Rio Grande Depot Seismic Retrofit

Project Manual

270 South Rio Grande Street

Salt Lake City, Utah 84101

October 3, 2022	**Demolition Bid Package 1**
DFCM Project #	**20229080**
CRSA Project #	**21-031**

CRSA

ARCHITECTURE
PLANNING
INTERIORS

649 E SOUTH TEMPLE
SALT LAKE CITY, UT 84102
801.355.5915
www.crsa-us.com

REAVELEY
Engineers

SPECTRUM
ENGINEERS

COLVIN
ENGINEERING
ASSOCIATES

BLANK PAGE

TABLE OF CONTENTS

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS

003100 AVAILABLE PRO ECT INFORMATION

005000 CONTRACTING FORMS AND SUPPLEMENTS

DIVISION 01 - GENERAL REQUIREMENTS

011000 SUMMARY

012100 ALLOWANCES

012200 UNIT PRICES

012500 SUBSTITUTION PROCEDURES

013000 ADMINISTRATIVE REQUIREMENTS

013216 CONSTRUCTION PROGRESS SCHEDULE

013233 PHOTOGRAPHIC DOCUMENTATION

013591 HISTORIC TREATMENT PROCEDURES

014000 QUALITY REQUIREMENTS

015000 TEMPORARY FACILITIES AND CONTROLS

017419 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

DIVISION 02 - EXISTING CONDITIONS

020342 REMOVAL AND SALVAGE OF PERIOD CONSTRUCTION MATERIALS

024119 SELECTIVE DEMOLITION

024296 HISTORIC REMOVAL AND DISMANTLING

APPENDIX A – DFCM HA□MAT

SECTION 011000
SUMMARY

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section Includes:
   1. Project information.
   2. Work covered by Contract Documents.
   3. Phased construction.
   4. Work performed by Owner.
   5. Multiple Work Packages.
   6. Work under Owner's separate contracts.
   7. Future work not part of this Project.
   8. Owner's product purchase contracts.
   9. Owner-furnished Contractor-installed (OFCI) products.
   10. Owner-furnished Owner-installed (OFOI) products.
   11. Contractor-furnished Owner-installed (CFOI) products.
   12. Contractor's use of site and premises.
   13. Coordination with occupants.
   14. Work restrictions.
   15. Specification and Drawing conventions.
   16. Miscellaneous provisions.

B. Related Requirements:
   1. Section 015000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.03 DEFINITIONS

A. Work Package: A group of specifications, drawings, and schedules prepared by the design team to describe a portion of the Project Work for pricing, permitting, and construction.

1.04 PRO ECT INFORMATION

A. Project Identification: Rio Grande Depot Seismic Retrofit, DFCM # 20229080.
   1. Phase 1: Design Development Demolition Bid Package 1
   2. Project Location: 270 South Rio Grande Street, Salt Lake City, UT 84101.

B. Owner: State of Utah.
   1. Owner's Representative: Ashley J Greenwood, DFCM, Project Manager, 385-522-9196, ajgreenwood utah.gov.

C. Architect: CRSA, 175 South Main Street, ste #300, Salt Lake City, UT 84111, 801-355-5915.
   1. Architect's Representative: ach Heslop, 801-746-6820, john crsa-us.com, Kenneth E Wheadon, 801-746-4979, ken crsa-us.com.

D. Architect's Consultants: Architect has retained the following design professionals, who have prepared designated portions of the Contract Documents:
   1. Consulting Preservation Architect:
      a. Representative: John Ewanowski, 1-608-333-2133, ewanowski gmail.com.
   2. Structural Engineer: Reaveley Engineering.
      a. Representative: Austin Guter, 801-4863892, aguter reaveley.com.
   3. Mechanical Engineer: Colvin Engineers.
      a. Representative: Steve Connor, 801-322-2400, sconnor cea-ut.com
   4. Electrical Engineer: Spectrum Engineers.
      a. Representative: Michael C. Fackrell, 801-401-8447, mcf spectrum-engineers.com .

5. Interior Design: CRSA.
    a. Representative: Elaine Jones, 801-746-6831, elaine crsa-us.com .

E. Other Owner Consultants: Owner has retained the following design professionals who have prepared designated portions of the Contract Documents:

F. Web-Based Project Software: Project software will be used for purposes of managing communication and documents during the construction stage.
    1. See Section 013100 "Project Management and Coordination." for requirements for using web-based Project software.

1.05 WOR COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents and includes, but is not limited to, the following:
    1. Scope of this bid package contains the salvage and storage of historic materials and items. Selective demolition for ease of access for work to be performed by owner's consultant and other Work indicated in the Contract Documents.

B. Type of Contract:
    1. Project will be constructed under a single prime contract.

1.06 WOR PERFORMED BY OWNER

A. Cooperate fully with Owner, so work may be carried out smoothly, without interfering with or delaying Work under this Contract or work by Owner. Coordinate the Work of this Contract with work performed by Owner.

B. Preceding Work: Owner will perform the following construction operations at Project site. Those operations are scheduled to be substantially complete before Work under this Contract begins.
    1. Relocate exterior miscellaneous items within the contract limit line.

C. Subsequent Work: Owner will perform the following additional work at site after Substantial Completion. Completion of that work will depend on successful completion of preparatory Work under this Contract.
    1. n a.

1.07 OWNER S PRODUCT PURCHASE CONTRACTS

A. Owner has negotiated Product Purchase contracts with suppliers of material and equipment to be incorporated into the Work. Owner will assign these Product Purchase contracts to Contractor. Include costs for purchasing, receiving, handling, storage if required, and installation of material and equipment in the Contract Sum unless otherwise indicated.
    1. Contractor's responsibilities are same as if Contractor had negotiated Product Purchase contracts, including responsibility to renegotiate purchase and to execute final purchasing agreements.

1.08 OWNER-FURNISHED/CONTRACTOR-INSTALLED (OFCI) PRODUCTS

A. Owner's Responsibilities: Owner will furnish products indicated and perform the following, as applicable:
    1. Provide to Contractor Owner-reviewed Product Data, Shop Drawings, and Samples.
    2. Provide for delivery of Owner-furnished products to Project site.
    3. Upon delivery, inspect, with Contractor present, delivered items.
        a. If Owner-furnished products are damaged, defective, or missing, arrange for replacement.
    4. Obtain manufacturer's inspections, service, and warranties.
    5. Inform Contractor of earliest available delivery date for Owner-furnished products.

B. Contractor's Responsibilities: The Work includes the following, as applicable:
    1. Designate delivery dates of Owner-furnished products in Contractor's construction schedule, utilizing Owner-furnished earliest available delivery dates.
    2. Review Owner-reviewed Product Data, Shop Drawings, and Samples, noting discrepancies and other issues in providing for Owner-furnished products in the Work.
    3. Receive, unload, handle, store, protect, and install Owner-furnished products.

4. Make building services connections for Owner-furnished products.
5. Protect Owner-furnished products from damage during storage, handling, and installation and prior to Substantial Completion.
6. Repair or replace Owner-furnished products damaged following receipt.

C. Owner-Furnished Contractor-Installed (OFCI) Products:
1. n a.

1.09 OWNER-FURNISHED/OWNER-INSTALLED (OFOI) PRODUCTS

A. The Owner will furnish and install products indicated.

B. Owner-Furnished Owner-Installed (OFOI) Products:
1. n a.

1.10 CONTRACTOR-FURNISHED/OWNER-INSTALLED (CFOI) PRODUCTS

A. Contractor shall furnish products indicated. The Work includes unloading, handling, storing, and protecting Contractor-furnished products as directed and turning them over to Owner at Project closeout.

B. Contractor-Furnished Owner-Installed (CFOI) Products:
1. N A.

1.11 CONTRACTOR S USE OF SITE AND PREMISES

A. Unrestricted Use of Site: Contractor shall have full use of Project site for construction operations during construction period. Contractor's use of Project site is limited only by Owner's right to perform work or to retain other contractors on portions of Project.

B. Limits on Use of Site: Limit use of Project site to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
1. Limits on Use of Site: Confine construction operations to access drive and immediate area around the carriage house.
2. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or for storage of materials.
   a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
   b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.

D. Condition of Existing Grounds: Maintain portions of existing grounds, landscaping, and hardscaping affected by construction operations throughout construction period. Repair damage caused by construction operations.

1.12 COORDINATION WITH OCCUPANTS

A. Owner does occupy parts of the building currently for the removal of archived items. Coordinate with facility manager, representative of the Department of Cultural & Community Engagement and representative of the State Archives.

1.13 WOR RESTRICTIONS

A. Comply with restrictions on construction operations.
1. Comply with limitations on use of public streets, work on public streets, rights of way, and other requirements of authorities having jurisdiction.

B. On-Site Work Hours: Limit work to between 7:00 a.m. to 7:00 p.m., Monday through Friday, unless otherwise indicated. Work hours may be modified to meet Project requirements if approved by Owner and authorities having jurisdiction.
1. Weekend Hours: Same as weekday unless the grounds are occupied by other activities.

2. Early Morning Hours: Reference DFCM for regulations by authorities having jurisdiction for restrictions on noisy work.
3. Work in Existing Building: Same as weekday or weekend hours.
4. Hours for Utility Shutdowns: No restrictions, notify owner prior to shutdowns 24 hours prior to implementation.
5. Hours for Core Drilling 7:00 a.m. to 7:00 p.m. .

C. On-Site Work Day Restrictions: Do not perform work resulting in utility shutdowns or resulting in noisy activity on-site during work black-out days indicated in Document 003113 "Preliminary Schedules."

D. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging for temporary utility services according to requirements indicated:
1. Notify Architect and Owner not less than two days in advance of proposed utility interruptions.
2. Obtain Owner's written permission before proceeding with utility interruptions.

E. Noise, Vibration, Dust, and Odors: Coordinate operations that may result in high levels of noise and vibration, dust, odors, or other disruption to Owner occupancy with Owner.
1. Notify Architect and Owner not less than two days in advance of proposed disruptive operations.
2. Obtain Owner's written permission before proceeding with disruptive operations.

F. Smoking and Controlled Substance Restrictions: Use of tobacco products, alcoholic beverages, and other controlled substances within the existing building and on Project site is not permitted.

G. Employee Identification: Provide identification tags for Contractor personnel working on Project site. Require personnel to use identification tags at all times.

H. Employee Screening: Comply with Owner's requirements for drug and background screening of Contractor personnel working on Project site.
1. Maintain list of approved screened personnel with Owner's representative.

1.14 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
2. Text Color: Text used in the Specifications, including units of measure, manufacturer and product names, and other text may appear in multiple colors or underlined as part of a hyperlink; no emphasis is implied by text with these characteristics.
3. Hypertext: Text used in the Specifications may contain hyperlinks. Hyperlinks may allow for access to linked information that is not residing in the Specifications. Unless otherwise indicated, linked information is not part of the Contract Documents.
4. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

B. Division 00 Contracting Requirements: General provisions of the Contract, including General and Supplementary Conditions, apply to all Sections of the Specifications.

C. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

D. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.

2. Abbreviations: Materials and products are identified by abbreviations scheduled on Drawings.
3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION 011000

This page intentionally left blank

SECTION 012100
ALLOWANCES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Contingency allowance.

B. Payment and modification procedures relating to allowances.

1.02 RELATED REQUIREMENTS

A. Section 012000 - Price and Payment Procedures: Additional payment and modification procedures.

1.03 CONTINGENCY ALLOWANCE

A. Contractor's costs for products, delivery, installation, labor, insurance, payroll, taxes, bonding, equipment rental, overhead and profit will be included in Change Orders authorizing expenditure of funds from this Contingency Allowance.

B. Funds will be drawn from the Contingency Allowance only by Change Order.

C. At closeout of Contract, funds remaining in Contingency Allowance will be credited to Owner by Change Order.

1.04 ALLOWANCES SCHEDULE

1.05 ITEM TO INCLUDE IN ALLOWANCE

A. Section - : Include the stipulated sum of [ ] for purchase and delivery of [ ].

B. Section - : Include the stipulated sum of [ ] for purchase and delivery of [ ].

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION 012100

This page intentionally left blank

SECTION 012200
UNIT PRICES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. List of unit prices, for use in preparing Bids.

1.02 RELATED REQUIREMENTS

A. Section 012000 - Price and Payment Procedures: Additional payment and modification procedures.

1.03 COSTS INCLUDED

1.04 UNIT QUANTITIES SPECIFIED

1.05 MEASUREMENT OF QUANTITIES

A. Measurement methods delineated in the individual specification sections complement the criteria of this section. In the event of conflict, the requirements of the individual specification section govern.

B. Assist by providing necessary equipment, workers, and survey personnel as required.

C. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness.

D. Measurement by Area: Measured by square dimension using mean length and width or radius.

1.06 PAYMENT

A. Payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities of Work that is incorporated in or made necessary by the Work and accepted by the Architect, multiplied by the unit price.

1.07 SCHEDULE OF UNIT PRICES *NEED TO AGREED ON A LIST.*

A. Item: [ ]; Section [ ].

B. Item: [ ]; Section [ ].

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION 012200

This page intentionally left blank

SECTION 012500
SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Procedural requirements for proposed substitutions.

1.02 DEFINITIONS

A. Substitutions: Changes from Contract Documents requirements proposed by Contractor to materials, products, assemblies, and equipment.
   1. Substitutions for Cause: Proposed due to changed Project circumstances beyond Contractor's control.
      a. Unavailability.
   2. Substitutions for Convenience: Proposed due to possibility of offering substantial advantage to the Project.
      a. Substitution requests offering advantages solely to the Contractor will not be considered.

1.03 REFERENCE STANDARDS

A. CSI CSC Form 1.5C - Substitution Request (During the Bidding Negotiating Stage) Current Edition.

B. CSI CSC Form 13.1A - Substitution Request (After the Bidding Negotiating Phase) Current Edition.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

A. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:
   1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
   2. Agrees to provide the same warranty for the substitution as for the specified product.
   3. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
   4. Waives claims for additional costs or time extension that may subsequently become apparent.

B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.

C. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.
   1. Forms indicated in the Project Manual are adequate for this purpose, and must be used.

D. Limit each request to a single proposed substitution item.

3.02 SUBSTITUTION PROCEDURES DURING PROCUREMENT

A. Submittal Time Restrictions:
   1. Owner will consider requests for substitutions only if submitted at least 10 days prior to the date for receipt of bids.

B. Submittal Form (before award of contract):
   1. Submit substitution requests by completing CSI CSC Form 1.5C - Substitution Request. See this form for additional information and instructions. Use only this form; other forms of submission are unacceptable.

3.03 SUBSTITUTION PROCEDURES DURING CONSTRUCTION

A. Submittal Form (after award of contract):

1. Submit substitution requests by completing CSI CSC Form 13.1A - Substitution Request (After Bidding Negotiating). See this form for additional information and instructions. Use only this form; other forms of submission are unacceptable.

B. Architect will consider requests for substitutions only within 15 days after date of Agreement.

C. Submit request for Substitution for Cause within 14 days of discovery of need for substitution, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.

D. Submit request for Substitution for Convenience immediately upon discovery of its potential advantage to the project, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.
   1. In addition to meeting general documentation requirements, document how the requested substitution benefits the Owner through cost savings, time savings, greater energy conservation, or in other specific ways.
   2. Document means of coordinating of substitution item with other portions of the work, including work by affected subcontractors.
   3. Bear the costs engendered by proposed substitution of:
      a. Owner's compensation to the Architect for any required redesign, time spent processing and evaluating the request.

E. Substitutions will not be considered under one or more of the following circumstances:
   1. When they are indicated or implied on shop drawing or product data submittals, without having received prior approval.
   2. When acceptance will require revisions to Contract Documents.

3.04 RESOLUTION

3.05 ACCEPTANCE

3.06 CLOSEOUT ACTIVITIES

END OF SECTION 012500

SECTION 013000
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General administrative requirements.

B. Electronic document submittal service.

C. Preconstruction meeting.

D. Coordination drawings.

E. Submittals for review, information, and project closeout.

F. Number of copies of submittals.

G. Requests for Interpretation (RFI) procedures.

H. Submittal procedures.

1.02 RELATED REQUIREMENTS

A. Owner provided General and Supplementary Conditions.

1.03 PRO ECT COORDINATOR

A. Project Coordinator: Construction Manager.

B. Cooperate with the Project Coordinator in allocation of mobilization areas of site; for field offices and sheds, for [ ] access, traffic, and parking facilities.

C. During construction, coordinate use of site and facilities through the Project Coordinator.

D. Comply with Project Coordinator's procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.

E. Comply with instructions of the Project Coordinator for use of temporary utilities and construction facilities. Responsibility for providing temporary utilities and construction facilities is identified in Section 011000 - Summary.

F. Coordinate field engineering and layout work under instructions of the Project Coordinator.

G. Make the following types of submittals to Architect through the Project Coordinator:
   1. Requests for Interpretation.
   2. Requests for substitution.
   3. Shop drawings, product data, and samples.
   4. Manufacturer's instructions and field reports.
   5. Applications for payment and change order requests.
   6. Progress schedules.
   7. Coordination drawings.
   8. Correction Punch List and Final Correction Punch List for Substantial Completion.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 ELECTRONIC DOCUMENT SUBMITTAL SERVICE

A. All documents transmitted for purposes of administration of the contract are to be in electronic (PDF, MS Word, or MS Excel) format, as appropriate to the document, and transmitted via an Internet-based submittal service that receives, logs and stores documents, provides electronic stamping and signatures, and notifies addressees via email.
   1. Besides submittals for review, information, and closeout, this procedure applies to Requests for Interpretation (RFIs), progress documentation, contract modification documents (e.g. supplementary instructions, change proposals, change orders), applications for payment, field reports and meeting minutes, Contractor's correction punchlist, and any other document any participant wishes to make part of the project

record.
2. Contractor and Architect are required to use this service.
3. It is Contractor's responsibility to submit documents in allowable format.
4. Subcontractors, suppliers, and Architect's consultants will be permitted to use the service at no extra charge.
5. Users of the service need an email address, internet access, and PDF review software that includes ability to mark up and apply electronic stamps (such as Adobe Acrobat, www.adobe.com, or Bluebeam PDF Revu, www.bluebeam.com), unless such software capability is provided by the service provider.
6. Paper document transmittals will not be reviewed; emailed electronic documents will not be reviewed.
7. All other specified submittal and document transmission procedures apply, except that electronic document requirements do not apply to samples or color selection charts.

B. Submittal Service: The selected service is:

C. Training: One, one-hour, web-based training session will be arranged for all participants, with representatives of Architect and Contractor participating; further training is the responsibility of the user of the service.

D. Project Closeout: Architect will determine when to terminate the service for the project and is responsible for obtaining archive copies of files for Owner.

3.02 PRECONSTRUCTION MEETING

A. Project Coordinator will schedule a meeting after Notice of Award.

B. Attendance Required:
1. Owner.
2. Architect.
3. Contractor.

C. Agenda:
1. Execution of Owner-Contractor Agreement.
2. Submission of executed bonds and insurance certificates.
3. Distribution of Contract Documents.
4. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.
5. Designation of personnel representing the parties to Contract, [ ] and Architect.
6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
7. Scheduling.

D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.03 COORDINATION DRAWINGS

3.04 REQUESTS FOR INTERPRETATION (RFI)

A. Definition: A request seeking one of the following:
1. An interpretation, amplification, or clarification of some requirement of Contract Documents arising from inability to determine from them the exact material, process, or system to be installed; or when the elements of construction are required to occupy the same space (interference); or when an item of work is described differently at more than one place in Contract Documents.
2. A resolution to an issue which has arisen due to field conditions and affects design intent.

B. Whenever possible, request clarifications at the next appropriate project progress meeting, with response entered into meeting minutes, rendering unnecessary the issuance of a formal RFI.

3.05 SUBMITTALS FOR REVIEW

A. When the following are specified in individual sections, submit them for review:
1. Product data.

2. Shop drawings.
3. Samples for selection.
4. Samples for verification.

B. Submit to Architect for review for the limited purpose of checking for compliance with information given and the design concept expressed in Contract Documents.

C. Samples will be reviewed for aesthetic, color, or finish selection.

D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 017800 - Closeout Submittals.

3.06 SUBMITTALS FOR INFORMATION

A. When the following are specified in individual sections, submit them for information:
1. Design data.
2. Certificates.
3. Test reports.
4. Inspection reports.
5. Manufacturer's instructions.
6. Manufacturer's field reports.
7. Other types indicated.

B. Submit for Architect's knowledge as contract administrator or for Owner.

3.07 SUBMITTALS FOR PRO ECT CLOSEOUT

A. Submit Correction Punch List for Substantial Completion.

B. Submit Final Correction Punch List for Substantial Completion.

C. When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 017800 - Closeout Submittals:
1. Project record documents.
2. Operation and maintenance data.
3. Warranties.
4. Bonds.
5. Other types as indicated.

D. Submit for Owner's benefit during and after project completion.

3.08 NUMBER OF COPIES OF SUBMITTALS

A. Electronic Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.

B. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect.
1. After review, produce duplicates.
2. Retained samples will not be returned to Contractor unless specifically so stated.

3.09 SUBMITTAL PROCEDURES

A. General Requirements:

END OF SECTION 013000

This page intentionally left blank

SECTION 013216
CONSTRUCTION PROGRESS SCHEDULE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Preliminary schedule.

B. Construction progress schedule, bar chart type.

1.02 RELATED SECTIONS

A. Section 011000 - Summary: Work sequence.

1.03 SUBMITTALS

A. Within 10 days after date of Agreement, submit preliminary schedule.

B. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.
   1. Include written certification that major contractors have reviewed and accepted proposed schedule.

C. Submit updated schedule with each Application for Payment.

D. Submit in PDF format.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PRELIMINARY SCHEDULE

A. Prepare preliminary schedule in the form of a horizontal bar chart.

3.02 CONTENT

A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.

B. Identify each item by specification section number.

C. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.

D. Provide legend for symbols and abbreviations used.

3.03 BAR CHARTS

A. Include a separate bar for each major portion of Work or operation.

B. Identify the first work day of each week.

3.04 NETWOR ANALYSIS

A. Prepare network analysis diagrams and supporting mathematical analyses using the Critical Path Method.

B. Illustrate order and interdependence of activities and sequence of work; how start of a given activity depends on completion of preceding activities, and how completion of the activity may restrain start of subsequent activities.

C. Mathematical Analysis: Tabulate each activity of detailed network diagrams, using calendar dates, and identify for each activity:
   1. Preceding and following event numbers.
   2. Activity description.
   3. Estimated duration of activity, in maximum 15 day intervals.
   4. Earliest start date.
   5. Earliest finish date.
   6. Actual start date.
   7. Actual finish date.
   8. Latest start date.

9. Latest finish date.
10. Total and free float; float time shall accrue to Owner and to Owner's benefit.
11. Monetary value of activity, keyed to Schedule of Values.
12. Percentage of activity completed.
13. Responsibility.

D. Analysis Program: Capable of compiling monetary value of completed and partially completed activities, accepting revised completion dates, and recomputation of all dates and float.

E. Required Reports: List activities in sorts or groups:
1. By preceding work item or event number from lowest to highest.
2. By amount of float, then in order of early start.

3.05 UPDATING SCHEDULE

A. Maintain schedules to record actual start and finish dates of completed activities.

B. Indicate progress of each activity to date of revision, with projected completion date of each activity.

C. Annotate diagrams to graphically depict current status of Work.

D. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.

E. Indicate changes required to maintain Date of Substantial Completion.

F. Submit reports required to support recommended changes.

3.06 DISTRIBUTION OF SCHEDULE

A. Distribute copies of updated schedules to Contractor's project site file, to subcontractors, suppliers, Architect, Owner, and other concerned parties.

B. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.

END OF SECTION 013216

SECTION 013233
PHOTOGRAPHIC DOCUMENTATION

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section includes administrative and procedural requirements for the following:
   1. Preconstruction photographs.
   2. Concealed Work photographs.
   3. Periodic construction photographs.
   4. Final Completion construction photographs.

B. Related Requirements:
   1. Section 024119 "Selective Demolition" for photographic documentation before selective demolition operations commence.
   2. Section 024296 “Historic Removal and Dismantling" for photographic documentation before building demolition operations commence.

1.03 INFORMATIONAL SUBMITTALS

A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.

B. Digital Photographs: Submit image files within three days of taking photographs.
   1. Submit photos by uploading to web-based Project management software site. Include copy of key plan indicating each photograph's location and direction.
   2. Identification: Provide the following information with each image description in web-based Project management software site:
      a. Name of Project.
      b. Name and contact information for photographer.
      c. Name of Architect.
      d. Name of Contractor.
      e. Date photograph was taken.
      f. Description of location, vantage point, and direction.
      g. Unique sequential identifier keyed to accompanying key plan.

1.04 QUALITY ASSURANCE

A. Photographer Qualifications: An individual who has been regularly engaged as a professional photographer of construction projects for not less than three years.

1.05 FORMATS AND MEDIA

A. Digital Photographs: Provide color images in JPG format, produced by a digital camera with minimum sensor size of 12 megapixels, and at an image resolution of not less than 3200 by 2400 pixels, and with vibration-reduction technology. Use flash in low light levels or backlit conditions.

B. Digital Images: Submit digital media as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.

C. Metadata: Record accurate date and time from camera.

D. File Names: Name media files with date and sequential numbering suffix.

1.06 CONSTRUCTION PHOTOGRAPHS

A. Photographer: Engage a qualified photographer (can be contractor superintendent or contractor project manager) to take construction photographs.

B. General: Take photographs with maximum depth of field and in focus.

1. Maintain key plan with each set of construction photographs that identifies each photographic location.

C. Preconstruction Photographs: Before commencement of the Work, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Architect.
   1. Flag construction limits before taking construction photographs.
   2. Take 20 photographs to show existing conditions adjacent to property before starting the Work.
   3. Take 20 photographs of existing buildings either on or adjoining property, to accurately record physical conditions at start of construction.
   4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.

D. Concealed Work Photographs: Before proceeding with installing work that will conceal other work, take photographs sufficient in number, with annotated descriptions, to record nature and location of concealed Work, including, but not limited to, the following:
   1. Underground utilities.
   2. Underslab services.
   3. Piping.
   4. Electrical conduit.
   5. Waterproofing and weather-resistant barriers.
   6. Unforeseen conditions.

E. Periodic Construction Photographs: Take 20 photographs weekly coinciding with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.

F. Final Completion Construction Photographs: Take 100 photographs after date of Substantial Completion for submission as Project Record Documents. Architect will inform photographer of desired vantage points.

G. Additional Photographs: Architect may request photographs in addition to periodic photographs specified. Additional photographs will be paid for by Change Order and are not included in the Contract Sum.
   1. Three days' notice will be given, where feasible.
   2. In emergency situations, take additional photographs within 24 hours of request.
   3. Circumstances that could require additional photographs include, but are not limited to, the following:
      a. Special events planned at Project site.
      b. Immediate follow-up when on-site events result in construction damage or losses.
      c. Photographs shall be taken at fabrication locations away from Project site. These photographs are not subject to unit prices or unit-cost allowances.
      d. Substantial Completion of a major phase or component of the Work.
      e. Extra record photographs at time of final acceptance.
      f. Owner's request for special publicity photographs.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION 013233

SECTION 013591
HISTORIC TREATMENT PROCEDURES

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section includes general protection and treatment procedures for designated historic spaces, areas, rooms, and surfaces in Project.

1.03 DEFINITIONS

A. Consolidate: To strengthen loose or deteriorated materials in place.

B. Design Reference Sample: A sample that represents Architect's pre-bid selection of work to be matched; it may be existing work or work specially produced for Project.

C. Dismantle: To disassemble or detach a historic item from a surface, or a non-historic item from a historic surface, using gentle methods and equipment to prevent damage to historic items and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

D. Historic: Spaces, areas, rooms, surfaces, materials, finishes, and overall appearance that are important to the successful rehabilitation and restoration as determined by Architect. Designated historic spaces, areas, rooms and surfaces are indicated on Drawings.
   1. Restoration ones Grade 1 Areas: Areas of greatest architectural importance, integrity, and visibility; to be preserved and restored to the original, circa 1893, design and finish as indicated on Drawings.
   2. Renovation ones Grade 2 Areas: Areas of significant architectural importance, integrity, and visibility; to be preserved and restored consistent with the remaining historic fabric and to the extent indicated on Drawings.
   3. Alteration ones Grade 3 Areas: Areas of slight architectural importance, integrity, and visibility; to leave any remaining original fabric untouched insofar as is consistent with accommodating modern uses for the building as indicated on Drawings.

E. Match: To blend with adjacent construction and manifest no apparent difference in material type, species, cut, form, detail, color, grain, texture, or finish; as approved by Architect.

F. Refinish: To remove existing finishes to base material and apply new finish to match original, or as otherwise indicated.

G. Reinstall: To protect removed or dismantled item, repair and clean it as indicated for reuse, and reinstall it in original position, or where indicated.

H. Remove: To take down or detach a non-historic item located within a historic space, area, or room, using methods and equipment to prevent damage to historic items and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

I. Repair: To correct damage and defects, retaining existing materials, features, and finishes while employing as little new material as possible. This includes patching, piecing-in, splicing, consolidating, or otherwise reinforcing or upgrading materials.

J. Replace: To remove, duplicate, and reinstall entire item with new material. The original item is the pattern for creating duplicates unless otherwise indicated.

K. Replicate: To reproduce in exact detail, materials, and finish unless otherwise indicated.

L. Reproduce: To fabricate a new item, accurate in detail to the original, and from either the same or a similar material as the original, unless otherwise indicated.

M. Restore: To consolidate, replicate, reproduce, repair, and refinish as required to achieve the indicated results.

N. Retain: To keep existing items that are not to be removed or dismantled.

O. Reversible: New construction work, treatments, or processes that can be removed or undone in the future without damaging historic materials unless otherwise indicated.

P. Salvage: To protect removed or dismantled items and deliver them to Owner ready for reuse.

Q. Stabilize: To provide structural reinforcement of unsafe or deteriorated items while maintaining the essential form as it exists at present; also, to reestablish a weather-resistant enclosure.

R. Strip: To remove existing finish down to base material unless otherwise indicated.

1.04 COORDINATION

A. Historic Treatment Sub-schedule: A construction schedule coordinating the sequencing and scheduling of historic treatment work for entire Project, including each activity to be performed in historic spaces, areas, and rooms, and on historic surfaces; and based on Contractor's Construction Schedule. Secure time commitments for performing critical construction activities from separate entities responsible for historic treatment work.
   1. Schedule construction operations in sequence required to obtain best historic treatment results.
   2. Coordinate sequence of historic treatment work activities to accommodate the following:
      a. Owner's continuing occupancy of portions of existing building.
      b. Owner's partial occupancy of completed Work.
      c. Other known work in progress.
      d. Tests and inspections.
   3. Detail sequence of historic treatment work, with start and end dates.
   4. Utility Services: Indicate how long utility services will be interrupted. Coordinate shutoff, capping, and continuation of utility services.
   5. Use of elevator and stairs.
   6. Equipment Data: List gross loaded weight, axle-load distribution, and wheel-base dimension data for mobile and heavy equipment proposed for use. Do not use such equipment without certification from Contractor's professional engineer that the structure can support the imposed loadings without damage.

B. Pedestrian and Vehicular Circulation: Coordinate historic treatment work with circulation patterns within Project building(s) and site. Some work is near circulation patterns and active Jordan River Trail. Circulation patterns cannot be closed off entirely, and in places can be only temporarily redirected around small areas of work. Plan and execute the Work accordingly.

1.05 PRO ECT MEETINGS FOR HISTORIC TREATMENT

A. Preliminary Historic Treatment Conference: Before starting historic treatment work, conduct conference at Project site.
   1. Attendees: In addition to representatives of Owner, Architect, and Contractor, testing service representative, historic treatment specialists, chemical-cleaner manufacturer(s), and installers whose work interfaces with or affects historic treatment shall be represented at the meeting.
   2. Agenda: Discuss items of significance that could affect progress of historic treatment work, including review of the following:
      a. Historic Treatment Sub-schedule: Discuss and finalize; verify availability of materials, historic treatment specialists' personnel, equipment, and facilities needed to make progress and avoid delays.
      b. Fire-prevention plan.
      c. Governing regulations.
      d. Areas where existing construction is to remain and the required protection.
      e. Hauling routes.
      f. Sequence of historic treatment work operations.
      g. Storage, protection, and accounting for salvaged and specially fabricated items.
      h. Existing conditions, staging, and structural loading limitations of areas where materials are stored.
      i. Qualifications of personnel assigned to historic treatment work and assigned duties.
      j. Requirements for extent and quality of work, tolerances, and required clearances.

k. Methods and procedures related to historic treatments, including product manufacturers' written instructions and precautions regarding historic treatment procedures and their effects on materials, components, and vegetation.
l. Embedded work such as flashings and lintels, special details, collection of wastes, protection of occupants and the public, and condition of other construction that affect the Work or will affect the work.

3. Reporting: Record conference results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from conference.

B. Coordination Meetings: Conduct specifically for historic treatment work at weekly intervals. Coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.
1. Attendees: In addition to representatives of Owner, Architect, and Contractor, each historic treatment specialist, supplier, installer, and other entity concerned with progress or involved in planning, coordination, or performance of historic treatment work activities shall be represented at these meetings. All participants at conference shall be familiar with Project and authorized to conclude matters relating to historic treatment work.
2. Agenda: Review and correct or approve minutes of previous coordination meeting. Review other items of significance that could affect progress of historic treatment work. Include topics for discussion as appropriate to status of Project.
a. Historic Treatment Sub-schedule: Review progress since last coordination meeting. Determine whether each schedule item is on time, ahead of schedule, or behind schedule. Determine how construction behind schedule will be expedited with retention of quality; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities are completed within the Contract Time.
b. Schedule Updating: Revise Contractor's Historic Treatment Sub-schedule after each coordination meeting where revisions to schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.
c. Review present and future needs of each entity present, including review items listed in the "Preliminary Historic Treatment Conference" Paragraph in this article and the following:
1) Interface requirements of historic treatment work with other Project Work.
2) Status of submittals for historic treatment work.
3) Access to historic treatment work.
4) Effectiveness of fire-prevention plan.
5) Quality and work standards of historic treatment work.
6) Change Orders for historic treatment work.
3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

1.06 MATERIALS OWNERSHIP

A. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to Owner that may be encountered or uncovered during the Work, regardless of whether they were previously documented, remain Owner's property.
1. Dismantle and salvage each item or object and protect it from damage, then promptly deliver it to Owner where directed.
2. Coordinate with Owner's historical adviser who will establish special procedures for dismantling and salvaging.

1.07 INFORMATIONAL SUBMITTALS

A. Historic Treatment Sub-schedule:
1. Submit historic treatment sub-schedule within seven days of date established for commencement of historic treatment work.

B. Preconstruction Documentation: Show preexisting conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by

Contractor's historic treatment operations.

C. Historic Treatment Program: Submit 30 days before work begins.

D. Fire-Prevention Plan: Submit 30 days before work begins.

1.08 QUALITY ASSURANCE

A. Historic Treatment Specialist Qualifications: An experienced firm regularly engaged in historic treatments similar in nature, materials, design, and extent to the work as specified in each Section and that has completed a minimum of five recent projects with a record of successful in-service performance that demonstrates the firm's qualifications to perform this work.
   1. Field Supervisor Qualifications: Full-time supervisors experienced in historic treatment work similar in nature, material, design, and extent to that indicated for this Project. Supervisors shall be on site when historic treatment work begins and during its progress. Supervisors shall not be changed during Project except for causes beyond control of the specialist firm.
      a. Construct new mockups of required work whenever a supervisor is replaced.

B. Title Requirement: Each firm conducting activities that disturb painted surfaces shall be a "Lead-Safe Certified Firm" according to 40 CFR 745, Subpart E, and use only workers that are trained in lead-safe work practices.

C. Historic Treatment Program: Prepare a written plan for historic treatment for whole Project, including each phase or process and protection of surrounding materials during operations. Describe in detail the materials, methods, and equipment to be used for each phase of work. Show compliance with indicated methods and procedures specified in this and other Sections. Coordinate this whole-Project historic treatment program with specific requirements of programs required in other historic treatment Sections.
   1. Dust and Noise Control: Include locations of proposed temporary dust- and noise-control partitions and means of egress from occupied areas coordinated with continuing on-site operations and other known work in progress.
   2. Debris Hauling: Include plans clearly marked to show debris hauling routes, turning radii, and locations and details of temporary protective barriers.

D. Fire-Prevention Plan: Prepare a written plan for preventing fires during the Work, including placement of fire extinguishers, fire blankets, rag buckets, and other fire-control devices during each phase or process. Coordinate plan with Owner's fire-protection equipment and requirements. Include fire-watch personnel's training, duties, and authority to enforce fire safety.

E. Safety and Health Standard: ANSI ASSE A10.6.

1.09 STORAGE AND HANDLING OF HISTORIC MATERIALS

A. Salvaged Historic Materials:
   1. Clean loose dirt and debris from salvaged historic items unless more extensive cleaning is indicated.
   2. Pack or crate items after cleaning; cushion against damage during handling. Label contents of containers.
   3. Store items in a secure area until delivery to Owner.
   4. Transport items to Owner's storage area designated by Owner.
   5. Protect items from damage during transport and storage.

B. Historic Materials for Reinstallation:
   1. Repair and clean historic items for reuse as indicated.
   2. Pack or crate items after cleaning and repairing; cushion against damage during handling. Label contents of containers.
   3. Protect items from damage during transport and storage.
   4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment unless otherwise indicated. Provide connections, supports, and miscellaneous materials to make items functional for use indicated.

C. Existing Historic Materials to Remain: Protect construction indicated to remain against damage and soiling from construction work. Where permitted by Architect, items may be dismantled and taken to a suitable, protected storage location during construction work and reinstalled in their original locations after historic treatment and construction work in the vicinity is complete.

D. Historic Materials for Replication:
   1. Repair and clean historic items for replication as indicated.
   2. Provide a record of items by a method recommended by a qualified historic treatment specialist after cleaning and repairing, cushion against damage during handling. Label contents of containers.
   3. Protect items from damage during transport and storage.
   4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment unless otherwise indicated. Provide connections, supports, and miscellaneous materials to make items functional for use indicated.

E. Storage: Catalog and store historic items within a weathertight enclosure where they are protected from moisture, weather, condensation, and freezing temperatures.
   1. Identify each item with a nonpermanent mark to document its original location. Indicate original locations on plans, elevations, sections, or photographs by annotating the identifying marks.
   2. Secure stored materials to protect from theft.
   3. Control humidity so that it does not exceed 85 percent. Maintain temperatures 5 deg F (3 deg C) or more above the dew point.

F. Storage Space:
   1. Owner will arrange for limited on-site location(s) for free storage of historic material. This storage space does not include security for stored material.
   2. Arrange for off-site locations for storage and protection of historic material that cannot be stored and protected on-site.
   3. Subject to requirements of the material, conditioned storage may be warranted as noted above.

1.10 FIELD CONDITIONS

A. Size Limitations in Historic Spaces: Materials, products, and equipment used for performing the Work and for transporting debris, materials, and products shall be of sizes that clear surfaces within historic spaces, areas, rooms, and openings, including temporary protection, by 12 inches (300 mm) or more.

PART 2 PRODUCTS - (NOT USED)

PART 3 EXECUTION

3.01 PROTECTION

A. Protect persons, motor vehicles, surrounding surfaces of building, building site, plants, and surrounding buildings from harm resulting from historic treatment procedures.
   1. Use only proven protection methods, appropriate to each area and surface being protected.
   2. Provide temporary barricades, barriers, and directional signage to exclude the public from areas where historic treatment work is being performed.
   3. Erect temporary barriers to form and maintain fire-egress routes.
   4. Erect temporary protective covers over walkways and at points of pedestrian and vehicular entrance and exit that must remain in service during historic treatment work.
   5. Contain dust and debris generated by historic treatment work and prevent it from reaching the public or adjacent surfaces.
   6. Provide shoring, bracing, and supports as necessary. Do not overload structural elements.
   7. Protect floors and other surfaces along hauling routes from damage, wear, and staining.
   8. Provide supplemental sound-control treatment to isolate removal and dismantling work from other areas of the building.

B. Temporary Protection of Historic Materials:

1. Protect existing historic materials with temporary protections and construction. Do not remove existing materials unless otherwise indicated.
2. Do not attach temporary protection to historic surfaces except as indicated as part of the historic treatment program and approved by Architect.

C. Comply with each product manufacturer's written instructions for protections and precautions. Protect against adverse effects of products and procedures on people and adjacent materials, components, and vegetation.

D. Utility and Communications Services:
1. Notify Owner, Architect, authorities having jurisdiction, and entities owning or controlling wires, conduits, pipes, and other services affected by historic treatment work before commencing operations.
2. Disconnect and cap pipes and services as required by authorities having jurisdiction, as required for historic treatment work.
3. Maintain existing services unless otherwise indicated; keep in service and protect against damage during operations. Provide temporary services during interruptions to existing utilities.

E. Existing Drains: Prior to the start of work in an area, test drainage system to ensure that it is functioning properly. Notify Architect immediately of inadequate drainage or blockage. Do not begin work in an area until the drainage system is functioning properly.
1. Prevent solids such as stone or mortar residue or other debris from entering the drainage system. Clean out drains and drain lines that become sluggish or blocked by sand or other materials resulting from historic treatment work.
2. Protect drains from pollutants. Block drains or filter out sediments, allowing only clean water to pass.

F. Existing Roofing: Prior to the start of work in an area, install roofing protection.

3.02 PROTECTION FROM FIRE

A. Follow fire-prevention plan and the following:
1. Comply with NFPA 241 requirements unless otherwise indicated. Perform duties titled "Owner's Responsibility for Fire Protection."
2. Remove and keep area free of combustibles, including rubbish, paper, waste, and chemicals, unless necessary for the immediate work.
a. If combustible material cannot be removed, provide fire blankets to cover such materials.
3. Prohibit smoking by all persons within Project work and staging areas.

B. Heat-Generating Equipment and Combustible Materials: Comply with the following procedures while performing work with heat-generating equipment or combustible materials, including welding, torch-cutting, soldering, brazing, removing paint with heat, or other operations where open flames or implements using high heat or combustible solvents and chemicals are anticipated:
1. Obtain Owner's approval for operations involving use of open-flame or welding or other high-heat equipment. Notify Owner at least 72 hours before each occurrence, indicating location of such work.
2. As far as practicable, restrict heat-generating equipment to shop areas or outside the building.
3. Do not perform work with heat-generating equipment in or near rooms or in areas where flammable liquids or explosive vapors are present or thought to be present. Use a combustible gas indicator test to ensure that area is safe.
4. Use fireproof baffles to prevent flames, sparks, hot gases, or other high-temperature material from reaching surrounding combustible material.
5. Prevent the spread of sparks and particles of hot metal through open windows, doors, holes, and cracks in floors, walls, ceilings, roofs, and other openings.
6. Fire Watch: Before working with heat-generating equipment or combustible materials, station personnel to serve as a fire watch at each location where such work is performed. Fire-watch personnel shall have the authority to enforce fire safety. Station fire watch

according to NFPA 51B, NFPA 241, and as follows:

a. Train each fire watch in proper operation of fire-control equipment and alarms.
b. Prohibit fire-watch personnel from other work that would distract from fire-watch duties.
c. Cease work with heat-generating equipment whenever fire-watch personnel are not present.
d. Have fire-watch personnel perform final fire-safety inspection each day beginning no sooner than 30 minutes after conclusion of work in each area to detect hidden or smoldering fires and to ensure that proper fire prevention is maintained.
e. Maintain fire-watch personnel at each area of Project site until 60 minutes after conclusion of daily work.

C. Fire-Control Devices: Provide and maintain fire extinguishers, fire blankets, and rag buckets for disposal of rags with combustible liquids. Maintain each as suitable for type of fire risk in each work area. Ensure that nearby personnel and fire-watch personnel are trained in fire-extinguisher and blanket use.

D. Sprinklers: Where sprinkler protection exists and is functional, maintain it without interruption while operations are being performed. If operations are performed close to sprinklers, shield them temporarily with guards.
1. Remove temporary guards at the end of work shifts, whenever operations are paused, and when nearby work is complete.

3.03 PROTECTION DURING APPLICATION OF CHEMICALS

A. Protect motor vehicles, surrounding surfaces of building being restored, building site, plants, and surrounding buildings from harm or spillage resulting from applications of chemicals and adhesives.

