

ADDENDUM NO. 1

TO THE PLANS AND SPECIFICATIONS FOR:

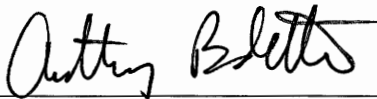
TNRB Auditoriums 151 & 251 Remodel

Prepared by

Brigham Young University  
Planning & Construction Dept.  
240 Brewster Physical Plant  
Provo, Utah 84602  
15 March 2024

This Addendum issued 15 March 2024 is for all persons preparing bids and as such shall be made a part of the contract documents. This Addendum consists of this cover sheet and 140 pages. In case of any conflict between the drawings, specifications, and this Addendum, this Addendum shall govern. All changes, corrections, deletions and/or additions to the initial bidding documents shall be included in the Bidder's proposal. Receipt of this Addendum shall be acknowledged on the Bid proposal forms.

Approved by:



Anthony R. Burdette, Director of Construction

15 March 2024

Date

**BRIGHAM YOUNG UNIVERSITY  
REMODEL AUDITORIUMS 151 & 251  
N. ELTON TANNER BUILDING (TNRB)  
Work Order No. M3728**

**ADDENDUM NO. 1  
15 MARCH 2024**

**OWNER/ARCHITECT**

Brigham Young University  
Stanton Woods, 245 BRWB, (801) 422-5695

These instructions are intended to provide additional information and/or clarification to that which is contained in the construction documents issued to bid. Contractor to review upon receipt and will be required to certify with the submission of their bid that these documents have been received. Bids submitted by the contractor shall reflect all costs associated with the changes contained herein.

See attached Asbestos Survey. It is for "Reference only" and is to be kept on sight by the general contractor and provided to any State or BYU inspector upon request. General contractor is responsible to understand the report. The owner will remove any asbestos on the project. If the general contractor or any of its subcontractors encounter any suspicious or known asbestos during the project, they are to notify BYU immediately and BYU will have it removed. It will be removed by a qualified asbestos abatement contractor.

**ATTACHMENTS:**

1. Standard Contract Requirements
  - a. Invitation to Bid
  - b. Notice to Bidders
  - c. Form of Proposal
  - d. Instructions to Bidders
  - e. Form of Contract
  - f. Sales Tax Exemption Certificate
  - g. General Conditions Table of Contents
    - i. General Conditions
    - ii. Supplementary Conditions
  - h. Request for Payment
    - i. Schedule of Values

2. Specifications:
  - a. Section 210500 – Common Work Results For Fire Suppression
  - b. Section 210523 – General-Duty Valves For Water-Based Fire-Suppression Piping
  - c. Section 210548 – Vibration And Seismic Controls For Fire Suppression Piping And Equipment
  - d. Section 210553 – Identification For Fire Suppression Piping And Equipment
  - e. Section 211200 – Fire-Suppression Standpipes
  - f. Section 211300 – Fire-Suppression Sprinkler Systems
3. Asbestos Survey and Assessment Report for BYU – Tanner Building (TNRB) – Dated 29 February, 2024



**SECTION 210500**  
**COMMON WORK RESULTS FOR FIRE SUPPRESSION**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Above ground piping.
- B. Escutcheons.
- C. Pipe, fittings, sleeves, escutcheons, seals, and connections for sprinkler systems.
- D. Expansion joints.
- E. Expansion loops.
- F. Pipe hangers and supports.
- G. Pipe sleeves.

**1.02 RELATED REQUIREMENTS**

- A. Section 078400 - Firestopping.
- B. Section 099113 - Exterior Painting: Preparation and painting of exterior fire protection piping systems.
- C. Section 099123 - Interior Painting: Preparation and painting of interior fire protection piping systems.
- D. Section 210523 - General-Duty Valves for Water-Based Fire-Suppression Piping.
- E. Section 210553 - Identification for Fire Suppression Piping and Equipment: Piping identification.
- F. Section 211200 - Fire-Suppression Standpipes: Standpipe design.
- G. Section 211300 - Fire-Suppression Sprinkler Systems: Sprinkler systems design.
- H. Section 220553 - Identification for Plumbing Piping and Equipment: Piping identification.

**1.03 REFERENCE STANDARDS**

- A. ASME A112.18.1 - Plumbing Supply Fittings; 2012.
- B. ASME BPVC-IX - Boiler and Pressure Vessel Code, Section IX - Welding, Brazing, and Fusing Procedures; Welders; Braziers; and Welding, Brazing and Fusing Operators; 2017.
- C. ASME B16.1 - Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250; 2015.
- D. ASME B16.3 - Malleable Iron Threaded Fittings: Classes 150 and 300; 2016.
- E. ASME B16.4 - Gray Iron Threaded Fittings: Classes 125 and 250; 2016.
- F. ASME B16.5 - Pipe Flanges and Flanged Fittings NPS 1/2 Through NPS 24 Metric/Inch Standard; 2017.
- G. ASME B16.9 - Factory-Made Wrought Buttwelding Fittings; 2012.
- H. ASME B16.11 - Forged Fittings, Socket-welding and Threaded; 2016 (Errata 2017).
- I. ASME B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings; 2012.
- J. ASME B16.22 - Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings; 2013.
- K. ASME B16.25 - Buttwelding Ends; 2012.
- L. ASME B36.10M - Welded and Seamless Wrought Steel Pipe; 2015.
- M. ASTM A47/A47M - Standard Specification for Ferritic Malleable Iron Castings; 1999 (Reapproved 2014).

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- N. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2012.
- O. ASTM A135/A135M - Standard Specification for Electric-Resistance-Welded Steel Pipe; 2009 (Reapproved 2014).
- P. ASTM A234/A234M - Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service; 2017.
- Q. ASTM A269/A269M - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service; 2015a.
- R. ASTM A536 - Standard Specification for Ductile Iron Castings; 1984 (Reapproved 2014).
- S. ASTM A795/A795M - Standard Specification for Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Fire Protection Use; 2013.
- T. ASTM B32 - Standard Specification for Solder Metal; 2008 (Reapproved 2014).
- U. ASTM B75/B75M - Standard Specification for Seamless Copper Tube; 2011.
- V. ASTM B88 - Standard Specification for Seamless Copper Water Tube; 2016.
- W. ASTM B88M - Standard Specification for Seamless Copper Water Tube (Metric); 2016.
- X. ASTM C592 - Standard Specification for Mineral Fiber Blanket Insulation and Blanket-Type Pipe Insulation (Metal-Mesh Covered) (Industrial Type); 2016.
- Y. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2016.
- Z. ASTM D2239 - Standard Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Controlled Inside Diameter; 2012a.
- AA. ASTM D2609 - Standard Specification for Plastic Insert Fittings for Polyethylene (PE) Plastic Pipe; 2015.
- AB. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems; 2013a.
- AC. ASTM F438 - Standard Specification for Socket-Type Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 40; 2015.
- AD. ASTM F439 - Standard Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80; 2013.
- AE. ASTM F442/F442M - Standard Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe (SDR-PR); 2013.
- AF. ASTM F493 - Standard Specification for Solvent Cements for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe and Fittings; 2014.
- AG. AWS A5.8M/A5.8 - Specification for Filler Metals for Brazing and Braze Welding; 2011-AMD 1.
- AH. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2015 (with March 2016 Errata).
- AI. AWWA C105/A21.5 - Polyethylene Encasement for Ductile-Iron Pipe Systems; 2010.
- AJ. AWWA C110/A21.10 - Ductile-Iron and Gray-Iron Fittings; 2012.
- AK. AWWA C111/A21.11 - Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings; 2017.
- AL. AWWA C151/A21.51 - Ductile-Iron Pipe, Centrifugally Cast; 2009.
- AM. AWWA C606 - Grooved and Shouldered Joints; 2015.
- AN. ITS (DIR) - Directory of Listed Products; current edition.
- AO. NFPA 13 - Standard for the Installation of Sprinkler Systems; 2016.

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- AP. NFPA 14 - Standard for the Installation of Standpipe and Hose Systems; 2016.
- AQ. UL (DIR) - Online Certifications Directory; current listings at database.ul.com.
- AR. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials; Current Edition, Including All Revisions.

**1.04 SUMMARY TABLE**

Item	Spec Section	Summary
Design	211300 1.06.B	Design with a margin of safety of 10%.
Submittal	211300 1.05.C	Submit shop drawings, product data, and hydraulic calculations to AHJ and BYU Fire Marshal for approval.
Pipe Thickness	210500 2.02.A	Minimum Pipe Thickness Schedule Mains: Sch 10 Grooved Branch: Sch 10 Threaded Branch: Sch 30
Design	Division 210000	Design does not need to be FM approved.
Drain Discharge	210500 3.03.I	All drain valves shall be discharged to the exterior of the building.
Flex Hose Drops	211300 2.02.F	Minimum capability of 5 bends is required.
Control Valves	210500 3.03.H	To be installed 7'-0" maximum above finish floor.
Flow Switches	211300 2.03.E	To be key operated/activated for testing purposes.
Dry/Pre-action Valves	211300 2.03.A	Victaulic is the only approved manufacturer.
Exposed Pipe Fittings	210500 3.03.F	Shall have a minimum 1" outlet with a bushing to accommodate future remodels.
Exposed Areas	210500 3.03.E	Piping shall be installed as high as possible.
Dry Systems	210500 2.02.A	Black pipe shall be used. Galvanized is not acceptable.

**1.05 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturers catalogue information. Indicate valve data and ratings.
- C. Shop Drawings: Indicate pipe materials used, jointing methods, supports, floor and wall penetration seals. Indicate installation, layout, weights, mounting and support details, and piping connections. Include flow calculations.
- D. Manufacturer's Qualification Statement.
- E. Installer's Qualification Statement.
- F. Project Record Documents: Record actual locations of components and tag numbering.
- G. Operation and Maintenance Data: Include installation instructions and spare parts lists.
- H. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  - 1. See Section 016000 - Product Requirements, for additional provisions.
  - 2. Extra Valve Stem Packings: One for each type and size of valve.
- I. Warranty Materials: Include all warranty certificates and schedule list of start and end dates for manufacturer equipment.

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## 1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum five years documented experience.
- B. Installer Qualifications: Company specializing in performing work of the type specified in this section.
  - 1. Minimum three years' experience for lead installers.
  - 2. Approved by manufacturer.
- C. Conform to UL (DIR) requirements.
- D. U.S. made domestic equipment, pipes, valves, and fittings.
- E. Valves: Bear UL (DIR) and ITS (DIR) or Warnock Hersey product listing label or marking. Provide manufacturer's name and pressure rating marked on valve body.
- F. Products Requiring Electrical Connection: Listed and classified as suitable for the purpose specified and indicated.
- G. Clean equipment, pipes, valves, and fittings of grease, metal cuttings, and sludge that may have accumulated from the installation and testing of the system.

## 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store valves in shipping containers, with labeling in place.
- B. Provide temporary protective coating on cast iron and steel valves.
- C. Provide temporary end caps and closures on piping and fittings. Maintain in protected place until installation.

## 1.08 WARRANTY

- A. See Section 017800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective Work within a one year period after Date of Substantial Completion.
- C. 11 months after substantial completion, contractor shall meet with BYU personnel to ensure integrity of system and to address any warranty issues identified during meeting.

## PART 2 PRODUCTS

### 2.01 FIRE PROTECTION SYSTEMS

- A. Sprinkler Systems: Conform to NFPA 13 (or NFPA 13R as applicable).
- B. Standpipe and Hose Systems: Conform to NFPA 14.
- C. Welding Materials and Procedures: Conform to ASME BPVC-IX.

### 2.02 ABOVE GROUND PIPING

- A. Steel Pipe: ASTM A795 Schedule 10, ASTM A53 Schedule 40, ASTM A135/A135M Schedule 10, or ASTM A795 Schedule 40 \_\_\_\_\_.
  - 1. Minimum Pipe Thickness Schedule
    - a. Mains: Sch 10
    - b. Grooved Branch: Sch 10
    - c. Threaded Branch: Sch 30
  - 2. Use Schedule
    - a. Conditioned Space: black pipe
    - b. Unconditioned Space: galvanized pipe
    - c. Dry System: black pipe

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3. Steel Fittings: ASME B16.9, wrought steel, buttwelded, ASME B16.25, buttweld ends, ASTM A234/A234M, wrought carbon steel or alloy steel, ASME B16.5, steel flanges and fittings, or ASME B16.11, forged steel socket welded and threaded.
  4. Cast Iron Fittings: ASME B16.1, flanges and flanged fittings and ASME B16.4, threaded fittings.
  5. Malleable Iron Fittings: ASME B16.3, threaded fittings and ASTM A47/A47M.
  6. Mechanical Grooved Couplings: Malleable iron housing clamps to engage and lock, "C" shaped elastomeric sealing gasket, steel bolts, nuts, and washers; galvanized for galvanized pipe.
  7. Mechanical Formed Fittings: Carbon steel housing with integral pipe stop and O-ring pocked and O-ring, uniformly compressed into permanent mechanical engagement onto pipe.
  8. Mechanical Saddle Tee: Victaulic 920, 920N, or 920 CROSS
- B. Copper Tube: ASTM B75/B75M or ASTM B88 (ASTM B88M), H58 drawn temper.
1. Type: Type L (B).
  2. Fittings: ASME B16.18, cast copper alloy or ASME B16.22, wrought copper and bronze solder joint, pressure type.
  3. Joints: AWS A5.8M/A5.8 Classification BCuP-3 or BCuP-4 copper/silver braze or ASTM B32, alloy Sn95 solder.
- C. Copper Tube: ASTM B88 (ASTM B88M), Type K (A), H58 drawn.
1. Fittings: ASME B16.18, cast copper alloy or ASME B16.22, wrought copper and bronze, grooved.
  2. Mechanical Grooved Couplings: Ductile iron housing with alkyd enamel paint coating clamps to engage and lock, "C" shaped elastomeric sealing gasket, steel bolts, nuts, and washers.

### 2.03 PIPE SLEEVES

- A. Vertical Piping:
1. Sleeve Length: 1 inch above finished floor.
  2. Provide sealant for watertight joint.
  3. Blocked Out Floor Openings: Provide 1-1/2 inch angle set in silicon adhesive around opening.
  4. Drilled Penetrations: Provide 1-1/2 inch angle ring or square set in silicone adhesive around penetration.
- B. Plastic, Sheet Metal, or Moisture-Resistant Fiber: Pipe passing through interior walls, partitions, and floors, unless steel or brass sleeves are specified below.
- C. Pipe Passing Through Below Grade Exterior Walls:
1. Provide watertight space with link rubber or modular seal between sleeve and pipe on both pipe ends.
- D. Pipe Passing Through Quarry Tile, Terrazzo, or Ceramic Tile Floors:
1. Connect sleeve with floor plate.
- E. Pipe Passing Through Concrete Beam Flanges, except where Brass Pipe Sleeves are Specified:
1. Galvanized steel pipe or black iron pipe with asphalt coating.
  2. Connect sleeve with floor plate except in mechanical rooms.
- F. Pipe Passing Through Mechanical, Laundry, and Animal Room Floors above Basement:
1. Galvanized steel pipe or black iron pipe with asphalt coating.
  2. Connect sleeve with floor plate except in mechanical rooms.
- G. Not required for wall hydrants for fire department connections or in drywall construction.
- H. Penetrations in concrete beam flanges are permitted but are prohibited through ribs or beams without prior approval from the Architect.
- I. Clearances:

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1. Wall, Floor, Floor, Partitions, and Beam Flanges: 2 inch greater than external; pipe diameter.
2. All Rated Openings: Caulked tight with fire stopping material conforming to ASTM E814 in accordance with Section 078400 to prevent the spread of fire, smoke, and gases.

