Addendum 1 for RFB927920-01

Project Name: WRC Decentralization Phase 2 & Fire Alarm & Myers Hall Sprinkler
DAS RFB #: 927920-01
DAS Project #: 9279.20-21 & 9294.00
Date: 2/16/2023

Questions Due: February 21, 2023, at 2:00pm

Bids Due: February 28, 2023, at 2:00pm

TO: PROSPECTIVE BIDDERS:

THIS ADDENDUM FORMS A PART OF THE BIDDING AND CONTRACT DOCUMENTS AND MODIFIES THE BIDDING DOCUMENTS DATED 01-10-2023, WITH AMENDMENTS AND ADDITIONS NOTED BELOW. THIS ADDENDUM SUPERSEDES AND SUPPLEMENTS ALL PORTIONS OF THE ORIGINAL BIDDING AND CONTRACT DOCUMENTS WITH WHICH IT CONFLICTS. ACKNOWLEDGE RECEIPT OF THIS ADDENDUM IN THE IMPACS ELECTRONIC PROCUREMENT SYSTEM. FAILURE TO DO SO MAY DISQUALIFY THE BIDDER.

GENERAL NOTES

The CM (Story Construction) will be in communication with Hazard Materials and asbestos contractors to remove any asbestos that may be present within the building.

Change all instances of RFB927900-01 to RFB927920-01.

QUESTIONS AND ANSWERS FROM PRE-BID MEETING

Q1. Is there an attic at Myers Hall that needs to be sprinklered?

A1. Yes, please see attached drawing sheet 04-FP103.

Q2. Will painting pipe and conduit fall under the owner performed work?

A2. All painting will be included with BP-09-1 as part of the updated allowance of $40,000 for wall patching and painting. ADD #2 will further clarify this scope.

Q3. Which bid package should be responsible for the radiator cover removal?

A3. This will be done by BP #22-1 and ADD #2 will further clarify this scope.

CHANGES TO SPECIFICATIONS AND DRAWINGS

Specifications:

- **SECTION 00 0110 – TABLE OF CONTENTS**
    - **REPLACE** entire specification section.

- **SECTION 00 0115 – LIST OF DRAWING SHEETS**
    - **REPLACE** entire specification section.
- **SECTION 07 2100-THERMAL INSULATION**
    - **REMOVE** section in its entirety.
- **SECTION 08 7100-DOOR HARDWARE**
    - **REMOVE** section in its entirety.
- **SECTION 09 9123-INTERIOR PAINTING**
    - **ADD** §2.1B4 “Architect Pre-Approved Equivalent.”
    - **REMOVE** §2.1C regarding substitutions.
    - **REVISE** §2.3A3a to “Architect Pre-Approved Equivalent.”
- **SECTION 21 1316 – DRY PIPE FIRE SUPPRESSION SPRINKLER SYSTEMS**
    - **ADD** specification to project.
- **SECTION 23 0500 – COMMON WORK RESULTS FOR HVAC**
    - **REPLACE 3.4.B** with: “Concrete bases and pads for mechanical equipment shall be furnished by this Contractor. Size bases to extend minimum of 4" beyond equipment base in any direction, and 4" above finished floor elevation. Construct of reinforced concrete, roughen floor slab beneath base for bond, and provide steel rod anchors between floor and base. Locate anchor bolts using equipment manufacturer's templates. Chamfer top and edge corners.”
- **SECTION 23 0923 – DIRECT-DIGITAL CONTROL SYSTEM FOR HVAC**
    - **REVISE** 2.11.X.1. to read “All VFD’s will be owner provided and BP #26-1 installed. Refer to 26 2923 – Variable-Frequency Motor Controllers for additional details.” This section will be included in Addendum #2.
    - **REVISE** 3.19.B. Delete reference to Appendix A in 23 09 93. If character limitations or space restrictions make it advisable to shorten a point name, provide a list of abbreviations in submittals.
    - **REVISE** 3.19.D.1. Delete reference to 23 09 93. Points are shown on schematics on control drawings and described in sequences.
- **SECTION 23 1123 – FACILITY NATURAL GAS PIPING**
    - **REMOVE** 3.1.Q.4. – the meter will be set, and meter concrete foundations will be provided by others.
- **SECTION 23 8239 – STEEL WATER TUBE BOILERS (HEATING WATER, MODULAR TYPE)**
    - **REVISE** 3.1.A. to 4” height on boiler pads.
- **SECTION 23 8239 – UNIT HEATERS**
    - **REMOVE** References to steam unit heaters. No steam unit heaters are in the project.

CHANGES TO THE DRAWINGS - WESTWOOD

- **00-MP00 – MECHANICAL & PLUMBING GENERAL INFORMATION**
    - **ADD** section outlining State Historical Preservation Office Requirements
- **00-E000 – ELECTRICAL GENERAL INFORMATION**
    - **REVISE** Description for wall mounted occupancy and ceiling devices description to include “ALL DEVICES TO BE PASSIVE INFRARED”
    - **ADD** section outlining State Historical Preservation Office Requirements
- **01-A101 - WESTWOOD FLOOR PLANS & RCPs**
    - **REVISE** CEILING PLAN NOTES to exclude note 6 regarding use of owner ceiling panel stock.
- **01-M500 – MECHANICAL DETAILS**
    - **REVISE** details F2 and F3 to read (heating water) instead of (chilled water). The intent is for the detail to apply to all heating water piping.
- **01-ED102 – SECOND AND THIRD FLOOR ELECTRICAL DEMOLITION PLAN**
    - **REVISE** Keynote 01-ED10 to state “KEYNOTE TYPICAL FOR ROOM 221, 220, 219, 216 215, 213 AND 200. SUPPORT ALL EXISTING CEILING MOUNTED ELECTRICAL DEVICES IN THE CEILING INCLUDED LIGHT FIXTURES, EXIT LIGHTS, SPEAKERS, AND FIRE ALARM DEVICES WHILE THE CEILING IS REMOVED TO INSTALL PIPING. REINSTALL THE EXISTING CEILING MOUNTED ELECTRICAL DEVICES IN THE CEILING AFTER MECHANICAL PIPING IS COMPLETE. REFER TO 01-AD01 FOR LOCATIONS OF CEILING REMOVED.”
- **01-E100 – BASEMENT LEVEL ELECTRICAL PLAN**
    - **REVISE** Keynote 01-E004 to state “CO DETECTOR (PROVIDED BY BP #22-1 MECHANICAL CONTRACTOR).”

CHANGES TO THE DRAWINGS - ADMIN BUILDING

- **02-E301 – ELECTRICAL ADMINISTRATION FIRE ALARM UPGRADES**
    - **ADD** To keynote 02-E002 “COORDINATE EXACT LOCATION WITH OWNER PRIOR TO ROUGH-IN.”

CHANGES TO THE DRAWINGS - MYERS HALL

- **04-AD01 – DEMOLITION PLANS**
    - Per detail A4 include demo note AD.03 for the two (2) door frames by the stairs in the vestibule near the general assembly rooms.
- **04-FP100 - BASEMENT FIRE PROTECTION PLAN**
    - **REVISE** notes 18 and 19 to read “NOT USED.”
- **04-FP101 - FIRST FLOOR FIRE PROTECTION PLAN**
    - **REVISE** notes 18 and 19 to read “NOT USED.”
    - **ADD** dry system riser to sheet.

- **04-FP102 - SECOND FLOOR FIRE PROTECTION PLAN**
    - **REVISE** notes 18 and 19 to read “NOT USED.”
    - **ADD** dry system riser to sheet.
    - **ADD** keynote 04-E025 to sheet.
    - **REMOVE** fire alarm devices that are not associated with the fire pump portion of the project. Due to source of funding, fire alarm devices associated with fire pump portion of project are required to be broken out as a separate price. Refer to bid package descriptions for more information. Refer to fire alarm sheets for remaining fire alarm devices.
- **04-FP103 - ATTIC FIRE PROTECTION PLAN**
    - **ADD** sheet to project.
- **04-FP300 - FIRE PUMP PLANS, DETAILS & SCHEDULES**
    - **REVISE** SPRINKLER RISER DIAGRAM to show dry sprinkler riser.
    - **ADD** dry sprinkler riser to FIRE PUMP PLAN.
- **04-MD100 – BASEMENT MECHANICAL PIPING DEMOLITION PLAN**
    - **ADD** keynote 04-MD5 regarding demolition of steam piping. See attached sheet for further information.
- **04-M100 – BASEMENT MECHANICAL PIPING PLAN**
    - **ADD** keynote 04-M05 regarding exhaust fan.
- **04-M500 – MECHANICAL DETAILS**
    - **REVISE** details F6 and D6 to read (heating water) instead of (chilled water). The intent is for the detail to apply to all heating water piping. Added detail 5 regarding pot feeder piping detail.
- **04-M600 – MECHANICAL SCHEDULES**
    - **CLARIFICATION –** Boiler efficiency listed in schedule is rated at 100% input, 20°F delta T and 120°F return water temperature.
- **04-E100 – BASEMENT LEVEL ELECTRICAL PLAN**
    - **ADD** Keynote to DETECTOR in Boiler B05 keynote state in “CO DETECTOR (PROVIDED BY MECHANICAL CONTRACTOR).”
    - **ADD** Electrical connection for dry pipe air compressor. Connection located in Boiler B05. Circuit to 20A/1P breaker in panel ‘SBLB’ with 2#12 and 1#12 GND in ¾” C. Non fused disconnect for air compressor to be furnished and installed by electrical contractor in Alternate #05.

SUBSTITUTION REQUESTS

SECTION	ITEM	SUBSTITUTION AND/OR APPROVED EQUAL
26 5100	L10	C-Lite LED Lighting
23 2113	Flow Balancing Kits	HCi
23 2113	Expansion Tank	Grundfos
23 8239	Unit Heaters	Daikin

ATTACHMENTS

1. **Specification sections:** 00 0110 – Table of Contents, 00 0115 – List of Drawing Sheets, 09 9123 – Interior Painting, and 21 1316 – Dry Pipe Fire Suppression Sprinkler Systems.

2. **Drawings:** 00-MP00, 04-FP101, 04-FP102, 04-FP103, 04-FP300, 04-MD100, 04-M100, and 04-M500

3. Hazardous Materials Report

4. Cottage 201 Asbestos Clarification

5. Pre-Bid Sign in Sheet held on 2/1/2023.

END OF ADDENDUM

SECTION 00 0110

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2.04 Division 7 – THERMAL AND MOISTURE PROTECTION

A.	07 84 00	Fire Stopping
B.	07 90 00	Joint Sealants

2.05 Division 8 – OPENINGS

A.	08 06 71	Door Hardware Schedule
B.	08 11 13	Hollow Metal Doors and Frames

2.06 Division 9 – FINISHES

A.	09 21 16	Gypsum Board Assemblies
B.	09 51 00	Acoustical Ceilings
C.	09 91 23	Interior Painting

2.07 Division 21 – FIRE SUPPRESSION

A.	21 05 23	General Duty Valves for Water Based Fire Suppression
B.	21 05 53	Identification for Fire Suppression Piping and Equipment
C.	21 11 00	Facility Fire Suppression Water Service Piping
D.	21 13 00	Fire Suppression Sprinkler Systems
E.	21 13 16	Dry Pipe Fire Suppression Sprinkler Systems
F.	21 31 00	Fire Pumps

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2.08 Division 22 – PLUMBING

A.	22 05 00	Common Work Results for Plumbing
B.	22 05 19	Meters and Gauges for Plumbing Piping
C.	22 05 23	General Duty Valves for Plumbing Piping
D.	22 05 29	Hangers and Supports for Plumbing Piping and Equipment
E.	22 05 53	Identification for Plumbing Piping and Equipment
F.	22 07 00	Plumbing Insulation
G.	22 11 16	Domestic Water Piping
H.	22 11 19	Domestic Water Piping Specialties
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J.	22 13 19	Sanitary Waste Piping Specialties

2.09 Division 23 – HVAC

2.010 Division 26 – ELECTRICAL

2.011 **Division 27 – COMMUNICATIONS**

2.012 Division 28 – ELECTRONIC SAFETY AND SECURITY

END OF SECTION

SECTION 00 0115

LIST OF DRAWING SHEETS

DRAWINGS

1.01 SHEET TITLE

1.	00-G000	Cover Sheet
2.	00-G001	Campus Map
3.	00-MP00	Mechanical & Plumbing General Information
4.	00-E000	Electrical General Information
5.	01-AD01	Westwood Demo Floor Plans & Demo Reflected Ceiling Plans
6.	01-A101	Westwood Floor Plans & RCPs
7.	01-MD100	Basement Mechanical Piping Demolition Plan
8.	01-MD101	First Floor Mechanical Piping Demolition Plan
9.	01-MD102	Second and Third Floor Mechanical Piping Demolition Plan
10.	01-M100	Basement Mechanical Piping Plan
11.	01-M101	First Floor Mechanical Piping Plan
12.	01-M102	Second and Third Floor Mechanical Piping Plan
13.	01-M103	Thermostat Zoning Plans
14.	01-M500	Mechanical Details
15.	01-M501	Controls
16.	01-M600	Mechanical Schedules
17.	01-ED100	Basement Level Electrical Demolition Plan
18.	01-ED101	First Floor Electrical Demolition Plan
19.	01-ED102	Second and Third floor Electrical Demolition Plan
20.	01-E100	Basement Level Electrical Plan
21.	01-E101	First Floor Electrical Plan
22.	01-E102	Second and Third Floor Electrical Plan
23.	01-ED300	Basement Level Fire Alarm Demolition Plan
24.	01-ED301	First Floor Fire Alarm Demolition Plan
25.	01-ED302	Second and Third Floor Fire Alarm Demolition Plan
26.	01-E300	Basement Level Fire Alarm Plan
27.	01-E301	First Floor Fire Alarm Plan
28.	01-E302	Second and Third Floor Fire Alarm Plan
29.	02-E301	Electrical Administration Fire Alarm Upgrades
30.	04-AD01	Demolition Plans
31.	04-A110	Basement and First Floor Plans & Doors
32.	04-A111	Second Floor Reflected Ceiling Plan
33.	04-P100	Plumbing Plans
34.	04-FP000	Fire Protection General Information
35.	04-FP100	Basement Fire Protection Plan
36.	04-FP101	First Floor Fire Protection Plan
37.	04-FP102	Second Floor Fire Protection Plan
38.	04-FP103	Attic Fire Protection Plan
39.	04-FP300	Fire Pump Plans, Details, & Schedules
40.	04-MD100	Basement Mechanical Piping Demolition Plan
41.	04-MD101	First Floor Mechanical Piping Demolition Plan
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43.	04-M100	Basement Mechanical Piping Plan
44.	04-M101	First Floor Mechanical Piping Plan
45.	04-M102	Second Floor Mechanical Piping Plan
46.	04-M103	Thermostat Zoning Plans

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47.	04-M500	Mechanical Details
48.	04-M501	Controls
49.	04-M502	Controls
50.	04-M600	Mechanical Schedules
51.	04-ED100	Basement Level Electrical Demolition Plan
52.	04-ED101	First Floor Electrical Demolition Plan
53.	04-ED102	Second Floor Electrical Demolition Plan
54.	04-E100	Basement Level Electrical Plan
55.	04-E101	First Floor Electrical Plan
56.	04-E102	Second Floor Electrical Plan
57.	04-ED300	Basement Level Fire Alarm Demolition Plan
58.	04-ED301	First Floor Fire Alarm Demolition Plan
59.	04-ED302	Second Floor Fire Alarm Demolition Plan
60.	04-E300	Basement Level Fire Alarm Plan
61.	04-E301	First Floor Fire Alarm Plan
62.	04-E302	Second Floor Fire Alarm Plan
63.	04-E600	Electrical Schedules
64.	C1-ED301	Cottage Style A Fire Alarm Demolition Plan
65.	C1-E301	Cottage Style A Fire Alarm Plans
66.	C2-ED301	Cottage Style B Fire Alarm Demolition Plan
67.	C2-E301	Cottage Style B Fire Alarm Plans
68.	C3-ED301	Cottage Style C Fire Alarm Demolition Plan
69.	C3-E301	Cottage Style C Fire Alarm Plans

END OF SECTION

SECTION 09 9123
INTERIOR PAINTING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Surface preparation.

B. Field application of paints.

C. Scope: Finish new wall, new door and frame, and other surfaces as indicated.

D. Do Not Paint or Finish the Following Items:

1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
2. Items indicated to receive other finishes.
3. Items indicated to remain unfinished.
4. Fire rating labels, equipment serial number and capacity labels, bar code labels, and operating parts of equipment.
5. Floors, unless specifically indicated.
6. Concealed pipes, ducts, and conduits.

1.2 DEFINITIONS

A. Comply with ASTM D16 for interpretation of terms used in this section.

1.3 REFERENCE STANDARDS

A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency current edition.

B. ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications 2019.

C. MPI (APL) - Master Painters Institute Approved Products List; Master Painters and Decorators Association Current Edition.

D. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual Current Edition.

E. SSPC-SP 1 - Solvent Cleaning 2015, with Editorial Revision (2016).

F. SSPC-SP 6 - Commercial Blast Cleaning 2007.

1.4 SUBMITTALS

A. Product Data: Provide complete list of products to be used, with the following information for each:

1. Manufacturer's name, product name and/or catalog number, and general product category (e.g., "alkyd enamel").
2. MPI product number (e.g., MPI #47).

3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.

B. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches (216 by 279 mm) in size, illustrating range of colors available for each finishing product specified.

1. Where sheen is specified, submit samples in only that sheen.

C. Certification: By manufacturer that paints and finishes comply with VOC limits specified.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.

1.6 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

C. Do not apply materials when relative humidity exceeds 85 percent, at temperatures less than 5 degrees F (3 degrees C) above the dew point, or to damp or wet surfaces.

D. Minimum Application Temperatures for Paints: 50 degrees F (10 degrees C) for interiors unless required otherwise by manufacturer's instructions.

E. Provide lighting level of 80 ft candles (860 lx) measured mid-height at substrate surface.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Provide paints and finishes from the same manufacturer to the greatest extent possible.

B. Paints:

1. Diamond Vogel Paints: www.diamondvogel.com/#sle.
2. PPG Paints: www.ppgpaints.com/#sle.
3. Sherwin-Williams Company: www.sherwin-williams.com/#sle.
4. Architect Pre-Approved Equivalent.

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2.2 PAINTS AND FINISHES - GENERAL

A. Paints and Finishes: Ready-mixed, unless intended to be a field-catalyzed paint.

1. Where MPI paint numbers are specified, provide products listed in Master Painters Institute Approved Product List, current edition available at www.paintinfo.com, for specified MPI categories, except as otherwise indicated.

2. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
3. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
4. Supply each paint material in quantity required to complete entire project's work from a single production run.
5. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.

B. Volatile Organic Compound (VOC) Content:

1. Provide paints and finishes that comply with the most stringent requirements specified in the following:
   a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
   b. Architectural coatings VOC limits of State in which the project is located.
2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.

C. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect/Engineer from the manufacturer's full line.

D. Colors:

1. Selection to be made by Architect/Engineer after award of contract.

2.3 PAINT SYSTEMS - INTERIOR

A. Paint I-OP - Interior Surfaces to be Painted, Unless Otherwise Indicated: Including gypsum board, uncoated steel, shop primed steel, and galvanized steel.

1. Paint hollow metal doors and door frames in all spaces indicated to receive new finishes.
2. Two top coats and one coat primer.
3. Top Coat(s): High Performance Architectural Interior Latex; MPI #138, 139, 140, or 141.
   a. Products:
      1) Sherwin-Williams Pre-Catalyzed Waterbased Epoxy, Eg-Shel. (MPI #139)
      2) Sherwin-Williams Pre-Catalyzed Waterbased Epoxy, Semi-Gloss. (MPI #141)
      3) Substitutions: Architect Pre-Approved Equivalent.

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4. Top Coat Sheen:
   a. Eggshell: MPI gloss level 3; use this sheen at gypsum wallboard locations.
   b. Semi-Gloss: MPI gloss level 5; use this sheen for hollow metal doors and frames.
5. Primer: As recommended by top coat manufacturer for specific substrate.

2.4 ACCESSORY MATERIALS

A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

B. Patching Material: Latex filler.

C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin application of paints and finishes until substrates have been adequately prepared.

B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

D. If substrate preparation is the responsibility of another installer, notify Architect/Engineer of unsatisfactory preparation before proceeding.

E. Test shop-applied primer for compatibility with subsequent cover materials.

F. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces is below the following maximums:

1. Gypsum Wallboard: 12 percent.

3.2 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove or repair existing paints or finishes that exhibit surface defects.

D. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.

E. Seal surfaces that might cause bleed through or staining of topcoat.

F. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

G. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.

H. Galvanized Surfaces:

1. Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.

I. Ferrous Metal:

1. Solvent clean according to SSPC-SP 1.

2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.

3. Remove rust, loose mill scale, and other foreign substances using using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 "Commercial Blast Cleaning". Protect from corrosion until coated.

3.3 APPLICATION

A. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".

B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

C. Apply each coat to uniform appearance in thicknesses specified by manufacturer.

D. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

E. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.4 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.5 PROTECTION

A. Touch-up damaged finishes after Substantial Completion.

END OF SECTION

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SECTION 21 1316
DRY PIPE FIRE SUPPRESSION SPRINKLER SYSTEMS

PART 1 GENERAL

1.1 SUMMARY

A. Provide equipment, material, devices, labor, and supervision necessary to fabricate and erect hydraulically designed Dry Pipe Suppression Sprinkler System as required by the Drawings and this Section.

1.2 CODES AND REGULATIONS

A. Sprinkler system design, equipment, materials, devices, and installation shall conform to NFPA Codes and Requirements of Governmental Bodies and Bureaus as listed below:

1. NFPA 13, 14, 24, 75 and other standards as applicable.
2. Local Fire Department
3. State Fire Marshal
4. International Building Code
5. Factory Mutual (FM)
6. Underwriters Laboratory (UL)

1.3 QUALIFICATIONS

A. All installation work shall be performed by licensed fire protection sprinkler contractors, licensed for such work where the work is to be performed.

1.4 WIRING

A. The Division 26 Contractor shall furnish wiring for signal and alarm devices furnished by sprinkler contractor.

1.5 SPRINKLER DESIGN

A. Flow tests taken by Iowa Fire Equipment Company at the hydrant near "Employee Home or E-Home" indicates a static pressure of 40 psi and residual pressure of 26 psi with a flow of 342 GPM.

1. There is an existing sprinkler system in the building that may have additional data available.

1.6 SUBMITTALS

A. Product Data: Submit manufacturer's technical product data and installation instructions for all fire protection materials and products.

B. Shop Drawings: Submit scaled, dimensioned installation drawings and supporting hydraulic calculations. Provide drawings and calculations that have been approved by the Authority Having Jurisdiction and that are prepared and stamped by a Registered Engineer or by a technician with NICET level III certification.

C. Contractor's Material & Test Certificate: Submit completed Contractor's Material & Test Certificate for each system.

D. At project closeout, submit record drawings of installed fire protection piping and products.

E. Submit operating and maintenance data and parts lists for fire protection materials and products. Include this data, product data, shop drawings, approved drawings, approved calculations, certificate of installation, and record drawings in maintenance manual.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Water Flow Indicators and Supervisory Switches
    a. Potter Electric Signal Co.
    b. System Sensor Div., Pittway Corp.
    c. Engineer Pre-Approved Equivalent
2. Sprinklers
    a. ASCOA Fire Systems, Figgie International Co.
    b. Central Sprinkler Corp.
    c. Gem Sprinkler Co. Div., Grinnell Corp.
    d. Globe Fire Sprinkler Corp.
    e. Reliable Automatic Sprinkler Co., Inc.
    f. Star Sprinkler Corp.
    g. Viking Corp.
    h. Engineer Pre-Approved Equivalent
3. Fire Protection Service Gate and Check Valves
    a. Gem Sprinkler Co. Div., Grinnell Corp.
    b. Kennedy Valve Div., McWane, Inc.
    c. Nibco, Inc.
    d. Stockham Valves and Fittings, Inc.
    e. Victaulic Company of America
    f. Central Sprinklers Corp.
    g. Engineer Pre-Approved Equivalent
4. Grooved Couplings for Steel Piping
    a. Grinnell Supply Sales Co., Grinnell Corp.
    b. Gustin-Bacon Div., Tyler Pipe Subsid., Tyler Corp.
    c. Stockham Valves and Fittings, Inc.

d. Victaulic Company of America

e. Central Sprinklers Corp.

f. Engineer Pre-Approved Equivalent

5. Dry Pipe Valves

a. Victaulic

b. Grinnell Supply Sales Co., Grinnell Corp.

c. Reliable Automatic Sprinkler Co., Inc.

d. Viking Corp.

e. ASCOA Fire Systems, Figgie International Co.

f. Central Sprinklers Corp.

g. Engineer Pre-Approved Equivalent

6. Air Compressors

a. Victaulic

b. Gast

c. Speedaire

d. Thomas Compressors and Vacuum Pumps

e. Ingersoll-Rand Air Compressors

f. Engineer Pre-Approved Equivalent

2.2 PIPES

A. Refer to Part 3 Article "Sprinkler System Piping Applications" for identification of systems where pipe and fitting materials specified below are used.

B. Steel Pipe: ASTM A53, Schedule 40, galvanized, plain and threaded ends, for threaded, cut-groove, and rolled-groove joints.

C. Steel Pipe: ASTM A 135, Schedule 10, galvanized, with plain ends for rolled-groove joints.

2.3 PIPE FITTINGS

A. Grooved-End Fittings for Ductile-Iron Pipe: ASTM A 536 ductile-iron or ASTM A 47 malleable-iron, AWWA pipe-size, designed to accept AWWA C606 grooved couplings. Include cement lining or Food and Drug Administration (FDA)-approved interior coating.

B. Steel Fittings: ASTM A234, seamless or welded; ASME B16.9, buttwelding; or ASME B16.11, socket-welding type for welded joints.

C. Steel Flanges and Flanged Fittings: ASME B16.5.

D. Grooved-End Fittings for Steel Pipe: UL-listed and FM-approved, ASTM A536, Grade 65-45-12 ductile iron or ASTM A 47 Grade 32510 malleable iron, with grooves or shoulders designed to accept grooved couplings.

2.4 JOINING MATERIALS

A. Refer to Division 22 for joining materials not included in this Section.

2.5 GENERAL-DUTY VALVES

A. Refer to Division 21 for general-duty gate and ball valves.

2.6 FIRE PROTECTION SERVICE VALVES

A. General: UL-listed and FM-approved, with 175-psig non-shock minimum working pressure rating.

1. Option: Valves for use with grooved piping may be grooved type.

2.7 SPECIALTY VALVES

A. Ball Drip Valves: UL 1726 automatic drain valve, 3/4-inch size, spring-loaded, ball check device with threaded ends.

B. Dry Pipe Valves shall be UL-listed and FM-approved, with 175-psig working pressure. Include trim sets for bypass, drain, electric sprinkler alarm switch, air pressure monitoring switch, pressure gauges, precision retarding chamber, air line, and fill line attachment with strainer.

1. Drip Cup Assembly: Pipe drain with check valve to main drain piping.
2. Option: Grooved-end connections for use with grooved-end piping.
3. Provide all required pipe nipples and fittings for operation with standard galvanized finish.
4. Provide all trim accessories required for operation.
5. Provide all required gauges for operation.
6. Provide alarm pressure switch.
7. Dry Accelerator.
8. Provide air supervisory pressure switch.
9. Provide air supply system for establishing and maintaining air in the system.
    a. Compressor.
    b. Low-pressure alarms.
    c. Ball valves.
    d. Required trim.

2.8 SPRINKLERS

A. Automatic Sprinklers with quick-response element conforming to:

1. UL 199 and FM-approved, for applications except residential.

B. Sprinkler types and categories are as indicated and as required by application. Furnish automatic sprinklers with nominal 1/2-inch orifice and 1/2-inch NPT.

C. Sprinkler heads shall be of the following types:

1. Dry pendant, quick response, recessed type chrome-plated, two piece escutcheon ring, Reliable model F3QR series or approved equivalent.

2. Areas without finished ceilings, in concealed spaces and under ducts; quick response, upright-type head for exposed piping, brass finish, Reliable F1FR series or approved equivalent.

D. Sprinkler heads shall be of the ordinary temperature range 160oF except where subject to high temperatures caused by unit heaters, hot pipes, radiant ceilings, or other heat source, heads shall be of high temperature type, 250oF.

E. Sprinkler Guards: Wire-cage type, including fastening device for attaching to sprinkler.

F. Sprinkler Cabinets: Finished steel cabinet and hinged cover, with space for minimum of 6 spare sprinklers plus sprinkler wrench, suitable for wall mounting. Include number of sprinklers required by NFPA 13 and 1 wrench for sprinklers. Include separate cabinet with sprinklers and wrench for each style sprinkler on project.

2.9 SPECIALTY SPRINKLER FITTINGS

A. Mechanical "T" Fittings: UL 213, ductile-iron housing with pressure-responsive gasket, bolts, and threaded or locking-lug outlet.

B. Mechanical Cross Fittings: UL 213, ductile-iron housing with pressure-responsive gaskets, bolts, and threaded or locking-lug outlets.

C. Drop-Nipple Fittings: UL 1474, with threaded inlet, threaded outlet, and seals; adjustable.

D. Sprinkler Alarm Test Fittings: Ductile-iron housing with 1-1/2-inch (DN 40) inlet and outlet, integral test valves, combination orifice and sight glass, and threaded or locking lug ends.

2.10 ALARM DEVICES

A. Alarm Devices: Types and sizes that will match piping and equipment connections.

B. Waterflow Indicators: UL 346, electrical-supervision type, vane-type Waterflow detector, rated to 250 psig, and designed for horizontal or vertical installation. Include 2 SPDT (single-pole, double-throw) circuit switches to provide isolated alarm and auxiliary contacts, 7 ampere, 125 volts AC and 0.25 ampere, 24 volts DC; complete with factory-set, field-adjustable retard element to prevent false signals, and tamper-proof cover that sends a signal when cover is removed.

C. Supervisory Switches: UL 753 for valves, electrical-supervision type, SPDT (single-pole, double-throw), normally closed contacts, designed to signal controlled valve in other than full open position.

D. Supervisory Switches: UL 753 for indicator posts, electrical-supervision type, SPDT (single-pole, double-throw), normally closed contacts, designed to signal controlled valve in other than full open position.

E. Supervisory Pressure Switches: UL 753, for low air alarm, air pressure switch with retard, electrical-supervision type, SPDT (single-pole, double-throw), normally closed contacts, designed to operate on rise or drop in air pressure.

2.11 PRESSURE GAUGES

A. Pressure Gauges: UL 393, 3½" to 4½" diameter dial, with dial range of 0-250 psig.

PART 3 EXECUTION

3.1 SPRINKLER SYSTEM PIPING APPLICATIONS

A. Refer to Part 2 of this Section for detailed specifications on pipe and fittings products listed below. Use pipe, fittings, and joining methods according to the following applications. Piping may be joined with flanges instead of indicated joints. Use grooved-end fittings with grooved couplings that are made by the same manufacturer and that comply with listing when used together for grooved-coupling joints.

1. Option: Mechanical "T" bolted-branch-outlet fittings, instead of fitting types specified may be used for branch connections.

B. Sizes 10" and Smaller for Dry Pipe Systems: ASTM A53 or A135 Schedule 40 galvanized steel pipe with rolled-groove or cut-groove ends, grooved-end steel pipe fittings, and grooved-coupling joints.

C. Sizes 2-1/2" to 6" for Dry Pipe Systems: ASTM A135 or A795, Schedule 10 galvanized steel pipe with rolled groove ends, grooved-end steel pipe fittings, and grooved-coupling joints.

3.2 VALVE APPLICATIONS

A. Drawings indicate valve types to be used. Where specific valve types are not indicated, the following requirements apply:

1. Shut-off Duty: Use gate, ball, or butterfly valves.
2. Throttling Duty: Use globe, ball, or butterfly valves.

3.3 JOINT CONSTRUCTION

A. Grooved-End Pipe and Grooved-End Fitting Joints: Use groove-end fittings and grooved couplings that are made by the same manufacturer and that are listed for use together. Groove pipe and assemble joints with grooved coupling, gasket, lubricant, and bolts according to coupling and fitting manufacturer's written instructions.

B. Mechanically Formed Outlet Joints: Use UL-listed procedure and follow forming equipment manufacturer's written instructions. Drill pilot hole in tube, form branch for collar, dimple tube to form seating stop, and braze branch tube into formed-collar outlet.

C. Locking-Lug Joints: Follow manufacturer's written instructions.

3.4 PIPING INSTALLATIONS

A. Locations and Arrangements: Drawings (plans, schematics, and diagrams) indicate general location and arrangement of piping. Install piping as indicated, as far as practical.

1. Deviations from approved shop drawings for sprinkler piping require written approval from authority having jurisdiction. File written approval with the Architect prior to deviating from approved shop drawings.

B. Use approved fittings to make changes in direction, branch takeoffs from mains, and reductions in pipe sizes.

C. Install flanges or flange adapters on valves, apparatus, and equipment have 2½-inch and larger connections.

D. Install combination Inspector's Test Connection and Drain in sprinkler piping, sized on the system riser, if acceptable to the authority having jurisdiction.

E. Install sprinkler piping with drains for complete system drainage.

F. Install ball drip valves to drain piping between fire department connections and check valves, and where indicated. Drain outside building.

G. Install alarm devices in piping systems.

H. Hangers and Supports: Comply with NFPA 13.

1. Install hanger and support spacing and locations for steel piping joined with grooved mechanical couplings according to manufacturer's written instructions for rigid systems.

2. Do not hang from joist bridging. Joist bridging is not considered structural.

I. Install pressure gauges on riser. Include pressure gauges with connection not less than ¼" and with soft metal seated globe valve, arranged for draining pipe between gauge and valve. Install gauges to permit removal, and install where they will not be subject to freezing.

J. Hold riser piping and components as close to wall as allowable. Install riser components vertically, when possible, rather than horizontally to minimize space requirements. Risers to second floor shall not pass through sales areas or electrical rooms.

K. For dry pipe systems, no portion of the sprinkler system shall be gridded, looped, or arranged in such a manner as to allow water to flow to any sprinkler from more than one direction.

3.5 HYDRAULIC CALCULATIONS

A. Size system piping such that total required system pressure at demand flow (including hose streams) is at least 5 psi less than the available pressure at demand flow. Include in calculations, the greater of the following:

1. 8-psi allowance for future reduced pressure principle backflow preventer installed at service entrance.

2. Actual backflow preventer installed.

3.6 VALVE INSTALLATIONS

A. Refer to Division 21 for installation of general-duty valves. Install fire-protection specialty valves, trim, fittings, controls, and specialties according to NFPA 13, manufacturer's written instructions, and the authority having jurisdiction.

B. Gate Valves: Install fire-protection service valves supervised-open, located to control sources of water supply excerpt from fire department connections. Where there is more than 1 control valve, provide permanently marked identification signs indicating portion of system controlled by each valve.

C. Install tamper switches on valves controlling water supply to the sprinkler system.

D. Install check valve in each water supply connection. Install backflow preventers instead of check valves in potable water supply sources.

E. Install valve on each sprinkler line to sprinkler head in elevator hoistway or elevator equipment room. Valve shall be located outside of these areas. Valves shall be locked in the open position.

F. Dry Pipe Valves: Install valves in vertical position for proper direction of flow, including bypass check valve and retard chamber drain line connection.

G. Install permanent signs supported by chains identifying all drains, test connections, air supplies (for dry pipe systems), and water supply valves. Install placards indicating all hydraulic design criteria for each area and permanently attach placards to riser.

3.7 SPRINKLER APPLICATIONS

A. Rooms without Ceilings: Upright sprinklers.

B. Rooms with Ceilings: Recessed sprinklers.

C. Sprinkler Temperature Ratings: Use sprinklers with the following temperature ratings in the applications listed unless noted otherwise on drawings:

1. Ordinary Temperature Classification (165° F): Public areas, classrooms, offices, janitor's closets, mechanical equipment rooms.

2. Intermediate Temperature Classification (212° F): Top of elevator hoistways where ambient temperatures can exceed 100° F, stock rooms.

3.8 SPRINKLER INSTALLATIONS

A. Install sprinklers in locations indicated. When sprinkler locations are not indicated in an area, locate sprinklers to meet this specification.

B. Install sprinklers in suspended ceiling in center of acoustical panels and in center of half of acoustical panels, as shown on plans. The location of sprinklers may deviate up to 3 inches from the center, provided the deviation is continued for all sprinklers in the rows of both directions.

C. Install sprinkler guards on sprinklers in janitor closets, gymnasiums, and on non-recessed heads within 84 inches of the floor.

3.9 CONNECTIONS

A. Connect water supplies to sprinkler systems. Include backflow preventers.

B. Electrical Connections: Power wiring as specified in Division 26.

C. For Dry Pipe Systems: Connect air lines to air compressor controlled by an automatic air maintenance device. Flexible connections and hose are not allowed.

D. Follow NFPA 24 testing requirements of below ground piping prior to connecting to the above ground pipes.

3.10 FIELD QUALITY CONTROL

A. Perform field acceptance tests of each fire protection system with Architect/Engineer and authority having jurisdiction present.

1. Flush, test, and inspect sprinkler piping systems according to NFPA 13 Chapter "System Acceptance."

B. Replace piping system components that do not pass test procedures specified then retest to demonstrate compliance. Repeat procedure until satisfactory results are obtained.

1. Complete the Contractor's Material & Test Certificate and submit form promptly to Owner's representative and authority having jurisdiction.

3.11 CLEANING

A. Clean dirt and debris from sprinklers. Replace sprinklers having paint other than factory finish with new sprinklers. Cleaning and reuse of painted sprinklers is prohibited.

3.12 COMMISSIONING

A. Starting Procedures: Follow manufacturer's written procedures. If manufacturer prescribes no procedures, proceed as follows:

1. Verify that valves, trim, fittings, controls, and accessories have been installed correctly and operate correctly.
2. Verify that specified tests of piping are complete.
3. Check that damaged sprinklers and sprinklers with paint or coating not specified have been replaced with new, correct type of sprinklers.
4. Check that sprinklers are correct type, have correct finish and temperature ratings, and have guards where required for applications.
5. Check that potable water supplies have correct type of backflow preventer.
6. Check that fire department connections have threads compatible with local fire department equipment and have correct pressure rating.
7. Fill wet pipe sprinkler systems with water.
8. Fill dry pipe sprinkler systems with air.
9. Energize circuits to electrical equipment and devices.
10. Adjust operating controls and pressure settings.