B. Cover adjacent surfaces with protective materials that are proven to resist chemicals selected for Project unless chemicals being used will not damage adjacent surfaces as indicated in historic treatment program. Use covering materials and masking agents that are waterproof and UV resistant and that will not stain or leave residue on surfaces to which they are applied. Apply protective materials according to manufacturer's written instructions. Do not apply liquid masking agents or adhesives to painted or porous surfaces. When no longer needed, promptly remove protective materials.

C. Do not apply chemicals during winds of sufficient force to spread them to unprotected surfaces.

D. Neutralize alkaline and acid wastes and legally dispose of off Owner's property.

E. Collect and dispose of runoff from chemical operations by legal means and in a manner that prevents soil contamination, soil erosion, undermining of paving and foundations, damage to landscaping, or water penetration into building interior.

3.04 GENERAL HISTORIC TREATMENT

A. Have historic treatment work performed only by qualified historic treatment specialists.

B. Ensure that supervisory personnel are present when historic treatment work begins and during its progress.

C. Record existing work before each procedure (preconstruction), and record progress during the work. Use digital preconstruction documentation photographs or video recordings. Comply with requirements in Section 013233 "Photographic Documentation."

D. Perform regular inspections of Project site as the Work progresses to detect hazards resulting from historic treatment procedures.

E. Follow the procedures in subparagraphs below and procedures approved in historic treatment program unless otherwise indicated:
1. Retain as much existing material as possible; repair and consolidate rather than replace.
2. Use additional material or structure to reinforce, strengthen, prop, tie, and support existing material or structure.
3. Use reversible processes wherever possible.

4. Use historically accurate repair and replacement materials and techniques unless otherwise indicated.
5. Record existing work before each procedure (preconstruction) and progress during the work with digital preconstruction documentation photographs or video recordings. Comply with requirements in Section 013233 "Photographic Documentation."

F. Notify Architect of visible changes in the integrity of material or components whether from environmental causes including biological attack, UV degradation, freezing, or thawing or from structural defects including cracks, movement, or distortion.
   1. Do not proceed with the work in question until directed by Architect.

G. Where missing features are indicated to be repaired or replaced, provide work with appearance based on accurate duplications rather than on conjecture, subject to approval of Architect.

H. Where work requires existing features to be removed or dismantled and reinstalled, perform these operations without damage to the material itself, to adjacent materials, or to the substrate.

I. Identify new and replacement materials and features with permanent marks hidden in the completed Work to distinguish them from original materials. Record a legend of identification marks and the locations of the items on record Drawings.

3.05 HISTORIC TREATMENT SCHEDULE

A. Spaces, areas, rooms, and surfaces requiring special care and treatment to ensure successful preservation, rehabilitation and restoration are indicated on Drawings.

END OF SECTION 013591

SECTION 014000
QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Quality assurance.

B. Testing and inspection agencies and services.

C. Control of installation.

D. Mock-ups.

E. Defect Assessment.

1.02 REFERENCE STANDARDS

A. ASTM C1021 - Standard Practice for Laboratories Engaged in Testing of Building Sealants 2008 (Reapproved 2019).

B. ASTM C1077 - Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation 2017.

C. ASTM C1093 - Standard Practice for Accreditation of Testing Agencies for Masonry 2022.

D. ASTM D3740 - Standard Practice for Minimum Requirements for Agencies Engaged in Testing and or Inspection of Soil and Rock as Used in Engineering Design and Construction 2019.

E. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection 2021.

F. ASTM E543 - Standard Specification for Agencies Performing Nondestructive Testing 2021.

G. ASTM E699 - Standard Specification for Agencies Involved in Testing, Quality Assurance, and Evaluating of Manufactured Building Components 2016.

H. IAS AC89 - Accreditation Criteria for Testing Laboratories 2021.

1.03 DEFINITIONS

A. Contractor's Quality Control Plan: Contractor's management plan for executing the Contract for Construction.

B. Contractor's Professional Design Services: Design of some aspect or portion of the project by party other than the design professional of record. Provide these services as part of the Contract for Construction.
   1. Design Services Types Required:

C. Design Data: Design-related, signed and sealed drawings, calculations, specifications, certifications, shop drawings and other submittals provided by Contractor, and prepared directly by, or under direct supervision of, appropriately licensed design professional.

1.04 TESTING AND INSPECTION AGENCIES AND SERVICES

PART 3 EXECUTION

2.01 CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.

B. Comply with manufacturers' instructions, including each step in sequence.

C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.

D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Have work performed by persons qualified to produce required and specified quality.

F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.

G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

2.02 MOC -UPS

A. Tests shall be performed under provisions identified in this section and identified in the respective product specification sections.

B. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.

C. Architect will use accepted mock-ups as a comparison standard for the remaining Work.

D. Where mock-up has been accepted by Architect and is specified in product specification sections to be removed, protect mock-up throughout construction, remove mock-up and clear area when directed to do so by Architect.

2.03 TESTING AND INSPECTION

A. Testing Agency Duties:
   1. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
   2. Perform specified sampling and testing of products in accordance with specified standards.
   3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
   4. Promptly notify Architect and Contractor of observed irregularities or non-compliance of Work or products.
   5. Perform additional tests and inspections required by Architect.
   6. Submit reports of all tests inspections specified.

B. Limits on Testing Inspection Agency Authority:
   1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
   2. Agency may not approve or accept any portion of the Work.
   3. Agency may not assume any duties of Contractor.
   4. Agency has no authority to stop the Work.

C. Contractor Responsibilities:
   1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
   2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
   3. Provide incidental labor and facilities:
      a. To provide access to Work to be tested inspected.
      b. To obtain and handle samples at the site or at source of Products to be tested inspected.
      c. To facilitate tests inspections.
      d. To provide storage and curing of test samples.
   4. Notify Architect and laboratory 24 hours prior to expected time for operations requiring testing inspection services.
   5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
   6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.

D. Re-testing required because of non-compliance with specified requirements shall be performed by the same agency on instructions by Architect.

E. Re-testing required because of non-compliance with specified requirements shall be paid for by Contractor.

2.04 DEFECT ASSESSMENT

A. Replace Work or portions of the Work not complying with specified requirements.

END OF SECTION 014000

This page intentionally left blank

SECTION 015000
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

B. Related Requirements:
   1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.

1.03 USE CHARGES

A. Installation, removal, and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities engaged in the Project to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, Architect, testing agencies, and authorities having jurisdiction.

B. Sewer Service: Pay sewer-service use charges for sewer usage by all entities for construction operations.

C. Water Service: Pay water-service use charges for water used by all entities for construction operations.

D. Electric Power Service: Pay electric-power-service use charges for electricity used by all entities for construction operations.

E. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use with metering. Provide connections and extensions of services and metering as required for construction operations.

F. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use with metering. Provide connections and extensions of services and metering as required for construction operations.

1.04 INFORMATIONAL SUBMITTALS

A. Site Utilization Plan: Show temporary facilities, temporary utility lines and connections, staging areas, construction site entrances, vehicle circulation, and parking areas for construction personnel.

B. Implementation and Termination Schedule: Within 15 days of date established for commencement of the Work, submit schedule indicating implementation and termination dates of each temporary utility.

C. Project Identification and Temporary Signs: Show fabrication and installation details, including plans, elevations, details, layouts, typestyles, graphic elements, and message content.

D. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.

E. Moisture- and Mold-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage and mold. Describe delivery, handling, storage, installation, and protection provisions for materials subject to water absorption or water damage.
   1. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and requirements for replacing water-damaged Work.
   2. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.

3. Indicate methods to be used to avoid trapping water in finished work.

F. Dust- and HVAC-Control Plan: Submit coordination drawing and narrative that indicates the dust- and HVAC-control measures proposed for use, proposed locations, and proposed time frame for their operation. Include the following:
   1. Locations of dust-control partitions at each phase of work.
   2. HVAC system isolation schematic drawing.
   3. Location of proposed air-filtration system discharge.
   4. Waste-handling procedures.
   5. Other dust-control measures.

G. Noise and Vibration Control Plan: Identify construction activities that may impact the occupancy and use of existing spaces within the building or adjacent existing buildings, whether occupied by others, or occupied by the Owner. Include the following:
   1. Methods used to meet the goals and requirements of the Owner.
   2. Concrete cutting method(s) to be used.
   3. Location of construction devices on the site.
   4. Show compliance with the use and maintenance of quieted construction devices for the duration of the Project.
   5. Indicate activities that may disturb building occupants and that are planned to be performed during non-standard working hours as coordinated with the Owner.
   6. Indicate locations of sensitive areas or other areas requiring special attention as identified by Owner. Indicate means for complying with Owner's requirements.

1.05 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

C. Accessible Temporary Egress: Comply with applicable provisions in the United States Access Board's ADA-ABA Accessibility Guidelines and ICC ANSI A117.1.

1.06 PRO ECT CONDITIONS

A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 PRODUCTS

2.01 MATERIALS

A. Portable Chain-Link Fencing: Minimum 2-inch (50-mm), 0.148-inch- (3.8-mm-) thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet (1.8 m) high with galvanized-steel pipe posts; minimum 2-3 8-inch- (60-mm-) OD line posts and 2-7 8-inch- (73-mm-) OD corner and pull posts, with 1-5 8-inch- (42-mm-) OD top and bottom rails. Provide galvanized-steel bases for supporting posts.

B. Fencing Windscreen Privacy Screen: Polyester fabric scrim with grommets for attachment to chain-link fence, sized to height of fence, in color selected by Architect from manufacturer's standard colors.

C. Polyethylene Sheet: Reinforced, fire-resistive sheet, 10-mil (0.25-mm) minimum thickness, with flame-spread rating of 15 or less in accordance with ASTM E84 and passing NFPA 701 Test Method 2.

2.02 TEMPORARY FACILITIES

A. Field Offices: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.

B. Common-Use Field Office: Of sufficient size to accommodate needs of Owner, Architect, and construction personnel office activities and to accommodate Project meetings specified in other

Division 01 Sections. Keep office clean and orderly. Furnish and equip offices as follows:

1. Furniture required for Project-site documents, including file cabinets, plan tables, plan racks, and bookcases.
2. Conference room of sufficient size to accommodate meetings of 10 individuals. Provide electrical power service and 120-V ac duplex receptacles, with no fewer than one receptacle on each wall. Furnish room with conference table, chairs, and 4-foot- (1.2-m-) square tack and marker boards.
3. Drinking water and private toilet.
4. Heating and cooling equipment necessary to maintain a uniform indoor temperature of 68 to 72 deg F (20 to 22 deg C).
5. Lighting fixtures capable of maintaining average illumination of 20 fc (215 lx) at desk height.

C. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.
   1. Store combustible materials apart from building.

2.03 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

B. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
   1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
   2. Heating, Cooling, and Dehumidifying Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction, and marked for intended location and application.
   3. Permanent HVAC System: If Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of 8 at each return-air grille in system and remove at end of construction.

C. Air-Filtration Units: Primary and secondary HEPA-filter-equipped portable units with four-stage filtration. Provide single switch for emergency shutoff. Configure to run continuously.

PART 3 EXECUTION

3.01 TEMPORARY FACILITIES, GENERAL

A. Conservation: Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
   1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

3.02 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
   1. Locate facilities to limit site disturbance as specified in Section 011000 "Summary."

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

C. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering occupied areas.
   1. Prior to commencing work, isolate the HVAC system in area where work is to be performed according to coordination drawings.
      a. Disconnect supply and return ductwork in work area from HVAC systems servicing occupied areas.

b. Maintain negative air pressure within work area, using HEPA-equipped air-filtration units, starting with commencement of temporary partition construction, and continuing until removal of temporary partitions is complete.

2. Maintain dust partitions during the Work. Use vacuum collection attachments on dust-producing equipment. Isolate limited work within occupied areas using portable dust-containment devices.
3. Perform daily construction cleanup and final cleanup using approved, HEPA-filter-equipped vacuum equipment.

3.03 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.
   1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
   1. Connect temporary sewers to municipal system as directed by authorities having jurisdiction.

C. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction.

D. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

E. Sanitary Facilities: Provide temporary toilets, wash facilities, safety shower and eyewash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
   1. Use of Permanent Toilets: Use of Owner's existing or new toilet facilities is not permitted.

F. Temporary Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
   1. Provide temporary dehumidification systems when required to reduce ambient and substrate moisture levels to level required to allow installation or application of finishes and their proper curing or drying.

G. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
   1. Install electric power service overhead unless otherwise indicated.
   2. Connect temporary service to Owner's existing power source, as directed by Owner.

H. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
   1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

I. Telephone Service: Provide temporary telephone service in common-use facilities for use by all construction personnel. Install WiFi cell phone access equipment and one land-based telephone line(s) for each field office.
   1. At each telephone, post a list of important telephone numbers.
      a. Police and fire departments.
      b. Ambulance service.
      c. Contractor's home office.
      d. Contractor's emergency after-hours telephone number.
      e. Architect's office.
      f. Engineers' offices.
      g. Owner's office.
      h. Principal subcontractors' field and home offices.

J. Electronic Communication Service: Provide secure WiFi wireless connection to internet with provisions for access by Architect and Owner.

K. Project Computer: Provide a desktop computer in the primary field office adequate for use by Architect and Owner to access Project electronic documents and maintain electronic communications. Equip computer with not less than the following:
   1. Processor: Intel Core i5 or i7.
   2. Memory: 16 gigabyte.
   3. Disk Storage: 1 -terabyte hard-disk drive and combination DVD-RW CD-RW drive.
   4. Display: 24-inch (610-mm) LCD monitor with 256-Mb dedicated video RAM.
   5. Full-size keyboard and mouse.
   6. Network Connectivity: 10 100BaseT Ethernet.
   7. Operating System: Microsoft Windows 10 Professional.
   8. Productivity Software:
      a. Microsoft Office Professional, 2013 or higher, including Word, Excel, and Outlook.
      b. Adobe Reader DC.
      c. Win ip 10.0 or higher.
   9. Printer: "All-in-one" unit equipped with printer server, combining color printing, photocopying, scanning, and faxing, or separate units for each of these three functions.
   10. Internet Service: Broadband modem, router, and ISP, equipped with hardware firewall, providing minimum 10.0 -Mbps upload and 15 -Mbps download speeds at each computer.
   11. Internet Security: Integrated software, providing software firewall, virus, spyware, phishing, and spam protection in a combined application.
   12. Backup: External hard drive, minimum 2 terrabytes, with automated backup software providing daily backups.

3.04 SUPPORT FACILITIES INSTALLATION

A. Comply with the following:
   1. Provide construction for temporary field offices, shops, and sheds located within construction area or within 30 feet (9 m) of building lines that is noncombustible in accordance with ASTM E136. Comply with NFPA 241.
   2. Utilize designated area within existing building for temporary field offices.
   3. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

B. Traffic Controls: Comply with requirements of authorities having jurisdiction.
   1. Protect existing site improvements to remain, including curbs, pavement, and utilities.
   2. Maintain access for fire-fighting equipment and access to fire hydrants.

C. Parking: Provide temporary offsite parking areas for construction personnel.

D. Storage and Staging: Use designated areas of Project site for storage and staging needs.

E. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
   1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
   2. Remove snow and ice as required to minimize accumulations.

F. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.
   1. Identification Signs: Provide Project identification signs as indicated on Drawings.
   2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.
      a. Provide temporary, directional signs for construction personnel and visitors.
   3. Maintain and touch up signs, so they are legible at all times.

G. Waste Disposal Facilities: Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."

H. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

I. Existing Stair Usage: Use of Owner's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.
   1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas, so no evidence remains of correction work.

3.05 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
   1. Where access to adjacent properties is required in order to affect protection of existing facilities, obtain written permission from adjacent property owner to access property for that purpose.

B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
   1. Comply with work restrictions specified in Section 011000 "Summary."

C. Temporary Erosion and Sedimentation Control: Comply with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent and requirements specified in Section 311000 "Site Clearing."

D. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.

E. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion as specified in Section 015639 “Temporary Tree Protection”.

F. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals, so Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using materials approved by authorities having jurisdiction.

G. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people from easily entering site except by entrance gates.
   1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
   2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Furnish one set of keys to Owner.

H. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each workday.

I. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

J. Temporary Egress: Provide temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction. Provide signage directing occupants to temporary egress.

K. Covered Walkway: Erect protective, covered walkway for passage of individuals through or adjacent to Project site. Coordinate with entrance gates, other facilities, and obstructions. Comply with regulations of authorities having jurisdiction.

1. Provide overhead decking, protective enclosure walls, handrails, barricades, warning signs, exit signs, lights, safe and well-drained walkways, and similar provisions for protection and safe passage.
2. Paint and maintain appearance of walkway for duration of the Work.

L. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
1. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.

M. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.
1. Prohibit smoking in construction areas. Comply with additional limits on smoking specified in other Sections.
2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition in accordance with requirements of authorities having jurisdiction.
3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign, stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.06 MOISTURE AND MOLD CONTROL

A. Moisture and Mold Protection: Protect stored materials and installed Work in accordance with Moisture and Mold Protection Plan.

B. Exposed Construction Period: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
1. Protect porous materials from water damage.
2. Protect stored and installed material from flowing or standing water.
3. Keep porous and organic materials from coming into prolonged contact with concrete.
4. Remove standing water from decks.
5. Keep deck openings covered or dammed.

C. Partially Enclosed Construction Period: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
2. Keep interior spaces reasonably clean and protected from water damage.
3. Periodically collect and remove waste containing cellulose or other organic matter.
4. Discard or replace water-damaged material.
5. Do not install material that is wet.
6. Discard and replace stored or installed material that begins to grow mold.
7. Perform work in a sequence that allows wet materials adequate time to dry before enclosing the material in gypsum board or other interior finishes.

D. Controlled Construction Period: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:
1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
2. Use temporary or permanent HVAC system to control humidity within ranges specified for installed and stored materials.
3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.
a. Hygroscopic materials that may support mold growth, including wood and gypsum-based products, that become wet during the course of construction and remain wet

for 48 hours are considered defective and require replacing.

b. Measure moisture content of materials that have been exposed to moisture during construction operations or after installation. Record readings beginning at time of exposure and continuing daily for 48 hours. Identify materials containing moisture levels higher than allowed. Report findings in writing to Architect.

c. Remove and replace materials that cannot be completely restored to their manufactured moisture level within 48 hours.

3.07 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
2. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
3. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period.

END OF SECTION 015000

SECTION 017419
CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section includes administrative and procedural requirements for the following:
   1. Salvaging nonhazardous demolition and construction waste.
   2. Disposing of nonhazardous demolition and construction waste.

B. Related Requirements:
   1. Section 024296 “Historic Removal and Dismantling” for handling requirements for historic material.

1.03 DEFINITIONS

A. Construction Waste: Building, structure, and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

B. Demolition Waste: Building, structure, and site improvement materials resulting from demolition operations.

C. Disposal: Removal of demolition or construction waste and subsequent salvage, sale, recycling, or deposit in landfill, incinerator acceptable to authorities having jurisdiction, or designated spoil areas on Owner’s property.

D. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

E. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.04 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition and construction waste becomes property of Contractor.

B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
   1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.05 ACTION SUBMITTALS

A. Waste Management Plan: Submit plan within 7 days of date established for commencement of the Work.

1.06 INFORMATIONAL SUBMITTALS

A. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

B. Qualification Data: For waste management coordinator and refrigerant recovery technician.

C. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

D. Refrigerant Recovery: Comply with requirements in Section 024116 "Structure Demolition" Section 024119 "Selective Demolition" for refrigerant recovery submittals.

1.07 QUALITY ASSURANCE

A. Waste Management Coordinator Qualifications: Experienced firm, or individual employed and assigned by General Contractor, with a record of successful waste management coordination of projects with similar requirements. Superintendent may serve as Waste Management Coordinator.

B. Refrigerant Recovery Technician Qualifications: Universal certified by EPA-approved certification program.

C. Regulatory Requirements: Comply with transportation and disposal regulations of authorities having jurisdiction.

D. Waste Management Conference(s): Conduct conference(s) at Project site to comply with requirements in Section 013100 "Project Management and Coordination." Review methods and procedures related to waste management including, but not limited to, the following:
   1. Review and discuss waste management plan including responsibilities of each contractor and waste management coordinator.
   2. Review requirements for documenting quantities of each type of waste and its disposition.
   3. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
   4. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
   5. Review waste management requirements for each trade.

1.08 WASTE MANAGEMENT PLAN

A. Waste Identification: Indicate anticipated types and quantities of demolition and construction waste generated by the Work. Use a form suitable to the owner. Include estimated quantities and assumptions for estimates.

PART 2 PRODUCTS

PART 3 EXECUTION

3.01 PLAN IMPLEMENTATION

A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
   1. Comply with operation, termination, and removal requirements in Section 015000 "Temporary Facilities and Controls."

B. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work.
   1. Distribute waste management plan to everyone concerned within three days of submittal return.
   2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.

C. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
   1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged.
   2. Comply with Section 015000 "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

D. Waste Management in Historic ones or Areas: Transportation equipment and other materials shall be of sizes that clear surfaces within historic spaces, areas, rooms, and openings, by 12 inches (300 mm) or more.

3.02 SALVAGING DEMOLITION WASTE

A. Comply with requirements in Section 024296 “Historic Removal and Dismantling “ for salvaging demolition waste.

B. Salvaged Items for Reuse in the Work: Salvage items for reuse and handle as follows:
   1. Clean salvaged items.
   2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
   3. Store items in a secure area until installation.
   4. Protect items from damage during transport and storage.
   5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.

C. Salvaged Items for Sale and Donation: Not permitted on Project site.

D. Salvaged Items for Owner's Use: Salvage items for Owner's use and handle as follows:
   1. Clean salvaged items.
   2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
   3. Store items in a secure area until delivery to Owner.
   4. Transport items to Owner's storage area on-site.
   5. Protect items from damage during transport and storage.

E. Doors and Hardware: Brace open end of door frames. Except for removing door closers, leave door hardware attached to doors.

F. Equipment: Drain tanks, piping, and fixtures. Seal openings with caps or plugs. Protect equipment from exposure to weather.

G. Plumbing Fixtures: Separate by type and size.

H. Lighting Fixtures: Separate lamps by type and protect from breakage.

I. Electrical Devices: Separate switches, receptacles, switchgear, transformers, meters, panelboards, circuit breakers, and other devices by type.

3.03 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged or recycled, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
   1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
   2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. General: Except for items or materials to be salvaged or recycled, remove waste materials and legally dispose of at designated spoil areas on Owner’s property.

C. Burning: Do not burn waste materials.

D. Burning: Burning of waste materials is permitted only at designated areas on Owner's property, provided required permits are obtained. Provide full-time monitoring for burning materials until fires are extinguished.

END OF SECTION 017419

This page intentionally left blank

SECTION 020342
REMOVAL AND SALVAGE OF PERIOD CONSTRUCTION MATERIALS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Work includes deconstruction and salvage of identified historic items and materials and removal of rubbish and debris.

B. Specified procedures required for preservation, rehabilitation, restoration, and reconstruction treatment areas.

C. Historic items and materials are indicated on drawings.

1.02 RELATED REQUIREMENTS

A. Section 013591 - Period Treatment Procedures for general historic preservation project requirements.

B. Section 024100 - Demolition: Selective demolition of nonhistoric building elements for alteration purposes.

1.03 DEFINITIONS

A. Debris: Nonhistoric building materials and contents destroyed during demolition.

B. Deconstruction: Systematic dismantling and removal of a structure or its parts and salvage of elements and components for reuse, recycling, and retaining maximum value.

1.04 REFERENCE STANDARDS

A. 29 CFR 1926 - Safety and Health Regulations for Construction Current Edition.

B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations 2022, with Errata (2021).

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Deconstruction Crew's Qualification Statement: Documentation of three consecutive years of work of this type, including similar projects identifying when, where, and for whom the work was performed.
   1. Include current point-of-contact information for references.

C. Work Plan: Detailed, proposed instructions for each type of operation of procedures for accomplishment of deconstruction work, including detailed description of the methods and equipment to be used and sequence of operations. Include the following:
   1. Extent of deconstruction, removal sequences, temporary and permanent bracing and shoring, and location and construction of barricades and fences.
   2. Instructions for removal and disposition of period materials specified to be salvaged or recycled.
   3. Dust control measures.
   4. Protection of property to remain undisturbed.
   5. Ensure coordination with other work.
   6. Plan for sequencing and timely disconnection and reconnection of utility services.
   7. Safe conduct of the work. Submit for information only.

1.06 QUALITY ASSURANCE

A. Deconstruction Crew Qualifications: Workers trained and experienced in removal and salvage of historic materials.

1.07 FIELD CONDITIONS

A. Comply with applicable requirements of NFPA 241.

B. Dust Control: Control dust resulting from removal, salvage, and demolition operations from spreading to occupied portions of the project and creating a nuisance in surrounding area. Use of water to control dust is not permitted when it will result in or create:

1. Damage to existing building materials.
2. Hazardous or objectionable conditions such as ice, flooding, or pollution.

C. Protection of Existing Historic Property: Before beginning removal, salvage, or demolition work, survey the site and examine the drawings and specifications to determine the extent of the work. Take necessary precautions to avoid damage to existing items to remain in place, be reused, or remain Owner's property. Repair or restore to original condition items damaged by Contractor, using approved means, methods, and techniques. Replace items that cannot be successfully repaired or restored to original condition.

D. Store materials to be salvaged or recycled daily, out of contact with the ground, under weathertight covering, in areas designated by Owner, and in the manner direct by Owner.

E. Hazardous Materials: Comply with 29 CFR 1926 and state and local regulations.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 PERIOD TREATMENT, GENERAL

A. See Section 013591 for special procedure requirements related to elements and features of historical significance and value.

3.02 GENERAL PROCEDURES

A. Drawings indicating existing construction, building services, and site utilities are based on casual field observation and existing record documents only.
   1. Report discrepancies to Architect before disturbing existing historic elements.
   2. Beginning of work constitutes acceptance of existing conditions that are apparent upon examination at that time.

B. Separate spaces in which removals and salvage operations are conducted from occupied spaces.
   1. Provide, erect, and maintain temporary dustproof partitions; see Section 015000.

3.03 ENVIRONMENTAL CONTROLS

A. Comply with federal, state, and local regulations pertaining to water, air, solid waste, recycling, chemical waste, sanitary waste, sediment, and noise pollution.

B. Protection of Natural Resources: Preserve the natural resources within the project boundaries or restore to an equivalent condition.
   1. Confine removal activities to areas defined by public roads, easements, and work area limits indicated on drawings.
      a. Temporary Construction: At the conclusion of the project, remove indications of temporary construction facilities, such as haul roads, work areas, structures, stockpiles, or waste areas.
   2. Water Resources: Comply with applicable regulations concerning direct or indirect discharge of pollutants to underground and natural surface waters.
      a. Oily Substances: Prevent oily or other hazardous substances from entering the ground, drainage areas, or local bodies of water in such quantities as to affect normal use, aesthetics, or produce a measurable ecological impact on the area.
         1) Store and service construction equipment at areas designated for collection of oil wastes.
   3. Dust Control, Air Pollution, and Odor Control: Prevent creation of dust, air pollution, and odors.
      a. Use temporary enclosures and other appropriate methods to limit dust and dirt rising and scattering in air to lowest practical level.
      b. Store volatile liquids, including fuels and solvents, in closed containers.
      c. Properly maintain equipment to reduce gaseous pollutant emissions.
   4. Noise Control: Perform removal operations to minimize noise.

3.04 ITEMS TO BE SALVAGED

A. General: Salvage elements and components to the maximum extent possible. Maintain a chain of custody of salvaged materials, including the condition of such materials before and after salvage operations.
   1. Remove historic items to be salvaged from the structure prior to deconstruction work.
   2. Accomplish removal of salvageable items by hand labor to the maximum extent possible.
   3. Take care not to damage historic portions of the structure scheduled to remain or items identified for salvage.
   4. Obtain hot work permits for removal of elements requiring use of fire- or spark-producing tools or activities that produce sources of ignition.

B. Metal Elements: Remove intact and salvage metal elements indicated on drawings.

C. Wood Elements: Remove intact and salvage wood elements indicated on drawings.

D. Doors and Windows: Remove intact and salvage doors and windows indicated on drawings.

E. Finishes: Protect special or historic finishes and finish elements indicated on drawings.

F. Equipment and Specialty Elements: Remove intact and salvage specialty elements indicated on drawings.

G. Mechanical Equipment: Remove intact and salvage equipment and fixtures indicated on drawings.

H. Electrical Equipment: Remove intact and salvage equipment and fixtures indicated on drawings.

3.05 MATERIALS TO BE REMOVED

A. Remove existing nonhistoric elements as indicated and as required to allow direct access to period construction elements indicated to be restored or salvaged for reuse.
   1. Remove items indicated on drawings.

B. Services: Remove existing systems and equipment to extent indicated, including but not limited to Fire Protection, Plumbing, HVAC, Electrical, and Telecommunications elements:
   1. Maintain existing active systems that are to remain in operation; maintain access to equipment and other operational components.
   2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service switchover.
   3. Verify that abandoned services serve only abandoned facilities prior to commencing removals.
   4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stubs and tag with identification.

C. Protect existing historic elements.
   1. Prevent movement of structure; provide temporary, removable shoring and bracing if necessary.
   2. Perform cutting to accomplish removals neatly, minimizing overcutting.

3.06 CLEANING

A. Upon completion of work, clean dust, dirt, and debris caused by salvage and demolition operations from portions of existing structure to remain and adjacent areas. Remove and transport debris and rubbish in a manner that prevents spillage on streets or adjacent areas. Obey local regulations regarding hauling and disposal.

END OF SECTION 020342

This page intentionally left blank

SECTION 024119
SELECTIVE DEMOLITION

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:
   1. Demolition and removal of selected portions of building or structure.
   2. Demolition and removal of selected site elements.
   3. Salvage of existing items to be reused or recycled.

B. Related Requirements:
   1. Section 011000 "Summary" for restrictions on use of the premises, Owner-occupancy requirements, and phasing requirements.
   2. Section 013591 “Historic Treatment Procedures" for general protection and work procedures for alteration projects.
   3. Section 017300 "Execution" for cutting and patching procedures
   4. Section 024296 “Historic Removal and Dismantling” for historic features to be documented for re-use.

1.03 DEFINITIONS

A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged or reinstalled.

B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse.

C. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage, prepare for reuse, and reinstall where indicated.

D. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.

E. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

1.04 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
   1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.05 PREINSTALLATION MEETINGS

A. Pre-demolition Conference: Conduct conference at Project site.
   1. Inspect and discuss condition of construction to be selectively demolished.
   2. Review structural load limitations of existing structure.
   3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
   4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
   5. Review areas where existing construction is to remain and requires protection.

1.06 INFORMATIONAL SUBMITTALS

A. Qualification Data: For refrigerant recovery technician.

B. Engineering Survey: Submit engineering survey of condition of building.

C. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and, for noise control. Indicate proposed locations and construction of barriers.

D. Schedule of Selective Demolition Activities: Indicate the following:
   1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
   2. Interruption of utility services. Indicate how long utility services will be interrupted.
   3. Coordination for shutoff, capping, and continuation of utility services.
   4. Use of elevator and stairs.
   5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.

E. Pre-demolition Photographs or Video: Show existing conditions of adjoining construction, including finish surfaces, that might be misconstrued as damage caused by demolition operations. Comply with Section 013233 "Photographic Documentation." Submit before Work begins.

F. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

G. Warranties: Documentation indicating that existing warranties are still in effect after completion of selective demolition.

1.07 CLOSEOUT SUBMITTALS

A. Inventory: Submit a list of items that have been removed and salvaged.

1.08 QUALITY ASSURANCE

A. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

1.09 FIELD CONDITIONS

A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
   1. Before selective demolition, Owner will remove the following items:
      a. Stored Items residing within the building.
      b. Furniture, Fixtures, and Equipment (FF&E).
      c. State History collections in basement.

C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
   1. Hazardous materials will be removed by Owner before start of the Work.
   2. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

E. Hazardous Materials: Present in buildings and structures to be selectively demolished. A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.
   1. Hazardous material remediation is specified elsewhere in the Contract Documents.
   2. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.

3. Owner will provide material safety data sheets for suspected hazardous materials that are known to be present in buildings and structures to be selectively demolished because of building operations or processes performed there.

F. Historic Areas: Demolition and hauling equipment and other materials shall be of sizes that clear surfaces within historic spaces, areas, rooms, and openings, including temporary protection, by 12 inches or more.

G. Storage or sale of removed items or materials on-site is not permitted.

H. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
   1. Maintain fire-protection facilities in service during selective demolition operations.

1.10 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials and using approved contractors so as not to void existing warranties. Notify warrantor before proceeding. Existing warranties include the following:
   1. Roof.

B. Notify warrantor on completion of selective demolition, and obtain documentation verifying that existing system has been inspected and warranty remains in effect. Submit documentation at Project closeout.

1.11 COORDINATION

A. Arrange selective demolition schedule so as not to interfere with Owner's operations.

PART 2 PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ASSE A10.6 and NFPA 241.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

B. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.

C. Perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.
   1. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

D. Steel Tendons: Locate tensioned steel tendons and include recommendations for de-tensioning.

E. Verify that hazardous materials have been remediated before proceeding with building demolition operations.

F. Survey of Existing Conditions: Record existing conditions by use of measured drawings and preconstruction photographs or video.
   1. Comply with requirements specified in Section 013233 "Photographic Documentation."
   2. Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage operations.

3. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

3.02 PREPARATION

A. Refrigerant: Before starting demolition, remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction.

3.03 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services Systems to Remain: Maintain services systems indicated to remain and protect them against damage.

B. Existing Services Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical electrical systems serving areas to be selectively demolished.
   1. Owner will arrange to shut off indicated services systems when requested by Contractor.
   2. Arrange to shut off utilities with utility companies.
   3. If services systems are required to be removed, relocated, or abandoned, provide temporary services systems that bypass area of selective demolition and that maintain continuity of services systems to other parts of building.
   4. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.
      a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
      b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
      c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
      d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
      e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
      f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
      g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material and leave in place.

3.04 PROTECTION

A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
   1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
   2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
   3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
   4. Cover and protect furniture, furnishings, and equipment that have not been removed.
   5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."

B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
   1. Strengthen or add new supports when required during progress of selective demolition.

C. Remove temporary barricades and protections where hazards no longer exist.

3.05 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
   1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
   2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
   3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
   4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
   5. Maintain fire watch during and for at least 2 hours after flame-cutting operations.
   6. Maintain adequate ventilation when using cutting torches.
   7. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
   8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
   9. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
   10. Dispose of demolished items and materials promptly. Comply with requirements in Section 017419 "Construction Waste Management and Disposal."

B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

C. Work in Historic Areas: Selective demolition may be performed only in areas of Project that are not designated as historic. In historic spaces, areas, and rooms, or on historic surfaces, the terms "demolish" or "remove" shall mean historic "removal" or "dismantling" as specified in Section 013591 Historic Treatment Procedures."

D. Removed and Salvaged Items:
   1. Clean salvaged items.
   2. Pack or crate items after cleaning. Identify contents of containers.
   3. Store items in a secure area until delivery to Owner.
   4. Transport items to Owner's storage area on-site or designated by Owner.
   5. Protect items from damage during transport and storage.

E. Removed and Reinstalled Items:
   1. Clean and repair items to functional condition adequate for intended reuse.
   2. Pack or crate items after cleaning and repairing. Identify contents of containers.
   3. Protect items from damage during transport and storage.
   4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

F. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.06 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Concrete: Demolish in small sections. Using power-driven saw, cut concrete to a depth of at least 3 4 inch at junctures with construction to remain. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete. Neatly trim openings to dimensions indicated.

B. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals using power-driven saw, and then remove concrete between saw cuts.

C. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, and then remove masonry between saw cuts.

D. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, and then break up and remove.

E. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI's "Recommended Work Practices for the Removal of Resilient Floor Coverings." Do not use methods requiring solvent-based adhesive strippers.

F. Roofing: Remove no more existing roofing than what is required for new venting and exhaust than can be covered in one day by new roofing and so that building interior remains watertight and weathertight.

3.07 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction. and recycle or dispose of them according to Section 017419 "Construction Waste Management and Disposal."
   1. Do not allow demolished materials to accumulate on-site.
   2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
   3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
   4. Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."

B. Burning: Do not burn demolished materials.

3.08 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

3.09 SELECTIVE DEMOLITION SCHEDULE

A. Remove: Concrete floor, temporary opening coverings, shelving and overhead sectional door as designated on the drawings.

B. Remove and Salvage: Loose historic items.

C. Remove and Reinstall: Windows, doors, trim as designated on the drawings.

D. Existing to Remain: Trim, masonry, historic grain mechanisms, roofing as designated on the drawings.

E. Dismantle: N A.

END OF SECTION 024119

END OF SECTION 024119

SECTION 024296
HISTORIC REMOVAL AND DISMANTLING

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 historic treatment procedures in the form of special types of selective demolition work for designated historic spaces, areas, rooms, and surfaces and the following specific work:
   1. Removal and dismantling of indicated portions of building or structure and debris hauling.
   2. Salvage of existing items to be reused or recycled.

B. Related Requirements:
   1. Section 013591 "Historic Treatment Procedures" for general historic treatment requirements.

1.03 DEFINITIONS

A. Dismantle: To disassemble or detach a historic item from a surface, or a nonhistoric item from a historic surface, using gentle methods and equipment to prevent damage to historic items and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

B. Existing to Remain: Existing items that are not to be removed or dismantled, except to the degree indicated for performing required Work.

C. Remove: To take down or detach a nonhistoric item located within a historic space, area, or room, using methods and equipment to prevent damage to historic items and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

D. Retain: To keep existing items that are not to be removed or dismantled.

E. Salvage: To protect removed or dismantled items and deliver them to Owner.

1.04 PRECONSTRUCTION MEETINGS

A. Preconstruction Conference(s): Conduct conference(s) at Project site.
   1. Review minutes of Preliminary Historic Treatment Conference that pertain to removal and dismantling procedures and protection of historic areas and surfaces.
   2. Review list of items indicated to be salvaged.
   3. Verify qualifications of personnel assigned to perform removal and dismantling.
   4. Inspect and discuss condition of each construction type to be removed or dismantled.
   5. Review requirements of other work that depends on condition of substrates exposed by removal and dismantling work.
   6. Review methods and procedures related to removal and dismantling work, including, but not limited to, the following:
      a. Historic removal and dismantling specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
      b. Materials, material application, sequencing, tolerances, and required clearances.
      c. Fire prevention.
      d. Coordination with building occupants.

1.05 INFORMATIONAL SUBMITTALS

A. Qualification Data: For historic removal and dismantling specialist.

B. Preconstruction Documentation: Show preexisting conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by Contractor's removal and dismantling operations.

C. Removal and Dismantling Historic Treatment Program: Submit 30 days before work begins.

D. List of Items Indicated to Be Salvaged: Prepare a list of items indicated on Drawings to be salvaged for Owner's use or for reinstallation. Submit 15 days before preconstruction conference.

E. Inventory of Salvaged Items: After removal or dismantling work is complete, submit a list of items that have been salvaged.
   1. Include item description, item condition, number of items if more than one of a type, and tag number.
   2. As work proceeds, include on the inventory items that were indicated to be salvaged and items of historic importance discovered during the work. Document reasons, if any, why an item indicated to be salvaged was not salvaged.

1.06 QUALITY ASSURANCE

A. Historic Removal and Dismantling Specialist Qualifications: A qualified historic treatment specialist. General selective demolition experience is insufficient experience for historic removal and dismantling work.

B. Removal and Dismantling Historic Treatment Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for each phase of removal and dismantling work, including protection of surrounding and substrate materials and Project site.
   1. Dust and Noise Control: Include locations of proposed temporary dust- and noise-control partitions and means of egress from occupied areas coordinated with continuing on-site operations and other known work in progress.
   2. Debris Hauling: Include plans clearly marked to show debris hauling routes, turning radii, and locations and details of temporary protective barriers.

C. Mockups: Prepare mockups of specific historic removal and dismantling procedures specified in this Section to demonstrate aesthetic effects and to set quality standards for materials and execution.
   1. Typical Dismantling Work:
      a. Dismantle typical North Wing first floor window trim as shown on Drawings, one (1) location.
      b. Dismantle typical second floor window trim as shown on Drawings, one (1) location.
      c. Dismantle one (1) section of marble base as shown on Drawings.
      d. Dismantle one (1) panel of marble wainscot from Northwest Vestibule, as shown on Drawings.
      e. Dismantle one (1) panel of wood wainscot from Lecture Room, as shown on Drawings.
      f. Dismantle one (1) panel of wood wainscot from Café, as shown on Drawings.
   2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

D. Regulatory Requirements: Comply with notification regulations of authorities having jurisdiction before beginning removal and dismantling work. Comply with hauling and disposal regulations of authorities having jurisdiction.

1.07 FIELD CONDITIONS

A. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
   1. Before removal and dismantling, Owner will remove the following items:
      a. Furniture, Fixtures, and Equipment (FF&E).
      b. State History Collections (this work is ongoing and scheduled to be complete by mid-July).

B. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with removal and dismantling work.

C. Hazardous Materials: Hazardous materials are present in construction affected by removal and dismantling work. A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.
   1. Hazardous material remediation is specified elsewhere in the Contract Documents.
   2. Do not disturb hazardous materials or items suspected of containing hazardous materials, except under procedures specified elsewhere in the Contract Documents.
   3. If unanticipated asbestos is suspected, stop work in the area of potential hazard, shut off fans and other air handlers ventilating the area, and rope off area until the questionable material is identified. Reassign workers to continue work in unaffected areas. Resume work in the area of concern after safe working conditions are verified.

D. Storage or sale of removed or dismantled items on-site is not permitted unless otherwise indicated.

PART 2 PRODUCTS - (NOT USED)

PART 3 EXECUTION

3.01 HISTORIC TREATMENT SPECIALISTS

A. Historic Removal and Dismantling Specialist Firms: Subject to compliance with requirements, firms that may perform historic removal and dismantling include, but are not limited to, the following:
   1. Architectural Metal Restoration.
   2. Carver Sheet Metal Works, Inc.
   3. Historical Arts and Casting.
   4. Hydro-Tech Inc.
   5. Abstract Masonry Restroation, Inc.
   6. Childs Enterprises Masonry.
   7. Commercial Restoration Services.
   8. IMS Masonry.
   9. RJ Masonry
   10. American Heritage Window Rebuilders.
   11. Classic Furniture Services.
   12. Historic Woods by Lunar Canyon.
   13. ReView Window Restoration.
   14. R Phillips Plastering.
   15. Evergreene Architectural Arts.

3.02 HISTORIC REMOVAL AND DISMANTLING EQUIPMENT

A. Removal Equipment: Use only hand-held tools, except as follows or unless otherwise approved by Architect on a case-by-case basis:
   1. Light jackhammers are allowed subject to Architect's approval.
   2. Large air hammers are not permitted.

B. Dismantling Equipment: Use manual, hand-held tools, except as follows or otherwise approved by Architect on a case-by-case basis:
   1. Hand-held power tools and cutting torches are permitted only as submitted in the historic treatment program. They must be adjustable so as to penetrate or cut only the thickness of material being removed.
   2. Pry bars more than 18 inches long and hammers weighing more than 2 lb are not permitted for dismantling work.

3.03 EXAMINATION

A. Preparation for Removal and Dismantling: Examine construction to be removed or dismantled to determine best methods to safely and effectively perform removal and dismantling work. Examine adjacent work to determine what protective measures are necessary. Make explorations, probes, and inquiries as necessary to determine condition of construction to be removed or dismantled and location of utilities and services to remain that may be hidden by construction that is to be removed or dismantled.

1. Verify that affected utilities are disconnected and capped.
2. Inventory and record the condition of items to be removed and dismantled for reinstallation or salvage. Enter this information on the submittal of inventory of salvaged items.
3. Before removal or dismantling of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.
4. Engineering Survey: Engage a professional engineer to survey condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures as a result of removal and dismantling work.

B. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs and [use of point cloud available from architect upon request].
   1. Comply with requirements specified in Section 013233 "Photographic Documentation."

C. Perform surveys as the Work progresses to detect hazards resulting from historic removal and dismantling procedures.

3.04 HISTORIC REMOVAL AND DISMANTLING

A. General: Have removal and dismantling work performed by a qualified historic removal and dismantling specialist. Ensure that historic removal and dismantling specialist's field supervisors are present when removal and dismantling work begins and during its progress.