#### **2.04 MANUFACTURED SLEEVE-SEAL SYSTEMS**

- A. Manufacturers:
  1. Advance Products & Systems, Inc.
  2. The Metraflex Company.
  3. Trumbull Industries.
  4. Garlock
  5. Substitutions: See Section 016000 - Product Requirements.
- B. Modular/Mechanical Seal:
  1. Synthetic rubber interlocking links continuously fill annular space between pipe and wall/casing opening.
  2. Provide watertight seal between pipe and wall/casing opening.
  3. Elastomer element size and material in accordance with manufacturer's recommendations.
  4. Glass reinforced plastic pressure end plates.

#### **2.05 ESCUTCHEONS**

- A. Manufacturers:
  1. Victaulic.
  2. Globe
  3. Reliable
  4. Substitutions: See Section 016000 - Product Requirements.
- B. Material:
  1. Fabricate from nonferrous metal.
  2. Chrome-plated.
  3. Grade TP304, seamless tube, ASTM A269/A269M stainless steel.
  4. Metals and Finish: Comply with ASME A112.18.1.
- C. Construction:
  1. One-piece for mounting on chrome-plated tubing or pipe and one-piece or split-pattern type elsewhere.
  2. Internal spring tension devices or setscrews to maintain a fixed position against a surface.

#### **2.06 PIPE HANGERS AND SUPPORTS**

- A. Hangers for Pipe Sizes 1/2 to 1-1/2 inch: Malleable iron, adjustable swivel, split ring.
- B. Hangers for Pipe Sizes 2 inches and Over: Carbon steel, adjustable, clevis.
- C. Multiple or Trapeze Hangers: Steel channels with welded spacers and hanger rods.
- D. Wall Support for Pipe Sizes to 3 inches: Unistrut with clamp
- E. Wall Support for Pipe Sizes 4 inches and Over: Welded steel bracket and wrought steel clamp.
- F. Vertical Support: Steel riser clamp.
- G. Floor Support: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
- H. Copper Pipe Support: Carbon steel ring, adjustable, copper plated.
- I. Seismic Hangers and Couplings:

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1. Provide coupling with a factory set disengagement rating of 140 percent to 160 percent of the static weight.
2. Provide resettable and reusable, break away couplings.
3. Provide tether cables to avoid excessive seismic joint movement.
4. Coupling to be manufactured from non-corrosive materials.
5. Manufacturers:
  - a. The Metraflex Company; Seismic Breakaway Hanger
  - b. Substitutions: See Section 016000 - Product Requirements.

## 2.07 EXPANSION LOOPS - HOSE AND BRAID

- A. Manufacturers:
  1. The Metraflex Company; FireLoop
  2. Substitutions: See Section 016000 - Product Requirements.
- B. Provide flexible loops with two flexible sections of hose and braid, two 90 degree elbows, and 180 degree return with support bracket and air release or drain plug.
- C. Provide flexible loops capable of movement in the x, y, and z planes. Flexible loops to impart no thrust loads to the building structure.
- D. Flexible Connectors: Flanged, braided type with wetted components of stainless steel, sized to match piping.
  1. Maximum Allowable Working Pressure: 150 psig at 120 degrees F.
  2. End Connections: Same as specified for pipe jointing.
  3. End Connections: Flanged ductile iron; complying with ASME B16.5 Class 125.
  4. End Connections: Threaded; complying with ASME B16.11.
  5. Provide necessary accessories including, but not limited to, swivel joints.

## 2.08 MECHANICAL COUPLINGS

- A. Manufacturers:
  1. Victaulic Company; FireLock Style 009H
  2. Grinnell.
  3. Gruvlok.
  4. Substitutions: See Section 016000 - Product Requirements.
- B. Rigid Mechanical Couplings for Grooved Joints:
  1. Dimensions and Testing: Comply with AWWA C606.
  2. Minimum Working Pressure: 300 psig.
  3. Housing Material: Fabricate of ductile iron conforming to ASTM A536.
  4. Housing Coating: Factory applied orange enamel.
  5. Gasket Material: EPDM suitable for operating temperature range from minus 30 degrees F to 230 degrees F.
  6. Bolts and Nuts: Hot dipped galvanized or zinc electroplated steel.
  7. Provide stops for direct stab installation without field assembly.

## PART 3 EXECUTION

### 3.01 INSTALLERS

- A. Western Automatic Sprinkler.
- B. Frontier Fire
- C. Delta Fire
- D. Kimco

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- E. The Safety Team / Triple A Fire
- F. Preferred Fire
- G. Substitutions: See Section 016000 - Product Requirements.

### 3.02 PREPARATION

- A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
- B. Remove scale and foreign material, from inside and outside, before assembly.
- C. Prepare piping connections to equipment with flanges or unions.

### 3.03 INSTALLATION

- A. Install sprinkler system and service main piping, hangers, and supports in accordance with NFPA 13.
- B. Install standpipe piping, hangers, and supports in accordance with NFPA 14.
- C. Route piping in orderly manner, plumb and parallel to building structure. Maintain gradient.
- D. Install piping to conserve building space, to not interfere with use of space and other work.
- E. In areas with no ceiling, piping shall be installed as high as possible.
- F. In exposed piping situations, head fittings shall have a 1" minimum outlet with a bushing to accommodate future remodel work.
- G. Group piping, whenever practical, at common elevations.
- H. Floor control valves shall be installed 7'-0" maximum above finish floor, unless prior approval is received from BYU.
- I. All drain valves shall be discharged to the exterior of the building. In a below grade application, drain lines shall tie to an auxiliary drain, not a mop sink. Do not tie into any drain line without BYU approval.
- J. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
- K. Inserts:
  - 1. Provide inserts for placement in concrete formwork.
  - 2. Provide inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams.
  - 3. Provide hooked rod to concrete reinforcement section for inserts carrying pipe over 4 inches.
  - 4. Where concrete slabs form finished ceiling, locate inserts flush with slab surface.
  - 5. Where inserts are omitted, drill through concrete slab from below and provide through-bolt with recessed square steel plate and nut recessed into and grouted flush with slab.
- L. Pipe Hangers and Supports:
  - 1. Install hangers to provide minimum 1/2 inch space between finished covering and adjacent work.
  - 2. Place hangers within 12 inches of each horizontal elbow.
  - 3. Use hangers with 1-1/2 inch minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.
  - 4. Support vertical piping at every floor. Support riser piping independently of connected horizontal piping.
  - 5. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.
  - 6. Provide copper hangers and supports for copper piping.
  - 7. Prime coat exposed steel hangers and supports. Hangers and supports located in crawl spaces, pipe shafts, and suspended ceiling spaces are not considered exposed.
    - a. Painting of interior fire suppression systems is specified in Section 099123.

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- b. Painting of exterior fire suppression systems is specified in Section 099113.
- M. Slope piping for dry systems and arrange all systems to drain at low points. Use eccentric reducers to maintain top of pipe level.
- N. Prepare pipe, fittings, supports, and accessories for finish painting. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc rich primer to welding.
  - 1. Painting of interior fire suppression systems is specified in Section 099123.
  - 2. Painting of exterior fire suppression systems is specified in Section 099113.
- O. Structural Considerations:
  - 1. Do not penetrate building structural members unless indicated.
  - 2. Locate flexible expansion loops at or near the building seismic joint.
- P. Provide sleeves when penetrating footings, floors, walls, and partitions. Seal pipe including sleeve penetrations to achieve fire resistance equivalent to fire separation required.
  - 1. Aboveground Piping:
    - a. Pack solid using mineral fiber conforming to ASTM C592.
    - b. Fill space with an elastomer caulk to a depth of 0.50 inch where penetrations occur between conditioned and unconditioned spaces.
  - 2. All Rated Openings: Caulk tight with fire stopping material conforming to ASTM E814 in accordance with Section 078400 to prevent the spread of fire, smoke, and gases.
  - 3. Caulk exterior wall sleeves watertight with lead and oakum or mechanically expandable chloroprene inserts with mastic-sealed components.
- Q. Manufactured Sleeve-Seal Systems:
  - 1. Install manufactured sleeve-seal systems in sleeves located in grade slabs and exterior concrete walls at piping entrances into building.
  - 2. Provide sealing elements of the size, quantity, and type required for the piping and sleeve inner diameter or penetration diameter.
  - 3. Locate piping in center of sleeve or penetration.
  - 4. Install field assembled sleeve-seal system components in annular space between sleeve and piping.
  - 5. Tighten bolting for a water-tight seal.
  - 6. Install in accordance with manufacturer's recommendations.
- R. Escutcheons:
  - 1. Install and firmly attach escutcheons at piping penetrations into finished spaces.
  - 2. Provide escutcheons on both sides of partitions separating finished areas through which piping passes.
  - 3. Attach plates at the underside only of suspended ceilings.
  - 4. Use chrome plated escutcheons in occupied spaces and to conceal openings in construction.
- S. When installing more than one piping system material, ensure system components are compatible and joined to ensure the integrity of the system. Provide necessary joining fittings. Ensure flanges, union, and couplings for servicing are consistently provided.
- T. Die cut threaded joints with full cut standard taper pipe threads with Teflon tape and non-toxic joint compound applied to male threads only.

### 3.04 CLEANING

- A. Upon completion of work, clean all parts of the installation.
- B. Clean equipment, pipes, valves, and fittings of grease, metal cuttings, and sludge that may have accumulated from the installation and testing of the system.

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C. See Section 017419 - Construction Waste Management and Disposal, for additional requirements.

**END OF SECTION**

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## SECTION 210523

### GENERAL-DUTY VALVES FOR WATER-BASED FIRE-SUPPRESSION PIPING

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Bronze butterfly valves with indicators.
- B. Iron butterfly valves with indicators.
- C. Check valves.
- D. Iron OS&Y gate valves (only for fire pumps).
- E. Indicator posts.
- F. Trim and drain valves.

##### 1.02 RELATED REQUIREMENTS

- A. Section 078400 - Firestopping.
- B. Section 210500 - Common Work Results for Fire Suppression: Pipe and fittings.
- C. Section 210548 - Vibration and Seismic Controls for Fire Suppression Piping and Equipment.
- D. Section 210553 - Identification for Fire Suppression Piping and Equipment.
- E. Section 210719 - Fire Suppression Piping Insulation.
- F. Section 211200 - Fire-Suppression Standpipes.
- G. Section 211300 - Fire-Suppression Sprinkler Systems.
- H. Section 260583 - Wiring Connections: Electrical characteristics and wiring connections.
- I. Section 284600 - Fire Detection and Alarm.
- J. Section 331416 - Site Water Utility Distribution Piping.

##### 1.03 ABBREVIATIONS AND ACRONYMS

- A. EPDM: Ethylene-propylene diene monomer.
- B. NBR: Acrylonitrile-butadiene, Buna-N, or nitrile rubber.
- C. NRS: Non-rising stem.
- D. OS&Y: Outside screw and yoke.
- E. PTFE: Polytetrafluoroethylene.
- F. SBR: Styrene-butadiene rubber.

##### 1.04 REFERENCE STANDARDS

- A. ASME B1.20.1 - Pipe Threads, General Purpose (Inch); 2013.
- B. ASME B16.1 - Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250; 2015.
- C. ASME B31.9 - Building Services Piping; 2014.
- D. ASME BPVC-IX - Boiler and Pressure Vessel Code, Section IX - Welding, Brazing, and Fusing Procedures; Welders; Braziers; and Welding, Brazing and Fusing Operators; 2017.
- E. AWWA C606 - Grooved and Shouldered Joints; 2015.
- F. NFPA 13 - Standard for the Installation of Sprinkler Systems; 2016.
- G. NFPA 13R - Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies; 2016.

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- H. UL (DIR) - Online Certifications Directory; current listings at database.ul.com.
- I. UL 262 - Gate Valves for Fire-Protection Service; Current Edition, Including All Revisions.
- J. UL 312 - Check Valves for Fire-Protection Service; Current Edition, Including All Revisions.
- K. UL 789 - Indicator Posts for Fire-Protection Service; Current Edition, Including All Revisions.
- L. UL 1091 - Standard for Butterfly Valves for Fire-Protection Service; Current Edition, Including All Revisions.

#### **1.05 ADMINISTRATIVE REQUIREMENTS**

- A. Preinstallation Meeting: Conduct a preinstallation meeting at least one week prior to the start of the work of this section; require attendance by all affected installers.

#### **1.06 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on valves including manufacturers catalog information. Submit performance ratings, rough-in details, weights, support requirements, and piping connections.
- C. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.
- D. Operation and Maintenance Data: Include manufacturer's descriptive literature, operating instructions, maintenance and repair data, and parts listings.

#### **1.07 QUALITY ASSURANCE**

- A. U.S. made domestic equipment, pipes, valves, and fittings.
- B. Manufacturer Qualifications:
  - 1. Company must specialize in manufacturing products specified in this section, with not less than five years of documented experience.
- C. Where listed products are specified, provide products listed, classified, and labeled by UL (DIR) or testing firm acceptable to authorities having jurisdiction as suitable for the purpose indicated.
- D. Welding Materials and Procedures: Conform to ASME BPVC-IX.
- E. Installer Qualifications:
  - 1. Company specializing in performing the work of this section with minimum three years documented experience.
  - 2. Trained and approved by manufacturer to design, install, test and maintain the equipment specified herein.
  - 3. Complies with manufacturer's certification requirements.
  - 4. Complies with manufacturer's insurance requirements.

#### **1.08 DELIVERY, STORAGE, AND HANDLING**

- A. Prepare valves for shipping as follows:
  - 1. Protect internal parts against rust and corrosion.
  - 2. Protect threads, flange faces, and weld ends.
  - 3. Set valves open to minimize exposure of functional surfaces.
- B. Use the following precautions during storage:
  - 1. Maintain valve end protection and protect flanges and specialties from dirt.
    - a. Provide temporary inlet and outlet caps.
    - b. Maintain caps in place until installation.
  - 2. Store valves in shipping containers and maintain in place until installation.
    - a. Store valves indoors and maintain at higher than ambient dew point temperature.

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- b. If outdoor storage is unavoidable, store valves off the ground in watertight enclosures.
- C. Use the following precautions for handling:
  - 1. Use sling to handle large valves, rigged to avoid damage to exposed parts.
  - 2. Do not use operating handles or stems as lifting or rigging points.

## **PART 2 PRODUCTS**

### **2.01 GENERAL REQUIREMENTS**

- A. UL Listed: Provide valves listed in UL (DIR) under following headings and bearing UL mark:
  - 1. Main Level: HAMV - Fire Main Equipment.
    - a. Level 1: HCBZ - Indicator Posts, Gate Valve.
    - b. Level 1: HLOT - Valves.
    - c. Level 3: HLUG - Ball Valves, System Control.
    - d. Level 3: HLXS - Butterfly Valves.
    - e. Level 3: HMER - Check Valves.
    - f. Level 3: HMRZ - Gate Valves.
  - 2. Main Level: VDGT - Sprinkler System & Water Spray System Devices.
    - a. Level 1: VQGU - Valves, Trim, and Drain.
- B. ASME Compliance:
  - 1. ASME B16.1 for flanges on iron valves.
  - 2. ASME B1.20.1 for threads on threaded-end valves.
  - 3. ASME B31.9 for building services piping valves.
- C. Comply with AWWA C606 for grooved-end connections.
- D. Comply with NFPA 13 and NFPA 13R for valves.
- E. Valve Pressure Ratings: Not less than minimum 200 psi pressure rating or higher as required.
- F. Valve Sizes: Same as upstream piping unless otherwise indicated.
- G. Valve Actuator Types:
  - 1. Worm-gear actuator with handwheel for quarter-turn valves, except trim and drain valves.
  - 2. Handwheel: For other than quarter-turn trim and drain valves.
  - 3. Hand-lever: For quarter-turn trim and drain valves 2 NPS and smaller.