B. Coordinate with fire alarm system tests. Operate systems as required.

3.13 DEMONSTRATION

A. Demonstrate equipment, specialties, and accessories. Review operating and maintenance information.

B. Schedule demonstration with at least 7 days advance notice.

END OF SECTION

GENERAL MECHANICAL NOTES

1. LIGHT LINES INDICATE EXISTING PIPING, DUCTWORK, EQUIPMENT, ETC. TO REMAIN. BOLD LINES INDICATE PIPING, DUCTWORK, EQUIPMENT, ETC. TO BE INSTALLED BY THIS CONTRACT UNLESS NOTED OTHERWISE.
2. COORDINATE ROUGH-IN AND FINAL LOCATION OF DUCTWORK AND PIPING WITH LIGHTING, STRUCTURE, SPRINKLERS, ETC. PROVIDE OFFSETS AND/OR EASEMENTS, OR RELOCATE AS REQUIRED AVOIDING CONFLICTS WITH WORK OF OTHER TRADES.
3. PROVIDE TEMPORARY FILTRATION ON RETURNS DURING CONSTRUCTION TO PREVENT DUST FROM SPREADING TO DUCTWORK, HVAC EQUIPMENT, AND NON-CONSTRUCTION AREAS.
4. PIPING IS SHOWN IN SCHEMATIC FORM. ROUTE AS REQUIRED FOR CLEARANCE. VERIFY ROUTING AND CLEARANCES AND COORDINATE WITH OTHER TRADES PRIOER TO FABRICATION.
5. BREAK CONNECTIONS ARE REQUIRED AT ALL MAJOR EQUIPMENT AND PIPING ITEMS THAT REQUIRE REMOVAL FOR MAINTENANCE.
6. PIPE REDUCTIONS ON HORIZONTAL PIPING GOING FROM LARGER TO SMALLER SHALL BE MADE WITH ECCENTRIC REDUCERS. TOP FLAT FOR LIQUID SYSTEMS, CONCENTRIC REDUCERS MAY BE USED FOR FLOW GOING FROM SMALL TO LARGER SIZE PIPE.
7. FIRE SAFE ALL PIPE PENETRATIONS PER UL AT RATED WALLS.
8. THERMOSTATS SHALL BE MOUNTED 4'-0" ABOVE FINISHED FLOOR.
9. NEW FLOOR/WALL/CEILING PENETRATIONS REQUIRED FOR MECHANICAL PIPING INSTALLATION SHALL BE CLEANLY BORED AT RIGHT ANGLES. AS NEW PIPING IS INSTALLED, NEW PIPING PENETRATIONS SHALL BE NEATLY CAULKED TO FILL VOID. EXPOSED WALL PENETRATIONS SHALL BE FINISHED WITH ESCUTCHEONS.
10. ALL NEW PIPING EXPOSED IN OCCUPIED SPACES SHALL HAVE PVC JACKETS INSTALLED OVER THE PIPING INSULATION. ANY PIPING REQUIRED TO BE EXPOSED SHALL BE INSTALLED VERTICALLY OR HORIZONTALLY IN LEAST VISIBLE LOCATIONS.
11. ALL NEW EQUIPMENT AND ACCESSORIES (CIRCUIT SETTERS, CIRCULATION PUMPS, EXPANSION TANKS, ETC.) SHALL BE INSTALLED TO BE EASILY ACCESSIBLE.
12. ALL CONDENSATE PIPING SHALL BE SLOPED 1/8" PER FOOT MINIMUM.
13. CONTRACTOR SHALL PATCH/REPAIR ALL UNUSED OPENINGS AND MODIFIED FINISH SURFACES. PATCHING SHALL MATCH MATERIALS, FINISH, AND TEXTURE OF ADJACENT SURFACES.
14. PATCH ANY REMAINING OPENINGS AND FILL EXCESSIVE GAPS. REWORK AND REFINISH TO MATCH ADJACENT STRUCTURES. FLASH AND SEAL ALL MECHANICAL AND ELECTRICAL PENETRATIONS THRU WALLS, CEILINGS, AND FLOORS WITH METAL FRAMEWORK OR ESCUTCHEONS. ALL OPENINGS SHALL BE PROPERLY SEALED TO MEET FIRE RATING NEEDS.
15. HEATING AND WATER BRANCH PIPING TO TERMINAL HEATING DEVICES SHALL BE 3/4" PIPE SIZE UNLESS OTHERWISE NOTED.
16. NEW WORK HAS BEEN SHOWN DIAGRAMMATICALLY AND DUE TO THE LIMITED SCALE OF THESE DRAWINGS, THE PLACEMENT AND ROUTING OF ALL DUCTWORK, PIPING, ETC. IS CONSIDERED SCHEMATIC IN NATURE. THEREFORE, THE DRAWINGS MAY NOT SHOW ALL OFFSETS AND TRASITIONS, WHICH MAY BE REQUIRED. THE CONTRACTOR SHALL PROVIDE COMPLETE FULLY FUNCTIONAL SYSTEMS.
17. ALL WORK WITHIN THE CONTRACT DOCUMENTS SHALL BE COMPLETED IN A SAFE MANNER AND IN ACCORDANCE WITH ALL APPLICABLE STATE AND NATIONAL CODES, REGULATIONS, AND ORDINANCES. IF ANY CONFLICTS ARISE BETWEEN THE CONTRACT DOCUMENTS AND THE APPLICABLE CODES, REGULATIONS, OR ORDINANCES, THE CONTRACTOR SHALL BE RESPONSIBLE TO HAVE ALL WORK CONFORM TO THE STRICTER OF SAID REQUIREMENTS.
18. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS AS REQUIRED FOR ELECTRICAL, FIRE PROTECTION, PLUMBING, MECHANICAL, AND BACKFLOW PREVENTION INSTALLATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE BOTH A COMPLETE AND COMPLIANT INSTALLATION AS MAY BE DETERMINED BY THE AUTHORITY/AUTHORITIES HAVING JURISDICTION.
19. CONTRACTOR SHALL NOT PROCURE OR FABRICATE ANY PIPING, DUCTWORK, OR OTHER EQUIPMENT WITHOUT FIRST VERIFYING ALL DIMENSIONS AND CONDITIONS WHETHER CURRENTLY EXISTING OR NOT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK, INCLUDING ANY REQUIRED REWORK.
20. MAINTAIN ALL MANUFACTURER RECOMMENDED EQUIPMENT SERVICE AND SAFETY CLEARANCES. DO NOT LOCATE ANY EQUIPMENT OR RUN MATERIALS ABOVE ANY ELECTRICAL PANELS OR SWITCHGEAR. MAINTAIN ALL NFPA/NEC/CODE REQUIRED CLEARANCES.
21. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING, SCHEDULING, AND SEQUENCING OF THEIR WORK WITH ALL OTHER TRADES. PROVIDE OFFSETS, EASEMENTS, OR RELOCATE AS REQUIRED AVOIDING CONFLICTS WITH WORK OF OTHER TRADES. FURNISH SUFFICIENT RESOURCES TO MEET ALL PROJECT MILESTONES AND DEADLINES.
22. PROTECT WORK FROM DAMAGE OR CONTAMINATION. PROVIDE TEMPORARY PROTECTIVE CAPPING OR TAPED POLYETHYLENE ENCLOSURES OVER OPEN DUCTWORK AND PIPING ENDS AND EQUIPMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING MECHANICAL SYSTEMS PRIOR TO PLACING THEM IN SERVICE.
23. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE WATERTIGHT AND WEATHER-PROOF INTEGRITY OF ROOFS, WALLS, AND FLOORS DURING CONSTRUCTION. EACH TRADE SHALL LOCATE/DIMENSION/COORDINATE THEIR ROOF, FLOOR, AND WALL OPENINGS AS NEEDED WITH THE GENERAL CONTRACTOR OR CONSTRUCTION MANGER.

GENERAL MECHANICAL DEMOLITION NOTES

1. THESE DRAWINGS REPRESENT THE LAYOUT OF EXISTING CONDITIONS OF MAJOR COMPONENTS. THEY ARE NOT INTENDED TO SHOW ACCESSORIES OR INCIDENTALS COMMON TO THE COMPONENTS INDICATED, THOUGH THESE ITEMS ARE TO BE REMOVED. ACCESSIBILITY TO DEMOLITIUON ITEMS SHALL NOT BE INFERRED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF BUILDING AND EXISTING CONDITIONS PRIOR TO BID SUBMISSION.
2. DEMOLITION WORK SHOWN IS BASED ON LIMITED SITE OBSERVATIONS AND CONSTRUCTION/RECORD DOCUMENTS. CONTRACTOR SHALL NOT DEMOLISH ANY MECHANICAL PIPING, DUCTWORK, EQUIPMENT, OR OTHER ITEMS WITHOUT FIRST VERIFYING EXISTING CONDITIONS. CONSULT OWNER'S REPRESENTATIVE OR CONSTRUCTION MANAGER BEFORE START OF WORK.
3. DEMOLITION OF MECHANICAL PIPING, DUCTWORK, AND EQUIPMENT SHALL INCLUDE ALL HANGERS, FITTINGS, DAMPERS, VALVES, ETC.
4. REPAIR ANY INSULATION DAMAGED DURING REMOVAL. REPAIR WORK TO MATCH EXISTING.
5. COORDINATE WALL AND FLOOR PATCHING REQUIREMENTS. PATCHWORK SHALL MATCH MATERIALS, FINISH, AND TEXTURE OF ADJACENT SURFACES.
6. CONTRACTOR SHALL PATCH/REPAIR ALL UNUSED OPENINGS AND MODIFIED FINISH SURFACES. PATCH SHALL MATCH MATERIALS, FINISH, AND TEXTURE OF ADJACENT SURFACES.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER AND TIMELY DISPOSAL OF ALL CONSTRUCTION DEBRIS INCLUDING BUT NOT LIMITED TO EQUIPMENT AND MATERIALS NOT CLAIMED BY OWNER.
8. IT IS ESSENTIAL TO MINIMIZE DISRUPTIONS. COORDINATE ALL DEMOLITION WITH THE OWNER OR CONSTRUCTION MANAGER BEFORE SHUTTING DOWN ANY UTILITY OR SIMILAR SYSTEM. SHUTDOWN OF UTILITIES OR SIMILAR SYSTEMS SHALL BE REQUESTED WELL IN ADVANCE AND PRE-APPROVED BY THE PROPER AUTHORITY AND/OR AUTHORITIES HAVING JURISDICTION BEFORE WORK BEGINS.
9. ALL WORK WITHIN THE CONTRACT DOCUMENTS SHALL BE COMPLETED IN A SAFE MANNER AND IN ACCORDANCE WITH ALL APPLICABLE STATE AND NATIONAL CODES, REGULATIONS, AND ORDINANCES. IF ANY CONFLICTS ARISE BETWEEN THE CONTRACT DOCUMENTS AND THE APPLICABLE CODES, REGULATIONS, OR ORDINANCES, THE CONTRACTOR SHALL BE RESPONSIBLE TO HAVE ALL WORK CONFORM TO THE STRICTER OF SAID REQUIREMENTS.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE WATERTIGHT AND WEATHERPROOF INTEGRITY OF ROOFS, WALLS, AND FLOORS DURING CONSTRUCTION. EACH TRADE SHALL LOCATE/DIMENSION/COORDINATE THEIR ROOF, FLOOR, AND WALL OPENINGS AS NEEDED WITH THE CONSTRUCTION MANAGER.
11. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS AS REQUIRED FOR ELECTRICAL, FIRE PROTECTION, PLUMBING, MECHANICAL, AND BACKFLOW PREVENTION INSTALLATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE BOTH A COMPLETE AND COMPLIANT INSTALLATION AS MAY BE DETERMINED BY THE AUTHORITY AND/OR AUTHORITIES HAVING JURISDICTION.
12. PROVIDE TEMPORARY SPACE TEMPERING (HEATING/COOLING/DE-HUMIDIFICATION) AS NEEDED TO PROTECT SPACES AND INSTALLATIONS FROM EXPOSURE TO DAMAGING CONDITIONS.

GENERAL MECHANICAL PIPING NOTES

1. PIPING IS SHOWN IN SCHEMATIC FORM. ROUTE AS REQUIRED FOR CLEARANCE WITH EXISTING CONDITIONS AND OTHER TRADES.
2. UNIONS AND VALVES TO BREAK CONNECTIONS ARE REQUIRED AT ALL MAJOR EQUIPMENT AND ALL PIPING ITEMS THAT REQUIRE REMOVAL FOR MAINTENANCE.
3. PIPE REDUCTIONS ON HORIZONTAL PIPING GOING FROM LARGER TO SMALLER SHALL BE MADE WITH ECCENTRIC REDUCERS. TOP FLAT FOR LIQUID SYSTEMS. CONCENTRIC REDUCERS MAY BE USED FOR FLOW GOING FROM SMALL TO LARGER SIZE PIPE.
4. FIRE SAFE ALL PIPE PENETRATIONS PER UL AT RATED WALLS AND FLOORS.
5. REFER TO DETAILS FOR ADDITIONAL INFORMATION.
6. FLOOR/WALL/CEILING PENETRATIONS REQUIRED FOR MECHANICAL PIPING INSTALLATION SHALL BE CLEANLY BORED AT RIGHT ANGLES. AS NEW PIPING IS INSTALLED, NEW PIPING PENETRATIONS SHALL BE NEATLY CAULKED TO FILL VOID. EXPOSED WALL PENETRATIONS SHALL BE FINISHED WITH ESCUTCHEONS.
7. ALL NEW EQUIPMENT AND ACCESSORIES (CIRCUIT SETTERS, CIRCULATION PUMPS, EXPANSION TANKS, ETC.) SHALL BE INSTALLED TO BE EASILY ACCESSIBLE. ALL ALREANACES FOR EQUIPMENT PER MANUFACTURERS' INSTRUCTIONS SHALL BE REQUIRED.
8. CONNECTIONS BETWEEN DISSIMILAR PIPING MATERIALS SHALL BE MADE USING DIELECTRIC FITTINGS.
9. THERMOSTATS SHALL BE MOUNTED AT 4'-0" ABOVE FINISHED FLOOR.
10. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

GENERAL MECHANICAL ABBREVIATIONS

SYMBOLS	
&	AND
@	AT
#	NUMBER or POUND

A	
A/E	ARCHITECT/ENGINEER
AD	ACCESS DOOR
ADJ	ADJUSTABLE/ADJACENT
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
AP	ACCESS PANEL
APPROX	APPROXIMATE(LY)
AS	AIR SEPARATOR
AVG	AVERAGE

B	
BAS	BUILDING AUTOMATION SYSTEM
BFF	BELOW FINISHED FLOOR
BFBP	BOILER FEED BOOSTER PUMP
BHP	BRAKE HORSEPOWER
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNITS PER HOUR

C	
CAP	CAPACITY
CFM	CUBIC FEET PER MINUTE
CFH	CUBIC FEET PER HOUR
CH	CHILLER
CHP	CHILLED WATER PUMP
CHSP	CHILLED WATER SECONDARY PUMP
CIRC	CIRCULATING
CLG	CEILING
CONT	CONTINUATION
CONTR	CONTRACTOR
CONV	CONVECTOR
COORD	COORDINATE
CTRL	CONTROL
CU	COPPER
CUH	CABINET UNIT HEATER

D	
°/DEG	DEGREE
°C	DEGREES CELSIUS
°F	DEGREES FAHRENHEIT
DB	DRY BULB
DDC	DIRECT DIGITAL CONTROLS
DEMO	DEMOLITION
DIA	DIAMETER
DIAG	DIAGRAM
DWG	DRAWING

E	
EAT	ENTERING AIR TEMPERATURE
ELEC	ELECTRICAL
EQ	EQUAL
EQUIP	EQUIPMENT
EQUIV	EQUIVALENT
ET	EXPANSION TANK
EWB	ENTERING WET BULB
EWT	ENTERING WATER TEMPERATURE
EX	EXISTING

F	
FS	FLOW SWITCH
FT	FINNED TUBE RADIATION
FTHD	FOOT HEAD OR PRESSURE DROP

G	
GA	GAUGE
GAL	GALLON
GC	GENERAL CONTRACTOR
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE

H	
HP	HORSEPOWER
HPR	HIGH PRESSURE STEAM RETURN
HPS	HIGH PRESSURE STEAM SUPPLY
HTG	HEATING
HVAC	HEATING, VENTILATION, AIR CONDITIONING
HX	HEAT EXCHANGER
HZ	HERTZ (FREQUENCY)

I	
ID	INSIDE DIAMETER
IN	INCHES
IN WC	INCHES (WATER COLUMN)
INS	INSULATION
INSTR	INSTRUMENT
ISO	ISOMETRIC

K	
KW	KILOWATT
KWH	KILOWATT HOUR

L	
LAT	LEAVING AIR TEMPERATURE
LB(S)	POUND(S)
LDB	LEAVING DRY BULB (TEMP)
LWB	LEAVING WET BULB (TEMP)
LWT	LEAVING WATER TEMPERATURE

M	
MAINT	MAINTENANCE
MAX	MAXIMUM
MBH	BRITISH THERMAL UNIT (1000/HR)
MC	MECHANICAL CONTRACTOR
MCA	MINIMUM CIRCUIT AMPS
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM OR MINUTE
MISC	MISCELLANEOUS

N	
NA	NOT APPLICABLE
NC	NORMALLY CLOSED OR NOISE CRITERIA
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NOM	NOMINAL

O	
OD	OUTER DIAMETER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED OWNER INSTALLED

P	
PG	PRESSURE GAUGE
PH	PHASE
PSIG	POUNDS PER SQUARE INCH GAUGE

R	
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
RPM	REVOLUTIONS PER MINUTE

S	
SCH	SCHEDULE
SCHM	SCHEMATIC
SHT	SHEET
SPEC	SPECIFICATION(S)
SQ IN	SQUARE INCH
SV	SAFETY VALVE
SYS	SYSTEM
SRV	SAFETY RELIEF VALVE

T	
T	THERMOSTAT
TCC	TEMPERATURE CONTROL CONTRACTOR
TEMP	TEMPERATURE OR TEMPORARY
THRU	THROUGH
TP	TOTAL PRESSURE
TYP	TYPICAL

U	
UNO	UNLESS NOTED OTHERWISE
UTIL	UTILITY

V	
VEL	VELOCITY
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE

W	
W/	WITH
W/O	WITHOUT
WB	WET BULB
WPD	WATER PRESSURE DROP
WT	WEIGHT
WTR	WATER

MECHANICAL SYMBOLS LIST

- 6" HWS — PIPE SIZE, SYSTEM, AND FLOW TAG (DIAMETER)
- HWS — EXISTING TO REMAIN
- HWS — TO BE DEMOLISHED
- HWR — HEATING WATER RETURN
- HWS — HEATING WATER SUPPLY
- HPS — HIGH PRESSURE STEAM
- LPC — LOW PRESSURE CONDENSATE
- LPS — LOW PRESSURE STEAM
- BALANCING VALVE
- BALL VALVE
- CHECK VALVE
- THREE WAY VALVE
- MOTORIZED CONTROL VALVE
- THREE WAY MOTORIZED CONTROL VALVE
- PRESSURE REDUCING VALVE
- SOLENOID VALVE
- BUTTERFLY VALVE
- ELBOW UP
- ELBOW DOWN
- PIPE OFFSET UP
- PIPE OFFSET DOWN
- PIPE TEE TURNED UP
- PIPE TEE TURNED DOWN
- PIPE TEE
- PIPE CAP
- PIPE UNION
- PIPE TRANSITION

KEYNOTE
- CAP EXISTING PIPE OR DUCT
- NEW CONNECTION INTO EXISTING PIPE OR DUCT
- T — THERMOSTAT
- DETAIL NUMBER
- SHEET NUMBER ON WHICH THE DETAIL RESIDES

GENERAL PLUMBING NOTES

1. UNLESS NOTED OTHERWISE: LIGHT LINES DENOTE EXISTING PIPING, OR EQUIPMENT WHICH IS TO REMAIN. BOLD LINES INDICATE NEW WORK TO BE INSTALLED UNDER THIS CONTRACT.
2. PLUMBING SHOWN IS IN SCHEMATIC FORM. NOT ALL RISERS AND DROPS ARE SHOWN. PROVIDE OFFSETS AS REQUIRED TO MEET SPACE REQUIREMENTS AND TO AVOID INTERFERENCE WITH OTHER TRADES. THE CONTRACTOR SHALL PROVIDE COMPLETE FULLY FUNCTIONAL SYSTEMS.
3. ALL EQUIPMENT AND ACCESSORIES SHALL BE INSTALLED TO BE EASILY ACCESSIBLE.
4. PLUMBING WORK SHALL BE COORDINATED WITH OTHER TRADES, INCLUDING BUT NOT LIMITED TO DUCTWORK, ELECTRICAL EQUIPMENT, PIPING AND FIRE PROTECTION. SPACE ABOVE CEILING IS LIMITED AND SHALL BE COORDINATED WITH OTHER TRADES.
5. ALL WORK WITHIN THE CONTRACT DOCUMENTS, WHICH INCLUDE THIS DRAWING, SHALL BE COMPLETED IN A SAFE WORKMANLIKE MANNER AND IN ACCORDANCE WITH ALL APPLICABLE STATE, LOCAL AND NATIONAL CODES, REGULATIONS AND ORDINANCES. IF ANY CONFLICTS ARISE BETWEEN THE CONTRACT DOCUMENTS AND THE APPLICABLE CODES, REGULATIONS OR ORDINANCE, THE CONTRACTOR SHALL BE RESPONSIBLE TO HAVE ALL WORK CONFORM TO THE STRICTER OF SAID REQUIREMENTS.
6. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS AS REQUIRED FOR ELECTRICAL, FIRE PROTECTION, PLUMBING, MECHANICAL AND BACKFLOW PREVENTION INSTALLATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE BOTH A COMPLETE AND COMPLIANT INSTALLATION AS MAY BE DETERMINED BY THE AUTHORITY(S) HAVING JURISDICTION.
7. CONTRACTOR SHALL NOT PROCURE OR FABRICATE ANY PIPING, DUCTWORK OR OTHER EQUIPMENT WITHOUT FIRST VERIFYING ALL DIMENSIONS AND CONDITIONS WHETHER CURRENTLY EXISTING OR NOT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK, INCLUDING ANY REQUIRED REWORK.
8. MAINTAIN ALL MANUFACTURER RECOMMENDED EQUIPMENT SERVICE AND SAFETY CLEARANCES. DO NOT LOCATE ANY EQUIPMENT OR RUN MATERIALS ABOVE ANY ELECTRICAL PANELS OR SWITCHGEAR. MAINTAIN ALL NFPA/NEC CODE REQUIRED CLEARANCES.
9. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING, SCHEDULING AND SEQUENCING OF THEIR WORK WITH ALL OTHER TRADES. PROVIDE OFFSETS, EASEMENTS, OR RELOCATE TO AVOID CONFLICTS WITH WORK OF OTHER TRADES. FURNISH SUFFICIENT RESOURCES TO MEET ALL PROJECT MILESTONES AND DEADLINES.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE WATERTIGHT AND WEATHER-PROOF INTEGRITY OF ROOFS, WALLS AND FLOORS DURING CONSTRUCTION. EACH TRADE SHALL LOCATE/DIMENSION/COORDINATE THEIR ROOF, FLOOR AND WALL OPENINGS WITH THE GENERAL CONTRACTOR (GC) OR CONSTRUCTION MANAGER.
11. PROTECT NEW WORK FROM DAMAGE OR DECONTAMINATION. PROVIDE TEMPORARY PROTECTIVE CAPPING OR TAPED POLYETHYLENE ENCLOSURES OVER OPEN DUCTWORK AND PIPING ENDS AND EQUIPMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING MECHANICAL SYSTEMS PRIOR TO PLACING THEM IN SERVICE.
12. IN A NEAT AND WORKMANLIKE MANNER: PATCH ANY REMAINING OPENINGS AND FILL EXCESSIVE GAPS; REWORK AND REFINISH TO MATCH ADJACENT STRUCTURES; FLASH AND SEAL ALL MECHANICAL AND ELECTRICAL PENETRATIONS THRU WALLS, CEILINGS AND FLOORS WITH METAL FRAMEWORK OR ESCUTCHEONS. ALL OPENINGS SHALL BE PROPERLY SEALED SO AS TO MEET FIRE RATING NEEDS.

GENERAL PLUMBING DEMOLITION NOTES

1. THIS DRAWING DIAGRAMMATICALLY REPRESENTS THE LAYOUT OF EXISTING CONDITIONS WITH MAJOR PLUMBING COMPONENTS. THEY ARE NOT INTENDED TO SHOW ACCESSORIES OR INCIDENTALS COMMON TO EQUIPMENT INDICATED, THOUGH THESE ITEMS ARE TO BE REMOVED, ACCESSIBILITY TO DEMOLITION ITEMS SHALL NOT BE INFERRED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF BUILDING AND EXISTING CONDITIONS, PRIOR TO BID SUBMISSION.
2. EXISTING PIPING PENETRATIONS VACATED/REVEALED DURING DEMOLITION AND REMODEL SHALL BE INFILLED AND FINISHED TO MATCH EXISTING. IF MATERIALS FOR REPAIR TO MATCH EXISTING ARE NOT AVAILABLE (IE GLAZED WALL TILE), GROUT ABANDONED PENETRATION FULL AND FINISH FLUSH. PRIOR APPROVAL OF THE OWNER MUST BE OBTAINED BEFORE ANY PROPOSED NON-SIMILAR FINISH WORK BEGINS.
3. DISCONNECT AND REMOVE ALL PREVIOUSLY ABANDONED PIPING WITHIN THE PROJECT AREA. REMOVE EXISTING/ABANDONED HANGERS AND SUPPORTS IF DEEMED NOT REUSABLE.
4. ALL PIPING SHOWN IS BASED ON ORIGINAL DRAWINGS AND LIMITED SITE OBSERVATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS PRIOR TO COMMENCING WORK.
5. ALL PIPING ASSOCIATED WITH EXISTING SYSTEMS SHALL BE DEMOLISHED. NO PIPING SHALL BE ABANDONED.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR DRAINING PIPING SYSTEMS TO BE CUT, CAPPED OR REMOVED. DISCHARGE FROM SUCH SYSTEMS SHALL BE APPROPRIATELY DISPOSED OF PER FEDERAL, STATE AND LOCAL REQUIREMENTS.
7. COORDINATE WITH GENERAL CONTRACTOR FOR FLOOR, WALL AND ROOF PATCHING REQUIRED DUE TO PENETRATIONS RESULTING FROM DEMOLITION OF EXISTING AND INSTALLATION OF NEW EQUIPMENT AND COMPONENTS.
8. CONTRACTOR IS RESPONSIBLE TO VERIFY ACTUAL NUMBER AND LOCATION OF SYSTEMS AND COMPONENTS TO BE DEMOLISHED AND REMOVED.
9. TO MINIMIZE DISRUPTIONS, COORDINATE ALL DEMOLITION WITH OWNER, GENERAL CONTRACTOR, OR CONSTRUCTION MANAGER BEFORE SHUTTING DOWN ANY UTILITY OR SIMILAR SYSTEM. SHUTDOWNS FOR UTILITIES OR SIMILAR SYSTEMS SHALL BE REQUESTED WELL IN ADVANCE PER THE SPECIFICATION.
10. ALL WORK WITHIN THE CONTRACT DOCUMENTS, WHICH INCLUDE THIS DRAWING, SHALL BE COMPLETED IN A SAFE WORKMANLIKE MANNER AND IN ACCORDANCE WITH ALL APPLICABLE STATE, LOCAL AND NATIONAL CODES, REGULATIONS AND ORDINANCES. IF ANY CONFLICTS ARISE BETWEEN THE CONTRACT DOCUMENTS AND THE APPLICABLE CODES, REGULATIONS OR ORDINANCE, THE CONTRACTOR SHALL BE RESPONSIBLE TO HAVE ALL WORK CONFORM TO THE STRICTER OF SAID REQUIREMENTS.
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12. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE WATERTIGHT AND WEATHER-PROOF INTEGRITY OF ROOFS, WALLS AND FLOORS DURING CONSTRUCTION. EACH TRADE SHALL LOCATE/DIMENSION/COORDINATE THEIR ROOF, FLOOR AND WALL OPENINGS WITH THE GENERAL CONTRACTOR (GC) OR CONSTRUCTION MANAGER.

GENERAL PLUMBING ABBREVIATIONS

SYMBOLS	
&	AND
@	AT
#	NUMBER or POUND

A	
ADJ	ADJUSTABLE/ADJACENT
AFF	ABOVE FINISHED FLOOR
ALT	ALTERNATE
AMB	AMBIENT
AP	ACCESS PANEL
APPROX	APPROXIMATE(LY)
AS	AIR SEPARATOR
ASSY	ASSEMBLY
ATM	ATMOSPHERE
AUX	AUXILIARY
AVG	AVERAGE

B	
BAS	BUILDING AUTOMATION SYSTEM
BFP	BACKFLOW PREVENTER
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BMS	BUILDING MANAGEMENT SYSTEM
BOP	BOTTOM OF PIPE
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNITS PER HOUR

C	
C	COMPRESSOR (AIR)
CAL	CALIBRATE
CAP	CAPACITY
CCW	COUNTER CLOCKWISE
CIP	CAST IRON PUMP
CIRC	CIRCULATING
CL	CENTER LINE
CLG	CEILING
CLR	CLEAR(ANCE)
CLW	CLOCKWISE
CO	CLEANOUT
COND	CONDENSATE
CONSTR	CONSTRUCTION
CONT	CONTINUATION
CONTR	CONTRACTOR
COORD	COORDINATE
CTRL	CONTROL
CU	COPPER
CU FT	CUBIC FEET
CU IN	CUBIC INCH

D	
°/DEG	DEGREE
°F	DEGREES FAHRENHEIT
DB	DRY BULB
DDC	DIRECT DIGITAL CONTROLS
DEMO	DEMOLITION
DIA	DIAMETER
DIAG	DIAGRAM
DN	DOWN
DR	DRAIN
DV	DRAIN VALVE
DWG	DRAWING

E	
EA	EACH
EER	ENERGY EFFICIENCY RATIO
EF	ENERGY FACTOR
ELEV	ELEVATION
ELEC	ELECTRICAL
EQ	EQUAL
EQUIP	EQUIPMENT
EQUIV	EQUIVALENT
ET	EXPANSION TANK
EWH	ELECTRIC WATER HEATER
EWT	ENTERING WATER TEMPERATURE
EX	EXISTING

F	
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FPT	FEMALE PIPE THREAD
FS	FLOOR SINK

G	
G	GAS
GA	GAUGE
GAL	GALLON
GC	GENERAL CONTRACTOR
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GWH	GAS FIRED WATER HEATER

H	
H&CW	HOT AND COLD WATER
HORIZ	HORIZONTAL
HP	HORSEPOWER
HVAC	HEATING, VENTILATION, AIR CONDITIONING
HZ	HERTZ (FREQUENCY)

I	
ID	INSIDE DIAMETER
IN	INCHES
IN WC	INCHES (WATER COLUMN)
INS	INSULATION
INSTR	INSTRUMENT
IP	IRON PIPE
IPS	IRON PIPE SIZE
ISO	ISOMETRIC

K	
KW	KILOWATT
KWH	KILOWATT HOUR

L	
LAV	LAVATORY
LB(S)	POUND(S)
LWT	LEAVING WATER TEMPERATURE

M	
MAINT	MAINTENANCE
MAX	MAXIMUM
MBH	BRITISH THERMAL UNIT (1000/HR)
MC	MECHANICAL CONTRACTOR
MCA	MINIMUM CIRCUIT AMPS
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM OR MINUTE
MISC	MISCELLANEOUS
MPT	MALE PIPE THREAD

N	
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NOM	NOMINAL
NPT	NATIONAL PIPE THREAD
NTS	NOT TO SCALE

O	
OD	OUTER DIAMETER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED OWNER INSTALLED

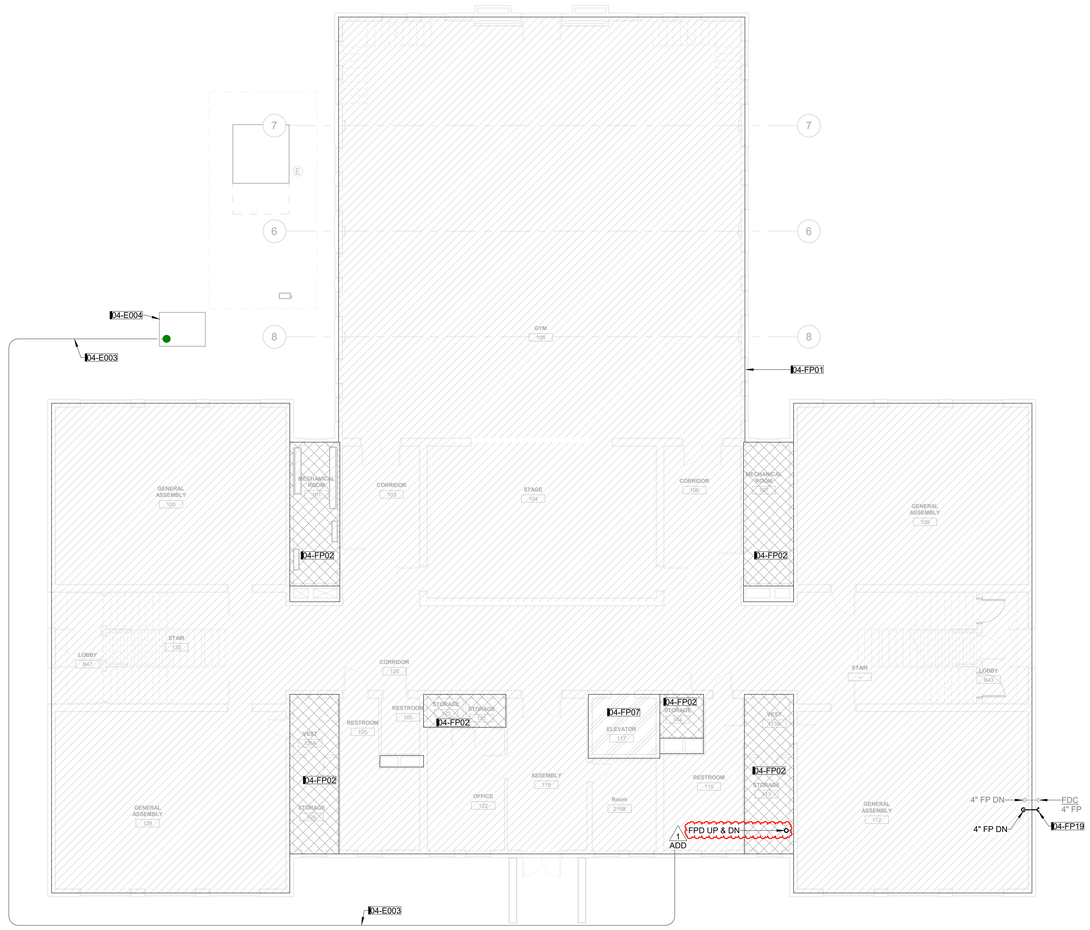
P	
PG	PRESSURE GAUGE OR PROPYLENE GLYCOL
PH	PHASE
PLBG	PLUMBING
PRV	PRESSURE RELIEF VALVE OR PRESSURE REGULATING VALVE
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH GAUGE

R	
RD	ROOF DRAIN
RECIRC	RECIRCULATE(ING)
REQD	REQUIRED
RHC	REHEAT COIL
RPM	REVOLUTIONS PER MINUTE

S	
SCH	SCHEDULE
SCHM	SCHEMATIC
SF	SQUARE FEET
SHT	SHEET
SK	SINK
SP	SUMP PUMP OR STATIC PRESSURE
SPEC	SPECIFICATION(S)
SS	STAINLESS STEEL
STBY	STANDBY
STD	STANDARD
STL	STEEL
SUCT	SUCTION
SV	SAFETY VALVE
SYS	SYSTEM
SRV	SAFETY RELIEF VALVE

T	
T	THERMOSTAT
TD	TRENCH DRAIN
TEMP	TEMPERATURE OR TEMPORARY
THRU	THROUGH
TOP	TOP OF PIPE
TYP	TYPICAL

U	
UL	UNDERWRIT



KEYNOTES

KEY	NOTE
04-E003	DIRECTIONAL BORE NEW FEEDER FOR FIRE PUMP. REFER TO 04-FP101 FOR CONTINUATION.
04-E004	EXISTING TRANSFORMER. CONNECT FIRE PUMP TO SECONDARY SIDE OF THE TRANSFORMER. CIRCUIT FIRE PUMP WITH (3) # 1/0 AND 1#6 GND IN 1-1/2" CONDUIT
04-FP01	AREA SHALL BE CONSIDERED LIGHT HAZARD, WITH SPRINKLER PROTECTION DENSITY OF 0.10 GPM/SQFT OVER THE HYDRAULICALLY MOST REMOTE 1500 SF. PROVIDE ALLOWANCE FOR 100 GPM COMBINED INSIDE AND OUTSIDE HOSE STREAM.
04-FP02	AREA SHALL BE CONSIDERED ORDINARY HAZARD GROUP 1 WITH A DENSITY OF 0.15 GPM OVER THE MOST HYDRAULICALLY REMOTE 1500 SF WITH A 250 GPM COMBINED INSIDE AND OUTSIDE HOSE STREAM ALLOWANCE.
04-FP07	ELEVATORS AND ELEVATOR MACHINE ROOMS. PROVIDE HORIZONTAL SIDEWALL HEADS IN ELEVATOR PIT AT ELEVATOR DOOR SIDE, ELEVATOR MACHINE ROOM AND AT TOP OF ELEVATOR SHAFT PER NFPA 13. MEET ANSI AND LOCAL ELEVATOR INSPECTOR'S REQUIREMENTS FOR SPRINKLERS IN ELEVATOR SHAFTS AND ELEVATOR MACHINE ROOMS.
04-FP19	NEW 4" X 2 1/2" X 2 1/2" FIRE PUMP TEST CONNECTION WITH HYDRANT OUTLET SNOOTS, GATE VALVES, CAPS AND CHAINS, AND IDENTIFICATION PLATE LETTERED "FIRE PUMP TEST".

FIRE PROTECTION

1. PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERATE FIRE PROTECTION SYSTEMS AS INDICATED ON DRAWINGS, AS SPECIFIED, AND IN COMPLIANCE WITH THE STANDARDS OF THE NATIONAL FIRE PROTECTION ASSOCIATION, AND ALL STATE REGULATIONS.
2. THE ENTIRE BUILDING SPRINKLER SYSTEM SHALL BE HYDRAULICALLY DESIGNED UNLESS OTHERWISE NOTED ON THE DRAWINGS.
3. FIRE PROTECTION WORK SHALL BE COORDINATED WITH OTHER TRADES INCLUDING BUT NOT LIMITED TO DUCTWORK, PLUMBING, ELECTRICAL EQUIPMENT, AND PIPING. SPACE ABOVE THE CEILING IS LIMITED AND SHALL BE COORDINATED WITH OTHER TRADES.
4. ALL FIRE PROTECTION PIPING MAY NOT BE INSTALLED AT A SINGLE ELEVATION. OFFSETS MAY BE REQUIRED TO ALLOW FOR INSTALLATION OF OTHER WORK. NOT ALL MAIN OR BRANCH LINES SHOWN. INSTALL PIPING TO BE SELF DRAINING BY GRAVITY WHERE POSSIBLE OR PROVIDE DRAIN LEGS AS NEEDED.
5. VERIFY CEILING HEIGHTS AND TYPES WITH ARCHITECTURAL PLANS AND ELEVATIONS.
6. TEST DRAIN LOCATIONS SHALL BE DRAINED INTO FLOOR DRAINS, MOP SINKS, OR THROUGH EXTERIOR WALLS TO SPILL ON CONCRETE PAD SPLASH BLOCKS, MOUNTED ON GRADE. VERIFY ALL LOCATIONS WITH ARCHITECT.
7. ALL EQUIPMENT AND ACCESSORIES SHALL BE INSTALLED TO BE EASILY ACCESSIBLE.
8. ALL WORK WITHIN THE CONTRACT DOCUMENTS, WHICH INCLUDE THIS DRAWING, SHALL BE COMPLETED IN A SAFE WORKMANLIKE MANNER AND IN ACCORDANCE WITH ALL APPLICABLE STATE, AND NATIONAL CODES, REGULATIONS AND ORDINANCES. IF ANY CONFLICTS ARISE BETWEEN THE CONTRACT DOCUMENTS AND THE APPLICABLE CODES, REGULATIONS OR ORDINANCE, THE CONTRACTOR SHALL BE RESPONSIBLE TO HAVE ALL WORK CONFORM TO THE STRICTER OF SAID REQUIREMENTS.
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13. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE WATERTIGHT AND WEATHER-PROOF INTEGRITY OF ROOFS, WALLS AND FLOORS DURING CONSTRUCTION. EACH TRADE SHALL LOCATE/DIMENSION/COORDINATE THEIR ROOF, FLOOR AND WALL OPENINGS WITH THE GENERAL CONTRACTOR (GC) OR CONSTRUCTION MANAGER.
14. PROTECT EXISTING BUILDING FROM DAMAGE OR CONTAMINATION. PROVIDE TEMPORARY PROTECTIVE CAPPING OR TAPED POLYETHYLENE ENCLOSURES OVER PIPING ENDS AND EQUIPMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING MECHANICAL SYSTEMS PRIOR TO PLACING THEM IN SERVICE.
15. IN A NEAT AND WORKMANLIKE MANNER: FLASH AND SEAL ALL MECHANICAL AND ELECTRICAL PENETRATIONS THRU WALLS, CEILINGS AND FLOORS WITH METAL FRAMEWORK OR ESCUTCHEONS. ALL OPENINGS SHALL BE PROPERLY SEALED SO AS TO MEET FIRE RATING NEEDS.
16. CENTER SPRINKLERS IN CEILING TILES IN BOTH DIRECTIONS IN ALL AREAS. IN AREAS WITH 2'X4' CEILING TILES, CENTER USING A 2'X2' CEILING PATTERN IS ACCEPTABLE.
17. FOR EXPOSED SPRINKLER PIPING IN FINISHED AREAS:
    - INSTALL AS TIGHT TO CEILING AS POSSIBLE.
    - KEEP PIPING AND HEADS A MINIMUM OF 4FT AWAY FROM WINDOWS. WHERE SPACE DOES NOT ALLOW, SUCH AS CORRIDORS, EXPOSED PIPING WITHIN 4 FT IS ACCEPTABLE.
    - TO PRESERVE HISTORIC BUILDING STATUS, MINIMIZE DISTURBANCE OF ANY DECORATIVE MATERIALS OR DETAILS SUCH AS DECORATIVE PLASTER.
18. NOT USED.
19. NOT USED.

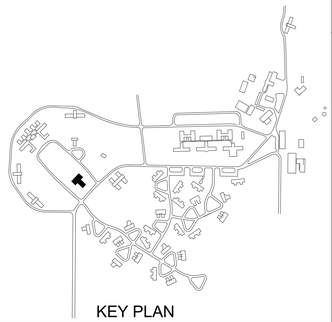
1 ADD

20. CONTRACTOR TO CAREFULLY REMOVE AND RE-INSTALL LAY-IN CEILING AS REQUIRED TO INSTALL NEW PIPING AND SPRINKLERS. REPLACE ANY TILE DAMAGED. SEE ARCHITECTURAL PLANS FOR CEILING TYPES.
21. WHERE GYPSUM BOARD IS DEMOLISHED AT CEILINGS AND NON-FIRE-RATED WALLS, CUT OPENINGS CLEAN, STRAIGHT, AND AS SMALL AS PRACTICAL TO PERFORM THE WORK REQUIRED. LEAVE READY FOR DRYWALL PATCHING. PATCHING OF CEILINGS AND NON-FIRE-RATED WALLS WILL BE BY OTHERS. PROVIDE TESTED FIRESTOPPING ASSEMBLIES AT PENETRATIONS OF FIRE-RATED WALLS.
22. FOR FINISHED SPACES (OFFICES, RECEPTION, ETC.), PAINT PIPING, CONDUIT, AND PROVIDE SPRINKLER HEADS WITH WHITE FACTORY FINISH.
23. FOR UNIFINISHED SPACES (BASEMENTS, ATTICS, WORKSHOPS, ETC.) PIPING, CONDUIT, SPRINKLER HEADS CAN REMAIN UNPAINTED.
24. FOR SPACES WITH WOOD CEILINGS (NATURAL COLOR) IN MYERS HALL PAINT PIPING BROWN AND USE STAINLESS SPRINKLER HEADS.
25. IN MYERS HALL, TO THE BEST EXTENT POSSIBLE, ROUTE PIPING ON THE SIDE OF BEAMS, RATHER THAN THE BOTTOM OF THE BEAMS.