B. Perform work according to the historic treatment program and approved mockup(s).
   1. Perform removal and dismantling to the limits indicated.
   2. Provide supports or reinforcement for existing construction that becomes temporarily weakened by removal and dismantling work, until the Project Work is completed unless otherwise indicated.
   3. Perform cutting by hand or with small power tools wherever possible. Cut holes and slots neatly to size required, with minimum disturbance of adjacent work.
   4. Do not operate air compressors inside building unless approved by Architect in each case.
   5. Do not drill or cut columns, beams, joints, girders, structural slabs, or other structural supporting elements, without having Contractor's professional engineer's written approval for each location before such work is begun.
   6. Dispose of removed and dismantled items off-site unless indicated to be salvaged or reinstalled.

C. Water-Mist Sprinkling: Use water-mist sprinkling and other wet methods to control dust only with adequate, approved procedures and equipment according to the historic treatment program to ensure that such water does not create a hazard or adversely affect other building areas or materials.

D. Unacceptable Equipment: Keep equipment that is not permitted for historic removal or dismantling work away from the vicinity where such work is being performed.

E. Removing and Dismantling Items on or Near Historic Surfaces:
   1. Use only dismantling equipment and procedures within 12 inches of historic surface. Do not use pry bars. Protect historic surface from contact with or damage by tools.
   2. Unfasten items in the opposite order from which they were installed.
   3. Support each item as it becomes loosened to prevent stress and damage to the historic surface.
   4. Dismantle anchorages.

F. Anchorages:
   1. Remove anchorages associated with removed items.
   2. Dismantle anchorages associated with dismantled items.
   3. In non-historic surfaces, patch holes created by anchorage removal or dismantling according to the requirements for new work.
   4. In historic surfaces, patch or repair holes created by anchorage removal or dismantling according to Section that is specific to the historic surface being patched.

3.05 HISTORIC REMOVAL AND DISMANTLING SCHEDULE

A. Existing Items to Be Removed: As Indicated on Drawings.

B. Existing Items to Be Dismantled and Reinstalled:
   1. Historic interior window trim, as indicated on Drawings.
   2. Wood wainscot, as indicated on Drawings.
   3. Marble wainscot, as indicated on Drawings.
   4. Marble base, as indicated on Drawings.
   5. Vestibule light fixtures, as indicated on Drawings.
   6. Historic radiators, as indicated on Drawings.
   7. Other Items As Indicated on Drawings.

C. Existing Items to Remain:
   1. Structural load-bearing concrete footings, foundations, and columns
   2. Structural load-bearing masonry walls.
   3. Structural steel trusses.
   4. Structural concrete floor and roof decks.
   5. Other items as indicated on Drawings.

END OF SECTION 024296

This page intentionally left blank

ASBESTOS, LEAD AND HAZARDOUS MATERIALS INSPECTION, SURVEY AND ASSESSMENT FOR THE

RIO GRANDE DEPOT MUSEUM

270 SOUTH RIO GRANDE
SALT LAKE CITY, UTAH 84101

State of Utah—Department of Administrative Services

DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

4110 State Office Building/Salt Lake City, Utah 84114/538-3018

ASBESTOS SURVEY AND ASSESSMENT
FOR THE

RIO GRANDE DEPOT MUSEUM

270 SOUTH RIO GRANDE
SALT LAKE CITY, UTAH 84101

March 17, 2022

Prepared for:

State of Utah–Department of Administrative Services

DIVISION OF FACILITIES CONSTRUCTION
AND MANAGEMENT
4110 State Office Building/Salt Lake City, Utah 84114/538-3018

Mr. Jon Vance
Project Manager
State of Utah
Department of Administrative Services
Division of Facilities Construction and Management (DFCM)
State Office Building Room 4110
Salt Lake City, Utah 84114
PH: (801) 686-4422

Prepared by:

R & R ENVIRONMENTAL
ASBESTOS • LEAD • INDUSTRIAL HYGIENE

R & R Environmental, Inc. (R & R)
47 West 9000 South, Suite #2
Sandy, Utah 84070
dave@rrenviro.com
Phone (801) 541-1035

Table of Contents

ASBESTOS

1.0 INTRODUCTION 1
2.0 EXECUTIVE SUMMARY 2
3.0 SAMPLING METHODS 5
4.0 SURVEY RESULTS 5
5.0 CONCLUSIONS 6
6.0 LIMITATIONS AND EXCLUSION OF WARRANTY 8

List of Appendices

Appendix A Sample Log
Appendix B Laboratory Report
Appendix C Photo Log
Appendix D Floor Plans
Appendix E State of Utah Certifications

1.0 INTRODUCTION

R & R Environmental, Inc. (R & R) was contacted to conduct an asbestos survey for the Rio Grande Depot Museum located at 270 South Rio Grande in Salt Lake City, Utah. The building set to undergo a seismic upgrade and renovation. The survey consisted of a visual assessment of the building for suspect asbestos containing materials (ACM) and bulk sampling of the materials. The fieldwork component of this survey was conducted by Mr. Jamison Moss who is a Utah Accredited Asbestos Building Inspector.

This report presents the conditions and observations noted on the visit dates.

The following general information is included in this survey report:

- Executive Summary (Section 2.0)
- Sampling Methods (Section 3.0)
- Analytical Results (Section 4.0)
- Conclusions (5.0)

2.0 EXECUTIVE SUMMARY

Material	Location(s)	Quantity	Result	Photo #	Condition
Concrete Wall/Column Coatings	Throughout Basement	~8,700 ft^2	5 % Chrysotile (Tar)	2	Undamaged
Elevator Frame Coating	Elevators (Freight & Passenger)	144 ft^2	Up to 9% Chrysotile	3, 4	Undamaged
Sheet Vinyl & Mastic	Floor 2 Janitor	35 ft^2	15% Chrysotile	5	Undamaged
Brown Putty Wall Packing	North Attic AHU Room	3 ft^2	20% Chrysotile	6	Undamaged
Elevator Flooring Materials	Passenger Elevator	40 ft^2	12% Chrysotile (Sheet Vinyl) <0.25% Chrysotile (Mastic) (By Point Count)	7	Undamaged
Black Roofing Sealant	Roof	~55,000 ft^2	9% Chrysotile	8	Undamaged
Fiber Cement Countertop	Room 004	55 ft^2	10% Chrysotile Trace Amosite	9	Undamaged
Fiber Cement Fume Hood	Room 004	144 ft^2	13% Chrysotile Trace Crocidolite	9	Undamaged
White Sink Undercoat	Room 004	6 ft^2	Up to 15% Chrysotile	10	Undamaged
12" Brown Vinyl Floor Tile & Mastic	Stairways	482 ft^2	15% Chrysotile (Mastic) 2% Chrysotile (Tile)	11	Undamaged
Stair Tread Adhesive	Stairways	580 ft^2	2% Chrysotile	12	Undamaged
Duct Sealants (Green & Gray)	Scattered Throughout	>7,521 ft^2	Up to 7% Chrysotile	13, 14	Undamaged
TSI-Aircell Lagging	Throughout Outer Walls (Basement to Floor 2)	~990 lf	Up to 75% Chrysotile	15	Undamaged
9” Vinyl Floor Tile & Mastic	Floor 1 NE Entry Closet	40 ft^2	Assumed	16	Undamaged
Other Roofing Materials	Roof	~55,000 ft^2	Assumed	17, 18	Undamaged
Fire Rated Doors (~120 Doors)	Throughout	~2,880 ft^2	Assumed	19	Undamaged
Boilers (2 units)	North Boiler Room	~765 ft^2	Assumed	20	Undamaged

RIO GRANDE DEPOT MUSEUM
SALT LAKE CITY, UTAH 84101
DATE OF SURVEY: FEBRUARY 2022
NESHAP - REGULATED
ASBESTOS-CONTAINING MATERIALS (R-ACM)

1. Friable asbestos material (>1% asbestos and can be crumbled, pulverized or reduced to powder by hand pressure)
   _X_ Thermal system insulation (TSI)*
   ____ Textured ceiling material (TCM)*
   ____ Spray-on insulation or fireproofing*
   ____ Blown-in insulation*
   ____ Ceiling tiles/panels*
   ____ Plaster, gypsum board, gypsum board joint compound*
   ____ Cloth materials* (Boiler Flue Gasket)
   ____ Paper materials* (HVAC Paper Tape and Insulating Board)
   ____ Electrical wiring insulation*
   ____ Sink undercoating (loose)*
   ____ Other*

2. Category I ACM which has become friable
   ____ Packings
   ____ Gaskets
   ____ Resilient floor coverings (floor tile and sheet vinyl)
   ____ Asphalt roofing products (Dust Debris, Roofing Underlayment Debris, Flashing Material)

3. Category I ACM that will be or has been subjected to sanding, grinding, cutting or abrading
   ____ Packings
   ____ Gaskets
   _X_ Resilient floor coverings (floor tile and sheet vinyl)
   ____ Asphalt roofing products

4. Category II ACM that has a high probability of becoming or has become friable in the course of demolition or renovation operations
   _X_ Asbestos cement materials (transite)*
   ____ Asphalt, tar and rubber-base ACM products other than roofing products*
   ____ Non-asphalt and non-paper roofing products*
   ____ Paint*
   ____ Fire brick and/or mortar*
   ____ Stainless steel sink undercoating (solid)*
   ____ Encapsulated TCM*
   ____ Encapsulated TSI*
   _X_ Mastic for floor tile, ceiling tile, cove molding, etc.*
   ____ Other

RIO GRANDE DEPOT MUSEUM
SALT LAKE CITY, UTAH 84101
DATE OF SURVEY: FEBRUARY 2022
NESHAP NON-REGULATED
ASBESTOS-CONTAINING MATERIAL (N-R-ACM)

1. ≥ 1% asbestos

2. Category I Non-friable (cannot be crumbled, pulverized, or reduced to powder by hand pressure) ACM with >1% asbestos by new PLM procedure
   _X_ Packings
   _X_ Gaskets (Duct Sealants)
   _X_ Resilient floor coverings (floor tile)
   ____ Asphalt roofing products

3. Category II Non-friable ACM with >1% asbestos by new PLM procedure (Category includes items meeting Category I definition but not specifically listed in that category)
   ____ Asbestos cement materials (transite)* (Fume hoods, counter tops, and window panels)
   ____ Asphalt, tar and rubber-base ACM products other than roofing products*
   _X_ Non-asphalt and non-paper roofing products*
   ____ Paint* (Silver Paint Sealant)
   ____ Fire brick and/or mortar*
   _X_ Sink undercoating (solid)*
   _X_ Mastic for floor tile, ceiling tile, cove molding, etc.*
   _X_ Other* (Fire Rated Doors/Boilers)

Notes:

1. (*) denotes R & R's interpretation of materials included in this category.
2. New PLM procedure is outlined in Appendix A, Subpart F, 40 CFR, Part 783, Section 1, Polarized Light Microscopy.
3. The Environmental Protection Agency (EPA) National Emission Standard for Hazardous Air Pollutants (NESHAP) asbestos revision as outlined in 40 CFR, Part 61, became effective November 20, 1990. The asbestos classification system outlined in the revision and included in this section is dynamic in nature. Asbestos materials classified as "NON-REGULATED" at the time of the survey may become "REGULATED" due to ongoing or planned maintenance, renovation, or demolition actions, which can transform a material containing greater than 1% asbestos from a "non-friable" and NON-REGULATED to a friable and REGULATED condition. Classification of ACM in this section and in the executive summary of this report is, therefore, based on the observations of the surveyor at the time of the survey and may or may not be appropriate at later dates.
4. Maintenance, renovation, demolition, weathering, normal wear, water or other damage can alter the "NON-REGULATED" status of materials, and necessitate precautions required for handling them as "REGULATED" asbestos-materials.

3.0 SAMPLING METHODS

Survey procedures were based on those outlined in Title 40 Code of Federal Regulation (CFR) Part 763, USEPA Asbestos Hazard Emergency Response Act, and the Asbestos Model Accreditation Plan (effective April 4, 1994). The procedures included visual observation, physical inspection, bulk sample collection, and condition assessment of suspect ACM. The number of samples collected was based on the amount and accessibility of each homogeneous material, with consideration given for the type, age, and condition.

Two – Hundred and Four (204) samples were collected from the suspect materials to assess the presence of asbestos (or lack thereof) in building materials/systems. Each sample collected was placed into a sealable plastic bag or tub, marked with a unique sample identification code, and packaged for subsequent shipment to the laboratory for analysis. Individual sample identification consisted of a numeric code denoting the sampling media/location.

Subsequent to packaging and labeling, samples were submitted under proper chain-of-custody to Reservoirs Environmental, Inc., Denver, Colorado. The National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896 accredits Reservoirs for asbestos analysis. Samples were analyzed via Polarized Light Microscopy (PLM) utilizing EPA Method 600/M4-82-020. Please note that USEPA and OSHA regulations define an ACM as a material containing more than one (1) percent asbestos, by volume, as determined by PLM analysis. In the case of multi-layer systems (e.g., floor tile/mastic layers), the laboratory analyzed and reported each layer separately.

4.0 SURVEY RESULTS

Two – Hundred and Four (204) representative samples collected were submitted for analytical determination. A summary of analytical results for samples collected and analyzed for this survey are in Appendix B (Laboratory Results) and are discussed below by building material/system type. Photographs of the buildings where samples were taken are included as Appendix C. Floor Plans of the building where samples were taken are included in Appendix D

5.0 CONCLUSIONS

Asbestos-containing materials were identified in the building. See Executive Summary for details.

6.0 LIMITATIONS AND EXCLUSION OF WARRANTY

This asbestos survey and assessment was performed using procedures and a level of diligence typically exercised by professional consultants performing similar services. However, asbestos-containing material (ACM) can be present in a structure, but not identified using ordinary investigative procedures.

No asbestos survey can completely, eliminate uncertainty regarding the presence of ACM. R & R Environmental, Inc.'s level of diligence and investigative procedures are intended to reduce, but not eliminate, potential uncertainty regarding the presence of ACM. The procedures used for this survey attempt to establish a balance between the competing goals of limiting investigative costs, time, and building damage, and reducing the uncertainty about unknown conditions. Therefore, the determinations in this report should not be construed as a guarantee that all ACM present in the subject property has been included in this report.

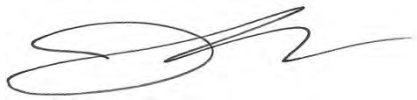
This report presents R & R Environmental, Inc.'s professional determinations, which are dependent upon information obtained during performance of consulting services. R & R Environmental, Inc. assumes no responsibility for omissions or errors resulting from inaccurate information provided by sources outside of R & R Environmental, Inc.

No warranty or guarantee, expressed or implied, is made regarding the findings, conclusions, or recommendations contained in this report. The limitations presented above supersede the requirements or provisions of all other contracts or scopes of work, implied, or otherwise, except stated or acknowledged herein.

AN ASBESTOS SURVEY AND ASSESSMENT
OF THE
RIO GRANDE DEPOT MUSEUM
SALT LAKE CITY, UTAH 84101

During the month of February 2022, R & R Environmental, Inc. (R & R) of Sandy, Utah, conducted an asbestos survey and assessment of the Rio Grande Depot Museum located at 270 South Rio Grande in Salt Lake City, Utah. Bulk samples of suspect asbestos-containing materials were collected and analyzed. The condition of all friable and non-friable asbestos-containing materials was, assessed. The following accredited inspector conducted the survey and assessment.

Inspected by:



March 17, 2022

Jamison Moss — Date
State of Utah, Division of Air Quality Inspector
Certification Number: ASB-6674
State of Utah Company Certification: ASBC-237

This report was reviewed by:

March 17, 2022

David C. Roskelley, MSPH, CIH, CSP — Date
State of Utah, Division of Air Quality Inspector
Certification Number: ASB-1370
AHERA Inspector #5 PSI 65451 I
Certified Safety Professional #15774
Certified Industrial Hygienist #8529
State of Utah Company Certification: ASBC-237

Appendix A

Sample Log

SAMPLE LOG

Sample #	Material/ Homogenous Area	Sample Location	Quantity	Lab Result (%/Type)	Assessment
R-01	Wall System	South Attic AHU	~93,000 ft^2	None Detected	Undamaged
R-02	Wall System	Room 238	~93,000 ft^2	None Detected	Undamaged
R-03	Wall System	Room 207	~93,000 ft^2	None Detected	Undamaged
R-04	Wall System	Floor 1 North Hall	~93,000 ft^2	None Detected	Undamaged
R-05	Wall System	Floor 1 Freight Hall	~93,000 ft^2	None Detected	Undamaged
R-06	Wall System	Room 016 Closet	~93,000 ft^2	None Detected	Undamaged
R-07	Wall System	Room 002A	~93,000 ft^2	None Detected	Undamaged
R-08	Smooth Plaster	Room 230 B	>198,000 ft^2	None Detected	Undamaged
R-09	Smooth Plaster	Room 220	>198,000 ft^2	None Detected	Undamaged
R-10	Smooth Plaster	SE Stairwell	>198,000 ft^2	None Detected	Undamaged
R-11	Smooth Plaster	Library	>198,000 ft^2	None Detected	Undamaged
R-12	Smooth Plaster	Kitchen	>198,000 ft^2	None Detected	Undamaged
R-13	Smooth Plaster	Reception Office	>198,000 ft^2	None Detected	Damaged
R-14	Smooth Plaster	North Basement Stairs	>198,000 ft^2	None Detected	Undamaged
R-15	Decorative Plaster	Floor 2 Lobby	>100,000 ft^2	None Detected	Damaged
R-16	Decorative Plaster	Floor 2 Lobby	>100,000 ft^2	None Detected	Undamaged
R-17	Decorative Plaster	Floor 2 South Hall	>100,000 ft^2	None Detected	Undamaged
R-18	Decorative Plaster	Café	>100,000 ft^2	None Detected	Undamaged
R-19	Decorative Plaster	Floor 1 Hall	>100,000 ft^2	None Detected	Damaged
R-20	Decorative Plaster	Floor 1 Hall	>100,000 ft^2	None Detected	Damaged
R-21	Decorative Plaster	SW Vestibule	>100,000 ft^2	None Detected	Undamaged
R-22	Scratch Coat Plaster	Basement Hall	~25,000 ft^2	None Detected	Undamaged
R-23	Scratch Coat Plaster	Room M004	~25,000 ft^2	None Detected	Undamaged
R-24	Scratch Coat Plaster	Library	~25,000 ft^2	None Detected	Undamaged
R-25	Scratch Coat Plaster	Library	~25,000 ft^2	None Detected	Undamaged
R-26	Scratch Coat Plaster	Antiquities Lab	~25,000 ft^2	None Detected	Undamaged
R-27	Scratch Coat Plaster	Room 113	~25,000 ft^2	None Detected	Undamaged
R-28	Scratch Coat Plaster	Collection Stacks	~25,000 ft^2	None Detected	Undamaged
R-29	Skim Coat Plaster	Room M004	896 ft^2	None Detected	Undamaged
R-30	Skim Coat Plaster	Basement Hall	896 ft^2	None Detected	Undamaged
R-31	Skim Coat Plaster	Room 016	896 ft^2	None Detected	Undamaged
R-32	CMU Blockfiller	Floor 1 Freight Hall	3,725 ft^2	None Detected	Undamaged

Sample #	Material/ Homogenous Area	Sample Location	Quantity	Lab Result (%/Type)	Assessment
R-33	CMU Blockfiller	Basement Hall	3,725 ft^2	None Detected	Undamaged
R-34	CMU Blockfiller	Boiler Room	3,725 ft^2	None Detected	Undamaged
R-35	CMU Blockfiller	Basement Hall	3,725 ft^2	None Detected	Undamaged
R-36	CMU Blockfiller	Room 001	3,725 ft^2	None Detected	Undamaged
R-37	Concrete Wall/Column Coatings	Room 001	~8,700 ft^2	None Detected	Undamaged
R-38	Concrete Wall/Column Coatings	Room 002	~8,700 ft^2	None Detected	Undamaged
R-39	Concrete Wall/Column Coatings	Room 008	~8,700 ft^2	None Detected	Undamaged
R-40	Concrete Wall/Column Coatings	Room 016	~8,700 ft^2	None Detected	Undamaged
R-41	Concrete Wall/Column Coatings	Room 012	~8,700 ft^2	**5 % Chrysotile** (Tar)	Undamaged
R-42	Concrete Wall/Column Coatings	Library	~8,700 ft^2	None Detected	Undamaged
R-43	Concrete Wall/Column Coatings	Collection Stacks	~8,700 ft^2	None Detected	Undamaged
R-44	Light Weight Concrete	Basement Men Bathroom	110 ft^2	None Detected	Undamaged
R-45	Light Weight Concrete	South Attic AHU	110 ft^2	None Detected	Undamaged
R-46	TSI-End Sealant	North Attic	709 ft^2	None Detected	Undamaged
R-47	TSI-End Sealant	South Attic AHU	709 ft^2	None Detected	Undamaged
R-48	TSI-End Sealant	Boiler Room	709 ft^2	None Detected	Undamaged
R-49	TSI-End Sealant	Collection Stacks	709 ft^2	None Detected	Undamaged
R-50	TSI-End Sealant	North Attic AHU	709 ft^2	None Detected	Undamaged
R-51	TSI-End Sealant	Room M004	709 ft^2	None Detected	Undamaged
R-52	TSI-End Sealant	Basement Hall	709 ft^2	None Detected	Undamaged
R-53	TSI-Plaster Fittings	North Attic AHU	625 ft^2	None Detected	Undamaged
R-54	TSI-Plaster Fittings	South Attic	625 ft^2	None Detected	Undamaged
R-55	TSI-Plaster Fittings	Floor 1 North Hall	625 ft^2	None Detected	Undamaged
R-56	TSI-Plaster Fittings	Collection Stacks	625 ft^2	None Detected	Undamaged
R-57	TSI-Plaster Fittings	Room M004	625 ft^2	None Detected	Undamaged
R-58	TSI-Plaster Fittings	Room 008	625 ft^2	None Detected	Undamaged
R-59	TSI-Plaster Fittings	South Attic AHU	625 ft^2	None Detected	Undamaged
R-60	TSI-Aircell Lagging	Café East	~990 lf	**75% Chrysotile**	Undamaged
R-61	TSI-Aircell Lagging	Reception Office B	~990 lf	**72% Chrysotile**	Undamaged
R-62	TSI-Aircell Lagging	Café West	~990 lf	**75% Chrysotile**	Undamaged
R-63	TSI-Aircell Lagging	Room 015	~990 lf	**75% Chrysotile**	Undamaged
R-64	TSI-Aircell Lagging	Room 001	~990 lf	**75% Chrysotile**	Undamaged
R-65	Pipe Thread Sealant	Room M004	>375 ft^2	None Detected	Undamaged
R-66	Pipe Thread Sealant	North Attic AHU	>375 ft^2	None Detected	Undamaged
R-67	TSI-Silver Foil Lagging	Room M004	12 lf	None Detected	Damaged

Sample #	Material/ Homogenous Area	Sample Location	Quantity	Lab Result (%/Type)	Assessment
R-68	TSI-Silver Foil Lagging	Room M004	12 lf	None Detected	Damaged
R-69	TSI-Silver Foil Lagging	Room M004	12 lf	None Detected	Damaged
R-70	TSI-Pipe Supports	Room M004	94 ft^2	None Detected	Undamaged
R-71	TSI-Pipe Supports	Room 008	94 ft^2	None Detected	Undamaged
R-72	TSI-Pipe Supports	Room 007	94 ft^2	None Detected	Undamaged
R-73	TSI-Pipe Supports	Boiler Room	94 ft^2	None Detected	Undamaged
R-74	TSI-Pipe Supports	Collection Stacks	94 ft^2	None Detected	Undamaged
R-75	Black Vibration Isolator	North Attic	56 ft^2	None Detected	Undamaged
R-76	Black Vibration Isolator	South Attic	56 ft^2	None Detected	Undamaged
R-77	HVAC Duct Tape	Room 006	88 ft^2	None Detected	Undamaged
R-78	HVAC Duct Tape	Room 007	88 ft^2	None Detected	Undamaged
R-79	Light Gray AHU Sealant	South Attic AHU	~4,147 ft^2	**7% Chrysotile**	Undamaged
R-80	Light Gray AHU Sealant	North Attic AHU	~4,147 ft^2	**7% Chrysotile**	Undamaged
R-81	Duct Gasket	Exterior	128 ft^2	None Detected	Undamaged
R-82	Duct Gasket	Exterior	128 ft^2	None Detected	Undamaged
R-83	Green Duct Sealant	South Attic AHU	~3,374 ft^2	**3% Chrysotile**	Undamaged
R-84	Green Duct Sealant	Room 010	~3,374 ft^2	None Detected	Undamaged
R-85	Dark Gray Duct Sealant	South Attic	>1,500 ft^2	None Detected	Undamaged
R-86	Dark Gray Duct Sealant	Library	>1,500 ft^2	None Detected	Undamaged
R-87	White Duct Sealant	North Attic	35 ft^2	None Detected	Undamaged
R-88	White Duct Sealant	North Attic	35 ft^2	None Detected	Undamaged
R-89	Light Gray Duct Sealant	Room 011	24 ft^2	None Detected	Undamaged
R-90	Light Gray Duct Sealant	Room 011	24 ft^2	None Detected	Undamaged
R-91	Old Gray Duct Sealant	North Attic	>1,500 ft^2	None Detected	Undamaged
R-92	Old Gray Duct Sealant	Room 014	>1,500 ft^2	None Detected	Undamaged
R-93	Brick & Mortar	Main Attic	>58,000 ft^2	None Detected	Undamaged
R-94	Brick & Mortar	Antiquities Lab	>58,000 ft^2	None Detected	Undamaged
R-95	Wall Covering	Floor 2 North Hall	2,704 ft^2	None Detected	Undamaged
R-96	Wall Covering	Floor 2 South Hall	2,704 ft^2	None Detected	Undamaged
R-97	Foundation Tar	Room 015	5,623 ft^2	None Detected	Undamaged
R-98	Foundation Tar	Room 003	5,623 ft^2	None Detected	Undamaged
R-99	Red Wall Packing	South Attic	43 ft^2	None Detected	Undamaged
R-100	Red Wall Packing	Basement Hall	43 ft^2	None Detected	Undamaged
R-101	Red/Pink Wall Packing	Room 001	18 ft^2	None Detected	Undamaged

Sample #	Material/ Homogenous Area	Sample Location	Quantity	Lab Result (%/Type)	Assessment
R-102	Red/Pink Wall Packing	Floor 2 IT Room	18 ft^2	None Detected	Undamaged
R-103	Brown Wall Packing	Basement Hall	76 ft^2	None Detected	Undamaged
R-104	Brown Wall Packing	Room 003	76 ft^2	None Detected	Undamaged
R-105	Brown Putty Wall Packing	North Attic AHU	3 ft^2	**20% Chrysotile**	Undamaged
R-106	Brown Putty Wall Packing	North Attic AHU	3 ft^2	**20% Chrysotile**	Undamaged
R-107	White Sink Undercoat	Room 004	6 ft^2	**15% Chrysotile**	Undamaged
R-108	White Sink Undercoat	Room 004	6 ft^2	**13% Chrysotile**	Undamaged
R-109	Light Gray Sink Undercoat	Room 002	8 ft^2	None Detected	Undamaged
R-110	Light Gray Sink Undercoat	Antiquities Lab	8 ft^2	None Detected	Undamaged
R-111	Fiber Cement Fume Hood	Room 004	144 ft^2	**13% Chrysotile**	Undamaged
R-112	Fiber Cement Fume Hood	Room 004	144 ft^2	**13% Chrysotile** **Trace Crocidolite**	Undamaged
R-113	Fiber Cement Countertop	Room 004	55 ft^2	**10% Chrysotile** **Trace Amosite**	Undamaged
R-114	Fiber Cement Countertop	Room 004	55 ft^2	**10% Chrysotile**	Undamaged
R-115	White Exterior Caulk	Exterior	1,728 ft^2	None Detected	Undamaged
R-116	White Exterior Caulk	Exterior	1,728 ft^2	None Detected	Undamaged
R-117	Black Exterior Caulk	Exterior	355 ft^2	None Detected	Undamaged
R-118	Black Exterior Caulk	Exterior	355 ft^2	None Detected	Undamaged
R-119	12" Brown Vinyl Floor Tile & Mastic	South Attic Stairway	482 ft^2	**15% Chrysotile (Mastic)** **2% Chrysotile (Tile)**	Undamaged
R-120	12" Brown Vinyl Floor Tile & Mastic	South Stairway	482 ft^2	**15% Chrysotile (Mastic)** **2% Chrysotile (Tile)**	Undamaged
R-121	12" White Vinyl Floor Tile & Mastic (Under Carpet)	Floor 2 IT Room	35 ft^2	None Detected	Undamaged
R-122	12" White Vinyl Floor Tile & Mastic (Under Carpet)	Floor 2 IT Room	35 ft^2	None Detected	Undamaged
R-123	12" White Vinyl Floor Tile & Mastic (w/ Red Streaks)	Room 002	591 ft^2	None Detected	Undamaged
R-124	12" White Vinyl Floor Tile & Mastic (w/ Red Streaks)	Antiquities Lab	591 ft^2	None Detected	Undamaged
R-125	Sheet Vinyl & Mastic	Floor 2 Janitor	35 ft^2	**15% Chrysotile**	Undamaged
R-126	Sheet Vinyl & Mastic	Floor 2 Janitor	35 ft^2	**15% Chrysotile**	Undamaged
R-127	Gray Flooring Compound	Library Back Office	376 ft^2	None Detected	Undamaged
R-128	Gray Flooring Compound	Room 218	376 ft^2	None Detected	Undamaged

Sample #	Material/ Homogenous Area	Sample Location	Quantity	Lab Result (%/Type)	Assessment
R-129	Black Mastic	Room 228	>6,815 ft^2	None Detected	Undamaged
R-130	Black Mastic	Room 217	>6,815 ft^2	None Detected	Undamaged
R-131	Yellow Carpet Adhesive	Room 230	795 ft^2	None Detected	Undamaged
R-132	Yellow Carpet Adhesive	Lecture Room	795 ft^2	None Detected	Undamaged
R-133	Elevator Flooring Materials	North Elevator	40 ft^2	**12% Chrysotile (Sheet Vinyl) <0.25% Chrysotile (Mastic) (By Point Count)**	Undamaged
R-134	Elevator Flooring Materials	North Elevator	40 ft^2	**12% Chrysotile (Sheet Vinyl) <0.25% Chrysotile (Mastic) (By Point Count)**	Undamaged
R-135	Epoxy Flooring	Room 004	178 ft^2	None Detected	Undamaged
R-136	Epoxy Flooring	Room 006	178 ft^2	None Detected	Undamaged
R-137	Stair Tread Adhesive	South Stairway	580 ft^2	**2% Chrysotile**	Undamaged
R-138	Stair Tread Adhesive	North Attic Stairway	580 ft^2	**2% Chrysotile**	Undamaged
R-139	6" Black Vinyl Cove Base & Mastic	Café	65 ft^2	None Detected	Undamaged
R-140	6" Black Vinyl Cove Base & Mastic	Café	65 ft^2	None Detected	Undamaged
R-141	4" Black Vinyl Cove Base & Mastic	Kitchen Lockers	58 ft^2	None Detected	Undamaged
R-142	4" Black Vinyl Cove Base & Mastic	Kitchen Bathroom	58 ft^2	None Detected	Undamaged
R-143	4" Brown Vinyl Cove Base & Mastic	Basement Hall	19 ft^2	None Detected	Undamaged
R-144	4" Brown Vinyl Cove Base & Mastic	Basement Hall	19 ft^2	None Detected	Undamaged
R-145	4" Light Tan Vinyl Cove Base & Mastic	Library/Offices	638 ft^2	None Detected	Undamaged
R-146	4" Light Tan Vinyl Cove Base & Mastic	Basement Hall	638 ft^2	None Detected	Undamaged
R-147	4" Tan Vinyl Cove Base & Mastic	Basement Hall	44 ft^2	None Detected	Undamaged
R-148	4" Tan Vinyl Cove Base & Mastic	South Attic Stairway	44 ft^2	None Detected	Undamaged
R-149	3" Tan Vinyl Cove Base & Mastic	North Elevator	28 ft^2	None Detected	Undamaged
R-150	3" Tan Vinyl Cove Base & Mastic	North Elevator	28 ft^2	None Detected	Undamaged
R-151	Vinyl Cove Base Mastic	Room 016	55 ft^2	None Detected	Damaged
R-152	Vinyl Cove Base Mastic	Room 004	55 ft^2	None Detected	Damaged
R-153	2x2 Ceiling Panel #1	Room 112	10,507 ft^2	None Detected	Undamaged
R-154	2x2 Ceiling Panel #1	Library	10,507 ft^2	None Detected	Undamaged
R-155	2x2 Ceiling Panel #2	Floor 1 North Hall	5,070 ft^2	None Detected	Undamaged

Sample #	Material/ Homogenous Area	Sample Location	Quantity	Lab Result (%/Type)	Assessment
R-156	2x2 Ceiling Panel #2	Floor 2 South Hall	5,070 ft^2	None Detected	Undamaged
R-157	12" Ceiling Tile #1 (Lg & Sm. Pencil Holes)	Café	475 ft^2	None Detected	Undamaged
R-158	12" Ceiling Tile #1 (Lg & Sm. Pencil Holes)	Café	475 ft^2	None Detected	Undamaged
R-159	12" Ceiling Tile #1 Adhesive	Café	475 ft^2	None Detected	Undamaged
R-160	12" Ceiling Tile #1 Adhesive	Café	475 ft^2	None Detected	Undamaged
R-161	12" Ceiling Tile #2 (Uniform Hole)	Café	1 ft^2	None Detected	Undamaged
R-162	12" Ceiling Tile #2 (Uniform Hole)	Café	1 ft^2	None Detected	Undamaged
R-163	12" Ceiling Tile #2 Adhesive	Café	1 ft^2	None Detected	Undamaged
R-164	12" Ceiling Tile #2 Adhesive	Café	1 ft^2	None Detected	Undamaged
R-165	12" Ceiling Tile #3 (Lg & Sm. w/ Covered)	Café	144 ft^2	None Detected	Undamaged
R-166	12" Ceiling Tile #3 (Lg & Sm. w/ Covered)	Café	144 ft^2	None Detected	Undamaged
R-167	12" Ceiling Tile #3 Adhesive	Café	144 ft^2	None Detected	Undamaged
R-168	12" Ceiling Tile #3 Adhesive	Café	144 ft^2	None Detected	Undamaged
R-169	12" Ceiling Tile #4 (Lg Crev. & Pinhole)	Room 223	188 ft^2	None Detected	Undamaged
R-170	12" Ceiling Tile #4 (Lg Crev. & Pinhole)	Room 016	188 ft^2	None Detected	Undamaged
R-171	12" Ceiling Tile #4 Adhesive	Floor 2 South Hall	188 ft^2	None Detected	Undamaged
R-172	12" Ceiling Tile #4 Adhesive	Room 016	188 ft^2	None Detected	Undamaged
R-173	12" Ceiling Tile #5 (Uniformed Lg Crev.)	Room 203	98 ft^2	None Detected	Undamaged
R-174	12" Ceiling Tile #5 (Uniformed Lg Crev.)	Room 114	98 ft^2	None Detected	Undamaged
R-175	12" Ceiling Tile #5 Adhesive	Room 203	98 ft^2	None Detected	Undamaged
R-176	12" Ceiling Tile #5 Adhesive	Room 114	98 ft^2	None Detected	Undamaged
R-177	12" Ceiling Tile #6 (Rough Texture)	Room 231	2 ft^2	None Detected	Undamaged
R-178	12" Ceiling Tile #6 (Rough Texture)	Room 231	2 ft^2	None Detected	Undamaged
R-179	12" Ceiling Tile #6 Adhesive	Room 231	2 ft^2	None Detected	Undamaged
R-180	12" Ceiling Tile #6 Adhesive	Room 231	2 ft^2	None Detected	Undamaged

Sample #	Material/ Homogenous Area	Sample Location	Quantity	Lab Result (%/Type)	Assessment
R-181	12" Ceiling Tile #7 (Scattered Small Pencil Holes)	Room 203 A	330 ft^2	None Detected	Undamaged
R-182	12" Ceiling Tile #7 (Scattered Small Pencil Holes)	Room 223	330 ft^2	None Detected	Undamaged
R-183	12" Ceiling Tile #7 Adhesive	Room 203 A	330 ft^2	None Detected	Undamaged
R-184	12" Ceiling Tile #7 Adhesive	Room 223	330 ft^2	None Detected	Undamaged
R-185	Foundation Paper Board	Room 004	2,115 ft^2	None Detected	Undamaged
R-186	Foundation Paper Board	Room 015	2,115 ft^2	None Detected	Undamaged
R-187	Tar Pipe Wrap	Room 011	2 ft^2	None Detected	Undamaged
R-188	Tar Pipe Wrap	Room 011	2 ft^2	None Detected	Undamaged
R-189	Cloth Vibration Isolator	South Attic	5 ft^2	None Detected	Undamaged
R-190	Cloth Vibration Isolator	South Attic	5 ft^2	None Detected	Undamaged
R-191	Brown Vibration Isolator	South Attic	16 ft^2	None Detected	Undamaged
R-192	Brown Vibration Isolator	South Attic	16 ft^2	None Detected	Undamaged
R-193	AHU Door Gasket	South Attic AHU	112 ft^2	None Detected	Damaged
R-194	AHU Door Gasket	North Attic AHU	112 ft^2	None Detected	Undamaged
R-195	Library Flooring Materials (Under Carpet)	Room 112	391 ft^2	None Detected	Undamaged
R-196	Library Flooring Materials (Under Carpet)	Library Office	391 ft^2	None Detected	Undamaged
R-197	Window Glazing	Exterior	1,944 ft^2	None Detected	Undamaged
R-198	Window Glazing	Exterior	1,944 ft^2	None Detected	Undamaged
R-199	Black Roofing Sealant	Roof	~55,000 ft^2	None Detected	Undamaged
R-200	Black Roofing Sealant	Roof	~55,000 ft^2	**9% Chrysotile**	Undamaged
R-201	Elevator Frame Coating	Freight	144 ft^2	**9% Chrysotile**	Undamaged
R-202	Elevator Frame Coating	North Elevator	144 ft^2	**8% Chrysotile**	Undamaged
R-203	Shingle	Roof	~55,000 ft^2	None Detected	Undamaged
R-204	Shingle	Roof	~55,000 ft^2	None Detected	Undamaged

Appendix B

Laboratory Report

eurofins | Built Environment Reservoirs

March 08, 2022

Subcontractor Number:
Laboratory Report: **RES 518653-3**
Project #/P.O. #: **None Given**
Project Description: **Rio Grande**

Jamison Moss
R & R Environmental
47 West 9000 South #2
Sandy UT 84070

Dear Jamison,

Eurofins Reservoirs is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA LAP, LLC), Lab ID 101533 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Eurofins Reservoirs has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 518653-3 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Eurofins Reservoirs will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed, as received by the customer. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Eurofins Reservoirs Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer
by Liu Wenlong

Jeanne Spencer
President

DATA QA
03/08/2022

EUROFINS RESERVOIRS ENVIRONMENTAL, INC

NVLAP Lab Code 101896-0
AIHA LAP, LLC. LAB ID 101533

TABLE: I ANALYSIS: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 518653-3**
Client: **R & R Environmental**
Client Project/P.O.: **None Given**
Client Project Description: **Rio Grande**
Date Samples Received: **March 01, 2022**
Analysis Type: **EPA 600/R-93/116 - Point Count, Bulk (400)**
Turnaround: **Priority**
Date Samples Analyzed: **March 02 - March 03, 2022**

NA = Not Analyzed
NR = Not Received
ND = None Detected
TR = Trace; <1 % Visual Estimate
Trem-Act = Tremolite-Actinolite

Laboratory Sample ID / Client Sample Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non-Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
518653 - R-01	A	White tape	5		ND	90	10
	B	White compound	10		ND	0	100
	C	White joint compound	10		ND	0	100
	D	Off white/tan drywall	75		ND	15	85
518653 - R-02	A	White tape	5		ND	90	10
	B	White joint compound	8		ND	0	100
	C	White compound w/ beige paint	10		ND	0	100
	D	White/tan drywall	77		ND	15	85
518653 - R-03	A	White joint compound	3		ND	0	100
	B	White tape	10		ND	90	10
	C	White compound w/ white paint	13		ND	0	100
	D	Off white/tan drywall	74		ND	10	90
518653 - R-04	A	White joint compound	2		ND	0	100
	B	White tape	10		ND	90	10
	C	White compound w/off white/purple paint	15		ND	0	100
	D	Off white/tan drywall	73		ND	10	90

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

EUROFINS RESERVOIRS ENVIRONMENTAL, INC

NVLAP Lab Code 101896-0
AIHA LAP, LLC. LAB ID 101533

TABLE: I ANALYSIS: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 518653-3**
Client: **R & R Environmental**
Client Project/P.O.: **None Given**
Client Project Description: **Rio Grande**
Date Samples Received: **March 01, 2022**
Analysis Type: **EPA 600/R-93/116 - Point Count, Bulk (400)**
Turnaround: **Priority**
Date Samples Analyzed: **March 02 - March 03, 2022**

NA = Not Analyzed
NR = Not Received
ND = None Detected
TR = Trace; <1 % Visual Estimate
Trem-Act = Tremolite-Actinolite

Laboratory Sample ID / Client Sample Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non-Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
518653 - R-05	A	White joint compound	10		ND	0	100
	B	White tape	10		ND	90	10
	C	White compound w/ beige paint	20		ND	0	100
	D	Off white/tan drywall	60		ND	10	90
518653 - R-06	A	White joint compound	5		ND	0	100
	B	White tape	10		ND	90	10
	C	White compound w/ beige paint	15		ND	0	100
	D	Pink/tan drywall	70		ND	15	85
518653 - R-07	A	White tape	10		ND	90	10
	B	White joint compound	10		ND	0	100
	C	White compound w/ beige paint	20		ND	0	100
	D	Off white/tan drywall	60		ND	5	95

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

EUROFINS RESERVOIRS ENVIRONMENTAL, INC

NVLAP Lab Code 101896-0
AIHA LAP, LLC. LAB ID 101533

TABLE: I ANALYSIS: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 518653-3**
Client: **R & R Environmental**
Client Project/P.O.: **None Given**
Client Project Description: **Rio Grande**
Date Samples Received: **March 01, 2022**
Analysis Type: **EPA 600/R-93/116 - Point Count, Bulk (400)**
Turnaround: **Priority**
Date Samples Analyzed: **March 02 - March 03, 2022**

NA = Not Analyzed
NR = Not Received
ND = None Detected
TR = Trace; <1 % Visual Estimate
Trem-Act = Tremolite-Actinolite

Laboratory Sample ID / Client Sample Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non-Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
518653 - R-08	A	White compound w/ beige paint	5		ND	0	100
	B	White compound w/ yellow paint	5		ND	0	100
	C	White granular plaster	10		ND	0	100
	D	White plaster	25		ND	0	100
	E	Off white granular plaster	55		ND	3	97
518653 - R-09	A	Green paint w/ yellow adhesive	5		ND	0	100
	B	White compound w/ beige paint	5		ND	0	100
	C	Pink foamy plaster	20		ND	0	100
	D	Off white granular plaster	20		ND	3	97
	E	White plaster w/ yellow adhesive	50		ND	0	100
518653 - R-10	A	Off white compound w/ off white paint	5		ND	0	100
	B	Green paint w/ yellow adhesive	5		ND	0	100
	C	Gray granular plaster	20		ND	2	98
	D	White plaster w/ yellow adhesive	70		ND	0	100

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

EUROFINS RESERVOIRS ENVIRONMENTAL, INC

NVLAP Lab Code 101896-0
AIHA LAP, LLC. LAB ID 101533

TABLE: I ANALYSIS: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 518653-3**
Client: **R & R Environmental**
Client Project/P.O.: **None Given**
Client Project Description: **Rio Grande**
Date Samples Received: **March 01, 2022**
Analysis Type: **EPA 600/R-93/116 - Point Count, Bulk (400)**
Turnaround: **Priority**
Date Samples Analyzed: **March 02 - March 03, 2022**

NA = Not Analyzed
NR = Not Received
ND = None Detected
TR = Trace; <1 % Visual Estimate
Trem-Act = Tremolite-Actinolite

Laboratory Sample ID / Client Sample Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non-Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
518653 - R-11	A	Off white granular plaster	15		ND	1	99
	B	White plaster	30		ND	0	100
	C	Off white compound w/ beige paint	55		ND	0	100
518653 - R-12	A	Beige/multi-colored paint	20		ND	0	100
	B	White plaster	80		ND	0	100
518653 - R-13	A	White plaster w/ beige paint	8		ND	0	100
	B	Off white granular plaster	92		ND	0	100
518653 - R-14	A	Gray granular material	25		ND	0	100
	B	White plaster w/ gray paint	75		ND	0	100
518653 - R-15	A	White compound w/ cream/tan paint	5		ND	0	100
	B	White plaster	10		ND	0	100
	C	Gray/multi-colored granular resinous material	85		ND	0	100
518653 - R-16	A	White compound tan/multi-colored paint	8		ND	0	100
	B	White plaster	92		ND	4	96