### **2.02 TWO-PIECE BALL VALVES WITH INDICATORS**

- A. Manufacturers:
  - 1. Victaulic.
  - 2. Nibco.
  - 3. Apollo.
  - 4. Watts.
- B. Description:
  - 1. Minimum Pressure Rating: 175 psig.
  - 2. Body Design: Two piece.
  - 3. Body Material: Forged brass or bronze.
  - 4. Port Size: Full or standard.
  - 5. Seat: PTFE.
  - 6. Stem: Stainless steel.
  - 7. Ball: Stainless steel.
  - 8. Actuator: Hand-lever, quarter-turn.
  - 9. Supervisory Switch: Internal or external.

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- 10. End Connections for Valves 1 NPS through 2 NPS: Threaded ends.
- 11. End Connections for Valves 2-1/2 NPS: Grooved ends.

**2.03 BRONZE BUTTERFLY VALVES WITH INDICATORS**

- A. Manufacturers:
  - 1. Nibco.
  - 2. Apollo.
  - 3. Watts.
  - 4. Substitutions: See Section 016000 - Product Requirements.
- B. UL 1091 standard listing for indicating valves, (butterfly or ball type), Class Number 1112.
- C. Minimum Pressure Rating: 200 psig
- D. Body Material: Bronze.
- E. Seat: EPDM.
- F. Stem: Bronze or stainless steel.
- G. Disc: Bronze with EPDM coating.
- H. Actuator: Worm gear or traveling nut.
- I. Supervisory Switch: Internal or external.
- J. End Connections for Valves 1 NPS through 2 NPS: Threaded or Grooved ends.
- K. End Connections for Valves 2-1/2 NPS and above: Grooved ends.

**2.04 IRON BUTTERFLY VALVES WITH INDICATORS**

- A. Manufacturers:
  - 1. Victaulic
  - 2. Nibco
  - 3. Apollo
  - 4. Watts
  - 5. Substitutions: See Section 016000 - Product Requirements.
- B. UL 1091 standard listing for indicating valves, (butterfly or ball type), Class Number 1112.
- C. Minimum Pressure Rating: 200 psi
- D. Body Material: Cast or ductile iron with epoxy coating.
- E. Seat: EPDM.
- F. Stem: Stainless steel.
- G. Disc: Ductile iron, EPDM or SBR coated.
- H. Actuator: Worm gear or traveling nut.
- I. Supervisory Switch: Internal only
- J. End Connections for Valves 1 NPS through 2 NPS: Threaded or Grooved ends.
- K. End Connections for Valves 2-1/2 NPS and above: Grooved ends.

**2.05 CHECK VALVES**

- A. Manufacturers:
  - 1. Victaulic
  - 2. Nibco
  - 3. Apollo
  - 4. Watts

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- 5. Substitutions: See Section 016000 - Product Requirements.
- B. UL 1091 standard listing for indicating valves, (butterfly or ball type), Class Number 1112.
- C. Minimum Pressure Rating: [ ]00psig
- D. Type: Center guided check valve.
- E. Body Material: Cast iron, ductile iron.
- F. Center guided check with elastomeric seal.
- G. Hinge Spring: Stainless steel.
- H. End Connections: Flanged, grooved, or threaded.

**2.06 NRS GATE VALVES**

- A. Manufacturers:
  - 1. Mueller.
  - 2. American.
  - 3. Kennedy Valve; www.kennedyvalve.com
  - 4. Substitutions: See Section 016000 - Product Requirements.
- B. Minimum Pressure Rating: 175 psig.
- C. Body and Bonnet Material: Cast or ductile iron with epoxy coating.
- D. Wedge: Cast or ductile iron with elastomeric coating.
- E. Stem: Brass or bronze.
- F. Packing: Non-asbestos PTFE.
- G. Supervisory Switch: External.
- H. End Connections: Flanged.

**2.07 INDICATOR POSTS**

- A. Manufacturers:
  - 1. Kennedy Valve; \_\_\_\_\_: www.kennedyvalve.com
  - 2. Mueller.
  - 3. American.
  - 4. Substitutions: See Section 016000 - Product Requirements.
- B. UL 789 standard listing for indicator posts.
- C. Type: Underground.
- D. Base Barrel Material: Cast or ductile iron.
- E. Extension Barrel for Adjustable Length Indicator Posts: Cast or ductile iron.
- F. Cap: Cast or ductile iron.
- G. Operation: Wrench.

**2.08 TRIM AND DRAIN VALVES**

- A. Ball Valves:
  - 1. Description:
    - a. Pressure Rating: 250 psig.
    - b. Body Design: Two piece.
    - c. Body Material: Forged brass or bronze.
    - d. Port Size: Full port.
    - e. Seat: PTFE.

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- f. Stem: Stainless Steel.
  - g. Ball: Stainless Steel.
  - h. Actuator: Hand-lever.
  - i. End Connections for Valves 1 NPS through 2-1/2 NPS: Threaded ends.
  - j. End Connections for Valves 1-1/4 NPS and 2-1/2 NPS: Grooved ends.
- B. Angle Valves:
- 1. Description:
    - a. Pressure Rating: 250 psig.
    - b. Body Material: Brass or bronze.
    - c. Ends: Threaded.
    - d. Stem: Brase.
    - e. Disc: Bronze.
    - f. Packing: Asbestos free.
    - g. Handwheel: Malleable iron, bronze, or aluminum.
- C. Globe Valves:
- 1. Description:
    - a. Pressure Rating: 250 psig.
    - b. Body Material: Bronze with integral seat and screw-in bonnet.
    - c. Ends: Threaded.
    - d. Stem: Bronze.
    - e. Disc Holder and Nut: Bronze.
    - f. Disc Seat: Nitrile.
    - g. Packing: Asbestos free.
    - h. Handwheel: Malleable iron, bronze, or aluminum.

### PART 3 EXECUTION

#### 3.01 EXAMINATION

- A. Confirm valve interior to be free of foreign matter and corrosion.
- B. Remove packing materials.
- C. Examine guides and seats by operating valves from the fully open position to the fully closed position.
- D. Examine valve threads and mating pipe for form and cleanliness.
- E. Examine mating flange faces for conditions that might cause leakage.
  - 1. Check bolting for proper size, length, and material.
  - 2. Verify gasket for size, defects, damage, and suitable material composition for service.
  - 3. Replace all defective valves with new valves.

#### 3.02 INSTALLATION

- A. Comply with specific valve installation requirements and application in the following Sections:
  - 1. Section 211200 for application of valves in fire-suppression standpipes.
  - 2. Section 211300 for application of valves in wet and dry pipe, fire-suppression sprinkler systems.
  - 3. Section 331416 for application of valves in fire-suppression water-service piping outside the building.
- B. Install listed fire protection shutoff valves supervised-open, located to control sources of water supply except from fire department connections.
  - 1. Install permanent identification signs indicating portion of system controlled by each valve.
  - 2. Provide 11"x17" laminated fire sprinkler zone plan at each control valve indicating portion of system controlled by each valve. Hang plans from valve.

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- C. Install testable double check backflow preventer at potable water supply connection to fire protection system.
  - 1. Test backflow preventer within ten days of system being in service and provide test documentation to BYU project manager.
- D. Valves in horizontal piping installed with stem at or above the pipe center.
- E. Position valves to allow full stem movement.
- F. Install valve tags. Comply with Section 210553 requirements for valve tags, schedules, and signs on surfaces concealing valves; and the appropriate NFPA standard applying to the piping system in which valves are installed.
- G. Floor control valves shall be installed 7'-0" maximum above finish floor, unless prior approval is received from BYU.

**END OF SECTION**

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## SECTION 210548

### VIBRATION AND SEISMIC CONTROLS FOR FIRE SUPPRESSION PIPING AND EQUIPMENT

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Seismic control requirements.
- B. Seismic restraints for suspended components and equipment.

##### 1.02 RELATED REQUIREMENTS

- A. Section 033000 - Cast-in-Place Concrete.
- B. Section 055000 - Metal Fabrications: Materials and requirements for fabricated metal supports.
- C. Section 220548 - Vibration and Seismic Controls for Plumbing Piping and Equipment
- D. Section 230548 - Vibration and Seismic Controls for HVAC Piping and Equipment

##### 1.03 DEFINITIONS

- A. Fire Suppression Component: Where referenced in this section in regards to seismic controls, applies to any portion of the fire suppression system subject to seismic evaluation in accordance with applicable codes, including distributed systems (e.g., piping).
- B. Seismic Restraint: Structural members or assemblies of members or manufactured elements specifically designed and applied for transmitting seismic forces between components and the seismic force-resisting system of the structure.

##### 1.04 REFERENCE STANDARDS

- A. ASCE 7 - Minimum Design Loads for Buildings and Other Structures; 2010, with 2013 Supplements and Errata.
- B. FEMA E-74 - Reducing the Risks of Nonstructural Earthquake Damage; 2011.
- C. ICC (IBC) - International Building Code; 2015.
- D. NFPA 13 - Standard for the Installation of Sprinkler Systems; 2016.
- E. UL 203A - Standard for Sway Brace Devices for Sprinkler System Piping; Current Edition, Including All Revisions.

##### 1.05 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
  - 1. Coordinate selection and arrangement of vibration isolation and/or seismic control components with the actual equipment to be installed.
  - 2. Coordinate the work with other trades to provide additional framing and materials required for installation.
  - 3. Coordinate compatibility of support and attachment components with mounting surfaces at the installed locations.
  - 4. Seismic Controls:
    - a. Coordinate the arrangement of seismic restraints with piping, conduit, equipment, and other potential conflicts installed under other sections or by others.
    - b. Coordinate the work with other trades to accommodate relative positioning of essential and nonessential components in consideration of seismic interaction.
  - 5. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

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- B. Sequencing:
  - 1. Do not install products on or provide attachment to concrete surfaces until concrete has fully cured in accordance with Section 033000.

### 1.06 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Design Documents: Prepare and submit all information required for plan review and permitting by authorities having jurisdiction, including but not limited to floor plans, details, and calculations.
- C. Product Data: Provide manufacturer's standard catalog pages and data sheets for products, including materials, fabrication details, dimensions, and finishes.
  - 1. Vibration Isolators: Include rated load capacities and deflections; include information on color coding or other identification methods for spring element load capacities.
  - 2. Seismic Controls: Include seismic load capacities.
- D. Shop Drawings - Seismic Controls:
  - 1. Include dimensioned plan views and sections indicating proposed fire suppression component locations and distributed system routing, with locations and details of gravity supports and seismic restraints and associated attachments.
- E. Field quality control test reports.

### 1.07 QUALITY ASSURANCE

- A. Comply with applicable building code.
- B. Seismic Controls Designer Qualifications: Registered professional engineer licensed in Utah and with minimum five years' experience designing seismic restraints for nonstructural components.
- C. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum five years documented experience.

### 1.08 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

## PART 2 PRODUCTS

### 2.01 SEISMIC CONTROL REQUIREMENTS

- A. Design and provide fire suppression component restraints, supports, and attachments suitable for seismic loads determined in accordance with applicable codes, as well as gravity and operating loads and other structural design considerations of the installed location. Consider wind loads for outdoor fire suppression components.
- B. Seismic Design Criteria: ICC (IBC)/ASCE 7/NFPA 13.
- C. Component Importance Factor (Ip): Fire suppression components to be assigned a component importance factor (Ip) of 1.5 unless otherwise indicated.
- D. Seismic Restraints:
  - 1. Provide seismic restraints for fire suppression components except where exempt according to applicable codes and specified seismic design criteria, as approved by authorities having jurisdiction.
  - 2. Seismic restraint capacities to be verified by a Nationally Recognized Testing Laboratory (NRTL) or certified by an independent third-party registered professional engineer acceptable to authorities having jurisdiction.
- E. Seismic Attachments:

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1. Comply with support and attachment requirements of NFPA 13.

F. Seismic Interactions:

1. Include provisions to prevent seismic impact between fire suppression components and other structural or nonstructural components.
2. Include provisions such that failure of a component, either essential or nonessential, does not cause the failure of an essential component.
3. Comply with minimum clearance requirements between other equipment, distribution systems, and associated supports and fire protection sprinkler system drops and sprigs.

G. Seismic Relative Displacement Provisions:

1. Use suitable fittings or flexible connections, in accordance with NFPA 13.
2. Provide clearance around fire suppression system piping extending through walls, floors, platforms, and foundations in accordance with NFPA 13.

**2.02 MANUFACTURERS**

A. Substitutions: See Section 016000 - Product Requirements.

**2.03 PERFORMANCE REQUIREMENTS**

A. General:

1. All vibration isolators, base frames and inertia bases to conform to all uniform deflection and stability requirements under all operating loads.
2. Steel springs to function without undue stress or overloading.
3. Steel springs to operate in the linear portion of the load versus deflection curve over deflection range of not less than 50 percent above specified deflection.
4. Lateral to vertical stiffness ratio to not exceed 0.08 with spring deflection at minimum 75 percent of specified deflection.
5. All equipment mounted on vibration isolated bases to have minimum operating clearance of 2 inches between the base and floor or support beneath unless noted otherwise.

**2.04 SEISMIC RESTRAINTS FOR SUSPENDED COMPONENTS AND EQUIPMENT**

A. Products to be listed in accordance with the requirements of NFPA 13.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify that field measurements are as shown on the drawings.
- B. Verify that mounting surfaces are ready to receive vibration isolation and/or seismic control components and associated attachments.
- C. Verify that conditions are satisfactory for installation prior to starting work.

**3.02 INSTALLATION**

- A. Install products in accordance with manufacturer's instructions.
- B. Comply with the requirements of NFPA 13.
- C. Install anchors and fasteners in accordance with ICC Evaluation Services, LLC (ICC-ES) evaluation report conditions of use where applicable.
- D. Secure fasteners according to manufacturer's recommended torque settings.
- E. Field-Welding (where approved by Architect): Comply with Section 055000.
- F. Install flexible piping connections to provide sufficient slack for vibration isolation and/or seismic relative displacements as indicated or as required.

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### 3.03 FIELD QUALITY CONTROL

- A. See Section 014000 - Quality Requirements, for additional requirements.
- B. Inspect vibration isolation and/or seismic control components for damage and defects.
- C. Correct deficiencies and replace damaged or defective vibration isolation and/or seismic control components.
- D. Submit detailed reports indicating inspection and testing results and corrective actions taken.
- E. Inspect isolated equipment after installation and submit report. Include static deflections.
- F. Seismic inspection in the presence of Authority Having Jurisdiction, at time of hydrostatic test.

**END OF SECTION**

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## SECTION 210553

### IDENTIFICATION FOR FIRE SUPPRESSION PIPING AND EQUIPMENT

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Nameplates.
- B. Tags.
- C. Laminated Fire Sprinkler Zone Plans

##### 1.02 REFERENCE STANDARDS

- A. NFPA 13
- B. ASME A13.1 - Scheme for the Identification of Piping Systems; 2015.
- C. ASTM D709 - Standard Specification for Laminated Thermosetting Materials; 2017.

##### 1.03 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. List: Submit list of wording, symbols, letter size, and color coding for mechanical identification.
- C. Chart and Schedule: Submit valve chart and schedule, including valve tag number, location, function, and valve manufacturer's name and model number. Shall be in laminated design drawings hung at each control valve.
- D. Product Data: Provide manufacturers catalog literature for each product required.
- E. Manufacturer's Installation Instructions: Indicate special procedures, and installation instructions.
- F. Project Record Documents: Record actual locations of tagged valves to be submitted to owner.