LIGHT HAZARD

ORDINARY HAZARD

ELEVATOR AND ELEVATOR MACHINE ROOM



KEY PLAN

PLAN NORTH

TRUE NORTH

B6 FIRST FLOOR FIRE PROTECTION PLAN

1/8" = 1'-0" 0 12'

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PKWY, SUITE 100
WEST DES MOINES, IA 50266
515.223.9164 | SHIVEHATTERY.COM

SEAL

Fire Sprinkler (#9279.21)

Iowa Department of Administrative Services
1251 334th St, Woodward, IA 50276

ADD	1	02/07/2023	ADDENDUM #1
JET	TLS	100% CD	2023-01-10

DRAWN BY
APPROVED BY
ISSUED FOR
ISSUE DATE
PROJECT NUMBER 2142203390
FIELD BOOK

FIRST FLOOR FIRE PROTECTION PLAN

04-FP101

KEYNOTES	
KEY	NOTE
04-E025	FURNISH AND INSTALL HEAT DETECTOR AND SMOKE DETECTOR WITHIN 24" OF SPRINKLER HEADS IN TOP OF ELEVATOR SHAFT.
04-FP01	AREA SHALL BE CONSIDERED LIGHT HAZARD, WITH SPRINKLER PROTECTION DENSITY OF 0.10 GPM/SQFT OVER THE HYDRAULICALLY MOST REMOTE 1500 SF. PROVIDE ALLOWANCE FOR 100 GPM COMBINED INSIDE AND OUTSIDE HOSE STREAM.
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6. TEST DRAIN LOCATIONS SHALL BE DRAINED INTO FLOOR DRAINS, MOP SINKS, OR THROUGH EXTERIOR WALLS TO SPILL ON CONCRETE PAD SPLASH BLOCKS, MOUNTED ON GRADE. VERIFY ALL LOCATIONS WITH ARCHITECT.
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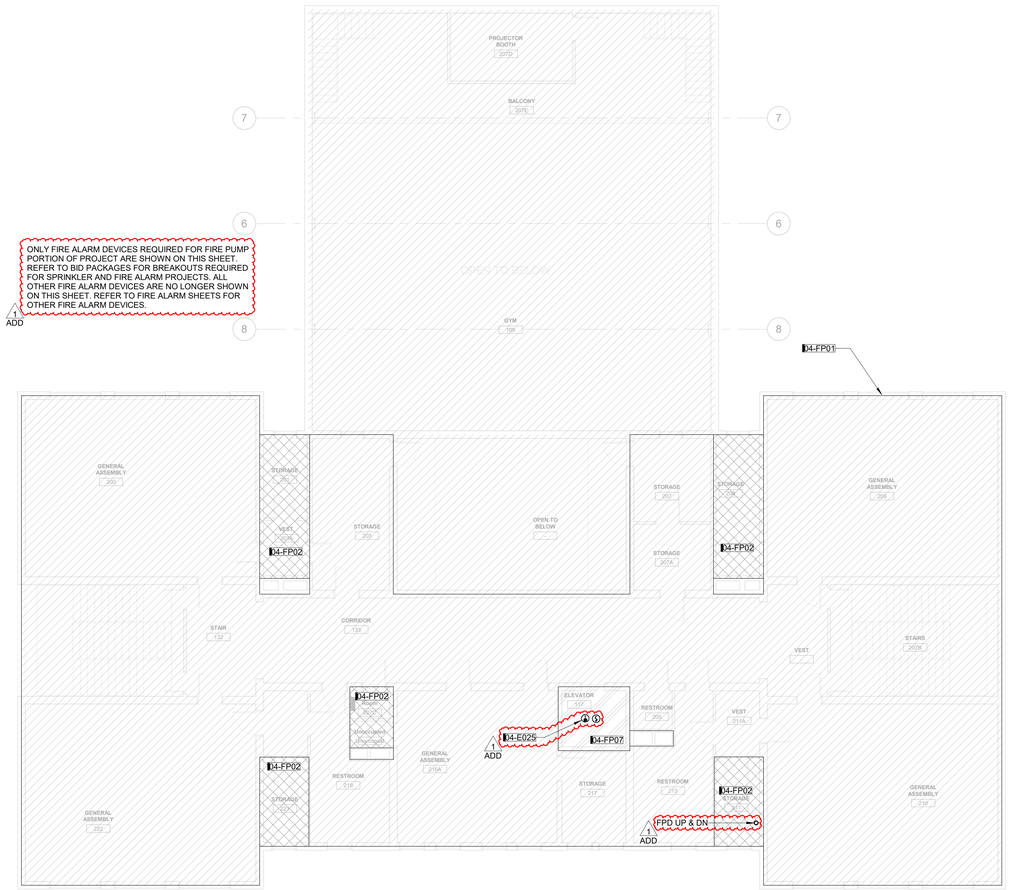
15. IN A NEAT AND WORKMANLIKE MANNER; FLASH AND SEAL ALL MECHANICAL AND ELECTRICAL PENETRATIONS THRU WALLS, CEILINGS AND FLOORS WITH METAL FRAMEWORK OR ESCUTCHEONS. ALL OPENINGS SHALL BE PROPERLY SEALED SO AS TO MEET FIRE RATING NEEDS.
16. CENTER SPRINKLERS IN CEILING TILES IN BOTH DIRECTIONS IN ALL AREAS. IN AREAS WITH 2'X4' CEILING TILES, CENTER USING A 2'X2' CEILING PATTERN IS ACCEPTABLE.
17. FOR EXPOSED SPRINKLER PIPING IN FINISHED AREAS:
    - INSTALL AS TIGHT TO CEILING AS POSSABLE.
    - KEEP PIPING AND HEADS A MINIMUM OF 4FT AWAY FROM WINDOWS. WHERE SPACE DOES NOT ALLOW, SUCH AS CORRIDORS, EXPOSED PIPING WITHIN 4 FT IS ACCEPTABLE.
    - TO PRESERVE HISTORIC BUILDING STATUS, MINIMIZE DISTURBANCE OF ANY DECORATIVE MATERIALS OR DETAILS SUCH AS DECORATIVE PLASTER.
18. NOT USED.
19. NOT USED.

1 ADD

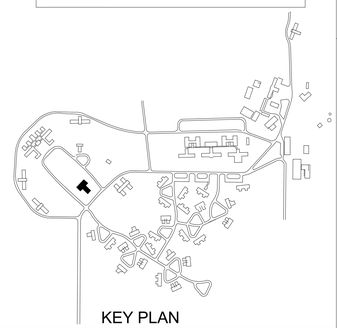
20. CONTRACTOR TO CAREFULLY REMOVE AND RE-INSTALL LAY-IN CEILING AS REQUIRED TO INSTALL NEW PIPING AND SPRINKLERS. REPLACE ANY TILE DAMAGED. SEE ARCHITECTURAL PLANS FOR CEILING TYPES.
21. WHERE GYPSUM BOARD IS DEMOLISHED AT CEILINGS AND NON-FIRE-RATED WALLS, CUT OPENINGS CLEAN, STRAIGHT, AND AS SMALL AS PRACTICAL TO PERFORM THE WORK REQUIRED. LEAVE READY FOR DRYWALL PATCHING. PATCHING OF CEILINGS AND NON-FIRE-RATED WALLS WILL BE BY OTHERS. PROVIDE TESTED FIRESTOPPING ASSEMBLIES AT PENETRATIONS OF FIRE-RATED WALLS.
22. FOR FINISHED SPACES (OFFICES, RECEPTION, ETC.), PAINT PIPING, CONDUIT, AND PROVIDE SPRINKLER HEADS WITH WHITE FACTORY FINISH.
23. FOR UNIFINISHED SPACES (BASEMENTS, ATTICS, WORKSHOPS, ETC.) PIPING, CONDUIT, SPRINKLER HEADS CAN REMAIN UNPAINTED.
24. FOR SPACES WITH WOOD CEILINGS (NATURAL COLOR) IN MYERS HALL PAINT PIPING BROWN AND USE STAINLESS SPRINKLER HEADS.
25. IN MYERS HALL, TO THE BEST EXTENT POSSIBLE, ROUTE PIPING ON THE SIDE OF BEAMS, RATHER THAN THE BOTTOM OF THE BEAMS.



PLAN NORTH
TRUE NORTH

B6 SECOND FLOOR FIRE PROTECTION PLAN
1/8" = 1'-0" 0 12'

LIGHT HAZARD
ORDINARY HAZARD
ELEVATOR AND ELEVATOR MACHINE ROOM



KEY PLAN

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PKWY, SUITE 100
WEST DES MOINES, IA 50266
515.223.6164 | SHIVEHATTERY.COM

SEAL

Fire Sprinkler (#9279.21)
Iowa Department of Administrative Services
1251 334th St, Woodward, IA 50276

ADD	DATE	DESCRIPTION
1	02/07/2023	ADDENDUM #1

DRAWN BY	JET
APPROVED BY	TLS
ISSUED FOR	100% CD
ISSUE DATE	2023-01-10
PROJECT NUMBER	2142203390
FIELD BOOK	

SECOND FLOOR FIRE PROTECTION PLAN

04-FP102

KEYNOTES	
KEY	NOTE
04-FP08	AREA TO BE CONSIDERED LIGHT HAZARD WITH A DENSITY OF 0.10 GPM/SF OVER THE MOST HYDRAULICALLY REMOTE 1500 SF WITH A 100 GPM TOTAL COMBINED INSIDE AND OUTSIDE HOSE STREAM ALLOWANCE. AREA TO BE SERVED BY A DRY TYPE SYSTEM.

FIRE PROTECTION

1. PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERATE FIRE PROTECTION SYSTEMS AS INDICATED ON DRAWINGS, AS SPECIFIED, AND IN COMPLIANCE WITH THE STANDARDS OF THE NATIONAL FIRE PROTECTION ASSOCIATION, AND ALL STATE REGULATIONS.
2. THE ENTIRE BUILDING SPRINKLER SYSTEM SHALL BE HYDRAULICALLY DESIGNED UNLESS OTHERWISE NOTED ON THE DRAWINGS.
3. FIRE PROTECTION WORK SHALL BE COORDINATED WITH OTHER TRADES INCLUDING BUT NOT LIMITED TO DUCTWORK, PLUMBING, ELECTRICAL EQUIPMENT, AND PIPING. SPACE ABOVE THE CEILING IS LIMITED AND SHALL BE COORDINATED WITH OTHER TRADES.
4. ALL FIRE PROTECTION PIPING MAY NOT BE INSTALLED AT A SINGLE ELEVATION. OFFSETS MAY BE REQUIRED TO ALLOW FOR INSTALLATION OF OTHER WORK. NOT ALL MAIN OR BRANCH LINES SHOWN. INSTALL PIPING TO BE SELF DRAINING BY GRAVITY WHERE POSSIBLE OR PROVIDE DRAIN LEGS AS NEEDED.
5. VERIFY CEILING HEIGHTS AND TYPES WITH ARCHITECTURAL PLANS AND ELEVATIONS.
6. TEST DRAIN LOCATIONS SHALL BE DRAINED INTO FLOOR DRAINS, MOP SINKS, OR THROUGH EXTERIOR WALLS TO SPILL ON CONCRETE PAD SPLASH BLOCKS, MOUNTED ON GRADE. VERIFY ALL LOCATIONS WITH ARCHITECT.
7. ALL EQUIPMENT AND ACCESSORIES SHALL BE INSTALLED TO BE EASILY ACCESSIBLE.
8. ALL WORK WITHIN THE CONTRACT DOCUMENTS, WHICH INCLUDE THIS DRAWING, SHALL BE COMPLETED IN A SAFE WORKMANLIKE MANNER AND IN ACCORDANCE WITH ALL APPLICABLE STATE, AND NATIONAL CODES, REGULATIONS AND ORDINANCES. IF ANY CONFLICTS ARISE BETWEEN THE CONTRACT DOCUMENTS AND THE APPLICABLE CODES, REGULATIONS OR ORDINANCE, THE CONTRACTOR SHALL BE RESPONSIBLE TO HAVE ALL WORK CONFORM TO THE STRICTER OF SAID REQUIREMENTS.
9. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS AS REQUIRED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE BOTH A COMPLETE AND COMPLIANT INSTALLATION AS MAY BE DETERMINED BY THE AUTHORITY(S) HAVING JURISDICTION.
10. CONTRACTOR SHALL NOT PROCURE OR FABRICATE ANY PIPING, DUCTWORK OR OTHER EQUIPMENT WITHOUT FIRST VERIFYING ALL DIMENSIONS AND CONDITIONS WHETHER CURRENTLY EXISTING OR NOT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK, INCLUDING ANY REQUIRED REWORK.
11. MAINTAIN ALL MANUFACTURER RECOMMENDED EQUIPMENT SERVICE AND SAFETY CLEARANCES. DO NOT LOCATE ANY EQUIPMENT OR RUN MATERIALS ABOVE ANY ELECTRICAL PANELS OR SWITCHGEAR. MAINTAIN ALL NFPA/NEC CODE REQUIRED CLEARANCES.
12. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING, SCHEDULING AND SEQUENCING OF THEIR WORK WITH ALL OTHER TRADES. PROVIDE OFFSETS, EASEMENTS OR RELOCATE TO AVOID CONFLICTS WITH WORK OF OTHER TRADES. FURNISH SUFFICIENT RESOURCES TO MEET ALL PROJECT MILESTONES AND DEADLINES.
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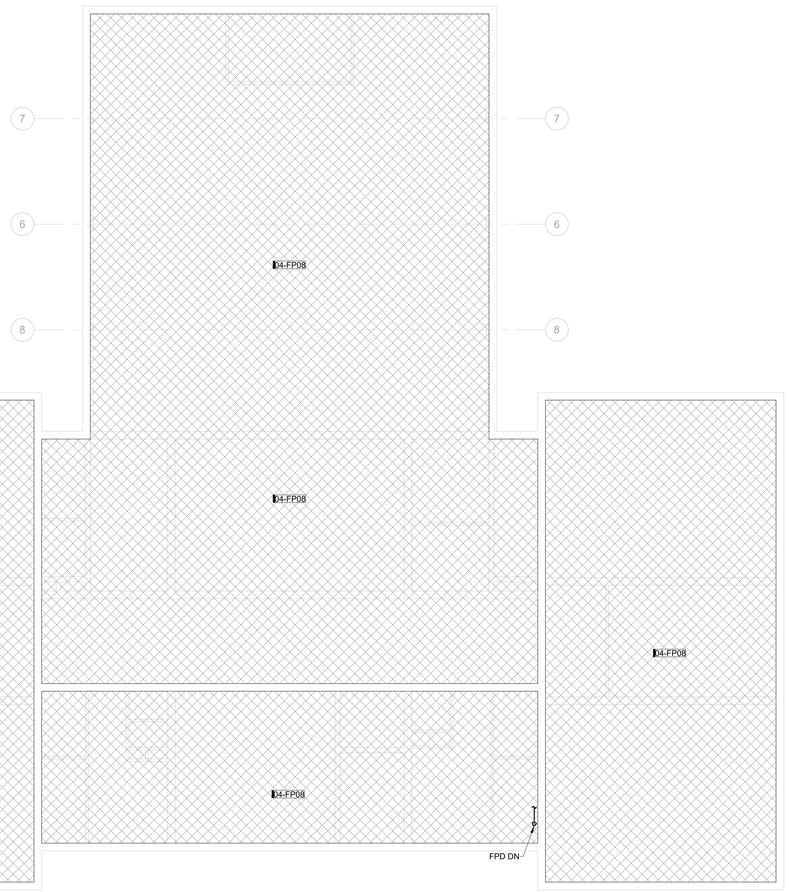


PLAN NORTH
TRUE NORTH

1 ATTIC FIRE PROTECTION PLAN
1/8" = 1'-0" 0 12'

LIGHT HAZARD
ORDINARY HAZARD
ELEVATOR AND ELEVATOR MACHINE ROOM

KEY PLAN

ADD

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PKWY, SUITE 100
WEST DES MOINES, IA 50266
515.223.6164 | SHIVEHATTERY.COM

SEAL

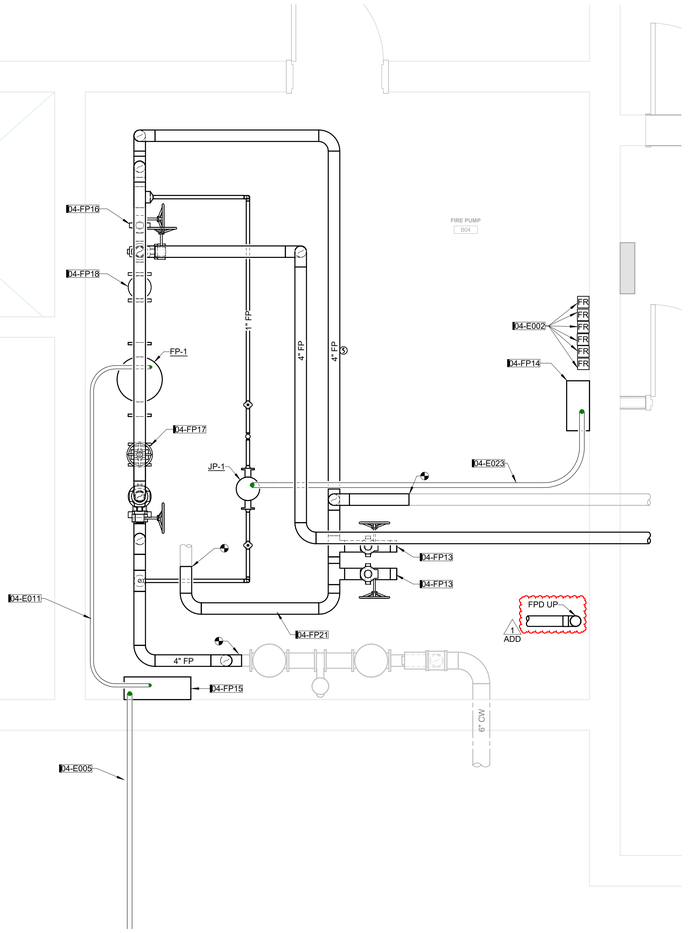
Fire Sprinkler (#9279.21)
Iowa Department of Administrative Services
1251 334th St, Woodward, IA 50276

ADD	1	02/07/2023	ADDENDUM #1

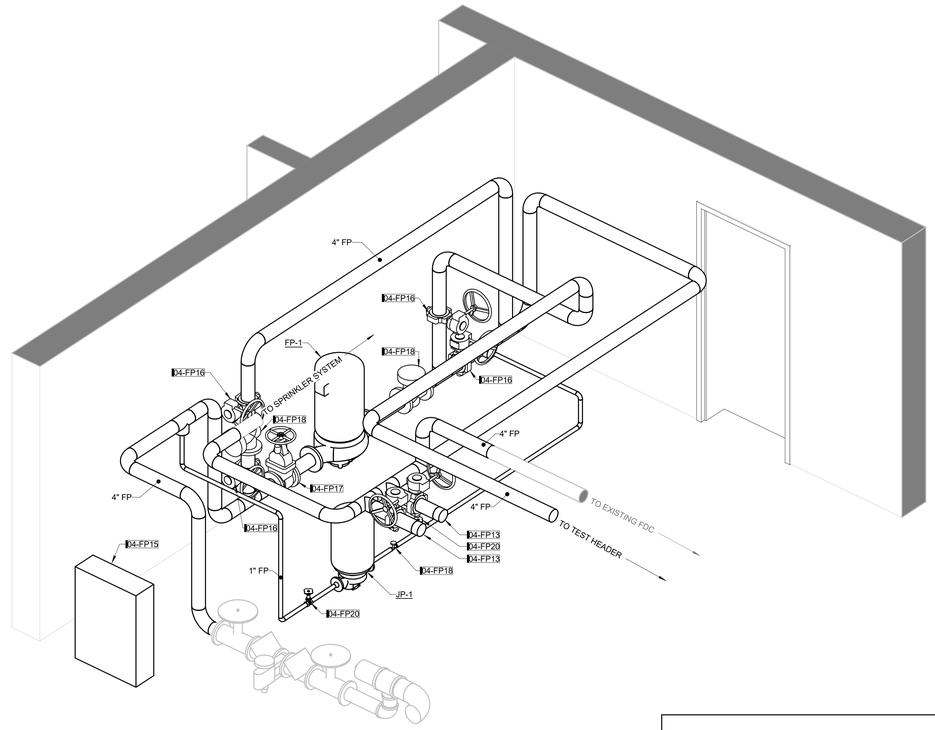
DRAWN BY	JET
APPROVED BY	TLS
ISSUED FOR	100% CD
ISSUE DATE	2023-01-10
PROJECT NUMBER	2142203390
FIELD BOOK	

ATTIC FIRE PROTECTION PLAN

04-FP103



C4 FIRE PUMP ISOMETRIC



KEYNOTES

KEY	NOTE
04-E002	FIRE ALARM RELAYS FOR INTERFACE WITH FIRE PUMP AND JOCKEY PUMP.
04-E005	NEW FEEDER FOR FIRE PUMP. REFER TO 04-FP300 FOR CONTINUATION.
04-E011	WIRING BETWEEN FIRE PUMP CONTROLLER AND FIRE PUMP TO BE IN RISID METAL CONDUIT.
04-E023	WIRING BETWEEN JOCKEY PUMP CONTROLLER AND JOCKEY PUMP TO BE IN RIGID METAL CONDUIT.
04-FP13	4" BRANCH LINES FOR FUTURE EXTENSION OF FIRE PROTECTION. PROVIDE WITH INDICATING BUTTERFLY VALVE AND CAP.
04-FP14	JOCKEY PUMP CONTROLLER.
04-FP15	FIRE PUMP CONTROLLER.
04-FP16	INDICATING BUTTERFLY VALVE WITH TAMPER SWITCH.
04-FP17	INDICATING GATE VALVE WITH TAMPER SWITCH.
04-FP18	CHECK VALVE.
04-FP20	ISOLATION VALVE.
04-FP21	FIRE PROTECTION SYSTEM RISER. SEE DETAIL.

FIRE PUMP SCHEDULE

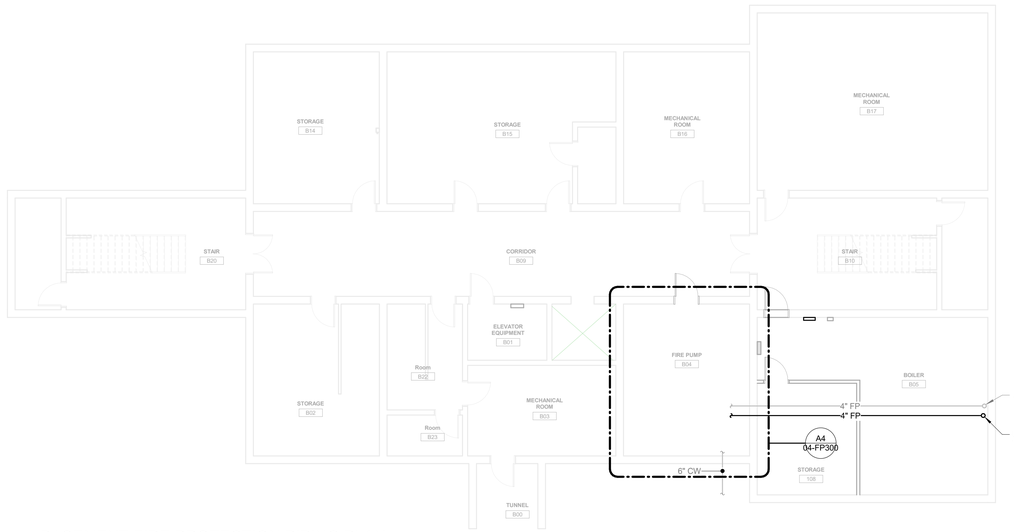
MARK	DESCRIPTION	TYPE	GPM	HEAD (PSI)	SHUTOFF HEAD (PSI)	HEAD @ 150% FLOW (PSI)	MOTOR DATA		ELECTRICAL DATA		DESIGN BASIS
							HP	RPM	VOLTS	PHASE	
FP-1	FIRE PUMP	VERTICAL IN-LINE	300	40	48	38	20	3500	208	3	AURORA 4-383-7B

JOCKEY PUMP SCHEDULE

MARK	DESCRIPTION	TYPE	PUMP DATA			MOTOR DATA				DESIGN BASIS
			STAGES	GPM	HEAD (PSI)	HP	RPM	VOLTS	PHASE	
JP-1	JOCKEY PUMP	VERTICAL MULTISTAGE	5	5	50	1/2	3500	208	3	AURORA PVM1-5

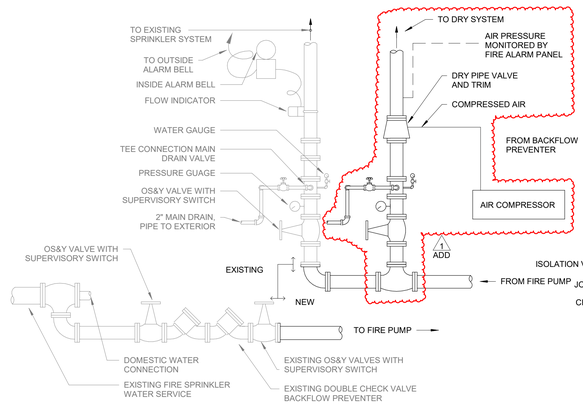
PLAN NORTH
TRUE NORTH

A4 FIRE PUMP PLAN
1/2" = 1'-0" 0 3'

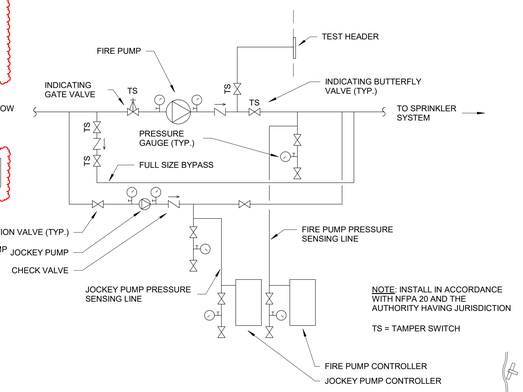


PLAN NORTH
TRUE NORTH

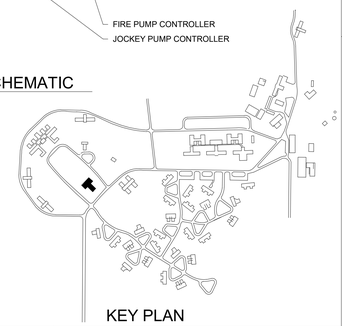
A6 BASEMENT FIRE PROTECTION PIPING PLAN
1/8" = 1'-0" 0 12'



E6 SPRINKLER RISER DIAGRAM
NOT TO SCALE



G6 FIRE PUMP SCHEMATIC
NOT TO SCALE



KEY PLAN

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PKWY, SUITE 100
WEST DES MOINES, IA 50266
515.223.8164 | SHIVEHATTERY.COM

SEAL

DRAWN BY	BSG
APPROVED BY	TLS
ISSUED FOR	100% CD
ISSUE DATE	2023-01-10
PROJECT NUMBER	2142203390
FIELD BOOK	

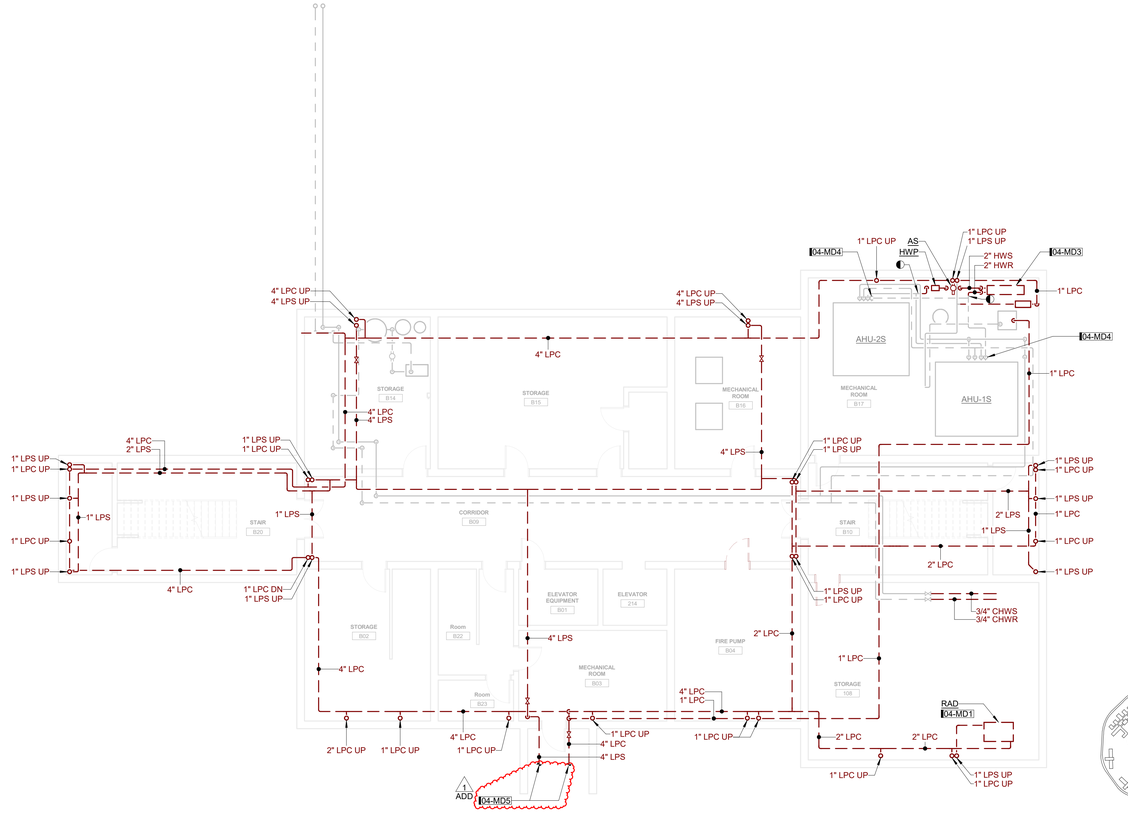
ADD	1	02/07/2023 ADDENDUM #1

Fire Sprinkler (#9279.21)
Iowa Department of Administrative Services
1251 334th St, Woodward, IA 50276

FIRE PUMP PLANS, DETAILS & SCHEDULES

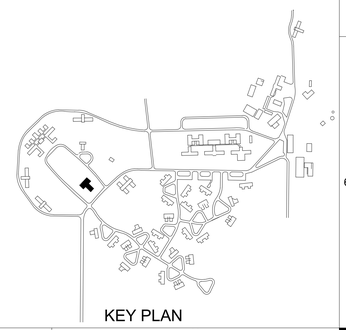
04-FP300

KEYNOTES	
KEY	NOTE
04-MD1	REMOVE STEAM RADIATOR AND ASSOCIATED PIPING AND CONTROLS.
04-MD3	REMOVE STEAM HEAT EXCHANGER. REMOVE ALL CONTROLS AND PIPING ACCESSORIES.
04-MD4	TEMPORARILY CAP PIPING TO COILS. RECONNECT TO NEW BOILER SYSTEM. SEE NEW WORK PLANS FOR ADDITIONAL DETAILS.
1 ADD 04-MD5	VALVE, SEAL, AND CAP STEAM PIPE MAINS AT THE NEAREST SHUTOFF VALVE IN THE TUNNEL OUTSIDE OF BUILDING FOOTPRINT.



PLAN NORTH
TRUE NORTH

C6 BASEMENT MECHANICAL PIPING DEMOLITION PLAN
1/8" = 1'-0" 0 12'



KEY PLAN

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PKWY, SUITE 100
WEST DES MOINES, IA 50266
515.223.8184 | SHIVEHATTERY.COM

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ADD	1	02/07/2023	ADDENDUM #1

WRC Decentralization Phase 2 (#9279.20)

Iowa Department of Administrative Services
1251 334th St, Woodward, IA 50276

DRAWN BY	CAS
APPROVED BY	TLS
ISSUED FOR	100% CD
ISSUE DATE	2023-01-10
PROJECT NUMBER	2142203390
FIELD BOOK	

BASEMENT MECHANICAL PIPING DEMOLITION PLAN

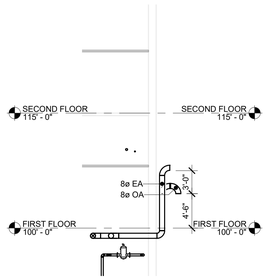
04-MD100

Autodesk Docs://A DAS - WRC Project/21420010-MEP-MH_2021.rvt
2/2/2023 8:41:56 AM

Autodesk Revit 2022

KEYNOTES	
KEY	NOTE
04-M01	REBALANCE HEATING COIL TO GPM LISTED BELOW.
04-M02	36 INCHES AROUND EACH BOILERS MINIMUM
04-M05	ADD LINE VOLTAGE COOLING-ONLY THERMOSTAT TO CONTROL EXHAUST FAN. SET TO 80° F.

1 ADD



A4 BOILER VENT TERMINATION SECTION
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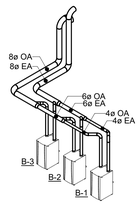
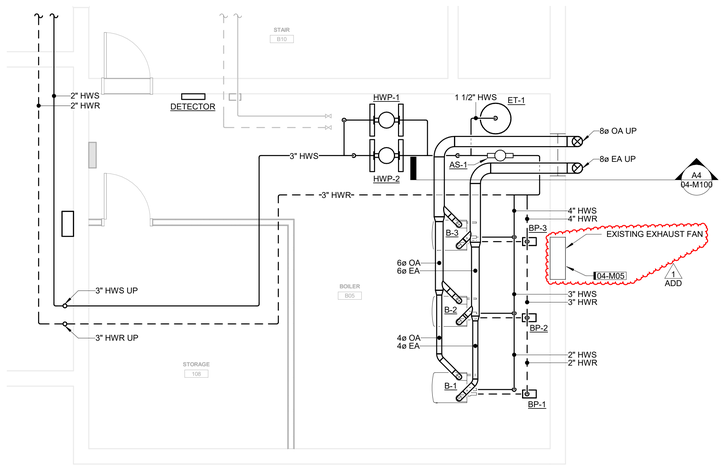
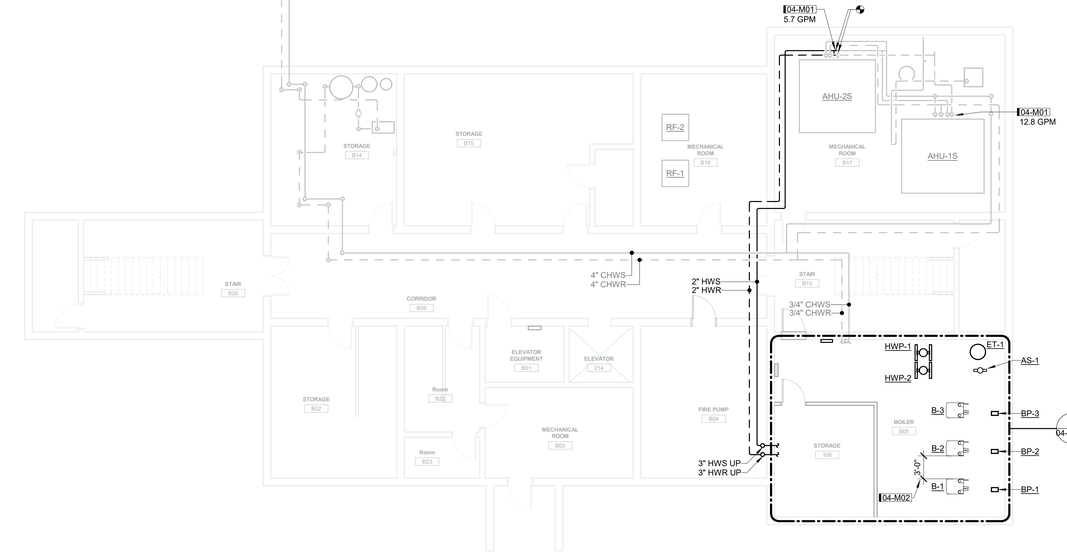


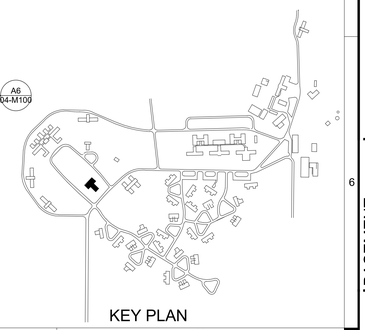
B4 BOILER VENTING ISOMETRIC VIEW
NOT TO SCALE



PLAN NORTH
TRUE NORTH

A6 BASEMENT ENLARGED MECHANICAL PLAN
1/4" = 1'-0" 0 6'





KEY PLAN

PLAN NORTH
TRUE NORTH

D6 BASEMENT MECHANICAL PIPING PLAN
1/8" = 1'-0" 0 12'

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SEAL

WRC Decentralization Phase 2 (#9279.20)

Iowa Department of Administrative Services
1251 334th St, Woodward, IA 50276

ADD	1	02/07/2023	ADDENDUM #1

DRAWN BY	CAS
APPROVED BY	TLS
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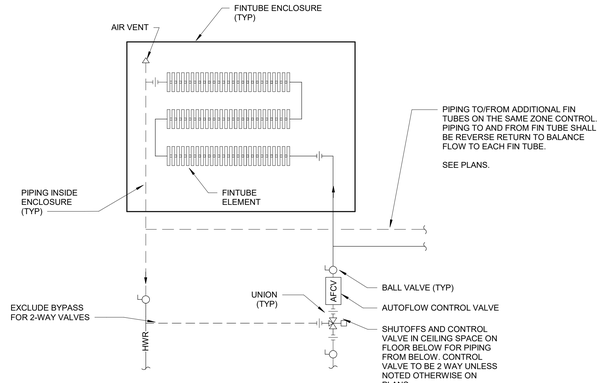
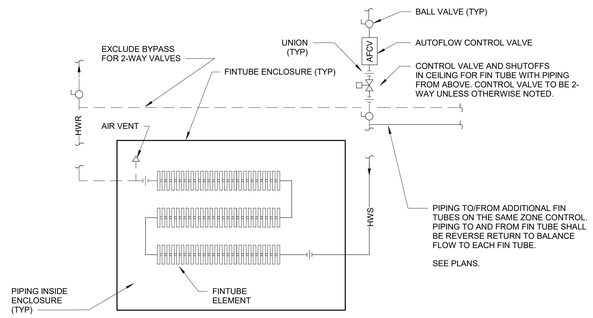
BASEMENT MECHANICAL PIPING PLAN

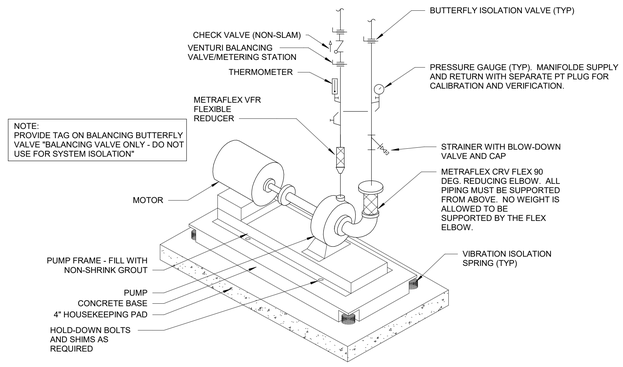
04-M100



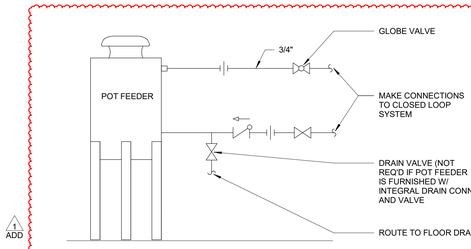
3 3-Tier Fin Tube Piping Diagram - Piping in Floor Below
NOT TO SCALE



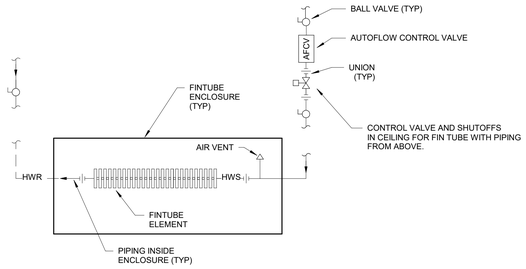
4 3-Tier Fin Tube Piping Diagram - Piping in Ceiling Above
NOT TO SCALE



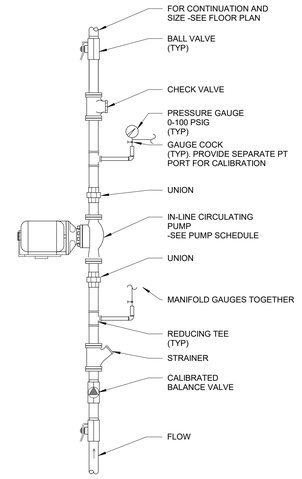
F2 END SUCTION PUMP WITH VIBRATION ISOLATION DETAIL
NOT TO SCALE



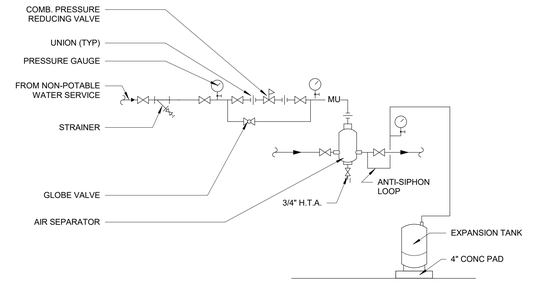
1 1-Tier Fin Tube Piping Diagram - Piping in Floor Below
NOT TO SCALE



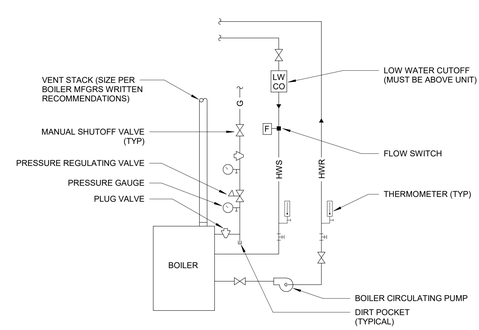
2 1-Tier Fin Tube Piping Diagram - Piping in Ceiling Above
NOT TO SCALE



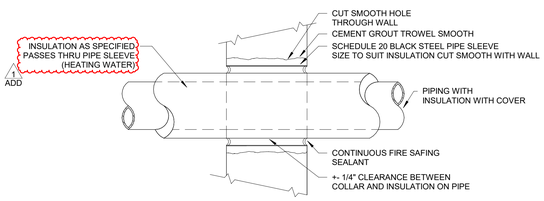
E5 CIRCULATING PUMP DETAIL
NOT TO SCALE



F4 AIR SEPARATOR/BLADDER TYPE EXP. TANK DETAIL
NOT TO SCALE

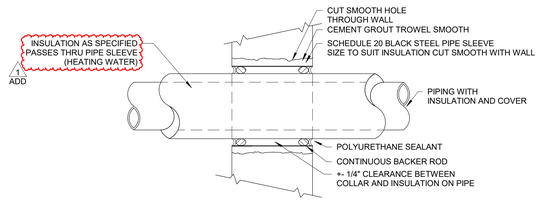


F5 GAS-FIRED BOILER PIPING DETAIL
NOT TO SCALE

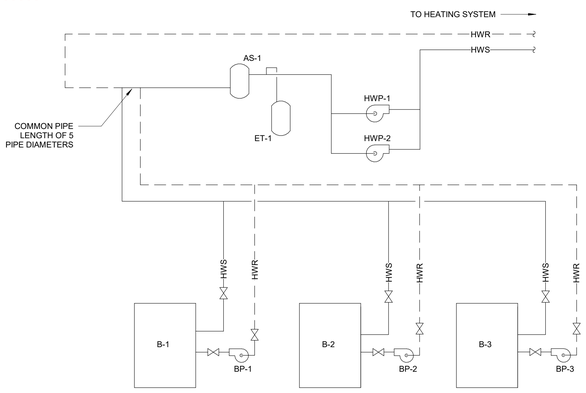


F6 Interior Fire Rated Wall Pipe Penetration Detail
NOT TO SCALE

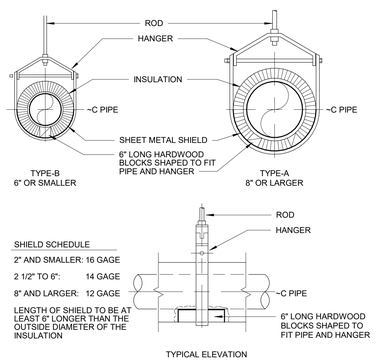
5 Pot Feeder Piping Detail
NOT TO SCALE



Interior Wall Pipe Penetration Detail (Through Conditioned Space)
D6 NOT TO SCALE



B6 HEATING WATER SCHEMATIC
NOT TO SCALE



D3 INSULATED PIPE HANGER DETAIL
NOT TO SCALE

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
4125 WESTOWN PKWY, SUITE 100
WEST DES MOINES, IA 50266
515.223.8104 | SHIVEHATTERY.COM
SEAL

WRC Decentralization Phase 2 (#9279.20)
Iowa Department of Administrative Services
1251 334th St, Woodward, IA 50276

ADD	1	02/07/2023 ADDENDUM #1
CAS	TLS	100% CD
DRAWN BY	APPROVED BY	ISSUED FOR
ISSUE DATE	2023-01-10	
PROJECT NUMBER	2142203390	
FIELD BOOK		

MECHANICAL DETAILS

04-M500

SHIVEHATTERY
ARCHITECTURE + ENGINEERING

November 10, 2022

Woodward Resource Center
ATTN: Mr. Rodney Carr
Facility Manager
1251 334th Street
Woodward, IA 50276

RE: Woodward Resource Center – Cottages – Asbestos Survey

Dear Mr. Carr:

Per your request and authorization, Shive-Hattery, Inc. performed asbestos surveys for the above referenced project on October 28 and 29, 2022. It is our understanding that the buildings will undergo renovations that may disturb suspect asbestos-containing building materials. It was the intent of the survey to determine what materials within the project area contain asbestos.