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

EUROFINS RESERVOIRS ENVIRONMENTAL, INC

NVLAP Lab Code 101896-0
AIHA LAP, LLC. LAB ID 101533

TABLE: I ANALYSIS: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 518653-3**
Client: **R & R Environmental**
Client Project/P.O.: **None Given**
Client Project Description: **Rio Grande**
Date Samples Received: **March 01, 2022**
Analysis Type: **EPA 600/R-93/116 - Point Count, Bulk (400)**
Turnaround: **Priority**
Date Samples Analyzed: **March 02 - March 03, 2022**

NA = Not Analyzed
NR = Not Received
ND = None Detected
TR = Trace; <1 % Visual Estimate
Trem-Act = Tremolite-Actinolite

Laboratory Sample ID / Client Sample Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non-Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
518653 - R-17	A	White compound w/ cream/tan paint	10		ND	0	100
	B	White plaster	90		ND	4	96
518653 - R-18	A	Beige/multi-colored paint w/ tan resinous material	10		ND	0	100
	B	White plaster	90		ND	0	100
518653 - R-19	A	Tan granular plaster	40		ND	TR	100
	B	White plaster w/ brown/multi-colored paint	60		ND	0	100
518653 - R-20	A	Brown fibrous material	5		ND	95	5
	B	Tan granular plaster	15		ND	TR	100
	C	White plaster w/ brown/multi-colored paint	80		ND	0	100
518653 - R-21	A	White plaster w/ beige/multi-colored paint	100		ND	TR	100
518653 - R-22	A	Gray resinous material	5		ND	0	100
	B	White granular plaster	45		ND	0	100
	C	White plaster	50		ND	0	100
518653 - R-23	A	White granular plaster w/ gray paint	100		ND	0	100
518653 - R-24	A	White granular plaster w/ gray/multi-colored paint	100		ND	0	100

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

EUROFINS RESERVOIRS ENVIRONMENTAL, INC

NVLAP Lab Code 101896-0
AIHA LAP, LLC. LAB ID 101533

TABLE: I ANALYSIS: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 518653-3**
Client: **R & R Environmental**
Client Project/P.O.: **None Given**
Client Project Description: **Rio Grande**
Date Samples Received: **March 01, 2022**
Analysis Type: **EPA 600/R-93/116 - Point Count, Bulk (400)**
Turnaround: **Priority**
Date Samples Analyzed: **March 02 - March 03, 2022**

NA = Not Analyzed
NR = Not Received
ND = None Detected
TR = Trace; <1 % Visual Estimate
Trem-Act = Tremolite-Actinolite

Laboratory Sample ID / Client Sample Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non-Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
518653 - R-25	A	White granular plaster w/ gray/multi-colored paint	100		ND	0	100
518653 - R-26	A	White compound	5		ND	0	100
	B	White granular plaster	15		ND	0	100
	C	White granular plaster w/ gray/multi-colored paint	80		ND	0	100
518653 - R-27	A	Tan/multi-colored paint	100		ND	0	100
518653 - R-28	A	White compound	TR		ND	0	100
	B	White granular plaster w/ gray/multi-colored paint	100		ND	0	100
518653 - R-29	A	White granular plaster w/ gray paint	20		ND	0	100
	B	Off white granular plaster w/ beige/multi-colored paint	80		ND	0	100
518653 - R-30	A	White plaster w/ beige paint	100		ND	0	100
518653 - R-31	A	Off white paint	5		ND	0	100
	B	White plaster	10		ND	0	100
	C	Gray granular plaster	85		ND	5	95
518653 - R-32	A	Beige paint	5		ND	0	100
	B	Dark gray granular cementitious material	20		ND	0	100
	C	Light gray granular cementitious material	75		ND	0	100

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

EUROFINS RESERVOIRS ENVIRONMENTAL, INC

NVLAP Lab Code 101896-0
AIHA LAP, LLC. LAB ID 101533

TABLE: I ANALYSIS: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 518653-3**
Client: **R & R Environmental**
Client Project/P.O.: **None Given**
Client Project Description: **Rio Grande**
Date Samples Received: **March 01, 2022**
Analysis Type: **EPA 600/R-93/116 - Point Count, Bulk (400)**
Turnaround: **Priority**
Date Samples Analyzed: **March 02 - March 03, 2022**

NA = Not Analyzed
NR = Not Received
ND = None Detected
TR = Trace; <1 % Visual Estimate
Trem-Act = Tremolite-Actinolite

Laboratory Sample ID / Client Sample Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non-Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
518653 - R-33	A	Gray/multi-colored granular cementitious material w/ beige paint	100		ND	0	100
518653 - R-34	A	Gray/multi-colored granular cementitious material w/ beige paint	100		ND	0	100
518653 - R-35	A	Gray/multi-colored granular cementitious material w/ beige paint	100		ND	0	100
518653 - R-36	A	Gray/multi-colored granular material w/ beige paint	100		ND	0	100
518653 - R-37	A	Gray/multi-colored granular material w/ gray paint	100		ND	0	100
518653 - R-38	A	Gray/multi-colored granular cementitious material w/ white paint	100		ND	0	100
518653 - R-39	A	Gray/multi-colored granular cementitious material w/ off white paint	100		ND	0	100
518653 - R-40	A	Black tar	TR		ND	0	100
	B	Gray granular cementitious material w/ brown/white paint	100		ND	0	100
518653 - R-41	A	Black tar	TR	Chrysotile	5	0	95
	B	Tan granular material w/ brown/multi-colored paint	100		ND	0	100
518653 - R-42	A	Tan granular material w/ gray/multi-colored paint	100		ND	0	100

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

EUROFINS RESERVOIRS ENVIRONMENTAL, INC

NVLAP Lab Code 101896-0
AIHA LAP, LLC. LAB ID 101533

TABLE: I ANALYSIS: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 518653-3**
Client: **R & R Environmental**
Client Project/P.O.: **None Given**
Client Project Description: **Rio Grande**
Date Samples Received: **March 01, 2022**
Analysis Type: **EPA 600/R-93/116 - Point Count, Bulk (400)**
Turnaround: **Priority**
Date Samples Analyzed: **March 02 - March 03, 2022**

NA = Not Analyzed
NR = Not Received
ND = None Detected
TR = Trace; <1 % Visual Estimate
Trem-Act = Tremolite-Actinolite

Laboratory Sample ID / Client Sample Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non-Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
518653 - R-43	A	Light gray granular cementitious material	30		ND	0	100
	B	Dark gray granular material w/ gray paint	70		ND	2	98
518653 - R-44	A	Light gray granular cementitious material	45		ND	0	100
	B	Dark gray granular material w/ gray paint	55		ND	0	100
518653 - R-45	A	Dark gray granular material w/ gray paint	45		ND	0	100
	B	Light gray granular cementitious material	55		ND	0	100
518653 - R-46	A	Off white sealant	20		ND	0	100
	B	Off white/silver wrap	20		ND	20	80
	C	Yellow insulation	60		ND	90	10
518653 - R-47	A	Off white/silver wrap	20		ND	20	80
	B	Off white sealant	25		ND	0	100
	C	Yellow insulation	55		ND	90	10
518653 - R-48	A	Yellow insulation	35		ND	90	10
	B	Off white sealant	65		ND	0	100

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

EUROFINS RESERVOIRS ENVIRONMENTAL, INC

NVLAP Lab Code 101896-0
AIHA LAP, LLC. LAB ID 101533

TABLE: I ANALYSIS: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 518653-3**
Client: **R & R Environmental**
Client Project/P.O.: **None Given**
Client Project Description: **Rio Grande**
Date Samples Received: **March 01, 2022**
Analysis Type: **EPA 600/R-93/116 - Point Count, Bulk (400)**
Turnaround: **Priority**
Date Samples Analyzed: **March 02 - March 03, 2022**

NA = Not Analyzed
NR = Not Received
ND = None Detected
TR = Trace; <1 % Visual Estimate
Trem-Act = Tremolite-Actinolite

Laboratory Sample ID / Client Sample Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non-Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
518653 - R-49	A	Off white/silver wrap	10		ND	20	80
	B	Yellow insulation	40		ND	90	10
	C	Off white sealant	50		ND	0	100
518653 - R-50	A	Yellow insulation w/ white sealant	100		ND	30	70
518653 - R-51	A	Silver wrap	10		ND	25	75
	B	White sealant	15		ND	0	100
	C	Yellow insulation	75		ND	95	5
518653 - R-52	A	Silver wrap	15		ND	25	75
	B	White sealant	15		ND	0	100
	C	Yellow insulation	70		ND	95	5
518653 - R-53	A	Off white fibrous woven material	5		ND	95	5
	B	Silver/multi-colored wrap	10		ND	25	75
	C	Yellow insulation	20		ND	95	5
	D	Gray insulation	65		ND	25	75

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

EUROFINS RESERVOIRS ENVIRONMENTAL, INC

NVLAP Lab Code 101896-0
AIHA LAP, LLC. LAB ID 101533

TABLE: I ANALYSIS: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 518653-3**
Client: **R & R Environmental**
Client Project/P.O.: **None Given**
Client Project Description: **Rio Grande**
Date Samples Received: **March 01, 2022**
Analysis Type: **EPA 600/R-93/116 - Point Count, Bulk (400)**
Turnaround: **Priority**
Date Samples Analyzed: **March 02 - March 03, 2022**

NA = Not Analyzed
NR = Not Received
ND = None Detected
TR = Trace; <1 % Visual Estimate
Trem-Act = Tremolite-Actinolite

Laboratory Sample ID / Client Sample Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non-Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
518653 - R-54	A	White fibrous woven material	15		ND	95	5
	B	Gray insulation	85		ND	25	75
518653 - R-55	A	Off white fibrous woven material	10		ND	95	5
	B	Gray insulation	90		ND	30	70
518653 - R-56	A	Off white fibrous woven material	10		ND	95	5
	B	Gray insulation	90		ND	30	70
518653 - R-57	A	Off white fibrous woven material	10		ND	95	5
	B	Gray insulation	90		ND	30	70
518653 - R-58	A	Off white fibrous woven material	5		ND	95	5
	B	Tan insulation	35		ND	30	70
	C	Gray insulation	60		ND	30	70
518653 - R-59	A	Off white fibrous woven material	10		ND	0	100
	B	Off white insulation	90		ND	30	70
518653 - R-60	A	Off white fibrous woven material w/ white paint	25		ND	60	40
	B	Off white wrap	75	Chrysotile	75	5	20

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

EUROFINS RESERVOIRS ENVIRONMENTAL, INC

NVLAP Lab Code 101896-0
AIHA LAP, LLC. LAB ID 101533

TABLE: I ANALYSIS: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 518653-3**
Client: **R & R Environmental**
Client Project/P.O.: **None Given**
Client Project Description: **Rio Grande**
Date Samples Received: **March 01, 2022**
Analysis Type: **EPA 600/R-93/116 - Point Count, Bulk (400)**
Turnaround: **Priority**
Date Samples Analyzed: **March 02 - March 03, 2022**

NA = Not Analyzed
NR = Not Received
ND = None Detected
TR = Trace; <1 % Visual Estimate
Trem-Act = Tremolite-Actinolite

Laboratory Sample ID / Client Sample Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non-Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
518653 - R-61	A	Off white/multi-colored wrap w/ gray debris	100	Chrysotile	72	10	18
518653 - R-62	A	Off white/multi-colored wrap	100	Chrysotile	75	10	15
518653 - R-63	A	Off white/multi-colored wrap w/ multi-colored debris	100	Chrysotile	75	5	20
518653 - R-64	A	Off white/multi-colored wrap w/ multi-colored debris	100	Chrysotile	75	5	20
518653 - R-65	A	Tan/multi-colored resinous material	100		ND	0	100
518653 - R-66	A	Gray/multi-colored cementitious material w/ black tar	100		ND	0	100
518653 - R-67	A	Off white/silver wrap	20		ND	45	55
	B	Yellow insulation	80		ND	95	5
518653 - R-68	A	Off white/silver wrap	15		ND	40	60
	B	Yellow insulation	85		ND	95	5
518653 - R-69	A	Silver wrap	10		ND	25	75
	B	Yellow insulation	90		ND	95	5
518653 - R-70	A	Yellow insulation	5		ND	90	10
	B	Off white/silver wrap w/ yellow adhesive	5		ND	70	30
	C	Off white fibrous plaster	90		ND	25	75

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

EUROFINS RESERVOIRS ENVIRONMENTAL, INC

NVLAP Lab Code 101896-0
AIHA LAP, LLC. LAB ID 101533

TABLE: I ANALYSIS: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 518653-3**
Client: **R & R Environmental**
Client Project/P.O.: **None Given**
Client Project Description: **Rio Grande**
Date Samples Received: **March 01, 2022**
Analysis Type: **EPA 600/R-93/116 - Point Count, Bulk (400)**
Turnaround: **Priority**
Date Samples Analyzed: **March 02 - March 03, 2022**

NA = Not Analyzed
NR = Not Received
ND = None Detected
TR = Trace; <1 % Visual Estimate
Trem-Act = Tremolite-Actinolite

Laboratory Sample ID / Client Sample Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non-Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
518653 - R-71	A	Beige/silver wrap w/ pink adhesive	5		ND	70	30
	B	Yellow insulation	10		ND	90	10
	C	Off white fibrous plaster	85		ND	30	70
518653 - R-72	A	Off white/silver wrap w/ pink adhesive	5		ND	65	35
	B	Off white fibrous plaster	95		ND	30	70
518653 - R-73	A	Off white/silver wrap w/ tan adhesive	5		ND	60	40
	B	Beige fibrous plaster	95		ND	30	70
518653 - R-74	A	Green resinous material	3		ND	5	95
	B	Beige/silver wrap w/ pink adhesive	5		ND	60	40
	C	Off white fibrous plaster	42		ND	25	75
	D	Yellow insulation	50		ND	90	10
518653 - R-75	A	Black/colorless fibrous resinous material	100		ND	45	55
518653 - R-76	A	Black/colorless fibrous resinous material	100		ND	45	55
518653 - R-77	A	White wrap w/ beige paint	100		ND	70	30

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

EUROFINS RESERVOIRS ENVIRONMENTAL, INC

NVLAP Lab Code 101896-0
AIHA LAP, LLC. LAB ID 101533

TABLE: I ANALYSIS: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 518653-3**
Client: **R & R Environmental**
Client Project/P.O.: **None Given**
Client Project Description: **Rio Grande**
Date Samples Received: **March 01, 2022**
Analysis Type: **EPA 600/R-93/116 - Point Count, Bulk (400)**
Turnaround: **Priority**
Date Samples Analyzed: **March 02 - March 03, 2022**

NA = Not Analyzed
NR = Not Received
ND = None Detected
TR = Trace; <1 % Visual Estimate
Trem-Act = Tremolite-Actinolite

Laboratory Sample ID / Client Sample Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non-Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
518653 - R-78	A	Tan adhesive	10		ND	0	100
	B	White wrap w/ beige/tan speckled paint	90		ND	70	30
518653 - R-79	A	Gray resinous material w/ silver/black paint	100	Chrysotile	7	5	88
518653 - R-80	A	Gray resinous material	100	Chrysotile	7	0	93
518653 - R-81	A	Tan resinous material	100		ND	0	100
518653 - R-82	A	Tan/gray resinous material	100		ND	0	100
518653 - R-83	A	Greenish-gray resinous material	100	Chrysotile	3	0	97
518653 - R-84	A	Greenish-gray resinous material w/ a trace of silver resinous material	100		ND	0	100
518653 - R-85	A	Gray resinous material w/ silver foil debris	100		ND	2	98
518653 - R-86	A	Gray resinous material	100		ND	0	100
518653 - R-87	A	Colorless resinous material	15		ND	0	100
	B	White resinous material	85		ND	3	97
518653 - R-88	A	Brown resinous material	3		ND	0	100
	B	White resinous material	97		ND	4	96
518653 - R-89	A	Gray resinous material	100		ND	2	98

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

EUROFINS RESERVOIRS ENVIRONMENTAL, INC

NVLAP Lab Code 101896-0
AIHA LAP, LLC. LAB ID 101533

TABLE: I ANALYSIS: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 518653-3**
Client: **R & R Environmental**
Client Project/P.O.: **None Given**
Client Project Description: **Rio Grande**
Date Samples Received: **March 01, 2022**
Analysis Type: **EPA 600/R-93/116 - Point Count, Bulk (400)**
Turnaround: **Priority**
Date Samples Analyzed: **March 02 - March 03, 2022**

NA = Not Analyzed
NR = Not Received
ND = None Detected
TR = Trace; <1 % Visual Estimate
Trem-Act = Tremolite-Actinolite

Laboratory Sample ID / Client Sample Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non-Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
518653 - R-90	A	Tan debris	2		ND	0	100
	B	Gray resinous material	98		ND	0	100
518653 - R-91	A	Yellow insulation	38		ND	90	10
	B	Gray resinous material	62		ND	0	100
518653 - R-92	A	Gray resinous material	100		ND	0	100
518653 - R-93	A	Gray/multi-colored granular debris	100		ND	0	100
518653 - R-94	A	Gray granular material w/ tan/multi-colored paint	100		ND	0	100
518653 - R-95	A	Off white compound w/ off white paint	26		ND	0	100
	B	Tan fibrous woven material w/ brown paint & colorless adhesive	74		ND	80	20
518653 - R-96	A	White plaster	12		ND	0	100
	B	Off white paint w/ white compound	19		ND	0	100
	C	Tan paper	30		ND	90	10
	D	Tan fibrous woven material w/ beige adhesive	39		ND	85	15
518653 - R-97	A	Black tar debris	100		ND	0	100
518653 - R-98	A	Black tar debris w/ off white paint	100		ND	0	100

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

EUROFINS RESERVOIRS ENVIRONMENTAL, INC

NVLAP Lab Code 101896-0
AIHA LAP, LLC. LAB ID 101533

TABLE: I ANALYSIS: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 518653-3**
Client: **R & R Environmental**
Client Project/P.O.: **None Given**
Client Project Description: **Rio Grande**
Date Samples Received: **March 01, 2022**
Analysis Type: **EPA 600/R-93/116 - Point Count, Bulk (400)**
Turnaround: **Priority**
Date Samples Analyzed: **March 02 - March 03, 2022**

NA = Not Analyzed
NR = Not Received
ND = None Detected
TR = Trace; <1 % Visual Estimate
Trem-Act = Tremolite-Actinolite

Laboratory Sample ID / Client Sample Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non-Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
518653 - R-99	A	White resinous material	9		ND	0	100
	B	Red resinous material	91		ND	0	100
518653 - R-100	A	Red fibrous resinous material w/ off white paint	100		ND	10	90
518653 - R-101	A	Red/black resinous material w/ off white paint	100		ND	0	100
518653 - R-102	A	Tan paper w/ off white paint	13		ND	70	30
	B	Red/black resinous material	87		ND	0	100
518653 - R-103	A	Cream paint w/ cream compound	23		ND	0	100
	B	Brown resinous perlitic material	77		ND	0	100
518653 - R-104	A	Brown resinous perlitic material w/ off white paint	100		ND	0	100
518653 - R-105	A	Beige fibrous resinous material	100	Chrysotile	20	0	80
518653 - R-106	A	Beige fibrous resinous material	100	Chrysotile	20	0	80
518653 - R-107	A	Pink/tan fibrous resinous material	100	Chrysotile	15	0	85
518653 - R-108	A	Tan/light pink fibrous resinous material	100	Chrysotile	13	0	87
518653 - R-109	A	Gray fibrous resinous material	100		ND	20	80
518653 - R-110	A	Gray fibrous resinous material	100		ND	10	90
518653 - R-111	A	Gray fibrous cementitious material	100	Chrysotile	13	0	87

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

EUROFINS RESERVOIRS ENVIRONMENTAL, INC

NVLAP Lab Code 101896-0
AIHA LAP, LLC. LAB ID 101533

TABLE: I ANALYSIS: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 518653-3**
Client: **R & R Environmental**
Client Project/P.O.: **None Given**
Client Project Description: **Rio Grande**
Date Samples Received: **March 01, 2022**
Analysis Type: **EPA 600/R-93/116 - Point Count, Bulk (400)**
Turnaround: **Priority**
Date Samples Analyzed: **March 02 - March 03, 2022**

NA = Not Analyzed
NR = Not Received
ND = None Detected
TR = Trace; <1 % Visual Estimate
Trem-Act = Tremolite-Actinolite

Laboratory Sample ID / Client Sample Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non-Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
518653 - R-112	A	Gray fibrous cementitious material	100	Crocidolite	TR	0	87
				Chrysotile	13		
518653 - R-113	A	Gray/tan fibrous resinous material w/ tan paint	100	Chrysotile	10	5	85
				Amosite	TR		
518653 - R-114	A	Gray/tan fibrous resinous material w/ tan paint	100	Chrysotile	10	3	87
518653 - R-115	A	White resinous material w/ white paint	100		ND	0	100
518653 - R-116	A	White resinous material w/ white paint	100		ND	0	100
518653 - R-117	A	White resinous material	100		ND	0	100
518653 - R-118	A	White resinous material w/ black paint	100		ND	0	100
518653 - R-119	A	Black mastic	2	Chrysotile	15	0	85
	B	Brown/multi-colored tile	98	Chrysotile	2	0	98
518653 - R-120	A	Black mastic	1	Chrysotile	15	0	85
	B	Brown/white tile	99	Chrysotile	2	0	98
518653 - R-121	A	Black mastic	3		ND	0	100
	B	White leveling compound	97		ND	0	100
518653 - R-122	A	White leveling compound	100		ND	0	100

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

EUROFINS RESERVOIRS ENVIRONMENTAL, INC

NVLAP Lab Code 101896-0
AIHA LAP, LLC. LAB ID 101533

TABLE: I ANALYSIS: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 518653-3**
Client: **R & R Environmental**
Client Project/P.O.: **None Given**
Client Project Description: **Rio Grande**
Date Samples Received: **March 01, 2022**
Analysis Type: **EPA 600/R-93/116 - Point Count, Bulk (400)**
Turnaround: **Priority**
Date Samples Analyzed: **March 02 - March 03, 2022**

NA = Not Analyzed
NR = Not Received
ND = None Detected
TR = Trace; <1 % Visual Estimate
Trem-Act = Tremolite-Actinolite

Laboratory Sample ID / Client Sample Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non-Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
518653 - R-123	A	Orange mastic	2		ND	0	100
	B	Off white/multi-colored tile	98		ND	0	100
518653 - R-124	A	Orange mastic	2		ND	0	100
	B	Off white/multi-colored tile	98		ND	0	100
518653 - R-125	A	Brown/multi-colored sheet vinyl w/ gray fibrous backing material & brown mastic	100	Chrysotile	15	TR	85
518653 - R-126	A	Brown/multi-colored sheet vinyl w/ gray fibrous backing material & brown mastic	100	Chrysotile	15	TR	85
518653 - R-127	A	Gray granular cementitious material w/ brown mastic	100		ND	0	100
518653 - R-128	A	Gray leveling compound w/ green/colorless mastic	100		ND	3	97
518653 - R-129	A	Black felt w/ brown mastic	100		ND	30	70
518653 - R-130	A	Black felt w/ brown/green mastic	100		ND	35	65
518653 - R-131	A	Tan/green mastic	100		ND	0	100
518653 - R-132	A	Orange mastic	100		ND	0	100

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

EUROFINS RESERVOIRS ENVIRONMENTAL, INC

NVLAP Lab Code 101896-0
AIHA LAP, LLC. LAB ID 101533

TABLE: I ANALYSIS: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 518653-3**
Client: **R & R Environmental**
Client Project/P.O.: **None Given**
Client Project Description: **Rio Grande**
Date Samples Received: **March 01, 2022**
Analysis Type: **EPA 600/R-93/116 - Point Count, Bulk (400)**
Turnaround: **Priority**
Date Samples Analyzed: **March 02 - March 03, 2022**

NA = Not Analyzed
NR = Not Received
ND = None Detected
TR = Trace; <1 % Visual Estimate
Trem-Act = Tremolite-Actinolite

Laboratory Sample ID / Client Sample Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non-Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
518653 - R-133	A	Black felt w/ brown mastic	5	Chrysotile	TR	65	35
				Point Count	<0.25		
	B	Brown/tan sheet vinyl w/ white fibrous backing material & brown mastic	30	Chrysotile	12	5	83
	C	Red sheet vinyl w/ gray mastic	65		ND	0	100
518653 - R-134	A	Black felt w/ brown mastic	7	Chrysotile	TR	65	35
				Point Count	<0.25		
	B	Brown/tan sheet vinyl w/ white fibrous backing material & brown mastic	23	Chrysotile	12	6	82
	C	Red sheet vinyl w/ gray mastic	70		ND	0	100
518653 - R-135	A	Gray granular cementitious material w/ gray paint & colorless adhesive	100		ND	0	100
518653 - R-136	A	Gray paint w/ gray granular material	100		ND	0	100
518653 - R-137	A	Brown/tan stair tread	100	Chrysotile	2	0	98
518653 - R-138	A	Tan mastic	2		ND	0	100
	B	Brown/tan stair tread	98	Chrysotile	2	0	98

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

EUROFINS RESERVOIRS ENVIRONMENTAL, INC

NVLAP Lab Code 101896-0
AIHA LAP, LLC. LAB ID 101533

TABLE: I ANALYSIS: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 518653-3**
Client: **R & R Environmental**
Client Project/P.O.: **None Given**
Client Project Description: **Rio Grande**
Date Samples Received: **March 01, 2022**
Analysis Type: **EPA 600/R-93/116 - Point Count, Bulk (400)**
Turnaround: **Priority**
Date Samples Analyzed: **March 02 - March 03, 2022**

NA = Not Analyzed
NR = Not Received
ND = None Detected
TR = Trace; <1 % Visual Estimate
Trem-Act = Tremolite-Actinolite

Laboratory Sample ID / Client Sample Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non-Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
518653 - R-139	A	Tan/brown adhesive	7		ND	0	100
	B	Black cove base	93		ND	0	100
518653 - R-140	A	Tan/brown adhesive	4		ND	0	100
	B	Black felt w/ brown paint	10		ND	80	20
	C	Black cove base	86		ND	0	100
518653 - R-141	A	Tan adhesive	15		ND	0	100
	B	Black cove base	85		ND	0	100
518653 - R-142	A	Tan adhesive	10		ND	0	100
	B	Black cove base	90		ND	0	100
518653 - R-143	A	White compound w/ beige paint	5		ND	0	100
	B	Tan adhesive	10		ND	0	100
	C	Tan cove base	85		ND	0	100
518653 - R-144	A	Tan adhesive	3		ND	0	100
	B	Tan cove base	97		ND	0	100

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

EUROFINS RESERVOIRS ENVIRONMENTAL, INC

NVLAP Lab Code 101896-0
AIHA LAP, LLC. LAB ID 101533

TABLE: I ANALYSIS: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 518653-3**
Client: **R & R Environmental**
Client Project/P.O.: **None Given**
Client Project Description: **Rio Grande**
Date Samples Received: **March 01, 2022**
Analysis Type: **EPA 600/R-93/116 - Point Count, Bulk (400)**
Turnaround: **Priority**
Date Samples Analyzed: **March 02 - March 03, 2022**

NA = Not Analyzed
NR = Not Received
ND = None Detected
TR = Trace; <1 % Visual Estimate
Trem-Act = Tremolite-Actinolite

Laboratory Sample ID / Client Sample Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non-Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
518653 - R-145	A	White compound	10		ND	0	100
	B	Gray/tan drywall	15		ND	35	65
	C	Orange adhesive	20		ND	0	100
	D	Tan cove base	55		ND	0	100
518653 - R-146	A	Brown adhesive	2		ND	0	100
	B	Tan adhesive w/ light brown/white paint	20		ND	0	100
	C	Tan cove base	78		ND	0	100
518653 - R-147	A	Beige compound	10		ND	0	100
	B	Brown adhesive	20		ND	0	100
	C	Tan cove base	70		ND	0	100
518653 - R-148	A	Brown adhesive	10		ND	0	100
	B	Tan cove base	90		ND	0	100
518653 - R-149	A	Gray adhesive	5		ND	0	100
	B	Brown adhesive	10		ND	0	100
	C	Orange/multi-colored cove base	85		ND	0	100

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

EUROFINS RESERVOIRS ENVIRONMENTAL, INC

NVLAP Lab Code 101896-0
AIHA LAP, LLC. LAB ID 101533

TABLE: I ANALYSIS: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 518653-3**
Client: **R & R Environmental**
Client Project/P.O.: **None Given**
Client Project Description: **Rio Grande**
Date Samples Received: **March 01, 2022**
Analysis Type: **EPA 600/R-93/116 - Point Count, Bulk (400)**
Turnaround: **Priority**
Date Samples Analyzed: **March 02 - March 03, 2022**

NA = Not Analyzed
NR = Not Received
ND = None Detected
TR = Trace; <1 % Visual Estimate
Trem-Act = Tremolite-Actinolite

Laboratory Sample ID / Client Sample Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non-Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
518653 - R-150	A	Gray resinous material	3		ND	0	100
	B	Brown adhesive	8		ND	0	100
	C	Tan cove base	89		ND	0	100
518653 - R-151	A	Cream resinous material	100		ND	0	100
518653 - R-152	A	Cream resinous material	TR		ND	0	100
	B	Brown resinous material	100		ND	0	100
518653 - R-153	A	Gray/white ceiling tile	100		ND	65	35
518653 - R-154	A	Gray/white ceiling tile	100		ND	65	35
518653 - R-155	A	Gray/white ceiling tile	100		ND	65	35
518653 - R-156	A	Gray/white ceiling tile	100		ND	65	35
518653 - R-157	A	Tan/white ceiling tile	100		ND	75	25
518653 - R-158	A	Tan/white ceiling tile	100		ND	75	25
518653 - R-159	A	Tan ceiling tile	10		ND	75	25
	B	Brown adhesive w/ off white/green paint	90		ND	0	100
518653 - R-160	A	Off white/green paint	40		ND	0	100
	B	Brown adhesive	60		ND	0	100

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

EUROFINS RESERVOIRS ENVIRONMENTAL, INC

NVLAP Lab Code 101896-0
AIHA LAP, LLC. LAB ID 101533

TABLE: I ANALYSIS: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 518653-3**
Client: **R & R Environmental**
Client Project/P.O.: **None Given**
Client Project Description: **Rio Grande**
Date Samples Received: **March 01, 2022**
Analysis Type: **EPA 600/R-93/116 - Point Count, Bulk (400)**
Turnaround: **Priority**
Date Samples Analyzed: **March 02 - March 03, 2022**

NA = Not Analyzed
NR = Not Received
ND = None Detected
TR = Trace; <1 % Visual Estimate
Trem-Act = Tremolite-Actinolite

Laboratory Sample ID / Client Sample Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non-Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
518653 - R-161	A	Tan/white ceiling tile	100		ND	75	25
518653 - R-162	A	Tan/white ceiling tile	100		ND	75	25
518653 - R-163	A	Greenish-gray resinous material	100		ND	0	100
518653 - R-164	A	Greenish-gray resinous material	100		ND	0	100
518653 - R-165	A	Orange/white ceiling tile	100		ND	75	25
518653 - R-166	A	Orange/white ceiling tile	100		ND	75	25
518653 - R-167	A	Brown adhesive	100		ND	0	100
518653 - R-168	A	Brown adhesive	100		ND	0	100
518653 - R-169	A	Gray/white ceiling tile	100		ND	65	35
518653 - R-170	A	Gray ceiling tile	40		ND	68	32
	B	Brown adhesive	60		ND	0	100
518653 - R-171		Sample Not Received.					
518653 - R-172	A	Gray/white ceiling tile	100		ND	65	35
518653 - R-173		Sample Not Received.					
518653 - R-174	A	Gray/white ceiling tile	100		ND	65	35
518653 - R-175	A	Off white ceiling tile	100		ND	65	35

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

EUROFINS RESERVOIRS ENVIRONMENTAL, INC

NVLAP Lab Code 101896-0
AIHA LAP, LLC. LAB ID 101533

TABLE: I ANALYSIS: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 518653-3**
Client: **R & R Environmental**
Client Project/P.O.: **None Given**
Client Project Description: **Rio Grande**
Date Samples Received: **March 01, 2022**
Analysis Type: **EPA 600/R-93/116 - Point Count, Bulk (400)**
Turnaround: **Priority**
Date Samples Analyzed: **March 02 - March 03, 2022**

NA = Not Analyzed
NR = Not Received
ND = None Detected
TR = Trace; <1 % Visual Estimate
Trem-Act = Tremolite-Actinolite

Laboratory Sample ID / Client Sample Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non-Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
518653 - R-176	A	Beige paint	5		ND	0	100
	B	Brown adhesive	20		ND	0	100
	C	Gray fibrous perlitic material	35		ND	65	35
	D	White plaster	40		ND	0	100
518653 - R-177	A	Gray/white ceiling tile	100		ND	65	35
518653 - R-178	A	Gray/white ceiling tile	100		ND	65	35
518653 - R-179	A	Gray fibrous perlitic material	20		ND	65	35
	B	Cream adhesive	80		ND	0	100
518653 - R-180	A	Cream adhesive	100		ND	0	100
518653 - R-181	A	Gray/white ceiling tile	100		ND	65	35
518653 - R-182	A	Gray/white ceiling tile	100		ND	65	35
518653 - R-183	A	Brown adhesive	15		ND	0	100
	B	Pink foamy plaster	35		ND	0	100
	C	Gray ceiling tile	50		ND	65	35

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

EUROFINS RESERVOIRS ENVIRONMENTAL, INC

NVLAP Lab Code 101896-0
AIHA LAP, LLC. LAB ID 101533

TABLE: I ANALYSIS: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 518653-3**
Client: **R & R Environmental**
Client Project/P.O.: **None Given**
Client Project Description: **Rio Grande**
Date Samples Received: **March 01, 2022**
Analysis Type: **EPA 600/R-93/116 - Point Count, Bulk (400)**
Turnaround: **Priority**
Date Samples Analyzed: **March 02 - March 03, 2022**

NA = Not Analyzed
NR = Not Received
ND = None Detected
TR = Trace; <1 % Visual Estimate
Trem-Act = Tremolite-Actinolite

Laboratory Sample ID / Client Sample Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non-Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
518653 - R-184	A	Brown adhesive	5		ND	0	100
	B	White plaster w/ beige/multi-colored paint	20		ND	0	100
	C	Gray ceiling tile	35		ND	65	35
	D	Off white granular plaster	40		ND	2	98
518653 - R-185	A	Dark brown fibrous resinous material w/ white/gray paint	100		ND	85	15
518653 - R-186	A	Dark brown fibrous resinous material	100		ND	85	15
518653 - R-187	A	Black resinous material	100		ND	0	100
518653 - R-188	A	Black resinous material	100		ND	0	100
518653 - R-189	A	Tan fibrous woven material	100		ND	85	15
518653 - R-190	A	Tan fibrous woven material	100		ND	90	10
518653 - R-191	A	Black resinous material w/ tan fibrous woven material	40		ND	30	70
	B	Black resinous material	60		ND	0	100
518653 - R-192	A	Black resinous material w/ tan fibrous woven material	40		ND	30	70
	B	Black resinous material	60		ND	0	100
518653 - R-193	A	Black foam	100		ND	0	100

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

EUROFINS RESERVOIRS ENVIRONMENTAL, INC

NVLAP Lab Code 101896-0
AIHA LAP, LLC. LAB ID 101533

TABLE: I ANALYSIS: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 518653-3**
Client: **R & R Environmental**
Client Project/P.O.: **None Given**
Client Project Description: **Rio Grande**
Date Samples Received: **March 01, 2022**
Analysis Type: **EPA 600/R-93/116 - Point Count, Bulk (400)**
Turnaround: **Priority**
Date Samples Analyzed: **March 02 - March 03, 2022**

NA = Not Analyzed
NR = Not Received
ND = None Detected
TR = Trace; <1 % Visual Estimate
Trem-Act = Tremolite-Actinolite

Laboratory Sample ID / Client Sample Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non-Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
518653 - R-194	A	Black foam	100		ND	0	100
518653 - R-195	A	Orange mastic	3		ND	0	100
	B	Gray granular cementitious material	12		ND	0	100
	C	Gray leveling compound	85		ND	3	97
518653 - R-196	A	Brown/multi-colored tile	15		ND	0	100
	B	Gray granular cementitious material	35		ND	0	100
	C	Gray leveling compound w/ tan/brown mastic	50		ND	3	97
518653 - R-197	A	Gray/white multi-layered caulk w/ brown fibrous material	20		ND	10	90
	B	Gray caulk	80		ND	2	98
518653 - R-198	A	Gray caulk	100		ND	2	98
518653 - R-199	A	Gray/black caulk	100		ND	0	100
518653 - R-200	A	Black tar	100	Chrysotile	9	0	91
518653 - R-201	A	Black tar	100	Chrysotile	9	0	91
518653 - R-202	A	Black tar	100	Chrysotile	8	0	92
518653 - R-203	A	Red cementitious material	100		ND	0	100
518653 - R-204	A	Red/gray cementitious material	100		ND	0	100

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

Stephanie Schindler — Analyst
Abigayle Call — Analyst
Matthew Sadler — Analyst
Tyler Hutchinson — Analyst
John C. McIntyre — Analyst
Liu Wenlong — Analyst

eurofins | Built Environment Reservoirs

RES Job #: 518653

SUBMITTED BY		INVOICE TO		CONTACT INFORMATION		SERIES
Company:	R & R Environmental	Company:	R & R Environmental	Contact:	Jamison Moss	-1 PLM Priority
Address:	47 West 9000 South #2	Address:	47 West 9000 South #2	Phone:	(801) 928-1560	
				Fax:		
	Sandy, UT 84070		Sandy, UT 84070	Cell:		
Project Number and/or P.O. #:	None Given			Final Data Deliverable Email Address:		
Project Description/Location:	Rio Grande			jamison@rrenviro.com (+ 3 ADDNL. CONTACTS)		

ASBESTOS LABORATORY HOURS: Weekdays: 7am - 7pm & Sat. 8am - 5pm

PLM / PCM / TEM DTL RUSH PRIORITY STANDARD

CHEMISTRY LABORATORY HOURS: Weekdays: 8am - 5pm

Dust RUSH PRIORITY STANDARD

Metals RUSH PRIORITY STANDARD *PRIOR NOTICE REQUIRED FOR SAME DAY TAT

Organics* SAME DAY RUSH PRIORITY STANDARD

MICROBIOLOGY LABORATORY HOURS: Weekdays: 8am - 5pm

Viable Analysis** PRIORITY STANDARD

Medical Device Analysis RUSH STANDARD **TAT DEPENDENT ON SPEED OF MICROBIAL GROWTH

Mold Analysis RUSH PRIORITY STANDARD

****Turnaround times establish a laboratory priority, subject to laboratory volume and are not guaranteed. Additional fees apply for afterhours, weekends and holidays.****

Special Instructions:

VALID MATRIX CODES

Air = A	Bulk = B
Dust = D	Food = F
Paint = P	Soil = S
Surface = SU	Swab = SW
Tape = T	Wipe = W
Drinking Water = DW	
Waste Water = WW	
ASTM E1792 approved wipe media only	

Client Sample ID Number (Sample ID's must be unique)	PLM - PLM Short Report (EPA/600/R-93/116)	TEM - AHERA (+/- or Quantified), Microvac (+/- or Quantified), Wipe (+/- or Quantified), NIOSH 7402, Yamate Level II, ISO 10312, ISO 13794, Chatfield, Drinking Water, Waste Water, Bulk +/-, CARB Modified Ahera	PCM - 7400A, 7400B, OSHA	DUST - Total, Respirable	METALS - Analyte(s) Lead Only (7082, 7420, Waste Water, Foodware), Multi Metals (7303,6020A, 200.8, Waste Water, Foodware, OSHA ID-125G), pH (Liquid or Non-Liquid), TCLP, RCRA 8 Scan, Welding Fume Scan, Full Metals Scan	ORGANICS - Methamphetamine, TSS	VIABLES - Campylobacter, Bacillus, Salmonella (Culturable or 1-2), Listeria, E.coli O157:H7, E.coli/Coliforms - Plated, S.aureus, Yeast & Mol, Aerobic Plate Count, Coliforms/E.coli - (State Water, Drinking Water, Non-Drinking Water, +/-, Quantification), Lactic Acid, Viable Microbial Count (wo/ID or w/ID), Enterococcus (+/- or Quantification), Legionella (P, NP, C)	MEDICAL - Bioburden, LAL	MOLD - Spore Trap, Bulk Mold, Particulate Identification	Sample Volume (L) / Area	Length (or Aliquots) x Width (or Area per Aliquot)	Matrix Code	# of Containers	Date Collected mm/dd/yy	Time Collected hh:mm	LAB NOTES / Laboratory Analysis Instructions
	ASBESTOS			CHEMISTRY			MICROBIOLOGY								
1 R-01	X											B			
2 R-02	X											B			
3 R-03	X											B			
4 R-04	X											B			
5 R-05	X											B			
6 R-06	X											B			
7 R-07	X											B			
8 R-08	X											B			
9 R-09	X											B			
10 R-10	X											B			
11 R-11	X											B			
12 R-12	X											B			
13 R-13	X											B			

REI will analyze incoming samples based on information received and will not be responsible for errors or omissions in calculations resulting from the inaccuracy of original data. By signing, client/company representative agrees that submission of the following samples for requested analysis as indicated on this Chain of Custody shall consitute an analytical services agreement with payment terms of NET 30 days. Failure to comply with payment terms may result in a 1.5% monthly interest surcharge.

