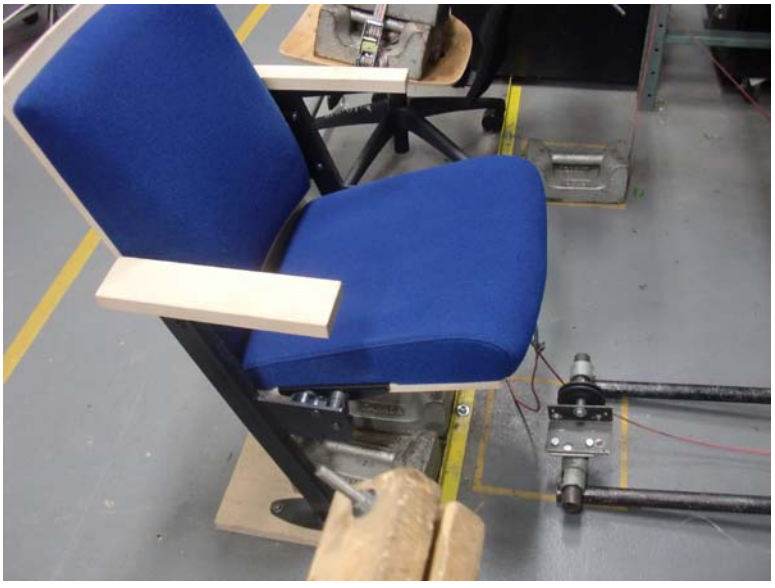
The sample was received on June 7, 2013.

The tests performed on the sample are as follows:

TESTS SUMMARY:

ANSI/BIFMA X5.4-2012

6	Back strength test – Vertical – Static	COMPLIES
7	Back strength test – Horizontal – Cyclic	COMPLIES
9	Arm strength test – Horizontal – Static	COMPLIES
10	Arm strength test – Vertical Static	COMPLIES
14	Seating Durability Test – Cyclic Impact	COMPLIES
15	Drop Test - Dynamic	COMPLIES



SYMPHONY WOOD SEAT

PRODUCT TESTED: SYMPHONY WOOD SEAT

TEST METHOD: ANSI/BIFMA X5.4-2012 - Office Furnishings - General-Purpose LOUNGE SEATING – Test 6 Backrest Strength Test - Vertical - Type II

(See appended photograph #1)

DATE OF TEST: July 19, 2013

TEST PARAMETERS:

6.4.1 – Functional Load	200 lbf
6.4.2 – Proof Load	300 lbf

COMPLIANCE STATUS:

6.5.1 – Functional Load	COMPLIES
6.5.2 – Proof Load	COMPLIES

Photograph #1

556 Avenue Lépine, Dorval, Québec, Canada, H9P 2V6, Email: info@micomlab.com
Phone: 514-633-0078, Fax: 514-633-7188

PRODUCT TESTED: SYMPHONY WOOD SEAT

TEST METHOD: ANSI/BIFMA X5.4-2012, test #7, - OFFICE FURNISHINGS - GENERAL-PURPOSE LOUNGE SEATING - TESTS
Back Durability Test - Horizontal - Cyclic, Type II.

(See appended photograph #2)

DATE OF TEST: July 10, 2013

TEST PARAMETERS:

Cycling rate (cpm)
18

TEST RESULTS: Back Durability Test COMPLIES

Photograph #2

556 Avenue Lépine, Dorval, Québec, Canada, H9P 2V6, Email: info@micomlab.com
Phone: 514-633-0078, Fax: 514-633-7188

PRODUCT TESTED: SYMPHONY WOOD SEAT

TEST METHOD: ANSI/BIFMA X5.4-2012, test #9 - OFFICE FURNISHINGS - GENERAL-PURPOSE LOUNGE SEATING - Arm Strength Test - Horizontal - Static.

(See appended photograph #3)

DATE OF TEST: July 19, 2013

TEST RESULTS:

9.5.1 - Functional Load (150 lbs)	COMPLIES
9.5.2 - Proof Load (200 lbs)	COMPLIES

Photograph #3

556 Avenue Lépine, Dorval, Québec, Canada, H9P 2V6, Email: info@micomlab.com
Phone: 514-633-0078, Fax: 514-633-7188

PRODUCT TESTED: SYMPHONY WOOD SEAT

TEST METHOD: ANSI/BIFMA X5.4-2012, test #10 - OFFICE FURNISHINGS - GENERAL-PURPOSE LOUNGE SEATING - Arm Strength Test - Vertical.

(See appended photograph #4)

DATE OF TEST: July 19, 2013

TEST RESULTS:

10.5.1 - Functional Load (169 lbs)	COMPLIES
10.5.2 - Proof Load (253 lbs)	COMPLIES

Photograph #4

556 Avenue Lépine, Dorval, Québec, Canada, H9P 2V6, Email: info@micomlab.com
Phone: 514-633-0078, Fax: 514-633-7188

PRODUCT TESTED: SYMPHONY WOOD SEAT

TEST METHOD: ANSI/BIFMA X5.4-2012 - OFFICE FURNISHINGS - LOUNGE SEATING - TESTS
Test performed: #14 – Seating Durability Test – Cyclic

(See appended photograph #5)

DATE OF TEST: July 16, 2013

TEST PARAMETERS:

100 000 cycles
20 cycles per minute

COMPLIANCE STATUS:

15.5. - Seating Durability Test- Cyclic COMPLIES

Photograph #5

556 Avenue Lépine, Dorval, Québec, Canada, H9P 2V6, Email: info@micomlab.com
Phone: 514-633-0078, Fax: 514-633-7188

PRODUCT TESTED: SYMPHONY WOOD SEAT

TEST METHOD: ANSI/BIFMA X5.4-2002, test #15 - OFFICE FURNISHINGS - GENERAL-PURPOSE LOUNGE SEATING - Drop Test, Dynamic

(See appended photograph #6)

DATE OF TEST: July 19, 2013

TEST PARAMETERS:

14.4.1 – Functional Load	225 lbf
14.4.2 – Proof Load	300 lbf

COMPLIANCE STATUS:

14.5.1 - Functional Load	COMPLIES
14.5.2 - Proof Load	COMPLIES

Photograph #6

556 Avenue Lépine, Dorval, Québec, Canada, H9P 2V6, Email: info@micomlab.com
Phone: 514-633-0078, Fax: 514-633-7188

ducharme PERFORMANCE SEATING

SYMPHONY

ducharme PERFORMANCE SEATING

SYMPHONY

Designed for Theatres, PACs and Auditoriums, the Symphony seat and backrest are composed of comfortable and pleasantly shaped foam. The sleek lines of the seat and back are aligned in a harmonious position that gives the seat all the lateral and longitudinal rigidity needed for its use without compromising comfort and durability. Available is either floor or riser mounted versions.

The comfort, aesthetics and uncompromising quality of the SYMPHONY seat can only be matched by its customizable seating solution that can be catered to meet any customer specification. The key feature to the chair is the noiseless counter-weight uplift seat mechanism that is mounted without visible hardware. This enables the seat to be easily installed and maintained with a life time guaranty.

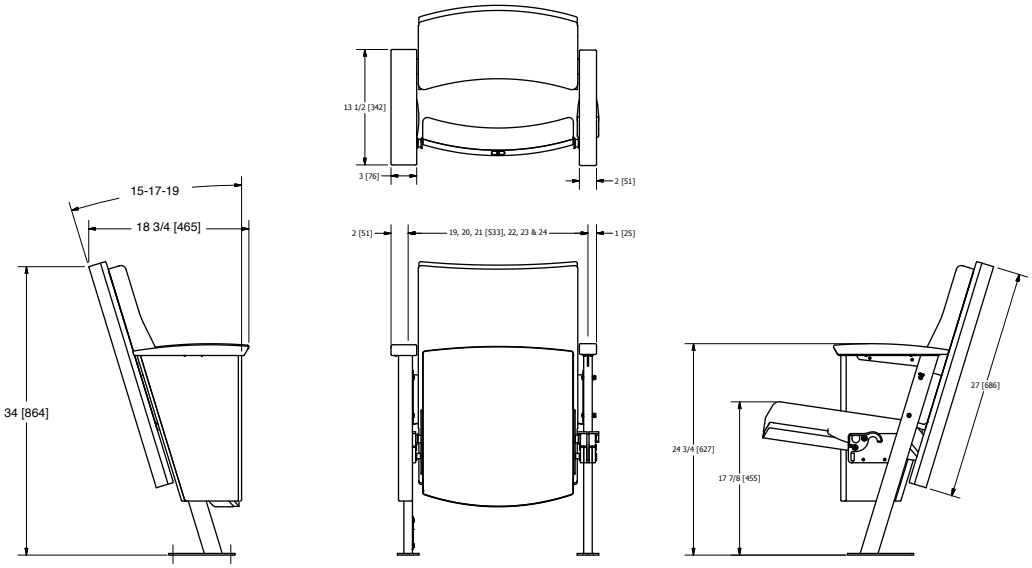
FEATURES & BENEFITS

- Flat, sloped or tiered floor installation
- Riser or floor mounted
- Overall chair height 34”
- Chair width 19” 20” 21” 22” 23”
- Three back rest angles
- Counterweight uplift seat mechanism

Options: To be built to customer specification. Anti-Panic Tablet Armrest, LED aisle lights, Seat and Row Lettering, ADA capability, Bariatric capability, cupholders.