#### PART 2 PRODUCTS

##### 2.01 IDENTIFICATION APPLICATIONS

- A. Automatic Controls: Nameplates.
- B. Instrumentation: Nameplates.
- C. Pumps: Nameplates.
- D. Small-sized Equipment: Nameplates.
- E. Floor Control Valves: Nameplates and Laminated Fire Sprinkler Zone Plans

##### 2.02 NAMEPLATES

- A. Description: Laminated three-layer plastic with engraved letters.
  - 1. Letter Color: Red.
  - 2. Letter Height: 1/2 inch.
  - 3. Background Color: White.
  - 4. Thickness: 1/16" - 1/8" inch.
  - 5. Plastic: Conform to ASTM D709.

##### 2.03 LAMINATED FIRE SPRINKLER ZONE PLANS

- A. Description: 11"x17" laminated fire sprinkler zone plan at each control valve indicating portion of system controlled by each valve. Hang plans from valve.

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## **PART 3 EXECUTION**

### **3.01 PREPARATION**

- A. Degrease and clean surfaces to receive adhesive for identification materials.

### **3.02 INSTALLATION**

- A. Install nameplates with corrosive-resistant mechanical fasteners, or adhesive. Apply with sufficient adhesive to ensure permanent adhesion and seal with clear lacquer.
- B. Install nameplates with corrosion resistant chain, when used.

**END OF SECTION**

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**SECTION 211200**  
**FIRE-SUPPRESSION STANDPIPES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Fire hose cabinets.
- B. Valves.
- C. Fire department connections.
- D. Fire extinguishers.

**1.02 RELATED REQUIREMENTS**

- A. Section 013000 - Administrative Requirements: Submittal procedures, project meetings, progress schedules and documentation, reports, coordination.
- B. Section 014100 - Regulatory Requirements.
- C. Section 016000 - Product Requirements: Fundamental product requirements, substitutions and product options, delivery, storage, and handling.
- D. Section 017800 - Closeout Submittals: Project record documents, operation and maintenance (O&M) data, warranties and bonds.
- E. Section 104400 - Fire Protection Specialties.
- F. Section 210500 - Common Work Results for Fire Suppression: Fire protection piping.
- G. Section 210523 - General-Duty Valves for Water-Based Fire-Suppression Piping.
- H. Section 210553 - Identification for Fire Suppression Piping and Equipment.
- I. Section 211300 - Fire-Suppression Sprinkler Systems.
- J. Section 260583 - Wiring Connections: Electrical characteristics and wiring connections.

**1.03 REFERENCE STANDARDS**

- A. ITS (DIR) - Directory of Listed Products; current edition.
- B. NFPA 10 - Standard for Portable Fire Extinguishers; 2013.
- C. NFPA 14 - Standard for the Installation of Standpipe and Hose Systems; 2016.
- D. NFPA 1963 - Standard for Fire Hose Connections; 2014.
- E. UL 405 - Fire Department Connection Devices; Current Edition; Including All Revisions.
- F. UL (DIR) - Online Certifications Directory; current listings at database.ul.com.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Preinstallation Meeting: Conduct a preinstallation meeting prior to the start of the work of this section; require attendance by all affected installers.

**1.05 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's catalog sheet for equipment indicating rough-in size, finish, and accessories.
- C. Shop Drawings: Indicate supports, components, accessories, and sizes.
  - 1. Submit proof of AHJ approval to BYU Construction Project Manager.
- D. Project Record Documents: Record actual locations of components.

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- E. Operation Data: Include appropriate manufacturer's data.
- F. Certificates: Provide certificate of compliance from authority having jurisdiction indicating approval of field acceptance tests.

**1.06 QUALITY ASSURANCE**

- A. Perform Work in accordance with NFPA 14.
- B. Installer Qualifications: Company specializing in performing the work of this section with minimum 3 years documented experience.

**1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver and store products in shipping packaging until installation.

**1.08 WARRANTY**

- A. See Section 017800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective Work within a 1 year period after Date of Substantial Completion.
- C. Provide standard manufacturer warranty for all components listed in this section.

**PART 2 PRODUCTS**

**2.01 FIRE HOSE CABINETS**

- A. Cabinet:
  - 1. Style: Recessed mounted.
  - 2. Tub: 16 gage, 0.0598 inch thick steel, prepared for pipe and accessory rough-in.
  - 3. Door: 12 gage, 0.1046 inch thick steel, flush, glazed with 1/4 inch (6.35 mm) thick wired glass full panel; hinged, positive latch device.
  - 4. Finish: Enameled, color as selected.

**2.02 VALVES**

- A. General Duty Valves: Refer to Section 210523.
- B. Specialty Valves:
  - 1. Hose Connection Valve:
    - a. Angle type; brass finish; 2-1/2 NPS, thread to match fire department hardware, 300 psi working pressure, with threaded cap and chain of same material and finish.

**2.03 FIRE DEPARTMENT CONNECTIONS**

- A. 5" Storz Connection as per AHJ
  - 1. Signage: Raised or engraved lettering 1 inch minimum indicating system type.
  - 2. Ball drip for drainage.

**2.04 FIRE EXTINGUISHERS**

- A. General: Comply with NFPA 10; FM (AG), ITS (DIR), and UL (DIR) listed product.
- B. Provide the proper size and type of fire extinguisher to cover the hazard.
- C. Fire extinguishers shall be able to be recharged and inspected.
- D. Fire extinguishers shall not have plastic heads or handles.

**PART 3 EXECUTION**

**3.01 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Install in accordance with NFPA 14.
- C. Locate and secure cabinets plumb and level.

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- D. Connect standpipe system to water source ahead of domestic water connection.
- E. Provide two way fire department outlet connection on roof.
- F. Flush entire system of foreign matter.
- G. Verify that hose connections and fire department connections have threads compatible with local fire department equipment.

**3.02 FIELD QUALITY CONTROL**

- A. Perform field inspection and testing (Field Acceptance Test) in accordance with Section 014000.
- B. Test entire system in accordance with NFPA 14.
- C. Test shall be witnessed by Fire Marshal, Authority Having Jurisdiction, and BYU Fire Marshall.

**END OF SECTION**

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**SECTION 211300**  
**FIRE-SUPPRESSION SPRINKLER SYSTEMS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Wet-pipe sprinkler system.
- B. Dry-pipe sprinkler system.
- C. Pre-action sprinkler system.
- D. System design, installation, and certification.
- E. Fire department connections.

**1.02 RELATED REQUIREMENTS**

- A. Section 078400 - Firestopping.
- B. Section 083477 - Smoke and Fire Protective Curtain Assemblies: Smoke and fire curtains to be released by activation of sprinkler system.
- C. Section 210500 - Common Work Results for Fire Suppression: Pipe and fittings.
- D. Section 210523 - General-Duty Valves for Water-Based Fire-Suppression Piping.
- E. Section 210548 - Vibration and Seismic Controls for Fire Suppression Piping and Equipment.
- F. Section 210553 - Identification for Fire Suppression Piping and Equipment.
- G. Section 211200 - Fire-Suppression Standpipes.
- H. Section 260583 - Wiring Connections: Electrical characteristics and wiring connections.
- I. Section 284600 - Fire Detection and Alarm.

**1.03 REFERENCE STANDARDS**

- A. ICC-ES AC01 - Acceptance Criteria for Expansion Anchors in Masonry Elements; 2015.
- B. ICC-ES AC106 - Acceptance Criteria for Predrilled Fasteners (Screw Anchors) in Masonry Elements; 2015.
- C. ICC-ES AC193 - Acceptance Criteria for Mechanical Anchors in Concrete Elements; 2015.
- D. ITS (DIR) - Directory of Listed Products; current edition.
- E. NFPA 13 - Standard for the Installation of Sprinkler Systems; 2016.
- F. NFPA 13R - Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies; 2016.
- G. UL (DIR) - Online Certifications Directory; current listings at database.ul.com.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Preinstallation Meeting: Conduct a preinstallation meeting prior to the start of the work of this section; require attendance by all affected installers. First install scope shall be determined at this meeting.

**1.05 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on sprinklers, valves, and specialties, including manufacturers catalog information. Submit performance ratings, rough-in details, weights, support requirements, and piping connections.
- C. Shop Drawings:

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1. Submit preliminary layout of finished ceiling areas indicating only sprinkler locations coordinated with ceiling installation.
  2. Indicate hydraulic calculations, detailed pipe layout, hangers and supports, seismic bracing, sprinklers, components and accessories. Indicate system controls.
  3. Submit shop drawings, product data, and hydraulic calculations to AHJ and BYU Fire Marshal for approval. Submit proof of approval to Architect.
- D. Manufacturer's Certificate: Certify that system has been tested and meets or exceeds specified requirements and code requirements.
- E. Designer's Qualification Statement.
- F. Manufacturer's Qualification Statement.
- G. Installer's Qualification Statement.
- H. Operation and Maintenance Data: Include components of system, servicing requirements, record drawings, inspection data, replacement part numbers and availability, and location and numbers of service depot.
- I. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
1. See Section 016000 - Product Requirements, for additional provisions.
  2. Extra Sprinklers: Type and size matching those installed, in quantity required by referenced NFPA design and installation standard.
  3. Sprinkler Wrenches: For each sprinkler type.
- J. Project Record Documents: Record actual locations of sprinklers and deviations of piping from drawings. Indicate drain and test locations.

#### 1.06 QUALITY ASSURANCE

- A. Designer Qualifications: Professional Fire Protection Engineer Utah or NICET Level III Technician.
- B. Margin of Safety for Available Water Flow and Pressure: 10 percent, including losses through water-service piping, valves, and backflow preventers.
- C. Water Velocity: the maximum water velocity shall not exceed 32 fps.
- D. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum five years documented experience.
- E. Installer Qualifications: Company specializing in performing the work of this section with minimum three years' experience and approved by manufacturer.
- F. Equipment and Components: Provide products that bear UL (DIR) label or marking. All products shall be domestic only.
- G. Products Requiring Electrical Connection: Listed and classified by UL (DIR) as suitable for the purpose specified and indicated.

#### 1.07 FIRST INSTALL

- A. Provide components for installation in first install.
- B. First install may remain as part of the Work.
- C. Owner shall be invited to participate.

#### 1.08 DELIVERY, STORAGE, AND HANDLING

- A. Store products in shipping containers and maintain in place until installation. Provide temporary inlet and outlet caps. Maintain caps in place until installation.
- B. Schedule inspection of material with Owner prior to first install.

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## PART 2 PRODUCTS

### 2.01 SPRINKLER SYSTEM

- A. Sprinkler System: Provide coverage for entire building.
- B. Occupancy: comply with NFPA 13.
- C. Water Supply: Determine volume and pressure from water flow test data.
  - 1. Contractor shall perform flow test.
- D. Interface system with building control system.
- E. Provide fire department connections where indicated.
- F. Storage Cabinet for Spare Sprinklers and Tools: Steel, in location designated.
- G. Pipe Hanger Fasteners: Attach hangers to structure using appropriate fasteners, as follows:
  - 1. Concrete Wedge Expansion Anchors: Complying with ICC-ES AC193.
  - 2. Masonry Wedge Expansion Anchors: Complying with ICC-ES AC01.
  - 3. Concrete Screw Type Anchors: Complying with ICC-ES AC193.
  - 4. Masonry Screw Type Anchors: Complying with ICC-ES AC106.

### 2.02 SPRINKLERS

- A. Suspended Ceiling Type: Concealed pendant type with matching screw on escutcheon plate.
  - 1. Response Type: Quick.
  - 2. Coverage Type: Standard.
  - 3. Finish: Brass.
  - 4. Escutcheon Plate Finish: Enamel, color as selected.
  - 5. Fusible Link: Glass bulb type temperature rated for specific area hazard.
  - 6. Manufacturers:
    - a. Victaulic.
    - b. Globe.
    - c. Reliable.
- B. Exposed Area Type: Pendant or Upright type with guard in minimum 1" fitting with bushing.
  - 1. Response Type: Quick.
  - 2. Coverage Type: Standard.
  - 3. Finish: Brass.
  - 4. Fusible Link: Glass bulb type temperature rated for specific area hazard.
  - 5. Manufacturers:
    - a. Victaulic.
    - b. Globe.
    - c. Reliable.
- C. Sidewall Type: Semi-recessed horizontal sidewall type with matching push on escutcheon plate.
  - 1. Response Type: Quick.
  - 2. Coverage Type: Standard.
  - 3. Finish: Brass.
  - 4. Escutcheon Plate Finish: Enamel, color as selected.
  - 5. Fusible Link: Glass bulb type temperature rated for specific area hazard.
  - 6. Manufacturers:
    - a. Victaulic.
    - b. Globe.
    - c. Reliable.
- D. Dry Sprinklers: Semi-Recessed Pendant type with matching escutcheon plate.

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1. Response Type: Quick.
  2. Coverage Type: Standard.
  3. Finish: Brass.
  4. Escutcheon Plate Finish: Enamel, color as selected.
  5. Fusible Link: Glass bulb type temperature rated for specific area hazard.
  6. Manufacturers:
    - a. Victaulic.
    - b. Globe.
    - c. Reliable.
- E. Flexible Drop System: Stainless steel, minimum of 5 bends.
1. Application: Use to properly locate sprinkler heads.
  2. Include all supports and bracing.
  3. Provide braided type tube as required for the application.
  4. Manufacturers:
    - a. Victaulic Company; AH2 or AH2CC.
    - b. Viking; Superflex.
    - c. Substitutions: See Section 016000 - Product Requirements.

### 2.03 PIPING SPECIALTIES

- A. Dry Pipe Sprinkler Alarm Valve: Check type valve with divided seat ring, rubber faced clapper to automatically actuate water motor alarm, accelerator, and with the following additional capabilities and features:
1. Activate electric alarm.
  2. Test and drain valve.
  3. Externally resettable.
  4. Replaceable internal components without removing valve from installed position.
  5. Manufacturers:
    - a. Victaulic Company; Series 768 - NXT: [www.victaulic.com](http://www.victaulic.com).
- B. Pre-action Valve:
1. Operated by detection system listed for releasing service and independent of building fire alarm system with provisions for local, manual, and indicated remote releases.
  2. Provide test detection device for each actuation circuit adjacent to each controlled valve in accordance with NFPA 13.
  3. Manufacturers:
    - a. Victaulic Company; Model 769N \_\_\_\_\_.
- C. Backflow Preventer: Double check valve assembly backflow preventer with drain and butterfly valve with tamper switch on each end.
1. Manufacturers:
    - a. Ames; Colt 200.
    - b. Wilkins; Model 957.
    - c. Apollo; Model DCLF4A.
- D. Test Connections:
1. Inspector's Test Connection:
    - a. Provide test connections approximately 6 ft above floor for each or portion of each sprinkler system equipped with an alarm device, located at the most remote part of each system.
    - b. Route test connection to an open-site drain location on exterior of the building.
      - 1) In basement locations, route to auxiliary drain.
      - 2) Drain location shall accept full flow without negative consequences.
      - 3) Draining to mop sinks is not allowed.

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- c. Supply discharge orifice with same size as corresponding sprinkler orifice.
- d. Limit vertical height of exterior wall penetration to 2 ft above finished grade.
- E. Water Flow Switch: Key activated. Vane type switch for mounting horizontal or vertical.
  - 1. Manufacturers:
    - a. Potter; Model VSR-AT.
- F. Fire Department Connections:
  - 1. 5" Storz Connection as per AHJ
    - a. Signage: Raised or engraved lettering 1 inch minimum indicating system type.
  - 2. **Requires 24V power. Coordinate with electrician.**

## 2.04 AIR COMPRESSOR

- A. Compressor: Single-unit, electric motor driven, motor, motor starter, safety valves, check valves, air maintenance device incorporating electric pressure switch and unloader valve.