Methods and Procedures

The review for this project was performed by personnel trained and certified under the National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations. Partial or destructive testing was not performed to reveal concealed conditions.

A sample from each suspect homogeneous area was collected from the project areas at the Woodward Resource Center Cottages. Pertinent information such as location, color, etc. was recorded for each suspect material. The samples were then sent to an NAVLAP accredited laboratory for analysis.

The samples were analyzed for asbestos fibers utilizing the Polarized Light Microscopy method of analysis by EMLab P&K of Phoenix, AZ. Each sample was analyzed for the six different types of fibrous asbestos forms of which a percentage, by volume, is estimated and summarized. As defined by the U.S. Environmental Protection Agency mandated AHERA regulations, the suspect material is considered an asbestos-containing material (ACM) if the material contains more than 1.0 percent of any one or a combination of asbestos fibers.

Pertinent information for each bulk sample has been summarized on the sample analytical results which can be found at the end of this report.

Summary of Findings

Cottage 101 Franklin:

Three (3) samples were collected from 5 homogeneous areas located at Cottage 101 Franklin. Materials tested with an asbestos content greater than 1.0% are considered to be asbestos containing. The following table summarizes the sampling results by homogeneous area:

Homogeneous Area		Asbestos Content
1.	White Joint Compound w/ Multilayered Paint (Wall)	0%
2.	White Drywall w/ Brown Paper (Wall)	0%
3.	White Texture w/ Gray Paint (Wall)	0%
4.	White Joint Compound w/ Multilayered Paint (Ceiling)	0%
5.	White Drywall w/ Brown Paper (Ceiling)	0%

Cottage 103 Franklin:

Three (3) samples were collected from 5 homogeneous areas located at Cottage 103 Franklin. Materials tested with an asbestos content greater than 1.0% are considered to be asbestos containing. The following table summarizes the sampling results by homogeneous area:

Homogeneous Area		Asbestos Content
1.	White Joint Compound w/ Multilayered Paint (Ceiling)	0%
2.	White Drywall w/ Brown Paper (Ceiling)	0%
3.	White Texture w/ Gray Paint (Wall)	0%
4.	White Joint Compound w/ Multilayered Paint (Wall)	0%
5.	White Drywall w/ Brown Paper (Wall)	0%

Cottage 104 Franklin:

Three (3) samples were collected from 4 homogeneous areas located at Cottage 104 Franklin. Materials tested with an asbestos content greater than 1.0% are considered to be asbestos containing. The following table summarizes the sampling results by homogeneous area:

Homogeneous Area		Asbestos Content
1.	White Joint Compound w/ Multilayered Paint (Ceiling)	0%
2.	White Drywall w/ Brown Paper (Ceiling)	0%
3.	White Joint Compound w/ Multilayered Paint (Wall)	0%
4.	White Drywall w/ Brown Paper (Wall)	0%

Cottage 105 Franklin:

Three (3) samples were collected from 6 homogeneous areas located at Cottage 105 Franklin. Materials tested with an asbestos content greater than 1.0% are considered to be asbestos containing. The following table summarizes the sampling results by homogeneous area:

Homogeneous Area		Asbestos Content
1.	White Compound (Wall)	0%
2.	White Joint Compound w/ Tan Paint (Wall)	0%
3.	White Drywall w/ Brown Paper (Wall)	0%
4.	White Compound (Ceiling)	0%
5.	White Joint Compound w/ Tan Paint (Ceiling)	0%
6.	White Drywall w/ Brown Paper (Ceiling)	0%

Cottage 107 Franklin:

Three (3) samples were collected from 6 homogeneous areas located at Cottage 107 Franklin. Materials tested with an asbestos content greater than 1.0% are considered to be asbestos containing. The following table summarizes the sampling results by homogeneous area:

Homogeneous Area		Asbestos Content
1.	White Joint Compound (Ceiling)	0%
2.	White Joint Compound w/ White Paint (Ceiling)	0%
3.	Beige Drywall w/ Brown Paper and White Paint (Ceiling)	0%

4.	White Joint Compound w/ White Paint #1 (Wall)	0%
5.	White Joint Compound w/ White Paint #2 (Wall)	0%
6.	Beige Drywall w/ Brown/Green Paper (Wall)	0%

Cottage 108 Franklin:

Three (3) samples were collected from 8 homogeneous areas located at Cottage 108 Franklin. Materials tested with an asbestos content greater than 1.0% are considered to be asbestos containing. The following table summarizes the sampling results by homogeneous area:

Homogeneous Area		Asbestos Content
1.	White Compound w/ Multilayered Paint (Ceiling)	0%
2.	Cream Tape (Ceiling)	0%
3.	White Joint Compound (Ceiling)	0%
4.	White Drywall w/ Brown Paper (Ceiling)	0%
5.	White Compound w/ Multilayered Paint (Wall)	0%
6.	Cream Tape (Wall)	0%
7.	White Joint Compound (Wall)	0%
8.	White Drywall w/ Brown Paper (Wall)	0%

Cottage 109 Franklin:

Three (3) samples were collected from 5 homogeneous areas located at Cottage 109 Franklin. Materials tested with an asbestos content greater than 1.0% are considered to be asbestos containing. The following table summarizes the sampling results by homogeneous area:

Homogeneous Area		Asbestos Content
1.	White Compound w/ Multilayered Paint (Ceiling)	0%
2.	Brown Drywall w/ Brown/Green Paper (Ceiling)	0%
3.	White Joint Compound (Wall)	0%
4.	White Compound w/ Multilayered Paint (Wall)	0%
5.	Brown Drywall w/ Brown/Green Paper (Wall)	0%

Cottage 200 Franklin:

Three (3) samples were collected from 6 homogeneous areas located at Cottage 200 Franklin. Materials tested with an asbestos content greater than 1.0% are considered to be asbestos containing. The following table summarizes the sampling results by homogeneous area:

Homogeneous Area		Asbestos Content
1.	White Compound w/ White Paint (Ceiling)	0%
2.	Off-White Compound w/ Multilayered Paint (Ceiling)	0%
3.	White Drywall w/ Brown Paper (Ceiling)	0%
4.	White Compound w/ White Paint (Wall)	0%
5.	Off-White Compound w/ Tan Paint (Wall)	0%
6.	Brown Drywall w/ Brown/Green Paper (Wall)	0%

Cottage 201 Franklin:

Eight (8) samples were collected from 16 homogeneous areas located at Cottage 201 Franklin. Materials tested with an asbestos content greater than 1.0% are considered to be asbestos containing. The following table summarizes the sampling results by homogeneous area:

Homogeneous Area		Asbestos Content
1.	Off-White Joint Compound w/ White Paint (Ceiling)	0%
2.	Off-White Compound w/ Multilayered Paint (Ceiling)	0%
3.	White Drywall w/ Brown Paper (Ceiling)	0%
4.	Off-White Joint Compound w/ White Paint (Wall)	0%
5.	Off-White Compound w/ Multilayered Paint (Wall)	0%
6.	White Drywall w/ Brown Paper (Wall)	0%
7.	**White Compound (Wall) – NE Restroom North Wall**	**2% Chrysotile***
8.	Tan Mastic	0%
9.	Yellow Linoleum	0%
10.	Tan Linoleum	0%
11.	Beige Caulk	0%
12.	Brown/Gray Linoleum w/ Fibrous Backing	0%
13.	Tan Mastic a/w Brown/Gray Linoleum	0%
14.	Tan Stucco	0%
15.	Gray Cementitious Material	0%
16.	Dark Brown Mastic	0%

*Material was point counted for more accurate results.

Cottage 202 Franklin:

Four (4) samples were collected from 5 homogeneous areas located at Cottage 202 Franklin. Materials tested with an asbestos content greater than 1.0% are considered to be asbestos containing. The following table summarizes the sampling results by homogeneous area:

Homogeneous Area		Asbestos Content
1.	White Joint Compound w/ White Paint (Ceiling)	0%
2.	White Drywall w/ Brown Paper (Ceiling)	0%
3.	White Joint Compound w/ White Paint (Wall)	0%
4.	White Drywall w/ Brown Paper (Wall)	0%
5.	Brown Mastic	0%

Cottage 203 Franklin:

Five (5) samples were collected from 9 homogeneous areas located at Cottage 203 Franklin. Materials tested with an asbestos content greater than 1.0% are considered to be asbestos containing. The following table summarizes the sampling results by homogeneous area:

Homogeneous Area		Asbestos Content
1.	White Compound w/ Multilayered Paint (Ceiling)	0%
2.	White Drywall w/ Brown Paper (Ceiling)	0%
3.	White Compound w/ Multilayered Paint #1 (Wall)	0%

4.	White Compound w/ Multilayered Paint #2 (Wall)	0%
5.	White Drywall w/ Brown Paper (Wall)	0%
6.	Cream Non-Fibrous Material	0%
7.	Tan Mastic	0%
8.	Tan Linoleum w/ Fibrous Backing	0%
9.	Yellow Mastic	0%

Cottage 202 Pine:

Four (4) samples were collected from 9 homogeneous areas located at Cottage 202 Pine. Materials tested with an asbestos content greater than 1.0% are considered to be asbestos containing. The following table summarizes the sampling results by homogeneous area:

Homogeneous Area		Asbestos Content
1.	White Compound w/ White Paint (Ceiling)	0%
2.	Cream Tape (Ceiling)	0%
3.	White Joint Compound (Ceiling)	0%
4.	White Drywall w/ Brown Paper & Cream Paint (Ceiling)	0%
5.	White Compound w/ White Paint (Wall)	0%
6.	Cream Tape (Wall)	0%
7.	White Joint Compound (Wall)	0%
8.	White Drywall w/ Brown Paper & Cream Paint (Wall)	0%
9.	Yellow Mastic	0%

Cottage 204 Pine:

Three (3) samples were collected from 5 homogeneous areas located at Cottage 204 Pine. Materials tested with an asbestos content greater than 1.0% are considered to be asbestos containing. The following table summarizes the sampling results by homogeneous area:

Homogeneous Area		Asbestos Content
1.	Yellow Mastic	0%
2.	White Joint Compound (Wall)	0%
3.	White Drywall w/ Brown Paper (Wall)	0%
4.	White Joint Compound (Ceiling)	0%
5.	White Drywall w/ Brown Paper (Ceiling)	0%

Cottage 301 Pine:

Three (3) samples were collected from 6 homogeneous areas located at Cottage 301 Pine. Materials tested with an asbestos content greater than 1.0% are considered to be asbestos containing. The following table summarizes the sampling results by homogeneous area:

Homogeneous Area		Asbestos Content
1.	White Joint Compound (Ceiling)	0%
2.	White Compound w/ Multilayered Paint (Ceiling)	0%
3.	White Drywall w/ Brown Paper (Ceiling)	0%
4.	White Joint Compound (Wall)	0%
5.	White Compound w/ Multilayered Paint (Wall)	0%
6.	White Drywall w/ Brown Paper (Wall)	0%

Cottage 302 Pine:

Three (3) samples were collected from 4 homogeneous areas located at Cottage 302 Pine. Materials tested with an asbestos content greater than 1.0% are considered to be asbestos containing. The following table summarizes the sampling results by homogeneous area:

Homogeneous Area	Asbestos Content
1. White Joint Compound (Ceiling)	0%
2. White Drywall w/ Brown Paper & White Paint (Ceiling)	0%
3. White Joint Compound (Wall)	0%
4. White Drywall w/ Brown Paper & White Paint (Wall)	0%

Cottage 303 Pine:

Three (3) samples were collected from 4 homogeneous areas located at Cottage 303 Pine. Materials tested with an asbestos content greater than 1.0% are considered to be asbestos containing. The following table summarizes the sampling results by homogeneous area:

Homogeneous Area	Asbestos Content
1. White Joint Compound (Ceiling)	0%
2. White Drywall w/ Brown Paper & White Paint (Ceiling)	0%
3. White Joint Compound (Wall)	0%
4. White Drywall w/ Brown Paper & White Paint (Wall)	0%

Cottage 304 Pine:

Three (3) samples were collected from 6 homogeneous areas located at Cottage 304 Pine. Materials tested with an asbestos content greater than 1.0% are considered to be asbestos containing. The following table summarizes the sampling results by homogeneous area:

Homogeneous Area	Asbestos Content
1. White Joint Compound w/ White Paint (Ceiling)	0%
2. White Joint Compound w/ Multilayered Paint (Ceiling)	0%
3. White Drywall w/ Brown Paper (Ceiling)	0%
4. White Joint Compound w/ White Paint (Wall)	0%
5. White Compound w/ Multilayered Paint (Wall)	0%
6. White Drywall w/ Brown Paper (Wall)	0%

Cottage 103 Cedar Street:

Three (3) samples were collected from 4 homogeneous areas located at Cottage 103 Cedar Street. Materials tested with an asbestos content greater than 1.0% are considered to be asbestos containing. The following table summarizes the sampling results by homogeneous area:

Homogeneous Area	Asbestos Content
1. White Joint Compound (Ceiling)	0%
2. White Drywall w/ Brown Paper (Ceiling)	0%
3. White Joint Compound (Wall)	0%
4. White Drywall w/ Brown Paper (Wall)	0%

Cottage 201 Cedar Street:

Three (3) samples were collected from 5 homogeneous areas located at Cottage 201 Cedar Street. Materials tested with an asbestos content greater than 1.0% are considered to be asbestos containing. The following table summarizes the sampling results by homogeneous area:

Homogeneous Area		Asbestos Content
1.	Semi-Transparent Caulk w/ White Paint (Wall)	0%
2.	White Joint Compound & White Paint (Wall)	0%
3.	Brown Drywall w/ Brown/Green Paper (Wall)	0%
4.	White Joint Compound (Ceiling)	0%
5.	Brown Drywall w/ Brown/Green Paper (Ceiling)	0%

Cottage 101 Cherry Lane:

Three (3) samples were collected from 8 homogeneous areas located at Cottage 101 Cherry Lane. Materials tested with an asbestos content greater than 1.0% are considered to be asbestos containing. The following table summarizes the sampling results by homogeneous area:

Homogeneous Area		Asbestos Content
1.	Off-White Compound (Ceiling)	0%
2.	White Compound w/ White Paint (Ceiling)	0%
3.	Brown Adhesive (Ceiling)	0%
4.	White Drywall w/ Brown Paper (Ceiling)	0%
5.	Off-White Compound (Wall)	0%
6.	White Compound w/ White Paint (Wall)	0%
7.	Brown Adhesive (Wall)	0%
8.	White Drywall w/ Brown Paper (Wall)	0%

Cottage 103 Cherry Lane:

Four (4) samples were collected from 7 homogeneous areas located at Cottage 103 Cherry Lane. Materials tested with an asbestos content greater than 1.0% are considered to be asbestos containing. The following table summarizes the sampling results by homogeneous area:

Homogeneous Area		Asbestos Content
1.	Red Insulation	0%
2.	Yellow Mastic	0%
3.	White Joint Compound w/ White Paint (Ceiling)	0%
4.	White Drywall w/ Brown Paper (Ceiling)	0%
5.	White Joint Compound w/ White Paint (Wall)	0%
6.	White Drywall w/ Brown Paper (Wall)	0%
7.	White Joint Compound w/ White Paint (Wall) - NE Entryway	<1% Chrysotile

Cottage 104 Cherry Lane:

Three (3) samples were collected from 4 homogeneous areas located at Cottage 104 Cherry Lane. Materials tested with an asbestos content greater than 1.0% are considered to be asbestos containing. The following table summarizes the sampling results by homogeneous area:

Homogeneous Area		Asbestos Content
1.	White Joint Compound (Ceiling)	0%
2.	White Drywall w/ Brown Paper & White Paint (Ceiling)	0%
3.	White Joint Compound (Wall)	0%
4.	White Drywall w/ Brown Paper & White Paint (Wall)	0%

Cottage 105 Cherry Lane:

Three (3) samples were collected from 4 homogeneous areas located at Cottage 105 Cherry Lane. Materials tested with an asbestos content greater than 1.0% are considered to be asbestos containing. The following table summarizes the sampling results by homogeneous area:

Homogeneous Area		Asbestos Content
1.	White Joint Compound w/ White Paint (Ceiling)	0%
2.	White Drywall w/ Brown/Green Paper (Ceiling)	0%
3.	White Joint Compound w/ White Paint (Wall)	0%
4.	White Drywall w/ Brown/Green Paper (Wall)	0%

Cottage 107 Cherry Lane:

Three (3) samples were collected from 4 homogeneous areas located at Cottage 107 Cherry Lane. Materials tested with an asbestos content greater than 1.0% are considered to be asbestos containing. The following table summarizes the sampling results by homogeneous area:

Homogeneous Area		Asbestos Content
1.	White Joint Compound w/ Multilayered Paint (Ceiling)	0%
2.	White Drywall w/ Brown/Green Paper & Multilayered Paint (Ceiling)	0%
3.	White Joint Compound w/ Multilayered Paint (Wall)	0%
4.	White Drywall w/ Brown/Green Paper & Multilayered Paint (Wall)	0%

Recommendations

Thus, it appears that the proposed project will not disturb any asbestos-containing materials and asbestos abatement is not required.

During the inspection, cottage at 201 Franklin was undergoing bathroom wall tile renovations. This work is outside the scope of this project. Wall mastic was observed, and a sample collected due to easy access. The sample came back positive for asbestos. It is our recommendation to halt that project until the asbestos-containing material is abated prior to commencing with further work.

Trace amounts of asbestos were found in the joint compound in cottage 103 Cherry Lane. This homogeneous area is not asbestos-containing material as defined by the EPA and asbestos abatement is not required. However, it is important that OSHA guidelines be followed. If this material is to be disturbed, OSHA requires that the material be handled using safe work practices by personnel trained in the proper procedure for building materials containing minimal amounts of asbestos.

Please call our office if you should have any questions or comments.

Sincerely,

SHIVE-HATTERY, INC.

Grant W. Bridgford
License Number IA 22-7928 INSP
Expiration Date: February 10, 2023

GWB/mas

Encs.

Copy: Chad Siems, S-H

eurofins | Built Environment Testing

Report for:

Grant Bridgford
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins Aerotech Built Environment Testing, Inc.
Project: Cottage 101 Franklin; 2142203390
EML ID: 3071775

Approved by:

Renee Luna-Trepczynski

Approved Signatory
Renee Luna-Trepczynski

Dates of Analysis:
Asbestos PLM: 11-03-2022

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)
NVLAP Lab Code 500031-0

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the samples as received and tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

Eurofins Aerotech Built Environment Testing, Inc. ("the Company"), a member of the Eurofins Built Environment Testing group of companies, shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Cottage 101 Franklin; 2142203390

Date of Sampling: 10-27-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Total Samples Submitted:	3
Total Samples Analyzed:	3
Total Samples with Layer Asbestos Content > 1%:	0

Location: HA.001A, Sheetrock and Joint Compound

Lab ID-Version‡: 14821628-1

Sample Layers	Asbestos Content
White Joint Compound with Multilayered Paint	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA.001B, Sheetrock and Joint Compound

Lab ID-Version‡: 14821629-1

Sample Layers	Asbestos Content
White Texture with Gray Paint	ND
White Joint Compound with Multilayered Paint	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA.00IC, Sheetrock and Joint Compound

Lab ID-Version‡: 14821630-1

Sample Layers	Asbestos Content
White Texture with Gray Paint	ND
White Joint Compound with Multilayered Paint	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

CHAIN OF CUSTODY

EMLab P&K

866.888.6653 www.EMLabPK.com

Phoenix, AZ: NVLAP Lab Code 500031-0; CO-ELAP # AL-17343
Orange County, CA: NVLAP Lab Code 200577-0
San Bruno, CA: NVLAP Lab Code 200728-0; AIHA IHLAP #102856
San Diego, CA: NVLAP Lab Code 500034-0

Ft. Lauderdale, FL: NVLAP Lab Coc
Cherry Hill, NJ: NVLAP Lab Code 2(
Ft. Worth, TX: NVLAP Lab Code 2(

003071775

CONTACT INFORMATION

Company: Shive-Hattery	Address: 4125 Westown Pkwy #100, West Des Moines, IA 50266
Contact: Grant Bridgford	Special Instructions: *Point Count All Results Between 1-3% *Stop at 1st Positive Greater Than 10% *Email results to gbridgford@shive-hattery.com
Phone: 515.971.8844	

PROJECT INFORMATION

Project ID: Cottage 101 Franklin
Project Desc.: 2142203390
Project Zip Code:
Sampling Date & Time: 10.27.22
PO Number:

TURN AROUND TIME CODES - (TAT)

STD - Standard (DEFAULT)
ND - Next Business Day
SD - Same Business Day Rush*
* RUSHES AVAILABLE FROM LOCATIONS LISTED ABOVE

Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.

ASBESTOS ANALYSIS

REQUESTED SERVICES (✓ Boxes)

SAMPLE ID	DESCRIPTION	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples Only)	NOTES
HH-001A	Sheetrock & Joint Compound	B	STD		
B	"	"	"		
C	"	"	"		

PCM Air		PLM Bulk					PLM Rock & Soil		Other Requests				
Fiber Count (NIOSH 7400)	OSHA with TWA	EPA Method 600/R-93/116	EPA Point Count (200 Point Count)	EPA Point Count (400 Point Count)	EPA Point Count (1000 Point Count)	Gravimetric Point Count	CARB 435 Method - Pre-crushed Sample	CARB 435 Method - Regular Sample (7 Bus. Days)	Non-Asbestos Fiber Ct. (NIOSH 7400) - "B" Counting Rules	Lead Analysis			
		X											
		"											
		"											

SAMPLE TYPE CODES	
A - Air	W - Wipe
B - Bulk	T - Tape
D - Dust	R- Rock
SO - Soil	O - Other

RELINQUISHED BY	DATE & TIME	RECEIVED BY	DATE & TIME
	10.28.22 0800		10-31-22 9:30am

By submitting this Chain of Custody, you agree to be bound by the terms and conditions set forth at http://www.emlab.com/s/main/serviceterms.html

eurofins | Built Environment Testing

Report for:

Grant Bridgford
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins Aerotech Built Environment Testing, Inc.
Project: Cottage 103 Franklin; 2142203390
EML ID: 3071781

Approved by:

Renee Luna-Trepczynski

Approved Signatory
Renee Luna-Trepczynski

Dates of Analysis:
Asbestos PLM: 11-03-2022

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)
NVLAP Lab Code 500031-0

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Cottage 103 Franklin; 2142203390

Date of Sampling: 10-27-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Total Samples Submitted:	3
Total Samples Analyzed:	3
Total Samples with Layer Asbestos Content > 1%:	0

Location: HA-001A, Sheetrock and Joint Compound

Lab ID-Version‡: 14821242-1

Sample Layers	Asbestos Content
White Joint Compound	ND
White Drywall with Brown Paper and Multilayered Paint	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA-001B, Sheetrock and Joint Compound

Lab ID-Version‡: 14821243-1

Sample Layers	Asbestos Content
Yellow Mastic	ND
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Poor

Location: HA-001C, Sheetrock and Joint Compound

Lab ID-Version‡: 14821244-1

Sample Layers	Asbestos Content
White Joint Compound	ND
White Drywall with Brown Paper and Multilayered Paint	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

CHAIN OF CUSTODY

EMLab P&K

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Phoenix, AZ: NVLAP Lab Code 500031-0; CO-ELAP # AL-17343
Orange County, CA: NVLAP Lab Code 200577-0
San Bruno, CA: NVLAP Lab Code 200728-0; AIHA IHLAP #102856
San Diego, CA: NVLAP Lab Code 500034-0
Ft. Lauderdale, FL: NVLAP La
Cherry Hill, NJ: NVLAP Lab C
Ft. Worth, TX: NVLAP Lab C

003071781

CONTACT INFORMATION

Company: Shive-Hattery
Address: 4125 Westown Pkwy #100, West Des Moines, IA 50266
Contact: Grant Bridgford
Special Instructions:
*Point Count All Results Between 1-3%
*Stop at 1st Positive Greater Than 10%
*Email results to gbridgford@shive-hattery.com
Phone: 515.971.8844

PROJECT INFORMATION

Project ID: Cottage 103 Franklin
Project Desc.: 2142203390
Project Zip Code:
Sampling Date & Time: 10.27.22
PO Number:

TURN AROUND TIME CODES - (TAT)

STD - Standard (DEFAULT)
ND - Next Business Day
SD - Same Business Day Rush*
* RUSHES AVAILABLE FROM LOCATIONS LISTED ABOVE

Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.

ASBESTOS ANALYSIS

REQUESTED SERVICES (✓ Boxes)

SAMPLE ID	DESCRIPTION	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples Only)	NOTES
HA-001A	Sheetrock & Joint Compound	B	STD		
B	"	"	"		
C	"	"	"		

PCM Air		PLM Bulk					Rock & Soil		Other Requests		
Fiber Count (NIOSH 7400)	OSHA with TWA	EPA Method 600/R-93/116	EPA Point Count (200 Point Count)	EPA Point Count (400 Point Count)	EPA Point Count (1000 Point Count)	Gravimetric Point Count	CARB 435 Method - Pre-crushed Sample	CARB 435 Method - Regular Sample (7 Bus. Days)	Non-Asbestos Fiber Ct. (NIOSH 7400) - "B" Counting Rules	Lead Analysis	
		X									
		"									
		"									

SAMPLE TYPE CODES

A - Air	W - Wipe
B - Bulk	T - Tape
D - Dust	R- Rock
SO - Soil	O - Other

RELINQUISHED BY	DATE & TIME	RECEIVED BY	DATE & TIME
	10.28.22 0800		10.31.22

By submitting this Chain of Custody, you agree to be bound by the terms and conditions set forth at http://www.emlab.com/s/main/serviceterms.html

eurofins | Built Environment Testing

Report for:

Grant Bridgford
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins Aerotech Built Environment Testing, Inc.
Project: Cottage 104 Franklin; 2142203390
EML ID: 3071838

Approved by:

Renee Luna-Trepczynski

Approved Signatory
Renee Luna-Trepczynski

Dates of Analysis:
Asbestos PLM: 11-03-2022

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)
NVLAP Lab Code 500031-0

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the samples as received and tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Cottage 104 Franklin; 2142203390

Date of Sampling: 10-27-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Total Samples Submitted:	3
Total Samples Analyzed:	3
Total Samples with Layer Asbestos Content > 1%:	0

Location: HA.001A, Sheetrock & Joint Compound

Lab ID-Version‡: 14822127-1

Sample Layers	Asbestos Content
White Joint Compound with Multilayered Paint	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA.001B, Sheetrock & Joint Compound

Lab ID-Version‡: 14822128-1

Sample Layers	Asbestos Content
White Joint Compound with Multilayered Paint	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA.001C, Sheetrock & Joint Compound

Lab ID-Version‡: 14822129-1

Sample Layers	Asbestos Content
White Joint Compound with Multilayered Paint	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

CHAIN OF CUSTODY

EMLab P&K

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Orange County, CA: NVLAP Lab Code 200577-0
San Bruno, CA: NVLAP Lab Code 200728-0; AIHA IHLAP #102856
San Diego, CA: NVLAP Lab Code 500034-0

Ft. Lauderdale, FL: NVLAP Lab Co
Cherry Hill, NJ: NVLAP Lab Code 2
Ft. Worth, TX: NVLAP Lab Code 20

003071838

CONTACT INFORMATION

Company: Shive-Hattery
Address: 4125 Westown Pkwy #100, West Des Moines, IA 50266
Contact: Grant Bridgford
Special Instructions:
*Point Count All Results Between 1-3%
*Stop at 1st Positive Greater Than 10%
*Email results to gbridgford@shive-hattery.com
Phone: 515.971.8844

PROJECT INFORMATION

Project ID: Cottage 104 Franklin
Project Desc.: 2142203390
Project Zip Code:
Sampling Date & Time: 10.27.22
PO Number:

TURN AROUND TIME CODES - (TAT)

STD - Standard (DEFAULT)
ND - Next Business Day
SD - Same Business Day Rush*
* RUSHES AVAILABLE FROM LOCATIONS LISTED ABOVE

Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.

ASBESTOS ANALYSIS

REQUESTED SERVICES (✓ Boxes)

SAMPLE ID	DESCRIPTION	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples Only)	NOTES
HA-001A	Sheetrock & Joint Compound	B	STD		
B	"	"	"		
C	"	"	"		

PCM Air		PLM Bulk					Rock & Soil		Other Requests			
Fiber Count (NIOSH 7400)	OSHA with TWA	EPA Method 600/R-93/116	EPA Point Count (200 Point Count)	EPA Point Count (400 Point Count)	EPA Point Count (1000 Point Count)	Gravimetric Point Count	CARB 435 Method - Pre-crushed Sample	CARB 435 Method - Regular Sample (7 Bus. Days)	Non-Asbestos Fiber Ct. (NIOSH 7400) - "B" Counting Rules	Lead Analysis		
		X										

SAMPLE TYPE CODES

A - Air	W - Wipe
B - Bulk	T - Tape
D - Dust	R- Rock
SO - Soil	O - Other

RELINQUISHED BY	DATE & TIME
[signature]	10.28.22 0800

RECEIVED BY	DATE & TIME
[signature]	10-31-22 9:30 AM

eurofins | Built Environment Testing

Report for:

Grant Bridgford
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins Aerotech Built Environment Testing, Inc.
Project: Cottage 105 Franklin; 2142203390
EML ID: 3071771

Approved by:

Renee Luna-Trepczynski

Approved Signatory
Renee Luna-Trepczynski

Dates of Analysis:
Asbestos PLM: 11-03-2022

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)
NVLAP Lab Code 500031-0

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Cottage 105 Franklin; 2142203390

Date of Sampling: 10-27-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Total Samples Submitted:	3
Total Samples Analyzed:	3
Total Samples with Layer Asbestos Content > 1%:	0

Location: HA-001A, Sheetrock and Joint Compound

Lab ID-Version‡: 14821584-1

Sample Layers	Asbestos Content
White Compound	ND
White Joint Compound with Tan Paint	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA-001B, Sheetrock and Joint Compound

Lab ID-Version‡: 14821585-1

Sample Layers	Asbestos Content
White Compound	ND
White Joint Compound with Tan Paint	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA-001C, Sheetrock and Joint Compound

Lab ID-Version‡: 14821586-1

Sample Layers	Asbestos Content
White Compound	ND
White Joint Compound with Tan Paint	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

CHAIN OF CUSTODY

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San Diego, CA: NVLAP Lab Code 500034-0

Ft. Lauderdale, FL: NVLAP Lab C
Cherry Hill, NJ: NVLAP Lab Code
Ft. Worth, TX: NVLAP Lab Code

003071771

CONTACT INFORMATION

Company: Shive-Hattery
Address: 4125 Westown Pkwy #100, West Des Moines, IA 50266
Contact: Grant Bridgford
Special Instructions:
*Point Count All Results Between 1-3%
*Stop at 1st Positive Greater Than 10%
*Email results to gbridgford@shive-hattery.com
Phone: 515.971.8844

PROJECT INFORMATION

Project ID: Cottage 105 Franklin
Project Desc.: 2142203390
Project Zip Code:
Sampling Date & Time: 10.27.22
PO Number:

TURN AROUND TIME CODES - (TAT)

STD - Standard (DEFAULT)
ND - Next Business Day
SD - Same Business Day Rush*
* RUSHES AVAILABLE FROM LOCATIONS LISTED ABOVE

Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.

ASBESTOS ANALYSIS

REQUESTED SERVICES (✓ Boxes)

SAMPLE ID	DESCRIPTION	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples Only)	NOTES
HA-001A	Sheetrock & Joint Compound	B	STD		
B	"	"	"		
C	"	"	"		

PCM Air		PLM Bulk					Rock & Soil		Other Requests			
Fiber Count (NIOSH 7400)	OSHA with TWA	EPA Method 600/R-93/116	EPA Point Count (200 Point Count)	EPA Point Count (400 Point Count)	EPA Point Count (1000 Point Count)	Gravimetric Point Count	CARB 435 Method - Pre-crushed Sample	CARB 435 Method - Regular Sample (7 Bus. Days)	Non-Asbestos Fiber Ct. (NIOSH 7400) - "B" Counting Rules	Lead Analysis		
		X										
		"										
		"										

SAMPLE TYPE CODES	
A - Air	W - Wipe
B - Bulk	T - Tape
D - Dust	R- Rock
SO - Soil	O - Other

RELINQUISHED BY	DATE & TIME
[signature]	10.28.22 0800

RECEIVED BY	DATE & TIME
[signature]	10.31.22 9:30 AM

By submitting this Chain of Custody, you agree to be bound by the terms and conditions set forth at http://www.emlab.com/s/main/serviceterms.html

eurofins | Built Environment Testing

Report for:

Grant Bridgford
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins Aerotech Built Environment Testing, Inc.
Project: Cottage 107 Franklin; 2142203390
EML ID: 3071790

Approved by:

Renee Luna-Trepczynski

Approved Signatory
Renee Luna-Trepczynski

Dates of Analysis:
Asbestos PLM: 11-03-2022

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)
NVLAP Lab Code 500031-0

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the samples as received and tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

Eurofins Aerotech Built Environment Testing, Inc. ("the Company"), a member of the Eurofins Built Environment Testing group of companies, shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Cottage 107 Franklin; 2142203390

Date of Sampling: 10-27-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Total Samples Submitted:	3
Total Samples Analyzed:	3
Total Samples with Layer Asbestos Content > 1%:	0

Location: HA.001A, Sheetrock & Joint Compound

Lab ID-Version‡: 14822223-1

Sample Layers	Asbestos Content
White Joint Compound	ND
White Joint Compound with White Paint	ND
Beige Drywall with Brown Paper and White Paint	ND
Composite Non-Asbestos Content:	10% Cellulose < 1% Glass Fibers
Sample Composite Homogeneity:	Poor

Location: HA.001B, Sheetrock & Joint Compound

Lab ID-Version‡: 14822224-1

Sample Layers	Asbestos Content
White Joint Compound with White Paint	ND
Beige Drywall with Brown/Green Paper and White Paint	ND
Composite Non-Asbestos Content:	10% Cellulose < 1% Glass Fibers
Sample Composite Homogeneity:	Poor

Location: HA.001C, Sheetrock & Joint Compound

Lab ID-Version‡: 14822225-1

Sample Layers	Asbestos Content
White Joint Compound with White Paint #1	ND
White Joint Compound with White Paint #2	ND
Beige Drywall with Brown/Green Paper	ND
Composite Non-Asbestos Content:	10% Cellulose < 1% Glass Fibers
Sample Composite Homogeneity:	Poor

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

CHAIN OF CUSTODY

EMLab P&K

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Orange County, CA: NVLAP Lab Code 200577-0
San Bruno, CA: NVLAP Lab Code 200728-0; AIHA IHLAP #102856
San Diego, CA: NVLAP Lab Code 500034-0

Ft. Lauderdale, FL: NVLAP Lab Co
Cherry Hill, NJ: NVLAP Lab Code
Ft. Worth, TX: NVLAP Lab Code

003071790

CONTACT INFORMATION

Company: Shive-Hattery
Address: 4125 Westown Pkwy #100, West Des Moines, IA 50266
Contact: Grant Bridgford
Special Instructions:
*Point Count All Results Between 1-3%
*Stop at 1st Positive Greater Than 10%
*Email results to gbridgford@shive-hattery.com
Phone: 515.971.8844

PROJECT INFORMATION

Project ID: Cottage 107 Franklin
Project Desc.: 2142203390
Project Zip Code:
Sampling Date & Time: 10.27.22
PO Number:

TURN AROUND TIME CODES - (TAT)

STD - Standard (DEFAULT)
ND - Next Business Day
SD - Same Business Day Rush*
* RUSHES AVAILABLE FROM LOCATIONS LISTED ABOVE

Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.

SAMPLE ID	DESCRIPTION	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples Only)	NOTES
HA-001A	Sheetrock & Joint Compound	B	STD		
B	"	"	"		
C	"	"	"		

ASBESTOS ANALYSIS

REQUESTED SERVICES (✓ Boxes)

PCM Air		PLM Bulk					Rock & Soil		Other Requests				
Fiber Count (NIOSH 7400)	OSHA with TWA	EPA Method 600/R-93/116	EPA Point Count (200 Point Count)	EPA Point Count (400 Point Count)	EPA Point Count (1000 Point Count)	Gravimetric Point Count	CARB 435 Method - Pre-crushed Sample	CARB 435 Method - Regular Sample (7 Bus. Days)	Non-Asbestos Fiber Ct. (NIOSH 7400) - "B" Counting Rules	Lead Analysis			
		X											
		"											
		"											

SAMPLE TYPE CODES

A - Air	W - Wipe
B - Bulk	T - Tape
D - Dust	R- Rock
SO - Soil	O - Other

RELINQUISHED BY	DATE & TIME	RECEIVED BY	DATE & TIME
	10.28.22 0800		10-31-22 9:30a

eurofins | Built Environment Testing

Report for:

Grant Bridgford
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins Aerotech Built Environment Testing, Inc.
Project: Cottage 108 Franklin; 2142203390
EML ID: 3071839

Approved by:

Renee Luna-Trepczynski

Approved Signatory
Renee Luna-Trepczynski

Dates of Analysis:
Asbestos PLM: 11-03-2022

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)
NVLAP Lab Code 500031-0

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Cottage 108 Franklin; 2142203390

Date of Sampling: 10-27-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Total Samples Submitted:	3
Total Samples Analyzed:	3
Total Samples with Layer Asbestos Content > 1%:	0

Location: HA.001A, Sheetrock & Joint Compound

Lab ID-Version‡: 14822107-1

Sample Layers	Asbestos Content
White Compound with Multilayered Paint	ND
Cream Tape	ND
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Poor

Location: HA.001B, Sheetrock & Joint Compound

Lab ID-Version‡: 14822108-1

Sample Layers	Asbestos Content
White Compound with Multilayered Paint	ND
Cream Tape	ND
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Poor

Location: HA.001C, Sheetrock & Joint Compound

Lab ID-Version‡: 14822109-1

Sample Layers	Asbestos Content
White Compound with Multilayered Paint	ND
Cream Tape	ND
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Poor

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

CHAIN OF CUSTODY

EMLab P&K

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Phoenix, AZ: NVLAP Lab Code 500031-0; CO-ELAP # AL-17343
Orange County, CA: NVLAP Lab Code 200577-0
San Bruno, CA: NVLAP Lab Code 200728-0; AIHA IHLAP #102856
San Diego, CA: NVLAP Lab Code 500034-0
Ft. Lauderdale, FL: NVLAP Lab C
Cherry Hill, NJ: NVLAP Lab Code
Ft. Worth, TX: NVLAP Lab Code

003071839

CONTACT INFORMATION

Company: Shive-Hattery	Address: 4125 Westown Pkwy #100, West Des Moines, IA 50266
Contact: Grant Bridgford	Special Instructions: *Point Count All Results Between 1-3% *Stop at 1st Positive Greater Than 10% *Email results to gbridgford@shive-hattery.com
Phone: 515.971.8844	

PROJECT INFORMATION

Project ID: Cottage 108 Franklin
Project Desc.: 2142203390
Project Zip Code:
Sampling Date & Time: 10.27.22
PO Number:

TURN AROUND TIME CODES - (TAT)

STD - Standard (DEFAULT)
ND - Next Business Day
SD - Same Business Day Rush*
* RUSHES AVAILABLE FROM LOCATIONS LISTED ABOVE

Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.