Customization available upon request.

GEOMETRY



Ducharme Seating International (1991) inc.
9275, LE ROYER STREET
SAINT-LEONARD QC H1P 3H7
CANADA

TÉL : 514-328-2772
888 967 3287 (CANADA)
888 235 8888 (USA)
FAX: 514-328-4645

www.ducharmeseating.com

Densifier XL

Technical Information Sheet

Rev: TIS-LY-DEN-XL-2013-05

***Colloidal Silica** is at the heart of Lythic technology.*

It is a substance that reacts with the chemistry of concrete to produce more cementitious material, which translates into higher performance concrete.

**Issued May, 2013. Subject to change. Contact Solomon/Brickform for most up-to-date information*

SPECIFICATION: Section 03 35 00 Concrete Finishing

☒ NO EXCEPTION TAKEN
☐ MAKE CORRECTIONS NOTED ☐ SUBMIT SPECIFIED ITEM
☐ REVISE AND RESUBMIT ☐ REJECTED

Checking is only for general conformance with the design concept of the project and general compliance with the information given in the contract documents. Any action shown is subject to the requirements of the plans and specifications. Contractor is responsible for dimensions which shall be confirmed and correlated at the job site, fabrication process and techniques of construction, coordination of his work with that of all other trades and satisfactory performance of his work.

LPAS, INC.
2484 Natomas Park Drive Ste. 100
Sacramento, California 95833

7640002 — PROJECT NO.
Sub Request 005B — SUBMITTAL NO.
08/11/2015 — DATE
Tom Hall — BY

001: Product Description

Lythic Densifier XL with reactive colloidal silica is a densifier/hardener for concrete, used to improve the performance and appearance of concrete floors. **Lythic Densifier XL** is designed specifically for treating extremely porous or deteriorated concrete. It increases surface hardness, compressive strength, abrasion-resistance, and liquid penetration-resistance. It can be used in the concrete polishing process to yield a glossy, reflective appearance similar to terrazzo or polished natural stone, even on softer slabs that do not respond properly to conventional densifiers. **Lythic Densifier XL** reduces dusting, efflorescence and ASR. It is a zero-VOC, non-toxic, safe-to-handle liquid that does not require scrubbing in, removal, or hazardous residue disposal, and does not leave discoloring mineral salt deposits on concrete.

Lythic Densifier XL is 99.5% pure silica in nano-scale particles, suspended in an ultra-low surface-tension liquid using a proprietary, "green" manufacturing process. **Lythic Densifier XL** features substantially larger silica particle-size than standard **Lythic Densifier,** although the particles are still nano-scale. It reacts with calcium hydroxide *(aka lime)* in the concrete matrix to create additional calcium silicate hydrates *(CSH),* the active binder in cement paste, which becomes a permanent part of the concrete. This new CSH increases the density of the concrete surface. Colloidal silica is unique among densifiers in that it also bonds to silica in concrete, and bonds to itself, enabling it to build up density in a way that silicate densifiers cannot.

Lythic Densifier XL may be helpful in restoring slabs that have suffered certain types of chemical deterioration sometimes referred to as bi-carbonation or cold-weather carbonation.

Lythic Densifier XL is used in concrete polishing to harden the surface and to close the pore structure, enabling the concrete to take a better polish and help resist liquid penetration. **Lythic Densifier XL**'s unique ability to build up surface density creates more polishable material. It increases durability of polished concrete surfaces, enhances reflectivity and extends the overall lifecycle of the finished floor. It is compatible with integral color, dyes, and shake-on hardeners, and will protect color appearance by reducing efflorescence. It can be applied on any concrete surface to achieve a more durable finish that resists spills and wear-damage.

Lythic Densifier XL is a zero-VOC, environmentally responsible product that may help qualify for LEED credits for Indoor Environmental Quality *(EQ Credit 4.2: Low-Emitting Materials).*

002: Features & Advantages

Lythic Densifier XL can be applied to any new or cured concrete surface to increase hardness and abrasion resistance, and prevent dusting.

Lythic Densifier XL's larger particle size can optimize performance on porous or deteriorated concrete. **Lythic Densifier XL** can be used in conjunction with **Lythic Densifier** and other Lythic products as described in Section 014.

Lythic Densifier XL works well with colored concrete. It minimizes efflorescence that can dull color. Unlike some silicate densifiers that can contribute to alkali-silica reaction *(ASR),* **Lythic Densifier XL** reduces the risk of ASR.

Because it bonds to silica in cementitious materials, **Lythic Densifier XL** can work with low-lime decorative cementitious overlays that do not react well with sodium, lithium, or potassium silicate densifiers, although porosity is usually not a problem with these overlays.

Unlike silicate densifiers, **Lythic Densifier XL** contains no significant proportion of mineral salts that can discolor concrete. It is fast-reacting, and does not require scrubbing-in or extensive reacting time. There is nothing to scrub off and no hazardous waste disposal.

Lythic Densifier XL provides multiple advantages and benefits:
◊ Hardens surface

◊ Enables concrete to take a polish

◊ Bonds to silica in concrete and to itself for density build-up

◊ Makes surface less permeable, increases resistance to liquid penetration, staining

◊ Increases surface compressive strength

◊ Increases impact resistance

◊ Increases abrasion resistance

◊ Prevents dusting

◊ Slows surface damage and extends service life of older slabs

◊ Works with low-lime decorative cementitious overlays

◊ Does not yellow or whiten concrete.

◊ Safe to handle – lower pH than silicates

◊ Fast reacting – one hour or less

◊ No overnight curing

◊ No scrubbing-in

◊ No residue removal

◊ No hazardous waste disposal

◊ Water-based

003: Sustainability

Exposed concrete, such as a polished concrete floor, is an inherently sustainable flooring solution that is durable, and offers a very long service life with only simple maintenance. It lowers materials and energy-consumption by eliminating the need for frequently-replaced floor covering materials. In many situations, the concrete itself is already installed, further reducing materials-consumption. Exposed concrete floors require minimal, low-impact maintenance, thereby lowering maintenance energy-consumption and eliminating harsh chemicals and solvents used to strip and wax some floor coverings.

Lythic Densifier XL has specific sustainability benefits:
◊ Zero-VOC formula

◊ Concentrate to lower environmental impacts, shipping and storage costs. *(Reduced Carbon Footprint)*

◊ No hazardous waste

004: Materials Packaging

Lythic Densifier XL is packaged as a concentrate, minimizing shipping and handling expense.
Packaging Detail:
◊ 1 gallon / 3.78 liter container ..... concentrate
◊ 5 gallon / 18.92 liter bucket ..... concentrate

Lythic Densifier XL concentrate is intended to be diluted with water before use. **(See section 007: Mixing & Dilution)*

005: Coverage Rates

Lythic Densifier XL will yield different coverage results depending on the porosity of the floor. Test on a small sample area to determine appropriate application rate and technique before applying to entire project area. **(See section 010: Project Testing)*

Use these coverage rates as a starting point to determine necessary application rate:
◊ High Porosity Concrete ..... 250 - 400 sf/gal *(6.1 – 9.8 m^2/L)*

◊ Medium Density Concrete .. 300 - 500 sf/gal *(7.4 – 12.3 m^2/L)*

◊ Hard Concrete ..... 400 - 600 sf/gal *(9.8 – 14.7 m^2/L)*

◊ High Density Concrete ..... 500 - 700 sf/gal *(12.3 – 17.2 m^2/L)*

The coverage rates are based on a mixed ready-to-use *(RTU)* gallon of **Lythic Densifier XL**. **(See section 007: Mixing & Dilution)*

Important: (See the coverage chart on page 4)

006: Safety Precautions

WARNING: FOR PROFESSIONAL USE ONLY. BEFORE USING PRODUCT, READ MATERIAL SAFETY DATA SHEET *(MSDS)* AND INSTRUCTIONS ON PACKAGING. ALKALINE CONCENTRATE: CONTACT CAN DAMAGE EYES, SKIN AND OTHER BODY TISSUES. HANDLE WITH CARE. EYE AND SKIN IRRITANT. DIGESTIVE TRACT IRRITANT; DO NOT TAKE INTERNALLY. KEEP OUT OF REACH OF CHILDREN. SPRAY MIST IS RESPIRATORY TRACT IRRITANT. USE ONLY WITH ADEQUATE VENTILATION. Do not breathe vapors or spray mist. Avoid contact with eyes, skin, clothing. Observe appropriate safety and jobsite controls. Wear appropriate protection including eye protection and chemical-resistant gloves. Ensure fresh air-flow during application and until dry. If you experience headaches, dizziness, eye watering, or if air monitoring shows vapor/mist levels above applicable limits, wear a properly fitted P100/organic vapor respirator *(NIOSH TC-84A approved),* used according to manufacturer's directions, during application and drying. SLIP/FALL DANGER: During application of **Lythic Densifier XL** and until dry, treated surface will be slippery. Use extreme care when walking on wet **Lythic Densifier XL**.