## 2.05 NITROGEN GENERATOR

- A. Provide piping and accessories to connect to dry and pre-action fire suppression systems.
- B. Accessories:
  - 1. Provide air maintenance device.
  - 2. Provide nitrogen storage tank sized to comply with NFPA 13.
  - 3. Provide purge valves to remove oxygen from the system.
  - 4. Provide nitrogen analyzer to determine the nitrogen purity.
  - 5. Provide system with replaceable filters.

## PART 3 EXECUTION

### 3.01 INSTALLATION

- A. Install in accordance with referenced NFPA design and installation standard.
- B. Install equipment in accordance with manufacturer's instructions.
- C. Provide complete set of 11"x17" laminated fire protection plans at the main control valve of sprinkler system.
- D. Install testable double check backflow preventer at potable water supply connection to fire protection system.
  - 1. Test backflow preventer within ten days of system being in service and provide test documentation to BYU project manager.
- E. Locate 5" Storz fire department connection with sufficient clearance from walls and obstructions to allow full swing of fire department wrench handle.
- F. Locate outside alarm horn and strobe at FDC on building wall as indicated.
  - 1. Blue lens as per AHJ.
- G. Place pipe runs to minimize obstruction to other work.
- H. Place piping in concealed spaces above finished ceilings.
- I. Place piping in exposed spaces as high as possible.
- J. Center sprinklers in two directions in ceiling tile and provide piping offsets as required.
  - 1. Exceptions as approved by Owner.
- K. Install air compressor on vibration isolators. Refer to Section 220548.
- L. Install guards on sprinklers where indicated.
- M. Hydrostatically test entire system.

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- N. All tests will be the responsibility of this contractor. If tests are not run or do not have the proper witness, then they will be run later and all damage caused by the system, or caused in uncovering the system for such test, will be borne by this contractor.
- O. Require test be witnessed by BYU Fire Marshal and Authority Having Jurisdiction.
- P. Whether the underground serving the sprinkler system is done by this contractor or another, this contractor shall be responsible to verify with the AHJ and BYU Fire Marshal that the underground has been flushed and tested by the contractor who installed it in accordance with NFPA-24 prior to connection of the underground piping to the overhead sprinkler system.

**3.02 INTERFACE WITH OTHER PRODUCTS**

- A. Ensure required devices are installed and connected as required to fire alarm system.

**END OF SECTION**

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**226 East 4800 South  
Murray, Utah 84107  
Phone 385-321-9701**

**AN ASBESTOS SURVEY AND ASSESSMENT FOR**



**Brigham Young University  
N. Eldon Tanner Building  
Provo, Utah 84602  
29 February, 2024**

**Prepared by:  
Scott Bainbridge #ASB-6822  
Annabelle Mitchell #ASB-8012  
Air Quality Consulting, LLC #603**

**385-321-9701  
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## **Executive Summary**

Asbestos-containing material (ACM) was not found in suspect materials tested in the N. Eldon Tanner Building.

\* - Denotes less than 1% asbestos which is regulated by OSHA, it is recommended to review their regulations before removal

## **Building Description**

**Structure:** Block, Framed

**Roof:** Not Inspected

**Siding:** Brick

**Foundation:** Concrete

**Insulation:** Fiberglass

**Walls:** Drywall

**Ceiling:** Ceiling Panel, Open Framing

**Flooring:** Ceramic Tile, Vinyl, Carpet

## Non-ACM Results by Material

Sample Number	Material Description/Lab Results	Amount	Homogeneous Area
<b>TSI</b>			
TB-TSI-01	TSI/None Detected	6,000 LF	Throughout
TB-TSI-02	TSI/None Detected	6,000 LF	Throughout
TB-TSI-03	TSI/None Detected	6,000 LF	Throughout
<b>Ceiling Tile and Panel</b>			
TB-CT-01	12"x12" Fissured Ceiling Tile/None Detected	10,000 SF	Bathrooms, Rooms 151, 251
TB-CT-02	12"x12" Fissured Ceiling Tile/None Detected	10,000 SF	Bathrooms, Rooms 151, 251
TBB-51021-1	12"x12" Fissured Ceiling Tile/None Detected	10,000 SF	Bathrooms, Rooms 151, 251
TBB-51021-2	12"x12" Fissured Ceiling Tile/None Detected	10,000 SF	Bathrooms, Rooms 151, 251
TBB-51021-8	12"x12" Fissured Ceiling Tile/None Detected	10,000 SF	Bathrooms, Rooms 151, 251
TBB-51021-9	12"x12" Fissured Ceiling Tile/None Detected	10,000 SF	Bathrooms, Rooms 151, 251
TBB-51021-16	12"x12" Fissured Ceiling Tile/None Detected	10,000 SF	Bathrooms, Rooms 151, 251
TBB-51021-17	12"x12" Fissured Ceiling Tile/None Detected	10,000 SF	Bathrooms, Rooms 151, 251
TB-CT-03	2'x2' Recessed Ceiling Panel/None Detected	12,000 SF	Entries, Classrooms
TB-CT-04	2'x2' Recessed Ceiling Panel/None Detected	12,000 SF	Entries, Classrooms
TBB-51021-6	2'x2' Recessed Ceiling Panel/None Detected	12,000 SF	Entries, Classrooms
<b>Mastic</b>			
TB-CTM-01	Ceiling Tile Mastic/None Detected	4,500 SF	Ceiling Tiles
TB-CA-01	Carpet Mastic/None Detected	30,000 SF	Carpet
<b>Fireproofing</b>			
TB-FP-01	Fireproofing/None Detected	40,000 SF	Structure



TB-FP-02	Fireproofing/None Detected	40,000 SF	Structure
TB-FP-03	Fireproofing/None Detected	40,000 SF	Structure
TB-FP-04	Fireproofing/None Detected	40,000 SF	Structure
TB-FP-05	Fireproofing/None Detected	40,000 SF	Structure
TB-FP-06	Fireproofing/None Detected	40,000 SF	Structure
TB-FP-07	Fireproofing/None Detected	40,000 SF	Structure
<b>Drywall System</b>			
TB-WS-01	Drywall System/None Detected	90,000 SF	Throughout
TB-WS-02	Drywall System/None Detected	90,000 SF	Throughout
TB-WS-03	Drywall System/None Detected	90,000 SF	Throughout
TB-WS-04	Drywall System/None Detected	90,000 SF	Throughout
TB-WS-05	Drywall System/None Detected	90,000 SF	Throughout
TB-WS-06	Drywall System/None Detected	90,000 SF	Throughout
TB-WS-07	Drywall System/None Detected	90,000 SF	Throughout
TB-WS-08	Drywall System/None Detected	90,000 SF	Throughout
TB-WS-09	Drywall System/None Detected	90,000 SF	Throughout
TBB-51021-3	Drywall System/None Detected	90,000 SF	Throughout
TBB-51024-4	Drywall System/None Detected	90,000 SF	Throughout
TBB-51024-5	Drywall System/None Detected	90,000 SF	Throughout
TBB-51021-10	Drywall System/None Detected	90,000 SF	Throughout
TBB-51024-11	Drywall System/None Detected	90,000 SF	Throughout
TBB-51021-14	Drywall System/None Detected	90,000 SF	Throughout
TBB-51024-15	Drywall System/None Detected	90,000 SF	Throughout
TBB-51024-18	Drywall System/None Detected	90,000 SF	Throughout
TBB-51024-19	Drywall System/None Detected	90,000 SF	Throughout
<b>Tile Backing</b>			
TBB-51021-7	Tile Backing/None Detected	2,300 SF	Bathrooms

## List of NESHAP Regulated Materials Tested and Found in Surveys

1. Friable asbestos material (>1% asbestos and can be crumbled, pulverized or reduced to powder by hand pressure)

<b>Tested</b>	<b>Materials</b>	<b>Positive</b>
_____	Thermal System Insulation (TSI)	_____
_____	Textured Ceiling Materials (TCM)	_____
_____	Spray-on Insulation or Fireproofing	_____
_____	Blown-in Insulation	_____
_____	Ceiling Tiles/Panels	_____
_____	Plaster, Gypsum Board, Joint Compound	_____
_____	Cloth Materials	_____
_____	Paper Materials	_____
_____	Electrical Wiring Insulation	_____
_____	Sink Undercoating (loose)	_____
_____	Other _____	_____

2. Category I ACM which has become friable

<b>Tested</b>	<b>Materials</b>	<b>Positive</b>
_____	Packings	_____
_____	Gaskets	_____
_____	Vinyl Floor Tile and Sheet Vinyl Flooring	_____
_____	Asphalt Roofing Products	_____

3. Category I ACM that will be or has been subjected to sanding, grinding, cutting or abrading

<b>Tested</b>	<b>Materials</b>	<b>Positive</b>
_____	Packings	_____
_____	Gaskets	_____
_____	Vinyl Floor Tile and Sheet Vinyl Flooring	_____
_____	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

<b>Tested</b>	<b>Materials</b>	<b>Positive</b>
_____	Asbestos Cement Materials (transite)	_____
_____	Asphalt, tar and rubber base ACM products other than roofing	_____
_____	Non-asphalt and Non-paper Roofing Products	_____
_____	Paint	_____
_____	Fire Brick and/or Mortar	_____
_____	Stainless Steel Sink Undercoating (solid)	_____
_____	Encapsulated TCM	_____
_____	Encapsulated TSI	_____
_____	Mastic for Floor Tile, Ceiling Tile, Cove Molding, etc.	_____

## List of NESHAP Non-Regulated Materials Tested and Found in Survey

1.  $\geq 1\%$  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

Tested	Materials	Positive
_____	Packings	_____
_____	Gaskets	_____
_____	Vinyl Floor Tile and Sheet Vinyl Flooring	_____
_____	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)

Tested	Materials	Positive
_____	Asbestos Cement Materials (transite)	_____
_____	Asphalt, tar and rubber base ACM products other than roofing	_____
_____	Non-asphalt and Non-paper Roofing Products	_____
_____	Paint	_____
_____	Fire Brick and/or Mortar	_____
_____	Stainless Steel Sink Undercoating (solid)	_____
_____	Encapsulated TCM	_____
_____	Encapsulated TSI	_____
_____	Mastic for Floor Tile, Ceiling Tile, Cove Molding, etc.	_____
_____	Other _Fume Hood Base_____	_____

### Notes

1. All materials and conditions are interpreted by Air Quality Consulting LLC
2. 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.
3. 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.
4. Details on testing locations, methods and results can be found on remaining report.

**Asbestos Survey and Assessment Performed at  
N. Eldon Tanner Building  
Provo, Utah 84602  
29 February, 2024**

**Scope of Work**

We were hired by Brigham Young University to compile past surveys for the N. Eldon Tanner Building for a pending renovation. Samples were taken by Air Quality Consulting LLC and R&R Environmental. The past results are included in this report.

**Methods and Materials**

A survey of the areas outlined in the floorplan sections was conducted to observe, identify, locate and sample any materials suspected of containing asbestos according to NESHAP categories. All accessible areas were identified and documented.

Bulk samples were collected using approved methods and microscopically analyzed for asbestos content by Reservoirs Environmental, Inc. in Denver, Colorado. Reservoirs participates in the National Institute for Standards and Technology's National Voluntary Laboratory Accreditation Program (NVLAP).

Asbestos percentages were estimated utilizing the polarized light microscope (PLM) and dispersion staining methods as prescribed by NIOSH.

*Scott Bainbridge*

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Scott Bainbridge  
State of Utah Inspector #ASB-6822 exp. 10/19/24

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Date

*Annabelle Mitchell*

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Annabelle Mitchell  
State of Utah Inspector #ASB-8012 exp. 12/15/24

---

Date

**Air Quality Consulting**  
4852 South Wasatch Street  
Murray, Utah 84107

**AN ASBESTOS SURVEY AND ASSESSMENT OF**



**Tanner Building  
Bathrooms**

**12 May, 2021**

**Prepared by:**

**Scott Bainbridge #ASB-6822**

**Elise Bainbridge #ASB-7303**

**Eldon C. Romney, LEHS #ASB-1362**

**Air Quality Consulting, LLC #ASBC-603**

**4852 S. Wasatch St.**

**Murray, UT 84107**

**385-321-9701**

**[scott@airqualityconsult.com](mailto:scott@airqualityconsult.com)**

**801-541-0615**

**[eldoncr2@gmail.com](mailto:eldoncr2@gmail.com)**

## **Executive Summary**

No asbestos containing material (ACM) is found in rooms 348, 350, 596, 598, 696, 698, 796, 798 in the Tanner Building.

## **Building or Rooms Description**

Structure: Metal Framed

Roof: Not Observed

Siding: Not Observed

Foundation: Concrete

Insulation: None

Walls: Ceramic Tile, Drywall

Ceiling: Ceiling Panel

Flooring: Ceramic Tile



## Non ACM Results by Material

Sample Number	Material/Lab Results	Homogeneous Area
<b>Ceiling Tile and Panel</b>		
TBB-51021-1	1'x1' Fissured Ceiling Tile/None Detected	Rooms 348, 350, 596, 598, 696, 698, 796, 798
TBB-51021-2	1'x1' Fissured Ceiling Tile/None Detected	Rooms 348, 350, 596, 598, 696, 698, 796, 798
TBB-51021-6	2'x2' Recessed Ceiling Panel/None Detected	Room 350 Entry
TBB-51021-8	1'x1' Fissured Ceiling Tile/None Detected	Rooms 348, 350, 596, 598, 696, 698, 796, 798
TBB-51021-9	1'x1' Fissured Ceiling Tile/None Detected	Rooms 348, 350, 596, 598, 696, 698, 796, 798
TBB-51021-16	1'x1' Fissured Ceiling Tile/None Detected	Rooms 348, 350, 596, 598, 696, 698, 796, 798
TBB-51021-17	1'x1' Fissured Ceiling Tile/None Detected	Rooms 348, 350, 596, 598, 696, 698, 796, 798
<b>Wall System</b>		
TBB-51021-3	Wall System/None Detected	Rooms 348, 350, 596, 598, 696, 698, 796, 798
TBB-51021-4	Wall System/None Detected	Rooms 348, 350, 596, 598, 696, 698, 796, 798
TBB-51021-5	Wall System/None Detected	Rooms 348, 350, 596, 598, 696, 698, 796, 798
TBB-51021-10	Wall System/None Detected	Rooms 348, 350, 596, 598, 696, 698, 796, 798
TBB-51021-11	Wall System/None Detected	Rooms 348, 350, 596, 598, 696, 698, 796, 798
TBB-51021-14	Wall System/None Detected	Rooms 348, 350, 596, 598, 696, 698, 796, 798
TBB-51021-15	Wall System/None Detected	Rooms 348, 350, 596, 598, 696, 698, 796, 798
TBB-51021-18	Wall System/None Detected	Rooms 348, 350, 596, 598, 696, 698, 796, 798
TBB-51021-19	Wall System/None Detected	Rooms 348, 350, 596, 598, 696, 698, 796, 798
<b>Tile Backing</b>		
TBB-51021-7	Tile Backing/None Detected	Rooms 348, 350, 596, 598, 696, 698, 796, 798