SAMPLE ID	DESCRIPTION	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples Only)	NOTES
HA-001A	Sheetrock Joint Compound	B	STD		
B	"	"	"		
C	"	"	"		

ASBESTOS ANALYSIS

REQUESTED SERVICES (✓ Boxes)

PCM Air		PLM Bulk					PLM Rock & Soil		Other Requests			
Fiber Count (NIOSH 7400)	OSHA with TWA	EPA Method 600/R-93/116	EPA Point Count (200 Point Count)	EPA Point Count (400 Point Count)	EPA Point Count (1000 Point Count)	Gravimetric Point Count	CARB 435 Method - Pre-crushed Sample	CARB 435 Method - Regular Sample (7 Bus. Days)	Non-Asbestos Fiber Ct. (NIOSH 7400) - "B" Counting Rules	Lead Analysis		
		X										
		"										
		"										

SAMPLE TYPE CODES

A - Air	W - Wipe
B - Bulk	T - Tape
D - Dust	R- Rock
SO - Soil	O - Other

RELINQUISHED BY	DATE & TIME
[signature]	10.28.22 0800

RECEIVED BY	DATE & TIME
[signature]	10-31-22 9:30 AM

eurofins | Built Environment Testing

Report for:

Grant Bridgford
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins Aerotech Built Environment Testing, Inc.
Project: Cottage 109 Franklin
EML ID: 3071767

Approved by:

Renee Luna-Trepczynski

Approved Signatory
Renee Luna-Trepczynski

Dates of Analysis:
Asbestos PLM: 11-03-2022

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)
NVLAP Lab Code 500031-0

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Cottage 109 Franklin

Date of Sampling: 10-27-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Total Samples Submitted:	3
Total Samples Analyzed:	3
Total Samples with Layer Asbestos Content > 1%:	0

Location: HA-001A, Sheetrock and Joint Compound Lab ID-Version‡: 14821526-1

Sample Layers	Asbestos Content
White Compound with Multilayered Paint	ND
Brown Drywall with Brown/Green Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA-001B, Sheetrock and Joint Compound Lab ID-Version‡: 14821527-1

Sample Layers	Asbestos Content
White Joint Compound	ND
White Compound with Multilayered Paint	ND
Brown Drywall with Brown/Green Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Poor

Location: HA-001C, Sheetrock and Joint Compound Lab ID-Version‡: 14821528-1

Sample Layers	Asbestos Content
White Joint Compound	ND
White Compound with Multilayered Paint	ND
Brown Drywall with Brown/Green Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Poor

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

CHAIN OF CUSTODY

EMLab P&K

866.888.6653 www.EMLabPK.com

Phoenix, AZ: NVLAP Lab Code 500031-0; CO-ELAP # AL-17343
Orange County, CA: NVLAP Lab Code 200577-0
San Bruno, CA: NVLAP Lab Code 200728-0; AIHA IHLAP #102856
San Diego, CA: NVLAP Lab Code 500034-0

Ft. Lauderdale, FL: NVLAP Lab Co
Cherry Hill, NJ: NVLAP Lab Code
Ft. Worth, TX: NVLAP Lab Code

003071767

CONTACT INFORMATION

Company: Shive-Hattery
Address: 4125 Westown Pkwy #100, West Des Moines, IA 50266
Contact: Grant Bridgford
Special Instructions:
*Point Count All Results Between 1-3%
*Stop at 1st Positive Greater Than 10%
*Email results to gbridgford@shive-hattery.com
Phone: 515.971.8844

PROJECT INFORMATION

Project ID: Cottage 109 Franklin
Project Desc.: 2142203390
Project Zip Code:
Sampling Date & Time: 10.27.22
PO Number:

TURN AROUND TIME CODES - (TAT)

STD - Standard (DEFAULT)
ND - Next Business Day
SD - Same Business Day Rush*
* RUSHES AVAILABLE FROM LOCATIONS LISTED ABOVE

Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.

SAMPLE ID	DESCRIPTION	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples Only)	NOTES
HA-001A	Sheetrock & Joint Compound	B	STD		
B	"	"	"		
C	"	"	"		

ASBESTOS ANALYSIS

REQUESTED SERVICES (✓ Boxes)

PCM Air		PLM Bulk					PLM Rock & Soil		Other Requests			
Fiber Count (NIOSH 7400)	OSHA with TWA	EPA Method 600/R-93/116	EPA Point Count (200 Point Count)	EPA Point Count (400 Point Count)	EPA Point Count (1000 Point Count)	Gravimetric Point Count	CARB 435 Method - Pre-crushed Sample	CARB 435 Method - Regular Sample (7 Bus. Days)	Non-Asbestos Fiber Ct. (NIOSH 7400) - "B" Counting Rules	Lead Analysis		
		X										

SAMPLE TYPE CODES

A - Air	W - Wipe
B - Bulk	T - Tape
D - Dust	R- Rock
SO - Soil	O - Other

RELINQUISHED BY	DATE & TIME
[signature]	10.28.22 0800

RECEIVED BY	DATE & TIME
[signature]	10-31-22 9:30a

eurofins | Built Environment Testing

Report for:

Grant Bridgford
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins Aerotech Built Environment Testing, Inc.
Project: Cottage 200 Franklin; 21422003390
EML ID: 3071796

Approved by:

Renee Luna-Trepczynski

Approved Signatory
Renee Luna-Trepczynski

Dates of Analysis:
Asbestos PLM: 11-03-2022

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)
NVLAP Lab Code 500031-0

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the samples as received and tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Cottage 200 Franklin; 21422003390

Date of Sampling: 10-26-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Total Samples Submitted:	3
Total Samples Analyzed:	3
Total Samples with Layer Asbestos Content > 1%:	0

Location: HA.001A, Sheetrock & Joint Compound

Lab ID-Version‡: 14821960-1

Sample Layers	Asbestos Content
White Compound with White Paint	ND
Off-White Compound with Multilayered Paint	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose < 1% Glass Fibers
Sample Composite Homogeneity:	Poor

Location: HA.001B, Sheetrock & Joint Compound

Lab ID-Version‡: 14821961-1

Sample Layers	Asbestos Content
White Compound with White Paint	ND
Off-White Compound with Tan Paint	ND
Brown Drywall with Brown/Green Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Poor

Location: HA.001C, Sheetrock & Joint Compound

Lab ID-Version‡: 14821962-1

Sample Layers	Asbestos Content
White Compound with White Paint	ND
Off-White Compound with Tan Paint	ND
Brown Drywall with Brown/Green Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Poor

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

CHAIN OF CUSTODY

EMLab P&K

866.888.6653 www.EMLabPK.com

Phoenix, AZ: NVLAP Lab Code 500031-0; CO-ELAP # AL-17343
Orange County, CA: NVLAP Lab Code 200577-0
San Bruno, CA: NVLAP Lab Code 200728-0; AIHA IHLAP #102856
San Diego, CA: NVLAP Lab Code 500034-0

Ft. Lauderdale, FL: NVLAP Lab Co
Cherry Hill, NJ: NVLAP Lab Code
Ft. Worth, TX: NVLAP Lab Code

003071796

CONTACT INFORMATION

Company: Shive-Hattery	Address: 4125 Westown Pkwy #100, West Des Moines, IA 50266
Contact: Grant Bridgford	Special Instructions: *Point Count All Results Between 1-3% *Stop at 1st Positive Greater Than 10% *Email results to gbridgford@shive-hattery.com
Phone: 515.971.8844	

PROJECT INFORMATION

Project ID: Cottage 200 Franklin
Project Desc.: 2142203390
Project Zip Code:
Sampling Date & Time: 10·26·22
PO Number:

TURN AROUND TIME CODES - (TAT)

STD - Standard (DEFAULT)
ND - Next Business Day
SD - Same Business Day Rush*
* RUSHES AVAILABLE FROM LOCATIONS LISTED ABOVE

Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.

SAMPLE ID	DESCRIPTION	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples Only)	NOTES
HA-001A	Sheetrock & Joint Compound	B	STD		
B	"	"	"		
C	"	"	"		

ASBESTOS ANALYSIS

REQUESTED SERVICES (✓ Boxes)

PCM Air		PLM Bulk						Rock & Soil		Other Requests			
Fiber Count (NIOSH 7400)	OSHA with TWA	EPA Method 600/R-93/116	EPA Point Count (200 Point Count)	EPA Point Count (400 Point Count)	EPA Point Count (1000 Point Count)	Gravimetric Point Count		CARB 435 Method - Pre-crushed Sample	CARB 435 Method - Regular Sample (7 Bus. Days)	Non-Asbestos Fiber Ct. (NIOSH 7400) - "B" Counting Rules	Lead Analysis		
		X											
		"											
		"											

SAMPLE TYPE CODES

A - Air	W - Wipe
B - Bulk	T - Tape
D - Dust	R- Rock
SO - Soil	O - Other

RELINQUISHED BY	DATE & TIME
[signature]	10·28·22 0800

RECEIVED BY	DATE & TIME
[signature]	10-31-22 9:30AM

eurofins | Built Environment Testing

Report for:

Grant Bridgford
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins Aerotech Built Environment Testing, Inc.
Project: Cottage 201 Franklin; 2142203390
EML ID: 3071801

Approved by:

Renee Luna-Trepczynski

Approved Signatory
Renee Luna-Trepczynski

Dates of Analysis:
Asbestos PLM: 11-03-2022

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)
NVLAP Lab Code 500031-0

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the samples as received and tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

Eurofins Aerotech Built Environment Testing, Inc. ("the Company"), a member of the Eurofins Built Environment Testing group of companies, shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Cottage 201 Franklin; 2142203390

Date of Sampling: 10-26-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Total Samples Submitted:	8
Total Samples Analyzed:	8
Total Samples with Layer Asbestos Content > 1%:	1

Location: HA.001A, Sheetrock & Joint Compound

Lab ID-Version‡: 14821905-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper and White Paint	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA.001B, Sheetrock & Joint Compound

Lab ID-Version‡: 14821906-1

Sample Layers	Asbestos Content
Off-White Joint Compound with White Paint	ND
Off-White Compound with Multilayered Paint	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Poor

Location: HA.001C, Sheetrock & Joint Compound

Lab ID-Version‡: 14821907-1

Sample Layers	Asbestos Content
Off-White Joint Compound with White Paint	ND
Off-White Compound with Multilayered Paint	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Poor

Location: HA.002, Yellow Mastic A/W Ceramic Wall Tile

Lab ID-Version‡: 14821908-1

Sample Layers	Asbestos Content
White Compound	2% Chrysotile
Tan Mastic	ND
Sample Composite Homogeneity:	Moderate

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Cottage 201 Franklin; 2142203390

Date of Sampling: 10-26-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Location: HA.003, Yellow & Tan Linoleum

Lab ID-Version‡: 14821909-1

Sample Layers	Asbestos Content
Yellow Linoleum	ND
Tan Linoleum	ND
Sample Composite Homogeneity:	Moderate

Location: HA.004, Tan & Gray Linoleum

Lab ID-Version‡: 14821910-1

Sample Layers	Asbestos Content
Beige Caulk	ND
Brown/Gray Linoleum with Fibrous Backing	ND
Tan Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose < 1% Glass Fibers < 1% Synthetic Fibers
Sample Composite Homogeneity:	Poor

Location: HA.005, Tan Stucco

Lab ID-Version‡: 14821911-1

Sample Layers	Asbestos Content
Tan Stucco	ND
Gray Cementitious Material	ND
Sample Composite Homogeneity:	Moderate

Location: HA.006, Brown Cove Base Mastic

Lab ID-Version‡: 14821912-1

Sample Layers	Asbestos Content
Dark Brown Mastic	ND
Sample Composite Homogeneity:	Good

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

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Report for:

Grant Bridgford
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins Aerotech Built Environment Testing, Inc.
Project: Cottage 201 Franklin; 2142203390
EML ID: 3071801

Approved by:

Renee Luna-Trepczynski

Approved Signatory
Renee Luna-Trepczynski

Dates of Analysis:
Asbestos-EPA 400 point count: 11-03-2022

Service SOPs: Asbestos-EPA 400 point count (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1262)
NVLAP Lab Code 500031-0

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. Due to the nature of the analyses performed, field blank correction of results is not applied. The results relate only to the samples as received and tested.

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Cottage 201 Franklin; 2142203390

Date of Sampling: 10-26-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS POINT COUNT REPORT

Location:	HA.002 Yellow Mastic A/W Ceramic Wall Tile		
Total Points Counted:	400		
Lab ID-Version‡:	14838972-1		
Sample Layers	**Asbestos Type**	**Asbestos Points Counted**	**Asbestos Concentration (%)**
White Compound	Chrysotile	8	2
Layer Totals:		8	2

The analytical sensitivity is 1 asbestos point. The limit of detection is 1 asbestos point divided by the total number of points counted and multiplied by 100.

The results relate only to the items tested. Interpretation is left to the company and/or persons who conducted the field work. The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by any agency of the federal government.

All samples were received in acceptable condition unless otherwise noted. The Company reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.
Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

CHAIN OF CUSTODY

EMLab P&K

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Phoenix, AZ: NVLAP Lab Code 500031-0; CO-ELAP # AL-17343
Orange County, CA: NVLAP Lab Code 200577-0
San Bruno, CA: NVLAP Lab Code 200728-0; AIHA IHLAP #102856
San Diego, CA: NVLAP Lab Code 500034-0
Ft. Lauderdale, FL: NVLAP Lab C
Cherry Hill, NJ: NVLAP Lab Cod
Ft. Worth, TX: NVLAP Lab Cod

003071801

CONTACT INFORMATION

Company: Shive-Hattery	Address: 4125 Westown Pkwy #100, West Des Moines, IA 50266
Contact: Grant Bridgford	Special Instructions: *Point Count All Results Between 1-3% *Stop at 1st Positive Greater Than 10% *Email results to gbridgford@shive-hattery.com
Phone: 515.971.8844	

PROJECT INFORMATION

Project ID: Cottage 201 Franklin
Project Desc.: 2142203390
Project Zip Code:
Sampling Date & Time: 10-26-22
PO Number:

TURN AROUND TIME CODES - (TAT)

STD - Standard (DEFAULT)
ND - Next Business Day
SD - Same Business Day Rush*
* RUSHES AVAILABLE FROM LOCATIONS LISTED ABOVE

Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.

ASBESTOS ANALYSIS

REQUESTED SERVICES (✓ Boxes)

SAMPLE ID	DESCRIPTION	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples Only)	NOTES
HA-001 A	Sheetrock & Joint Compound	B	STD		
B	↓	↓	↓		
C	↓	↓	↓		
HA002	Yellow Mastic w/ Ceramic Wall Tile				
HA-003	Yellow & Tan Linoleum				
HA-004	Tan & Gray Linoleum				
HA-005	Tan Stucco				
HA-006	Brown Cove Base Mastic	↓	↓		

PCM Air		PLM Bulk					Rock & Soil		Other Requests			
Fiber Count (NIOSH 7400)	OSHA with TWA	EPA Method 600/R-93/116	EPA Point Count (200 Point Count)	EPA Point Count (400 Point Count)	EPA Point Count (1000 Point Count)	Gravimetric Point Count	CARB 435 Method - Pre-crushed Sample	CARB 435 Method - Regular Sample (7 Bus. Days)	Non-Asbestos Fiber Ct. (NIOSH 7400) - "B" Counting Rules	Lead Analysis		
		X										
		↓										

SAMPLE TYPE CODES

A - Air	W - Wipe
B - Bulk	T - Tape
D - Dust	R- Rock
SO - Soil	O - Other

RELINQUISHED BY	DATE & TIME
[signature]	10-28-22 0800

RECEIVED BY	DATE & TIME
[signature]	10-31-22 @ 1:30pm

eurofins | Built Environment Testing

Report for:

Grant Bridgford
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins Aerotech Built Environment Testing, Inc.
Project: Cottage 202 Franklin; 2142203390
EML ID: 3071840

Approved by:

Renee Luna-Trepczynski

Approved Signatory
Renee Luna-Trepczynski

Dates of Analysis:
Asbestos PLM: 11-03-2022

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)
NVLAP Lab Code 500031-0

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Cottage 202 Franklin; 2142203390

Date of Sampling: 10-26-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Total Samples Submitted:	4
Total Samples Analyzed:	4
Total Samples with Layer Asbestos Content > 1%:	0

Location: HA.001A, Sheetrock & Joint Compound

Lab ID-Version‡: 14822076-1

Sample Layers	Asbestos Content
White Joint Compound with White Paint	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA.001B, Sheetrock & Joint Compound

Lab ID-Version‡: 14822077-1

Sample Layers	Asbestos Content
White Joint Compound with White Paint	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA.001C, Sheetrock & Joint Compound

Lab ID-Version‡: 14822078-1

Sample Layers	Asbestos Content
White Joint Compound with Multilayered Paint	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA.002, Brown Cove Base Mastic

Lab ID-Version‡: 14822079-1

Sample Layers	Asbestos Content
Brown Mastic	ND
Sample Composite Homogeneity:	Good

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

CHAIN OF CUSTODY

EMLab P&K

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Orange County, CA: NVLAP Lab Code 200577-0
San Bruno, CA: NVLAP Lab Code 200728-0; AIHA IHLAP #102856
San Diego, CA: NVLAP Lab Code 500034-0
Ft. Lauderdale, FL: NVLAP Lab Co
Cherry Hill, NJ: NVLAP Lab Code 2
Ft. Worth, TX: NVLAP Lab Code 2

003071840

CONTACT INFORMATION

Company: Shive-Hattery	Address: 4125 Westown Pkwy #100, West Des Moines, IA 50266
Contact: Grant Bridgford	Special Instructions: *Point Count All Results Between 1-3% *Stop at 1st Positive Greater Than 10% *Email results to gbridgford@shive-hattery.com
Phone: 515.971.8844	

PROJECT INFORMATION

Project ID: Cottage 202 Franklin
Project Desc.: 2142203390
Project Zip Code:
Sampling Date & Time: 10.26.22
PO Number:

TURN AROUND TIME CODES - (TAT)

STD - Standard (DEFAULT)
ND - Next Business Day
SD - Same Business Day Rush*
* RUSHES AVAILABLE FROM LOCATIONS LISTED ABOVE

Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.

ASBESTOS ANALYSIS

REQUESTED SERVICES (✓ Boxes)

SAMPLE ID	DESCRIPTION	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples Only)	NOTES
HA-001A	Sheetrock & Joint Compound	B	STD		
B	"	"	"		
C	"	"	"		
HA-002	Brown Cove Base Mastic	"	"		

PCM Air		PLM Bulk					Rock & Soil		Other Requests			
Fiber Count (NIOSH 7400)	OSHA with TWA	EPA Method 600/R-93/116	EPA Point Count (200 Point Count)	EPA Point Count (400 Point Count)	EPA Point Count (1000 Point Count)	Gravimetric Point Count	CARB 435 Method - Pre-crushed Sample	CARB 435 Method - Regular Sample (7 Bus. Days)	Non-Asbestos Fiber Ct. (NIOSH 7400) - "B" Counting Rules	Lead Analysis		
		X										

SAMPLE TYPE CODES

A - Air	W - Wipe
B - Bulk	T - Tape
D - Dust	R- Rock
SO - Soil	O - Other

RELINQUISHED BY	DATE & TIME
[signature]	10.28.22 0800

RECEIVED BY	DATE & TIME
[signature]	10-31-22 9:30 AM

eurofins | Built Environment Testing

Report for:

Grant Bridgford
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins Aerotech Built Environment Testing, Inc.
Project: Cottage 203 Franklin; 2142203390
EML ID: 3071844

Approved by:

Renee Luna-Trepczynski

Approved Signatory
Renee Luna-Trepczynski

Dates of Analysis:
Asbestos PLM: 11-03-2022

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)
NVLAP Lab Code 500031-0

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the samples as received and tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Cottage 203 Franklin; 2142203390

Date of Sampling: 10-26-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Total Samples Submitted:	5
Total Samples Analyzed:	5
Total Samples with Layer Asbestos Content > 1%:	0

Location: HA.001A, Sheetrock & Joint Compound

Lab ID-Version‡: 14822043-1

Sample Layers	Asbestos Content
White Compound with Multilayered Paint	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA.001B, Sheetrock & Joint Compound

Lab ID-Version‡: 14822044-1

Sample Layers	Asbestos Content
White Compound with Multilayered Paint	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA.001C, Sheetrock & Joint Compound

Lab ID-Version‡: 14822045-1

Sample Layers	Asbestos Content
White Compound with Multilayered Paint #1	ND
White Compound with Multilayered Paint #2	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA.002, Cream Wall Matting

Lab ID-Version‡: 14822046-1

Sample Layers	Asbestos Content
Cream Non-Fibrous Material	ND
Tan Mastic	ND
Sample Composite Homogeneity:	Moderate

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Cottage 203 Franklin; 2142203390

Date of Sampling: 10-26-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Location: HA.003, Tan & Gray Speckled Linoleum

Lab ID-Version‡: 14822047-1

Sample Layers	Asbestos Content
Tan Linoleum with Fibrous Backing	ND
Yellow Mastic	ND
Composite Non-Asbestos Content:	15% Cellulose < 1% Glass Fibers
Sample Composite Homogeneity:	Moderate

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

CHAIN OF CUSTODY

EMLab P&K

866.888.6653 www.EMLabPK.com

Phoenix, AZ: NVLAP Lab Code 500031-0; CO-ELAP # AL-17343
Orange County, CA: NVLAP Lab Code 200577-0
San Bruno, CA: NVLAP Lab Code 200728-0; AIHA IHLAP #102856
San Diego, CA: NVLAP Lab Code 500034-0
Ft. Lauderdale, FL: NVLAP Lab Co
Cherry Hill, NJ: NVLAP Lab Code 2
Ft. Worth, TX: NVLAP Lab Code 2

003071844

CONTACT INFORMATION

Company: Shive-Hattery
Address: 4125 Westown Pkwy #100, West Des Moines, IA 50266
Contact: Grant Bridgford
Special Instructions:
*Point Count All Results Between 1-3%
*Stop at 1st Positive Greater Than 10%
*Email results to gbridgford@shive-hattery.com
Phone: 515.971.8844

PROJECT INFORMATION

Project ID: Cottage 203 Franklin
Project Desc.: 2142203390
Project Zip Code:
Sampling Date & Time: 10.26.22
PO Number:

TURN AROUND TIME CODES - (TAT)

STD - Standard (DEFAULT)
ND - Next Business Day
SD - Same Business Day Rush*
* RUSHES AVAILABLE FROM LOCATIONS LISTED ABOVE

Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.

ASBESTOS ANALYSIS

REQUESTED SERVICES (✓ Boxes)

SAMPLE ID	DESCRIPTION	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples Only)	NOTES	PCM Air: Fiber Count (NIOSH 7400)	PCM Air: OSHA with TWA	PLM Bulk: EPA Method 600/R-93/116	PLM Bulk: EPA Point Count (200 Point Count)	PLM Bulk: EPA Point Count (400 Point Count)	PLM Bulk: EPA Point Count (1000 Point Count)	PLM Bulk: Gravimetric Point Count	Rock & Soil: CARB 435 Method - Pre-crushed Sample	Rock & Soil: CARB 435 Method - Regular Sample (7 Bus. Days)	Other Requests: Non-Asbestos Fiber Ct. (NIOSH 7400) - "B" Counting Rules	Other Requests: Lead Analysis
HA-001 A	Sheetrock & Joint Compound	B	STD					X								
B	"	"	"					"								
C	"	"	"					"								
HA-002	Cream Wall Matting	"	"					"								
HA-003	Tan & Gray Speckled Linoleum	"	"					"								

SAMPLE TYPE CODES

A - Air	W - Wipe
B - Bulk	T - Tape
D - Dust	R- Rock
SO - Soil	O - Other

RELINQUISHED BY	DATE & TIME	RECEIVED BY	DATE & TIME
	10.28.22 0800		10-31-22 9:30 24

eurofins | Built Environment Testing

Report for:

Grant Bridgford
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins Aerotech Built Environment Testing, Inc.
Project: Cottage 202 Pine; 2142203390
EML ID: 3071786

Approved by:

Renee Luna-Trepczynski

Approved Signatory
Renee Luna-Trepczynski

Dates of Analysis:
Asbestos PLM: 11-03-2022

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)
NVLAP Lab Code 500031-0

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the samples as received and tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Cottage 202 Pine; 2142203390

Date of Sampling: 10-27-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Total Samples Submitted:	4
Total Samples Analyzed:	4
Total Samples with Layer Asbestos Content > 1%:	0

Location: HA-001A, Sheetrock and Joint Compound

Lab ID-Version‡: 14822087-1

Sample Layers	Asbestos Content
White Compound with White Paint	ND
Cream Tape	ND
White Joint Compound	ND
White Drywall with Brown Paper and Cream Paint	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Poor

Location: HA-001B, Sheetrock and Joint Compound

Lab ID-Version‡: 14822088-1

Sample Layers	Asbestos Content
White Compound with White Paint	ND
Cream Tape	ND
White Joint Compound	ND
White Drywall with Brown Paper and Cream Paint	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Poor

Location: HA-001C, Sheetrock and Joint Compound

Lab ID-Version‡: 14822089-1

Sample Layers	Asbestos Content
White Compound with White Paint	ND
Cream Tape	ND
White Joint Compound	ND
White Drywall with Brown Paper and Cream Paint	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Poor

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Cottage 202 Pine; 2142203390

Date of Sampling: 10-27-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Location: HA-002, Yellow Wall Mastic

Lab ID-Version‡: 14822090-1

Sample Layers	Asbestos Content
Yellow Mastic	ND
Sample Composite Homogeneity:	Good

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

CHAIN OF CUSTODY

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San Bruno, CA: NVLAP Lab Code 200728-0; AIHA IHLAP #102856
San Diego, CA: NVLAP Lab Code 500034-0
Ft. Lauderdale, FL: NVLAP Lab Co
Cherry Hill, NJ: NVLAP Lab Code 2
Ft. Worth, TX: NVLAP Lab Code 2

003071786

CONTACT INFORMATION

Company: Shive-Hattery	Address: 4125 Westown Pkwy #100, West Des Moines, IA 50266
Contact: Grant Bridgford	Special Instructions: *Point Count All Results Between 1-3% *Stop at 1st Positive Greater Than 10% *Email results to gbridgford@shive-hattery.com
Phone: 515.971.8844	

PROJECT INFORMATION

Project ID: Cottage 202 Pine
Project Desc.: 2142203390
Project Zip Code:
Sampling Date & Time: 10.27.22
PO Number:

TURN AROUND TIME CODES - (TAT)

STD - Standard (DEFAULT)
ND - Next Business Day
SD - Same Business Day Rush*
* RUSHES AVAILABLE FROM LOCATIONS LISTED ABOVE

Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.

SAMPLE ID	DESCRIPTION	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples Only)	NOTES
HA-001A	Sheetrock & Joint Compound	B	STD		
B	"	"	"		
C	"	"	"		
HA-002	Yellow wall mastic	"	"		

ASBESTOS ANALYSIS

REQUESTED SERVICES (✓ Boxes)

PCM Air		PLM Bulk					Rock & Soil		Other Requests			
Fiber Count (NIOSH 7400)	OSHA with TWA	EPA Method 600/R-93/116	EPA Point Count (200 Point Count)	EPA Point Count (400 Point Count)	EPA Point Count (1000 Point Count)	Gravimetric Point Count	CARB 435 Method - Pre-crushed Sample	CARB 435 Method - Regular Sample (7 Bus. Days)	Non-Asbestos Fiber Ct. (NIOSH 7400) - "B" Counting Rules	Lead Analysis		
		X										
		↓										

SAMPLE TYPE CODES

A - Air	W - Wipe
B - Bulk	T - Tape
D - Dust	R- Rock
SO - Soil	O - Other

RELINQUISHED BY	DATE & TIME	RECEIVED BY	DATE & TIME
[signature]	10.28.22 0800	[signature]	10-31-22 9:30

eurofins | Built Environment Testing

Report for:

Grant Bridgford
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins Aerotech Built Environment Testing, Inc.
Project: Cottage 204 Pine; 2142203390
EML ID: 3071833

Approved by:

Renee Luna-Trepczynski

Approved Signatory
Renee Luna-Trepczynski

Dates of Analysis:
Asbestos PLM: 11-03-2022

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)
NVLAP Lab Code 500031-0

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the samples as received and tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

Eurofins Aerotech Built Environment Testing, Inc. ("the Company"), a member of the Eurofins Built Environment Testing group of companies, shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Cottage 204 Pine; 2142203390

Date of Sampling: 10-27-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Total Samples Submitted:	3
Total Samples Analyzed:	3
Total Samples with Layer Asbestos Content > 1%:	0

Location: HA.001A, Sheetrock & Joint Compound Lab ID-Version‡: 14822145-1

Sample Layers	Asbestos Content
Yellow Mastic	ND
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Poor

Location: HA.001B, Sheetrock & Joint Compound Lab ID-Version‡: 14822146-1

Sample Layers	Asbestos Content
White Joint Compound	ND
White Drywall with Brown Paper and Multilayered Paint	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA.001C, Sheetrock & Joint Compound Lab ID-Version‡: 14822147-1

Sample Layers	Asbestos Content
White Joint Compound	ND
White Drywall with Brown Paper and Multilayered Paint	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

CHAIN OF CUSTODY

EMLab P&K

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San Bruno, CA: NVLAP Lab Code 200728-0; AIHA IHLAP #102856
San Diego, CA: NVLAP Lab Code 500034-0

Ft. Lauderdale, FL: NVLAP Lab Co
Cherry Hill, NJ: NVLAP Lab Code 2
Ft. Worth, TX: NVLAP Lab Code 2

003071833

CONTACT INFORMATION

Company: Shive-Hattery
Address: 4125 Westown Pkwy #100, West Des Moines, IA 50266
Contact: Grant Bridgford
Special Instructions:
*Point Count All Results Between 1-3%
*Stop at 1st Positive Greater Than 10%
*Email results to gbridgford@shive-hattery.com
Phone: 515.971.8844

PROJECT INFORMATION

Project ID: Cottage 204 Pine
Project Desc.: 2142203390
Project Zip Code:
Sampling Date & Time: 10.27.22
PO Number:

TURN AROUND TIME CODES - (TAT)

STD - Standard (DEFAULT)
ND - Next Business Day
SD - Same Business Day Rush*
* RUSHES AVAILABLE FROM LOCATIONS LISTED ABOVE

Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.

ASBESTOS ANALYSIS

REQUESTED SERVICES (✓ Boxes)

SAMPLE ID	DESCRIPTION	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples Only)	NOTES	PCM Air: Fiber Count (NIOSH 7400)	PCM Air: OSHA with TWA	PLM Bulk: EPA Method 600/R-93/116	PLM Bulk: EPA Point Count (200 Point Count)	PLM Bulk: EPA Point Count (400 Point Count)	PLM Bulk: EPA Point Count (1000 Point Count)	PLM Bulk: Gravimetric Point Count	Rock & Soil: CARB 435 Method - Pre-crushed Sample	Rock & Soil: CARB 435 Method - Regular Sample (7 Bus. Days)	Other Requests: Non-Asbestos Fiber Ct. (NIOSH 7400) - "B" Counting Rules	Other Requests: Lead Analysis
HA-001A	Sheetrock & Joint Compound	B	STD					X								
B	"	"	"	"				"								
C	"	"	"	"				"								

SAMPLE TYPE CODES

A - Air	W - Wipe
B - Bulk	T - Tape
D - Dust	R- Rock
SO - Soil	O - Other

RELINQUISHED BY	DATE & TIME	RECEIVED BY	DATE & TIME
	10.28.22 0800		10-31-22 1130 94

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Report for:

Grant Bridgford
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins Aerotech Built Environment Testing, Inc.
Project: Cottage 301 Pine; 2142203390
EML ID: 3071856

Approved by:

Renee Luna-Trepczynski

Approved Signatory
Renee Luna-Trepczynski

Dates of Analysis:
Asbestos PLM: 11-03-2022

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)
NVLAP Lab Code 500031-0

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the samples as received and tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Cottage 301 Pine; 2142203390

Date of Sampling: 10-26-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Total Samples Submitted:	3
Total Samples Analyzed:	3
Total Samples with Layer Asbestos Content > 1%:	0

Location: HA.001A, Sheetrock & Joint Compound

Lab ID-Version‡: 14821546-1

Sample Layers	Asbestos Content
White Joint Compound	ND
White Joint Compound with Multilayered Paint	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA.001B, Sheetrock & Joint Compound

Lab ID-Version‡: 14821547-1

Sample Layers	Asbestos Content
White Joint Compound	ND
White Joint Compound with Multilayered Paint	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA.001C, Sheetrock & Joint Compound

Lab ID-Version‡: 14821548-1

Sample Layers	Asbestos Content
White Joint Compound	ND
White Joint Compound with Multilayered Paint	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

CHAIN OF CUSTODY

EMLab P&K

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Phoenix, AZ: NVLAP Lab Code 500031-0; CO-ELAP # AL-17343
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San Bruno, CA: NVLAP Lab Code 200728-0; AIHA IHLAP #102856
San Diego, CA: NVLAP Lab Code 500034-0

Ft. Lauderdale, FL: NVLAP Lab
Cherry Hill, NJ: NVLAP Lab Coc
Ft. Worth, TX: NVLAP Lab Cod

003071856

CONTACT INFORMATION

Company: Shive-Hattery	Address: 4125 Westown Pkwy #100, West Des Moines, IA 50266
Contact: Grant Bridgford	Special Instructions: *Point Count All Results Between 1-3% *Stop at 1st Positive Greater Than 10% *Email results to gbridgford@shive-hattery.com
Phone: 515.971.8844	

PROJECT INFORMATION

Project ID: Cottage 301 Pine
Project Desc.: 2142203390
Project Zip Code:
Sampling Date & Time: 10.26.22
PO Number:

TURN AROUND TIME CODES - (TAT)

STD - Standard (DEFAULT)
ND - Next Business Day
SD - Same Business Day Rush*
* RUSHES AVAILABLE FROM LOCATIONS LISTED ABOVE

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ASBESTOS ANALYSIS

REQUESTED SERVICES (✓ Boxes)

SAMPLE ID	DESCRIPTION	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples Only)	NOTES
HA-001A	Sheetrock & Joint Compound	B	STD		
B	"	"	"		
C	"	"	"		

PCM Air		PLM Bulk					Rock & Soil		Other Requests			
Fiber Count (NIOSH 7400)	OSHA with TWA	EPA Method 600/R-93/116	EPA Point Count (200 Point Count)	EPA Point Count (400 Point Count)	EPA Point Count (1000 Point Count)	Gravimetric Point Count	CARB 435 Method - Pre-crushed Sample	CARB 435 Method - Regular Sample (7 Bus. Days)	Non-Asbestos Fiber Ct. (NIOSH 7400) - "B" Counting Rules	Lead Analysis		
		X										

SAMPLE TYPE CODES	
A - Air	W - Wipe
B - Bulk	T - Tape
D - Dust	R- Rock
SO - Soil	O - Other

RELINQUISHED BY	DATE & TIME
[signature]	10.28.22 0800

RECEIVED BY	DATE & TIME
[signature]	10-31-22 9:30 AM

By submitting this Chain of Custody, you agree to be bound by the terms and conditions set forth at http://www.emlab.com/s/main/serviceterms.html

eurofins | Built Environment Testing

Report for:

Grant Bridgford
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins Aerotech Built Environment Testing, Inc.
Project: Cottage 302 Pine; 2142203390
EML ID: 3071831

Approved by:

Renee Luna-Trepczynski

Approved Signatory
Renee Luna-Trepczynski

Dates of Analysis:
Asbestos PLM: 11-03-2022

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)
NVLAP Lab Code 500031-0

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the samples as received and tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Cottage 302 Pine; 2142203390

Date of Sampling: 10-27-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Total Samples Submitted:	3
Total Samples Analyzed:	3
Total Samples with Layer Asbestos Content > 1%:	0

Location: HA.001A, Sheetrock & Joint Compound

Lab ID-Version‡: 14822161-1

Sample Layers	Asbestos Content
White Joint Compound	ND
White Drywall with Brown Paper and White Paint	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA.001B, Sheetrock & Joint Compound

Lab ID-Version‡: 14822162-1

Sample Layers	Asbestos Content
White Joint Compound	ND
White Drywall with Brown Paper and White Paint	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA.001C, Sheetrock & Joint Compound

Lab ID-Version‡: 14822163-1

Sample Layers	Asbestos Content
White Joint Compound	ND
White Drywall with Brown Paper and White Paint	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

CHAIN OF CUSTODY

EMLab P&K

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Orange County, CA: NVLAP Lab Code 200577-0
San Bruno, CA: NVLAP Lab Code 200728-0; AIHA IHLAP #102856
San Diego, CA: NVLAP Lab Code 500034-0

Ft. Lauderdale, FL: NVLAP Lab C
Cherry Hill, NJ: NVLAP Lab Code
Ft. Worth, TX: NVLAP Lab Code

003071831

CONTACT INFORMATION

Company: Shive-Hattery	Address: 4125 Westown Pkwy #100, West Des Moines, IA 50266
Contact: Grant Bridgford	Special Instructions: *Point Count All Results Between 1-3% *Stop at 1st Positive Greater Than 10% *Email results to gbridgford@shive-hattery.com
Phone: 515.971.8844	

PROJECT INFORMATION

Project ID: Cottage 302 Pine
Project Desc.: 2142203390
Project Zip Code:
Sampling Date & Time: 10.27.22
PO Number:

TURN AROUND TIME CODES - (TAT)

STD - Standard (DEFAULT)
ND - Next Business Day
SD - Same Business Day Rush*
* RUSHES AVAILABLE FROM LOCATIONS LISTED ABOVE

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ASBESTOS ANALYSIS

REQUESTED SERVICES (✓ Boxes)

SAMPLE ID	DESCRIPTION	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples Only)	NOTES	PCM Air: Fiber Count (NIOSH 7400)	PCM Air: OSHA with TWA	PLM Bulk: EPA Method 600/R-93/116	PLM Bulk: EPA Point Count (200 Point Count)	PLM Bulk: EPA Point Count (400 Point Count)	PLM Bulk: EPA Point Count (1000 Point Count)	PLM Bulk: Gravimetric Point Count	Rock & Soil: CARB 435 Method - Pre-crushed Sample	Rock & Soil: CARB 435 Method - Regular Sample (7 Bus. Days)	Other Requests: Non-Asbestos Fiber Ct. (NIOSH 7400) - "B" Counting Rules	Other Requests: Lead Analysis
HA-OCA	Sheetrock & Joint Compound	B	STD					X								
B	"	"	"					"								
C	"	"	"					"								

SAMPLE TYPE CODES	
A - Air	W - Wipe
B - Bulk	T - Tape
D - Dust	R- Rock
SO - Soil	O - Other

RELINQUISHED BY	DATE & TIME	RECEIVED BY	DATE & TIME
	10.28.22 0800		10-31-22 9:30a

By submitting this Chain of Custody, you agree to be bound by the terms and conditions set forth at http://www.emlab.com/s/main/serviceterms.html

eurofins | Built Environment Testing

Report for:

Grant Bridgford
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins Aerotech Built Environment Testing, Inc.
Project: Cottage 303 Pine; 2142203390
EML ID: 3071855

Approved by:

Renee Luna-Trepczynski

Approved Signatory
Renee Luna-Trepczynski

Dates of Analysis:
Asbestos PLM: 11-03-2022

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)
NVLAP Lab Code 500031-0

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Cottage 303 Pine; 2142203390

Date of Sampling: 10-26-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Total Samples Submitted:	3
Total Samples Analyzed:	3
Total Samples with Layer Asbestos Content > 1%:	0

Location: 303.HA.001A, Sheetrock & Joint Compound Lab ID-Version‡: 14821980-1

Sample Layers	Asbestos Content
White Joint Compound with White Paint	ND
White Drywall with Brown Paper and White Paint	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: 303.HA.001B, Sheetrock & Joint Compound Lab ID-Version‡: 14821981-1

Sample Layers	Asbestos Content
White Joint Compound with White Paint	ND
White Drywall with Brown Paper and White Paint	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: 303.HA.001C, Sheetrock & Joint Compound Lab ID-Version‡: 14821982-1

Sample Layers	Asbestos Content
White Joint Compound	ND
White Drywall with Brown Paper and White Paint	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

CHAIN OF CUSTODY

EMLab P&K

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Phoenix, AZ: NVLAP Lab Code 500031-0; CO-ELAP # AL-17343
Orange County, CA: NVLAP Lab Code 200577-0
San Bruno, CA: NVLAP Lab Code 200728-0; AIHA IHLAP #102856
San Diego, CA: NVLAP Lab Code 500034-0
Ft. Lauderdale, FL: NVLAP Lab C
Cherry Hill, NJ: NVLAP Lab Code
Ft. Worth, TX: NVLAP Lab Code

003071855

CONTACT INFORMATION

Company: Shive-Hattery	Address: 4125 Westown Pkwy #100, West Des Moines, IA 50266
Contact: Grant Bridgford	Special Instructions: *Point Count All Results Between 1-3% *Stop at 1st Positive Greater Than 10% *Email results to gbridgford@shive-hattery.com
Phone: 515.971.8844	

PROJECT INFORMATION

Project ID: Cottage 303 Pine
Project Desc.: 2142203390
Project Zip Code:
Sampling Date & Time: 10.26.22
PO Number:

TURN AROUND TIME CODES - (TAT)

STD - Standard (DEFAULT)
ND - Next Business Day
SD - Same Business Day Rush*
* RUSHES AVAILABLE FROM LOCATIONS LISTED ABOVE

Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.