007: Mixing & Dilution

Lythic Densifier XL is shipped as a concentrate. Before use, it must be diluted with clean potable water in a ratio of 1:1.

- 1 - Before opening **Lythic Densifier XL** container, shake to agitate the concentrate.

- 2 - Pour one part **Lythic Densifier XL** concentrate into mixing container or directly into sprayer.

- 3 - Add one part clean potable water to make **Lythic Densifier XL** Ready-to-Use *(RTU)* mixture.

- 4 - Mix for 30 seconds using low-to-medium speed drill and mixing paddle, or shake sprayer for 60 seconds, until mixture is homogeneous and uniform.

the immediate work at hand, and only making as much **Lythic Densifier XL** RTU mixture as needed. Left over RTU mixture can be stored in an air-tight container, and needs to be used within 2 months after being mixed from concentrate, or the stated expiration date, whichever comes first. Manufacturing date can be found within the batch number on the original packaging. Over prolonged periods of time, RTU mixture may settle. Before using RTU mixture, agitate container to mix contents.

> **Important: The water used to dilute **Lythic Densifier XL** concentrate must be clean potable water. Any contaminates in the water could reduce the shelf life of RTU mixture.*

008: Equipment

Apply using a low-pressure pump sprayer. Automatic low-pressure sprayers can also be used for larger projects.

009: Pre-Application

Advanced planning is critical to all successful concrete work, including the use of **Lythic Densifier XL**.

◊ Any adjacent areas, surfaces, or objects not intended to be treated with **Lythic Densifier XL** should be protected from overspray or drift with plastic sheeting or other proven protective material.

◊ Surface must be clean and structurally sound, and must be clear of membrane forming curing compounds, oils, dust and other surface contaminants that will prevent **Lythic Densifier XL** from having full contact with the concrete. Do not use acidic or aggressive detergents when cleaning before or after application of **Lythic Densifier XL**. Use **Lythic Cleaner** or other pH neutral cleanser.

◊ Measure area *(square feet/m^2)* that will require **Lythic Densifier XL.**

◊ Mix an appropriate quantity of **Lythic Densifier XL** for job-size, per instructions in Section 007: Mixing & Dilution, using estimated coverage rates in Section 005: Coverage Rates or the coverage chart on page 4.

◊ Check that sprayers and tips are in working order.

◊ Designate trained operator*(s)* to apply **Lythic Densifier XL** throughout project, to ensure consistent application.

010: Project Testing

To assure that performance and slip-resistance specifications are met, and that desired appearance is achieved, test a sample area of each slab to be treated, using the proposed treatment methods and techniques, coverage rates, and equipment, with the work performed by the same installation personnel who will do the project. Test section should be large enough to properly represent the overall slab. Specific to **Lythic Densifier XL**, check whether coverage rate is appropriate, that concrete accepts the product, and that product is reacting with slab.

NOTE: Grinding and polishing operations may significantly alter slip-resistance of surface. To determine that safe levels of wet and dry slip-resistance are achieved, it is necessary to apply the complete treatment, including the protection layer. **Lythic Protector** and **Lythic Protector SPD** increase slip resistance.

011: Application Guidelines

Lythic Densifier XL can be applied to new or existing concrete. Application may vary depending on the type of project and other jobsite specifics. The information provided is best practice guidelines for **Lythic Densifier XL**. Every project will present variables that may require adjustment of application procedures during the job. These guidelines are based on terminology used within the concrete and flooring industry sector.

**(See coverage chart on page 4)*

011-A - General Application Instructions

- 1 - Agitate **Lythic Densifier XL** RTU mixture before pouring into sprayer.

- 2 - Pour **Lythic Densifier XL** RTU mixture into sprayer. Keep sprayer pressure at optimized level, allowing even distribution when applying to concrete surface.

- 3 - Spray apply **Lythic Densifier XL**, holding spray tip 12-24 inches above surface and moving in a circular motion to achieve even distribution. Spray enough to form an even sheen and ensure complete saturation of surface.

- 4 - Apply **Lythic Densifier XL** until the surface is at the point of saturation.

- 5 - Keep the surface wet for 10 to 15 minutes, applying additional **Lythic Densifier XL** only as needed. Areas of higher porosity will require more **Lythic Densifier XL**.

- 6 - Allow surface to dry completely before further operations commence.

011-B - Diamond Grinding / Polishing

As part of concrete polishing, **Lythic Densifier XL** is typically applied after the initial diamond cutting stages or surface stock removal is completed, and prior to the higher levels of diamond polishing. In most instances, it is used after to 200-grit to 400-grit steps. See coverage chart for application stages on page 4.

012: Next Steps

Polishing or other treatments can begin when **Lythic Densifier XL** has dried. Concrete intended to be left exposed should be protected with **Lythic Protector**, **Lythic SPD Protector** or other appropriate to the finish installed, as the final step of treatment. Exposed concrete should be cleaned with **Lythic Cleaner** or other pH neutral cleaners. Avoid acidic cleaners and detergents containing hydroxides or sulfates as these may etch or dull the surface.

013: Limitations & Important Notes

◊ **Lythic Densifier XL** densifies and hardens concrete surfaces, but should not be confused with concrete sealers; it will not seal or prevent staining.

◊ Floors treated with **Lythic Densifier XL** should not be cleaned with citric or abrasive cleaning fluids. Medium to long-term exposure to aggressive cleaning products will cause damage. **Lythic Cleaner** or other pH neutral cleansers or should used for continuous maintenance of concrete that has been treated with **Lythic Densifier XL**.

◊ During application of **Lythic Densifier XL** and until dry, treated surface will be slippery. Use extreme care when walking on wet **Lythic Densifier XL**.

◊ Jobsite samples are strongly recommended prior to application of all Solomon/Brickform and Lythic products.

014: Lythic Densifier XL used in conjunction with:

◊ **Lythic DAY1** .....(Troweling aid and curing agent)

◊ **Lythic Densifier** .....(Smaller particle densifier)

◊ **Lythic Protector** .....(Color enhancer & stain reducer)

◊ **Lythic SPD Protector** .....(Color enhancer & stain protection)

◊ **Lythic Cleaner** .....(Colloidal silica cleaning agent)

◊ **CONTRAZZO** .....(Polished concrete overlay system)

◊ **Pro-Dye** .....(Penetrating colorant concentrate)

Other Solomon/Brickform products can be used in conjunction with **Lythic Densifier XL*

015: Physical Properties

Appearance ..... milky white liquid
Drying Time ..... 20 min to 1 hour
VOC Content ..... 0 g/l (VOC-free)
Active Ingredients ..... 100% of total solid
pH ..... approx 9.5
Freeze point ..... 32˚F / 0˚C
Shelf Life ..... 24 months

016: Storage & Shelf Life

Lythic Densifier XL should be kept in the original container when possible, with the lid fastened tightly. **Lythic Densifier XL** concentrate has an optimized shelf life of 24 months from the date of manufacture. This date is available on the batch reference number on the original container.

Storage of RTU mixture: see Section 006: Mixing & Dilution

Keep in a cool, dry place raised off the floor. Keep in temperature range of 40–100°F or 4–38°C.

Important:* **Do Not Allow to Freeze

017: Warranty

Lythic Densifier XL is intended for use by licensed contractors and installers, experienced and trained in the use of these types of products. It is warranted to be of uniform quality, within manufacturing tolerances. The manufacturer has no control over the use of this product, therefore, no warranty, expressed or implied, is or can be made either as to the effects or results of such use. In any case, the manufacturer's obligations shall be limited to refunding the purchase price or replacing **Lythic Densifier XL** proven defective. The end user shall be responsible for determining product's suitability and assumes all risks and liability.

018: First Aid

Ingestion: Not expected to be toxic. Never give an unconscious person anything to ingest. If swallowed, immediately give two glasses of water, DO NOT INDUCE VOMITING. Seek medical attention if ill effects develop.

Inhalation: May cause irritation. Remove to fresh air and provide oxygen. If not breathing, give artificial respiration. Seek medical attention if irritation persists.

Eye Contact: Flush with plenty of water for at least 15 minutes. Seek medical attention if irritation persists.

Skin Contact: May cause irritation. Wash affected area with soap and water. Remove contaminated clothing and shoes. Seek medical attention if irritation persists.