Relinquished By:	Jamison Moss	Date/Time: 02/28/2022 21:47:57	Sample Condition: Acceptable
Received By:	Jessica Shapiro	Date/Time: 03/01/2022 10:43:35	Carrier: Fed-Ex

eurofins | Built Environment Reservoirs

Res Job#: **518653**

Submitted By: **R & R Environmental**

Client Sample ID Number (Sample ID's must be unique)	REQUESTED ANALYSIS: ASBESTOS — PLM - PLM Short Report (EPA/600/R-93/116)	ASBESTOS — TEM - AHERA (+/- or Quantified), Microvac (+/- or Quantified), Wipe (+/- or Quantified), NIOSH 7402, Yamate Level II, ISO 10312, ISO 13794, Chatfield, Drinking Water, Waste Water, Bulk +/-, CARB Modified Ahera	ASBESTOS — PCM - 7400A, 7400B, OSHA	CHEMISTRY — DUST - Total, Respirable	CHEMISTRY — METALS - Analyte(s) Lead Only (7082, 7420), Waste Water, Foodware), Multi Metals (7303,6020A, 200.8, Waste Water, Foodware, OSHA ID-125G), pH (Liquid or Non-Liquid), TCLP, RCRA 8 Scan, Welding Fume Scan, Full Metals Scan	CHEMISTRY — ORGANICS - Methamphetamine, TSS	MICROBIOLOGY — VIABLES - Campylobacter, Bacillus, Salmonella (Culturable or 1-2), Listeria, E.coli O157:H7, E.coli/Coliforms - Plated, S.aureus, Yeast & Mol, Aerobic Plate Count, Coliforms/E.coli - (State Water, Drinking Water, Non-Drinking Water, +/- Quantification), Lactic Acid, Viable Microbial Count (wo/ID or w/ID), Enterococcus (+/- or Quantification), Legionella (P, NP, C)	MICROBIOLOGY — MEDICAL - Bioburden, LAL	MICROBIOLOGY — MOLD - Spore Trap, Bulk Mold, Particulate Identification	Sample Volume (L) / Area	Length (or Aliquots) x Width (or Area per Aliquot)	Matrix Code	# of Containers	Date Collected mm/dd/yy	Time Collected hh:mm	Laboratory Analysis Instructions
14 R-14	X											B				
15 R-15	X											B				
16 R-16	X											B				
17 R-17	X											B				
18 R-18	X											B				
19 R-19	X											B				
20 R-20	X											B				
21 R-21	X											B				
22 R-22	X											B				
23 R-23	X											B				
24 R-24	X											B				
25 R-25	X											B				
26 R-26	X											B				
27 R-27	X											B				
28 R-28	X											B				
29 R-29	X											B				
30 R-30	X											B				
31 R-31	X											B				
32 R-32	X											B				
33 R-33	X											B				
34 R-34	X											B				
35 R-35	X											B				
36 R-36	X											B				
37 R-37	X											B				
38 R-38	X											B				
39 R-39	X											B				
40 R-40	X											B				
41 R-41	X											B				
42 R-42	X											B				
43 R-43	X											B				

VALID MATRIX CODES

Air = A	Bulk = B
Dust = D	Food = F
Paint = P	Soil = S
Surface = SU	Swab = SW
Tape = T	Wipe = W
Drinking Water = DW	
Waste Water = WW	
ASTM E1792 approved wipe media only	

LAB NOTES

eurofins | Built Environment Reservoirs

Res Job#: **518653**

Submitted By: **R & R Environmental**

Client Sample ID Number (Sample ID's must be unique)	ASBESTOS: PLM - PLM Short Report (EPA/600/R-93/116)	ASBESTOS: TEM - AHERA (+/- or Quantified), Microvac (+/- or Quantified), Wipe (+/- or Quantified), NIOSH 7402, Yamate Level II, ISO 10312, ISO 13794, Chatfield, Drinking Water, Waste Water, Bulk +/-, CARB Modified Ahera	ASBESTOS: PCM - 7400A, 7400B, OSHA	CHEMISTRY: DUST - Total, Respirable	CHEMISTRY: METALS - Analyte(s) Lead Only (7082, 7420), Waste Water, Foodware), Multi Metals (7303,6020A, 200.8, Waste Water, Foodware, OSHA ID-125G), pH (Liquid or Non-Liquid), TCLP, RCRA 8 Scan, Welding Fume Scan, Full Metals Scan	CHEMISTRY: ORGANICS - Methamphetamine, TSS	MICROBIOLOGY: VIABLES - Campylobacter, Bacillus, Salmonella (Culturable or 1-2), Listeria, E.coli O157:H7, E.coli/Coliforms - Plated, S.aureus, Yeast & Mol, Aerobic Plate Count, Coliforms/E.coli - (State Water, Drinking Water, Non-Drinking Water, +/- Quantification), Lactic Acid, Viable Microbial Count (wo/ID or w/ID), Enterococcus (+/- or Quantification), Legionella (P, NP, C)	MICROBIOLOGY: MEDICAL - Bioburden, LAL	MICROBIOLOGY: MOLD - Spore Trap, Bulk Mold, Particulate Identification	Sample Volume (L) / Area	Length (or Aliquots) x Width (or Area per Aliquot)	Matrix Code	# of Containers	Date Collected mm/dd/yy	Time Collected hh:mm	Laboratory Analysis Instructions
44 R-44	X											B				
45 R-45	X											B				
46 R-46	X											B				
47 R-47	X											B				
48 R-48	X											B				
49 R-49	X											B				
50 R-50	X											B				
51 R-51	X											B				
52 R-52	X											B				
53 R-53	X											B				
54 R-54	X											B				
55 R-55	X											B				
56 R-56	X											B				
57 R-57	X											B				
58 R-58	X											B				
59 R-59	X											B				
60 R-60	X											B				
61 R-61	X											B				
62 R-62	X											B				
63 R-63	X											B				
64 R-64	X											B				
65 R-65	X											B				
66 R-66	X											B				
67 R-67	X											B				
68 R-68	X											B				
69 R-69	X											B				
70 R-70	X											B				
71 R-71	X											B				
72 R-72	X											B				
73 R-73	X											B				

VALID MATRIX CODES

Air = A	Bulk = B
Dust = D	Food = F
Paint = P	Soil = S
Surface = SU	Swab = SW
Tape = T	Wipe = W
Drinking Water = DW	
Waste Water = WW	
ASTM E1792 approved wipe media only	

LAB NOTES

eurofins | Built Environment Reservoirs

Res Job#: **518653**

Submitted By: **R & R Environmental**

Client Sample ID Number (Sample ID's must be unique)	ASBESTOS: PLM - PLM Short Report (EPA/600/R-93/116)	ASBESTOS: TEM - AHERA (+/- or Quantified), Microvac (+/- or Quantified), Wipe (+/- or Quantified), NIOSH 7402, Yamate Level II, ISO 10312, ISO 13794, Chatfield, Drinking Water, Waste Water, Bulk +/-, CARB Modified Ahera	ASBESTOS: PCM - 7400A, 7400B, OSHA	CHEMISTRY: DUST - Total, Respirable	CHEMISTRY: METALS - Analyte(s) Lead Only (7082, 7420), Waste Water, Foodware), Multi Metals (7303,6020A, 200.8, Waste Water, Foodware, OSHA ID-125G), pH (Liquid or Non-Liquid), TCLP, RCRA 8 Scan, Welding Fume Scan, Full Metals Scan	CHEMISTRY: ORGANICS - Methamphetamine, TSS	MICROBIOLOGY: VIABLES - Campylobacter, Bacillus, Salmonella (Culturable or 1-2), Listeria, E.coli O157:H7, E.coli/Coliforms - Plated, S.aureus, Yeast & Mol, Aerobic Plate Count, Coliforms/E.coli - (State Water, Drinking Water, Non-Drinking Water, +/- Quantification), Lactic Acid, Viable Microbial Count (wo/ID or w/ID), Enterococcus (+/- or Quantification), Legionella (P, NP, C)	MICROBIOLOGY: MEDICAL - Bioburden, LAL	MICROBIOLOGY: MOLD - Spore Trap, Bulk Mold, Particulate Identification	Sample Volume (L) / Area	Length (or Aliquots) x Width (or Area per Aliquot	Matrix Code	# of Containers	Date Collected mm/dd/yy	Time Collected hh:mm	Laboratory Analysis Instructions
74 R-74	X											B				
75 R-75	X											B				
76 R-76	X											B				
77 R-77	X											B				
78 R-78	X											B				
79 R-79	X											B				
80 R-80	X											B				
81 R-81	X											B				
82 R-82	X											B				
83 R-83	X											B				
84 R-84	X											B				
85 R-85	X											B				
86 R-86	X											B				
87 R-87	X											B				
88 R-88	X											B				
89 R-89	X											B				
90 R-90	X											B				
91 R-91	X											B				
92 R-92	X											B				
93 R-93	X											B				
94 R-94	X											B				
95 R-95	X											B				
96 R-96	X											B				
97 R-97	X											B				
98 R-98	X											B				
99 R-99	X											B				
100 R-100	X											B				
101 R-101	X											B				
102 R-102	X											B				
103 R-103	X											B				

VALID MATRIX CODES

Air = A	Bulk = B
Dust = D	Food = F
Paint = P	Soil = S
Surface = SU	Swab = SW
Tape = T	Wipe = W
Drinking Water = DW	
Waste Water = WW	
ASTM E1792 approved wipe media only	

LAB NOTES

eurofins | Built Environment Reservoirs

Res Job#: **518653**

Submitted By: **R & R Environmental**

Client Sample ID Number (Sample ID's must be unique)	REQUESTED ANALYSIS: ASBESTOS — PLM - PLM Short Report (EPA/600/R-93/116)	ASBESTOS — TEM - AHERA (+/- or Quantified), Microvac (+/- or Quantified), Wipe (+/- or Quantified), NIOSH 7402, Yamate Level II, ISO 10312, ISO 13794, Chatfield, Drinking Water, Waste Water, Bulk +/-, CARB Modified Ahera	ASBESTOS — PCM - 7400A, 7400B, OSHA	CHEMISTRY — DUST - Total, Respirable	CHEMISTRY — METALS - Analyte(s) Lead Only (7082, 7420), Waste Water, Foodware), Multi Metals (7303,6020A, 200.8, Waste Water, Foodware, OSHA ID-125G), pH (Liquid or Non-Liquid), TCLP, RCRA 8 Scan, Welding Fume Scan, Full Metals Scan	CHEMISTRY — ORGANICS - Methamphetamine, TSS	MICROBIOLOGY — VIABLES - Campylobacter, Bacillus, Salmonella (Culturable or 1-2), Listeria, E.coli O157:H7, E.coli/Coliforms - Plated, S.aureus, Yeast & Mol, Aerobic Plate Count, Coliforms/E.coli - (State Water, Drinking Water, Non-Drinking Water, +/- Quantification), Lactic Acid, Viable Microbial Count (wo/ID or w/ID), Enterococcus (+/- or Quantification), Legionella (P, NP, C)	MICROBIOLOGY — MEDICAL - Bioburden, LAL	MICROBIOLOGY — MOLD - Spore Trap, Bulk Mold, Particulate Identification	Sample Volume (L) / Area	Length (or Aliquots) x Width (or Area per Aliquot)	Matrix Code	# of Containers	Date Collected mm/dd/yy	Time Collected hh:mm	Laboratory Analysis Instructions
104 R-104	X											B				
105 R-105	X											B				
106 R-106	X											B				
107 R-107	X											B				
108 R-108	X											B				
109 R-109	X											B				
110 R-110	X											B				
111 R-111	X											B				
112 R-112	X											B				
113 R-113	X											B				
114 R-114	X											B				
115 R-115	X											B				
116 R-116	X											B				
117 R-117	X											B				
118 R-118	X											B				
119 R-119	X											B				
120 R-120	X											B				
121 R-121	X											B				
122 R-122	X											B				
123 R-123	X											B				
124 R-124	X											B				
125 R-125	X											B				
126 R-126	X											B				
127 R-127	X											B				
128 R-128	X											B				
129 R-129	X											B				
130 R-130	X											B				
131 R-131	X											B				
132 R-132	X											B				
133 R-133	X											B				

VALID MATRIX CODES

Air = A	Bulk = B
Dust = D	Food = F
Paint = P	Soil = S
Surface = SU	Swab = SW
Tape = T	Wipe = W
Drinking Water = DW	
Waste Water = WW	
ASTM E1792 approved wipe media only	

LAB NOTES

eurofins | Built Environment Reservoirs

Res Job#: **518653**

Submitted By: **R & R Environmental**

Client Sample ID Number (Sample ID's must be unique)	REQUESTED ANALYSIS: ASBESTOS — PLM - PLM Short Report (EPA/600/R-93/116)	ASBESTOS — TEM - AHERA (+/- or Quantified), Microvac (+/- or Quantified), Wipe (+/- or Quantified), NIOSH 7402, Yamate Level II, ISO 10312, ISO 13794, Chatfield, Drinking Water, Waste Water, Bulk +/-, CARB Modified Ahera	ASBESTOS — PCM - 7400A, 7400B, OSHA	CHEMISTRY — DUST - Total, Respirable	CHEMISTRY — METALS - Analyte(s) Lead Only (7082, 7420), Waste Water, Foodware), Multi Metals (7303,6020A, 200.8, Waste Water, Foodware, OSHA ID-125G), pH (Liquid or Non-Liquid), TCLP, RCRA 8 Scan, Welding Fume Scan, Full Metals Scan	CHEMISTRY — ORGANICS - Methamphetamine, TSS	MICROBIOLOGY — VIABLES - Campylobacter, Bacillus, Salmonella (Culturable or 1-2), Listeria, E.coli O157:H7, E.coli/Coliforms - Plated, S.aureus, Yeast & Mol, Aerobic Plate Count, Coliforms/E.coli - (State Water, Drinking Water, Non-Drinking Water, +/- Quantification), Lactic Acid, Viable Microbial Count (wo/ID or w/ID), Enterococcus (+/- or Quantification), Legionella (P, NP, C)	MICROBIOLOGY — MEDICAL - Bioburden, LAL	MICROBIOLOGY — MOLD - Spore Trap, Bulk Mold, Particulate Identification	Sample Volume (L) / Area	Length (or Aliquots) x Width (or Area per Aliquot)	Matrix Code	# of Containers	Date Collected mm/dd/yy	Time Collected hh:mm	Laboratory Analysis Instructions
134 R-134	X											B			
135 R-135	X											B			
136 R-136	X											B			
137 R-137	X											B			
138 R-138	X											B			
139 R-139	X											B			
140 R-140	X											B			
141 R-141	X											B			
142 R-142	X											B			
143 R-143	X											B			
144 R-144	X											B			
145 R-145	X											B			
146 R-146	X											B			
147 R-147	X											B			
148 R-148	X											B			
149 R-149	X											B			
150 R-150	X											B			
151 R-151	X											B			
152 R-152	X											B			
153 R-153	X											B			
154 R-154	X											B			
155 R-155	X											B			
156 R-156	X											B			
157 R-157	X											B			
158 R-158	X											B			
159 R-159	X											B			
160 R-160	X											B			
161 R-161	X											B			
162 R-162	X											B			
163 R-163	X											B			

VALID MATRIX CODES

Air = A	Bulk = B
Dust = D	Food = F
Paint = P	Soil = S
Surface = SU	Swab = SW
Tape = T	Wipe = W
Drinking Water = DW	
Waste Water = WW	
ASTM E1792 approved wipe media only	

LAB NOTES

eurofins | Built Environment Reservoirs

Res Job#: **518653**

Submitted By: **R & R Environmental**

Client Sample ID Number (Sample ID's must be unique)	REQUESTED ANALYSIS: ASBESTOS — PLM - PLM Short Report (EPA/600/R-93/116)	ASBESTOS — TEM - AHERA (+/- or Quantified), Microvac (+/- or Quantified), Wipe (+/- or Quantified), NIOSH 7402, Yamate Level II, ISO 10312, ISO 13794, Chatfield, Drinking Water, Waste Water, Bulk +/-, CARB Modified Ahera	ASBESTOS — PCM - 7400A, 7400B, OSHA	CHEMISTRY — DUST - Total, Respirable	CHEMISTRY — METALS - Analyte(s) Lead Only (7082, 7420), Waste Water, Foodware), Multi Metals (7303,6020A, 200.8, Waste Water, Foodware, OSHA ID-125G), pH (Liquid or Non-Liquid), TCLP, RCRA 8 Scan, Welding Fume Scan, Full Metals Scan	CHEMISTRY — ORGANICS - Methamphetamine, TSS	MICROBIOLOGY — VIABLES - Campylobacter, Bacillus, Salmonella (Culturable or 1-2), Listeria, E.coli O157:H7, E.coli/Coliforms - Plated, S.aureus, Yeast & Mol, Aerobic Plate Count, Coliforms/E.coli - (State Water, Drinking Water, Non-Drinking Water, +/- Quantification), Lactic Acid, Viable Microbial Count (wo/ID or w/ID), Enterococcus (+/- or Quantification), Legionella (P, NP, C)	MICROBIOLOGY — MEDICAL - Bioburden, LAL	MICROBIOLOGY — MOLD - Spore Trap, Bulk Mold, Particulate Identification	Sample Volume (L) / Area	Length (or Aliquots) x Width (or Area per Aliquot)	Matrix Code	# of Containers	Date Collected mm/dd/yy	Time Collected hh:mm	Laboratory Analysis Instructions
VALID MATRIX CODES: Air = A; Bulk = B; Dust = D; Food = F; Paint = P; Soil = S; Surface = SU; Swab = SW; Tape = T; Wipe = W; Drinking Water = DW; Waste Water = WW; **ASTM E1792 approved wipe media only**																
LAB NOTES																
164 R-164	X											B				
165 R-165	X											B				
166 R-166	X											B				
167 R-167	X											B				
168 R-168	X											B				
169 R-169	X											B				
170 R-170	X											B				
171 R-171	X											B				
172 R-172	X											B				
173 R-173	X											B				
174 R-174	X											B				
175 R-175	X											B				
176 R-176	X											B				
177 R-177	X											B				
178 R-178	X											B				
179 R-179	X											B				
180 R-180	X											B				
181 R-181	X											B				
182 R-182	X											B				
183 R-183	X											B				
184 R-184	X											B				
185 R-185	X											B				
186 R-186	X											B				
187 R-187	X											B				
188 R-188	X											B				
189 R-189	X											B				
190 R-190	X											B				
191 R-191	X											B				
192 R-192	X											B				
193 R-193	X											B				

Built Environment
Reservoirs

Res Job#: **518653**

Submitted By: **R & R Environmental**

REQUESTED ANALYSIS											VALID MATRIX CODES						LAB NOTES
											Air = A			Bulk = B			
											Dust = D			Food = F			
											Paint = P			Soil = S			
											Surface = SU			Swab = SW			
											Tape = T			Wipe = W			
											Drinking Water = DW						
											Waste Water = WW						
											ASTM E1792 approved wipe media only						
PLM - PLM Short Report (EPA/600/R-93/116)	**TEM** - AHERA (+/- or Quantified), Microvac (+/- or Quantified), Wipe (+/- or Quantified), NIOSH 7402, Yamate Level II, ISO 10312, ISO 13794, Chatfield, Drinking Water, Waste Water, Bulk +/-, CARB Modified Ahera	**PCM** - 7400A, 7400B, OSHA	**DUST** - Total, Respirable	**METALS** - Analyte(s) Lead Only (7082, 7420), Waste Water, Foodware), Multi Metals (7303,6020A, 200.8, Waste Water, Foodware, OSHA ID-125G), pH (Liquid or Non-Liquid), TCLP, RCRA 8 Scan, Welding Fume Scan, Full Metals Scan	**ORGANICS** - Methamphetamine, TSS	**VIABLES** - Campylobacter, Bacillus, Salmonella (Culturable or 1-2), Listeria, E.coli O157:H7, E.coli/Coliforms - Plated, S.aureus, Yeast & Mol, Aerobic Plate Count, Coliforms/E.coli - (State Water, Drinking Water, Non-Drinking Water, +/- Quantification), Lactic Acid, Viable Microbial Count (wo/ID or w/ID), Enterococcus (+/- or Quantification), Legionella (P, NP, C)	**MEDICAL** - Bioburden, LAL	**MOLD** - Spore Trap, Bulk Mold, Particulate Identification	Sample Volume (L) / Area	Length (or Aliquots) x Width (or Area per Aliquot	Matrix Code	# of Containers	Date Collected mm/dd/yy	Time Collected hh:mm	Laboratory Analysis Instructions
ASBESTOS			**CHEMISTRY**				**MICROBIOLOGY**										
Client Sample ID Number (Sample ID's must be unique)																	
194 R-194	X												B				
195 R-195	X												B				
196 R-196	X												B				
197 R-197	X												B				
198 R-198	X												B				
199 R-199	X												B				
200 R-200	X												B				
201 R-201	X												B				
202 R-202	X												B				
203 R-203	X												B				
204 R-204	X												B				

Appendix C

Photo Log

PHOTO 1: Rio Grande Depot Museum

PHOTO 2: Asbestos Containing Concrete Wall/Column Coating

PHOTO 3: Asbestos Containing Elevator Frame Coating

PHOTO 4: Asbestos Containing Elevator Frame Coating

R & R Environmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:		
DESIGNED BY:	SCALE:	REVIEWED BY:
DRAWN BY:	DATE:	FILE:

SITE PHOTOGRAPHS

AN ASBESTOS SURVEY AND ASSESSMENT

OF THE

RIO GRANDE DEPOT MUSEUM

270 SOUTH RIO GRANDE

SALT LAKE CITY, UTAH 84101

PHOTO 5: Asbestos Containing Sheet Vinyl & Mastic

PHOTO 6: Asbestos Containing Brown Putty Wall Packing

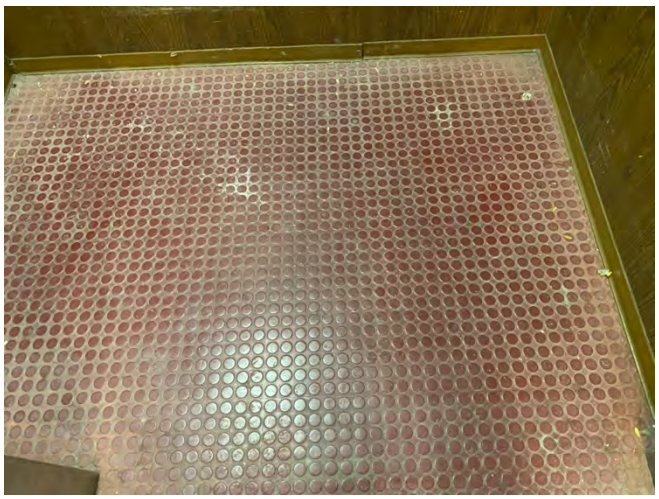


PHOTO 7: Asbestos Containing Elevator Flooring Materials

PHOTO 8: Asbestos Containing Black Roofing Sealant

R & R Environmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:		
DESIGNED BY:	SCALE:	REVIEWED BY:
DRAWN BY:	DATE:	FILE:

SITE PHOTOGRAPHS

AN ASBESTOS SURVEY AND ASSESSMENT

OF THE

RIO GRANDE DEPOT MUSEUM

270 SOUTH RIO GRANDE

SALT LAKE CITY, UTAH 84101

PHOTO 9: Asbestos Containing Fiber Cement Fume Hood & Counter Top

PHOTO 10: Asbestos Containing White Sink Undercoat

PHOTO 11: Asbestos Containing 12” Vinyl Floor Tile & Mastic

PHOTO 12: Asbestos Containing Stair Tread Adhesive

R & R Environmental, Inc.

47 West 9000 South, Suite #2, Sandy, Utah 84070

(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:		
DESIGNED BY:	SCALE:	REVIEWED BY:
DRAWN BY:	DATE:	FILE:

SITE PHOTOGRAPHS

AN ASBESTOS SURVEY AND ASSESSMENT

OF THE

RIO GRANDE DEPOT MUSEUM

270 SOUTH RIO GRANDE

SALT LAKE CITY, UTAH 84101

PHOTO 13: Asbestos Containing Green Duct Sealant

PHOTO 14: Asbestos Containing Gray Duct Sealant

PHOTO 15: Asbestos Containing TSI-Aircell Lagging

PHOTO 16: Assumed Asbestos Containing 9'Vinyl Floor tile & Mastic

R & R Environmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:		
DESIGNED BY:	SCALE:	REVIEWED BY:
DRAWN BY:	DATE:	FILE:

SITE PHOTOGRAPHS

AN ASBESTOS SURVEY AND ASSESSMENT

OF THE

RIO GRANDE DEPOT MUSEUM

270 SOUTH RIO GRANDE

SALT LAKE CITY, UTAH 84101

PHOTO 17: Assumed Asbestos Containing Other Roofing Materials (Other Caulks & Sealants)

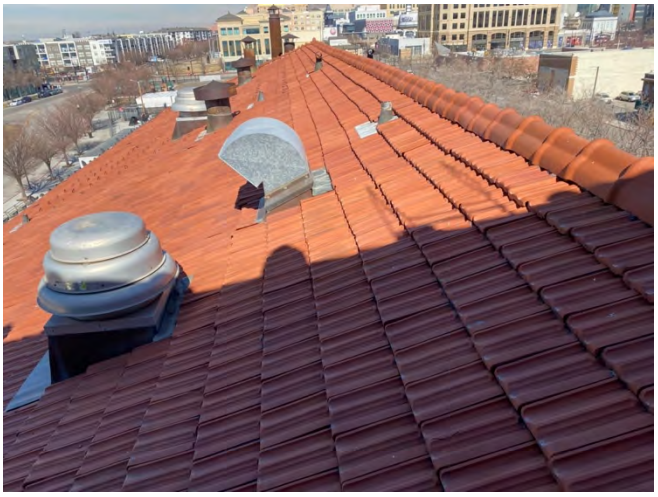


PHOTO 18: Assumed Asbestos Containing Other Roofing Materials (Membrane Under Shingles)

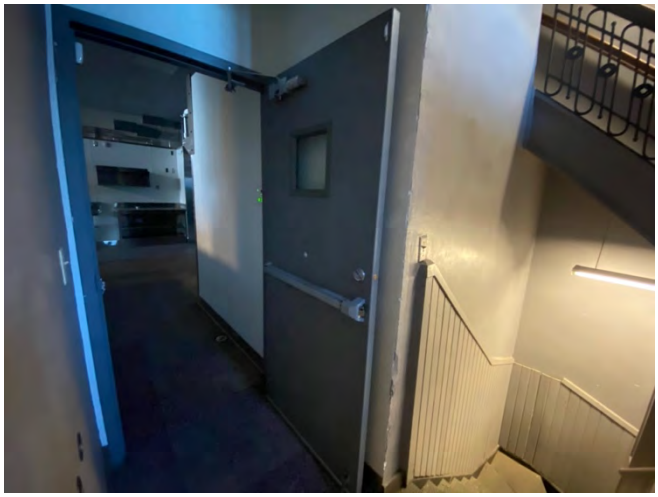


PHOTO 19: Assumed Asbestos Containing Fire Rated Doors

PHOTO 20: Assumed Asbestos Containing Boilers

R & R Environmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:		
DESIGNED BY:	SCALE:	REVIEWED BY:
DRAWN BY:	DATE:	FILE:

SITE PHOTOGRAPHS

AN ASBESTOS SURVEY AND ASSESSMENT

OF THE

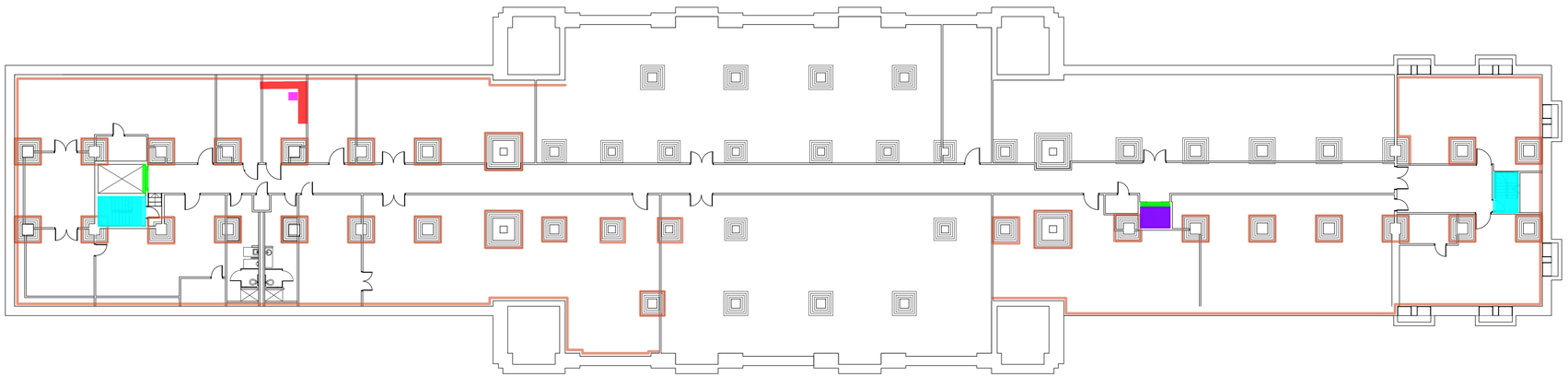
RIO GRANDE DEPOT MUSEUM

270 SOUTH RIO GRANDE

SALT LAKE CITY, UTAH 84101

Appendix D

Floor Plan



- ASBESTOS CONTAINING CONCRETE WALL/COLUMN COATING
- ASBESTOS CONTAINING 12" VINYL FLOOR TILE + MASTIC AND STAIR TREAD ADHESIVE
- ASBESTOS CONTAINING ELEVATOR FRAME COATING
- ASBESTOS CONTAINING WHITE SINK UNDERCOAT
- ASBESTOS CONTAINING FIBER CEMENT FUME HOOD AND COUNTER TOP
- ASBESTOS CONTAINING ELEVATOR FLOORING MATERIAL

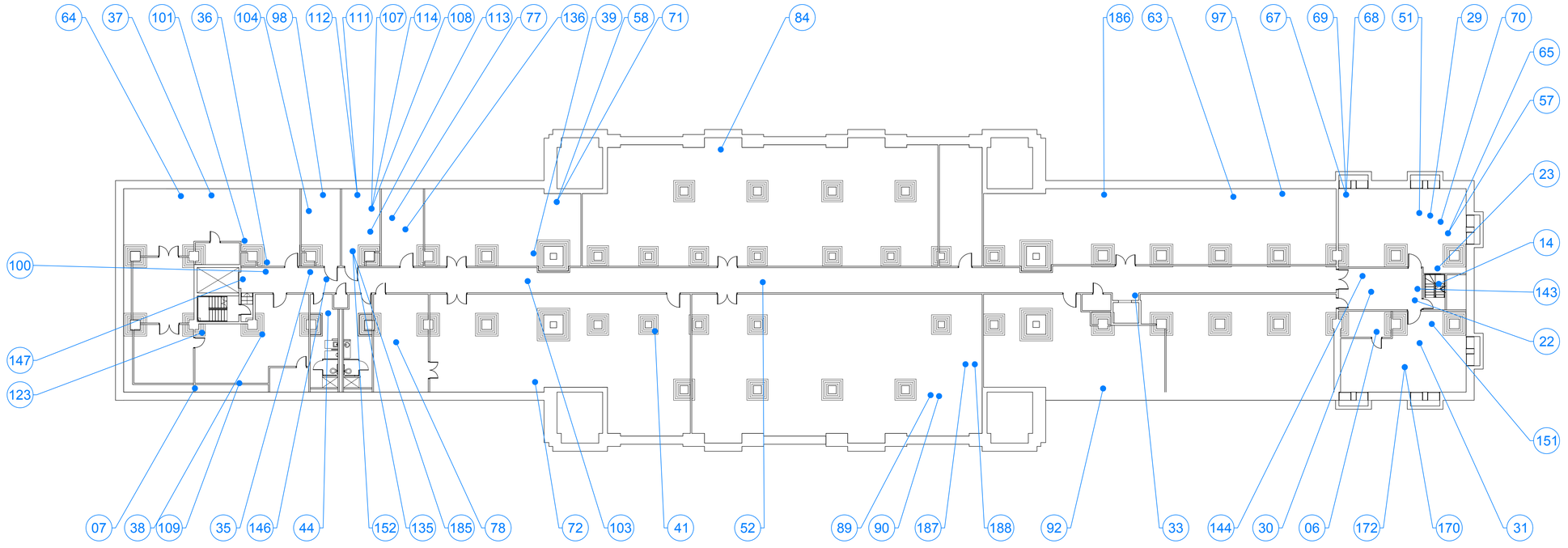
R&R ENVIRONMENTAL
ASBESTOS • LEAD • INDUSTRIAL HYGIENE

RIO GRANDE

BASEMENT FLOOR PLAN

RIO GRANDE DEPOT MUSEUM
270 SOUTH RIO GRANDE STREET
SALT LAKE CITY, UTAH 84101

MARCH 2022



SAMPLE NUMBER AND LOCATION

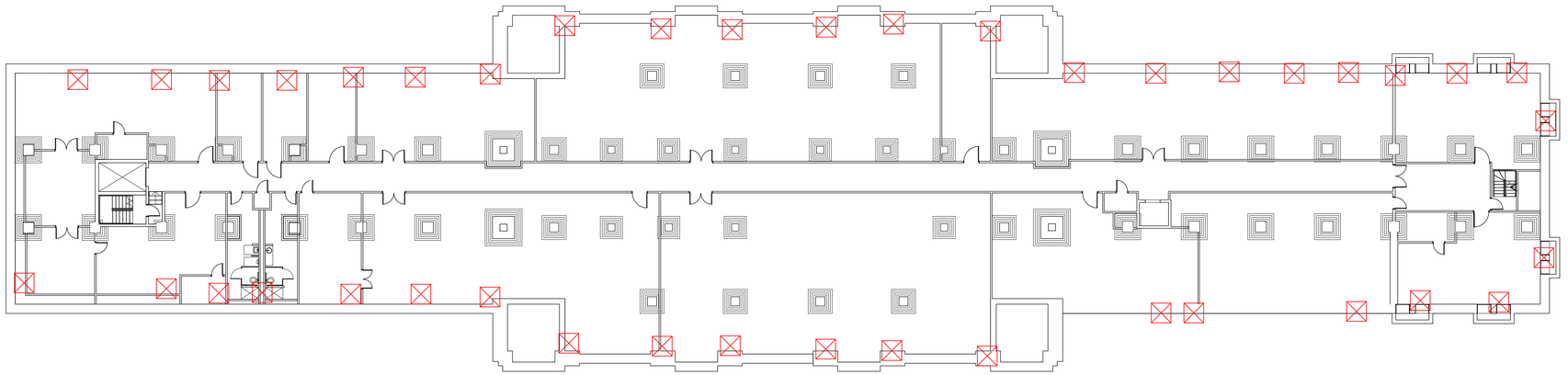
ENVIRONMENTAL
ASBESTOS • LEAD • INDUSTRIAL HYGIENE

RIO GRANDE

BASEMENT FLOOR PLAN

RIO GRANDE DEPOT MUSEUM
270 SOUTH RIO GRANDE STREET
SALT LAKE CITY, UTAH 84101

MARCH 2022



ASBESTOS CONTAINING TSI-ARRCELL LAGGING (APPROX)

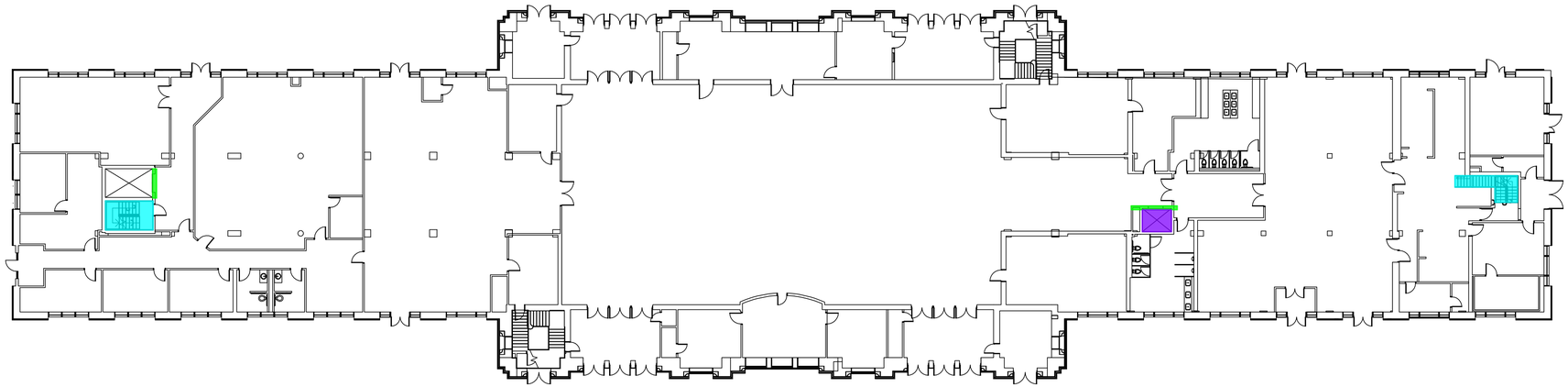
R&R ENVIRONMENTAL
ASBESTOS • LEAD • INDUSTRIAL HYGIENE

RIO GRANDE

BASEMENT FLOOR PLAN

RIO GRANDE DEPOT MUSEUM
270 SOUTH RIO GRANDE STREET
SALT LAKE CITY, UTAH 84101

MARCH 2022



- ASBESTOS CONTAINING 12" VINYL FLOOR TILE + MASTIC AND STAIR TREAD ADHESIVE
- ASBESTOS CONTAINING ELEVATOR FRAME COATING
- ASBESTOS CONTAINING ELEVATOR FLOORING MATERIAL

***ASBESTOS CONTAINING DUCT SEALANT (NOT SHOWN)

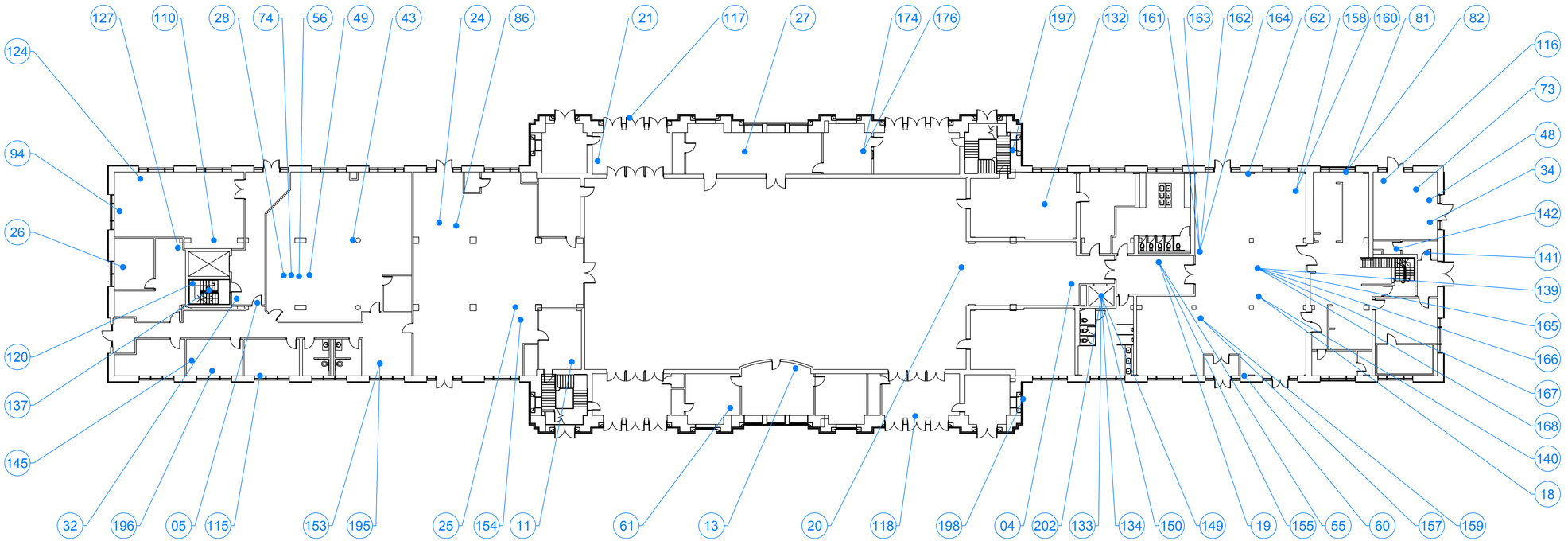
R&R ENVIRONMENTAL
ASBESTOS • LEAD • INDUSTRIAL HYGIENE

RIO GRANDE

MAIN FLOOR PLAN

RIO GRANDE DEPOT MUSEUM
270 SOUTH RIO GRANDE STREET
SALT LAKE CITY, UTAH 84101

MARCH 2022



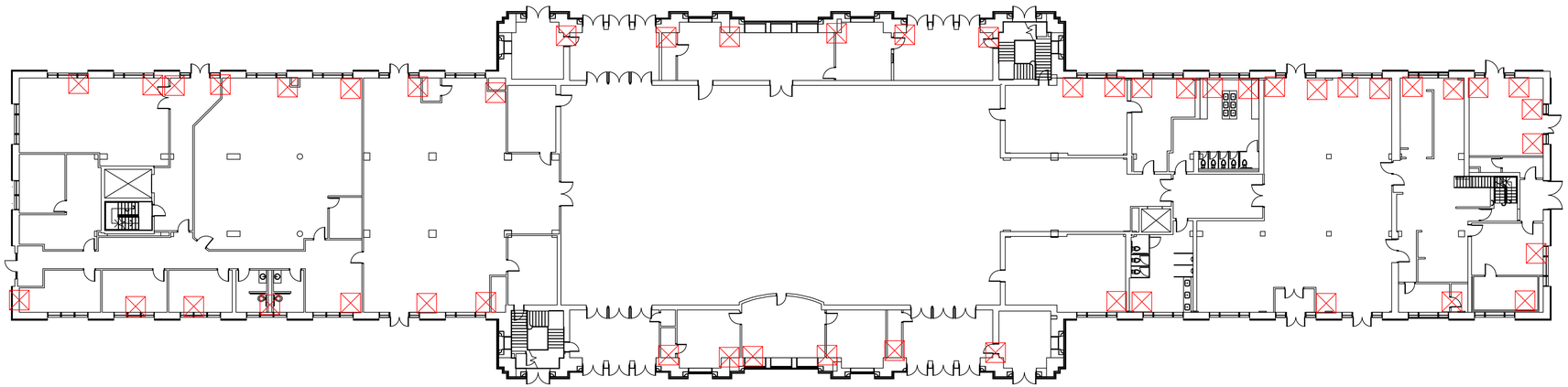
(#) SAMPLE NUMBER AND LOCATION

R&R ENVIRONMENTAL
ASBESTOS • LEAD • INDUSTRIAL HYGIENE

RIO GRANDE
MAIN FLOOR PLAN

RIO GRANDE DEPOT MUSEUM
270 SOUTH RIO GRANDE STREET
SALT LAKE CITY, UTAH 84101

MARCH 2022



ASBESTOS CONTAINING TSI-ARRCELL LAGGING (APPROX)
***ASBESTOS CONTAINING DUCT SEALANT (NOT SHOWN)

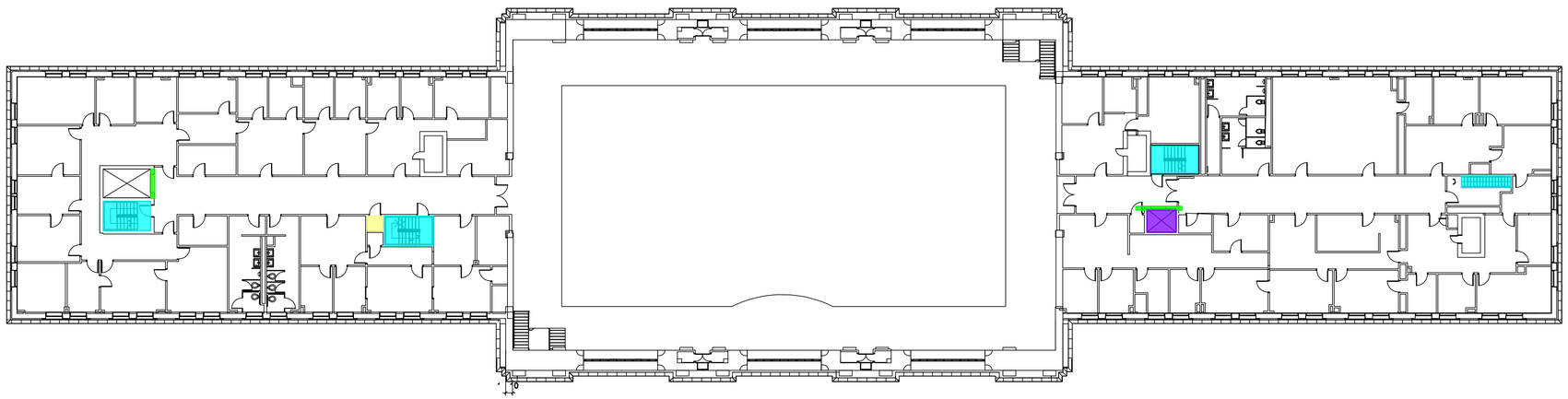
R&R ENVIRONMENTAL
ASBESTOS • LEAD • INDUSTRIAL HYGIENE

RIO GRANDE

MAIN FLOOR PLAN

RO GRANDE DEPOT MUSEUM
270 SOUTH RIO GRANDE STREET
SALT LAKE CITY, UTAH 84101

MARCH 2022



- ASBESTOS CONTAINING 12" VINYL FLOOR TILE + MASTIC AND STAIR TREAD ADHESIVE
- ASBESTOS CONTAINING ELEVATOR FRAME COATING
- ASBESTOS CONTAINING ELEVATOR FLOORING MATERIAL
- ASBESTOS CONTAINING SHEET VINYL AND MASTIC