**Utah Asbestos Sampling Worksheet**

**Facility name, address:** Bathrooms, Tanner Building, Brigham Young University, Provo, UT

**Scope:** Test all suspect ACM fireproofing for potential renovation to bathrooms

**Anticipation of work:** Collect samples of all homogenous, suspect materials

Suspect ACM	Quantity	Location	Sampled/ Assumed	RACM/ CAT 1/ CAT 2
TBB-51021-1 Ceiling Tile	90 sf	Room 350	Sampled	ND
TBB-51021-2 Ceiling Tile	120 sf	Room 348	Sampled	ND
TBB-51021-3 Wall System	70 sf	Room 348	Sampled	ND
TBB-51021-4 Wall System	70 sf	Room 348	Sampled	ND
TBB-51021-5 Wall System	70 sf	Room 350	Sampled	ND
TBB-51021-6 Ceiling Panel	30 sf	Room 350	Sampled	ND
TBB-51021-7 Tile Backing	180 sf	Room 350	Sampled	ND
TBB-51021-8 Ceiling Tile	170 sf	Room 596	Sampled	ND
TBB-51021-9 Ceiling Tile	170 sf	Room 598	Sampled	ND
TBB-51021-10 Wall System	70 sf	Room 598	Sampled	ND
TBB-51021-11 Wall System	160 sf	Room 596	Sampled	ND
TBB-51021-12 Ceiling Tile	170 sf	Room 698	Sampled	ND
TBB-51021-13 Ceiling Tile	250 sf	Room 696	Sampled	ND
TBB-51021-14 Wall System	70 sf	Room 698	Sampled	ND
TBB-51021-15 Wall System	160 sf	Room 696	Sampled	ND
TBB-51021-16 Ceiling Tile	170 sf	Room 798	Sampled	ND
TBB-51021-17 Ceiling Tile	250 sf	Room 796	Sampled	ND
TBB-51021-18 Wall System	70 sf	Room 796	Sampled	ND
TBB-51021-19 Wall System	160 sf	Room 798	Sampled	ND

**Laboratory Analysis PLM/PCM/TEM** PLM

**Inaccessible areas of suspect ACM**

**Scott Bainbridge #ASB-6822**

	10 May, 2021
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## List of NESHAP Regulated Materials Tested and Found in Survey

1. Friable asbestos material (>1% asbestos and can be crumbled, pulverized or reduced to powder by hand pressure)

<b>Tested</b>	<b>Materials</b>	<b>Positive</b>
_____	Thermal System Insulation (TSI)	_____
_____	Textured Ceiling Materials (TCM)	_____
_____	Spray-on Insulation or Fireproofing	_____
_____	Blown-in Insulation	_____
_____	Ceiling Tiles/Panels	_____
_____	Plaster, Gypsum Board, Joint Compound	_____
_____	Cloth Materials	_____
_____	Paper Materials	_____
_____	Electrical Wiring Insulation	_____
_____	Sink Undercoating (loose)	_____
_____	Other _____ Door Core _____	_____

2. Category I ACM which has become friable

<b>Tested</b>	<b>Materials</b>	<b>Positive</b>
_____	Packings	_____
_____	Gaskets	_____
_____	Vinyl Floor Tile and Sheet Vinyl Flooring	_____
_____	Asphalt Roofing Products	_____

3. Category I ACM that will be or has been subjected to sanding, grinding, cutting or abrading

<b>Tested</b>	<b>Materials</b>	<b>Positive</b>
_____	Packings	_____
_____	Gaskets	_____
_____	Vinyl Floor Tile and Sheet Vinyl Flooring	_____
_____	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

<b>Tested</b>	<b>Materials</b>	<b>Positive</b>
_____	Asbestos Cement Materials (transite)	_____
_____	Asphalt, tar and rubber base ACM products other than roofing	_____
_____	Non-asphalt and Non-paper Roofing Products	_____
_____	Paint	_____
_____	Fire Brick and/or Mortar	_____
_____	Stainless Steel Sink Undercoating (solid)	_____
_____	Encapsulated TCM	_____
_____	Encapsulated TSI	_____
_____	Mastic for Floor Tile, Ceiling Tile, Cove Molding, etc.	_____

## List of NESHAP Non-Regulated Materials Tested and Found in Survey

1.  $\geq 1\%$  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

<b>Tested</b>	<b>Materials</b>	<b>Positive</b>
_____	Packings	_____
_____	Gaskets	_____
_____	Vinyl Floor Tile and Sheet Vinyl Flooring	_____
_____	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)

<b>Tested</b>	<b>Materials</b>	<b>Positive</b>
_____	Asbestos Cement Materials (transite)	_____
_____	Asphalt, tar and rubber base ACM products other than roofing	_____
_____	Non-asphalt and Non-paper Roofing Products	_____
_____	Paint	_____
_____	Fire Brick and/or Mortar	_____
_____	Stainless Steel Sink Undercoating (solid)	_____
_____	Encapsulated TCM	_____
_____	Encapsulated TSI	_____
_____	Mastic for Floor Tile, Ceiling Tile, Cove Molding, etc.	_____
_____	Other _____ Door Core _____	_____

### Notes

1. All materials and conditions are interpreted by Air Quality Consulting LLC
2. 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.
3. 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.
4. Details on testing locations, methods and results can be found on remaining report.



May 11, 2021

**Subcontractor Number:**  
**Laboratory Report:** RES 493369-1  
**Project #/P.O. #:** TBB-51021  
**Project Description:** Tanner Building Bathrooms

Scott Bainbridge  
Air Quality Consulting, LLC  
1264 W. Pitchfork Rd  
Murray UT 84123

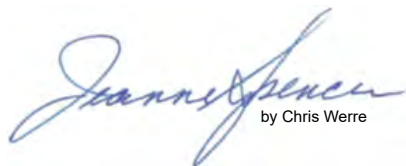
Dear Scott,

Reservoirs Environmental, Inc. 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.

Reservoirs Environmental, Inc. 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 493369-1** is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. 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 Reservoirs Environmental, Inc. 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,



by Chris Werre

Jeanne Spencer  
President



## RESERVOIRS ENVIRONMENTAL INC.

NVLAP Lab Code 101896-0

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

RES Job Number: **RES 493369-1**  
 Client: **Air Quality Consulting, LLC**  
 Client Project Number / P.O.: **TBB-51021**  
 Client Project Description: **Tanner Building Bathrooms**  
 Date Samples Received: **May 11, 2021**  
 Method: **EPA 600/R-93/116 - Short Report, Bulk**  
 Turnaround: **Priority**  
 Date Samples Analyzed: **May 11, 2021**

ND=None Detected  
 TR=Trace, <1% Visual Estimate  
 Trem/Act=Tremolite/Actinolite

Laboratory Sample ID  Client Sample Number	L A Y E R	Physical Description	Sub Part  (%)	Asbestos Content		Non Asbestos Fibrous Components (%)	Non- Fibrous Components (%)
				Mineral	Visual Estimate (%)		
493369 - 1-Ceiling Tile	A	White ceiling tile w/ white paint	100		ND	65	35
493369 - 2-Ceiling Tile	A	White ceiling tile w/ white paint	100		ND	65	35
493369 - 3-Wall System	A	White compound w/ white paint	5		ND	0	100
	B	White/tan drywall	95		ND	15	85
493369 - 4-Wall System	A	White/tan drywall w/ white paint	100		ND	15	85
493369 - 5-Wall System	A	White/tan drywall w/ white paint	100		ND	15	85
493369 - 6-Ceiling Panel	A	White ceiling tile w/ white paint	100		ND	65	35
493369 - 7-Tile Backing	A	White granular cementitious material	100		ND	0	100
493369 - 8-Ceiling Tile	A	White ceiling tile w/ white paint	100		ND	65	35
493369 - 9-Ceiling Tile	A	White ceiling tile w/ white paint	100		ND	65	35
493369 - 10-Wall System	A	White compound w/ white paint	15		ND	0	100
	B	White/tan drywall	85		ND	15	85
493369 - 11-Wall System	A	White compound w/ white paint	20		ND	0	100
	B	White/tan drywall	80		ND	15	85

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

## RESERVOIRS ENVIRONMENTAL INC.

NVLAP Lab Code 101896-0

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

RES Job Number: **RES 493369-1**  
 Client: **Air Quality Consulting, LLC**  
 Client Project Number / P.O.: **TBB-51021**  
 Client Project Description: **Tanner Building Bathrooms**  
 Date Samples Received: **May 11, 2021**  
 Method: **EPA 600/R-93/116 - Short Report, Bulk**  
 Turnaround: **Priority**  
 Date Samples Analyzed: **May 11, 2021**

ND=None Detected  
 TR=Trace, <1% Visual Estimate  
 Trem/Act=Tremolite/Actinolite

Laboratory Sample ID  Client Sample Number	L A Y E R	Physical Description	Sub Part  (%)	Asbestos Content		Non Asbestos Fibrous Components (%)	Non- Fibrous Components (%)
				Mineral	Visual Estimate (%)		
493369 - 12-Ceiling Tile	A	White ceiling tile w/ white paint	100		ND	65	35
493369 - 13-Ceiling Tile	A	White ceiling tile w/ white paint	100		ND	65	35
493369 - 14-Wall System	A	White compound w/ white paint	7		ND	0	100
	B	White compound w/ off white paint	8		ND	0	100
	C	White/tan drywall	85		ND	15	85
493369 - 15-Wall System	A	White compound w/ off white paint	7		ND	0	100
	B	White/tan drywall	93		ND	15	85
493369 - 16-Ceiling Tile	A	White ceiling tile w/ white paint	100		ND	65	35
493369 - 17-Ceiling Tile	A	White ceiling tile w/ white paint	100		ND	65	35
493369 - 18-Wall System	A	White compound w/ off white paint	5		ND	0	100
	B	White compound	7		ND	0	100
	C	Off white compound w/ white paint	8		ND	0	100
	D	White/tan drywall	80		ND	15	85

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

## RESERVOIRS ENVIRONMENTAL INC.

NVLAP Lab Code 101896-0


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

RES Job Number: **RES 493369-1**  
 Client: **Air Quality Consulting, LLC**  
 Client Project Number / P.O.: **TBB-51021**  
 Client Project Description: **Tanner Building Bathrooms**  
 Date Samples Received: **May 11, 2021**  
 Method: **EPA 600/R-93/116 - Short Report, Bulk**  
 Turnaround: **Priority**  
 Date Samples Analyzed: **May 11, 2021**

ND=None Detected  
 TR=Trace, <1% Visual Estimate  
 Trem/Act=Tremolite/Actinolite

Laboratory Sample ID	L A Y E R	Physical Description	Sub Part (%)	Asbestos Content		Non Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
				Mineral	Visual Estimate (%)		
493369 - 19-Wall System	A	White compound w/ white paint	8		ND	0	100
	B	White/tan drywall	92		ND	15	85

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



**Chris Werre**

Analyst







Res Job#: 493369

Submitted By: Air Quality Consulting, LLC

Client Sample ID Number <small>(Sample ID's must be unique)</small>	REQUESTED ANALYSIS			VALID MATRIX CODES					LAB NOTES
	ASBESTOS	CHEMISTRY	MICROBIOLOGY	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
14 14-Wall System	X					B			
15 15-Wall System	X					B			
16 16-Ceiling Tile	X					B			
17 17-Ceiling Tile	X					B			
18 18-Wall System	X					B			
19 19-Wall System	X					B			

REQUESTED ANALYSIS			VALID MATRIX CODES					LAB NOTES		
<b>PLM - PLM Short Report (EPA/600/R-93/116)</b>	<b>TEM</b> - 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	<b>PCM</b> - 7400A, 7400B, OSHA	<b>DUST</b> - Total, Respirable	<b>METALS</b> - Analyte(s) Lead Only (7062, 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	<b>ORGANICS</b> - Methamphetamine, TSS	<b>VIABLES</b> - 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)	<b>MEDICAL</b> - Bioburden, LAL	<b>MOLD</b> - Spore Trap, Bulk Mold, Particulate Identification	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 <b>**ASTM E1792 approved wipe media only**</b>	
									<b>Laboratory Analysis Instructions</b>	



**REMIT TO: 5801 Logan St, Suite 100, Denver, CO 80216**

<p><b>Invoice To:</b></p> <p>Air Quality Consulting, LLC 1264 W. Pitchfork Rd Murray UT 84123</p>	<p><b>Invoice Date:</b> May 11, 2021 <b>Invoice Number:</b> 493369-1</p> <p><b>TERMS:</b> Net 30 Days</p> <p>Service Charge of 18% per annum may be charged on past due invoices.</p>
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Quantity	Analytical Procedure	Unit Price	Amount
19	<p><b>RES Job#:</b> RES 493369-1  <b>Submitted By:</b> Air Quality Consulting, LLC  <b>P/O Number:</b> TBB-51021  <b>Description:</b> Tanner Building Bathrooms  <b>Contact:</b> Scott Bainbridge</p> <p>PLM Short Report (EPA/600 /R-93/116)      Bulk      Priority</p>	\$12.00	\$228.00
<b>Invoice Total:</b>			<b>\$228.00</b>

**Asbestos Survey and Assessment Performed at  
Brigham Young University  
Tanner Building  
Bathrooms  
12 May, 2021**

**Scope of Work**

We were hired by Matt Giles and Jeff Throckmorton to survey the suspect materials in the bathrooms at the Tanner Building for a potential renovation. All accessible suspect material was sampled by Scott Bainbridge. These samples were sent to Reservoirs Labs in Denver, Colorado and the results are included in this report.

**Methods and Materials**

A survey of the areas outlined in the floorplan sections was conducted to observe, identify, locate and sample any materials suspected of containing asbestos according to NESHAP categories. All accessible areas were identified and documented.

Bulk samples were collected using approved methods and microscopically analyzed for asbestos content by Reservoirs Environmental, Inc. in Denver, Colorado. Reservoirs participates in the National Institute for Standards and Technology's National Voluntary Laboratory Accreditation Program (NVLAP).

Asbestos percentages were estimated utilizing the polarized light microscope (PLM) and dispersion staining methods as prescribed by NIOSH.



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Elise Bainbridge  
State of Utah Inspector #ASB-7303

12 May, 2021

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Date



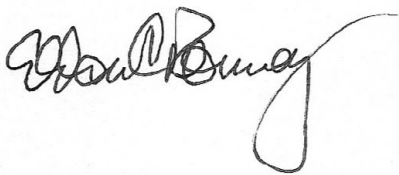
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Scott Bainbridge  
State of Utah Inspector #ASB-6822

12 May, 2021

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Date



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Eldon C. Romney, LEHS  
State of Utah Inspector #ASB-1362

12 May, 2021

---

Date



**AN ASBESTOS SURVEY AND ASSESSMENT  
FOR THE  
N. ELDON TANNER BUILDING (TNRB)  
BRIGHAM YOUNG UNIVERSITY  
PROVO, UTAH**

May 31, 2007

Prepared for:

Kerry J. Smith, CIH  
Industrial Hygiene Officer  
Risk Management and Safety Department  
Brigham Young University  
100 TOMH, PO Box 20100  
Provo, Utah 84602-0100

Prepared by:

David C. Roskelley, MSPH, CIH, CSP  
R & R Environmental, Inc. (R & R)  
47 West 9000 South, Suite #2  
Sandy, Utah 84070  
(801) 541-1035  
dave@rrenviro.com

## EXECUTIVE SUMMARY

None of the suspect materials sampled in the N. Eldon Tanner Building (TNRB) were found to contain asbestos (See Note 1 below).

Note 1: No roofing samples were collected during the course of this inspection due to the rubberized (membranous) nature of the roofing material. Future roof renovation work should address asbestos sampling with regards to the roof.

**N. ELDON TANNER BUILDING (TNRB)**  
**DATE OF SURVEY: MAY 2007**  
**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)
  - Thermal system insulation (TSI)\*
  - Textured ceiling material (TCM)\*
  - Spray-on insulation or fireproofing\* (Column Fireproofing)
  - Blown-in insulation\*
  - Ceiling tiles/panels\*
  - Plaster, gypsum board, gypsum board joint compound\*
  - Cloth materials\*
  - Paper materials\*
  - 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
  
3. Category I ACM that will be or has been subjected to sanding, grinding, cutting or abrading
  - Packings
  - Gaskets
  - 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
  - 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\*
  - Mastic for floor tile, ceiling tile, cove molding, etc.\*
  - Other



**N. ELDON TANNER BUILDING (TNRB)**  
**DATE OF SURVEY: MAY 2007**  
**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  
      \_\_\_ Packings  
      \_\_\_ Gaskets  
      \_\_\_ 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 (HVAC Putty)\*  
      \_\_\_ Non-asphalt and non-paper roofing products\*  
      \_\_\_ Paint\*  
      \_\_\_ Fire brick and/or mortar\*  
      \_\_\_ Sink undercoating (solid)\*  
      \_\_\_ Mastic for floor tile, ceiling tile, cove molding, etc.\*  
      \_\_\_ Other\* (Fire door)

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.