In most cases, medium-to-high density and polished concrete should be treated with standard **Lythic Densifier**. **Lythic Densifier XL** performs most efficiently on porous and damaged concrete. In circumstances where you wish to apply **Lythic Densifier XL** to harder slabs, use these rates as a starting point:

Concrete Condition	Diamond Stage/Stages			Possible Applications	Coverage Per Application
Ultra Soft Condition Concrete	50-80 Grit	80-100 Grit	100-200 Grit	*3 Coat Application*	250 - 400 ft per Gallon
Soft Condition Concrete	80-100 Grit		120-200 Grit	*2 Coat application*	250 - 400 ft per Gallon
Normal Condition Concrete	80-200 Grit			*1 Application*	300 - 500 ft per Gallon
Hard Condition Concrete	80-200 Grit			*1 Application*	400 - 600 ft per Gallon
High Density Concrete	100-400 Grit			*1 Application*	500 - 700 ft per Gallon

Densifier

Technical Information Sheet

Rev: TIS-LY-DEN-2013-05

***Colloidal Silica** is at the heart of Lythic technology. It is a substance that reacts with the chemistry of concrete to produce more cementitious material, which translates into higher performance concrete.*

**Issued May, 2013. Subject to change. Contact Solomon/Brickform for most up-to-date information*

Specification: Section 03 35 00 Concrete Finishing

☒ NO EXCEPTION TAKEN
☐ MAKE CORRECTIONS NOTED ☐ SUBMIT SPECIFIED ITEM
☐ REVISE AND RESUBMIT ☐ REJECTED

Checking is only for general conformance with the design concept of the project and general compliance with the information given in the contract documents. Any action shown is subject to the requirements of the plans and specifications. Contractor is responsible for dimensions which shall be confirmed and correlated at the job site, fabrication process and techniques of construction, coordination of his work with that of all other trades and satisfactory performance of his work.

LPAS, INC.
2484 Natomas Park Drive Ste. 100
Sacramento, California 95833

7640002 PROJECT NO. | Sub Request 005-A SUBMITTAL NO.
08/11/2015 DATE | Tom Hall BY

001: Product Description

Lythic Densifier with reactive colloidal silica is a densifier/hardener for concrete, used to improve the performance and appearance of concrete floors. It increases surface hardness, compressive strength, abrasion-resistance, and liquid penetration-resistance. It is an integral part of the concrete polishing process, which can yield a glossy, reflective appearance similar to terrazzo or polished natural stone. **Lythic Densifier** reduces dusting, efflorescence and ASR. It is a zero-VOC, non-toxic, safe-to-handle liquid that does not require scrubbing in, removal, or hazardous residue disposal, and does not leave discoloring mineral salt deposits on concrete.

Lythic Densifier is 99.5% pure silica in nano-scale particles, suspended in an ultra-low surface-tension liquid using a proprietary, "green" manufacturing process. It reacts with calcium hydroxide (aka lime) in the concrete matrix to create additional calcium silicate hydrates (CSH), the active binder in cement paste, which becomes a permanent part of the concrete. This new CSH increases the density of the concrete surface. Colloidal silica is unique among densifiers in that it also bonds to silica in concrete, and bonds to itself, enabling it to build up density in a way that silicate densifiers cannot.

Lythic Densifier is used for concrete polishing to harden the surface and to close the pore structure, enabling the concrete to take a better polish and help resist liquid penetration. Lythic Densifier's polish and help resist liquid penetration. **Lythic Densifier's** unique ability to build up surface density creates more polishable material. It increases durability of polished concrete surfaces, enhances reflectivity and extends the overall lifecycle of the finished floor. It is compatible with integral color, dyes, and shake-on hardeners, and will protect color appearance by reducing efflorescence. It can be applied on any concrete surface to achieve a more durable finish that resists spills and wear-damage.

Lythic Densifier is a zero-VOC, environmentally responsible product that may help qualify for LEED credits for Indoor Environmental Quality *(EQ Credit 4.2: Low-Emitting Materials).*

002: Features & Advantages

Lythic Densifier can be applied to any new or cured concrete surfaces to increase hardness and abrasion resistance, and prevent dusting.

Lythic Densifier works well with colored concrete. It minimizes efflorescence that can dull color. Unlike some silicate densifiers that can contribute to alkali-silica reaction *(ASR),* **Lythic Densifier** reduces the risk of ASR.

Because it bonds to silica in cementitious materials, **Lythic Densifier** works with low-lime decorative cementitious overlays that do not react well with sodium, lithium, or potassium silicate densifiers.

Unlike silicate densifiers, **Lythic Densifier** contains no significant proportion of mineral salts that can discolor concrete. It is fast-reacting, and does not require scrubbing-in or extensive reaction time. There is nothing to scrub off and no hazardous waste disposal.

Lythic Densifier provides multiple advantages and benefits:

◊ Hardens surface

◊ Enables concrete to take a polish

◊ Bonds to silica in concrete and to itself for density build-up

◊ Makes surface less permeable, increases resistance to liquid penetration, staining

◊ Increases surface compressive strength

◊ Increases impact resistance

◊ Increases abrasion resistance

◊ Prevents dusting

◊ Slows surface damage and extends service life of older slabs

◊ Works with low-lime decorative cementitious overlays

◊ Does not yellow or whiten concrete.

◊ Safe to handle – lower pH than silicates

◊ Fast reacting – one hour or less

◊ No overnight curing

◊ No scrubbing-in

◊ No residue removal

◊ No hazardous waste disposal

◊ Water-based

003: Sustainability

Exposed concrete, such as a polished concrete floor, is an inherently sustainable flooring solution that is durable, and offers a very long service life with only simple maintenance. It lowers materials and energy-consumption by eliminating the need for frequently-replaced floor covering materials. In many situations, the concrete itself is already installed, further reducing materials-consumption. Exposed concrete floors require minimal, low-impact maintenance, thereby lowering maintenance energy-consumption and eliminating harsh chemicals and solvents used to strip and wax some floor coverings.

Lythic Densifier has specific sustainability benefits:
◊ Zero-VOC formula

◊ Concentrate to lower environmental impacts, shipping and storage costs. *(Reduced Carbon Footprint)*

◊ No hazardous waste

004: Materials Packaging

Lythic Densifier is packaged as a concentrate, minimizing shipping and handling expense.
Packaging Detail:
◊ 1 gallon / 3.78 liter container ..... concentrate
◊ 5 gallon / 18.92 liter bucket ..... concentrate

Lythic Densifier concentrate is intended to be diluted with water before use. **(See section 007: Mixing & Dilution)*

005: Coverage Rates

Lythic Densifier will yield different coverage results depending on the porosity of the floor. Test on a small sample area to determine appropriate application rate and technique before applying to entire project area. **(See section 010: Project Testing)*

Use these coverage rates as a starting point to determine necessary application rate:
◊ High Porosity Concrete ..... 250 - 400 sf/gal *(6.1 – 9.8 m^2/L)*

◊ Medium Density Concrete .. 300 - 500 sf/gal *(7.4 – 12.3 m^2/L)*

◊ Hard Concrete ..... 400 - 600 sf/gal *(9.8 – 14.7 m^2/L)*

◊ High Density Concrete ..... 500 - 700 sf/gal *(12.3 – 17.2 m^2/L)*

The coverage rates are based on a mixed ready-to-use *(RTU)* gallon of **Lythic Densifier**. **(See section 007: Mixing & Dilution)*

**Important: (See the coverage chart on page 4)*

006: Safety Precautions

WARNING: FOR PROFESSIONAL USE ONLY. BEFORE USING PRODUCT, READ MATERIAL SAFETY DATA SHEET (MSDS) AND INSTRUCTIONS ON PACKAGING. ALKALINE CONCENTRATE: CONTACT CAN DAMAGE EYES, SKIN AND OTHER BODY TISSUES. HANDLE WITH CARE. EYE AND SKIN IRRITANT. DIGESTIVE TRACT IRRITANT; DO NOT TAKE INTERNALLY. KEEP OUT OF REACH OF CHILDREN. SPRAY MIST IS RESPIRATORY TRACT IRRITANT. USE ONLY WITH ADEQUATE VENTILATION. Do not breathe vapors or spray mist. Avoid contact with eyes, skin, clothing. Observe appropriate safety and jobsite controls. Wear appropriate protection including eye protection and chemical-resistant gloves. Ensure fresh air-flow during application and until dry. If you experience headaches, dizziness, eye watering, or if air monitoring shows vapor/mist levels above applicable limits, wear a properly fitted P100/organic vapor respirator *(NIOSH TC-84A approved),* used according to manufacturer's directions, during application and drying. SLIP/FALL DANGER: During application of **Lythic Densifier** and until dry, treated surface will be slippery. Use extreme care when walking on wet **Lythic Densifier**.

007: Mixing & Dilution

Lythic Densifier is shipped as a concentrate. Before use, it must be diluted with clean potable water in a ratio of 1:1.

- 1 - Before opening **Lythic Densifier** container, shake to agitate the concentrate.

- 2 - Pour one part **Lythic Densifier** concentrate into mixing container or directly into sprayer.