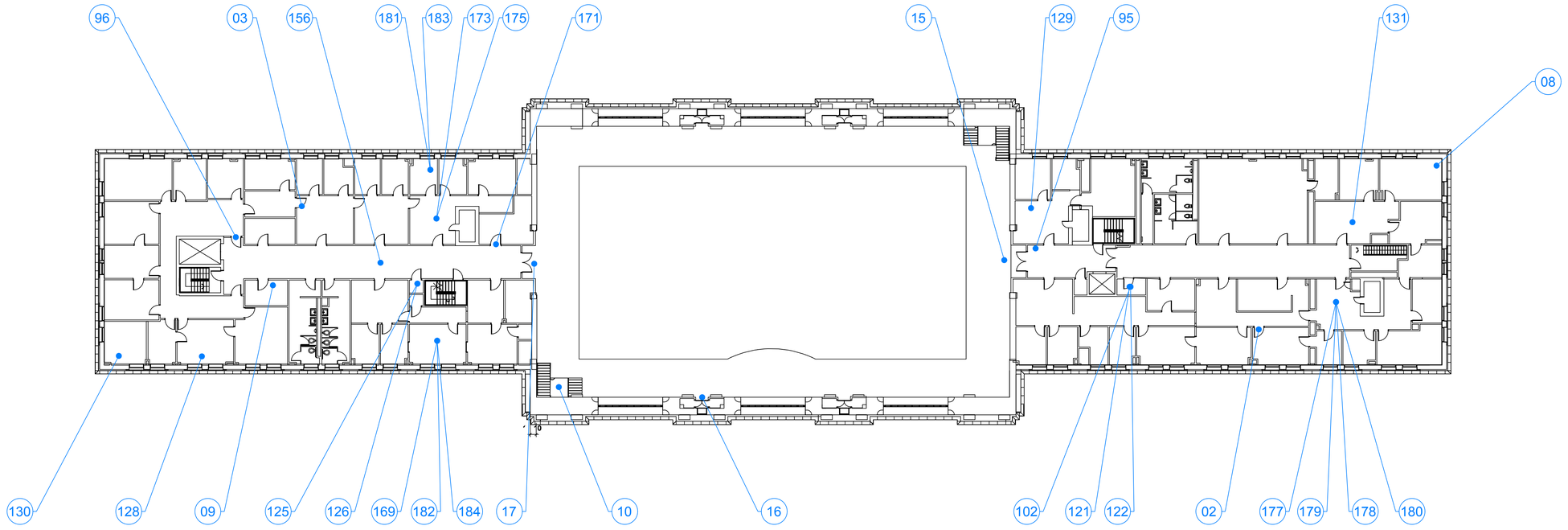
R&R ENVIRONMENTAL
ASBESTOS • LEAD • INDUSTRIAL HYGIENE

RIO GRANDE

SECOND FLOOR PLAN

RIO GRANDE DEPOT MUSEUM
270 SOUTH RIO GRANDE STREET
SALT LAKE CITY, UTAH 84101

MARCH 2022



SAMPLE NUMBER AND LOCATION

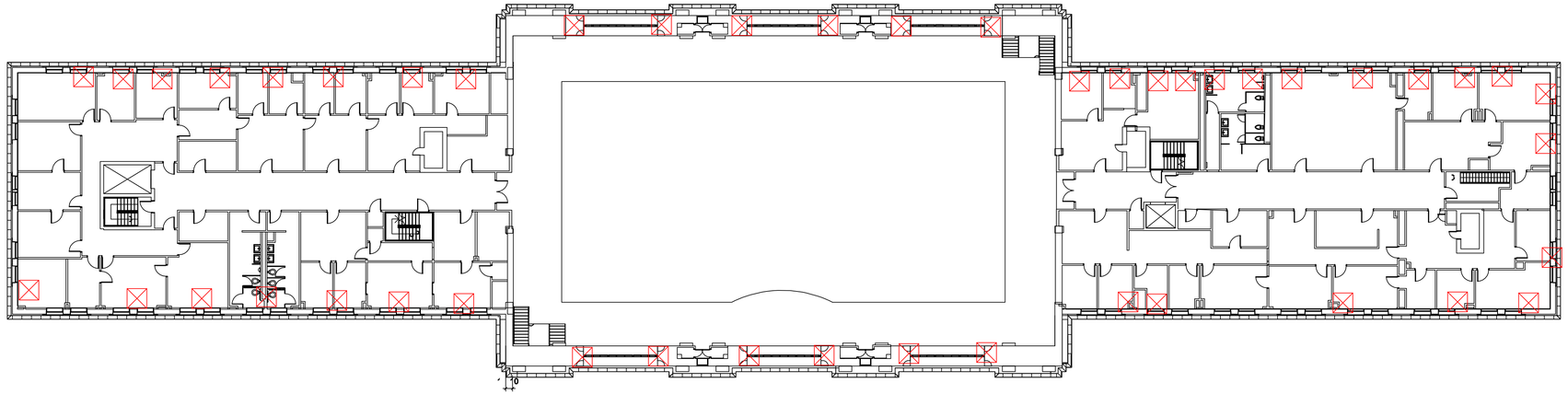
R&R ENVIRONMENTAL
ASBESTOS • LEAD • INDUSTRIAL HYGIENE

RIO GRANDE

SECOND FLOOR PLAN

RIO GRANDE DEPOT MUSEUM
270 SOUTH RIO GRANDE STREET
SALT LAKE CITY, UTAH 84101

MARCH 2022



ASBESTOS CONTAINING TSI-ARRCELL LAGGING (APPROX)

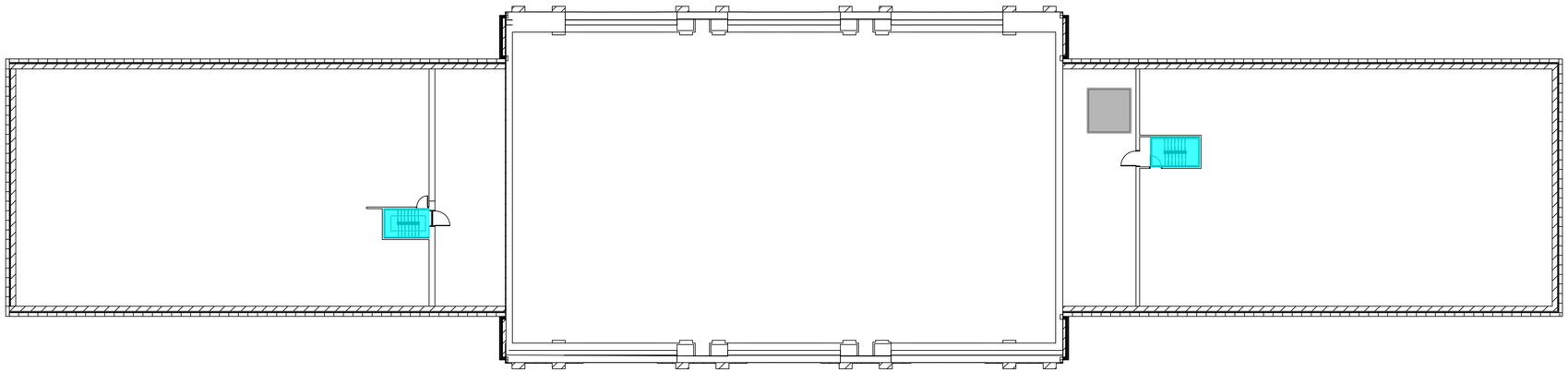
R&R ENVIRONMENTAL
ASBESTOS • LEAD • INDUSTRIAL HYGIENE

RIO GRANDE

SECOND FLOOR PLAN

RIO GRANDE DEPOT MUSEUM
270 SOUTH RIO GRANDE STREET
SALT LAKE CITY, UTAH 84101

MARCH 2022



ASBESTOS CONTAINING 12" VINYL FLOOR TILE + MASTIC AND STAIR TREAD ADHESIVE
ASBESTOS CONTAINING BROWN PUTTY WALL PACKING
***ASBESTOS CONTAINING DUCT SEALANT (NOT SHOWN)

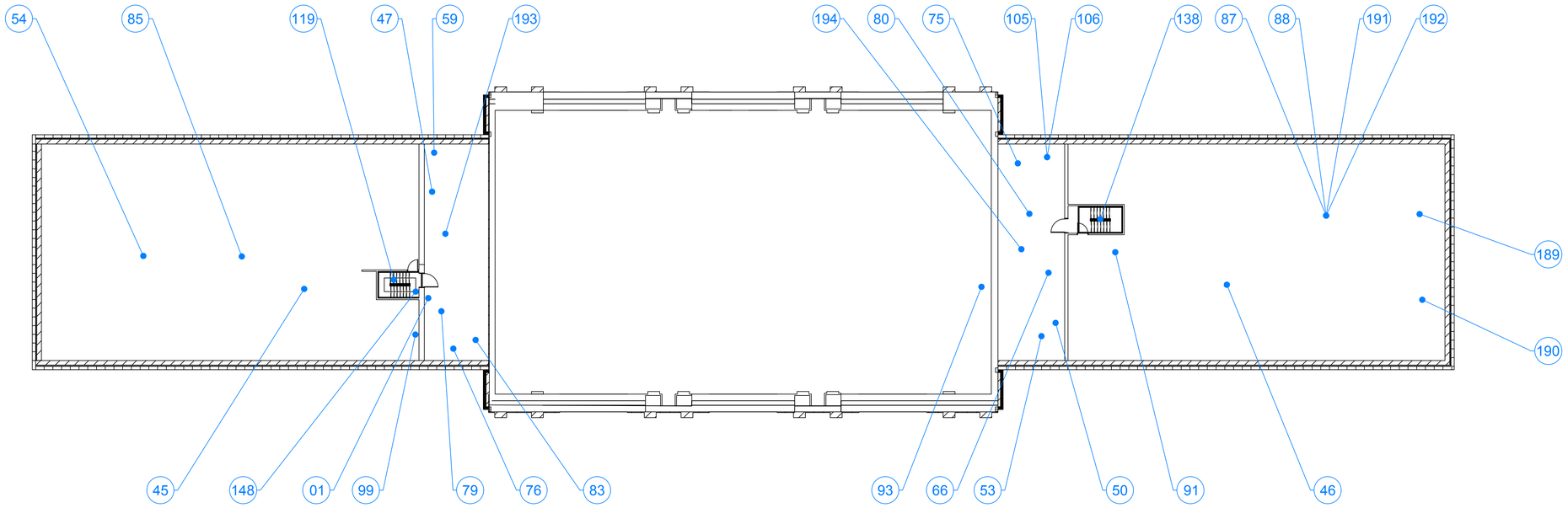
R&R ENVIRONMENTAL
ASBESTOS • LEAD • INDUSTRIAL HYGIENE

RIO GRANDE

ATTIC PLAN

RIO GRANDE DEPOT MUSEUM
270 SOUTH RIO GRANDE STREET
SALT LAKE CITY, UTAH 84101

MARCH 2022



RIO GRANDE

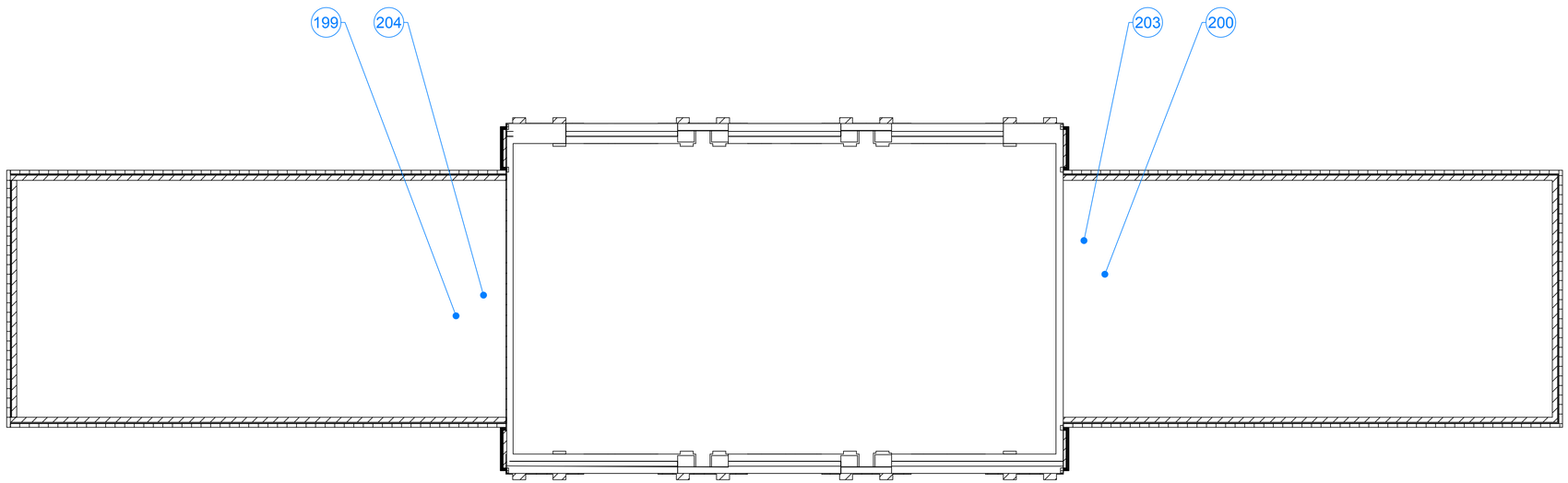
ATTIC PLAN

(#) SAMPLE NUMBER AND LOCATION

R&R ENVIRONMENTAL
ASBESTOS • LEAD • INDUSTRIAL HYGIENE

RIO GRANDE DEPOT MUSEUM
270 SOUTH RIO GRANDE STREET
SALT LAKE CITY, UTAH 84101

MARCH 2022



RIO GRANDE

ROOF PLAN

RIO GRANDE DEPOT MUSEUM
270 SOUTH RIO GRANDE STREET
SALT LAKE CITY, UTAH 84101

MARCH 2022

R&R ENVIRONMENTAL
ASBESTOS • LEAD • INDUSTRIAL HYGIENE

(#) SAMPLE NUMBER AND LOCATION

Appendix E

State of Utah Certifications

State of Utah

SPENCER J. COX
Governor

DEIDRE HENDERSON
Lieutenant Governor

Department of
Environmental Quality

Kimberly D. Shelley
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

Utah Asbestos Certification

Jamison Moss
ASB-6674
Inspector (Exp. 12/03/2022)
Project Designer (Exp. 06/16/2022)

Director, Utah Division of Air Quality

December 15, 2021

DAQA-001-21

Jamison Moss
R&R Environmental, Inc.
47 West 9000 South, #2
Sandy, UT 84070

Dear Mr. Moss:

Re: Utah Asbestos Program Individual Certification Card

The Utah Division of Air Quality (DAQ) has reviewed your Utah Asbestos Program Certification Application for Individuals and we are pleased to inform you that your application has been approved. Your new asbestos program individual certification card is enclosed with this letter and this card is the sole method of individual certification documentation that you will receive from the DAQ.

Please check the information on your asbestos program certification card carefully. Please confirm that the photograph, name, and certification discipline(s) are correct. Also, please remember to keep your current asbestos program certification card with you at all times when you are performing regulated asbestos work activities.

Please contact Tamie Call at (385) 227-1055 or at twcall@utah.gov if you have any questions regarding this letter or the enclosed asbestos program certification card.

Sincerely,

Leonard Wright (Dec 14, 2021 08:39 MST)

Leonard Wright, Manager
Air Toxics, Lead-Based Paint, and Asbestos Section

LW:TC:lr

State of Utah

SPENCER J. COX
Governor

DEIDRE HENDERSON
Lieutenant Governor

Department of
Environmental Quality

Kimberly D. Shelley
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

Utah Asbestos Certification

Jeremy Jett Groves
ASB-6688
Inspector (Exp. 01/14/2023)

Director, Utah Division of Air Quality

February 25, 2022

DAQA-001-22

Jeremy Jett Groves
R&R Environmental, Inc.
47 West 9000 South, #2
Sandy, UT 84070

Dear Mr. Groves:

Re: Utah Asbestos Program Individual Certification Card

The Utah Division of Air Quality (DAQ) has reviewed your Utah Asbestos Program Certification Application for Individuals and we are pleased to inform you that your application has been approved. Your new asbestos program individual certification card is enclosed with this letter and this card is the sole method of individual certification documentation that you will receive from the DAQ.

Please check the information on your asbestos program certification card carefully. Please confirm that the photograph, name, and certification discipline(s) are correct. Also, please remember to keep your current asbestos program certification card with you at all times when you are performing regulated asbestos work activities.

Please contact Tamie Call at (385) 227-1055 or at twcall@utah.gov if you have any questions regarding this letter or the enclosed asbestos program certification card.

Sincerely,

Leonard Wright (Feb 24, 2022 10:16 MST)

Leonard Wright, Manager
Air Toxics, Lead-Based Paint, and Asbestos Section

LW:TC:lr

195 North 1950 West, 4th Floor • Salt Lake City, UT
Mailing Address: P.O. Box 144820 • Salt Lake City, UT 84114-4820
Telephone (801) 536-4000 • Fax (801) 536-4099 • T.D.D. (801) 536-4414
www.deq.utah.gov

State of Utah
GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

Alan Matheson
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

Utah Department of Environmental Quality
Division of Air Quality
The Utah Division of Air Quality certifies that:
R & R Environmental, Inc.
is hereby certified as an asbestos company in accordance with the provisions of Utah Administrative Code R307-801
Certification number: ASBC-237
Expiration date: 12/31/23
Director, Utah Division of Air Quality

September 26, 2018

DAQA-003-18

David Roskelley
R&R Environmental, Inc.
47 West 9000 South, #2
Sandy, UT 84070

Dear Mr. Roskelley:

Re: Utah Asbestos Company Certification Card

The Utah Division of Air Quality (DAQ) has received your Certification Application for Asbestos Company and we are pleased to inform you that your application has been approved. Your new Asbestos company certification card is enclosed with this letter and this card is the sole method of Asbestos company certification documentation that you will receive from the DAQ. Please check the information on your asbestos company certification card carefully and please confirm that the company name and certification expiration date are correct.

Please be aware that your company is certified to perform asbestos projects in accordance with applicable state and federal rules and the use of Utah certified individuals is mandatory. Also, your certification may be revoked or suspended if the Utah certified individual or company are found to be in violation of the asbestos certification and work practices standards found in Utah Administrative Code R307-801 or the National Emission Standard for Asbestos found in Title 40 Code of Federal Regulations Part 61 Subpart M.

Please contact Tamie Call at (801) 536-4007 or at twcall@utah.gov if you have any questions about this letter or the enclosed asbestos company certification card.

Sincerely,

Robert W. Ford, Manager
Air Toxics, Lead-Based Paint, and Asbestos Section

RWF:TC:lr LT

State of Utah
SPENCER J. COX
Governor

DEIDRE HENDERSON
Lieutenant Governor

Department of
Environmental Quality

Kimberly D. Shelley
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

Utah Asbestos Certification

David C. Roskelley
ASB-1370
Inspector (Exp. 07/16/2022)
Management Planner (Exp. 07/16/2022)
Project Designer (Exp. 07/14/2022)

Director, Utah Division of Air Quality

DAQA-001-21

July 28, 2021

David Roskelley
R&R Environmental, Inc.
47 West 9000 South, #2
Sandy, UT 84070

Dear Mr. Roskelley:

Re: Utah Asbestos Program Individual Certification Card

The Utah Division of Air Quality (DAQ) has reviewed your Utah Asbestos Program Certification Application for Individuals and we are pleased to inform you that your application has been approved. Your new asbestos program individual certification card is enclosed with this letter and this card is the sole method of individual certification documentation that you will receive from the DAQ.

Please check the information on your asbestos program certification card carefully. Please confirm that the photograph, name, and certification discipline(s) are correct. Also, please remember to keep your current asbestos program certification card with you at all times when you are performing regulated asbestos work activities.

Please contact Tamie Call at (385) 227-1055 or at twcall@utah.gov if you have any questions regarding this letter or the enclosed asbestos program certification card.

Sincerely,

Leonard Wright (Jul 22, 2021 12:12 MDT)

Leonard Wright, Manager
Air Toxics, Lead-Based Paint, and Asbestos Section

LW:TC:lr

State of Utah
GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

Alan Matheson
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

Utah Department of Environmental Quality
Division of Air Quality
The Utah Division of Air Quality certifies that:
R & R Environmental, Inc.
is hereby certified as Lead-Based Paint firm in accordance with the provisions of Utah Administrative Code R307-841 and R307-842.
Certification number: **PBF-0059**
Expiration date: **05/31/22**
Director, Utah Division of Air Quality

DAQA-004-16

November 9, 2016

David C. Roskelley
R&R Environmental, Inc.
47 West 9000 South #2
Sandy, UT 84070

Dear Mr. Roskelley:

Re: Utah Lead-Based Paint Firm Certification Card

The Utah Division of Air Quality (DAQ) has received your Lead-Based Paint (LBP) Certification Application for Firms and we are pleased to inform you that your application has been approved. Your new LBP firm certification card is enclosed with this letter and this card is the sole method of LBP firm certification documentation that you will receive from the DAQ. Please check the information on your LBP firm certification card carefully and please confirm that the LBP firm name and certification expiration date are correct.

Please be aware that your LBP firm is certified to perform regulated LBP projects in accordance with applicable state administrative rules and federal regulations and the use of Utah certified individuals is mandatory. Also, your LBP firm certification may be revoked or suspended if the Utah certified individual or LBP firm are found to be in violation of the LBP certification and work practice standards found in Utah Administrative Code R307-841 and R307-842 or the federal LBP regulations found in Title 40 Code of Federal Regulations Part 745.

If you have any questions regarding this letter or the enclosed LBP firm certification card, please contact Lisa Haroutunian at (801) 536-4007 or at lharoutunian@utah.gov.

Sincerely,

Robert W. Ford, Manager
Air Toxics, Lead-Based Paint, and Asbestos Section

RWF:LH:lr
LW

State of Utah

SPENCER J. COX
Governor

DEIDRE HENDERSON
Lieutenant Governor

Department of
Environmental Quality

Kimberly D. Shelley
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

Utah Lead-Based Paint Certification

David C. Roskelley
PB-1041
Inspector (Exp. 02/11/2025)
Risk Assessor (Exp. 02/11/2025)

Director, Utah Division of Air Quality

March 1, 2022

DAQA-002-22

David Roskelley
R&R Environmental, Inc.
47 West 9000 South, #2
Sandy, UT 84070

Dear Mr. Roskelley:

Re: Utah Lead-Based Paint Program Individual Certification Card

The Utah Division of Air Quality (DAQ) has reviewed your Utah Lead-Based Paint (LBP) Program Certification Application for Individuals and we are pleased to inform you that your application has been approved. Your new LBP program individual certification card is enclosed with this letter and this card is the sole method of individual certification documentation that you will receive from the DAQ.

Please check the information on your LBP program certification card carefully. Please confirm that the photograph, name, and certification discipline(s) are correct. Also, please remember to keep your current LBP program certification card with you at all times when you are performing regulated LBP work activities.

Please contact Tamie Call at (385) 227-1055 or at twcall@utah.gov if you have any questions regarding this letter or the enclosed LBP program certification card.

Sincerely,

Leonard Wright (Feb 25, 2022 07:27 MST)

Leonard Wright, Manager
Air Toxics, Lead-Based Paint, and Asbestos Section

LW:TC:lr

195 North 1950 West, 4th Floor • Salt Lake City, UT
Mailing Address: P.O. Box 144820 • Salt Lake City, UT 84114-4820
Telephone (801) 536-4000 • Fax (801) 536-4099 • T.D.D. (801) 536-4414
www.deq.utah.gov

ABIH®

american board of industrial hygiene®

organized to improve the practice of industrial hygiene
proclaims that

David C. Roskelley

having met all requirements of
education, experience and examination, and
ongoing maintenance,
is hereby certified in the

COMPREHENSIVE PRACTICE
of
INDUSTRIAL HYGIENE

and has the right to use the designations

CERTIFIED INDUSTRIAL HYGIENIST

CIH

Certificate Number	**8529 CP**
Awarded:	**July 3, 2003**
Expiration Date:	**December 1, 2023**

Chair, ABIH

Chief Executive Officer, ABIH

STATE OF CALIFORNIA Gavin Newsom, Governor

DEPARTMENT OF INDUSTRIAL RELATIONS
Division of Occupational Safety and Health
Asbestos Certification & Training Unit
1750 Howe Avenue, Suite 460
Sacramento, CA 95825
(916) 574-2993 Office http://www.dir.ca.gov/dosh/asbestos.html acru@dir.ca.gov

709162250C **150**

R & R Environmental, Inc.
David C Roskelley
47 West 9000 South, #2
Sandy UT 84070

August 09, 2021

Dear Certified Asbestos Consultant or Technician:

Enclosed is your certification card. **To maintain your certification, you must 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 an asbestos consultant or site surveillance technician.

Please notify our office via U.S. Postal Service or other carrier of any changes in your mailing or work address within 15 days of the change.

Sincerely,

Jeff Ferrell
Senior Safety Engineer

Attachment: Certification Card

cc: File

LEAD-BASED PAINT INSPECTION
FOR THE
RIO GRANDE DEPOT MUSEUM
270 SOUTH RIO GRANDE
SALT LAKE CITY, UTAH 84101

March 17, 2022

Prepared for:

State of Utah–Department of Administrative Services

DIVISION OF FACILITIES CONSTRUCTION
AND MANAGEMENT
4110 State Office Building/Salt Lake City, Utah 84114/538-3018

Mr. Jon Vance
Project Manager
State of Utah
Department of Administrative Services
Division of Facilities Construction and Management (DFCM)
State Office Building Room 4110
Salt Lake City, Utah 84114
PH: (801) 686-4422

Prepared by:

R & R ENVIRONMENTAL
ASBESTOS • LEAD • INDUSTRIAL HYGIENE

R & R Environmental, Inc. (R & R)
47 West 9000 South, Suite #2
Sandy, Utah 84070
dave@rrenviro.com
Phone (801) 541-1035

LEAD-BASED PAINT INSPECTION
RIO GRANDE DEPOT MUSEUM
SALT LAKE CITY, UTAH 84101

TABLE OF CONTENTS

TITLE		PAGE
1.0	Introduction	1
2.0	Building Description	2
3.0	Lead-based Paint Definition	3
4.0	Procedures	3
4.1	Paint Sampling Methods	3
4.2	XRF Calibration	4
4.3	Field Documentation	4
5.0	Findings	4
6.0	Results and Recommendation	5
8.0	Limitations and Exclusion of Warranty	5

Appendices

A. Data Tables
   Table 1 – Building Component with Lead Levels at 0.3 mg/cm^2 and above
   Table 2 – Building Component with Lead Levels at below 0.3 mg/cm^2
B. Photograph Log

Lead-Based Paint Inspection

RIO GRANDE DEPOT MUSEUM
SALT LAKE CITY, UTAH

1.0 INTRODUCTION

During the month of February 2022, a lead-based paint (LBP) survey was conducted for the Rio Grande Depot Museum in Salt Lake City, Utah. The purpose of the survey was to identify lead in paint on interior and exterior surfaces of the building. Measurements for lead in paint were made using a Niton XLp 300 X-ray Fluorescence (XRF) Spectrum Analyzer. No chip sampling or laboratory analysis was performed for confirmation of XRF measurements.

The survey work was overseen by David Roskelley with R & R Environmental, Inc. in Sandy, Utah. David Roskelley has completed Lead Inspector Training through the University of Utah, Rocky Mountain Center for Occupational and Environmental Health (RMCOEH), an EPA-sponsored Regional Lead Training Center, and is certified by the State of Utah, Division of Environmental Quality, as a Lead Inspector.

The U.S. Department of housing and Urban Development (HUD) *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in housing* (HUD Guidelines), Chapter7: Lead-Based Paint Inspection, 1997 Revision, was generally followed for this survey, with modifications appropriate for a non-residential building.

The following accredited and certified inspector oversaw the inspection, collected the samples and made assessment:

June 21, 2022

David C. Roskelley, MSPH, CIH, CSP — Date
Lead-Based Paint Inspector
Certification Number: PB-1041

This report was reviewed by:

June 21, 2022

David C. Roskelley, MSPH, CIH, CSP — Date
Lead-Based Paint Inspector
Certification Number: PB-1041

2.0 BUILDING DESCRIPTION

Building Identification

Building Name..... Rio Grande Depot Museum
Building Address ..... 270 South Rio Grande, Salt Lake City, UT 84101

Building Construction

Building Construction Date.....1910
Building Type..... Museum, Office Space
Building Total Sq. Ft ..... 88,000 ft^2
Structural System..... Concrete, Brick, Wood, Metal Joists
Exterior Wall Construction.....Masonry
Floor Deck Construction ..... Concrete
Roof Construction.....Pitched
Floors Above Grade.....3
Floors Below Grade.....1

Interior Finishes

Floors..... Concrete, Wood, Vinyl Flooring, Carpet
Walls..... Wallboard System, Plaster
Attic .....Yes
Crawl space..... None

Building Mechanical

Heating Plant ..... Hot Water
Main Heating Distribution..... Forced Air
Cooling Plant..... Chilled Water
Main A / C Distribution..... Forced Air

3.0 LEAD-BASED PAINT DEFINITIONS

HUD defines "lead-based paint" as any coating that has a lead concentration of 1.0 milligram of lead per square centimeter (1.0 mg/cm^2) or greater, or if the lead concentration is greater than 0.5% by weight. The Consumer Product Safety Commission (CPSC) currently considers paint to be lead-containing if the concentration of lead exceeds 600 ppm (0.06% by weight). In 1978, the CPSC banned the sale of lead-based paint to consumers, and banned its application in areas where consumers have direct access to painted surfaces. Both the CPSC and HUD definitions of lead-containing paint are aimed at protecting the general population from exposure to lead in the residential setting.

By contrast, the mission of the Occupational Safety and Health Administration (OSHA) with respect to lead-containing paint, is to protect workers during construction activities that may generate elevated airborne lead concentrations. OSHA states that construction work (including renovation, maintenance, and demolition) carried-out on structures coated with paint have lead concentrations lower than the HUD or CPSC can still result in airborne lead concentrations in excess of regulatory limits. For this reason, OSHA has not defined lead-containing paint, but states that paint having any measurable level of lead may pose a substantial exposure hazard during construction work, depending upon the work performed.

4.0 PROCEDURES

4.1 Paint Sampling Methodologies

Direct measurements of lead in paint were made using a Niton 300 XLp Series X-ray Fluorescence (XRF) Spectrum Analyzer. The Niton 300 XLp Lead Paint Analyzer non-destructively measures lead concentrations of painted surfaces, regardless of the number of layers present. These instruments were developed specifically for addressing lead-based paint issues in housing and their use in identifying potential exposure hazards for renovation or construction work must be augmented by selective collection and analysis of physical paint chip samples.

The newer XRF instruments are capable of identifying lead in paint at concentrations of about 0.3 milligram per square centimeter (mg/cm^2) or greater. When lead concentrations are lower than this, the instruments are not capable of making accurate, reliable measurements, and the reported lead concentration may underestimate or overestimate the actual lead concentration in the paint. Therefore, an XRF readings of 0.4 mg/cm^2 or greater may be considered lead-containing from an OSHA perspective, and any readings of 0.3 mg/cm^2 or less should be confirmed by the collection and laboratory analysis of paint chip samples, or assumed to be positive for lead.

Where paint chip samples are necessary, samples are collected according to the protocol specified in the HUD Guidelines. The samples are then submitted to a laboratory recognized under the EPA's National Lead Laboratory Accreditation Program (NLLAP) for analysis by flame atomic absorption spectrophotometry according to American Society of Testing and Materials (ASTM) method ASTM E 1645.

4.2 XRF Calibration

Before beginning the testing and after the testing was completed, the internal calibration of the LPA-1 was checked by taking two consecutive measurements on a National Institute for Standards and Technology (NIST) standard with a known concentration of lead. Three more readings were taken on a lead-free wood block. These calibration checks are reported within the XRF data tables found in Appendix A of this report and are maintained in a file at R & R Environmental, Inc. to detect changes in instrument performance over time.

4.3 Lead Paint Inspection Data Tables

The XRF instrument generates a unique set of data tables for each inspection and can be exported into Microsoft Excel Spreadsheet format .xls. The Sequential Report lists the measurements made throughout the property in sequential order, from the first measurement to the last. The Data table is maintained in a file at R & R Environmental, Inc.

5.0 FINDINGS

The XRF instrument indicated that lead is present on interior or exterior surfaces. These surfaces are listed in Table 1 "positive" building components (Measurements of 0.3 mg/cm^2 and above) in Appendix A of this report:

Interior:

- Wood Doors, Jambs, Frames
- Metal Door Hardware
- Wall Casing / Trim
- Window Components
- Decorative Metal Air Registers
- Plaster Walls, Ceilings, Decorative Components
- Phone Booth
- Marble / Stone, Wall Wainscot, Baseboard, Trim
- Wood Baseboards
- Hand Rails, Guard Rails, Balusters
- Green Wall Tiles

Exterior:

- Painted Metal Awning Components
- Windows

Since lead was detected in some of the building's painted surfaces, the OSHA Lead in Construction Standard (29 CFR 1926.62) will apply to any construction work (including renovation and demolition) that may disturb those surfaces. The standard requires, among other things, the following:

- Initial training on the hazards of lead exposure, proper work practices, respiratory protection, and other topics;

- An initial exposure assessment, by air monitoring, to determine the lead exposure assessment, until sample analysis indicates exposures below the Permissible Exposure Limit;

- Hand washing facilities, designated clean change areas, and designated eating areas.

In addition to the above considerations, the presence of lead in demolition debris has the potential to impose limitations on where and how the debris may be disposed. The Resource Conservation and Recovery Act (RCRA), Subtitles C and D, require that the waste must be analyzed to determine the amount of leachable lead present. The type of test to be performed on the waste is the Toxicity Characteristic Leaching Procedure (TCLP) for lead, and the results of this test will determine whether the material must be handled and disposed of as hazardous waste. For structures containing large amounts of lead-containing paint, significant potential for failing the TCLP exists.

6.0 RESULTS AND RECOMMENDATIONS

Lead-based paint was found during this survey. See Table 1 Below for details.

7.0 LIMITATIONS AND EXCLUSIONS OF WARRANTY

This lead inspection was performed using procedures and a level of diligence typically exercised by professional consultants performing similar services. However, lead-based paint (LBP) can be present in a surface, but not identified using ordinary investigative procedures.

No lead inspection can completely eliminate uncertainty regarding the presence of LBP. R & R Environmental, Inc. level of diligence and investigative procedures are intended to reduce, but not eliminate, potential uncertainty regarding the presence of LBP. The procedures used for this survey attempt to establish a balance between the competing goals of limiting investigative costs, time, and building damage, and reducing the uncertainty about unknown conditions. Therefore, the determinations in this report should not be construed as a guarantee that all LBP present in the subject property has been included in this report.

This report presents R & R Environmental, Inc.'s professional determinations, which are dependent upon information obtained during performance of consulting services. R &R Environmental, Inc. assumes no responsibility for omissions or errors resulting from inaccurate information provided by sources outside of R & R Environmental, Inc.

No warranty or guarantee, expressed or implied, is made regarding the findings, conclusions, or recommendations contained in this report. The limitations presented above supersede the requirements or provisions of all other contracts or scopes of work, implied or otherwise, except those stated or acknowledged herein.

Appendix A

Lead Paint Inspection Data Tables

Table 1

Building Components with Lead Levels at 0.3 mg/cm^2 and Above
Rio Grande Depot Museum
Salt Lake City, Utah

Room	Floor (2)	Sample Number	Lead Level (mg/cm^2)	Component	Side (1)	Substrate	Color	Condition
218	SECOND	73	0.3	BASEBOARDS	A	WOOD	BROWN	INTACT
GRAND HALL	FIRST	181	0.3	RAILING	C	METAL	black	INTACT
GRAND HALL	FIRST	183	0.3	STAIRS UNDERCOAT	C	PLASTER	WHITE	INTACT
FREEZER	1	258	0.3	DOOR	A	WOOD	WHITE	INTACT
KITCHEN	1	285	0.3	WINDOW	D	WOOD	WHITE	INTACT
KITCHEN	1	286	0.3	WINDOW	D	WOOD	WHITE	INTACT
WOMENS RR	1	412	0.3	WINDOW	D	WOOD	WHITE	INTACT
BREAK	1	441	0.3	DOOR	C	WOOD	BROWN	INTACT
N STAIRS	THIRD	757	0.3	TRIM	D	WOOD	GREY	INTACT
W STAIR	FIRST	804	0.3	STAIRS	D	METAL	BLK	INTACT
KITCHEN	1	291	0.4	DOOR	B	WOOD	WHITE	INTACT
CAFE	1	334	0.4	COUNTER	B	WOOD	RED	INTACT
CAFE	1	352	0.4	COUNTER	D	METAL	G	INTACT
WOMENS RR	1	406	0.4	COUNTER	B	STNE	BLK	INTACT
BREAK	1	440	0.4	WINDOW	D	WOOD	BROWN	INTACT
LIBRARY	1	541	0.4	COLUMN	C	METAL	GREY	INTACT
OFFICEA	1	584	0.4	WALL	D	BRICK	BROWN	INTACT
W OFFICES	1	673	0.4	WINDOW	D	WOOD	WHITE	INTACT
E OFFICES	1	680	0.4	WINDOW	B	WOOD	BEIGE	INTACT
E OFFICES	1	684	0.4	DOOR	D	METAL	SIL	INTACT
N STAIRS	THIRD	746	0.4	WALL	D	PLASTER	GREY	INTACT
N STAIRS	THIRD	756	0.4	BANISTER	D	METAL	BLK	INTACT
N STAIRS	THIRD	759	0.4	TRIM	D	WOOD	GREY	INTACT
S AHU	THIRD	782	0.4	BEAM	D	METAL	YELLOW	INTACT
MECH	BASEMENT	834	0.4	PUMP	A	METAL	RED	INTACT
GRAND HALL	SECOND	165	0.5	RAILING	A	METAL	black	INTACT
KITCHEN	1	296	0.5	WINDOW	B	WOOD	WHITE	INTACT
MENS RR	1	375	0.5	WALL	A	STONE	GREY	INTACT
WOMENS RR	1	415	0.5	FLOOR	D	STONE	GREY	INTACT
LOBBY	1	651	0.5	DOOR	D	WOOD	BLK	INTACT
E OFFICES	1	682	0.5	BASEBOARD	D	WOOD	BROWN	INTACT
OUTSIDE	FIRST	891	0.5	WINDOW	B	WOOD	WHITE	INTACT
GRAND HALL	SECOND	166	0.6	RAILING	A	METAL	black	INTACT
GRAND HALL	SECOND	176	0.6	RAILING HOLDER	C	METAL	black	INTACT
KITCHEN	1	221	0.6	DOOR	D	WOOD	WHITE	INTACT
KITCHEN	1	222	0.6	DOOR	D	WOOD	WHITE	INTACT
JAN	1	226	0.6	DOOR	B	WOOD	WHITE	INTACT
S STAIR	FIRST	817	0.6	STAIR	A	METAL	WHITE	INTACT
GRAND HALL	SECOND	177	0.7	RAILING HOLDER	C	METAL	black	INTACT
AHU N	THIRD	728	0.7	BEAM	C	METAL	YELLOW	INTACT
OUTSIDE	FIRST	905	0.7	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE
KITCHEN	1	292	0.8	DOOR	B	WOOD	WHITE	INTACT
HALL	1	365	0.8	PHONE BOOT	B	WOOD	BROWN	INTACT
OUTSIDE	FIRST	904	0.8	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE
OUTSIDE	FIRST	906	0.8	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE
CONFERENCE ROOM	1	5	0.9	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE
CALIBRATE	SECOND	82	0.9	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE
CALIBRATE	SECOND	83	0.9	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE
		87	0.9	CALIBRATE				

Room	Floor (2)	Sample Number	Lead Level (mg/cm^2)	Component	Side (1)	Substrate	Color	Condition
		88	0.9	CALIBRATE				
15	BASEMENT	109	0.9	SPARE HEATERS	A	METAL	BEIGE	INTACT
GRAND HALL	FIRST	199	0.9	DOOR STOPPER	B	METAL	gold	INTACT
GRAND HALL	FIRST	202	0.9	DOOR STOPPER	B	METAL	gold	INTACT
GRAND HALL	FIRST	203	0.9	DOOR STOPPER	B	METAL	gold	INTACT
HALL	1	355	0.9	DOOR	A	WOOD	WHITE	INTACT
AHU	SECOND	852	0.9	PIPE	C	METAL	RED	INTACT
OUTSIDE	FIRST	907	0.9	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE
		1	0.95					
CONFERENCE ROOM	1	2	1	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE
CONFERENCE ROOM	1	3	1	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE
CONFERENCE ROOM	1	4	1	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE
CALIBRATE	SECOND	80	1	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE
		86	1					
GRAND HALL	FIRST	201	1	DOOR STOPPER	B	METAL	gold	INTACT
BREAK	1	451	1	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE
OFFICEA	1	583	1	WALL	D	BRICK	BROWN	INTACT
CAFE	FIRST	694	1	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE
CAFE	FIRST	695	1	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE
CAFE	FIRST	792	1	CALIBRATE				
CAFE	FIRST	885	1	CT	C	DRYWALL	GREEN	INTACT
CAFE	FIRST	886	1	CT	C	DRYWALL	GREEN	INTACT
		84	1.06					
CALIBRATE	SECOND	81	1.1	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE
		85	1.1	CALIBRATE				
CONFERENCE ROOM	1	204	1.1	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE
CONFERENCE ROOM	1	206	1.1	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE
BREAK	1	450	1.1	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE
BREAK	1	452	1.1	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE
BREAK	1	453	1.1	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE
CONFERENCE ROOM	1	455	1.1	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE
CONFERENCE ROOM	1	456	1.1	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE
CONFERENCE ROOM	1	457	1.1	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE
E OFFICES	1	690	1.1	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE
E OFFICES	1	691	1.1	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE
E OFFICES	1	692	1.1	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE
CAFE	FIRST	696	1.1	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE
S AHU	THIRD	784	1.1	CALIBRATE	D	METAL	GREY	INTACT
S AHU	THIRD	785	1.1	CALIBRATE	D	METAL	GREY	INTACT
S AHU	THIRD	786	1.1	CALIBRATE	D	METAL	GREY	INTACT
CAFE	FIRST	788	1.1	CALIBRATE				
CAFE	FIRST	790	1.1	CALIBRATE				
CONFERENCE ROOM	1	6	1.2	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE	CALIBRATE
GRAND HALL	FIRST	200	1.2	DOOR STOPPER	B	METAL	gold	INTACT

Room	Floor (2)	Sample Number	Lead Level (mg/cm^2)	Component	Side (1)	Substrate	Color	Condition
CONFERENCE					CALIBRAT			
ROOM	1	205	1.2	CALIBRATE	E	CALIBRATE	CALIBRATE	CALIBRATE
HALL	1	364	1.2	PHONE BOOT	B	WOOD	BROWN	INTACT
CAFE	FIRST	791	1.2	CALIBRATE				
106	1	508	1.3	BASEBOARD	C	WOOD	BROWN	INTACT
CAFE	FIRST	789	1.3	CALIBRATE				
CAFE	FIRST	883	1.3	VENT	C	METAL	GREEN	INTACT
KITCHEN	1	212	1.4	FLOOR	A	TILE	BLK	INTACT
S STAIR	FIRST	816	1.5	STAIR	A	METAL	BLK	INTACT
KITCHEN	1	251	1.7	TRIM	C	WOOD	GREY	INTACT
N STAIRS	THIRD	743	1.7	STAIE	A	WOOD	GREY	INTACT
OFFICEA	1	594	1.9	WINDOW	D	CONCRETE	WHITE	INTACT
N STAIRS	THIRD	748	1.9	BASEBOARD	D	WOOD	GREY	INTACT
HALL	1	358	2.1	WALL	D	PLASTER	BLK	INTACT
W OFFICES	1	665	2.1	WALL	A	PLASTER	BEIGE	INTACT
SAFE ROOM	SECOND	90	2.2	WALL	D	METAL	GREEN	INTACT
S HALL	1	564	2.2	WINDOW	B	WOOD	WHITE	INTACT
HALLWAY	SECOND	22	2.3	DOOR JAMBS	B	METAL	GOLD	INTACT
HALL	1	359	2.3	WALL	D	PLASTER	BROWN	INTACT
HALL	1	368	2.3	WALL	B	WOOD	WHITE	INTACT
S AHU	THIRD	773	2.3	STAIRS	D	METAL	GREY	INTACT
S HALL	1	563	3	WINDOW	B	WOOD	WHITE	INTACT
NORTH SAFE	SECOND	50	3.1	SAFE DOOR INSIDE PLATE	C	METAL	GREEN	INTACT
HALL	1	357	3.1	WALL	D	PLASTER	WHITE	INTACT
FREEZER	1	261	3.4	DOOR	A	METAL	WHITE	INTACT
KITCHEN	1	288	3.8	VENT	C	METAL	WHITE	INTACT
NE CONFERENCE ROOM ROOM	SECOND	38	3.9	WALL	C	PLASTER	GREEN	INTACT
NORTH SAFE	SECOND	49	3.9	SAFE DOOR	C	METAL	BLACK	INTACT
BOARD	1	481	4.1	DOOR	C	METAL	G	INTACT
CAFE	1	343	4.3	CHAIR	B	METAL	G	INTACT
CAFE	1	340	4.4	CHAIR	B	WOOD	BROWN	INTACT
HALL	1	356	4.4	WALL	B	PLASTER	WHITE	INTACT
		787	4.51	CALIBRATE				
E OFFICES	1	685	4.6	DOOR	D	METAL	G	INTACT
ROOM 14 SAFE ROOM	SECOND	57	4.7	SAFE DOOR	C	METAL	black	INTACT
CAFE	1	341	4.7	CHAIR	B	METAL	WHITE	INTACT
		454	4.94	CALIBRATE				
		693	4.99	CALIBRATE				
W STAIR	FIRST	805	5	STAIR	C	METAL	BLK	INTACT
NORTH SAFE	SECOND	52	5.6	METAL SHEETING	C	METAL	WHITE	INTACT
SAFE ROOM	SECOND	89	5.8	SAFE DOOR	D	METAL	black	INTACT
OUTSIDE	FIRST	902	7	AWNING	D	METAL	BLK	INTACT
GRAND HALL	SECOND	162	7.3	RAILING	D	METAL	black	INTACT
BOILER	FIRST	869	7.4	WALL	D	METAL	BEIGE	INTACT
JAN	1	238	7.5	FAUCET	C	METAL	SIL	INTACT
W OFFICES	1	678	7.6	FLOOR	B	METAL	GOLD	INTACT
HALLWAY	SECOND	27	8	DOORKNOB PLATES	D	METAL	GOLD	INTACT
106	1	513	8.9	DOOR	D	METAL	G	INTACT
N STAIRS	THIRD	745	9	WALL	D	PLASTER	GREY	INTACT
KITCHEN	1	217	9.2	KNOB	A	METAL	GOLD	INTACT
RECORDS	1	567	9.4	DOOR	B	METAL	BROWN	INTACT
RECORDS	1	569	9.7	COLUMN	B	PLASTER	BROWN	INTACT
BOILER	FIRST	856	9.8	DOOR	A	METAL	G	INTACT
217	SECOND	75	10.1	WALLPAPER	C	WOOD	BROWN	INTACT
N STAIRS	THIRD	769	10.2	CEILING	D	PLASTER	GREY	INTACT
CAFE	1	306	11.1	CLOSER	B	METAL	G	INTACT
BOILER	FIRST	875	11.6	DOOR JAMB	A	METAL	BLK	INTACT
ROOM 14	SECOND	60	13.5	DOORKNOB PLATE	D	METAL	gold	INTACT
CAFE	1	349	14	WALL	D	WOOD	BROWN	INTACT
ROOM 14	SECOND	59	14.5	DOORKNOB	D	METAL	gold	INTACT
ROOM 14	SECOND	58	15.1	WALLPAPER	D	WOOD	DARK BROWN	INTACT
WOMENS RR	1	420	15.2	DOOR	B	METAL	BROWN	INTACT