ASBESTOS ANALYSIS

REQUESTED SERVICES (✓ Boxes)

SAMPLE ID	DESCRIPTION	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples Only)	NOTES
303-HA-001 A	Sheetrock & Joint Compound	B	STD		
" B					
C					

PCM Air		PLM Bulk					Rock & Soil		Other Requests			
Fiber Count (NIOSH 7400)	OSHA with TWA	EPA Method 600/R-93/116	EPA Point Count (200 Point Count)	EPA Point Count (400 Point Count)	EPA Point Count (1000 Point Count)	Gravimetric Point Count	CARB 435 Method - Pre-crushed Sample	CARB 435 Method - Regular Sample (7 Bus. Days)	Non-Asbestos Fiber Ct. (NIOSH 7400) - "B" Counting Rules	Lead Analysis		
		X										

SAMPLE TYPE CODES	
A - Air	W - Wipe
B - Bulk	T - Tape
D - Dust	R- Rock
SO - Soil	O - Other

RELINQUISHED BY	DATE & TIME
	10.28.22 0800

RECEIVED BY	DATE & TIME
	10-31-22 1:30

eurofins | Built Environment Testing

Report for:

Grant Bridgford
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins Aerotech Built Environment Testing, Inc.
Project: Cottage 304 Pine; 21422033090
EML ID: 3071825

Approved by:

Renee Luna-Trepczynski

Approved Signatory
Renee Luna-Trepczynski

Dates of Analysis:
Asbestos PLM: 11-03-2022

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)
NVLAP Lab Code 500031-0

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the samples as received and tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Cottage 304 Pine; 21422033090

Date of Sampling: 10-27-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Total Samples Submitted:	3
Total Samples Analyzed:	3
Total Samples with Layer Asbestos Content > 1%:	0

Location: HA-001A, Sheetrock and Joint Compound

Lab ID-Version‡: 14822154-1

Sample Layers	Asbestos Content
White Joint Compound with White Paint	ND
White Joint Compound with Multilayered Paint	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA-001B, Sheetrock and Joint Compound

Lab ID-Version‡: 14822155-1

Sample Layers	Asbestos Content
White Joint Compound with White Paint	ND
White Joint Compound with Multilayered Paint	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA-001C, Sheetrock and Joint Compound

Lab ID-Version‡: 14822156-1

Sample Layers	Asbestos Content
White Joint Compound with White Paint	ND
White Joint Compound with Multilayered Paint	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

CHAIN OF CUSTODY

EMLab P&K

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San Bruno, CA: NVLAP Lab Code 200728-0; AIHA IHLAP #102856
San Diego, CA: NVLAP Lab Code 500034-0
Ft. Lauderdale, FL: NVLAP Lab C-
Cherry Hill, NJ: NVLAP Lab Code
Ft. Worth, TX: NVLAP Lab Code

003071825

CONTACT INFORMATION

Company: Shive-Hattery	Address: 4125 Westown Pkwy #100, West Des Moines, IA 50266
Contact: Grant Bridgford	Special Instructions: *Point Count All Results Between 1-3% *Stop at 1st Positive Greater Than 10% *Email results to gbridgford@shive-hattery.com
Phone: 515.971.8844	

PROJECT INFORMATION

Project ID: Cottage 304 Pine
Project Desc.: 2142203390
Project Zip Code:
Sampling Date & Time: 10.27.22
PO Number:

TURN AROUND TIME CODES - (TAT)

STD - Standard (DEFAULT)
ND - Next Business Day
SD - Same Business Day Rush*
* RUSHES AVAILABLE FROM LOCATIONS LISTED ABOVE

Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.

ASBESTOS ANALYSIS

REQUESTED SERVICES (✓ Boxes)

SAMPLE ID	DESCRIPTION	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples Only)	NOTES
HA-001A	Sheetrock & Joint Compound	B	STD		
B	"	"	"		
C	"	"	"		

PCM Air		PLM Bulk					Rock & Soil		Other Requests			
Fiber Count (NIOSH 7400)	OSHA with TWA	EPA Method 600/R-93/116	EPA Point Count (200 Point Count)	EPA Point Count (400 Point Count)	EPA Point Count (1000 Point Count)	Gravimetric Point Count	CARB 435 Method - Pre-crushed Sample	CARB 435 Method - Regular Sample (7 Bus. Days)	Non-Asbestos Fiber Ct. (NIOSH 7400) - "B" Counting Rules	Lead Analysis		
		X										
		"										
		"										

SAMPLE TYPE CODES	
A - Air	W - Wipe
B - Bulk	T - Tape
D - Dust	R- Rock
SO - Soil	O - Other

RELINQUISHED BY	DATE & TIME
[signature]	10.28.22 0800

RECEIVED BY	DATE & TIME
[signature]	10-31-22 1:30 pm

By submitting this Chain of Custody, you agree to be bound by the terms and conditions set forth at http://www.emlab.com/s/main/serviceterms.html

eurofins | Built Environment Testing

Report for:

Grant Bridgford
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins Aerotech Built Environment Testing, Inc.
Project: Cottage 103 Cedar St.; 2142203390
EML ID: 3071848

Approved by:

Renee Luna-Trepczynski

Approved Signatory
Renee Luna-Trepczynski

Dates of Analysis:
Asbestos PLM: 11-03-2022

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)
NVLAP Lab Code 500031-0

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Cottage 103 Cedar St.; 2142203390

Date of Sampling: 10-26-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Total Samples Submitted:	3
Total Samples Analyzed:	3
Total Samples with Layer Asbestos Content > 1%:	0

Location: HA.001A, Sheetrock & Joint Compound Lab ID-Version‡: 14821669-1

Sample Layers	Asbestos Content
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA.001B, Sheetrock & Joint Compound Lab ID-Version‡: 14821670-1

Sample Layers	Asbestos Content
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA.001C, Sheetrock & Joint Compound Lab ID-Version‡: 14821671-1

Sample Layers	Asbestos Content
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

CHAIN OF CUSTODY

EMLab P&K

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San Diego, CA: NVLAP Lab Code 500034-0
Ft. Lauderdale, FL: NVLAP Lab C
Cherry Hill, NJ: NVLAP Lab Code
Ft. Worth, TX: NVLAP Lab Code

003071848

CONTACT INFORMATION

Company: Shive-Hattery
Address: 4125 Westown Pkwy #100, West Des Moines, IA 50266
Contact: Grant Bridgford
Special Instructions:
*Point Count All Results Between 1-3%
*Stop at 1st Positive Greater Than 10%
*Email results to gbridgford@shive-hattery.com
Phone: 515.971.8844

PROJECT INFORMATION

Project ID: Cottage 103 Cedar St.
Project Desc.: 2142203390
Project Zip Code:
Sampling Date & Time: 10.26.22
PO Number:

TURN AROUND TIME CODES - (TAT)

STD - Standard (DEFAULT)
ND - Next Business Day
SD - Same Business Day Rush*
* RUSHES AVAILABLE FROM LOCATIONS LISTED ABOVE

Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.

ASBESTOS ANALYSIS

REQUESTED SERVICES (✓ Boxes)

SAMPLE ID	DESCRIPTION	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples Only)	NOTES
HA-001A	Sheetrock & Joint Compound	B	STD		
B	"	"	"		
C	"	"	"		

PCM Air		PLM Bulk					Rock & Soil		Other Requests			
Fiber Count (NIOSH 7400)	OSHA with TWA	EPA Method 600/R-93/116	EPA Point Count (200 Point Count)	EPA Point Count (400 Point Count)	EPA Point Count (1000 Point Count)	Gravimetric Point Count	CARB 435 Method - Pre-crushed Sample	CARB 435 Method - Regular Sample (7 Bus. Days)	Non-Asbestos Fiber Ct. (NIOSH 7400) - "B" Counting Rules	Lead Analysis		
		X										
		"										
		"										

SAMPLE TYPE CODES

A - Air	W - Wipe
B - Bulk	T - Tape
D - Dust	R- Rock
SO - Soil	O - Other

RELINQUISHED BY	DATE & TIME
[signature]	10.28.22 0800

RECEIVED BY	DATE & TIME
[signature]	10-31-22 9:30 94

By submitting this Chain of Custody, you agree to be bound by the terms and conditions set forth at http://www.emlab.com/s/main/serviceterms.html

eurofins | Built Environment Testing

Report for:

Grant Bridgford
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins Aerotech Built Environment Testing, Inc.
Project: Cottage 201 Cedar St; 2142203390
EML ID: 3071802

Approved by:

Renee Luna-Trepczynski

Approved Signatory
Renee Luna-Trepczynski

Dates of Analysis:
Asbestos PLM: 11-03-2022

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)
NVLAP Lab Code 500031-0

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the samples as received and tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Cottage 201 Cedar St; 2142203390

Date of Sampling: 10-26-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Total Samples Submitted:	3
Total Samples Analyzed:	3
Total Samples with Layer Asbestos Content > 1%:	0

Location: HA.001A, Sheetrock & Joint Compound

Lab ID-Version‡: 14821870-1

Sample Layers	Asbestos Content
Semi-Transparent Caulk with White Paint	ND
White Joint Compound with White Paint	ND
Brown Drywall with Brown/Green Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA.001B, Sheetrock & Joint Compound

Lab ID-Version‡: 14821871-1

Sample Layers	Asbestos Content
White Joint Compound with White Paint	ND
Brown Drywall with Brown/Green Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA.001C, Sheetrock & Joint Compound

Lab ID-Version‡: 14821872-1

Sample Layers	Asbestos Content
White Joint Compound with White Paint	ND
Brown Drywall with Brown/Green Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

CHAIN OF CUSTODY

EMLab P&K

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San Diego, CA: NVLAP Lab Code 500034-0

Ft. Lauderdale, FL: NVLAP Lab Co
Cherry Hill, NJ: NVLAP Lab Code 2
Ft. Worth, TX: NVLAP Lab Code 2

003071802

CONTACT INFORMATION

Company: Shive-Hattery
Address: 4125 Westown Pkwy #100, West Des Moines, IA 50266
Contact: Grant Bridgford
Special Instructions:
*Point Count All Results Between 1-3%
*Stop at 1st Positive Greater Than 10%
*Email results to gbridgford@shive-hattery.com
Phone: 515.971.8844

PROJECT INFORMATION

Project ID: Cottage 201 Cedar St
Project Desc.: 2142203390
Project Zip Code:
Sampling Date & Time: 10.26.22
PO Number:

TURN AROUND TIME CODES - (TAT)

STD - Standard (DEFAULT)
ND - Next Business Day
SD - Same Business Day Rush*
* RUSHES AVAILABLE FROM LOCATIONS LISTED ABOVE

Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.

ASBESTOS ANALYSIS

REQUESTED SERVICES (✓ Boxes)

SAMPLE ID	DESCRIPTION	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples Only)	NOTES	PCM Air: Fiber Count (NIOSH 7400)	PCM Air: OSHA with TWA	PLM Bulk: EPA Method 600/R-93/116	PLM Bulk: EPA Point Count (200 Point Count)	PLM Bulk: EPA Point Count (400 Point Count)	PLM Bulk: EPA Point Count (1000 Point Count)	PLM Bulk: Gravimetric Point Count	Rock & Soil: CARB 435 Method - Pre-crushed Sample	Rock & Soil: CARB 435 Method - Regular Sample (7 Bus. Days)	Other Requests: Non-Asbestos Fiber Ct. (NIOSH 7400) - "B" Counting Rules	Other Requests: Lead Analysis
HA-001A	Sheetrock & Joint Compound	B	STD					X								
B	"	"	"					"								
C	"	"	"					"								

SAMPLE TYPE CODES

A - Air	W - Wipe
B - Bulk	T - Tape
D - Dust	R- Rock
SO - Soil	O - Other

RELINQUISHED BY	DATE & TIME	RECEIVED BY	DATE & TIME
	10.26.22 0800		10-31-22 9:30a

eurofins | Built Environment Testing

Report for:

Grant Bridgford
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins Aerotech Built Environment Testing, Inc.
Project: Cottage 101 Cherry Ln; 2142203390
EML ID: 3071793

Approved by:

Renee Luna-Trepczynski

Approved Signatory
Renee Luna-Trepczynski

Dates of Analysis:
Asbestos PLM: 11-03-2022

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)
NVLAP Lab Code 500031-0

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Cottage 101 Cherry Ln; 2142203390

Date of Sampling: 10-26-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Total Samples Submitted:	3
Total Samples Analyzed:	3
Total Samples with Layer Asbestos Content > 1%:	0

Location: HA.001A, Sheetrock & Joint Compound

Lab ID-Version‡: 14821967-1

Sample Layers	Asbestos Content
Off-White Compound	ND
White Compound with White Paint	ND
Brown Adhesive	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose < 1% Glass Fibers
Sample Composite Homogeneity:	Poor

Location: HA.001B, Sheetrock & Joint Compound

Lab ID-Version‡: 14821968-1

Sample Layers	Asbestos Content
Off-White Compound	ND
White Compound with White Paint	ND
Brown Adhesive	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose < 1% Glass Fibers
Sample Composite Homogeneity:	Poor

Location: HA.001C, Sheetrock & Joint Compound

Lab ID-Version‡: 14821969-1

Sample Layers	Asbestos Content
Off-White Compound	ND
White Compound with White Paint	ND
Brown Adhesive	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose < 1% Glass Fibers
Sample Composite Homogeneity:	Poor

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

CHAIN OF CUSTODY

EMLab P&K

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Orange County, CA: NVLAP Lab Code 200577-0
San Bruno, CA: NVLAP Lab Code 200728-0; AIHA IHLAP #102856
San Diego, CA: NVLAP Lab Code 500034-0
Ft. Lauderdale, FL: NVLAP Lab C
Cherry Hill, NJ: NVLAP Lab Code
Ft. Worth, TX: NVLAP Lab Code

003071793

CONTACT INFORMATION

Company: Shive-Hattery
Address: 4125 Westown Pkwy #100, West Des Moines, IA 50266
Contact: Grant Bridgford
Special Instructions:
*Point Count All Results Between 1-3%
*Stop at 1st Positive Greater Than 10%
*Email results to gbridgford@shive-hattery.com
Phone: 515.971.8844

PROJECT INFORMATION

Project ID: Cottage 101 Cherry LN
Project Desc.: 2142203390
Project Zip Code:
Sampling Date & Time: 10.27.22
PO Number:

TURN AROUND TIME CODES - (TAT)

STD - Standard (DEFAULT)
ND - Next Business Day
SD - Same Business Day Rush*
* RUSHES AVAILABLE FROM LOCATIONS LISTED ABOVE

Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.

SAMPLE ID	DESCRIPTION	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples Only)	NOTES
HA-001 A	Sheetrock & Joint Compound	B	STD		
B	"	"	"		
C	"	"	"		

ASBESTOS ANALYSIS

REQUESTED SERVICES (✓ Boxes)

PCM Air		PLM Bulk					PLM Rock & Soil		Other Requests			
Fiber Count (NIOSH 7400)	OSHA with TWA	EPA Method 600/R-93/116	EPA Point Count (200 Point Count)	EPA Point Count (400 Point Count)	EPA Point Count (1000 Point Count)	Gravimetric Point Count	CARB 435 Method - Pre-crushed Sample	CARB 435 Method - Regular Sample (7 Bus. Days)	Non-Asbestos Fiber Ct. (NIOSH 7400) "B" Counting Rules	Lead Analysis		
		X										

SAMPLE TYPE CODES	
A - Air	W - Wipe
B - Bulk	T - Tape
D - Dust	R- Rock
SO - Soil	O - Other

RELINQUISHED BY	DATE & TIME
	10.28.22 0800

RECEIVED BY	DATE & TIME
	10-31-22 9:30

By submitting this Chain of Custody, you agree to be bound by the terms and conditions set forth at http://www.emlab.com/s/main/serviceterms.html

eurofins | Built Environment Testing

Report for:

Grant Bridgford
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins Aerotech Built Environment Testing, Inc.
Project: Cottage 103 Cherry Ln; 2142203390
EML ID: 3071814

Approved by:

Renee Luna-Trepczynski

Approved Signatory
Renee Luna-Trepczynski

Dates of Analysis:
Asbestos PLM: 11-03-2022

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)
NVLAP Lab Code 500031-0

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the samples as received and tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Cottage 103 Cherry Ln; 2142203390

Date of Sampling: 10-26-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Total Samples Submitted:	4
Total Samples Analyzed:	4
Total Samples with Layer Asbestos Content > 1%:	0

Location: HA.0001, Red Linoleum

Lab ID-Version‡: 14821737-1

Sample Layers	Asbestos Content
Red Insulation	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: HA.002A, Sheetrock & Joint Compound

Lab ID-Version‡: 14821738-1

Sample Layers	Asbestos Content
White Joint Compound with White Paint	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA.002B, Sheetrock & Joint Compound

Lab ID-Version‡: 14821739-1

Sample Layers	Asbestos Content
White Joint Compound with White Paint	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA.002C, Sheetrock & Joint Compound

Lab ID-Version‡: 14821740-1

Sample Layers	Asbestos Content
White Joint Compound with White Paint	< 1% Chrysotile
White Drywall with Brown Paper	ND
Composite Asbestos Fibrous Content:	< 1% Asbestos
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Comments: Composite content provided for this analysis has been performed by following the NESHAP guidelines.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

CHAIN OF CUSTODY

EMLab P&K

866.888.6653 www.EMLabPK.com

Phoenix, AZ: NVLAP Lab Code 500031-0; CO-ELAP # AL-17343
Orange County, CA: NVLAP Lab Code 200577-0
San Bruno, CA: NVLAP Lab Code 200728-0; AIHA IHLAP #102856
San Diego, CA: NVLAP Lab Code 500034-0
Ft. Lauderdale, FL: NVLAP Lab Code
Cherry Hill, NJ: NVLAP Lab Code 200
Ft. Worth, TX: NVLAP Lab Code 200

003071814

CONTACT INFORMATION

Company: Shive-Hattery
Address: 4125 Westown Pkwy #100, West Des Moines, IA 50266
Contact: Grant Bridgford
Special Instructions:
*Point Count All Results Between 1-3%
*Stop at 1st Positive Greater Than 10%
*Email results to gbridgford@shive-hattery.com
Phone: 515.971.8844

PROJECT INFORMATION

Project ID: Cottage 103 Cherry LN
Project Desc.: Z142203390
Project Zip Code:
Sampling Date & Time: 10-26-22
PO Number:

TURN AROUND TIME CODES - (TAT)

STD - Standard (DEFAULT)
ND - Next Business Day
SD - Same Business Day Rush*
* RUSHES AVAILABLE FROM LOCATIONS LISTED ABOVE

Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.

ASBESTOS ANALYSIS

REQUESTED SERVICES (✓ Boxes)

SAMPLE ID	DESCRIPTION	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples Only)	NOTES
HA-001	Red Linoleum	B	STD		
HA-002A	Sheetrock & Joint Compound	↓	↓		
B	↓	↓	↓	↓	
C	↓	↓	↓	↓	

PCM Air		PLM Bulk					Rock & Soil		Other Requests			
Fiber Count (NIOSH 7400)	OSHA with TWA	EPA Method 600/R-93/116	EPA Point Count (200 Point Count)	EPA Point Count (400 Point Count)	EPA Point Count (1000 Point Count)	Gravimetric Point Count	CARB 435 Method - Pre-crushed Sample	CARB 435 Method - Regular Sample (7 Bus. Days)	Non-Asbestos Fiber Ct. (NIOSH 7400) - "B" Counting Rules	Lead Analysis		
		X										
		↓										
		↓										

SAMPLE TYPE CODES

A - Air	W - Wipe
B - Bulk	T - Tape
D - Dust	R- Rock
SO - Soil	O - Other

RELINQUISHED BY	DATE & TIME	RECEIVED BY	DATE & TIME
	10.28.22 0800		10-31-22 9:30am

eurofins | Built Environment Testing

Report for:

Grant Bridgford
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins Aerotech Built Environment Testing, Inc.
Project: Cottage 104 Cherry Ln; 2145503390
EML ID: 3071817

Approved by:

Renee Luna-Trepczynski

Approved Signatory
Renee Luna-Trepczynski

Dates of Analysis:
Asbestos PLM: 11-03-2022

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)
NVLAP Lab Code 500031-0

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the samples as received and tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Cottage 104 Cherry Ln; 2145503390

Date of Sampling: 10-27-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Total Samples Submitted:	3
Total Samples Analyzed:	3
Total Samples with Layer Asbestos Content > 1%:	0

Location: HA-001A, Sheetrock and Joint Compound

Lab ID-Version‡: 14821999-1

Sample Layers	Asbestos Content
White Joint Compound	ND
White Drywall with Brown Paper and White Paint	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA-001B, Sheetrock and Joint Compound

Lab ID-Version‡: 14822000-1

Sample Layers	Asbestos Content
White Joint Compound	ND
White Drywall with Brown Paper and White Paint	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA-001C, Sheetrock and Joint Compound

Lab ID-Version‡: 14822001-1

Sample Layers	Asbestos Content
White Joint Compound	ND
White Drywall with Brown Paper and White Paint	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

CHAIN OF CUSTODY

EMLab P&K

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Phoenix, AZ: NVLAP Lab Code 500031-0; CO-ELAP # AL-17343
Orange County, CA: NVLAP Lab Code 200577-0
San Bruno, CA: NVLAP Lab Code 200728-0; AIHA IHLAP #102856
San Diego, CA: NVLAP Lab Code 500034-0

Ft. Lauderdale, FL: NVLAP Lab Co
Cherry Hill, NJ: NVLAP Lab Code 2
Ft. Worth, TX: NVLAP Lab Code 2

003071817

CONTACT INFORMATION

Company: Shive-Hattery
Address: 4125 Westown Pkwy #100, West Des Moines, IA 50266
Contact: Grant Bridgford
Special Instructions:
*Point Count All Results Between 1-3%
*Stop at 1st Positive Greater Than 10%
*Email results to gbridgford@shive-hattery.com
Phone: 515.971.8844

PROJECT INFORMATION

Project ID: Cottage 104 Cherry LN
Project Desc.: 2142203390
Project Zip Code:
Sampling Date & Time: 10-28-22
PO Number:

TURN AROUND TIME CODES - (TAT)

STD - Standard (DEFAULT)
ND - Next Business Day
SD - Same Business Day Rush*
* RUSHES AVAILABLE FROM LOCATIONS LISTED ABOVE

Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.

SAMPLE ID	DESCRIPTION	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples Only)	NOTES
HA-001A	Sheetrock & Joint Compound	B	STD		
B	"	"	"		
C	"	"	"		

ASBESTOS ANALYSIS

REQUESTED SERVICES (✓ Boxes)

PCM Air		PLM Bulk					Rock & Soil		Other Requests		
Fiber Count (NIOSH 7400)	OSHA with TWA	EPA Method 600/R-93/116	EPA Point Count (200 Point Count)	EPA Point Count (400 Point Count)	EPA Point Count (1000 Point Count)	Gravimetric Point Count	CARB 435 Method - Pre-crushed Sample	CARB 435 Method - Regular Sample (7 Bus. Days)	Non-Asbestos Fiber Ct. (NIOSH 7400) - "B" Counting Rules	Lead Analysis	
		X									
		"									
		"									

SAMPLE TYPE CODES

A - Air	W - Wipe
B - Bulk	T - Tape
D - Dust	R- Rock
SO - Soil	O - Other

RELINQUISHED BY	DATE & TIME	RECEIVED BY	DATE & TIME
	10-28-22 0800		10-31-22 @ 1:30 pm

By submitting this Chain of Custody, you agree to be bound by the terms and conditions set forth at http://www.emlab.com/s/main/serviceterms.html

eurofins | Built Environment Testing

Report for:

Grant Bridgford
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins Aerotech Built Environment Testing, Inc.
Project: Cottage 105 Cherry Ln; 2142203390
EML ID: 3071808

Approved by:

Renee Luna-Trepczynski

Approved Signatory
Renee Luna-Trepczynski

Dates of Analysis:
Asbestos PLM: 11-03-2022

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)
NVLAP Lab Code 500031-0

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the samples as received and tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Cottage 105 Cherry Ln; 2142203390

Date of Sampling: 10-26-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Total Samples Submitted:	3
Total Samples Analyzed:	3
Total Samples with Layer Asbestos Content > 1%:	0

Location: HA.001A, Sheetrock & Joint Compound

Lab ID-Version‡: 14821831-1

Sample Layers	Asbestos Content
White Joint Compound with White Paint	ND
White Drywall with Brown/Green Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA.001B, Sheetrock & Joint Compound

Lab ID-Version‡: 14821832-1

Sample Layers	Asbestos Content
White Joint Compound with White Paint	ND
White Drywall with Brown/Green Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA.001C, Sheetrock & Joint Compound

Lab ID-Version‡: 14821833-1

Sample Layers	Asbestos Content
White Joint Compound with White Paint	ND
White Drywall with Brown/Green Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

CHAIN OF CUSTODY

EMLab P&K

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Phoenix, AZ: NVLAP Lab Code 500031-0; CO-ELAP # AL-17343
Orange County, CA: NVLAP Lab Code 200577-0
San Bruno, CA: NVLAP Lab Code 200728-0; AIHA IHLAP #102856
San Diego, CA: NVLAP Lab Code 500034-0

Ft. Lauderdale, FL: NVLAP Lab C-
Cherry Hill, NJ: NVLAP Lab Code
Ft. Worth, TX: NVLAP Lab Code .

003071808

CONTACT INFORMATION

Company: Shive-Hattery
Address: 4125 Westown Pkwy #100, West Des Moines, IA 50266
Contact: Grant Bridgford
Special Instructions:
*Point Count All Results Between 1-3%
*Stop at 1st Positive Greater Than 10%
*Email results to gbridgford@shive-hattery.com
Phone: 515.971.8844

PROJECT INFORMATION

Project ID: Cottage 105 Cherry LN
Project Desc.: 214220339O
Project Zip Code:
Sampling Date & Time: 10.26.22
PO Number:

TURN AROUND TIME CODES - (TAT)

STD - Standard (DEFAULT)
ND - Next Business Day
SD - Same Business Day Rush*
* RUSHES AVAILABLE FROM LOCATIONS LISTED ABOVE

Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.

SAMPLE ID	DESCRIPTION	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples Only)	NOTES
HA-001A	Sheetrock & Joint Compound	B	STD		
B	"	"	"		
C	"	"	"		

ASBESTOS ANALYSIS

REQUESTED SERVICES (✓ Boxes)

PCM Air		PLM Bulk					Rock & Soil		Other Requests				
Fiber Count (NIOSH 7400)	OSHA with TWA	EPA Method 600/R-93/116	EPA Point Count (200 Point Count)	EPA Point Count (400 Point Count)	EPA Point Count (1000 Point Count)	Gravimetric Point Count	CARB 435 Method - Pre-crushed Sample	CARB 435 Method - Regular Sample (7 Bus. Days)	Non-Asbestos Fiber Ct. (NIOSH 7400) - "B" Counting Rules	Lead Analysis			
		X											
		"											
		"											

SAMPLE TYPE CODES	
A - Air	W - Wipe
B - Bulk	T - Tape
D - Dust	R- Rock
SO - Soil	O - Other

RELINQUISHED BY	DATE & TIME
[signature]	10.28.22 0800

RECEIVED BY	DATE & TIME
[signature]	10-31-22 9:30 94

By submitting this Chain of Custody, you agree to be bound by the terms and conditions set forth at http://www.emlab.com/s/main/serviceterms.html

eurofins | Built Environment Testing

Report for:

Grant Bridgford
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins Aerotech Built Environment Testing, Inc.
Project: Cottage 107 Cherry Ln; 2142203390
EML ID: 3071805

Approved by:

Renee Luna-Trepczynski

Approved Signatory
Renee Luna-Trepczynski

Dates of Analysis:
Asbestos PLM: 11-03-2022

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)
NVLAP Lab Code 500031-0

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the samples as received and tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Cottage 107 Cherry Ln; 2142203390

Date of Sampling: 10-26-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Total Samples Submitted:	3
Total Samples Analyzed:	3
Total Samples with Layer Asbestos Content > 1%:	0

Location: HA.001A, Sheetrock & Joint Compound

Lab ID-Version‡: 14821838-1

Sample Layers	Asbestos Content
White Joint Compound with Multilayered Paint	ND
White Drywall with Brown/Green Paper and Multilayered Paint	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA.001B, Sheetrock & Joint Compound

Lab ID-Version‡: 14821839-1

Sample Layers	Asbestos Content
White Joint Compound with Multilayered Paint	ND
White Drywall with Brown/Green Paper and Multilayered Paint	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: HA.001C, Sheetrock & Joint Compound

Lab ID-Version‡: 14821840-1

Sample Layers	Asbestos Content
White Joint Compound with Multilayered Paint	ND
White Drywall with Brown/Green Paper and Multilayered Paint	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

CHAIN OF CUSTODY

EMLab P&K

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Orange County, CA: NVLAP Lab Code 200577-0
San Bruno, CA: NVLAP Lab Code 200728-0; AIHA IHLAP #102856
San Diego, CA: NVLAP Lab Code 500034-0
Ft. Lauderdale, FL: NVLAP Lab C
Cherry Hill, NJ: NVLAP Lab Code
Ft. Worth, TX: NVLAP Lab Code

003071805

CONTACT INFORMATION

Company: Shive-Hattery	Address: 4125 Westown Pkwy #100, West Des Moines, IA 50266
Contact: Grant Bridgford	Special Instructions: *Point Count All Results Between 1-3% *Stop at 1st Positive Greater Than 10% *Email results to gbridgford@shive-hattery.com
Phone: 515.971.8844	

PROJECT INFORMATION

Project ID: Cottage 107 Cherry Ln
Project Desc.: 2142203390
Project Zip Code:
Sampling Date & Time: 10.26.22
PO Number:

TURN AROUND TIME CODES - (TAT)

STD - Standard (DEFAULT)
ND - Next Business Day
SD - Same Business Day Rush*
* RUSHES AVAILABLE FROM LOCATIONS LISTED ABOVE

Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.

ASBESTOS ANALYSIS

REQUESTED SERVICES (✓ Boxes)

SAMPLE ID	DESCRIPTION	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples Only)	NOTES	PCM Air: Fiber Count (NIOSH 7400)	PCM Air: OSHA with TWA	PLM Bulk: EPA Method 600/R-93/116	PLM Bulk: EPA Point Count (200 Point Count)	PLM Bulk: EPA Point Count (400 Point Count)	PLM Bulk: EPA Point Count (1000 Point Count)	PLM Bulk: Gravimetric Point Count	Rock & Soil: CARB 435 Method - Pre-crushed Sample	Rock & Soil: CARB 435 Method - Regular Sample (7 Bus. Days)	Other Requests: Non-Asbestos Fiber Ct. (NIOSH 7400) - "B" Counting Rules	Other Requests: Lead Analysis
HA-001A	Sheetrock & Joint Compound	B	STD					X								
B	"	"	"					"								
C	"	"	"					"								

SAMPLE TYPE CODES

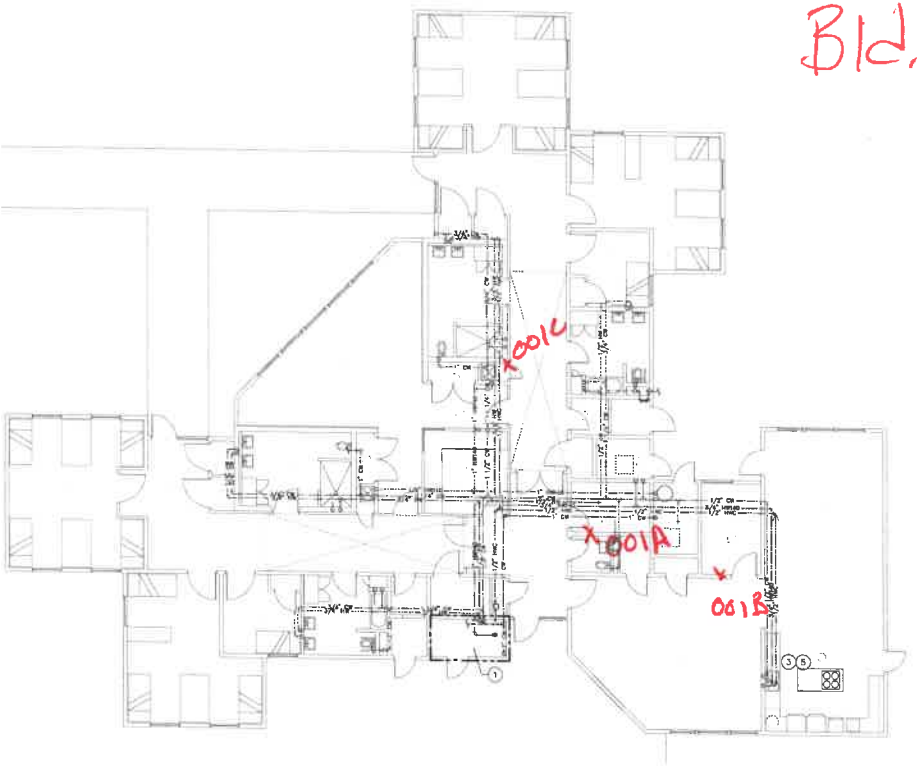
A - Air	W - Wipe
B - Bulk	T - Tape
D - Dust	R- Rock
SO - Soil	O - Other

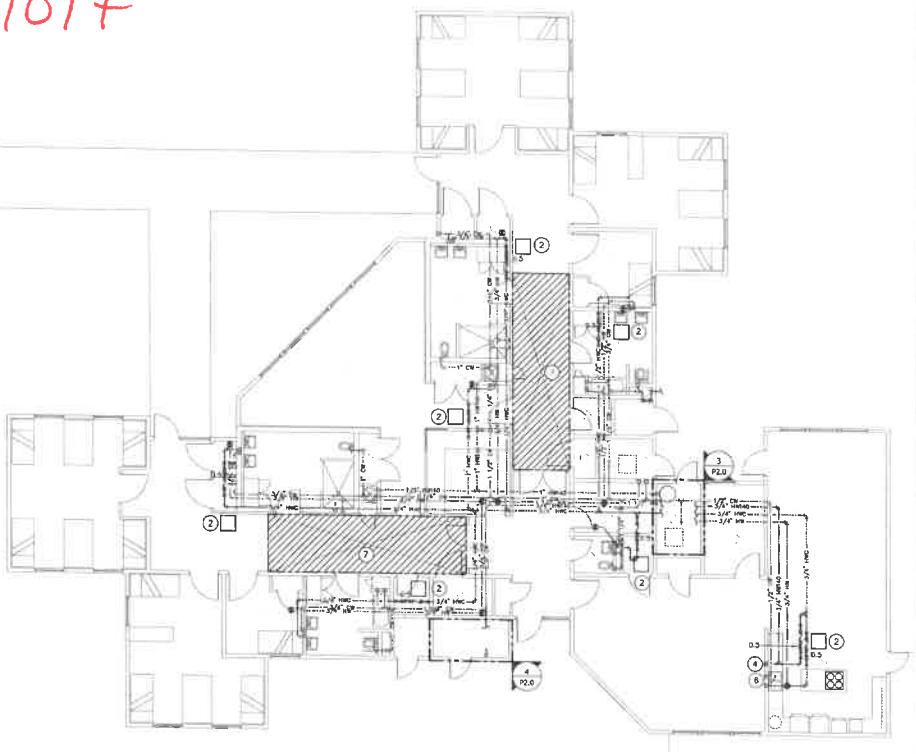
RELINQUISHED BY	DATE & TIME
	10.28.22 0800

RECEIVED BY	DATE & TIME
	10-31-22 9:30 94

By submitting this Chain of Custody, you agree to be bound by the terms and conditions set forth at http://www.emlab.com/s/main/serviceterms.html

Bld. 101F





REVISION	DATE	BY	DATE
		DESIGNED	BMC 4.29.13
		DRAWN	CAD 4.29.13
		CHECKED	BMC 4.29.13
		LAST UPDATE:	4.29.13

bluestone engineering
2310 Northpark Drive
Ankeny, IA 50021
515.727.1700
FAX 515.727.0777

PROJECT NO.
112-089

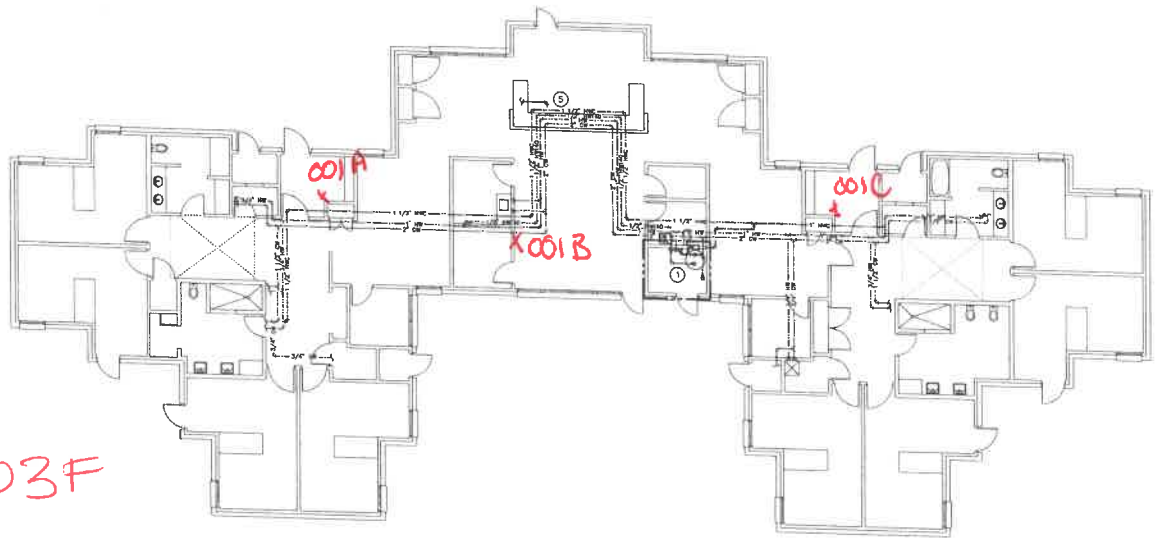
DEPARTMENT OF ADMINISTRATIVE SERVICES
HOOVER STATE OFFICE BUILDING
1305 EAST WALNUT ST., DES MOINES, IOWA 50319

D.A.S. WOODWARD MECHANICAL UPGRADES
1251 334TH STREET
WOODWARD, IOWA 50276

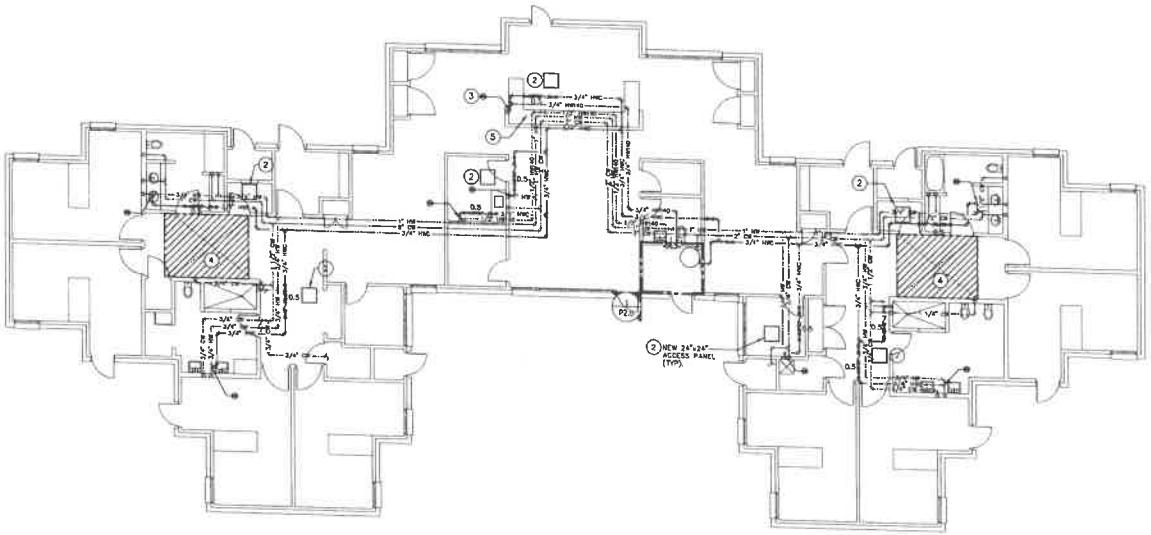
UNIT STYLE C PLUMBING PLANS

SHEET
P1C

Bld. 103F



1 COTTAGE STYLE "A" PLUMBING DEMO PLAN



2 COTTAGE STYLE "A" PLUMBING PLAN

KEYED NOTES (ENTIRE SHEET):

1. DEMO EXISTING HOT WATER PIPING, HOT WATER RECIRCULATION PIPING, MIXING VALVE, RECIRCULATION PUMP, AND ACCESSORIES IN THIS AREA. CONTRACTOR TO DEMO DOMESTIC WATER PIPING BACK TO WATER SERVICE ENTRANCE FOR MODIFICATION. FIRE PROTECTION SERVICE TO REMAIN.
2. INSTALL NEW 24"x24" 1-HOUR FIRE RATED ACCESS PANEL IN CEILING. COORDINATE LOCATION WITH ROOF TRUSS LOCATIONS AND VALVE LOCATIONS. ACCESS PANEL TO BE EQUAL TO J.L. INDUSTRIES TO SERIES. INSTALL PER MANUFACTURERS REQUIREMENTS.
3. CONNECT DEDICATED HW140 LINE TO DISHWASHER.
4. SKYLIGHT. DO NOT ROUTE PIPING IN THIS AREA.
5. DEMO EXISTING MIXING VALVE ASSEMBLY BENEATH SINK. RECONNECT SINK TO DOMESTIC HOT WATER LINE.