- 3 - Add one part clean potable water to make **Lythic Densifier** Ready-to-Use *(RTU)* mixture.

- 4 - Mix for 30 seconds using low-to-medium speed drill and mixing paddle, or shake sprayer for 60 seconds, until mixture is homogeneous and uniform.

We recommend calculating the quantity of material needed for the immediate work at hand, and only making as much **Lythic Densifier** RTU mixture as needed. Left over RTU mixture can be stored in an air-tight container, and needs to be used within 2 months after being mixed from concentrate, or the stated expiration date, whichever comes first. Manufacturing date can be found within the batch number on the original packaging. Over prolonged periods of time, RTU mixture may settle. Before using RTU mixture, agitate container to mix contents.

> **Important: The water used to dilute **Lythic Densifier** concentrate must be clean potable water. Any contaminates in the water could reduce the shelf life of RTU mixture.*

008: Equipment

Apply using a low-pressure pump sprayer. Automatic low-pressure sprayers can also be used for larger projects.

009: Pre-Application

Advanced planning is critical to all successful concrete work, including the use of **Lythic Densifier**.

◊ Any adjacent areas, surfaces, or objects not intended to be treated with **Lythic Densifier** should be protected from overspray or drift with plastic sheeting or other proven protective material.

◊ Surface must be clean and structurally sound, and must be clear of membrane forming curing compounds, oils, dust and other surface contaminants that will prevent **Lythic Densifier** from having full contact with the concrete. Do not use acidic or aggressive detergents when cleaning before or after application of **Lythic Densifier**. Use **Lythic Cleaner** or other pH neutral cleanser.

◊ Measure area *(square feet/m^2)* that will require **Lythic Densifier**.

◊ Mix an appropriate quantity of **Lythic Densifier** for job-size, per instructions in Section 007: Mixing & Dilution, using estimated coverage rates in Section 005: Coverage Rates or the coverage chart on page 4.

◊ Check that sprayers and tips are in working order.

◊ Designate trained operator*(s)* to apply **Lythic Densifier** throughout project, to ensure consistent application.

010: Project Testing

To assure that performance and slip-resistance specifications are met, and that desired appearance is achieved, test a sample area of each slab to be treated, using the proposed treatment methods and techniques, coverage rates, and equipment, with the work performed by the same installation personnel who will do the project. Test section should be large enough to properly represent the overall slab. Specific to **Lythic Densifier**, check whether coverage rate is appropriate, that concrete accepts the product, and that product is reacting with slab.
NOTE: Grinding and polishing operations may significantly alter slip-resistance of surface. To determine that safe levels of wet and dry slip-resistance are achieved, it is necessary to apply the complete treatment, including the protection layer. **Lythic Protector** and **Lythic Protector SPD** increase slip resistance.

011: Application Guidelines

Lythic Densifier can be applied to new or existing concrete. Application may vary depending on the type of project and other jobsite specifics. The information provided is best practice guidelines for **Lythic Densifier**. Every project will present variables that may require adjustment of application procedures during the job. These guidelines are based on terminology used within the concrete and flooring industry sector.

(See coverage chart on page 4)

011-A - General Application Instructions

- 1 - Agitate **Lythic Densifier** RTU mixture before pouring into sprayer.

- 2 - Pour **Lythic Densifier** RTU mixture into sprayer. Keep sprayer pressure at optimized level, allowing even distribution when applying to concrete surface.

- 3 - Spray apply **Lythic Densifier**, holding spray tip 12-24 inches above surface and moving in a circular motion to achieve even distribution. Spray enough to form an even sheen and ensure complete saturation of surface.

- 4 - Apply **Lythic Densifier** until the surface is at the point of saturation.

- 5 - Keep the surface wet for 10 to 15 minutes, applying additional **Lythic Densifier** only as needed. Areas of higher porosity will require more **Lythic Densifier**.

- 6 - Allow surface to dry completely before further operations commence.

011-B - Diamond Grinding / Polishing

As part of concrete polishing, **Lythic Densifier** is typically applied after the initial diamond cutting stages or surface stock removal is completed, and prior to the higher levels of diamond polishing. In most instances, it is used after to 200-grit to 400-grit steps. See coverage chart for application stages on page 4.

011-C - New (Green) Concrete

Lythic Densifier can be applied within 1 to 3 days after the concrete placement, when the peak of hydration and outgassing has slowed enough to allow sufficient penetration. Application at this stage dramatically increases abrasion resistance, will help to prevent dusting and ASR, and will improve overall surface performance. Slab must be clean and free of all contaminants such as curing compounds, bond breakers, release oils, dust and debris, etc. Apply per instructions in 011-A General Application Instructions steps 1-4. Allow to dry. No cleaning, flooding, neutralizing, or rinsing is necessary.

012: Next Steps

Polishing or other treatments can begin when **Lythic Densifier** has dried. Concrete intended to be left exposed should be protected with **Lythic Protector** or **Lythic SPD Protector**, or other appropriate protection to the finish installed, as the final step of treatment. Exposed concrete should be cleaned with **Lythic Cleanser** or other pH neutral cleaners. Avoid acidic cleaners and detergents containing hydroxides or sulfates as these may etch or dull the surface.

013: Limitations & Important Notes

◊ **Lythic Densifier** densifies and hardens concrete surfaces, but should not be confused with concrete sealers; it will not seal or prevent staining.

◊ Floors treated with **Lythic Densifier** should not be cleaned with citric or abrasive cleaning fluids. Medium to long-term exposure to aggressive cleaning products will cause

damage. **Lythic Cleaner** or other pH neutral cleansers or should used for continuous maintenance of concrete that has been treated with **Lythic Densifier**.

◊ During application of **Lythic Densifier** and until dry, treated surface will be slippery. Use extreme care when walking on wet **Lythic Densifier**.

◊ Jobsite samples are strongly recommended prior to application of all Solomon/Brickform and Lythic products.

014: Lythic Densifier used in conjunction with:

◊ **Lythic DAY1** .....(Troweling aid and curing agent)

◊ **Lythic Densifier XL** .....(Larger particle densifier)

◊ **Lythic Protector** .....(Color enhancer & stain reducer)

◊ **Lythic SPD Protector** .....(Color enhancer & stain protection)

◊ **Lythic Cleaner** .....(Colloidal silica cleaning agent)

◊ **CONTRAZZO** .....(Polished concrete overlay system)

◊ **Pro-Dye** .....(Penetrating colorant concentrate)

Other Solomon/Brickform products can be used in conjunction with **Lythic Densifier.*

015: Physical Properties

Appearance ..... milky white liquid
Drying Time ..... 20 min to 1 hour
VOC Content ..... 0 g/l (VOC-free)
Active Ingredients ..... 100% of total solid
pH ..... approx 9.5
Freeze point ..... 32˚F / 0˚C
Shelf Life ..... 24 months

016: Storage & Shelf Life

Lythic Densifier should be kept in the original container when possible, with the lid fastened tightly. **Lythic Densifier** concentrate has an optimized shelf life of 24 months from the date of manufacture. This date is available on the batch reference number on the original container.

Storage of RTU mixture: see Section 006: Mixing & Dilution

Keep in a cool, dry place raised off the floor. Keep in temperature range of 40–100°F or 4–38°C.

Important:* **Do Not Allow to Freeze

017: Warranty

Lythic Densifier is intended for use by licensed contractors and installers, experienced and trained in the use of these types of products. It is warranted to be of uniform quality, within manufacturing tolerances. The manufacturer has no control over the use of this product, therefore, no warranty, expressed or implied, is or can be made either as to the effects or results of such use. In any case, the manufacturer's obligations shall be limited to refunding the purchase price or replacing **Lythic Densifier** proven defective. The end user shall be responsible for determining product's suitability and assumes all risks and liability.

018: First Aid

Ingestion: Not expected to be toxic. Never give an unconscious person anything to ingest. If swallowed, immediately give two glasses of water, DO NOT INDUCE VOMITING. Seek medical attention if ill effects develop.

Inhalation: May cause irritation. Remove to fresh air and provide oxygen. If not breathing, give artificial respiration. Seek medical attention if irritation persists.

Eye Contact: Flush with plenty of water for at least 15 minutes. Seek medical attention if irritation persists.

Skin Contact: May cause irritation. Wash affected area with soap and water. Remove contaminated clothing and shoes. Seek medical attention if irritation persists.

The chart offers generalized guidelines of application rates and recommended diamond-grit stages for application of **Lythic Densifier**, according to the condition of the slab. High porosity or heavily damaged concrete could require multiple applications of **Lythic Densifier**. In some instances, **Lythic Densifier XL**, which features larger silica particle size, may perform more efficiently in "rescuing" soft or damaged slabs. Both densifiers work well together to solve many problematic polished concrete issues.