**AN ASBESTOS SURVEY AND ASSESSMENT  
AT THE  
N. ELDON TANNER BUILDING (TNRB)  
BRIGHAM YOUNG UNIVERSITY  
PROVO, UTAH**

During the month of May 2007, R & R Environmental, Inc. (R & R) of Sandy, Utah, conducted an asbestos survey and assessment at Brigham Young University's N. Eldon Tanner Building (TNRB) in Provo, 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.



Date: May 31, 2007

David C. Roskelley, MSPH, CIH, CSP  
AHERA Inspector #5 PSI 65461 I  
State of Utah Inspector #ASB-1370 (1408)  
Certified Safety Professional #15774  
Certified Industrial Hygienist #8529

**AN ASBESTOS SURVEY AND ASSESSMENT  
FOR THE  
N. ELDON TANNER BUILDING (TNRB)  
BRIGHAM YOUNG UNIVERSITY  
PROVO, UTAH**

**INTRODUCTION AND BACKGROUND**

During the month of May 2007, R & R Environmental, Inc. (R & R) of Sandy, Utah, conducted an asbestos survey and assessment at Brigham Young University's N. ELDON TANNER BUILDING (TNRB) in Provo, Utah. The purpose of the survey was to identify materials within and on the building that contain asbestos and to recommend appropriate response actions.

Brigham Young University intends that no occupant or worker inside a Brigham Young University facility shall be exposed to airborne asbestos fibers at concentrations potentially hazardous to health, and has initiated a program to abate potential asbestos problems in all its facilities.

**METHODS AND MATERIALS**

A survey of the facility was conducted to observe, identify and locate: surfacing materials, pipe, boiler and tank insulation, ceiling and floor tiles, siding and roofing materials suspected of containing asbestos. All areas of the building accessible to observation were inspected.

Bulk samples of suspect materials were collected and microscopically analyzed for asbestos content by Dixon Information Inc., in Salt Lake City, Utah. Dixon participates in the National Institute for Standards and Technology's National Voluntary Laboratory Accreditation Program (NVLAP).

Asbestos percentages were estimated utilizing the polarized light microscopy (PLM) and dispersion staining methods as prescribed by NIOSH.

## BUILDING DESCRIPTION AND OBSERVATIONS

N. ELDON TANNER BUILDING (TNRB), Provo, Utah

STRUCTURE: Approximately 100,000 square foot granite, steel, glass, and re-enforced concrete building

INTERIOR WALLS: Concrete block, with some wood-framing throughout upper floors.

ATTIC: None

CRAWL SPACE: Pipe chases in various basement and interior wall and ceiling locations

FIRE DOOR: Throughout building (tested previously Non-ACM)

HEATING SYSTEM: Boiler/Radiator

CULINARY WATER LINES: Mudded elbows, fittings, joints, etc. with fiber glass

CEILING FINISHES AND SUBSTRATE: Steel deck with suspended ceilings

FLOOR COVERINGS AND SUBSTRATE: Concrete and carpet

PEAKED ROOF: None

FLAT ROOF: Rubberized membranous roof layer

INACCESSIBLE AREAS: Certain locations above ceilings and pipe chases throughout the building

ADDITIONAL NOTES AND OBSERVATIONS: See Executive Summary

## RESULTS

Results of the laboratory analyses of the bulk samples collected at the N. ELDON TANNER BUILDING (TNRB) are summarized in Table 1 below.

**Table 1. Bulk Sample Results  
N. ELDON TANNER BUILDING (TNRB)**

Area Sample No.	Material Lab Results	Location
	<b><u>Thermal System Insulation (TSI)</u></b>	
TB-TSI-01	None Detected	Room 140
TB-TSI-02	None Detected	Room 140
TB-TSI-03	None Detected	Room 140
	<b><u>Ceiling Tile 12"</u></b>	
TB-CT-01	None Detected	Room 398
TB-CT-02	None Detected	Room 151 C
	<b><u>Ceiling Tile 2' x 2'</u></b>	
TB-CT-03	None Detected	Room 360
TB-CT-04	None Detected	Room 140 C
	<b><u>Ceiling Tile Mastic</u></b>	
TB-CTM-01	None Detected	Room 398 A
	<b><u>Carpet Adhesive</u></b>	
TB-CA-01	None Detected	Room 104
	<b><u>Fire Proofing (Beams and Columns)</u></b>	
TB-FP-01	None Detected	Room 360
TB-FP-02	None Detected	Room 360
TB-FP-03	None Detected	Room 140 B
TB-FP-04	None Detected	Room 270
TB-FP-05	None Detected	Room 570
TB-FP-06	None Detected	Room 470
TB-FP-07	None Detected	Room 151 C
	<b><u>Wall System</u></b>	
TB-WS-01	None Detected	Room 360
TB-WS-02	None Detected	Room 360
TB-WS-03	None Detected	Room 855

Area Sample No.	Material Lab Results	Location
TB-WS-04	None Detected	Room 701
TB-WS-05	None Detected	Room 698 A
TB-WS-06	None Detected	Room 855
TB-WS-07	None Detected	Room 597
TB-WS-08	None Detected	Room 270
TB-WS-09	None Detected	Room 151 C

## PHOTO LOG

1. Exterior view of building sign
2. Exterior view, west side of building
3. 2' ceiling panels (Non-ACM)
4. Adhesive under carpet (Non-ACM)
5. 12" ceiling tiles (Non-ACM)
6. Fireproofing on beams and columns above ceiling (Non-ACM)
7. Thermal System Insulation, Elbows and Tanks in mechanical room (Non-ACM)
8. Wall System (Non-ACM)

PHOTO 1

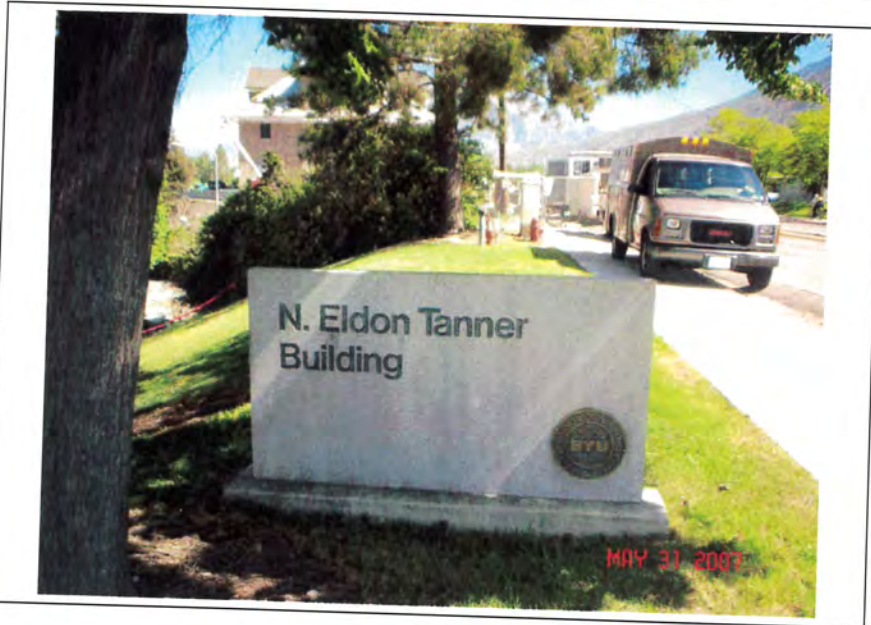


PHOTO 2



**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**

**N. ELDON TANNER BUILDING (TNRB)  
BRIGHAM YOUNG UNIVERSITY  
PROVO, UTAH**



PHOTO 3



PHOTO 4



**R & R Environmental, Inc.**

47 West 9000 South, Suite #2, Sandy, Utah 84070  
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PROJECT NO:

DESIGNED BY:

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**SITE PHOTOGRAPHS**

**AN ASBESTOS SURVEY AND ASSESSMENT**

**N. ELDON TANNER BUILDING (TNRB)  
BRIGHAM YOUNG UNIVERSITY  
PROVO, UTAH**

PHOTO 5



PHOTO 6



**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**

**N. ELDON TANNER BUILDING (TNRB)  
BRIGHAM YOUNG UNIVERSITY  
PROVO, UTAH**



PHOTO 7



PHOTO 8



**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:

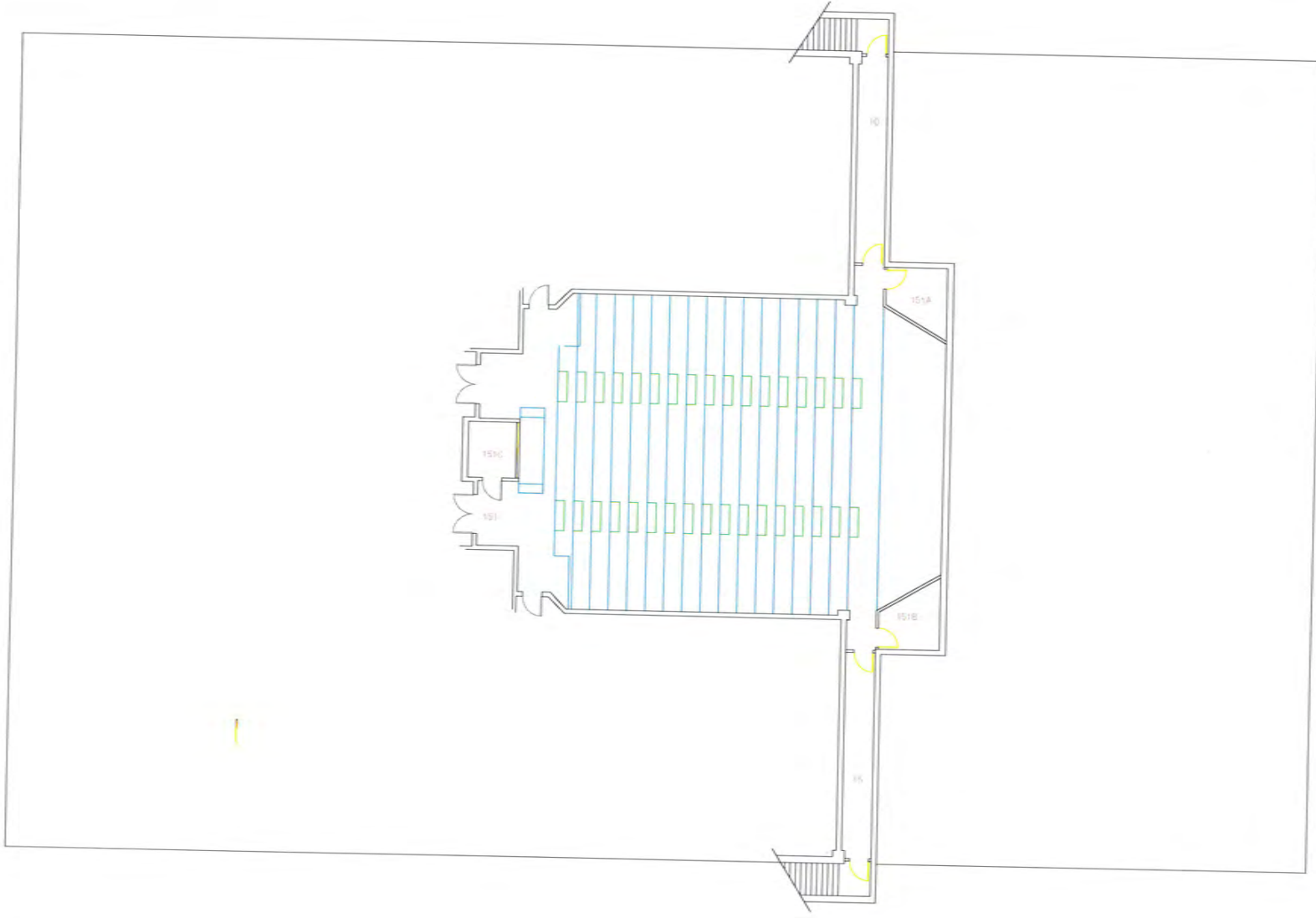
**SITE PHOTOGRAPHS**

**AN ASBESTOS SURVEY AND ASSESSMENT**

**N. ELDON TANNER BUILDING (TNRB)  
BRIGHAM YOUNG UNIVERSITY  
PROVO, UTAH**

**ACM LOCATION PLANS**

# = SAMPLE NUMBER AND LOCATION











# = SAMPLE NUMBER AND LOCATION







# = SAMPLE NUMBER AND LOCATION

FP06





# = SAMPLE NUMBER AND LOCATION





WS04



# = SAMPLE NUMBER AND LOCATION





# = SAMPLE NUMBER AND LOCATION



**DIXON INFORMATION**  
**ASBESTOS RESULTS**

**DIXON INFORMATION INC.**

MICROSCOPY, ASBESTOS ANALYSIS & CONSULTING

A.I.H.A. ACCREDITED LABORATORY # 101579

NVLAP LAB CODE 101012-0

June 4, 2007

Ms. Caroline Jung  
R&R Environmental  
47 West 9000 South, Unit #2  
Sandy, UT 84070

Ref: Batch # 74578, Lab # RR18098 - RR18122  
Received May 31, 2007  
Test report  
Tanner Building - BYU, Provo, UT.  
Sampled by Caroline Jung, 05/31/07

Dear Ms. Jung:

Samples RR18098 through RR18122 have been analyzed by visual estimation based on EPA-600/M4-82-020 December 1982 optical microscopy test method. Appendix "A" contains statements which an accredited laboratory must make to meet the requirements of accrediting agencies. It also contains additional information about the method of analysis. This analysis is accredited by NVLAP. Appendix "A" must be included as an essential part of this test report.

This report may be reproduced but all reproduction must be in full unless written approval is received from the laboratory for partial reproduction. The results of analysis are as follows:

Lab RR18098, Field TB-TSI-01 Thermal System Insulation - 6" elbow - Mech Room 140

This sample contains three types of material: The first type is white cotton cloth; the second type is 5% organic fiber in white plaster; the third type is 20% mineral wool in white plaster. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 5% of the sample. The second type is 80% of the sample. The third type is 15% of the sample.

Lab RR18099, Field TB-TSI-02 Thermal System Insulation - small tank - Mech Room 140

This sample contains two types of material: The first type is white cotton cloth; the second type is 5% organic fiber in off-white plaster. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 5% of the sample. The second type is 95% of the sample.

Batch # 74578

Lab # RR18098 - RR18122

Page 2 of 5

Lab RR18100, Field TB-TSI-03 Thermal System Insulation - 4" elbow - Mech Room 140

This sample contains two types of material: The first type is white cotton cloth; the second type is 5% organic fiber and 5% mineral wool in a mixture of off-white plasters. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 5% of the sample. The second type is 95% of the sample.

Lab RR18101, Field TB-CT-01 12" ceiling tile - 3<sup>rd</sup> fl. Womens R.R.

This is 80% mineral wool in white resin binder with a white coating on one side. **Asbestos is none detected.**

The white coating is 1% of the sample.

Lab RR18102, Field TB-CT-02 12" ceiling tile - Media Rm. Auditorium

This is 80% mineral wool in white resin binder with a white coating on one side. **Asbestos is none detected.**

The white coating is 1% of the sample.