GENERAL NOTES (ENTIRE SHEET):

1. ROUTE ALL PIPING IN ATTIC SPACE.
2. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL GENERAL CONSTRUCTION DEMO & PATCHING.
3. HOT WATER PIPING DEAD LEG LENGTH SHALL NOT EXCEED 8'-0".
4. DEMO ALL EXISTING HWC PIPING IN ATTIC. PIPING TO BE REPLACED.
5. REFER TO DRAWING P2.0 FOR THE FOLLOWING DETAILS:
   - WATER METER AND MIXING VALVE

CONTRACTOR TO CREATE BALANCING REPORT FOR ALL PLUMBING FIXTURES. REPORT SHALL LIST THE FOLLOWING INFORMATION:

- DATE & TIME OF TEST
- PLUMBING FIXTURE TESTED
- HOT WATER TEMPERATURE

HOT WATER TEMPERATURE SHALL REMAIN BETWEEN 100 DEGREES AND 108.9 DEGREES AT ALL TAPS. IF SYSTEM DIPS BELOW THIS RANGE, CONTRACTOR SHALL RE-BALANCE ENTIRE PLUMBING SYSTEM WITHIN THE BUILDING.

	DATE	REVISION

	BY	DATE
DESIGNED:	DAC	4.29.13
DRAWN:	CAD	4.29.13
CHECKED:	DAC	4.29.13
LAST UPDATE:		4.29.13

bluestone
411 Fairview Ave. Suite 201
Ames, IA 50014
515.232.4700
515.232.4777
www.bluestonepmf.com

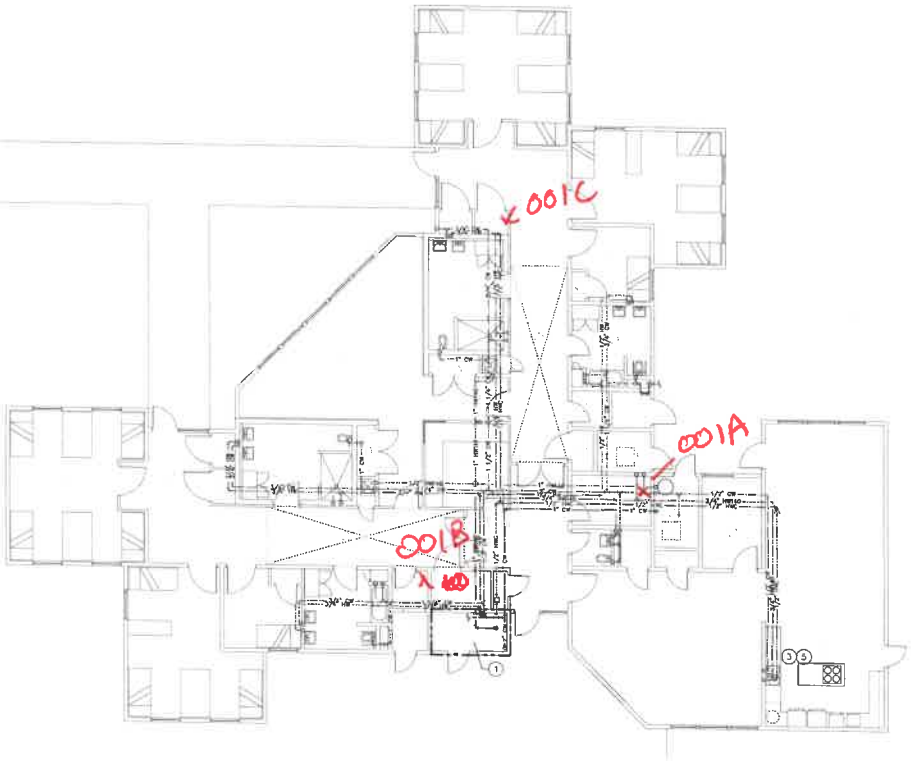
PROJECT NO.
112-089

DEPARTMENT OF ADMINISTRATIVE SERVICES
HOOVER STATE OFFICE BUILDING
1305 EAST WALNUT ST., DES MOINES, IOWA 50319

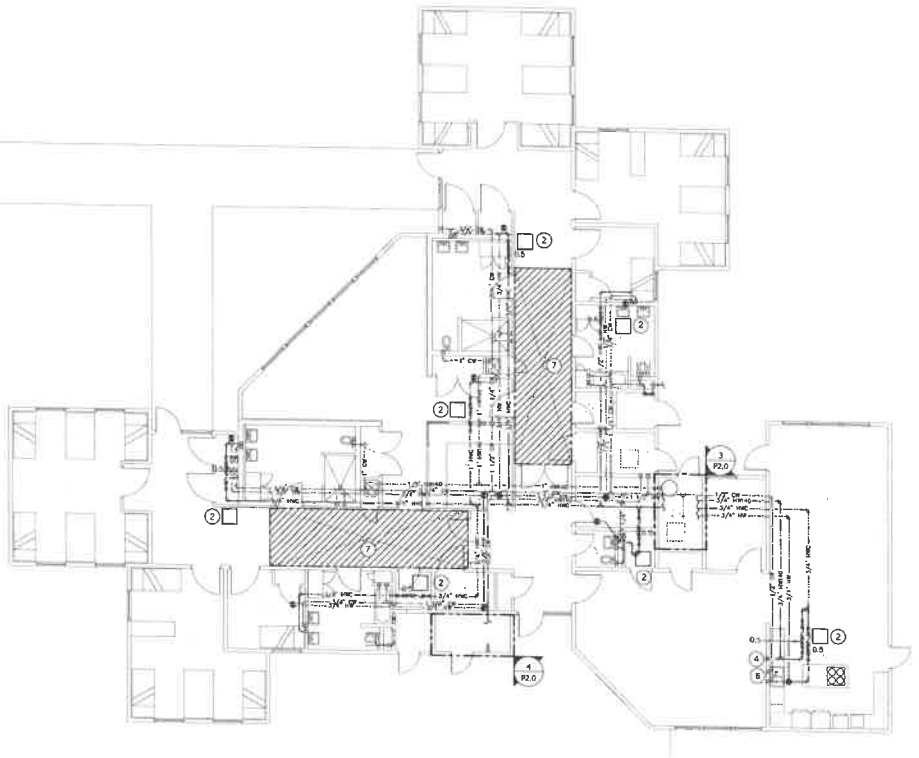
D.A.S. WOODWARD MECHANICAL UPGRADES
1251 334TH STREET
WOODWARD, IOWA 50276

UNIT STYLE A PLUMBING PLANS

SHEET
P1A



1 COTTAGE STYLE "C" PLUMBING DEMO PLAN



1 COTTAGE STYLE "C" PLUMBING PLAN

Bld. 104F

KEYED NOTES (ENTIRE SHEET):

1. DEMO EXISTING HOT WATER PIPING, HOT WATER RECIRCULATION PIPING, MIXING VALVE, RECIRCULATION PUMP, AND ACCESSORIES IN THIS AREA. CONTRACTOR TO DEMO DOMESTIC WATER PIPING BACK TO WATER SERVICE ENTRANCE FOR MODIFICATION. FIRE PROTECTION SERVICE TO REMAIN.
2. INSTALL NEW 24"x24" 1-HOUR FIRE RATED ACCESS PANEL IN GYP.WALL. COORDINATE LOCATION WITH ROOF TRUSS LOCATIONS AND VALVE LOCATIONS. ACCESS PANEL TO BE EQUAL TO J. INDUSTRIES TO SERIES. INSTALL PER MANUFACTURERS REQUIREMENTS.
3. DEMO EXISTING HW140 PIPING TO EXISTING DISHWASHER.
4. CONNECT NEW DEDICATED HW140 PIPING TO EXISTING DISHWASHER.
5. DEMO EXISTING MIXING VALVE ASSEMBLY BENEATH SINK.
6. RECONNECT SINK TO EXISTING HOT WATER PIPING.
7. SKYLIGHT. DO NOT ROUTE PIPING IN THIS AREA.

GENERAL NOTES (ENTIRE SHEET):

1. ROUTE ALL PIPING IN ATTIC SPACE.
2. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL GENERAL CONSTRUCTION DEMO & PATCHING.
3. HOT WATER PIPING DEAD LEG LENGTH SHALL NOT EXCEED 8'-0".
4. DEMO ALL EXISTING HWC PIPING IN ATTIC. PIPING TO BE REPLACED.
5. REFER TO DRAWING P2.0 FOR THE FOLLOWING DETAILS
   - WATER METER AND MIXING VALVE

CONTRACTOR TO CREATE BALANCING REPORT FOR ALL PLUMBING FIXTURES. REPORT SHALL LIST THE FOLLOWING INFORMATION:

- DATE & TIME OF TEST
- PLUMBING FIXTURE TESTED
- HOT WATER TEMPERATURE

HOT WATER TEMPERATURE SHALL REMAIN BETWEEN 100 DEGREES AND 109.9 DEGREES AT ALL TIMES. IF SYSTEM DIPS BELOW THIS RANGE, CONTRACTOR SHALL RE-BALANCE ENTIRE PLUMBING SYSTEM WITHIN THE BUILDING.

REVISION	DATE	BY

DESIGNED DAC 4.29.13
DRAWN CAD 4.29.13
CHECKED DAC 4.29.13
LAST UPDATE 4.29.13

bluestone
911 Commerce Court, Suite 200
Buffalo Grove, IL 60089
PHONE 847.215.8100
FAX 815.727.0777

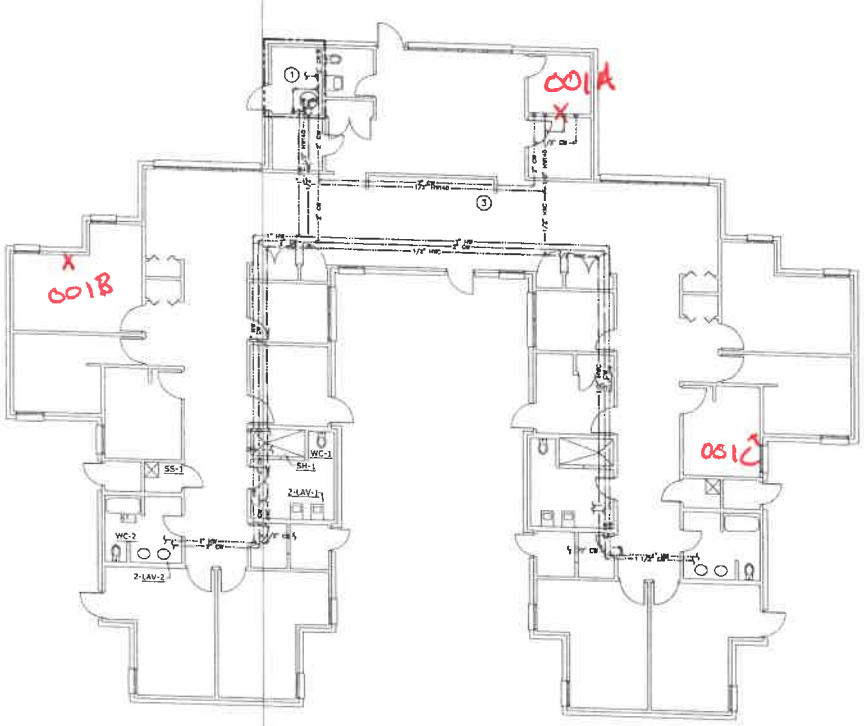
PROJECT NO. 112-089

DEPARTMENT OF ADMINISTRATIVE SERVICES
HOOVER STATE OFFICE BUILDING
1305 EAST WALNUT ST., DES MOINES, IOWA 50319

D.A.S. WOODWARD MECHANICAL UPGRADES
1251 334TH STREET
WOODWARD, IOWA 50276

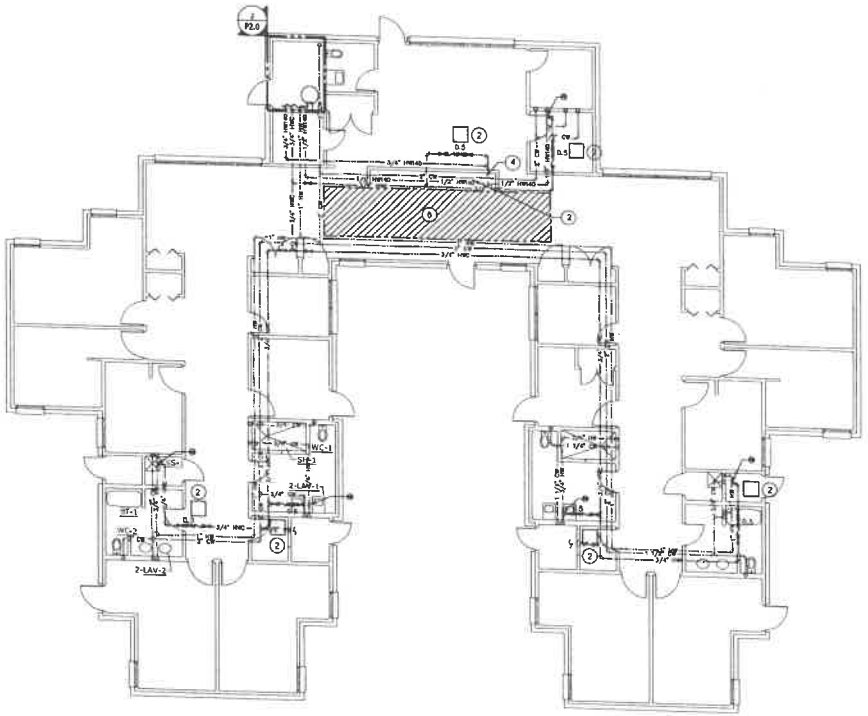
UNIT STYLE C PLUMBING PLANS

SHEET P1C



1 COTTAGE STYLE "B" PLUMBING DEMO PLAN

BLD. 105 F



1 COTTAGE STYLE "B" PLUMBING PLAN

CONTRACTOR TO CREATE BALANCING REPORT FOR ALL PLUMBING FIXTURES. REPORT SHALL LIST THE FOLLOWING INFORMATION:

- DATE & TIME OF TEST
- PLUMBING FIXTURE TESTED
- HOT WATER TEMPERATURE

HOT WATER TEMPERATURE SHALL REMAIN BETWEEN 100 DEGREES AND 109.8 DEGREES AT ALL TIMES. IF SYSTEM DIPS BELOW THIS RANGE, CONTRACTOR SHALL RE-BALANCE ENTIRE PLUMBING SYSTEM WITHIN THE BUILDING.

KEYED NOTES (ENTIRE SHEET):

1. DEMO EXISTING HOT WATER PIPING, HOT WATER RECIRCULATION PIPING, MIXING VALVE, RECIRCULATION PUMP, AND ACCESSORIES IN THIS AREA. CONTRACTOR TO DEMO DOMESTIC WATER PIPING BACK TO WATER SERVICE ENTRANCE FOR MODIFICATION. FIRE PROTECTION SERVICE TO REMAIN.
2. INSTALL NEW 24"x24" 1-HOUR FIRE RATED ACCESS PANEL IN CEILING. COORDINATE LOCATION WITH ROOF TRUSS LOCATIONS AND VALVE LOCATIONS. ACCESS PANEL TO BE EQUAL TO J.L. INDUSTRIES FD SERIES. INSTALL PER MANUFACTURERS REQUIREMENTS.
3. DEMO EXISTING HWH&D PIPING TO EXISTING DISHWASHER.
4. CONNECT NEW DEDICATED HWH&D PIPING TO EXISTING DISHWASHER.
5. RECONNECT SINK TO EXISTING HOT WATER PIPING.
6. SKYLIGHT. DO NOT ROUTE PIPING IN THIS AREA.

GENERAL NOTES (ENTIRE SHEET):

1. ROUTE ALL PIPING IN ATTIC SPACE.
2. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL GENERAL CONSTRUCTION DEMO & PATCHING.
3. HOT WATER PIPING DEAD LEG LENGTH SHALL NOT EXCEED 8'-0".
4. DEMO ALL EXISTING HWC PIPING IN ATTIC. PIPING TO BE REPLACED.
5. REFER TO DRAWING P2.0 FOR THE FOLLOWING DETAILS:
   - WATER METER AND MIXING VALVE

DATE	REVISION	BY	DATE
		DESIGNED:	ENG 4.29.13
		DRAWN:	CAD 4.29.13
		CHECKED:	ENG 4.29.13
		LAST UPDATE:	4.29.13

bluestone engineering
317 Graham Ave.
Eau Claire, WI 54701
715-271-0789
FAX 715-271-0777

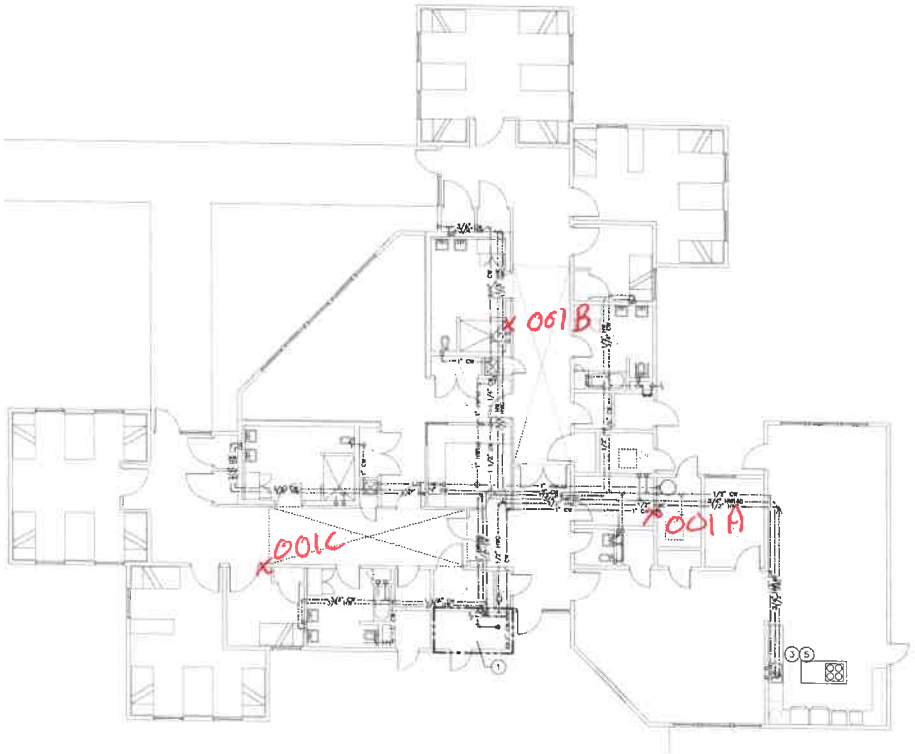
PROJECT NO.
112-089

DEPARTMENT OF ADMINISTRATIVE SERVICES
HOOVER STATE OFFICE BUILDING
1305 EAST WALNUT ST., DES MOINES, IOWA 50319

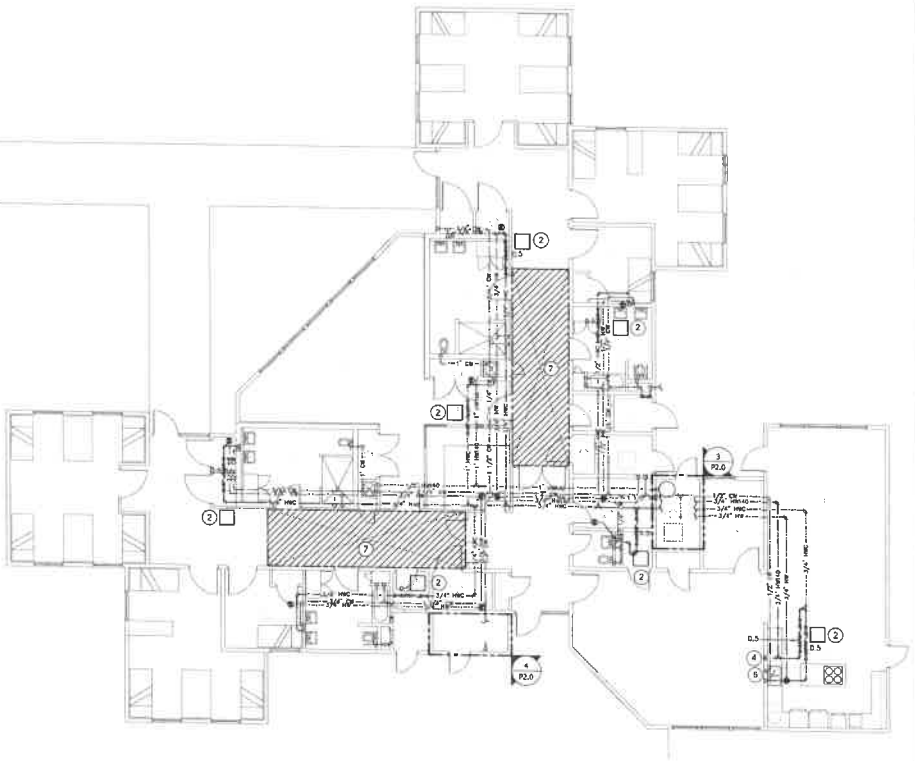
D.A.S. WOODWARD MECHANICAL UPGRADES
1251 334TH STREET
WOODWARD, IOWA 50276

UNIT STYLE B PLUMBING PLANS

SHEET
P1B



1 COTTAGE STYLE "C" PLUMBING DEMO PLAN



1 COTTAGE STYLE "C" PLUMBING PLAN

Bid. 107 F

KEYED NOTES (ENTIRE SHEET):

1. DEMO EXISTING HOT WATER PIPING, HOT WATER RECIRCULATION PIPING, MIXING VALVE, RECIRCULATION PUMP, AND ACCESSORIES IN THIS AREA. CONTRACTOR TO DEMO DOMESTIC WATER PIPING BACK TO WATER SERVICE ENTRANCE FOR MODIFICATION. FIRE PROTECTION SERVICE TO REMAIN.
2. INSTALL NEW 24"x24" 1-HOUR FIRE RATED ACCESS PANEL IN CEILING. COORDINATE LOCATION WITH ROOF TRUSS LOCATIONS AND VALVE LOCATIONS. ACCESS PANEL TO BE EQUAL TO A. INDUSTRIES FD SERIES. INSTALL PER MANUFACTURERS REQUIREMENTS.
3. DEMO EXISTING HWT40 PIPING TO EXISTING DISHWASHER.
4. CONNECT NEW DEDICATED HWT40 PIPING TO EXISTING DISHWASHER.
5. DEMO EXISTING MIXING VALVE ASSEMBLY BENEATH SINK.
6. RECONNECT SINK TO EXISTING HOT WATER PIPING.
7. SKYLIGHT. DO NOT ROUTE PIPING IN THIS AREA.

GENERAL NOTES (ENTIRE SHEET):

1. ROUTE ALL PIPING IN ATTIC SPACE.
2. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL GENERAL CONSTRUCTION DEMO & PATCHING.
3. HOT WATER PIPING DEAD LEG LENGTH SHALL NOT EXCEED 8'-0".
4. DEMO ALL EXISTING HWC PIPING IN ATTIC. PIPING TO BE REPLACED.
5. REFER TO DRAWING P2.0 FOR THE FOLLOWING DETAILS:
   - WATER METER AND MIXING VALVE

CONTRACTOR TO CREATE BALANCING REPORT FOR ALL PLUMBING FIXTURES. REPORT SHALL LIST THE FOLLOWING INFORMATION:

- DATE & TIME OF TEST
- PLUMBING FIXTURE TESTED
- HOT WATER TEMPERATURE

HOT WATER TEMPERATURE SHALL REMAIN BETWEEN 100 DEGREES AND 109.8 DEGREES AT ALL TIMES. IF SYSTEM DIPS BELOW THIS RANGE, CONTRACTOR SHALL RE-BALANCE ENTIRE PLUMBING SYSTEM WITHIN THE BUILDING.

REVISION	DATE	BY	DATE
		DESIGNED	ENC	4.29.13
		DRAWN	CAD	4.29.13
		CHECKED	ENG	4.29.13
		LAST UPDATE:		4.29.13

bluestone engineering
3719 Northern Drive
Altoona, IA 50009
515.727.0200
FAX 515.727.0777

PROJECT NO.
112-089

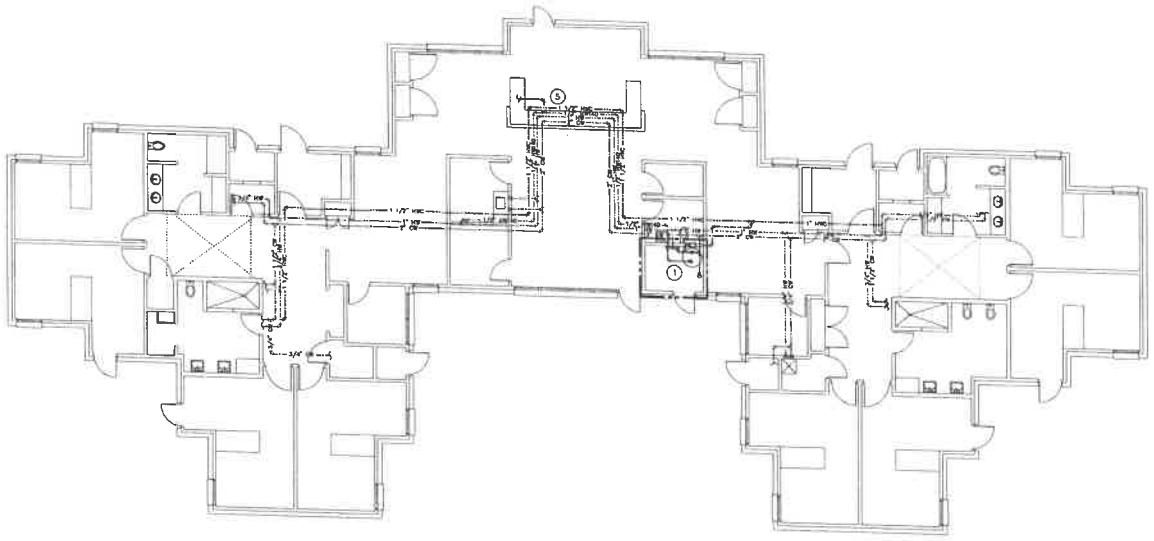
DEPARTMENT OF ADMINISTRATIVE SERVICES
HOOVER STATE OFFICE BUILDING
1305 EAST WALNUT ST., DES MOINES, IOWA 50319

D.A.S. WOODWARD MECHANICAL UPGRADES
1251 334TH STREET
WOODWARD, IOWA 50276

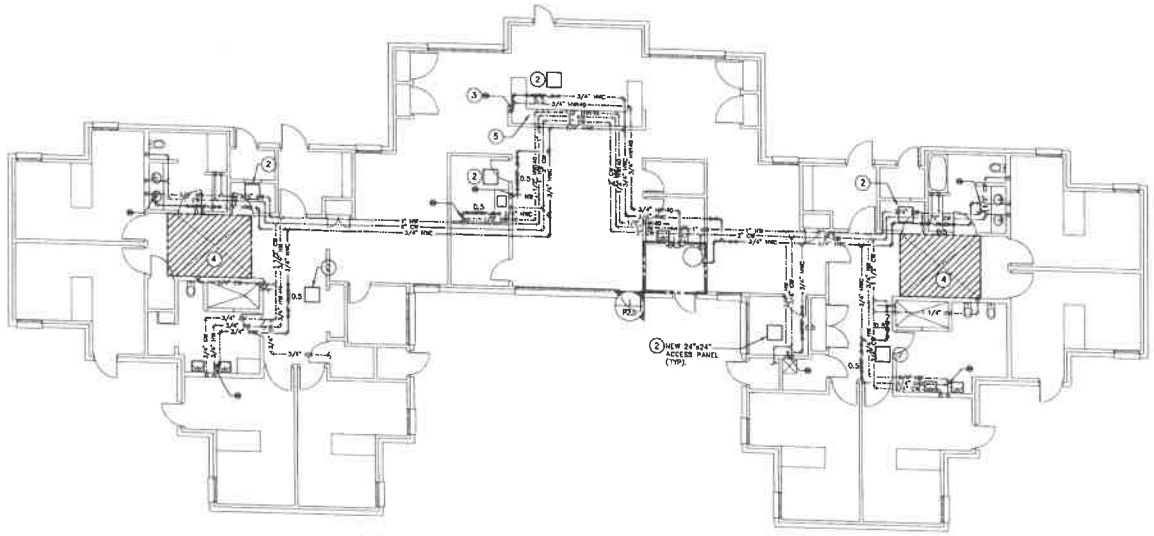
UNIT STYLE C PLUMBING PLANS

SHEET
P1C

Bld 108 F



1 COTTAGE STYLE "A" PLUMBING DEMO PLAN



2 COTTAGE STYLE "A" PLUMBING PLAN

KEYED NOTES (ENTIRE SHEET):

1. DEMO EXISTING HOT WATER PIPING, HOT WATER RECIRCULATION PIPING, MIXING VALVE, RECIRCULATION PUMP, AND ACCESSORIES IN THIS AREA. CONTRACTOR TO DEMO DOMESTIC WATER PIPING BACK TO WATER SERVICE ENTRANCE FOR MODIFICATION. FIRE PROTECTION SERVICE TO REMAIN.
2. INSTALL NEW 24"x24" 1-HOUR FIRE RATED ACCESS PANEL IN CEILING. COORDINATE LOCATION WITH ROOF TRUSS LOCATIONS AND VALVE LOCATIONS. ACCESS PANEL TO BE EQUAL TO J. INDUSTRIES TD SERIES. INSTALL PER MANUFACTURERS REQUIREMENTS.
3. CONNECT DEDICATED HWH40 LINE TO DISHWASHER.
4. SKYLIGHT. DO NOT ROUTE PIPING IN THIS AREA.
5. DEMO EXISTING MIXING VALVE ASSEMBLY BENEATH SINK. RECONNECT SINK TO DOMESTIC HOT WATER LINE

GENERAL NOTES (ENTIRE SHEET):

1. ROUTE ALL PIPING IN ATTIC SPACE.
2. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL GENERAL CONSTRUCTION DEMO & PATCHING.
3. HOT WATER PIPING DEAD LEG LENGTH SHALL NOT EXCEED 9'-0".
4. DEMO ALL EXISTING HWC PIPING IN ATTIC. PIPING TO BE REPLACED.
5. REFER TO DRAWING P2.0 FOR THE FOLLOWING DETAILS:
   - WATER METER AND MIXING VALVE

CONTRACTOR TO CREATE BALANCING REPORT FOR ALL PLUMBING FIXTURES. REPORT SHALL LIST THE FOLLOWING INFORMATION:

- DATE & TIME OF TEST
- PLUMBING FIXTURE TESTED
- HOT WATER TEMPERATURE

HOT WATER TEMPERATURE SHALL REMAIN BETWEEN 100 DEGREES AND 108.9 DEGREES AT ALL TIMES. IF SYSTEM DIPS BELOW THIS RANGE, CONTRACTOR SHALL RE-BALANCE ENTIRE PLUMBING SYSTEM WITHIN THE BUILDING.

NO.	REVISION	DATE

		BY	DATE
DESIGNED:		DMC	4.29.13
DRAWN:		CAD	4.29.13
CHECKED:		DMC	4.29.13
LAST UPDATE:			4.29.13

bluestone
515 6th Ave, Suite 201
Des Moines, IA 50309
515.725.0700
FAX 515.727.0777

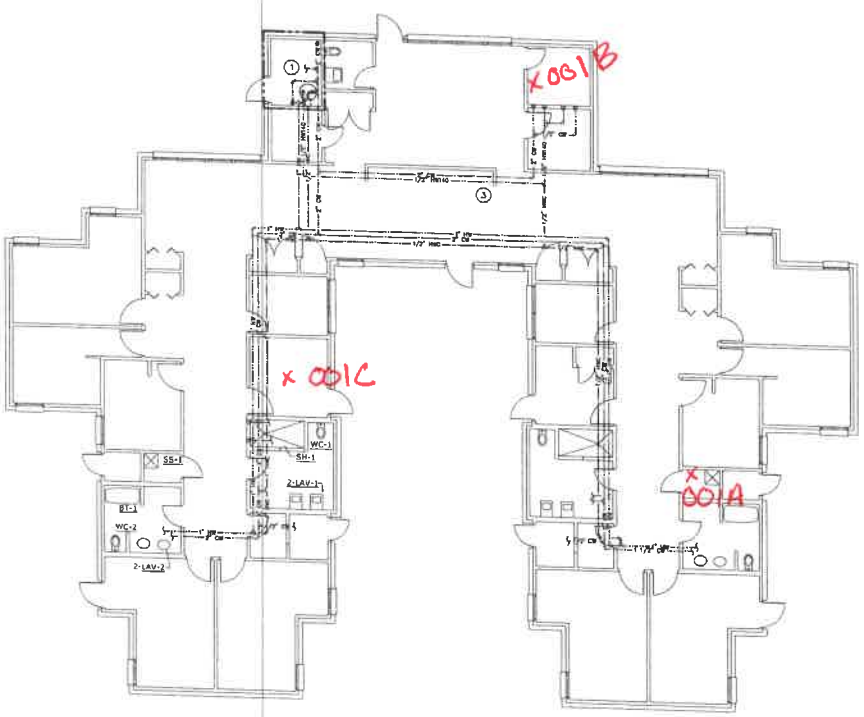
PROJECT NO.
412-089

DEPARTMENT OF ADMINISTRATIVE SERVICES
HOOVER STATE OFFICE BUILDING
1305 EAST WALNUT ST., DES MOINES, IOWA 50319

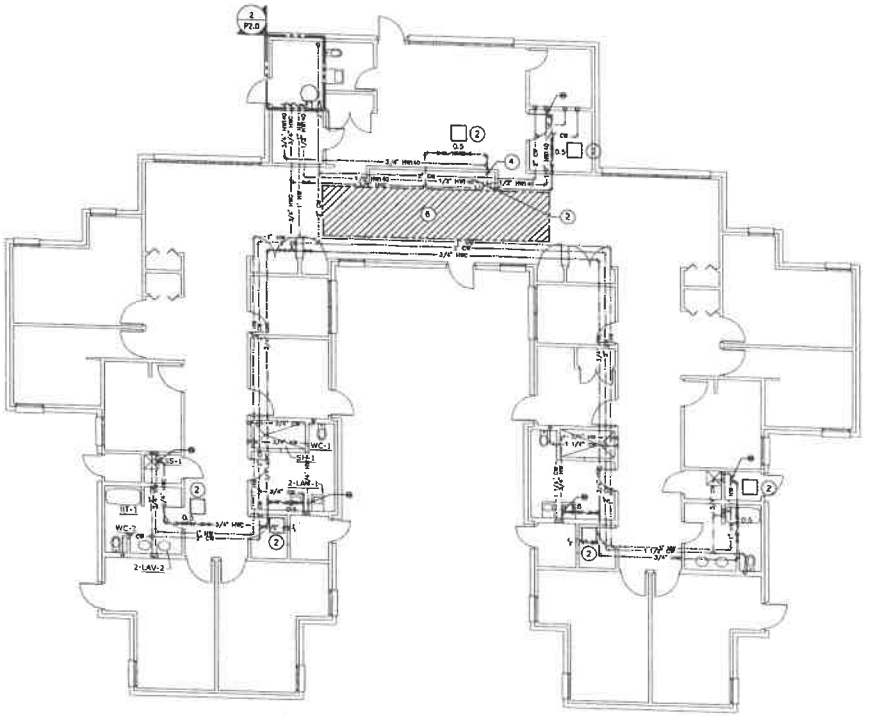
D.A.S. WOODWARD MECHANICAL UPGRADES
1231 334TH STREET
WOODWARD, IOWA 50276

UNIT STYLE A PLUMBING PLANS

SHEET
P1A



1 COTTAGE STYLE "B" PLUMBING DEMO PLAN



1 COTTAGE STYLE "B" PLUMBING PLAN

Bld. 109F

KEYED NOTES (ENTIRE SHEET):

1. DEMO EXISTING HOT WATER PIPING, HOT WATER RECIRCULATION PIPING, MIXING VALVE, RECIRCULATION PUMP, AND ACCESSORIES IN THIS AREA. CONTRACTOR TO DEMO DOMESTIC WATER PIPING BACK TO WATER SERVICE ENTRANCE FOR MODIFICATION. FIRE PROTECTION SERVICE TO REMAIN.
2. INSTALL NEW 24"x24" 1-HOUR FIRE RATED ACCESS PANEL IN CEILING. COORDINATE LOCATION WITH ROOF TRUSS LOCATIONS AND VALVE LOCATIONS. ACCESS PANEL TO BE EQUAL TO J.L. INDUSTRIES TD SERIES. INSTALL PER MANUFACTURERS REQUIREMENTS.
3. DEMO EXISTING HW140 PIPING TO EXISTING DISHWASHER.
4. CONNECT NEW DEDICATED HW140 PIPING TO EXISTING DISHWASHER.
5. RECONNECT SINK TO EXISTING HOT WATER PIPING.
6. SKYLIGHT. DO NOT ROUTE PIPING IN THIS AREA.

GENERAL NOTES (ENTIRE SHEET):

1. ROUTE ALL PIPING IN ATTIC SPACE.
2. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL GENERAL CONSTRUCTION DEMO & PATCHING.
3. HOT WATER PIPING DEAD LEG LENGTH SHALL NOT EXCEED 8'-0".
4. DEMO ALL EXISTING HWC PIPING IN ATTIC. PIPING TO BE REPLACED.
5. REFER TO DRAWING P2.0 FOR THE FOLLOWING DETAILS:
   - WATER METER AND MIXING VALVE

CONTRACTOR TO CREATE BALANCING REPORT FOR ALL PLUMBING FIXTURES. REPORT SHALL LIST THE FOLLOWING INFORMATION:

- DATE & TIME OF TEST
- PLUMBING FIXTURE TESTED
- HOT WATER TEMPERATURE

HOT WATER TEMPERATURE SHALL REMAIN BETWEEN 100 DEGREES AND 108.9 DEGREES AT ALL TAPS. IF SYSTEM DIPS BELOW THIS RANGE, CONTRACTOR SHALL RE-BALANCE ENTIRE PLUMBING SYSTEM WITHIN THE BUILDING.

BY	DATE
DESIGNED: ENG	4.29.13
DRAWN: CAD	4.29.13
CHECKED: ENG	4.29.13
LAST UPDATE:	4.29.13

DATE	REVISION

bluestone

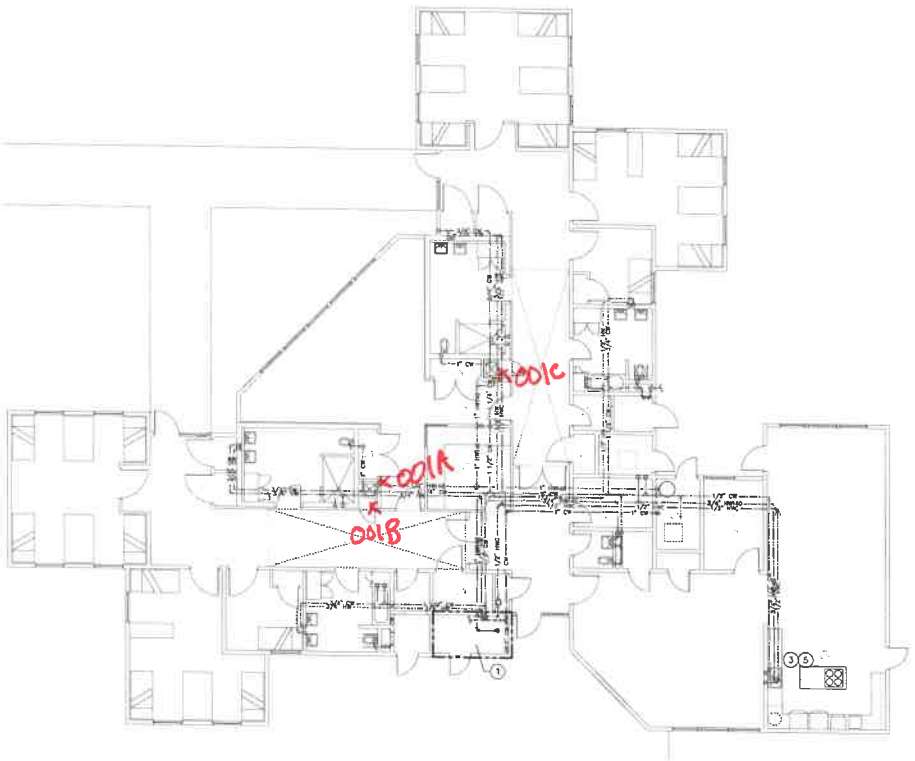
PROJECT NO. 112-089

DEPARTMENT OF ADMINISTRATIVE SERVICES
HOOVER STATE OFFICE BUILDING
1305 EAST WALNUT ST., DES MOINES, IOWA 50319

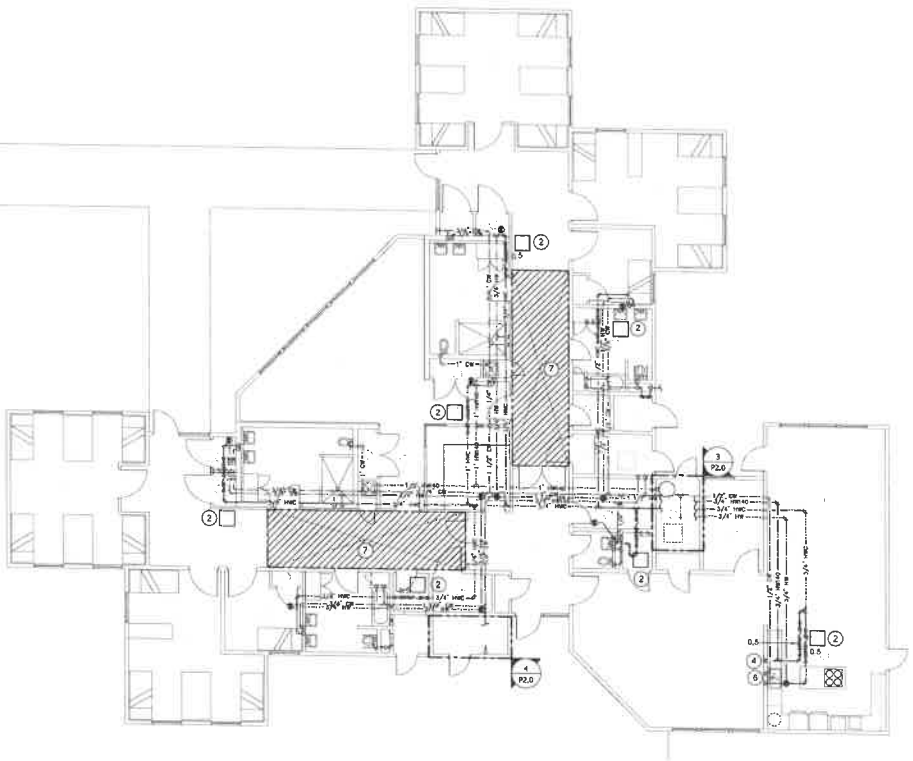
D.A.S. WOODWARD MECHANICAL UPGRADES
1251 334TH STREET
WOODWARD, IOWA 50276

UNIT STYLE B PLUMBING PLANS

SHEET P1B



1 COTTAGE STYLE "C" PLUMBING DEMO PLAN



1 COTTAGE STYLE "C" PLUMBING PLAN

Bld. 200

Franklin

KEYED NOTES (ENTIRE SHEET):

1. DEMO EXISTING HOT WATER PIPING, HOT WATER RECIRCULATION PIPING, MIXING VALVE, RECIRCULATION PUMP, AND ACCESSORIES IN THIS AREA. CONTRACTOR TO DEMO DOMESTIC WATER PIPING BACK TO WATER SERVICE ENTRANCE FOR MODIFICATION. FIRE PROTECTION SERVICE TO REMAIN.
2. INSTALL NEW 24"x24" 1-HOUR FIRE RATED ACCESS PANEL IN CEILING. COORDINATE LOCATION WITH ROOF TRUSS LOCATIONS AND VALVE LOCATIONS. ACCESS PANEL TO BE EQUAL TO J. INDUSTRIES FD SERIES. INSTALL PER MANUFACTURERS REQUIREMENTS.
3. DEMO EXISTING HW140 PIPING TO EXISTING DISHWASHER.
4. CONNECT NEW DEDICATED HW140 PIPING TO EXISTING DISHWASHER.
5. DEMO EXISTING MIXING VALVE ASSEMBLY BENEATH SINK.
6. RECONNECT SINK TO EXISTING HOT WATER PIPING.
7. SKYLIGHT. DO NOT ROUTE PIPING IN THIS AREA.