Concrete Condition	Diamond Stage/Stages			Possible Applications	Coverage Per Application
Ultra Soft Condition Concrete	50-80 Grit	80-100 Grit	100-200 Grit	*3 Coat Application*	250 - 400 ft per Gallon
Soft Condition Concrete	80-100 Grit		120-200 Grit	*2 Coat application*	250 - 400 ft per Gallon
Normal Condition Concrete	80-200 Grit			*1 Application*	300 - 500 ft per Gallon
Hard Condition Concrete	80-200 Grit			*1 Application*	400 - 600 ft per Gallon
High Density Concrete	100-400 Grit			*1 Application*	500 - 700 ft per Gallon

Solano College Bldg. 1200 Theater Renovation, Substitution Request 002

Solano Community College – BLDG 1200 Theater Renovation - Inc 2 PROJECT NO. 14-014
4000 Suisun Valley Road, Fairfield, CA

SUBSTITUTION REQUEST FORM

TO: LPAS DATE: August 6, 2015

PROJECT: Solano Community College

We hereby submit to your consideration the following product instead of the specified item for the above referenced project:

Proposed Substitution: All Theater Rigging Equipment

Section 11 61 33 Paragraph All Specified Item All

Attach complete technical data, including laboratory tests, if applicable.

Provide complete information below on changes to Drawings and Specifications which proposed substitution will require for its proper installation.

A. Does the substitution affect dimensions shown on Drawings? Yes __ No x If yes, clearly indicate changes.

B. What effect does substitution have on other trades? none

C. What effect does substitution have on construction schedule? none

D. Cost difference between proposed substitution and specified item? _____

E. Manufacturer's warranty/guarantees of the proposed and specified items are:

x Same _____ Different (explain on attachment)

The undersigned certifies that the function, appearance and quality are equivalent or superior to the specified item. The undersigned also certifies that all costs caused by or resulting from the requested substitution including, but not limited to, additional design work, construction changes and review time will be paid by the firm requesting the substitution.

Submitted by:
Signature: Tracy Holmes

Firm Protech Theatrical Services, Inc.

Address 3431 N Bruce Street
North Las Vegas, NV 89030

Date 8/6/2015

Telephone 702-639-0290

Evaluated by:
Accepted X Accepted as Noted

Not Accepted ____ Received Too Late

By Ian Hunter

Firm The Shalleck Collaborative

Date 8/10/15

Remarks See e-mail approval, attached.

Krista McCord

From: Tom Hall
Sent: Tuesday, August 11, 2015 11:05 AM
To: Krista McCord
Subject: FW: Substitution Request Building 1200 Solano College

Please print and add to substitution 02.

Please mark as acceptable.

Tom Hall, AIA
Project Architect
LEED AP

LPAS Architecture + Design

Sacramento 916 443 0335 | San Francisco 415 213 0335
LPAS.com Making Buildings Together

From: Ian Hunter [mailto:ian@shalleck.com]
Sent: Monday, August 10, 2015 12:09 PM
To: Tom Hall <thall@lpas.com>
Cc: Eric Van Pelt <eric@vpcsonline.com>; Eric Spielman <espielman@lpas.com>
Subject: RE: Substitution Request Building 1200 Solano College

Hi Tom-

Here's our response:

"Protech Rigging is an acceptable substitution, so long as the entirety of the specifications are met."

Thanks-

Ian Hunter, CTS-D
Principal
The Shalleck Collaborative, Inc.
Direct Tel. 415/814-1564

From: Tom Hall [mailto:thall@lpas.com]
Sent: Monday, August 10, 2015 8:03 AM
To: Ian Hunter <ian@shalleck.com>
Cc: Eric Van Pelt <eric@vpcsonline.com>; Eric Spielman <espielman@lpas.com>
Subject: FW: Substitution Request Building 1200 Solano College

Please review ASAP.

Thanks

Tom Hall, AIA

Project Architect
LEED AP

LPAS Architecture + Design

Sacramento 916 443 0335 | San Francisco 415 213 0335
LPAS.com Making Buildings Together

From: Eric Van Pelt [mailto:eric@vpcsonline.com]
Sent: Friday, August 07, 2015 2:19 PM
To: Krista McCord <kmccord@lpas.com>; Tom Hall <thall@lpas.com>
Subject: Fwd: Substitution Request Building 1200 Solano College

Protech Substitution form.

Eric Van Pelt
VPCS

Sent from my iPhone

Begin forwarded message:

> **From:** "Tracy Holmes" <tracy@protechlv.com>
> **Date:** August 7, 2015 at 2:17:35 PM PDT
> **To:** "'Eric Van Pelt'" <eric@vpcsonline.com>
> **Subject: RE: Substitution Request Building 1200 Solano College**
>
> Eric,
>
> Please find attached the completed substitution request form. Have a nice weekend.
>
> Best Regards,
>
> Tracy Holmes
> Sr. Project Administrator
> Protech Theatrical Services, Inc.

From: Eric Van Pelt [mailto:eric@vpcsonline.com]
Sent: Thursday, August 06, 2015 6:18 PM
To: tracy@protechlv.com
Subject: Substitution Request Building 1200 Solano College

Tracy,
Please fill out the attached substitution form for the design team to approve. Thanks.

Eric Van Pelt
Van Pelt Construction Services
Cell: 707-249-7863

Please consider the environment before printing this email.

Theatre Equipment | Systems | Integration

July 30, 2015

Attention Theresa Paige, Project Architect
LPA Sacramento, Inc.
2484 Natomas Park Drive, Suite 100
Sacramento, CA 95833

RE: SOLANO COMMUNITY COLLEGE BLDG 1200 THEATER RENOVATION
SECOA SUBSTITUTION REQUESTS

Dear Ms. Paige:

Attached are two Substitution Requests – one for ***Section 116133 Production Rigging*** and the other for ***Section 116183 – Production Lighting Control*** for the Solano Community College Theater Renovation. For your review, I have also included information on SECOA, products and services.

SECOA is the nation's foremost integrator of theatre equipment and systems and offers unmatched expertise in the planning and construction of theatre spaces, from budgeting, scheduling and engineering right through to manufacturing and installation. As integrators, we understand the myriad systems in a performing arts space – rigging, lifts, lighting, orchestra shells and more - and how they interconnect. As a manufacturer of our own equipment, we are able to provide a competitively priced, quality guaranteed product.

Upon review of the information provided, if you conclude that **SECOA** is an *acceptable "Specialty Manufacturer/Supplier and Subcontractor,* please list **SECOA** by addendum. In addition, if you find our products acceptable, we would ask that you name **SECOA** in your master specifications for any future projects requiring theatrical equipment. Should you have any questions, please contact Jeff Jones at (763) 506-8838.

Thank you for your time and consideration of our Substitution Request.

Best Regards,

Senior Project Coordinator

www.secoa.com | 8650 109th Avenue North | Champlin, MN 55316-3789 | T: 800-328-5519 | F: 763-506-8844

Theatre Equipment | Systems | Integration

REQUEST FOR PRIOR APPROVAL FORM

TO: c/o Theresa Paige, Project Architect
LPA Sacramento, Inc. 2484 Natomas Park Drive, Suite 100, Sacramento, CA 95833

PROJECT: Solano Community College Bldg 1200 Theater Renovation (Increment 2)

For your consideration, we are proposing that you accept the following product as an "equal" to the product specified for the above project.

Section: Section 116133 Paragraph: Page 4-5, Paragraph 2.01 B-C

Specified Item: Production Rigging

Proposed Substitution: SECOA approved as a "Production Rigging Specialty Manufacturer and Supplier" to bid as an equal.

If applicable, we have attached technical data and drawings to support our Substitution Request. Include complete information on changes to Drawings and/or Specifications which the proposed substitution will require for proper installation. Fill in the blanks below:

A.	Does the substitution affect dimensions shown on Drawings?	Yes ____ No __X__
B.	Does the substitution affect other trades or the construction schedule?	Yes ____ No __X__
C.	Does the Manufacturer's guarantee differ from that specified?	Yes ____ No __X__
	If you indicated "YES" to Items A, B or C above, attach a thorough explanation on your company letterhead.	Yes ____ No __X__
D.	Will the undersigned pay for changes to the building design, including architectural, engineering and detailing costs caused by the requested substitution?	Yes ____ N/A __X__
E.	What effect does the substitution have on other trades?	None.
F.	Are there any major differences between the proposed substitution and specified item?	None: SECOA meets the intent of the specification.
G.	Manufacturer's guarantees of the proposed and specified items are:	Same __X__ Different ___

The undersigned states that the function, appearance and quality of the Proposed Substitution are equivalent, or superior, to the specified item.

Submitted by:

Date: July 30, 2015
Dawn McKenzie, Senior Project Coordinator
SECOA, Inc.
8650 109th Avenue North, Champlin, MN 55316-3789
Phone: (763) 506-8845; Fax: (763) 506-8844
Email: d.mckenzie@secoa.com

For Use by the Design Consultant

_____X_____Accepted
_____Accepted As Not
_____Not Accepted
_____Received Too Late

By: IDH- SHALLECK
Date: 7/30/2015
Remarks: _____

Theatre Equipment | Systems | Integration

REQUEST FOR PRIOR APPROVAL FORM

TO: c/o Theresa Paige, Project Architect
LPA Sacramento, Inc. 2484 Natomas Park Drive, Suite 100, Sacramento, CA 95833

PROJECT: Solano Community College Bldg 1200 Theater Renovation (Increment 2)

For your consideration, we are proposing that you accept the following product as an "equal" to the product specified for the above project.