Lab RR18103, Field TB-CT-03 2'x2' - ceiling tile - Rm - 360 Entrance

This is a light gray sample with perlite, 30% plant fiber, and 30% mineral wool in resin binder with a white coating on one side. **Asbestos is none detected.**

The white coating is 1% of the sample.

Lab RR18104, Field TB-CT-04 2'x2' - ceiling tile - Rm - 140c Entrance

This is a light gray sample with perlite, 30% plant fiber, and 30% mineral wool in resin binder with a white coating on one side. **Asbestos is none detected.**

The white coating is 1% of the sample.

Lab RR18105, Field TB-CTM-01 Ceiling tile - 12" mixed w/mastic

This sample contains two types of material: The first type is brown resin mastic; the second type is 70% mineral wool in white resin. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 50% of the sample. The second type is 50% of the sample.

Lab RR18106, Field TB-CA-01 Carpet Adhesive Vending Room #104

This is yellow and black resin mastic. **Asbestos is none detected.**

Lab RR18107, Field TB-FP-01 Fireproofing above ceiling on beams - Rm 360

This is 70% mineral wool in gray binder with limestone. **Asbestos is none detected.**



Batch # 74578

Lab # RRI8098 - RR18122

Page 3 of 5

Lab RR18108, Field TB-FP-02 Fireproofing above ceiling on beams - Rm 360  
This is 70% mineral wool in gray binder with limestone. **Asbestos is none detected.**

Lab RR18109, Field TB-FP-03 Fireproofing above ceiling on beams - Rm 140b  
This is 70% mineral wool with gray binder and limestone. **Asbestos is none detected.**

Lab RR18110, Field TB-FP-04 Fireproofing above ceiling on beams - Rm 270  
This is 70% mineral wool in gray binder with limestone. **Asbestos is none detected.**

Lab RR18111, Field TB-FP-05 Fireproofing above ceiling on beams - Rm 570  
This is 70% mineral wool in gray binder with limestone. **Asbestos is none detected.**

Lab RR18112, Field TB-FP-06 Fireproofing above ceiling on beams - Rm 470  
This is 70% mineral wool in gray binder with limestone. **Asbestos is none detected.**

Lab RR18113, Field TB-FP-07 Fireproofing above ceiling on beams - Media Rm Auditorium  
This is 70% mineral wool in gray binder with limestone. **Asbestos is none detected.**

Lab RR18114, Field TB-WS-01 Wall System - Rm 360  
This sample contains off-white paint, white micaceous gypsum joint compound, tan plant fiber paper, and white gypsum plaster with 1% fiberglass and 1% plant fiber. This sample is non-homogeneous. **Asbestos is none detected.**

The paint is 1% of the sample. The joint compound is 5% of the sample. The plant fiber paper is 5% of the sample. The white gypsum plaster is 89% of the sample.

Lab RR18115, Field TB-WS-02 Wall System - Rm 360  
This sample contains off-white paint, white micaceous limestone joint compound, tan plant fiber paper, and white gypsum plaster with 1% fiberglass and 1% plant fiber. This sample is non-homogeneous. **Asbestos is none detected.**

The paint is 1% of the sample. The joint compound is 20% of the sample. The plant fiber paper is 5% of the sample. The white gypsum plaster is 74% of the sample.

Lab RR18116, Field TB-WS-03 Wall System - Fan Room entrance S. E. Roof Corner  
This sample contains off-white paint, white micaceous gypsum and limestone joint compound, tan and white plant fiber paper, and white gypsum plaster with 2% plant fiber. This sample is non-homogeneous. **Asbestos is none detected.**

The paint is 1% of the sample. The joint compound is 5% of the sample. The plant fiber paper is 4% of the sample. The white gypsum plaster is 90% of the sample.

Batch # 74578

Lab # RR18098 - RR18122

Page 4 of 5

Lab RR18117, Field TB-WS-04 Wall System - 7<sup>th</sup> Floor stairwell - west

This sample contains off-white paint, white micaceous limestone joint compound, tan plant fiber paper, and white gypsum plaster with 2% fiberglass. This sample is non-homogeneous. **Asbestos is none detected.**

The paint is 1% of the sample. The joint compound is less than 1% of the sample. The plant fiber paper is 5% of the sample. The white gypsum plaster is 93% of the sample.

Lab RR18118, Field TB-WS-05 Wall System - 6<sup>th</sup> Floor Womens restroom

This sample contains four types of material: The first type is white vinyl with cotton cloth and adhesive; the second type is white gypsum plaster with fine mica; the third type is tan plant fiber paper; the fourth type is 1% fiberglass in white gypsum plaster. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 20% of the sample. The second type is 20% of the sample. The third type is 20% of the sample. The fourth type is 40% of the sample.

Lab RR18119, Field TB-WS-06 Wall System - ~~5<sup>th</sup> Floor lobby outside Rm 510~~ Room 855 ~~DR~~

This sample contains off-white paint, tan plant fiber paper, and white gypsum plaster with 2% fiberglass. This sample is non-homogeneous. **Asbestos is none detected.**

The paint is 1% of the sample. The plant fiber paper is 4% of the sample. The white gypsum plaster is 95% of the sample.

Lab RR18120, Field TB-WS-07 Wall System - ~~4<sup>th</sup> Floor stairwell - east~~ Room 597 ~~DR~~

This sample contains off-white paint, tan plant fiber paper, and white gypsum plaster with 2% fiberglass. This sample is non-homogeneous. **Asbestos is none detected.**

The paint is 1% of the sample. The plant fiber paper is 5% of the sample. The white gypsum plaster is 94% of the sample.

Lab RR18121, Field TB-WS-08 Wall System - 2<sup>nd</sup> Floor - Rm 270

This sample contains off-white paint, white micaceous limestone joint compound with perlite, tan plant fiber paper, and white gypsum plaster with 1% fiberglass and 1% plant fiber. This sample is non-homogeneous. **Asbestos is none detected.**

The paint is 1% of the sample. The joint compound is 8% of the sample. The plant fiber paper is 6% of the sample. The white gypsum plaster is 85% of the sample.

Batch # 74578

Lab # RR18098 - RR18122

Page 5 of 5

Lab RR18122, Field TB-WS-09 Wall System - Media Rm - Auditorium

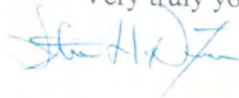
This sample contains off-white paint, white micaceous limestone joint compound, tan and white plant fiber paper, and white gypsum plaster with 2% plant fiber. This sample is non-homogeneous.

**Asbestos is none detected.**

The paint is 1% of the sample. The joint compound is 8% of the sample. The plant fiber paper is 6% of the sample. The white gypsum plaster is 85% of the sample.

In order to be sure reagents and tools used for analysis are not contaminated with asbestos, blanks are tested. Asbestos was none detected in the blanks tested with this bulk sample set.

Very truly yours,



Steve H. Dixon, President

Analyst: Steve H. Dixon



Date Analyzed: 6/1/07

Dixon Information Inc.  
78 West 2400 South  
South Salt Lake, Utah 84115  
Phone: 1-801-486-0800 Fax: 1-801-486-0849

**RUSH**

BULK ANALYTICAL REQUEST FORM

Turnaround Time - Circle One

Batch Number 74578

Rush (24 hours \$25.00 per sample)

Non-rush (5 Working days \$17.00 per sample)

Name of location sample was taken at Tanner Building - Byk  
Street address sample was taken at Provo, UT  
Sampled by: Caroline Jung

Report to be sent to: Caroline - RJK Billing to be sent to: D. Roskelley  
Company: \_\_\_\_\_ Company: RJK  
Address: \_\_\_\_\_ Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ City: on file State: \_\_\_\_\_  
Zip Code: \_\_\_\_\_ Zip Code: \_\_\_\_\_  
Telephone #: (801) 647-5362 Telephone #: \_\_\_\_\_  
Fax #: \_\_\_\_\_ Fax #: \_\_\_\_\_  
E-mail: Caroline/dave/elden PO #: \_\_\_\_\_  
@renviro.com

Field #	Description of Sample	Samples Collected		Lab #
		Date	Time	
TB-TSI-01	6" elbow Thermal System Insulation - mech	5/31/07		18098
" -02	" " " Small Tank mech	"		18099
" -03	" " " 4" elbow - " "	"		18100

Chain of Custody

Submission of asbestos samples for analysis and/or signing a chain of custody is the equivalent of submission of a purchase order and constitutes an agreement to pay for services provided at Dixon Information Incorporated standard schedule of fees for services.

Submitted by: [Signature]  
Received by Lab: [Signature]  
Received by Analyst: [Signature]  
Returned by Lab: \_\_\_\_\_

Date: 5/31/07 Time: 15:26  
Date: 5/31/07 Time: 15:26  
Date: 5/31/07 Time: 16:00  
Date: \_\_\_\_\_ Time: \_\_\_\_\_



Dixon Information Inc.  
 78 West 2400 South  
 South Salt Lake, Utah 84115  
 Phone: 1-801-486-0800 Fax: 1-801-486-0849

**RUSH**

BULK ANALYTICAL REQUEST FORM

Turnaround Time - Circle One

Batch Number 74578

Rush (24 hours \$25.00 per sample)

Non-rush (5 Working days \$17.00 per sample)

Name of location sample was taken at Tanner Bldg. Byu  
 Street address sample was taken at Provo, UT

Sampled by: Caroline Jung

Report to be sent to: Caroline  
 Company: RTR

Billing to be sent to: D. Roskelley  
 Company: RTR

Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_

Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_

Zip Code: \_\_\_\_\_

Zip Code: \_\_\_\_\_

Telephone #: (801) 487-5362

Telephone #: \_\_\_\_\_

Fax #: \_\_\_\_\_

Fax #: \_\_\_\_\_

E-mail: Caroline/dave/selden@rrenviro.com

PO #: \_\_\_\_\_

Field #	Description of Sample	Samples Collected		Lab #
		Date	Time	
TB-CT-01	12" Ceiling tile - 3rd FL. Womens R.R.	5/31/07		18101
-02	12" " " - Media Rm. Auditorium	"		18102
-03	2'x2' ceiling tile - Rm - 360 entrance	"		18103
-04	2'x2' Ceiling tile - Rm 140c	"		18104
TB-CTM-01	Ceiling tile - 12" mixed w/ mastic	"		18105
TB-CA-01	Carpet Adhesive Vending Room #104			18106

Chain of Custody

Submission of asbestos samples for analysis and/or signing a chain of custody is the equivalent of submission of a purchase order and constitutes an agreement to pay for services provided at Dixon Information Incorporated standard schedule of fees for services.

Submitted by: [Signature]  
 Received by Lab: [Signature]  
 Received by Analyst: [Signature]  
 Returned by Lab: \_\_\_\_\_

Date: 05/31/07 Time: 15:20  
 Date: 5/21/07 Time: 15:26  
 Date: 6-1-07 Time: 9:00  
 Date: \_\_\_\_\_ Time: \_\_\_\_\_

Dixon Information Inc.  
 78 West 2400 South  
 South Salt Lake, Utah 84115  
 Phone: 1-801-486-0800 Fax: 1-801-486-0849

**BULK ANALYTICAL REQUEST FORM**

Turnaround Time - Circle One

Batch Number 74578

Rush (24 hours \$25.00 per sample)

Non-rush (5 Working days \$17.00 per sample)

Name of location sample was taken at Janner Bldg. - BYU  
 Street address sample was taken at Provo, UT  
 Sampled by: Caroline Jung

Report to be sent to: Caroline-KRC  
 Company: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_  
 Zip Code: \_\_\_\_\_  
 Telephone #: (801) 647-5362  
 Fax #: \_\_\_\_\_  
 E-mail: caroline/dave/eldon@rrenviro.com

Billing to be sent to: D. Roskelley  
 Company: \_\_\_\_\_  
 Address: on file  
 City: \_\_\_\_\_ State: \_\_\_\_\_  
 Zip Code: \_\_\_\_\_  
 Telephone #: \_\_\_\_\_  
 Fax #: \_\_\_\_\_  
 PO #: \_\_\_\_\_

Field #	Description of Sample	Samples Collected		Lab #
		Date	Time	
TB-FP-01	Fireproofing above ceiling on Beams - Rm 360	5/31/07		18107
-02	" " " " " " - " "			18108
-03	" " " " " " - Rm 140B			18109
-04	" " " " " " - Rm 270			18110
-05	" " " " " " - Rm 570			18111
-06	" " " " " " - Rm 470			18112
-07	" " " " " " - Media Rm Auditorium			18113
				<del>18114</del>

**Chain of Custody**

Submission of asbestos samples for analysis and/or signing a chain of custody is the equivalent of submission of a purchase order and constitutes an agreement to pay for services provided at Dixon Information Incorporated standard schedule of fees for services.

Submitted by: [Signature]  
 Received by Lab: [Signature]  
 Received by Analyst: [Signature]  
 Returned by Lab: \_\_\_\_\_

Date: 5/31/07 Time: 15:24  
 Date: 5/31/07 Time: 15:26  
 Date: 6-1-07 Time: 9:00  
 Date: \_\_\_\_\_ Time: \_\_\_\_\_



Dixon Information Inc.  
78 West 2400 South  
South Salt Lake, Utah 84115  
Phone: 1-801-486-0800 Fax: 1-801-486-0849

**BULK ANALYTICAL REQUEST FORM**

Turnaround Time - Circle One

Batch Number 74578

Rush (24 hours \$25.00 per sample)

Non-rush (5 Working days \$17.00 per sample)

Name of location sample was taken at Tanner Bldg - B44  
Street address sample was taken at Provo, UT  
Sampled by: Caroline Jung

Report to be sent to: Caroline Jung Billing to be sent to: D. Roskelley  
Company: RTR Company: RTR  
Address: \_\_\_\_\_ Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_  
Zip Code: \_\_\_\_\_ Zip Code: on file  
Telephone #: (801) 647-5362 Telephone #: \_\_\_\_\_  
Fax #: \_\_\_\_\_ Fax #: \_\_\_\_\_  
E-mail: caroline/dave/eldon PO #: \_\_\_\_\_  
@rrenviro.com

Field #	Description of Sample	Samples Collected		Lab #
		Date	Time	
TB-WS-01	Wall System - Rm 360	5/31/07		18115 18119
-02	" " - Rm 360			18110 18115
-03	" " - Fan Room entrance S.E. Corner <sup>Roof</sup>			18117 18116
-04	" " - 17th Floor Stairwell - West			18118 18117
-05	" " - 6th Floor Womens Restroom			18119 18118
-06	" " - 5th Floor lobby outside Rm 510			18120 18119
-07	" " - 4th Floor Stairwell East			18121 18120
-08	" " - 2nd Floor - Rm 270			18122 1821
-09	" " - Media Rm - Auditorium			18123 1822

**Chain of Custody**

Submission of asbestos samples for analysis and/or signing a chain of custody is the equivalent of submission of a purchase order and constitutes an agreement to pay for services provided at Dixon Information Incorporated standard schedule of fees for services.

Submitted by: [Signature] Date: 5/31/07 Time: 15:24  
Received by Lab: [Signature] Date: 5/31/07 Time: 1506  
Received by Analyst: [Signature] Date: 6-1-07 Time: 900  
Returned by Lab: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

BRIGHAM YOUNG UNIVERSITY

ADDENDUM RECEIPT

DATE: March 15, 2024

PROJECT: TNRB Auditoriums 151 & 251 Remodel

PROJ. #: WO #M3728

We acknowledge receipt of Addendum Number 1.

COMPANY: \_\_\_\_\_

BY: \_\_\_\_\_

TITLE: \_\_\_\_\_

**PLEASE EMAIL SIGNED RECEIPT TO [construction@byu.edu](mailto:construction@byu.edu)**