Room	Floor (2)	Sample Number	Lead Level (mg/cm^2)	Component	Side (1)	Substrate	Color	Condition
S MEN	1	635	15.3	WALL	B	CONCRETE	WHITE	INTACT
MENS RR	1	388	18.6	DOOR	B	WOOD	BROWN	INTACT
OUTSIDE	FIRST	903	21	AWNING	D	METAL	WHITE	INTACT
BOILER	FIRST	858	22.5	WINDOW	A	WOOD	BLK	INTACT
RECORDS	1	573	22.6	WINDOW	D	WOOD	BROWN	INTACT
LOBBY	1	655	22.7	DOOR	D	METAL	BROWN	INTACT
WOMENS RR	1	421	23.8	PIPE	B	METAL	WHITE	INTACT
SE AREA	1	616	27.2	WALL	D	CONCRETE	BEIGE	INTACT
BOILER	FIRST	859	28.8	WINDOW	A	WOOD	WHITE	INTACT
S MEN	1	631	29.6	WALL	A	TILE	WHITE	INTACT
AHU	SECOND	849	30.3	FLOOR	B	CONCRETE	GREY	INTACT
W STAIR	FIRST	809	75.7	RISER	D	PLASTER	WHITE	INTACT

*Side: A=North, B=East, C=South, D=West

Table 2

Building Components with Lead Levels Below 0.3 mg/cm^2
Rio Grande Depot Museum
Salt Lake City, Utah

Room	Floor (2)	Sample Number	Lead Level (mg/cm^2)	Component	Side (1)	Substrate	Color	Condition
7	BASEMENT	126	-0.68	KICK PLATE	B	METAL	black	INTACT
OUTSIDE	FIRST	889	-0.68	WALL	B	CONCRETE	WHITE	INTACT
LOBBY	1	658	-0.37	DOOR	D	METAL	BROWN	INTACT
N STAIRS	THIRD	760	-0.35	STAIRS	D	STN	GREY	INTACT
LOBBY	1	656	-0.2	DOOR	D	METAL	BROWN	INTACT
CAFE	1	303	-0.11	CLOSER	B	METAL	G	INTACT
CONFERENCE ROOM	1	7	0	TRIM	C	WOOD	BROWN	INTACT
LECTURE	1	8	0	TRIM	B	WOOD	BROWN	INTACT
LECTURE	1	9	0	TRIM	D	WOOD	BROWN	INTACT
NORTH BATHROOMS	SECOND	13	0	URINALS	A	PORCELAIN	BROWN	INTACT
NORTH BATHROOMS	SECOND	14	0	TOILET	A	PORCELAIN	BROWN	INTACT
NORTH BATHROOMS	SECOND	15	0	LIGHT FIXTURES	A	METAL	CHROME	INTACT
NORTH BATHROOMS	SECOND	16	0	LIGHT FIXTURES	C	METAL	CHROME	INTACT
NORTH BATHROOMS	SECOND	17	0	DOORS	A	WOOD	BROWN	INTACT
NORTH BATHROOMS	SECOND	18	0	DOORS	B	WOOD	BROWN	INTACT
NORTH BATHROOMS	SECOND	19	0	DOORS	B	WOOD	BROWN	INTACT
HALLWAY	SECOND	26	0	DOORKNOB PLATES	B	METAL	GOLD	INTACT
HALLWAY	SECOND	28	0	DOOR LOCK PLATES	D	METAL	GOLD	INTACT
HALLWAY	SECOND	31	0	DOOR BOTTOM PLATE	A	METAL	BLACK	INTACT
HALLWAY	SECOND	33	0	DOOR BOTTOM PLATE	B	METAL	BLACK	INTACT
HALLWAY	SECOND	34	0	DOOR BOTTOM PLATE	B	METAL	BLACK	INTACT
MULTICULTURAL AFFAIRS HORNE	SECOND	36	0	BASEBOARDS	A	WOOD	MAROON	INTACT
CONFERENCE ROOM ROOM NE	SECOND	37	0	MAILBOX	B	METAL	BLACK	INTACT
CONFERENCE ROOM ROOM NE	SECOND	42	0	BRICK AND MORTAR	B	CONCRETE	NO COLOR BRICKS	INTACT
CONFERENCE ROOM ROOM NE	SECOND	43	0	BRICK AND MORTAR	B	CONCRETE	NO COLOR BRICKS	INTACT
CONFERENCE ROOM ROOM	SECOND	44	0	DRYWALL	C	DRYWALL	BEIGE	INTACT
ROOM BEHIND N STAIRS	SECOND	45	0	WINDOW PAINT	B	GLASS	BEIGE	INTACT
ROOM BEHIND N STAIRS	SECOND	47	0	DOORKNOB	D	METAL	BLACK	INTACT
JILL LOVE	SECOND	48	0	DOORFRAME	B	METAL	MAROON	INTACT
NORTH SAFE	SECOND	51	0	HEXAGON TILING	A	CONCRETE	WHITE,RED	INTACT

Room	Floor (2)	Sample Number	Lead Level (mg/cm^2)	Component	Side (1)	Substrate	Color	Condition
TODD ANDERSON	SECOND	53	0	DOOR WINDOW	D	GLASS	WHITE,GOLD	INTACT
TODD ANDERSON	SECOND	54	0	DOOR WINDOW	D	GLASS	WHITE,GOLD	INTACT
MULTICULTUR AL AFFAIRS	SECOND	55	0	ELECTRCALIBRAT E PANEL	C	METAL	GREY	INTACT
MULTICULTUR AL AFFAIRS	SECOND	56	0	ELECTRCALIBRAT E PANEL	C	METAL	GREY	INTACT
HALLWAY	SECOND	62	0	DRINKING FOUNTAIN	B	METAL	grey	INTACT
HALLWAY	SECOND	63	0	DRINKING FOUNTAIN	B	METAL	grey	INTACT
HALLWAY	SECOND	64	0	DOOR FRAME	D	WOOD	dark brown	INTACT
HALLWAY	SECOND	66	0	DOOR STOP	D	METAL	black	INTACT
HALLWAY	SECOND	67	0	DOOR HANDLE	D	METAL	black	INTACT
220	SECOND	71	0	DOOR FRAME	D	WOOD	brown	INTACT
217	SECOND	74	0	BASEBOARDS	C	WOOD	BROWN	INTACT
216	SECOND	76	0	SHELVES	D	WOOD	WHITE	INTACT
215	SECOND	77	0	DOOR	A	WOOD	BROWN	INTACT
212	SECOND	79	0	DOOR	B	WOOD	BROWN	INTACT
203	SECOND	94	0	DOOR FRAME	D	WOOD	BROWN	INTACT
HALLWAY	SECOND	98	0	DOORKNOB	B	METAL	gold	INTACT
HALLWAY	SECOND	99	0	DOORKNOB	B	METAL	gold	INTACT
HALLWAY	SECOND	100	0	TORRAZO	A	CONCRETE	RE	INTACT
HALLWAY	SECOND	101	0	DOOR JAMB	A	METAL	BLACK	INTACT
HALLWAY	SECOND	102	0	DOOR JAMB	A	METAL	BLACK	INTACT
15	BASEMENT	103	0	DOOR	B	METAL	TAN	INTACT
15	BASEMENT	104	0	CONCRETE ROOFING	B	CONCRETE	BLACK	INTACT
15	BASEMENT	105	0	CONCRETE ROOFING	B	CONCRETE	BLACK	INTACT
15	BASEMENT	106	0	DOOR FRAME	A	METAL	BROWN	INTACT
15	BASEMENT	107	0	ELECTRICALIBRA TE BOX	A	METAL	BEIGE	INTACT
15	BASEMENT	108	0	SWITCHGEAR	A	METAL	BEIGE	INTACT
HALLWAY	BASEMENT	112	0	WALL	B	DRYWALL	BEIGE	INTACT
HALLWAY	BASEMENT	117	0	DOORFRAME	B	WOOD	DARK BRIWN	INTACT
HALLWAY	BASEMENT	118	0	DOORSTOPPER	D	METAL	BLACK	INTACT
12	BASEMENT	119	0	PILLAR	A	CONCRETE	WHITE	INTACT
12	BASEMENT	120	0	PILLAR	B	CONCRETE	WHITE	INTACT
8	BASEMENT	122	0	SHELF	B	WOOD	WHITE	INTACT
8	BASEMENT	123	0	CEILING	A	CONCRETE	black	INTACT
8	BASEMENT	124	0	CEILING	A	CONCRETE	black	INTACT
8	BASEMENT	125	0	WALL	D	CONCRETE	WHITE	INTACT
7	BASEMENT	127	0	KICK PLATE	B	METAL	black	INTACT
6	BASEMENT	128	0	FLOORING	B	CONCRETE	gray	INTACT
6	BASEMENT	129	0	FLOORING	B	CONCRETE	gray	INTACT
MEN'S RESTROOM	BASEMENT	130	0	DOOR FRAMEs	B	METAL	BROWN	INTACT
HALLWAY	BASEMENT	133	0	WALL	D	DRYWALL	BEIGE	INTACT

Room	Floor (2)	Sample Number	Lead Level (mg/cm^2)	Component	Side (1)	Substrate	Color	Condition
HALLWAY	BASEMENT	135	0	FLOORING	D	CONCRETE	gray	INTACT
HALLWAY	BASEMENT	136	0	DOOR HINGES	D	METAL	black	INTACT
15	BASEMENT	137	0	DOOR HINGES	D	METAL	black	INTACT
15	BASEMENT	138	0	DOORKNOB	B	METAL	gold	INTACT
15	BASEMENT	139	0	DOORKNOB	B	METAL	gold	INTACT
15	BASEMENT	140	0	DOORKNOB	B	METAL	gold	INTACT
HALLWAY	BASEMENT	141	0	TRASHCAN	B	METAL	BROWN	INTACT
HALLWAY	BASEMENT	142	0	DOOR STOPPER	D	METAL	black	INTACT
HALLWAY	BASEMENT	143	0	DOOR STOPPER	D	METAL	black	INTACT
HALLWAY	BASEMENT	144	0	DOOR STOPPER	D	METAL	black	INTACT
HALLWAY	BASEMENT	145	0	RAILING	A	METAL	TAN	INTACT
HALLWAY	BASEMENT	146	0	DOORKNOB	B	METAL	black	INTACT
GRAND HALL	SECOND	148	0	GUIDE RAIL	B	WOOD	BROWN	INTACT
GRAND HALL	SECOND	152	0	GUIDE RAIL	D	WOOD	BROWN	INTACT
GRAND HALL	SECOND	154	0	WINDOW SEAL	B	WOOD	BROWN	INTACT
GRAND HALL	SECOND	155	0	WINDOW SEAL	B	WOOD	BROWN	INTACT
GRAND HALL	SECOND	156	0	DOOR	B	WOOD	BROWN	INTACT
GRAND HALL	SECOND	157	0	DOOR	B	WOOD	BROWN	INTACT
GRAND HALL	SECOND	158	0	DOOR	B	WOOD	BROWN	INTACT
GRAND HALL	SECOND	167	0	TRIM	A	WOOD	BROWN	INTACT
GRAND HALL	SECOND	168	0	TRIM	D	WOOD	BROWN	INTACT
GRAND HALL	SECOND	170	0	DOORKNOB	B	WOOD	BROWN	INTACT
GRAND HALL	SECOND	171	0	DOORKNOB	B	WOOD	BROWN	INTACT
GRAND HALL	SECOND	172	0	DOORKNOB	B	WOOD	BROWN	INTACT
GRAND HALL	SECOND	179	0	RAILING	C	WOOD	BROWN	INTACT
GRAND HALL	SECOND	180	0	RAILING	C	WOOD	BROWN	INTACT
GRAND HALL	FIRST	185	0	EXTINGUISHER CABINET	C	METAL	RED	INTACT
GRAND HALL	FIRST	187	0	DOOR PLATE	C	METAL	gold	INTACT
GRAND HALL	FIRST	188	0	DOOR PLATE	C	METAL	gold	INTACT
GRAND HALL	FIRST	191	0	DOOR FRAME	C	METAL	black	INTACT
GRAND HALL	FIRST	192	0	DOOR FRAME	B	METAL	black	INTACT
GRAND HALL	FIRST	194	0	DOOR HANDLE	B	METAL	gold	INTACT
GRAND HALL	FIRST	196	0	DOOR HINGE	B	METAL	gold	INTACT
GRAND HALL	FIRST	197	0	DOOR HINGE	B	METAL	gold	INTACT
KITCHEN	1	207	0	DOOR	A	METAL	GREY	INTACT
KITCHEN	1	208	0	DOOR	A	METAL	GREY	INTACT
KITCHEN	1	209	0	DOOR	A	METAL	GREY	INTACT
KITCHEN	1	210	0	DOOR	A	METAL	BLK	INTACT
KITCHEN	1	211	0	FLOOR	A	TILE	BLK	INTACT
KITCHEN	1	218	0	DOOR	A	WOOD	BROWN	INTACT
KITCHEN	1	220	0	DOOR	A	WOOD	BROWN	INTACT
KITCHEN	1	224	0	DOOR	D	METAL	GLD	INTACT
KITCHEN	1	225	0	DOOR	D	METAL	GLD	INTACT
JAN	1	229	0	DOOR	B	METAL	BLK	INTACT
JAN	1	231	0	FLOOR	B	TILE	GREY	INTACT
JAN	1	235	0	WALL	B	FRP	WHITE	INTACT
JAN	1	236	0	COAT	D	WOOD	WHITE	INTACT
JAN	1	239	0	SHOWER	C	POR	WHITE	INTACT
JAN	1	241	0	LOCKERS	D	METAL	GREY	INTACT
JAN	1	243	0	TOILET	C	POR	WHITE	INTACT
JAN	1	244	0	SINK	C	METAL	SIL	INTACT
JAN	1	245	0	DOOR	C	METAL	GREY	INTACT
JAN	1	246	0	DOOR	C	METAL	GREY	INTACT
JAN	1	247	0	DOOR	C	METAL	GREY	INTACT

Room	Floor (2)	Sample Number	Lead Level (mg/cm^2)	Component	Side (1)	Substrate	Color	Condition
KITCHEN	1	248	0	WALL	A	PLASTER	GREY	INTACT
KITCHEN	1	249	0	WALL	C	PLASTER	GREY	INTACT
KITCHEN	1	254	0	CLOSER	A	METAL	BLK	INTACT
KITCHEN	1	255	0	WINDOW	A	METAL	GREY	INTACT
FREEZER	1	256	0	FLOOR	A	CONCRETE	GREY	INTACT
FREEZER	1	259	0	DOOR	A	WOOD	BROWN	INTACT
FREEZER	1	260	0	DOOR	A	METAL	WHITE	INTACT
FREEZER	1	262	0	FREEZER	B	METAL	SIL	INTACT
FREEZER	1	263	0	FREEZER	B	METAL	SIL	INTACT
FREEZER	1	264	0	BASEBOARD	D	WOOD	WHITE	INTACT
FREEZER	1	268	0	DOOR	C	WOOD	WHITE	INTACT
FREEZER	1	269	0	DOOR	C	WOOD	WHITE	INTACT
FREEZER	1	270	0	DOOR	C	WOOD	WHITE	INTACT
KITCHEN	1	272	0	DOOR	A	WOOD	G	INTACT
KITCHEN	1	273	0	DOOR	A	WOOD	G	INTACT
KITCHEN	1	274	0	DOOR	A	WOOD	G	INTACT
KITCHEN	1	276	0	FLOOR	A	TILE	G	INTACT
KITCHEN	1	277	0	FLOOR	A	TILE	G	INTACT
KITCHEN	1	278	0	FLOOR	A	TILE	G	INTACT
KITCHEN	1	279	0	FLOOR	A	TILE	G	INTACT
KITCHEN	1	280	0	FLOOR	A	TILE	G	INTACT
KITCHEN	1	282	0	WINDOW	D	WOOD	WHITE	INTACT
KITCHEN	1	290	0	DRAIN	C	METAL	WHITE	INTACT
KITCHEN	1	293	0	DOOR	B	METAL	G	INTACT
KITCHEN	1	294	0	BASEBOARD	B	STONE	GREY	INTACT
KITCHEN	1	295	0	BASEBOARD	B	STONE	GREY	INTACT
KITCHEN	1	297	0	DOOR	B	METAL	G	INTACT
CAFE	1	298	0	DOOR	A	WOOD	BROWN	INTACT
CAFE	1	299	0	DOOR	A	WOOD	BROWN	INTACT
CAFE	1	302	0	DOOR	B	WOOD	BROWN	INTACT
CAFE	1	304	0	CLOSER	B	METAL	G	INTACT
CAFE	1	305	0	CLOSER	B	METAL	G	INTACT
CAFE	1	307	0	FLOOR	B	STONE	GREY	INTACT
CAFE	1	308	0	PIPE	B	METAL	BLK	INTACT
CAFE	1	309	0	PIPE	B	METAL	BLK	INTACT
CAFE	1	310	0	WALL	B	BRICK	RED	INTACT
CAFE	1	311	0	WALL	B	BRICK	RED	INTACT
CAFE	1	312	0	WALL	B	BRICK	RED	INTACT
CAFE	1	313	0	WALL	B	BRICK	RED	INTACT
CAFE	1	317	0	DOOR	B	WOOD	BROWN	INTACT
CAFE	1	318	0	DOOR	B	WOOD	BROWN	INTACT
CAFE	1	324	0	COLUMN	B	WOOD	BROWN	INTACT
CAFE	1	325	0	COUNTER	B	WOOD	BROWN	INTACT
CAFE	1	326	0	COUNTER	B	STONE	BROWN	INTACT
CAFE	1	327	0	COUNTER	B	WOOD	BROWN	INTACT
CAFE	1	331	0	COUNTER	B	WOOD	RED	INTACT
CAFE	1	332	0	COUNTER	B	WOOD	RED	INTACT
CAFE	1	333	0	COUNTER	B	WOOD	RED	INTACT
CAFE	1	335	0	COUNTER	B	METAL	SIL	INTACT
CAFE	1	336	0	COUNTER	B	METAL	SIL	INTACT
CAFE	1	338	0	COUNTER	B	METAL	SIL	INTACT
CAFE	1	339	0	CHAIR	B	WOOD	BROWN	INTACT
CAFE	1	345	0	WALL	D	WOOD	BROWN	INTACT
CAFE	1	347	0	WALL	D	WOOD	BROWN	INTACT
CAFE	1	348	0	WALL	D	WOOD	BROWN	INTACT
CAFE	1	351	0	COUNTER	D	METAL	G	INTACT
CAFE	1	353	0	COUNTER	D	METAL	G	INTACT
CAFE	1	354	0	COUNTER	D	METAL	G	INTACT
HALL	1	360	0	PHONE BOOT	B	WOOD	BROWN	INTACT
HALL	1	362	0	PHONE BOOT	B	WOOD	BROWN	INTACT
MENS RR	1	369	0	DOOR	B	WOOD	WHITE	INTACT
MENS RR	1	371	0	DOOR	B	WOOD	WHITE	INTACT
MENS RR	1	373	0	DOOR	B	WOOD	WHITE	INTACT
MENS RR	1	374	0	DOOR	B	WOOD	WHITE	INTACT
MENS RR	1	376	0	WALL	A	STONE	GREY	INTACT
MENS RR	1	377	0	WALL	C	STONE	GREY	INTACT

Room	Floor (2)	Sample Number	Lead Level (mg/cm^2)	Component	Side (1)	Substrate	Color	Condition
MENS RR	1	381	0	SINK	A	POR	WHITE	INTACT
MENS RR	1	382	0	RADIATOR	B	METAL	WHITE	INTACT
MENS RR	1	384	0	WINDOW	B	WOOD	BROWN	INTACT
HALL	1	389	0	DOOR	C	WOOD	WHITE	INTACT
HALL	1	390	0	DOOR	C	WOOD	WHITE	INTACT
HALL	1	391	0	DOOR	C	WOOD	WHITE	INTACT
HALL	1	393	0	DOOR	C	WOOD	WHITE	INTACT
HALL	1	394	0	DOOR	C	WOOD	WHITE	INTACT
WOMENS RR	1	396	0	DOOR	B	WOOD	BROWN	INTACT
WOMENS RR	1	397	0	DOOR	B	WOOD	WHITE	INTACT
WOMENS RR	1	398	0	DOOR	B	WOOD	WHITE	INTACT
WOMENS RR	1	399	0	DOOR	B	WOOD	WHITE	INTACT
WOMENS RR	1	400	0	DOOR	B	WOOD	WHITE	INTACT
WOMENS RR	1	401	0	COUNTER	B	STNE	GREY	INTACT
WOMENS RR	1	402	0	COUNTER	B	STNE	GREY	INTACT
WOMENS RR	1	403	0	COUNTER	B	STNE	BLK	INTACT
WOMENS RR	1	405	0	COUNTER	B	STNE	BLK	INTACT
WOMENS RR	1	407	0	COUNTER	B	STNE	BLK	INTACT
WOMENS RR	1	411	0	WINDOW	D	WOOD	WHITE	INTACT
WOMENS RR	1	413	0	RADIATOR	D	METAL	WHITE	INTACT
WOMENS RR	1	414	0	FLOOR	D	STONE	GREY	INTACT
WOMENS RR	1	418	0	WALL	D	PLASTER	WHITE	INTACT
WOMENS RR	1	422	0	WALL	B	STNE	BLK	INTACT
WOMENS RR	1	423	0	FLOOR	B	STNE	BLK	INTACT
WOMENS RR	1	424	0	FLOOR	B	STNE	BLK	INTACT
WOMENS RR	1	425	0	FLOOR	B	STNE	BLK	INTACT
WOMENS RR	1	426	0	DOOR	B	METAL	GREY	INTACT
ELEV	1	429	0	F,RE	B	WOOD	WHITE	INTACT
ELEV	1	430	0	F,RE	B	WOOD	WHITE	INTACT
ELEV	1	431	0	WALL	B	PLASTER	BROWN	INTACT
BREAK	1	432	0	WALL	A	DRYWALL	WHITE	INTACT
BREAK	1	433	0	DOOR	B	WOOD	BROWN	INTACT
BREAK	1	434	0	DOOR	B	WOOD	BROWN	INTACT
BREAK	1	435	0	DOOR	B	WOOD	BROWN	INTACT
BREAK	1	436	0	DOOR	B	WOOD	BROWN	INTACT
BREAK	1	437	0	BASEBOARD	A	WOOD	BROWN	INTACT
BREAK	1	438	0	COUNTER	A	STONE	GREY	INTACT
BREAK	1	439	0	COUNTER	D	STONE	WHITE	INTACT
BREAK	1	444	0	DUCT	C	METAL	WHITE	INTACT
BREAK	1	447	0	BENCH	C	WOOD	BROWN	INTACT
BREAK	1	448	0	COLUMN	C	WOOD	BROWN	INTACT
BREAK	1	449	0	COLUMN	C	WOOD	BROWN	INTACT
CONFERENCE ROOM	1	458	0	WALL	C	WOOD	BROWN	INTACT
CONFERENCE ROOM	1	459	0	WALL	C	WOOD	BROWN	INTACT
CONFERENCE ROOM	1	460	0	WALL	C	WOOD	BROWN	INTACT
CONFERENCE ROOM	1	461	0	WALL	C	WOOD	BROWN	INTACT
CONFERENCE ROOM	1	462	0	WALL	C	METAL	G	INTACT
CONFERENCE ROOM	1	463	0	DOOR	C	METAL	G	INTACT
CONFERENCE ROOM	1	464	0	DOOR	C	WOOD	BROWN	INTACT
CONFERENCE ROOM	1	465	0	DOOR	C	WOOD	BROWN	INTACT
CONFERENCE ROOM	1	466	0	DOOR	C	WOOD	BROWN	INTACT
CONFERENCE ROOM	1	468	0	DOOR	C	METAL	BROWN	INTACT
CONFERENCE ROOM	1	469	0	WALL	D	ST	BROWN	INTACT
CONFERENCE ROOM	1	472	0	WINDOW	D	WOOD	BROWN	INTACT
BOARD	1	477	0	WALL	A	WOOD	BROWN	INTACT

Room	Floor (2)	Sample Number	Lead Level (mg/cm^2)	Component	Side (1)	Substrate	Color	Condition
BOARD	1	482	0	DOOR	C	METAL	G	INTACT
106	1	483	0	DOOR	A	WOOD	BROWN	INTACT
106	1	485	0	DOOR	A	METAL	G	INTACT
106	1	487	0	DOOR	A	METAL	G	INTACT
106	1	490	0	DOOR	B	WOOD	BROWN	INTACT
106	1	491	0	DOOR	B	WOOD	BROWN	INTACT
106	1	493	0	WINDOW	B	WOOD	BROWN	INTACT
106	1	494	0	WINDOW	B	STN	BROWN	INTACT
106	1	495	0	WINDOW	B	STN	BROWN	INTACT
106	1	496	0	CONDUIT	B	METAL	BROWN	INTACT
106	1	497	0	WALL	C	PLASTER	WHITE	INTACT
106	1	499	0	WALL	C	BRICK	BEIGE	INTACT
106	1	500	0	WINDOW	C	WOOD	BROWN	INTACT
106	1	507	0	BASEBOARD	C	WOOD	BROWN	INTACT
106	1	509	0	DOOR	D	WOOD	BROWN	INTACT
106	1	510	0	DOOR	D	WOOD	BROWN	INTACT
106	1	511	0	DOOR	D	WOOD	BROWN	INTACT
106	1	512	0	DOOR	D	WOOD	BROWN	INTACT
106	1	514	0	DOOR	D	METAL	G	INTACT
106	1	516	0	DOOR	D	METAL	G	INTACT
106	1	517	0	VENT	A	METAL	BROWN	INTACT
106	1	518	0	DOOR	B	METAL	BROWN	INTACT
106	1	519	0	DOOR	B	METAL	BROWN	INTACT
106	1	520	0	DOOR	B	METAL	BROWN	INTACT
106	1	521	0	DOOR	B	METAL	BROWN	INTACT
LIBRARY	1	522	0	DOOR	A	METAL	BROWN	INTACT
LIBRARY	1	523	0	DOOR	A	METAL	BROWN	INTACT
LIBRARY	1	524	0	DOOR	A	METAL	BROWN	INTACT
LIBRARY	1	525	0	DOOR	A	METAL	BROWN	INTACT
LIBRARY	1	526	0	DOOR	A	WOOD	BROWN	INTACT
LIBRARY	1	527	0	DOOR	A	WOOD	BROWN	INTACT
LIBRARY	1	528	0	DOOR	A	WOOD	BROWN	INTACT
LIBRARY	1	531	0	WALL	A	PLASTER	BEIGE	INTACT
LIBRARY	1	532	0	FLOOR	A	STN	GREY	INTACT
LIBRARY	1	533	0	FLOOR	A	STN	BLK	INTACT
LIBRARY	1	534	0	BASEBOARD	A	WOOD	BROWN	INTACT
LIBRARY	1	535	0	COLUMN	D	WOOD	BROWN	INTACT
LIBRARY	1	536	0	COLUMN	D	WOOD	BROWN	INTACT
LIBRARY	1	537	0	COLUMN	D	WOOD	BROWN	INTACT
LIBRARY	1	538	0	DOOR	C	WOOD	BROWN	INTACT
LIBRARY	1	539	0	DOOR	C	WOOD	BROWN	INTACT
LIBRARY	1	540	0	DOOR	C	WOOD	BROWN	INTACT
LIBRARY	1	542	0	WALL	B	PLASTER	BEIGE	INTACT
LIBRARY	1	543	0	WINDOW	B	WOOD	BROWN	INTACT
LIBRARY	1	544	0	WINDOW	B	WOOD	BROWN	INTACT
LIBRARY	1	545	0	BASEBOARD	B	WOOD	BROWN	INTACT
LIBRARY	1	546	0	WALL	B	BRICK	TAN	INTACT
LIBRARY	1	547	0	WALL	B	BRICK	TAN	INTACT
LIBRARY	1	548	0	WALL	B	BRICK	TAN	INTACT
LIBRARY	1	549	0	WALL	B	BRICK	TAN	INTACT
LIBRARY	1	550	0	CONDUIT	B	METAL	TAN	INTACT
LIBRARY	1	551	0	WINDOW	B	WOOD	BROWN	INTACT
LIBRARY	1	552	0	WINDOW	B	WOOD	BROWN	INTACT
LIBRARY	1	553	0	WINDOW	B	WOOD	BROWN	INTACT
LIBRARY	1	554	0	WINDOW	B	METAL	BROWN	INTACT
LIBRARY	1	555	0	WINDOW	B	METAL	BROWN	INTACT
LIBRARY	1	556	0	DOOR	C	WOOD	BROWN	INTACT
LIBRARY	1	557	0	DOOR	C	WOOD	BROWN	INTACT
LIBRARY	1	558	0	DOOR	C	METAL	TAN	INTACT
LIBRARY	1	560	0	DOOR	C	METAL	G	INTACT
S HALL	1	562	0	WALL	A	DRYWALL	BEIGE	INTACT
S HALL	1	565	0	FLOOR	B	VINYL	BEIGE	INTACT
RECORDS	1	566	0	DOOR	B	WOOD	BROWN	INTACT
RECORDS	1	568	0	DOOR	B	METAL	BROWN	INTACT
RECORDS	1	570	0	WALL	A	PLASTER	BROWN	INTACT
RECORDS	1	571	0	WINDOW	D	WOOD	BROWN	INTACT

Room	Floor (2)	Sample Number	Lead Level (mg/cm^2)	Component	Side (1)	Substrate	Color	Condition
RECORDS	1	572	0	WINDOW	D	WOOD	BROWN	INTACT
RECORDS	1	574	0	WALL	D	DRYWALL	BROWN	INTACT
RECORDS	1	575	0	COLUMN	D	METAL	BROWN	INTACT
RECORDS	1	577	0	DOOR	D	METAL	BROWN	INTACT
RECORDS	1	578	0	DOOR	D	WOOD	BROWN	INTACT
RECORDS	1	579	0	DOOR	D	WOOD	BROWN	INTACT
RECORDS	1	580	0	DOOR	D	WOOD	BROWN	INTACT
RECORDS	1	581	0	WALL	D	DRYWALL	BROWN	INTACT
OFFICEA	1	591	0	WINDOW	D	WOOD	WHITE	INTACT
OFFICEA	1	592	0	WINDOW	D	WOOD	WHITE	INTACT
OFFICEA	1	593	0	WINDOW	D	WOOD	WHITE	INTACT
OFFICEA	1	598	0	DOOR	C	METAL	SIL	INTACT
OFFICEA	1	599	0	DOOR	C	METAL	SIL	INTACT
OFFICEA	1	600	0	DOOR	C	METAL	SIL	INTACT
S OFFICES	1	601	0	WINDOW	C	WOOD	WHITE	INTACT
S OFFICES	1	602	0	WALL	C	DRYWALL	BEIGE	INTACT
S OFFICES	1	603	0	WALL	C	METAL	BEIGE	INTACT
SE AREA	1	604	0	WALL	A	DRYWALL	BEIGE	INTACT
SE AREA	1	605	0	DOOR	A	WOOD	BROWN	INTACT
SE AREA	1	606	0	DOOR	A	METAL	BROWN	INTACT
SE AREA	1	607	0	DOOR	A	METAL	BROWN	INTACT
SE AREA	1	608	0	DOOR	A	METAL	BROWN	INTACT
SE AREA	1	609	0	DOOR	A	METAL	BROWN	INTACT
SE AREA	1	610	0	DOOR	D	METAL	BROWN	INTACT
SE AREA	1	612	0	DOOR	D	METAL	BROWN	INTACT
SE AREA	1	613	0	DOOR	D	METAL	BROWN	INTACT
SE AREA	1	614	0	WINDOW	D	WOOD	WHITE	INTACT
SE AREA	1	615	0	WINDOW	D	WOOD	WHITE	INTACT
SE AREA	1	617	0	ELEC	A	METAL	GREY	INTACT
SE AREA	1	618	0	WINDOW	D	WOOD	WHITE	INTACT
SE AREA	1	619	0	WINDOW	D	WOOD	WHITE	INTACT
SE AREA	1	620	0	WALL	B	CONCRETE	TAN	INTACT
SE AREA	1	621	0	WALL	D	DRYWALL	TAN	INTACT
SE AREA	1	623	0	WALL	D	BRICK	TAN	INTACT
SE AREA	1	624	0	PIPE	B	METAL	YELLOW	INTACT
ELEV	1	627	0	DOOR	C	WOOD	BROWN	INTACT
ELEV	1	628	0	WALL	C	CONCRETE	BROWN	INTACT
ELEV	1	629	0	DOOR	C	DRYWALL	TAN	INTACT
ELEV	1	630	0	DOOR	C	DRYWALL	TAN	INTACT
S MEN	1	632	0	WINDOW	B	WOOD	WHITE	INTACT
S MEN	1	633	0	WINDOW	B	WOOD	WHITE	INTACT
S MEN	1	636	0	RADIATOR	C	METAL	WHITE	INTACT
S MEN	1	638	0	COUNTER	A	WOOD	GREY	INTACT
S MEN	1	640	0	FLOOR	D	STN	WHITE	INTACT
LIBRARY	1	641	0	FIRE	B	METAL	WHITE	INTACT
LIBRARY	1	642	0	CIUNTER	A	WOOD	BROWN	INTACT
LIBRARY	1	643	0	CIUNTER	A	WOOD	BROWN	INTACT
LIBRARY	1	644	0	DOOR	A	WOOD	BROWN	INTACT
LIBRARY	1	645	0	DOOR	A	WOOD	BROWN	INTACT
LIBRARY	1	646	0	DOOR	A	WOOD	BROWN	INTACT
LIBRARY	1	647	0	BASEBOARD	D	WOOD	BROWN	INTACT
LIBRARY	1	648	0	BASEBOARD	D	WOOD	BROWN	INTACT
LIBRARY	1	649	0	WINDOW	D	STN	BROWN	INTACT
LIBRARY	1	650	0	FLOOR	D	STN	GREY	INTACT
LOBBY	1	652	0	DOOR	D	WOOD	BROWN	INTACT
LOBBY	1	657	0	DOOR	D	METAL	BROWN	INTACT
LOBBY	1	659	0	WALL	D	STN	BROWN	INTACT
LOBBY	1	662	0	VENT	A	METAL	BROWN	INTACT
LOBBY	1	663	0	FLOOR	A	STN	RED	INTACT
LOBBY	1	664	0	FLOOR	A	STN	BLK	INTACT
W OFFICES	1	666	0	WALL	A	BRICK	BEIGE	INTACT
W OFFICES	1	667	0	WALL	A	BRICK	BEIGE	INTACT
W OFFICES	1	668	0	CONDUIT	A	METAL	BLK	INTACT
W OFFICES	1	670	0	WINDOW	D	WOOD	WHITE	INTACT
W OFFICES	1	675	0	DOOR	C	WOOD	WHITE	INTACT
W OFFICES	1	676	0	DOOR	C	WOOD	WHITE	INTACT

Room	Floor (2)	Sample Number	Lead Level (mg/cm^2)	Component	Side (1)	Substrate	Color	Condition
W OFFICES	1	677	0	DOOR	B	WOOD	BLK	INTACT
E OFFICES	1	686	0	FLOOR	D	CONCRETE	BLK	INTACT
E OFFICES	1	687	0	VENT	D	METAL	BROWN	INTACT
E OFFICES	1	688	0	PIPE	D	METAL	BROWN	INTACT
E OFFICES	1	689	0	CONDUIT	C	METAL	BROWN	INTACT
14	SECOND	697	0	FLOOR	A	WOOD	BROWN	POOR
14	SECOND	698	0	FLOOR	A	WOOD	BROWN	POOR
AHU N	THIRD	712	0	FLOOR	D	METAL	BROWN	INTACT
AHU N	THIRD	713	0	FLOOR	D	METAL	BROWN	INTACT
AHU N	THIRD	719	0	DOOR	C	METAL	BROWN	INTACT
AHU N	THIRD	721	0	DOOR	C	METAL	BLK	INTACT
AHU N	THIRD	722	0	DOOR	C	METAL	BLK	INTACT
AHU N	THIRD	723	0	DOOR	C	METAL	BLK	INTACT
AHU N	THIRD	724	0	DOOR	C	METAL	BLK	INTACT
AHU N	THIRD	733	0	WALKWAY	C	METAL	SIL	INTACT
AHU N	THIRD	734	0	WALKWAY	C	METAL	SIL	INTACT
AHU N	THIRD	737	0	TURBINE	C	METAL	GREY	INTACT
N STAIRS	THIRD	738	0	DOOR	C	WOOD	BROWN	INTACT
N STAIRS	THIRD	739	0	DOOR	C	WOOD	BROWN	INTACT
N STAIRS	THIRD	740	0	BASEBOARD	C	WOOD	BROWN	INTACT
N STAIRS	THIRD	741	0	WALL	A	PLASTER	GREY	INTACT
N STAIRS	THIRD	761	0	STAIRS	D	METAL	GREY	INTACT
N STAIRS	THIRD	766	0	STAIRS	D	METAL	GREY	INTACT
N STAIRS	THIRD	772	0	FLOOR	D	CONCRETE	GREY	INTACT
S AHU	THIRD	776	0	PIPE	A	METAL	WHITE	INTACT
S AHU	THIRD	778	0	DOOR	D	METAL	BROWN	INTACT
S AHU	THIRD	780	0	BEAM	D	METAL	SIL	INTACT
S AHU	THIRD	783	0	CONDUIT	D	METAL	GREY	INTACT
N ELEV	FIRST	794	0	WALL	A	METAL	BROWN	INTACT
W STAIR	FIRST	795	0	WALL	A	PLASTER	RED	INTACT
W STAIR	FIRST	798	0	WINDOW	D	WOOD	BROWN	INTACT
W STAIR	FIRST	800	0	STAIRS	D	WOOD	BROWN	INTACT
W STAIR	FIRST	807	0	WALL	C	PLASTER	BROWN	INTACT
W STAIR	FIRST	808	0	LIGHT	C	METAL	GOLD	INTACT
S STAIR	FIRST	811	0	WALL	D	CONCRETE	WHITE	INTACT
S STAIR	FIRST	812	0	WALL	D	CONCRETE	WHITE	INTACT
S STAIR	FIRST	813	0	DOOR	A	WOOD	BROWN	INTACT
S STAIR	FIRST	814	0	DOOR	A	WOOD	BROWN	INTACT
S STAIR	FIRST	820	0	WALL	A	CONCRETE	BROWN	INTACT
S STAIR	FIRST	821	0	WALL	C	CONCRETE	WHITE	INTACT
S STAIR	FIRST	822	0	WALL	C	CONCRETE	WHITE	INTACT
S STAIR	FIRST	823	0	WALL	C	CONCRETE	WHITE	INTACT
MECH	BASEMENT	825	0	BOILER	C	METAL	BLUE	INTACT
MECH	BASEMENT	826	0	BOILER	C	METAL	BLUE	INTACT
MECH	BASEMENT	827	0	PUMP	D	METAL	RED	INTACT
MECH	BASEMENT	828	0	PUMP	D	METAL	BLUE	INTACT
MECH	BASEMENT	831	0	EXPTANK	D	METAL	GREY	INTACT
MECH	BASEMENT	841	0	PIPE	A	METAL	RED	INTACT
MECH	BASEMENT	842	0	PIPE	A	METAL	BEIGE	INTACT
MECH	BASEMENT	845	0	WALL	B	DRYWALL	BEIGE	INTACT
MECH	BASEMENT	847	0	DOOR	B	METAL	BEIGE	INTACT
AHU	SECOND	848	0	FLOOR	B	CONCRETE	GREY	INTACT
AHU	SECOND	851	0	PIPE	A	METAL	GREY	INTACT
AHU	SECOND	853	0	CEILING	C	CONCRETE	GREY	INTACT
AHU	SECOND	854	0	CEILING	C	CONCRETE	GREY	INTACT
BOILER	FIRST	855	0	DOOR	A	METAL	GREY	INTACT
BOILER	FIRST	857	0	DOOR	A	METAL	G	INTACT