Section: Section 116183 Paragraph: Page 4, Paragraph 2.01 A

Specified Item: Production Lighting Control

Proposed Substitution: SECOA pre-approved as a "Specialty Subcontractor" to bid this project.

If applicable, we have attached technical data and drawings to support our Substitution Request. Include complete information on changes to Drawings and/or Specifications which the proposed substitution will require for proper installation. Fill in the blanks below:

A.	Does the substitution affect dimensions shown on Drawings?	Yes ____ No __X__
B.	Does the substitution affect other trades or the construction schedule?	Yes ____ No __X__
C.	Does the Manufacturer's guarantee differ from that specified?	Yes ____ No __X__
	If you indicated "YES" to Items A, B or C above, attach a thorough explanation on your company letterhead.	Yes ____ No __X__
D.	Will the undersigned pay for changes to the building design, including architectural, engineering and detailing costs caused by the requested substitution?	Yes ____ N/A __X__
E.	What effect does the substitution have on other trades?	None.
F.	Are there any major differences between the proposed substitution and specified item?	None: SECOA meets the intent of the specification.
G.	Manufacturer's guarantees of the proposed and specified items are:	Same __X__ Different ___

The undersigned states that the function, appearance and quality of the Proposed Substitution are equivalent, or superior, to the specified item.

Submitted by:

Date: July 30, 2015
Dawn McKenzie, Senior Project Coordinator
SECOA, Inc.
8650 109th Avenue North, Champlin, MN 55316-3789
Phone: (763) 506-8845; Fax: (763) 506-8844
Email: d.mckenzie@secoa.com

For Use by the Design Consultant

X Accepted
_____ Accepted As Not
_____ Not Accepted
_____ Received Too Late

By: IDH- SHALLECK
Date: 7/30/2015
Remarks: _____

Solano College Bldg. 1200 Theater Renovation, Substitution Request 001

Bill Famini
2701 Del Paso Road, Suite 130,
Sacramento, CA 95835
P 916-900-8111
C 702-561-8163
F 916-256-3661
bfamini@conticorporation.com

7/29/15

[x] NO EXCEPTION TAKEN
[ ] MAKE CORRECTIONS NOTED [ ] SUBMIT SPECIFIED ITEM
[ ] REVISE AND RESUBMIT [ ] REJECTED

Checking is only for general conformance with the design concept of the project and general compliance with the information given in the contract documents. Any action shown is subject to the requirements of the plans and specifications. Contractor is responsible for dimensions which shall be confirmed and correlated at the job site, fabrication process and techniques of construction, coordination of his work with that of all other trades and satisfactory performance of his work.

LPAS, INC.
2484 Natomas Park Drive Ste. 100
Sacramento, California 95833

764-0002	Pre-bid Sub 001
PROJECT NO.	SUBMITTAL NO.
08/10/2015	Tom Hall
DATE	BY

Re Specialty Contractor Qualifications

1. Five years of financial reports
   - To be submitted
2. List of personnel who will be working on this Project, including skills, experience, and accreditations.
   - Bill Famini – Project Manager resume included
   - Dave Rowe – Project Superintendent resume included
   - Pete Truelson- Lead engineer resume included
3. List of union affiliations, contractor licenses, and other applicable trade certifications.
   - Conti Corporation is an IBEW Company
   - California State contractors license C7/C10 # 922558 Exp. 9/30/2016
   - BICSI certified
   - Please see resume's for trade certifications
4. List of projects,completed wlthin the past 5 years, with references. Provide phone and/or e-mail addresses for reference contacts

   Proof that at least 5 jobs in the past 5 years have a minimum contract value equal to or greater than the project listed herein
   - Project Name: North Las Vegas City Hall
     1. Contract Amount $2,252,868.70
     2. City/Client Contact North Las Vegas/Dave Sawyer
     3. Name,Email Ken Todd- toddk@cityofnorthlasvegas.com
   - Project: Name:Nashville Music City Center
     1. Contract Amount $4,777,000.00
     2. City/Client Contact Nashville/Eric Blouin
     3. Name,Email Eric Blouin eric.blouin@nashvillemcc.com
   - Project Name: Hacienda Heights Community Center
     1. Contract Amount $784,133.14
     2. City/Client Contact Hacienda Heights/Eric Chow
     3. Name,Email Brian Ceballos bceballos@park.lacounty.gov

Bill Famini
2701 Del Paso Road, Suite 130,
Sacramento, CA 95835
P 916-900-8111
C 702-561-8163
F 916-256-3661
bfamini@conticorporation.com

- Project Name: Downtown Grand Hotel and Casino
    1. Contract Amount $5,362,000.00
    2. Client Contact Breslin Builders 702 798 3977
    3. Name,Email CIM Group David McQuitty 323-860-4900

- Project Name: College of Sothern Nevada Smart Classrooms
    1. Contract Amount $1,115,591.0
    2. Client Contact Cheryl Felderman 702 651 7494

- Project Name: Yuba Community College
    1. Contract Amount $366,245.36
    2. City/Client Contact Marysville/George Parker
    3. Name,Email Jeff Rutledge jrutledg@yccd.edu
- Proof of bonding and insurance
    1. included

Sincerely,

Bill Famini

BILL FAMINI

Project Manager

PROFESIONAL QUALIFICATIONS

- *Project Manager for over 20 years for multiple Audio Video Systems Installations.*
- *Over 18 years in the Casino Industry on A/V Operations and Installations.*
- *28+ year's experience as a Front of House and Monitor Audio Engineer.*
- *System Design Build include: Sound Reinforcement Systems/Video Systems & Video Conferencing Systems for Race & Sports Book, Board Rooms, Restraints, Nite Clubs, Theaters and Arena's*
- *Programmer for BSS London, Media Matrix, BiAmp, Symetrix various audio software programs*
- *Produce Crestron Interface for Audio Video Equipment.*
- *Interpret/Supply Construction Drawings, Blue Prints and AutoCAD.*
- *Calculate Project Costs, Labor, Schedule and Equipment.*
- *Excellent Computer Skills.*
- *Extensive knowledge of Audio Video Systems.*
- *Commission and Train personnel on Audio/Video Systems.*
- *Relationship with several Equipment Manufactures and Vendors*
- *Certified: CTS, HiQNet. D& B Audiotechnik Remote network and Line array workshop*
- *Crestron DME Certified*

PROFESSIONAL EXPERIENCE

A/V PROJECT MANAGER- CONTI TECHNOLOGIES, 2008- PRESENT

- *Job Functions Include-Onsite Management, Programming, Commissioning, Training, Budgeting, Ordering of Material/Equipment and Estimating.*
- *Manage the Low Voltage Installation not limited to but include Audio Visual,Tel/Data and Surveillance*
- *Works well with Contractors to ensure the Project stays on task and appropriate design guidelines are adhered to.*
- *Suggest V/E changes to the Consultant, Property and Contractor to ensure the most cost effective solution is installed with the latest technology.*

A/V Project Manager - MGM Grand Hotel, 1994-2008

- *Manage Design, Installation and Programming of A/V Systems throughout MGM Hotel Properties. .*
- *Audio Engineer for various recording artist*

PRODUCTION MANAGER- Bill Medley (Righteous Brothers), 1996-Present

- *Front of House Engineer*
- *Production manager for Artist*
- *Engineer on Digital and Analog Mixing Boards.*

INDEPENDENT CONTRACTOR- South Point Casino, 2006, 2007/Coast Casinos, 2002-2006

- *Engineer Monitors and Front Of House*
- *Consult for purchase of A/V Equipment*

REFERENCES AND COMPLETED PROJECTS

Music City Center, Nashville TN

- *Project Manage Low Voltage Systems Installation*
- *Programmer for A/V System*
- *Commission A/V System and Train Staff*

OMNI Hotel, Nashville TN

- *Project Manage Low Voltage Systems Installation*
- *Programmer for A/V System*
- *Commission A/V System & Train Staff*

North Las Vegas City Hall

- *Project Manage A/V System Installation*
- *Programmer for A/V System*
- *21 Independent Crestron/DSP AV system*
- *Commission A/V System and Train City Personnel*

City of Henderson-Senior Center/Aquatic Center

- *Project Manage A/V System Installation*
- *Programmer for A/V System*
- *Commission A/V System and Train City of Henderson Personnel*

Planet Hollywood-Westgate Tower and Convention Space

- *Design/Assist A/V Installation*
- *Project Manage A/V System Installation*
- *Programmer for A/V System*
- *Commission A/V System and Train Westgate Personnel*

V'Dara- Tower and Convention Space

- *Project Manage A/V System Installation*

Hard Rock Hotel:

Joint Theater

- *Project Manage A/V System Installation*
- *Programmer for A/V System*

Joint Convention Meeting Room

- *Project Manage A/V System Installation*

Design Build Projects:

MGM GRAND:
Studio 54- Hollywood Theater- Tabu- Teatro- Show Bar Lounge- Witchcraft- Wolfgang Puck- Craftsteak- Diego- Emeril's- Fiamma- Rouge- 32 Degrees- Nobhill- Pearl- Centrifuge- Seablue- Shibuya- Xclusive- Zuri- Christophe Salon- Race & Sports Book- Poker- High Limit Slots- Portable Concert System for Arena and Conference Center- Mansions Remodel- Wet Republic- Vadra Sales Office

MGM GRAND- DETROIT CASINO-CONSTRUCTION:
Casino Floor-Restaurants-Convention-Boardrooms-Hotel Suites

NEW YORK NEW YORK CASINO RESORT:
Nine Fine Irishmen-Bar at Time Square-Cabaret Theater

MANDALAY BAY CASINO RESORT:
Strip Steak-Areole-Pool Remodel Phase 1 & 2, 3 & 4-Wedding Chapel-Ultra Sun Villa's- Pool Side Casino- Center Bar-Mix Remodel

EXCALIBUR CASINO RESORT:
Octane Bar-Race & Sports Book- Poker Room-Pool Remodel Phase 1 & 2

David Rowe

Senior Installation Technician (Field Foreman)

WORK EXPERIENCE

General Foreman
2008 – Present, Conti Technologies

North Las Vegas City Hall- General Foreman for Audio/Visual, Telecommunications, and Security Systems installation. The project included Multiple Conference Rooms, Training Rooms, & Council Chambers. This project included installation of over 20 individual Crestron DM Systems all working together on the same network. The Telecommunications System was a Systimax 10G Solution with Fiber Optic and Copper Backbone. This project also included indoor and outdoor CCTV cameras, access control system and IPTV.

City of Henderson Senior Center and Aquatic Center – General Foreman for Audio/Visual system installation. The project included a conference room, several recreation rooms, a multi-purpose room and a full aquatic center. Work included installation of all A/V components including head end racks, stand alone racks, rack build out, projection screens and projectors, Crestron devices, and all speakers.

City Center Vdara – Foreman for Security installation. Installed Audio/Visual, Telecommunications, CCTV, DAS, CATV, and Access Control Systems for the entire project.

- **Hard Rock Joint and Meeting Rooms** – General Foreman for Audio/Visual, Telecommunications, and Security systems installation. Project included a large Theater/Concert hall, Bar, multiple Meeting Rooms and Employee Offices. Project included a large underground Fiber Optic ring as well.

General Foreman
2007 - 2008, Cogent Electric

- **Westside Cannery Hotel and Casino –** General Foreman for Telecommunications, Security, and Audio/Visual systems installation.

General Foreman
1996 - 2007, Mojave Electric

- 2007 – ESPN Zone - General Foreman for Data, Voice, Security, and A/V system installation.
- 2006 – Playboy Club at the Palms Casino – General Foreman for A/V system installation.
- 1999 – Nascar Café at Sahara Hotel - General Foreman for A/V system installation.
- 1998 – Sunset Hotel and Casino - General Foreman for A/V system installation.
- 1996 – Cashman Field Baseball Stadium - General Foreman for A/V system installation.

PETE TRUELSON

LEAD ENGINEER

SUMMARY

- Skilled Project Manager & Engineer with over 15 years of experience in audio/video systems integration.
- Ability to work within deadlines and budgets to successfully complete large integration projects.
- Extensive knowledge of audio/video systems with training in control system and DSP programming.

EXPERIENCES

Conti Corporation 2011 — Present

Senior Project Manager

- Management of large commercial and residential audio/video integration projects throughout the United States.
- Programming and engineering of control, DSP and networking systems for large convention spaces, hotel suites, and hospitality common areas.
- Management of ongoing Service and Maintenance contracts for previously installed audio/video systems.

ISD Tech Group 2008 — 2011

Project Manager

- Management of large commercial audio/video integration projects in the Las Vegas market.
- Programming and engineering of control, DSP and networking systems for large Casino and Hospitality projects.

Venetian Resort & Casino 2006 — 2008

Assistant Project Manager for A/V

- Project Management and Crestron programming of the audio/video systems installed throughout the Palazzo Tower and Casino.
- Ongoing maintenance and repair and upgrades of the audio/video systems located throughout the Venetian Resort & Casino.

Abbott's Audio & Video 2001 — 2006

Systems Technician/ Programmer

- Installation and programming of integrated audio/video systems in luxury residences located in the Las Vegas Valley.
- Customer interfacing, troubleshooting, and service of audio/video systems.

CERTIFICATIONS

- **Crestron DMC E**
- **Crestron Essentials**
- **Crestron Intermediate**
- **Panasonic IP Networking**
- **Panasonic TDA 50G Technician**
- **Speakercraft Mode**
- **Linn KNEKT**
- **Runco Academy**

KEY COMPLETED PROJECTS

- **M Resort & Casino**
- **MGM Mirage Villas**
- **Venetian Palazzo Tower & Casino**
- **Wynn Encore Suites**
- **Winstar Hotel & Casino**
- **Various Large Residential Projects**

Aon Surety
David J. Roth
Director

Re: Surety Prequalification – Conti Corporation

To Whom It May Concern:

As the exclusive surety broker for the Conti Corporation, Aon Risk Services is pleased to confirm the excellent relationship between the Conti Corporation and the Fidelity and Deposit Company of Maryland (Zurich). The Fidelity and Deposit Company of Maryland (Zurich), with an A.M. Best rating of "A" and listed in the U.S. Treasury Department Circular 570, provides bid, performance and payment bonds for the Conti Corporation.

Fidelity and Deposit Company of Maryland (Zurich) is prepared to extend their support on single projects of 50,000,000 with aggregate capacity of $200,000,000. This credit facility is a testament to the character, capacity and capital of the Conti organization. The ability of Fidelity and Deposit Company of Maryland (Zurich) to provide the required bonds, at the request of our client, the Conti Corporation, is conditioned on the contract terms and conditions, bond forms, appropriate contract funding and any other underwriting considerations at the time of the request meeting normal underwriting expectations.

Consideration and issuance of bonds is a matter solely between the Conti Corporation and Fidelity and Deposit Company of Maryland (Zurich), and we assume no liability to third parties or to you by the issuance of this letter.

If needed Aon will provide whatever additional information you may require in regards to Conti's surety relationship. Please contact me at my direct phone number of 312-381-4478.

Sincerely,

David J. Roth
Director

Aon Risk Services Central, Inc.
200 East Randolph • 12th Floor • Chicago, IL. 60601
tel: 312.381.4478 • cel: 312.806.4478 • David.Roth@aon.com

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 06/30/2014

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME:	
Aon Risk Services Central, Inc. Southfield MI Office 3000 Town Center, Suite 3000 Southfield MI 48375	PHONE (A/C, No, Ext): 866-283-7122	FAX (A/C, No): 800-363-0105
	E-MAIL ADDRESS:	

INSURED	INSURER(S) AFFORDING COVERAGE	NAIC #
Conti Corporation 6417 Center Drive Sterling Heights MI 48312	INSURER A : National Union Fire Ins Co	19445
	INSURER B : New Hampshire Ins Co	23841
	INSURER C :	
	INSURER D :	
	INSURER E :	
	INSURER F :	

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	GENERAL LIABILITY [X] COMMERCIAL GENERAL LIABILITY [ ] CLAIMS-MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: [ ] POLICY [X] PRO-JECT [X] LOC			GL 5388344	07/01/2014	07/01/2015	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 1,000,000 $ 100,000 $ 10,000 $ 1,000,000 $ 2,000,000 $ 2,000,000
A	AUTOMOBILE LIABILITY [X] ANY AUTO [ ] ALL OWNED AUTOS [ ] SCHEDULED AUTOS [ ] HIRED AUTOS [ ] NON-OWNED AUTOS			CA 5101710	07/01/2014	07/01/2015	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 1,000,000 $ $ $
A	[X] UMBRELLA LIAB [X] OCCUR EXCESS LIAB [ ] CLAIMS-MADE [ ] DED [ ] RETENTION $			29157258	07/01/2014	07/01/2015	EACH OCCURRENCE AGGREGATE	$ 2,000,000 $ 2,000,000
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICE/MEMBER EXCLUDED? Y/N [N] (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N/A		WC 034157362	07/01/2014	07/01/2015	[X] WC STATU-TORY LIMITS [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ 1,000,000 $ 1,000,000 $ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

CERTIFICATE HOLDER

EVIDENCE OF COVERAGE
Conti Corporation
6417 Center Drive
Sterling Heights MI 48310

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Aon Risk Services Central Inc.