Room	Floor (2)	Sample Number	Lead Level (mg/cm^2)	Component	Side (1)	Substrate	Color	Condition
BOILER	FIRST	861	0	BOILER	A	METAL	GREY	INTACT
BOILER	FIRST	862	0	BOILER	A	METAL	BLUE	INTACT
BOILER	FIRST	865	0	BOILER	A	METAL	BLK	INTACT
BOILER	FIRST	868	0	BOILER	A	METAL	SIL	INTACT
BOILER	FIRST	872	0	WINDOW	D	WOOD	WHITE	INTACT
BOILER	FIRST	874	0	PIPE	C	METAL	SIL	INTACT
ATTIC	ATTIC	878	0	BEAM	A	METAL	RED	INTACT
ATTIC	ATTIC	880	0	CEILING	A	CONCRETE	GREY	INTACT
CAFE	FIRST	882	0	VENT	C	METAL	GREEN	INTACT
OUTSIDE	FIRST	887	0	WINDOW	B	METAL	WHITE	INTACT
OUTSIDE	FIRST	888	0	WINDOW	B	METAL	WHITE	INTACT
OUTSIDE	FIRST	892	0	WINDOW	B	WOOD	BLK	INTACT
OUTSIDE	FIRST	893	0	FLAG POLE	B	METAL	BLK	INTACT
OUTSIDE	FIRST	894	0	FENCE	B	METAL	BLK	INTACT
OUTSIDE	FIRST	896	0	BOX	A	METAL	BL	INTACT
OUTSIDE	FIRST	897	0	WINDOW	A	GLASS	BL	INTACT
OUTSIDE	FIRST	900	0	PIPE	A	METAL	GREY	INTACT
OUTSIDE	FIRST	901	0	FENCE	A	METAL	BLK	INTACT
NORTH BATHROOMS	SECOND	12	0.01	SINK	D	PORCELAIN	BROWN	INTACT
HALLWAY	SECOND	21	0.01	DOOR JAMBS	B	METAL	GOLD	INTACT
HALLWAY	SECOND	32	0.01	DOOR BOTTOM PLATE	B	METAL	BLACK	INTACT
ROOM 14	SECOND	61	0.01	DOORKNOB PLATE	B	METAL	black	INTACT
HALLWAY	SECOND	68	0.01	DOOR HANDLE	D	METAL	black	INTACT
215	SECOND	78	0.01	DOOR	D	WOOD	BROWN	INTACT
HALLWAY	SECOND	97	0.01	DOOR JAMB	B	METAL	gold	INTACT
15	BASEMENT	110	0.01	BRICK AND MORTAR	A	CONCRETE	NO COLOR	INTACT
HALLWAY	BASEMENT	114	0.01	EXSTINGUISHER FRAME	D	METAL	GRAY	INTACT
12	BASEMENT	121	0.01	FILING CABINETS	A	METAL	BEIGE	INTACT
MEN'S RESTROOM	BASEMENT	131	0.01	EXTINGUISHER CABINET	B	METAL	BROWN	INTACT
HALLWAY	BASEMENT	132	0.01	CEILING	C	CONCRETE	WHITE	INTACT
GRAND HALL	SECOND	149	0.01	GUIDE RAIL	C	WOOD	BROWN	INTACT
GRAND HALL	SECOND	150	0.01	GUIDE RAIL	C	WOOD	BROWN	INTACT
GRAND HALL	SECOND	153	0.01	WINDOW SEAL	D	WOOD	BROWN	INTACT
GRAND HALL	SECOND	159	0.01	EXTINGUISHER CABINET	B	METAL	WHITE	INTACT
GRAND HALL	SECOND	178	0.01	RAILING	C	WOOD	BROWN	INTACT
GRAND HALL	FIRST	189	0.01	DOOR JAMB	C	METAL	black	INTACT
GRAND HALL	FIRST	193	0.01	DOOR HANDLE	B	METAL	gold	INTACT
GRAND HALL	FIRST	195	0.01	DOOR HANDLE	B	METAL	gold	INTACT
KITCHEN	1	215	0.01	FLOOR	A	CONCRETE	GREY	INTACT
JAN	1	227	0.01	DOOR	B	WOOD	BROWN	INTACT
JAN	1	228	0.01	DOOR	B	WOOD	BROWN	INTACT
JAN	1	234	0.01	DOORHINGE	B	METAL	WHITE	INTACT
JAN	1	237	0.01	WALL	B	TILE	GREY	INTACT
JAN	1	240	0.01	FLOOR	C	TILE	WHITE	INTACT
FREEZER	1	265	0.01	ELEC	D	METAL	GRY	INTACT
KITCHEN	1	271	0.01	DOOR	A	WOOD	G	INTACT
KITCHEN	1	275	0.01	DOOR	A	WOOD	G	INTACT
CAFE	1	300	0.01	DOOR	A	WOOD	BROWN	INTACT
CAFE	1	301	0.01	DOOR	A	WOOD	BROWN	INTACT
CAFE	1	320	0.01	DOOR	B	METAL	G	INTACT
CAFE	1	321	0.01	DOOR	B	METAL	G	INTACT
CAFE	1	322	0.01	COLUMN	B	WOOD	BROWN	INTACT
CAFE	1	328	0.01	COUNTER	B	STONE	RED	INTACT
CAFE	1	344	0.01	WALL	D	WOOD	BROWN	INTACT
HALL	1	366	0.01	PHONE BOOT	B	WOOD	BROWN	INTACT
MENS RR	1	370	0.01	DOOR	B	WOOD	WHITE	INTACT
MENS RR	1	372	0.01	DOOR	B	WOOD	WHITE	INTACT
MENS RR	1	380	0.01	SINK	A	POR	WHITE	INTACT

Room	Floor (2)	Sample Number	Lead Level (mg/cm^2)	Component	Side (1)	Substrate	Color	Condition
MENS RR	1	386	0.01	DUCT	B	METAL	WHITE	INTACT
ELEV	1	428	0.01	F,RE	B	WOOD	WHITE	INTACT
BREAK	1	443	0.01	DOOR	C	WOOD	BROWN	INTACT
CONFERENCE ROOM	1	470	0.01	WINDOW	D	WOOD	BROWN	INTACT
CONFERENCE ROOM	1	471	0.01	WINDOW	D	WOOD	BROWN	INTACT
BOARD	1	475	0.01	WALL	A	WOOD	BROWN	INTACT
BOARD	1	476	0.01	WALL	A	WOOD	BROWN	INTACT
BOARD	1	478	0.01	WINDOW	B	WOOD	BROWN	INTACT
BOARD	1	480	0.01	DOOR	C	WOOD	BROWN	INTACT
106	1	484	0.01	DOOR	A	WOOD	BROWN	INTACT
106	1	488	0.01	DOOR	B	METAL	BROWN	INTACT
106	1	489	0.01	DOOR	B	WOOD	BROWN	INTACT
106	1	492	0.01	DOOR	B	WOOD	BROWN	INTACT
106	1	498	0.01	WALL	C	PLASTER	BEIGE	INTACT
106	1	515	0.01	DOOR	D	METAL	G	INTACT
LIBRARY	1	530	0.01	WINDOW	A	WOOD	BROWN	INTACT
LIBRARY	1	559	0.01	DOOR	C	METAL	G	INTACT
SE AREA	1	611	0.01	DOOR	D	METAL	BROWN	INTACT
SE AREA	1	622	0.01	WALL	D	BRICK	TAN	INTACT
S MEN	1	634	0.01	WALL	B	BRICK	RED	INTACT
S MEN	1	637	0.01	FLOOR	C	TILE	GREY	INTACT
S MEN	1	639	0.01	SINK	A	POR	WHITE	INTACT
LOBBY	1	661	0.01	RADIATOR	A	METAL	BROWN	INTACT
W OFFICES	1	674	0.01	WINDOW	D	WOOD	BROWN	INTACT
AHU N	THIRD	704	0.01	STAIR	D	METAL	BROWN	INTACT
AHU N	THIRD	707	0.01	STAIR	D	METAL	BLK	INTACT
AHU N	THIRD	718	0.01	DOOR	C	METAL	BROWN	INTACT
AHU N	THIRD	729	0.01	PIPE	C	METAL	BLK	INTACT
AHU N	THIRD	735	0.01	TURBINE	C	METAL	GREY	INTACT
AHU N	THIRD	736	0.01	TURBINE	C	METAL	GREY	INTACT
N STAIRS	THIRD	744	0.01	STAIE	A	WOOD	BROWN	INTACT
N STAIRS	THIRD	771	0.01	FLOOR	D	CONCRETE	GREY	INTACT
S AHU	THIRD	774	0.01	STAIRS	D	METAL	BROWN	INTACT
S AHU	THIRD	777	0.01	DOOR	D	METAL	BROWN	INTACT
S AHU	THIRD	779	0.01	DOOR	D	METAL	BROWN	INTACT
W STAIR	FIRST	796	0.01	TRIM	A	WOOD	BROWN	INTACT
W STAIR	FIRST	799	0.01	WINDOW	D	WOOD	BROWN	INTACT
MECH	BASEMENT	830	0.01	PUMP	D	METAL	BLK	INTACT
MECH	BASEMENT	835	0.01	COLUMN	A	METAL	GREY	INTACT
MECH	BASEMENT	836	0.01	FLOOR	A	CONCRETE	GREY	INTACT
MECH	BASEMENT	837	0.01	FLOOR	A	CONCRETE	GREY	INTACT
MECH	BASEMENT	840	0.01	CEILING	A	CONCRETE	BEIGE	INTACT
MECH	BASEMENT	846	0.01	DOOR	B	METAL	BEIGE	INTACT
ATTIC	ATTIC	876	0.01	LADDER	A	METAL	BLK	INTACT
ATTIC	ATTIC	881	0.01	WALL	A	BRICK	RED	INTACT
OUTSIDE	FIRST	895	0.01	STORM DRAIN	B	METAL	RED	INTACT
OUTSIDE	FIRST	898	0.01	SIGN	A	METAL	BLUE	INTACT
NORTH BATHROOMS	SECOND	11	0.02	WINDOW	D	WOOD	BROWN	INTACT
HALLWAY	SECOND	29	0.02	DOOR HINGE	B	METAL	BLACK	INTACT
HALLWAY	BASEMENT	113	0.02	EXSTINGUISHER FRAME	B	METAL	GRAY	INTACT
GRAND HALL	FIRST	198	0.02	DOOR STOPPER	B	METAL	gold	INTACT
KITCHEN	1	219	0.02	DOOR	A	WOOD	BROWN	INTACT
KITCHEN	1	223	0.02	DOOR	D	WOOD	BROWN	INTACT
KITCHEN	1	289	0.02	DRAIN	C	METAL	WHITE	INTACT
CAFE	1	314	0.02	RADIATOR	B	METAL	BLK	INTACT
CAFE	1	315	0.02	RADIATOR	B	METAL	BLK	INTACT

Room	Floor (2)	Sample Number	Lead Level (mg/cm^2)	Component	Side (1)	Substrate	Color	Condition
CAFE	1	319	0.02	BENCH	B	METAL	BLK	INTACT
CAFE	1	337	0.02	COUNTER	B	METAL	SIL	INTACT
HALL	1	361	0.02	PHONE BOOT	B	WOOD	BROWN	INTACT
HALL	1	367	0.02	PHONE BOOT	B	WOOD	BROWN	INTACT
MENS RR	1	378	0.02	TOILET	C	POR	WHITE	INTACT
WOMENS RR	1	404	0.02	COUNTER	B	STNE	BLK	INTACT
WOMENS RR	1	419	0.02	DOOR	B	WOOD	BROWN	INTACT
BREAK	1	446	0.02	BENCH	C	WOOD	BROWN	INTACT
BOARD	1	474	0.02	WALL	A	WOOD	BROWN	INTACT
BOARD	1	479	0.02	DOOR	C	WOOD	BROWN	INTACT
106	1	486	0.02	DOOR	A	METAL	G	INTACT
AHU N	THIRD	705	0.02	STAIR	D	METAL	BROWN	INTACT
AHU N	THIRD	706	0.02	STAIR	D	METAL	BLK	INTACT
AHU N	THIRD	720	0.02	DOOR	C	METAL	BROWN	INTACT
N STAIRS	THIRD	768	0.02	STAIRS	D	METAL	GREY	INTACT
W STAIR	FIRST	797	0.02	RISER	A	WOOD	BROWN	INTACT
S STAIR	FIRST	815	0.02	STAIR	A	METAL	BLK	INTACT
BOILER	FIRST	864	0.02	BOILER	A	METAL	BLK	INTACT
ATTIC	ATTIC	877	0.02	BEAM	A	METAL	RED	INTACT
OUTSIDE	FIRST	890	0.02	WALL	B	CONCRETE	WHITE	INTACT
HALLWAY	SECOND	23	0.03	DOOR JAMBS	D	METAL	GOLD	INTACT
HALLWAY	SECOND	96	0.03	DOOR JAMB	D	METAL	gold	INTACT
HALLWAY	BASEMENT	115	0.03	DOOR	A	METAL	BROWN	INTACT
HALLWAY	BASEMENT	116	0.03	DOORFRAME	A	METAL	DARK BRIWN	INTACT
HALLWAY	BASEMENT	134	0.03	EXTINGUISHER CABINET	B	DRYWALL	gray	INTACT
GRAND HALL	SECOND	174	0.03	PERIMETER OUTLET CASING	C	METAL	WHITE	INTACT
GRAND HALL	FIRST	186	0.03	DOOR PLATE	C	METAL	gold	INTACT
JAN	1	232	0.03	DOORHINGE	B	METAL	WHITE	INTACT
JAN	1	242	0.03	TOILET	C	POR	WHITE	INTACT
KITCHEN	1	252	0.03	TRIM	A	WOOD	BROWN	INTACT
KITCHEN	1	253	0.03	TRIM	A	WOOD	BROWN	INTACT
CAFE	1	316	0.03	CLOSERS	B	METAL	BLK	INTACT
CAFE	1	342	0.03	CHAIR	B	METAL	G	INTACT
MENS RR	1	385	0.03	WINDOW	B	WOOD	BROWN	INTACT
HALL	1	392	0.03	DOOR	C	WOOD	WHITE	INTACT
106	1	503	0.03	RADIATOR	C	METAL	TAN	INTACT
106	1	506	0.03	RADIATOR	C	METAL	TAN	INTACT
RECORDS	1	576	0.03	COLUMN	D	METAL	BROWN	INTACT
OFFICEA	1	585	0.03	WINDOW	D	WOOD	WHITE	INTACT
AHU N	THIRD	715	0.03	STAIR	D	METAL	BLK	INTACT
AHU N	THIRD	717	0.03	DOOR	C	METAL	BROWN	INTACT
AHU N	THIRD	727	0.03	BEAM	C	METAL	RED	INTACT
AHU N	THIRD	732	0.03	PIPE	C	METAL	BLK	INTACT
BOILER	FIRST	863	0.03	BOILER	A	METAL	WHITE	INTACT
BOILER	FIRST	867	0.03	BOILER	A	METAL	SIL	INTACT
SAFE ROOM	SECOND	92	0.04	INSIDE WALL	C	PLASTER	WHITE	INTACT
HALLWAY	BASEMENT	147	0.04	ELEVATOR WALL	A	METAL	BROWN	INTACT
GRAND HALL	SECOND	169	0.04	TRIM	B	WOOD	BROWN	INTACT
GRAND HALL	FIRST	190	0.04	DOOR JAMB	C	METAL	black	INTACT
KITCHEN	1	213	0.04	FLOOR	A	CONCRETE	GREY	INTACT
KITCHEN	1	214	0.04	FLOOR	A	CONCRETE	GREY	INTACT
CAFE	1	323	0.04	COLUMN	B	WOOD	BROWN	INTACT
BREAK	1	445	0.04	CABINET	C	WOOD	WHITE	INTACT
LIBRARY	1	529	0.04	WINDOW	A	WOOD	BROWN	INTACT
S HALL	1	561	0.04	WALL	C	BRICK	RED	INTACT
SE AREA	1	625	0.04	PIPE	B	METAL	YELLOW	INTACT
LOBBY	1	660	0.04	RADIATOR	A	METAL	BROWN	INTACT
AHU N	THIRD	700	0.04	STAIR	D	METAL	BLK	INTACT
AHU N	THIRD	714	0.04	STAIR	D	METAL	BLK	INTACT
AHU N	THIRD	725	0.04	BEAM	C	METAL	RED	INTACT
N STAIRS	THIRD	762	0.04	STAIRS	D	METAL	GREY	INTACT

Room	Floor (2)	Sample Number	Lead Level (mg/cm^2)	Component	Side (1)	Substrate	Color	Condition
S AHU	THIRD	781	0.04	BEAM	D	METAL	RED	INTACT
S STAIR	FIRST	818	0.04	RISER	A	METAL	BROWN	INTACT
ATTIC	ATTIC	879	0.04	BEAM	A	METAL	RED	INTACT
HALLWAY	BASEMENT	111	0.05	ELEVATOR DOOR	D	CONCRETE	BROWN	INTACT
GRAND HALL	SECOND	173	0.05	PERIMETER OUTLET CASING	B	METAL	WHITE	INTACT
GRAND HALL	SECOND	175	0.05	PERIMETER OUTLET CASING	D	METAL	WHITE	INTACT
KITCHEN	1	216	0.05	FLOOR	A	CONCRETE	GREY	INTACT
KITCHEN	1	284	0.05	WINDOW	D	WOOD	WHITE	INTACT
CAFE	1	346	0.05	WALL	D	WOOD	BROWN	INTACT
HALL	1	363	0.05	PHONE BOOT	B	WOOD	BROWN	INTACT
MENS RR	1	383	0.05	WINDOW	B	WOOD	BROWN	INTACT
ELEV	1	626	0.05	DOOR	C	WOOD	BROWN	INTACT
W OFFICES	1	669	0.05	WINDOW	D	WOOD	WHITE	INTACT
AHU N	THIRD	703	0.05	STAIR	D	METAL	BROWN	INTACT
AHU N	THIRD	726	0.05	BEAM	C	METAL	RED	INTACT
AHU N	THIRD	731	0.05	PIPE	C	METAL	BLK	INTACT
N ELEV	FIRST	793	0.05	WALL	A	WOOD	BROWN	INTACT
BOILER	FIRST	860	0.05	VENT	A	WOOD	WHITE	INTACT
HALLWAY	SECOND	24	0.06	DOOR FRAMES	D	WOOD	BROWN	INTACT
HALLWAY	SECOND	69	0.06	FREIGHT DOOR	C	WOOD	brown	INTACT
SAFE ROOM	SECOND	93	0.06	SHELVES	B	WOOD	WHITE	INTACT
JAN	1	230	0.06	FLOOR	B	TILE	WHITE	INTACT
ELEV	1	427	0.06	DOOR	B	WOOD	BROWN	INTACT
BREAK	1	442	0.06	DOOR	C	WOOD	BROWN	INTACT
CONFERENCE ROOM	1	467	0.06	DOOR	C	METAL	BROWN	INTACT
106	1	502	0.06	RADIATOR	C	METAL	TAN	INTACT
LOBBY	1	653	0.06	DOOR	D	METAL	BROWN	INTACT
E OFFICES	1	683	0.06	DOOR	D	WOOD	BROWN	INTACT
S AHU	THIRD	775	0.06	STAIRS	D	METAL	BLK	INTACT
BOILER	FIRST	866	0.06	BOILER	A	METAL	SIL	INTACT
SARINA EHRGOTT	SECOND	39	0.07	WINDOW SEAL	B	WOOD	DARK BROWN	INTACT
220	SECOND	70	0.07	DOOR FRAME	C	WOOD	brown	INTACT
WOMENS RR	1	416	0.07	WINDOW	D	METAL	WHITE	INTACT
AHU N	THIRD	711	0.07	STAIR	D	METAL	BLK	INTACT
AHU N	THIRD	716	0.07	STAIR	D	METAL	BLK	INTACT
N STAIRS	THIRD	751	0.07	BASEBOARD	D	STN	BLK	INTACT
GRAND HALL	SECOND	160	0.08	RAILING	B	METAL	black	INTACT
GRAND HALL	SECOND	163	0.08	RAILING	A	METAL	black	INTACT
GRAND HALL	SECOND	164	0.08	RAILING	A	METAL	black	INTACT
FREEZER	1	257	0.08	DOOR	A	WOOD	WHITE	INTACT
MENS RR	1	379	0.08	TOILET	A	POR	WHITE	INTACT
WOMENS RR	1	417	0.08	WALL	D	PLASTER	WHITE	INTACT
CONFERENCE ROOM	1	473	0.08	WINDOW	D	METAL	BROWN	INTACT
106	1	505	0.08	RADIATOR	C	METAL	TAN	INTACT
AHU N	THIRD	701	0.08	STAIR	D	METAL	BLK	INTACT
S STAIR	FIRST	819	0.08	RISER	A	METAL	BLK	INTACT
S STAIR	FIRST	824	0.08	RISER	C	METAL	BLK	INTACT
BOILER	FIRST	873	0.08	WINDOW	D	WOOD	WHITE	INTACT
HALLWAY	SECOND	30	0.09	DOOR HINGE	D	METAL	BLACK	INTACT
FREEZER	1	266	0.09	DOOR	C	WOOD	WHITE	INTACT
FREEZER	1	267	0.09	DOOR	C	WOOD	WHITE	INTACT
CAFE	1	350	0.09	RADIATOR	D	METAL	BROWN	INTACT
OFFICEA	1	588	0.09	WINDOW	D	WOOD	WHITE	INTACT
AHU N	THIRD	709	0.09	STAIR	D	METAL	BLK	INTACT
AHU N	THIRD	710	0.09	STAIR	D	METAL	BLK	INTACT
N STAIRS	THIRD	749	0.09	BASEBOARD	D	STN	BLK	INTACT
N STAIRS	THIRD	767	0.09	STAIRS	D	METAL	GREY	INTACT
MECH	BASEMENT	843	0.09	PIPE	A	METAL	BEIGE	INTACT
SAFE ROOM	SECOND	91	0.1	INSIDE WALL	C	METAL	WHITE	INTACT

Room	Floor (2)	Sample Number	Lead Level (mg/cm^2)	Component	Side (1)	Substrate	Color	Condition
OFFICEA	1	597	0.1	WALL	D	BRICK	TAN	INTACT
LOBBY	1	654	0.1	DOOR	D	METAL	BROWN	INTACT
AHU N	THIRD	702	0.1	STAIR	D	METAL	BLK	INTACT
W STAIR	FIRST	806	0.1	STAIR	C	STN	BLK	INTACT
MECH	BASEMENT	829	0.1	PUMP	D	METAL	BLK	INTACT
203	SECOND	95	0.11	DOOR FRAME	B	WOOD	BROWN	INTACT
KITCHEN	1	287	0.11	WINDOW	D	WOOD	WHITE	INTACT
AHU N	THIRD	699	0.11	STAIR	D	METAL	BLK	INTACT
MECH	BASEMENT	839	0.11	COLUMN	A	CONCRETE	BEIGE	INTACT
OUTSIDE	FIRST	899	0.11	PIPE	A	METAL	GREY	INTACT
HALLWAY	SECOND	20	0.12	DOOR JAMBS	D	METAL	GOLD	INTACT
KITCHEN	1	250	0.12	TRIM	C	WOOD	GREY	INTACT
CAFE	1	330	0.12	COUNTER	B	WOOD	RED	INTACT
MENS RR	1	387	0.12	DOOR	B	WOOD	BROWN	INTACT
HALL	1	395	0.12	DOOR	C	WOOD	WHITE	INTACT
106	1	504	0.12	RADIATOR	C	METAL	TAN	INTACT
N STAIRS	THIRD	752	0.12	TRIM	D	WOOD	BROWN	INTACT
W STAIR	FIRST	801	0.12	STAIRS	D	WOOD	BLK	INTACT
HALLWAY	SECOND	25	0.13	DOOR FRAMES	D	WOOD	BROWN	INTACT
SARINA EHRGOTT	SECOND	40	0.13	WINDOW SEAL	B	WOOD	DARK BROWN	INTACT
GRAND HALL	SECOND	151	0.13	GUIDE RAIL	D	WOOD	BROWN	INTACT
OFFICEA	1	595	0.13	WALL	D	BRICK	TAN	INTACT
MECH	BASEMENT	832	0.13	PUMP	A	METAL	RED	INTACT
CAFE	1	329	0.14	COUNTER	B	WOOD	RED	INTACT
WOMENS RR	1	410	0.14	WINDOW	D	WOOD	WHITE	INTACT
W OFFICES	1	672	0.14	WINDOW	D	WOOD	WHITE	INTACT
N STAIRS	THIRD	755	0.14	BANISTER	D	METAL	BLK	INTACT
CAFE	FIRST	884	0.14	CT	C	DRYWALL	GREEN	INTACT
NORTH BATHROOMS	SECOND	10	0.15	WINDOW	D	WOOD	BROWN	INTACT
KITCHEN	1	283	0.15	WINDOW	D	WOOD	WHITE	INTACT
OFFICEA	1	587	0.15	WINDOW	D	WOOD	WHITE	INTACT
N STAIRS	THIRD	742	0.15	STAIE	A	WOOD	GREY	INTACT
N STAIRS	THIRD	770	0.15	TREAD	D	METAL	GREY	INTACT
MECH	BASEMENT	838	0.15	COLUMN	A	CONCRETE	BEIGE	INTACT
AHU	SECOND	850	0.15	PIPE	A	METAL	BL	INTACT
218	SECOND	72	0.16	PIPE	B	METAL	WHITE	INTACT
OFFICEA	1	590	0.16	WINDOW	D	WOOD	WHITE	INTACT
N STAIRS	THIRD	750	0.16	BASEBOARD	D	STN	BLK	INTACT
OFFICEA	1	596	0.17	WALL	D	BRICK	TAN	INTACT
MECH	BASEMENT	844	0.17	PIPE	C	METAL	YELLOW	INTACT
HALLWAY	SECOND	65	0.18	TRIM	B	WOOD	dark brown	INTACT
W STAIR	FIRST	803	0.18	STAIRS	D	WOOD	BLK	INTACT
W STAIR	FIRST	810	0.18	STAIR	D	WOOD	BLK	INTACT
ROOM BEHIND N STAIRS	SECOND	46	0.19	DOOR FRAME	D	WOOD	BROWN	INTACT
AHU N	THIRD	708	0.19	STAIR	D	METAL	BLK	INTACT
N STAIRS	THIRD	764	0.19	STAIRS	D	METAL	GREY	INTACT
BOILER	FIRST	871	0.19	WINDOW	D	WOOD	WHITE	INTACT
NE CONFERENCE ROOM ROOM	SECOND	41	0.2	WINDOW SEAL	D	WOOD	DARK BROWN	INTACT
JAN	1	233	0.2	DOORHINGE	B	METAL	WHITE	INTACT
WOMENS RR	1	409	0.21	WINDOW	D	WOOD	WHITE	INTACT
N STAIRS	THIRD	747	0.21	BASEBOARD	D	WOOD	GREY	INTACT
MULTICULTURAL AFFAIRS PENA	SECOND	35	0.22	BASEBOARDS	B	WOOD	MAROON	INTACT
E OFFICES	1	679	0.22	WINDOW	B	WOOD	BEIGE	INTACT

Room	Floor (2)	Sample Number	Lead Level (mg/cm^2)	Component	Side (1)	Substrate	Color	Condition
GRAND HALL	FIRST	184	0.23	STAIRS UNDERCOAT	C	PLASTER	WHITE	INTACT
WOMENS RR	1	408	0.23	WINDOW	D	WOOD	WHITE	INTACT
OFFICEA	1	586	0.23	WINDOW	D	WOOD	WHITE	INTACT
W STAIR	FIRST	802	0.23	STAIRS	D	WOOD	BLK	INTACT
N STAIRS	THIRD	763	0.24	STAIRS	D	METAL	GREY	INTACT
GRAND HALL	SECOND	161	0.25	RAILING	C	METAL	black	INTACT
106	1	501	0.25	RADIATOR	C	METAL	TAN	INTACT
E OFFICES	1	681	0.25	BASEBOARD	D	WOOD	BROWN	INTACT
AHU N	THIRD	730	0.25	PIPE	C	METAL	BLK	INTACT
GRAND HALL	FIRST	182	0.26	RAILING	C	METAL	black	INTACT
KITCHEN	1	281	0.26	WINDOW	D	WOOD	WHITE	INTACT
OFFICEA	1	589	0.26	WINDOW	D	WOOD	WHITE	INTACT
N STAIRS	THIRD	753	0.27	BANISTER	D	METAL	BLK	INTACT
BOILER	FIRST	870	0.27	WINDOW	D	WOOD	WHITE	INTACT
W OFFICES	1	671	0.28	WINDOW	D	WOOD	WHITE	INTACT
N STAIRS	THIRD	754	0.28	BANISTER	D	METAL	BLK	INTACT
N STAIRS	THIRD	758	0.28	TRIM	D	WOOD	GREY	INTACT
OFFICEA	1	582	0.29	WALL	D	BRICK	BROWN	INTACT
N STAIRS	THIRD	765	0.29	STAIRS	D	METAL	GREY	INTACT
MECH	BASEMENT	833	0.29	PUMP	A	METAL	RED	INTACT

*Side: A=North, B=East, C=South, D=West

Appendix B

Photograph Log

PHOTO 1: EXTERIOR

PHOTO 2: CONCRETE FLOORING

PHOTO 3: GOLD DOOR COMPONENTS

PHOTO 4: WHITE WOOD DOORS

R & R Environmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:		
DESIGNED BY:	SCALE:	REVIEWED BY:
DRAWN BY:	DATE: 2022	FILE:

SITE PHOTOGRAPHS

LEAD BASED PAINT SURVEY AND ASSESSMENT

EARTHQUAKE UPGRADES
RIO GRANDE
SALT LAKE CITY, UTAH 84101

PHOTO 5: SILVER FAUCETS

PHOTO 6: GREY TRIM

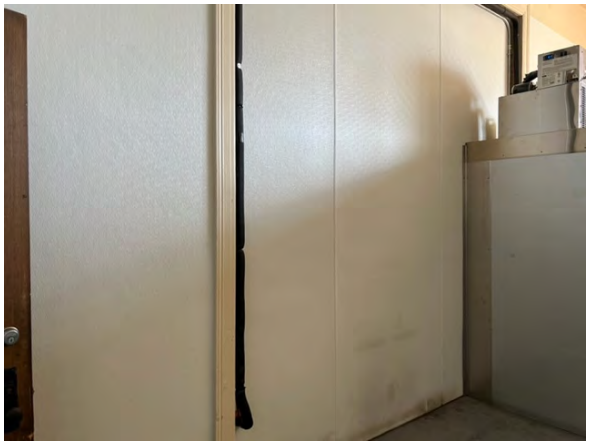


PHOTO 7: WHITE WOOD TRIM

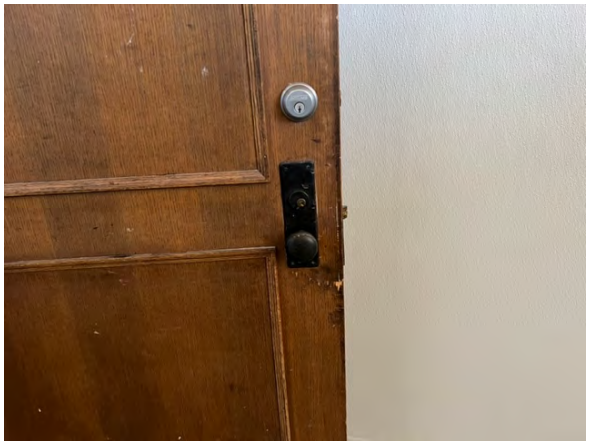


PHOTO 8: BLACK DOOR COMPONENTS

R & R Environmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:		
DESIGNED BY:	SCALE:	REVIEWED BY:
DRAWN BY:	DATE: 2022	FILE:

SITE PHOTOGRAPHS

LEAD BASED PAINT SURVEY AND ASSESSMENT

EARTHQUAKE UPGRADES
RIO GRANDE
SALT LAKE CITY, UTAH 84101

PHOTO 9: WHITE WINDOW FRAMES

PHOTO 10: WHITE DECORATIVE VENTS

PHOTO 11: WHITE WOOD DOORS

PHOTO 12: DOOR JAMBS

R & R Environmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:		
DESIGNED BY:	SCALE:	REVIEWED BY:
DRAWN BY:	DATE: 2022	FILE:

SITE PHOTOGRAPHS

LEAD BASED PAINT SURVEY AND ASSESSMENT

EARTHQUAKE UPGRADES
RIO GRANDE
SALT LAKE CITY, UTAH 84101

PHOTO 13: SILVER COUNTER TRIM

PHOTO 14: GOLD NAMETAGS

PHOTO 15: WHITE CHAIR COMPONENTS

PHOTO 16: WHITE DRINK TAP COMPONENTS

R & R Environmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:		
DESIGNED BY:	SCALE:	REVIEWED BY:
DRAWN BY:	DATE: 2022	FILE:

SITE PHOTOGRAPHS

LEAD BASED PAINT SURVEY AND ASSESSMENT

EARTHQUAKE UPGRADES
RIO GRANDE
SALT LAKE CITY, UTAH 84101

PHOTO 17: WHITE PLASTER WALLS

PHOTO 18: PLASTER WALLS

PHOTO 19: PHONE BOOTH

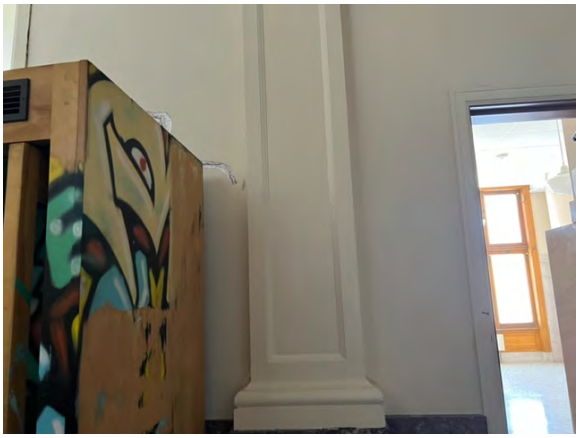


PHOTO 20: WHITE COLUMNS

R & R Environmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:		
DESIGNED BY:	SCALE:	REVIEWED BY:
DRAWN BY:	DATE: 2022	FILE:

SITE PHOTOGRAPHS

LEAD BASED PAINT SURVEY AND ASSESSMENT

EARTHQUAKE UPGRADES
RIO GRANDE
SALT LAKE CITY, UTAH 84101

PHOTO 21: STONE WALLS

PHOTO 22: GOLD RESTROOM DOOR COMPONENTS

PHOTO 23: BLACK COUNTER COMPONENTS

PHOTO 24: GREY CONCRETE BASEBOARDS IN RESTROOM

R & R Environmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:		
DESIGNED BY:	SCALE:	REVIEWED BY:
DRAWN BY:	DATE: 2022	FILE:

SITE PHOTOGRAPHS

LEAD BASED PAINT SURVEY AND ASSESSMENT

EARTHQUAKE UPGRADES
RIO GRANDE
SALT LAKE CITY, UTAH 84101

PHOTO 25: WHITE METAL PIPE

PHOTO 26: BROWN WOOD CONFERENCE ROOM DOOR

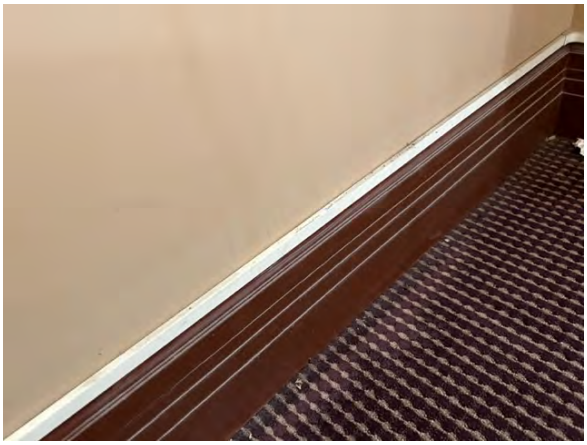


PHOTO 27: BROWN WOOD BASEBOARDS

PHOTO 28: GREY PLASTER COLUMN

R & R Environmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:		
DESIGNED BY:	SCALE:	REVIEWED BY:
DRAWN BY:	DATE: 2022	FILE:

SITE PHOTOGRAPHS

LEAD BASED PAINT SURVEY AND ASSESSMENT

EARTHQUAKE UPGRADES
RIO GRANDE
SALT LAKE CITY, UTAH 84101

PHOTO 29: BROWN PLASTER COLUMN

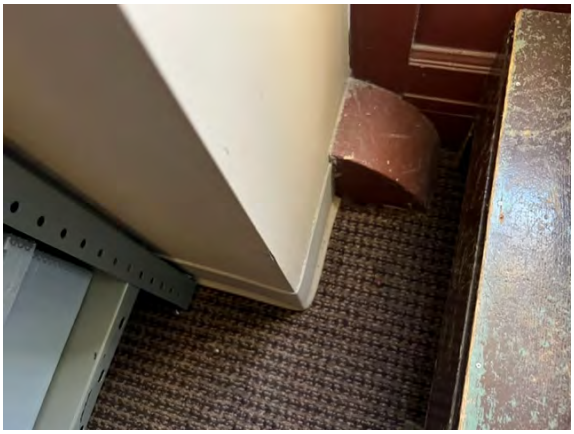


PHOTO 30: FOOTINGS ALONG EXTERIOR WALLS

PHOTO 31: PAINTED BRICK WALLS

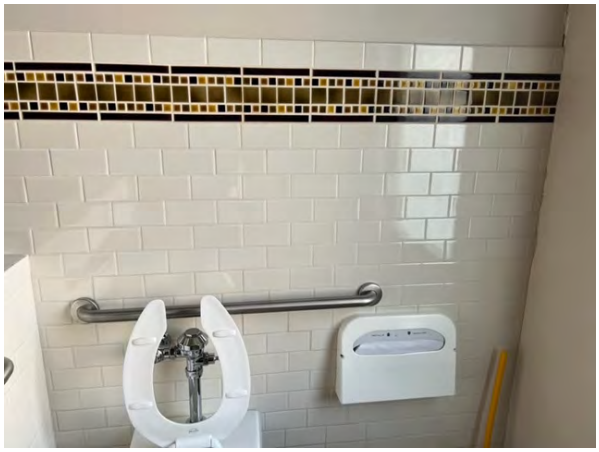


PHOTO 32: WALL TILE IN SOUTHEAST RESTROOMS

R & R Environmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:		
DESIGNED BY:	SCALE:	REVIEWED BY:
DRAWN BY:	DATE: 2022	FILE:

SITE PHOTOGRAPHS

LEAD BASED PAINT SURVEY AND ASSESSMENT

EARTHQUAKE UPGRADES
RIO GRANDE
SALT LAKE CITY, UTAH 84101

PHOTO 33: BLACK WOOD DOOR FRAMES IN LOBBY

PHOTO 34: GOLD OUTLET COVERS

PHOTO 35: SILVER DOOR COMPONENTS

PHOTO 36: LOBBY BASEBOARDS

R & R Environmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:		
DESIGNED BY:	SCALE:	REVIEWED BY:
DRAWN BY:	DATE: 2022	FILE:

SITE PHOTOGRAPHS

LEAD BASED PAINT SURVEY AND ASSESSMENT

EARTHQUAKE UPGRADES
RIO GRANDE
SALT LAKE CITY, UTAH 84101

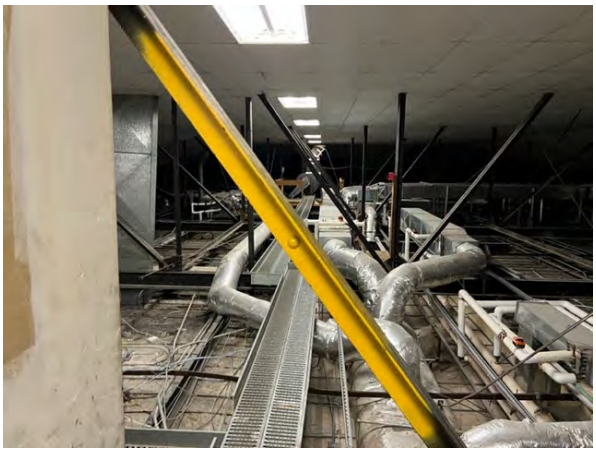


PHOTO 37: YELLOW CROSS BEAMS

PHOTO 38: STAIR RAIL COMPONENTS

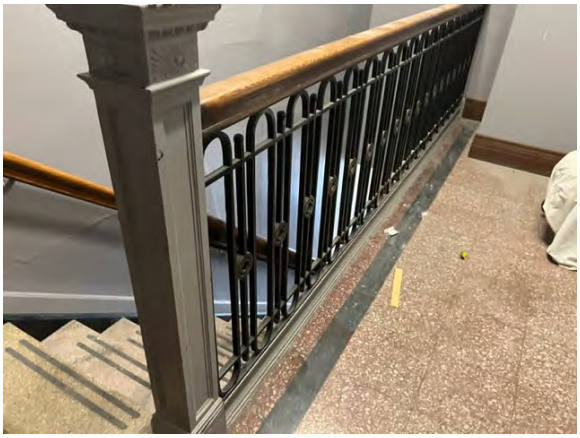


PHOTO 39: BLACK BANISTER BARS

PHOTO 40: GREY BANISTER

R & R Environmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:		
DESIGNED BY:	SCALE:	REVIEWED BY:
DRAWN BY:	DATE: 2022	FILE:

SITE PHOTOGRAPHS

LEAD BASED PAINT SURVEY AND ASSESSMENT

EARTHQUAKE UPGRADES
RIO GRANDE
SALT LAKE CITY, UTAH 84101

PHOTO 41: STAIR RAIL

PHOTO 42: GREY BASEBOARDS

PHOTO 43: PLASTER UNDER STAIRS

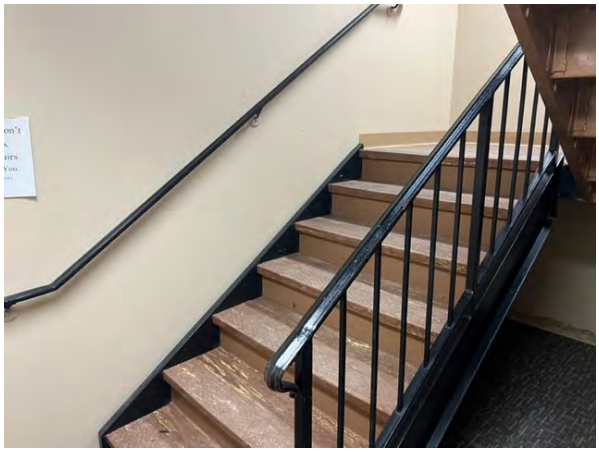


PHOTO 44: BLACK PENTHOUSE STAIRS

R & R Environmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:		
DESIGNED BY:	SCALE:	REVIEWED BY:
DRAWN BY:	DATE: 2022	FILE:

SITE PHOTOGRAPHS

LEAD BASED PAINT SURVEY AND ASSESSMENT

EARTHQUAKE UPGRADES
RIO GRANDE
SALT LAKE CITY, UTAH 84101

PHOTO 45: PLASTER UNDER STAIRS

PHOTO 46: GOLD LIGHT FIXTURES

PHOTO 47: RED PUMPS

PHOTO 48: MECHANICAL DRAINS

R & R Environmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:		
DESIGNED BY:	SCALE:	REVIEWED BY:
DRAWN BY:	DATE: 2022	FILE:

SITE PHOTOGRAPHS

LEAD BASED PAINT SURVEY AND ASSESSMENT

EARTHQUAKE UPGRADES
RIO GRANDE
SALT LAKE CITY, UTAH 84101

PHOTO 49: GREEN WALL TILES

PHOTO 50: PAINTED AWNING COMPONENTS

R & R Environmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:		
DESIGNED BY:	SCALE:	REVIEWED BY:
DRAWN BY:	DATE: 2022	FILE:

SITE PHOTOGRAPHS

LEAD BASED PAINT SURVEY AND ASSESSMENT

EARTHQUAKE UPGRADES
RIO GRANDE
SALT LAKE CITY, UTAH 84101

HAZARDOUS MATERIALS INSPECTION
FOR THE
RIO GRANDE DEPOT MUSEUM
270 SOUTH RIO GRANDE
SALT LAKE CITY, UTAH 84101

March 17, 2022

Prepared for:

State of Utah–Department of Administrative Services

DIVISION OF FACILITIES CONSTRUCTION
AND MANAGEMENT

4110 State Office Building/Salt Lake City, Utah 84114/538-3018

Mr. Jon Vance
Project Manager
State of Utah
Department of Administrative Services
Division of Facilities Construction and Management (DFCM)
State Office Building Room 4110
Salt Lake City, Utah 84114
PH: (801) 686-4422

Prepared by:

R & R ENVIRONMENTAL
ASBESTOS • LEAD • INDUSTRIAL HYGIENE

R & R Environmental, Inc. (R & R)
47 West 9000 South, Suite #2
Sandy, Utah 84070
dave@rrenviro.com
Phone (801) 541-1035

Hazardous Materials Inspection

Rio Grande Depot Museum
Salt Lake City, Utah 84101

During the month of February 2022, Jamison Moss of R & R Environmental, Inc., conducted a hazardous materials inspection of the Rio Grande Depot Museum located at 270 South Rio Grande in Salt Lake City, Utah. The purpose of this survey was to identify the existence, extent, and condition of hazardous materials. The inspection was conducted based on an agreement with Jon Vance with Utah DFCM.

Hazardous materials requiring proper removal and disposal were identified at the Rio Grande Depot Museum, Salt Lake City, Utah as follows:

Material	Location	Quantity	Unit Cost
PCB Ballast	Throughout	682 Units	$8.00 / unit
Fluorescent Bulb	Throughout	2,026 Units	$2.00 / unit
Fire Suppression System	Kitchen	1 Unit	$NA / unit
Refrigerants	Throughout	17 Units	$200.00 / unit
Switch Gears	Throughout Mechanical Rooms	4 Units	$NA / unit
Fuses	Elevator Motor Room	6 Units	$150.00 / unit
Lead Batteries	Basement	4 Units	$75.00 / unit
Thermostats	Throughout Mechanical Rooms	6 Units	$75.00 / unit
Chemical Inventory	Throughout	1,116 Gallons	$NA / unit

The State of Utah's DFCM policy requires the items above to be removed and disposed of at a facility approved to accept such waste prior to demolition. This may or may not be applied to the city of Salt Lake City in Salt Lake County, but R & R Environmental, Inc. recommends removal and proper disposal of these components prior to any demolition activities.

The cost estimate to remove and dispose of these hazardous materials is estimated at approximately **>$26,550.00**. This cost estimate does not include transportation, removal, design, or management fees associated with dismantling and packaging the materials.