GENERAL NOTES (ENTIRE SHEET):

1. ROUTE ALL PIPING IN ATTIC SPACE.
2. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL GENERAL CONSTRUCTION DEMO & PATCHING.
3. HOT WATER PIPING DEAD LEG LENGTH SHALL NOT EXCEED 8'-0".
4. DEMO ALL EXISTING HWC PIPING IN ATTIC. PIPING TO BE REPLACED.
5. REFER TO DRAWING P2.0 FOR THE FOLLOWING DETAILS:
   - WATER METER AND MIXING VALVE

CONTRACTOR TO CREATE BALANCING REPORT FOR ALL PLUMBING FIXTURES. REPORT SHALL LIST THE FOLLOWING INFORMATION:

- DATE & TIME OF TEST
- PLUMBING FIXTURE TESTED
- HOT WATER TEMPERATURE

HOT WATER TEMPERATURE SHALL REMAIN BETWEEN 100 DEGREES AND 105 0 DEGREES AT ALL TIMES. IF SYSTEM DIPS BELOW THIS RANGE, CONTRACTOR SHALL RE-BALANCE ENTIRE PLUMBING SYSTEM WITHIN THE BUILDING.

DATE	REVISION	BY	DATE
	DESIGNED	DMC	4.29.13
	DRAWN	CAD	4.29.13
	CHECKED	DMC	4.29.13
	LAST UPDATE		4.29.13

bluestone engineering
9110 Hickman Road
Suite 100
Des Moines, IA 50131
515.276.4000
FAX 515.727.0177

PROJECT NO.
112-089

DEPARTMENT OF ADMINISTRATIVE SERVICES
HOOVER STATE OFFICE BUILDING
1305 EAST WALNUT ST., DES MOINES, IOWA 50319

D.A.S. WOODWARD MECHANICAL UPGRADES
1251 534TH STREET
WOODWARD, IOWA 50276

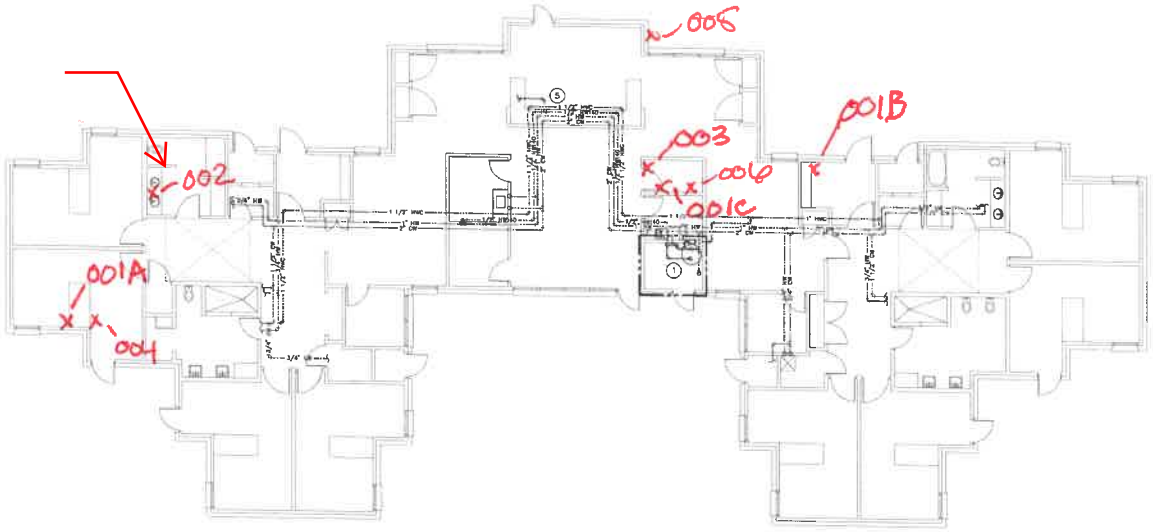
UNIT STYLE C PLUMBING PLANS

SHEET
P1C

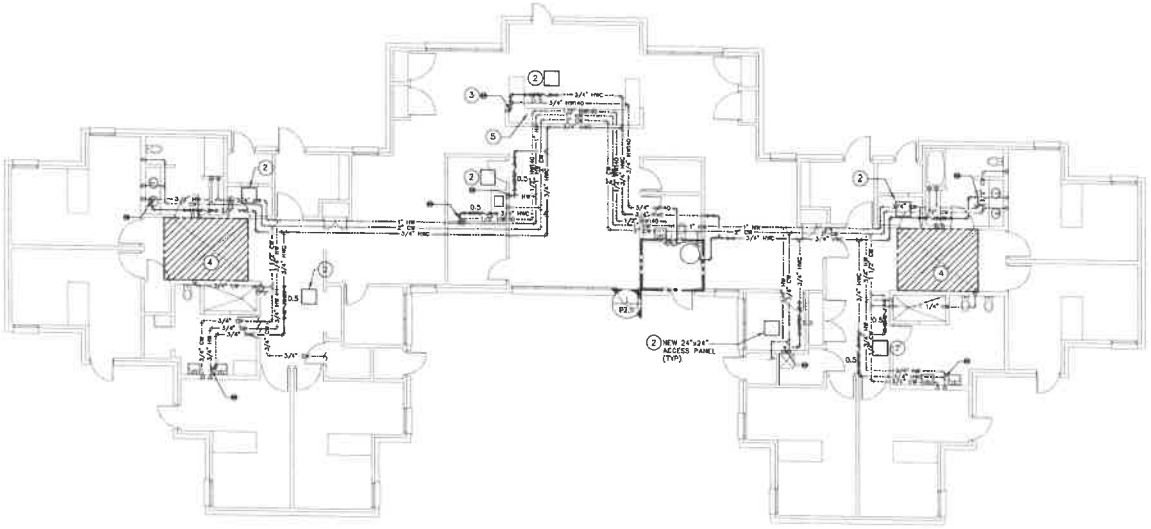
2% Chrysotile Sample Location

Bld. 201

Franklin



1 COTTAGE STYLE "A" PLUMBING DEMO PLAN



2 COTTAGE STYLE "A" PLUMBING PLAN

KEYED NOTES (ENTIRE SHEET):

1. DEMO EXISTING HOT WATER PIPING, HOT WATER RECIRCULATION PIPING, MIXING VALVE, RECIRCULATION PUMP, AND ACCESSORIES IN THIS AREA. CONTRACTOR TO DEMO DOMESTIC WATER PIPING BACK TO WATER SERVICE ENTRANCE FOR MODIFICATION. FIRE PROTECTION SERVICE TO REMAIN.
2. INSTALL NEW 24"x24" 1-HOUR FIRE RATED ACCESS PANEL IN CEILING. COORDINATE LOCATION WITH ROOF TRUSS LOCATIONS AND VALVE LOCATIONS. ACCESS PANEL TO BE EQUAL TO J. INDUSTRIES TD SERIES. INSTALL PER MANUFACTURERS REQUIREMENTS.
3. CONNECT DEDICATED HWHAD LINE TO DISHWASHER.
4. SKYLIGHT. DO NOT ROUTE PIPING IN THIS AREA.
5. DEMO EXISTING MIXING VALVE ASSEMBLY BENEATH SINK. RECONNECT SINK TO DOMESTIC HOT WATER LINE.

GENERAL NOTES (ENTIRE SHEET):

1. ROUTE ALL PIPING IN ATTIC SPACE.
2. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL GENERAL CONSTRUCTION DEMO & PATCHING.
3. HOT WATER PIPING DEAD LEG LENGTH SHALL NOT EXCEED 6'-0".
4. DEMO ALL EXISTING HWC PIPING IN ATTIC. PIPING TO BE REPLACED.
5. REFER TO DRAWING P2.0 FOR THE FOLLOWING DETAILS:
   - WATER METER AND MIXING VALVE

CONTRACTOR TO CREATE BALANCING REPORT FOR ALL PLUMBING FIXTURES. REPORT SHALL LIST THE FOLLOWING INFORMATION:

- DATE & TIME OF TEST
- PLUMBING FIXTURE TESTED
- HOT WATER TEMPERATURE

HOT WATER TEMPERATURE SHALL REMAIN BETWEEN 100 DEGREES AND 106.9 DEGREES AT ALL TAILS. IF SYSTEM OPS BELOW THIS RANGE, CONTRACTOR SHALL RE-BALANCE ENTIRE PLUMBING SYSTEM WITHIN THE BUILDING.

DATE	REVISION	BY	DATE
	DESIGNED	PAC	4.29.13
	DRAWN	CAD	4.29.13
	CHECKED	JJAC	4.29.13
	LAST UPDATE:		4.29.13

bluestone engineering
317 Fairbank Street
Waterloo, Iowa 50701
515.277.4700
FAX 319.232.6911

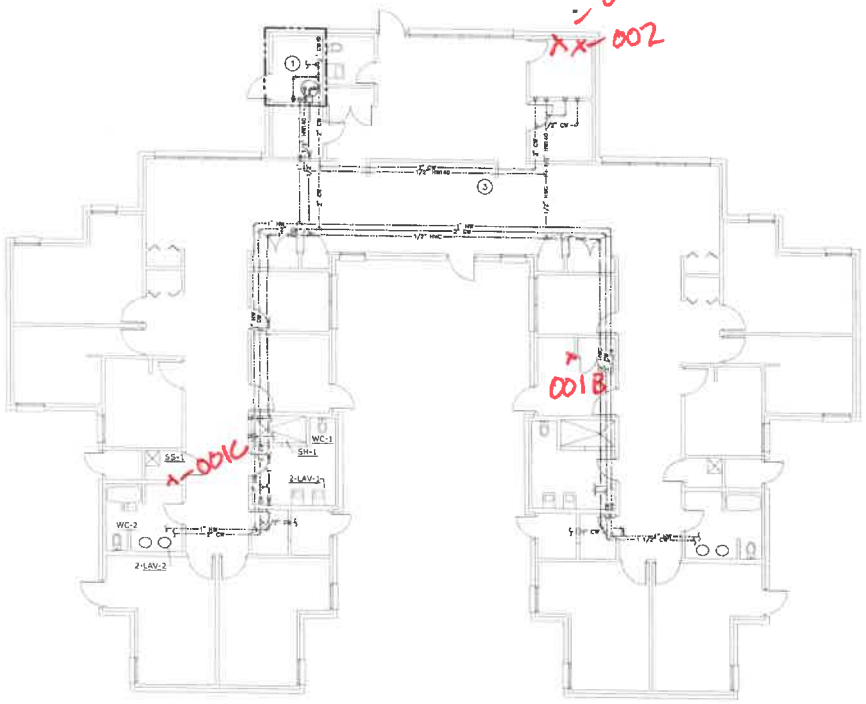
PROJECT NO.
112-089

DEPARTMENT OF ADMINISTRATIVE SERVICES
HOOVER STATE OFFICE BUILDING
1305 EAST WALNUT ST., DES MOINES, IOWA 50319

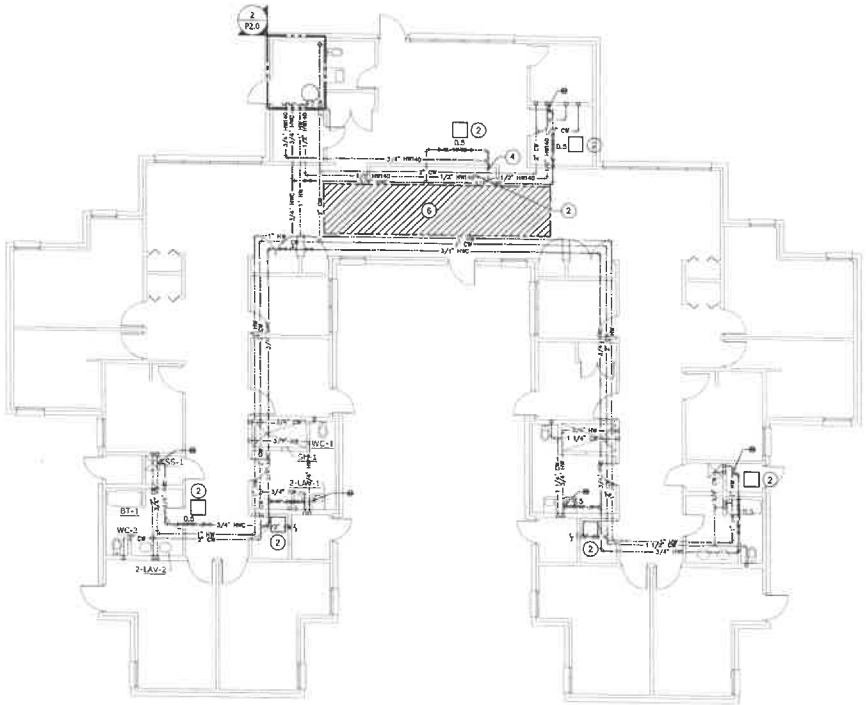
D.A.S. WOODWARD MECHANICAL UPGRADES
1251 334TH STREET
WOODWARD, IOWA 50276

UNIT STYLE A PLUMBING PLANS

SHEET
P1A



1 COTTAGE STYLE "B" PLUMBING DEMO PLAN
1/8"=1'-0"



1 COTTAGE STYLE "B" PLUMBING PLAN
1/8"=1'-0"

CONTRACTOR TO CREATE BALANCING REPORT FOR ALL PLUMBING FIXTURES. REPORT SHALL LIST THE FOLLOWING INFORMATION:

- DATE & TIME OF TEST
- PLUMBING FIXTURE TESTED
- HOT WATER TEMPERATURE

HOT WATER TEMPERATURE SHALL REMAIN BETWEEN 100 DEGREES AND 108.8 DEGREES AT ALL TIMES. IF SYSTEM DIPS BELOW THIS RANGE, CONTRACTOR SHALL RE-BALANCE ENTIRE PLUMBING SYSTEM WITHIN THE BUILDING.

Bld. 202

Franklin

KEYED NOTES (ENTIRE SHEET):

1. DEMO EXISTING HOT WATER PIPING, HOT WATER RECIRCULATION PIPING, MIXING VALVE, RECIRCULATION PUMP, AND ACCESSORIES IN THIS AREA. CONTRACTOR TO DEMO DOMESTIC WATER PIPING BACK TO WATER SERVICE ENTRANCE FOR MODIFICATION. FIRE PROTECTION SERVICE TO REMAIN.
2. INSTALL NEW 24"x24" 1-HOUR FIRE RATED ACCESS PANEL IN CEILING. COORDINATE LOCATION WITH ROOF TRUSS LOCATIONS AND VALVE LOCATIONS. ACCESS PANEL TO BE EQUAL TO A.L. INDUSTRIES 7D SERIES. INSTALL PER MANUFACTURERS REQUIREMENTS.
3. DEMO EXISTING HW140 PIPING TO EXISTING DISHWASHER.
4. CONNECT NEW DEDICATED HW140 PIPING TO EXISTING DISHWASHER.
5. RECONNECT SINK TO EXISTING HOT WATER PIPING.
6. SKYLIGHT. DO NOT ROUTE PIPING IN THIS AREA.

GENERAL NOTES (ENTIRE SHEET):

1. ROUTE ALL PIPING IN ATTIC SPACE.
2. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL GENERAL CONSTRUCTION DEMO & PATCHING.
3. HOT WATER PIPING DEAD LEG LENGTH SHALL NOT EXCEED 6'-0".
4. DEMO ALL EXISTING HWC PIPING IN ATTIC. PIPING TO BE REPLACED.
5. REFER TO DRAWING P2.0 FOR THE FOLLOWING DETAILS:
   - WATER METER AND MIXING VALVE

BY	DATE
DESIGNED	4.29.13
DRAWN	4.29.13
CHECKED	4.29.13
LAST UPDATE	4.29.13

bluestone engineering

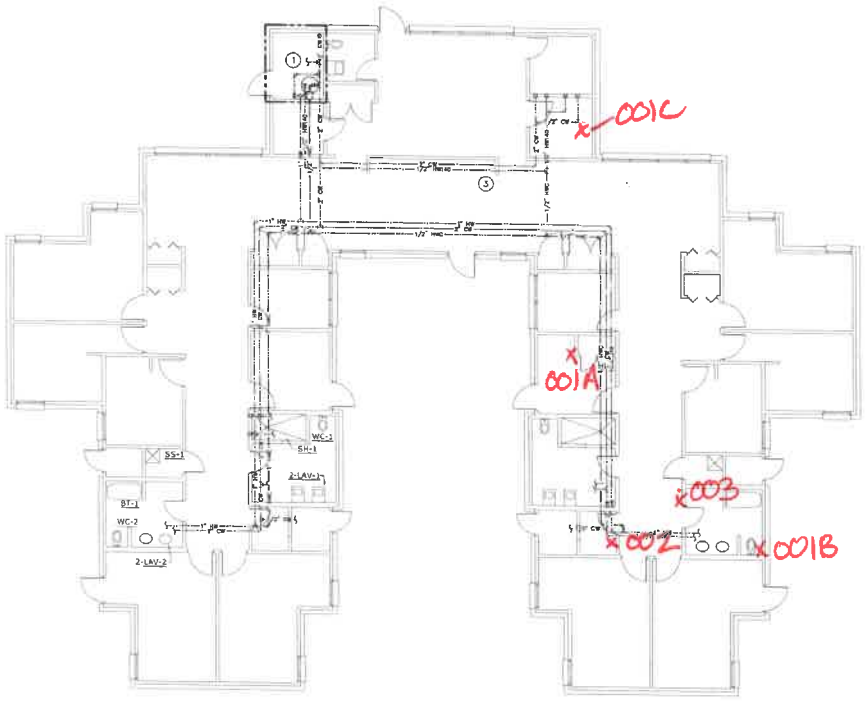
PROJECT NO. 112-089

DEPARTMENT OF ADMINISTRATIVE SERVICES
HOOVER STATE OFFICE BUILDING
1305 EAST WALNUT ST., DES MOINES, IOWA 50319

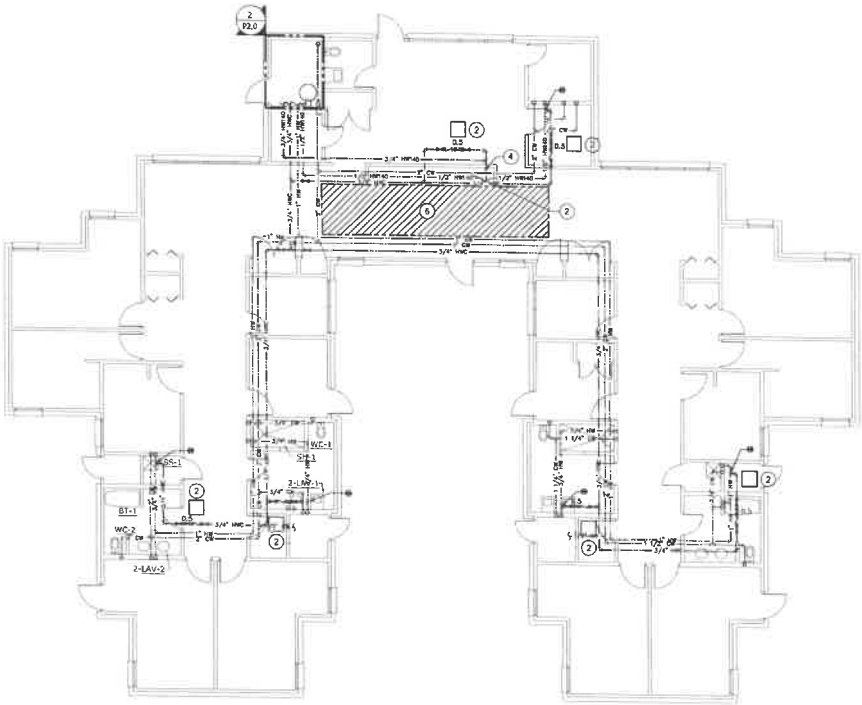
D.A.S. WOODWARD MECHANICAL UPGRADES
1251 334TH STREET
WOODWARD, IOWA 50276

UNIT STYLE B PLUMBING PLANS

SHEET P1B



1 COTTAGE STYLE "B" PLUMBING DEMO PLAN
1/8"=1'-0"



1 COTTAGE STYLE "B" PLUMBING PLAN
1/8"=1'-0"

BLD. 203

Franklin

CONTRACTOR TO CREATE BALANCING REPORT FOR ALL PLUMBING FIXTURES. REPORT SHALL LIST THE FOLLOWING INFORMATION:

- DATE & TIME OF TEST
- PLUMBING FIXTURE TESTED
- HOT WATER TEMPERATURE

HOT WATER TEMPERATURE SHALL REMAIN BETWEEN 100 DEGREES AND 109.8 DEGREES AT ALL TIMES. IF SYSTEM DIPS BELOW THIS RANGE, CONTRACTOR SHALL RE-BALANCE ENTIRE PLUMBING SYSTEM WITHIN THE BUILDING.

KEYED NOTES (ENTIRE SHEET):

1. DEMO EXISTING HOT WATER PIPING, HOT WATER RECIRCULATION PIPING, MIXING VALVE, RECIRCULATION PUMP, AND ACCESSORIES IN THIS AREA. CONTRACTOR TO DEMO DOMESTIC WATER PIPING BACK TO WATER SERVICE ENTRANCE FOR MODIFICATION. FIRE PROTECTION SERVICE TO REMAIN.
2. INSTALL NEW 24"x24" 1-HOUR FIRE RATED ACCESS PANEL IN CEILING. COORDINATE LOCATION WITH ROOF TRUSS LOCATIONS AND VALVE LOCATIONS. ACCESS PANEL TO BE EQUAL TO JL INDUSTRIES TO SERIES. INSTALL PER MANUFACTURERS REQUIREMENTS.
3. DEMO EXISTING HW140 PIPING TO EXISTING DISHWASHER.
4. CONNECT NEW DEDICATED HW140 PIPING TO EXISTING DISHWASHER.
5. RECONNECT SINK TO EXISTING HOT WATER PIPING.
6. SKYLIGHT. DO NOT ROUTE PIPING IN THIS AREA.

GENERAL NOTES (ENTIRE SHEET):

1. ROUTE ALL PIPING IN ATTIC SPACE.
2. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL GENERAL CONSTRUCTION DEMO & PATCHING.
3. HOT WATER PIPING DEAD LEG LENGTH SHALL NOT EXCEED 6'-0".
4. DEMO ALL EXISTING HWC PIPING IN ATTIC. PIPING TO BE REPLACED.
5. REFER TO DRAWING P2.0 FOR THE FOLLOWING DETAILS:
   - WATER METER AND MIXING VALVE

BY	DATE
DESIGNED:	4.29.13
DRAWN:	4.29.13
CHECKED:	4.29.13
LAST UPDATE:	4.29.13

REVISION

DATE

5910 Northpark Drive, Suite 201
Johnston, IA 50131
515.727.0700
FAX 515.727.0777
bluestone
civil | mechanical | plumbing

PROJECT NO.
112-089

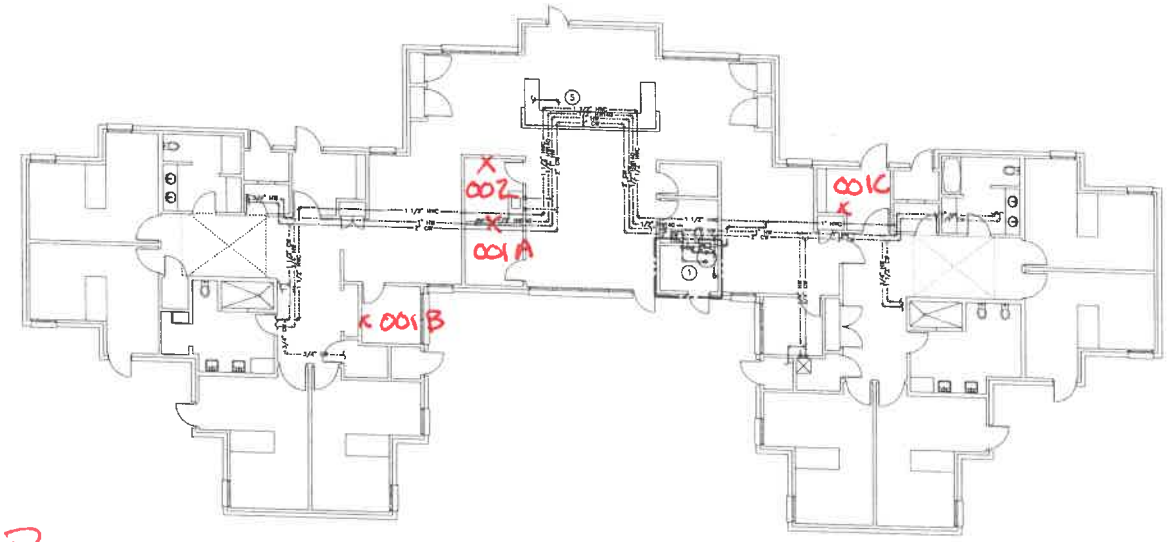
DEPARTMENT OF ADMINISTRATIVE SERVICES
HOOVER STATE OFFICE BUILDING
1305 EAST WALNUT ST., DES MOINES, IOWA 50319

D.A.S. WOODWARD MECHANICAL UPGRADES
1251 334TH STREET
WOODWARD, IOWA 50276

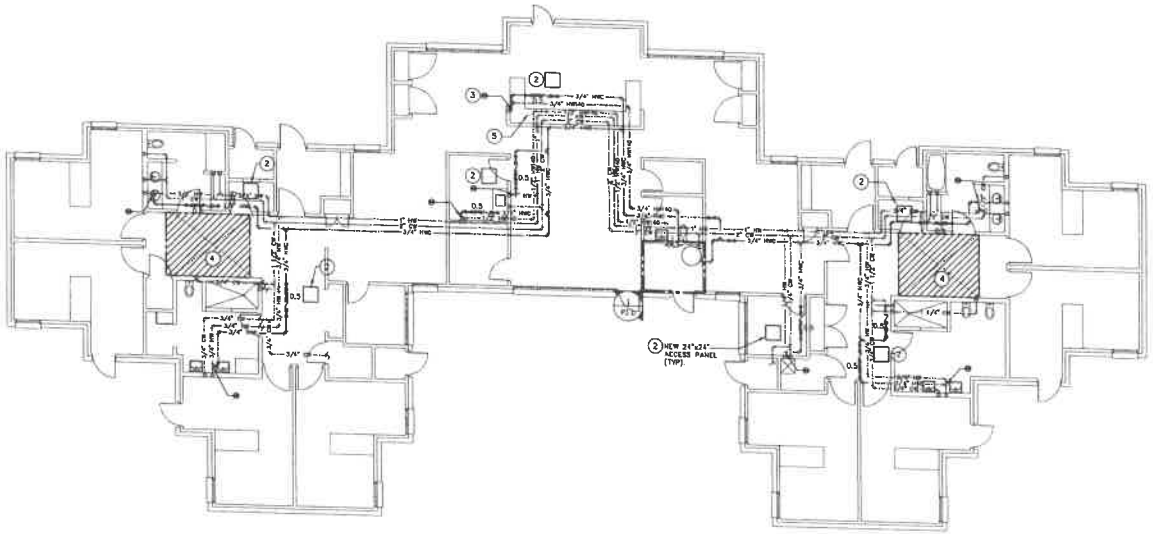
UNIT STYLE B PLUMBING PLANS

SHEET
P1B

Bld. 202 P



1 COTTAGE STYLE "A" PLUMBING DEMO PLAN



2 COTTAGE STYLE "A" PLUMBING PLAN

KEYED NOTES (ENTIRE SHEET):

1. DEMO EXISTING HOT WATER PIPING, HOT WATER RECIRCULATION PIPING, MIXING VALVE, RECIRCULATION PUMP, AND ACCESSORIES IN THIS AREA. CONTRACTOR TO DEMO DOMESTIC WATER PIPING BACK TO WATER SERVICE ENTRANCE FOR MODIFICATION. FIRE PROTECTION SERVICE TO REMAIN.
2. INSTALL NEW 24"x24" 1-HOUR FIRE RATED ACCESS PANEL IN CEILING. COORDINATE LOCATION WITH ROOF TRUSS LOCATIONS AND VALVE LOCATIONS. ACCESS PANEL TO BE EQUAL TO A. INDUSTRIES TO SERIES. INSTALL PER MANUFACTURERS REQUIREMENTS.
3. CONNECT DEDICATED HWH40 LINE TO DISHWASHER.
4. SKYLIGHT. DO NOT ROUTE PIPING IN THIS AREA.
5. DEMO EXISTING MIXING VALVE ASSEMBLY BENEATH SINK. RECONNECT SINK TO DOMESTIC HOT WATER LINE.

GENERAL NOTES (ENTIRE SHEET):

1. ROUTE ALL PIPING IN ATTIC SPACE.
2. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL GENERAL CONSTRUCTION DEMO & PATCHING.
3. HOT WATER PIPING DEAD LEG LENGTH SHALL NOT EXCEED 8'-0".
4. DEMO ALL EXISTING HWE PIPING IN ATTIC. PIPING TO BE REPLACED.
5. REFER TO DRAWING P2.0 FOR THE FOLLOWING DETAILS:
   - WATER METER AND MIXING VALVE

CONTRACTOR TO CREATE BALANCING REPORT FOR ALL PLUMBING FIXTURES. REPORT SHALL LIST THE FOLLOWING INFORMATION:

- DATE & TIME OF TEST
- PLUMBING FIXTURE TESTED
- HOT WATER TEMPERATURE

HOT WATER TEMPERATURE SHALL REMAIN BETWEEN 100 DEGREES AND 108.8 DEGREES AT ALL TIMES. IF SYSTEM DIPS BELOW THIS RANGE, CONTRACTOR SHALL RE-BALANCE ENTIRE PLUMBING SYSTEM WITHIN THE BUILDING.

REVISION	DATE

	BY	DATE
DESIGNED:	ENG	4.29.13
DRAWN:	CAD	4.29.13
CHECKED:	ENG	4.29.13
LAST UPDATE:		4.29.13

bluestone engineering
311 WASHINGTON ST. SUITE 201
WAUKEE, IOWA 50263
515.987.0789
515.987.0777

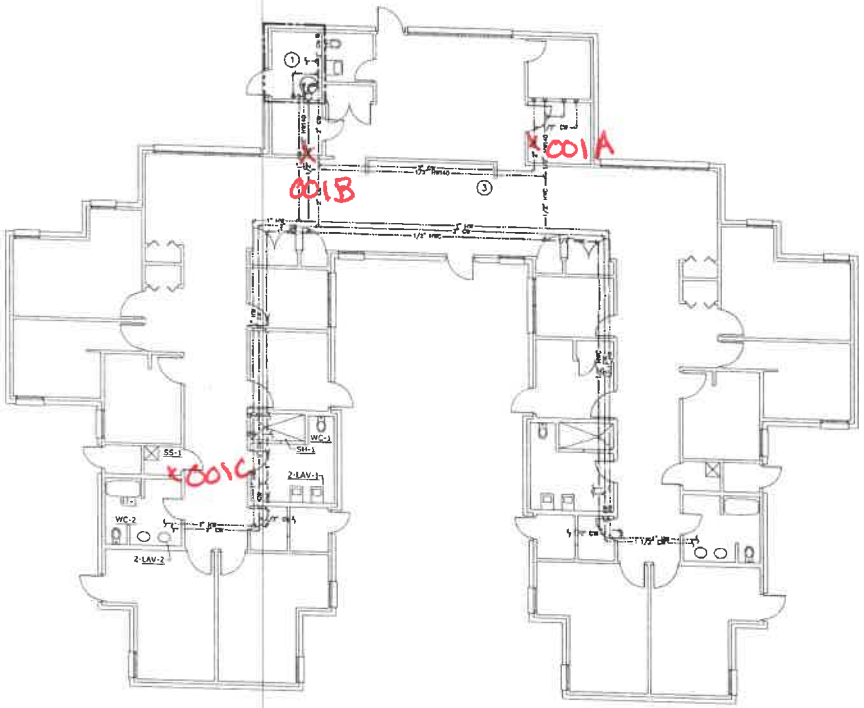
PROJECT NO.
112-089

DEPARTMENT OF ADMINISTRATIVE SERVICES
HOOVER STATE OFFICE BUILDING
1305 EAST WALNUT ST., DES MOINES, IOWA 50319

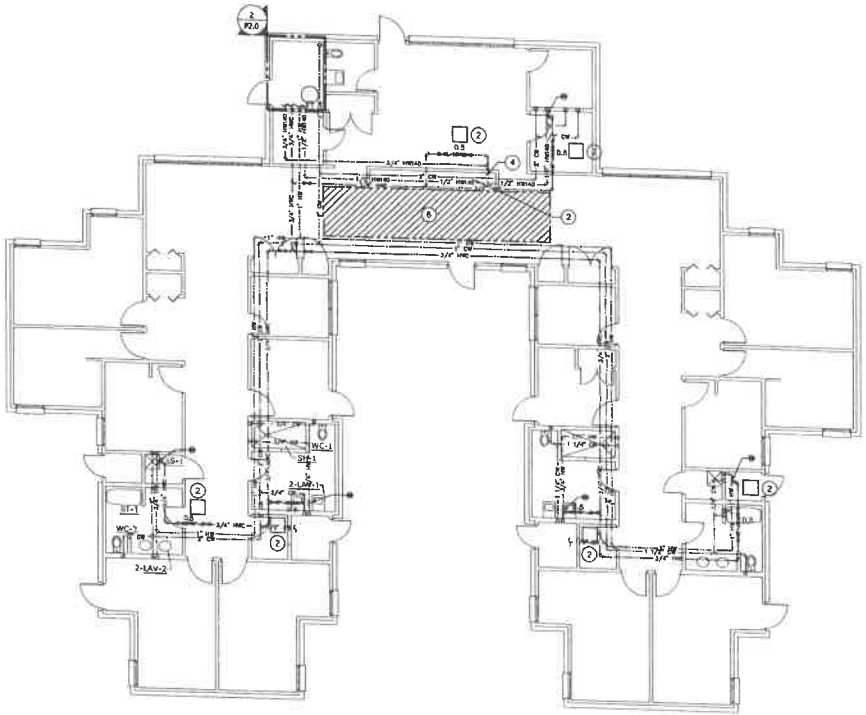
D.A.S. WOODWARD MECHANICAL UPGRADES
1251 334TH STREET
WOODWARD, IOWA 50276

UNIT STYLE A PLUMBING PLANS

SHEET
P1A



1 COTTAGE STYLE "B" PLUMBING DEMO PLAN



1 COTTAGE STYLE "B" PLUMBING PLAN

CONTRACTOR TO CREATE BALANCING REPORT FOR ALL PLUMBING FIXTURES. REPORT SHALL LIST THE FOLLOWING INFORMATION:

- DATE & TIME OF TEST
- PLUMBING FIXTURE TESTED
- HOT WATER TEMPERATURE

HOT WATER TEMPERATURE SHALL REMAIN BETWEEN 100 DEGREES AND 109.9 DEGREES AT ALL TIMES. IF SYSTEM DIPS BELOW THIS RANGE, CONTRACTOR SHALL RE-BALANCE ENTIRE PLUMBING SYSTEM WITHIN THE BUILDING.

Bld. 2047

KEYED NOTES (ENTIRE SHEET):

1. DEMO EXISTING HOT WATER PIPING, HOT WATER RECIRCULATION PIPING, MIXING VALVE, RECIRCULATION PUMP, AND ACCESSORIES IN THIS AREA. CONTRACTOR TO DEMO DOMESTIC WATER PIPING BACK TO WATER SERVICE ENTRANCE FOR MODIFICATION. FIRE PROTECTION SERVICE TO REMAIN.
2. INSTALL NEW 24"x24" 1-HOUR FIRE RATED ACCESS PANEL IN CEILING. COORDINATE LOCATION WITH ROOF TRUSS LOCATIONS AND VALVE LOCATIONS. ACCESS PANEL TO BE EQUAL TO JL INDUSTRIES FD SERIES. INSTALL PER MANUFACTURERS REQUIREMENTS.
3. DEMO EXISTING HW140 PIPING TO EXISTING DISHWASHER.
4. CONNECT NEW DEDICATED HW140 PIPING TO EXISTING DISHWASHER.
5. RECONNECT SINK TO EXISTING HOT WATER PIPING.
6. SKYLIGHT. DO NOT ROUTE PIPING IN THIS AREA.

GENERAL NOTES (ENTIRE SHEET):

1. ROUTE ALL PIPING IN ATTIC SPACE.
2. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL GENERAL CONSTRUCTION DEMO & PATCHING.
3. HOT WATER PIPING DEAD LEG LENGTH SHALL NOT EXCEED 6'-0".
4. DEMO ALL EXISTING HWC PIPING IN ATTIC. PIPING TO BE REPLACED.
5. REFER TO DRAWING P2.0 FOR THE FOLLOWING DETAILS:
   - WATER METER AND MIXING VALVE

BY	DATE
DESIGNED:	DMC 4.29.13
DRAWN:	CJG 4.29.13
CHECKED:	DMC 4.29.13
LAST UPDATE:	4.29.13

DATE REVISION

bluestone engineering
811 Alexander Road, Suite 101
Princeton, NJ 08540
215.777.1700
FAX 215.777.0777

PROJECT NO.
112-089

DEPARTMENT OF ADMINISTRATIVE SERVICES
HOOVER STATE OFFICE BUILDING
1305 EAST WALNUT ST., DES MOINES, IOWA 50319

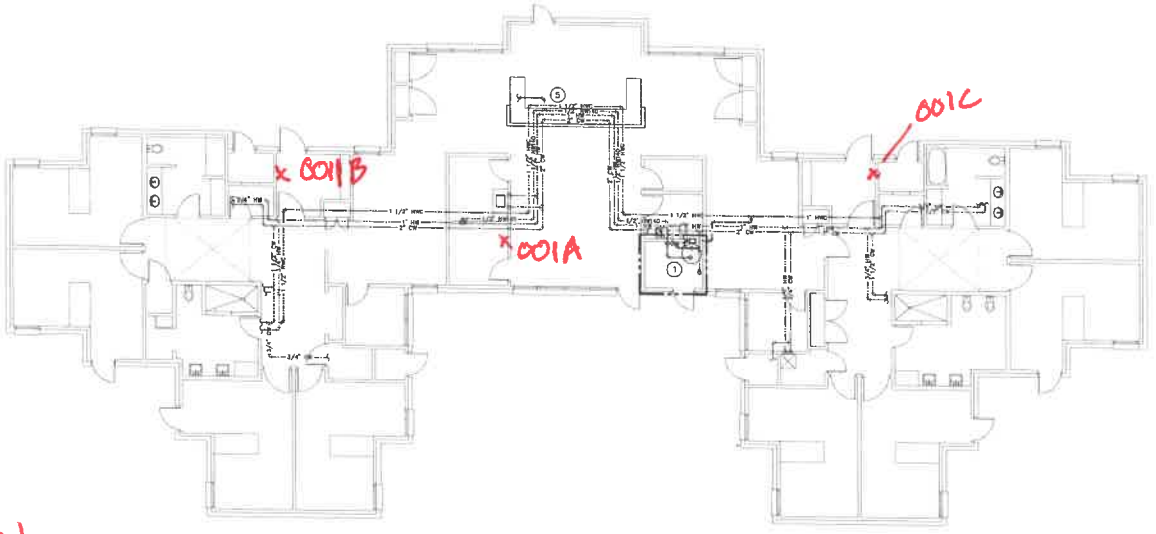
D.A.S. WOODWARD MECHANICAL UPGRADES
1251 334TH STREET
WOODWARD, IOWA 50276

UNIT STYLE B PLUMBING PLANS

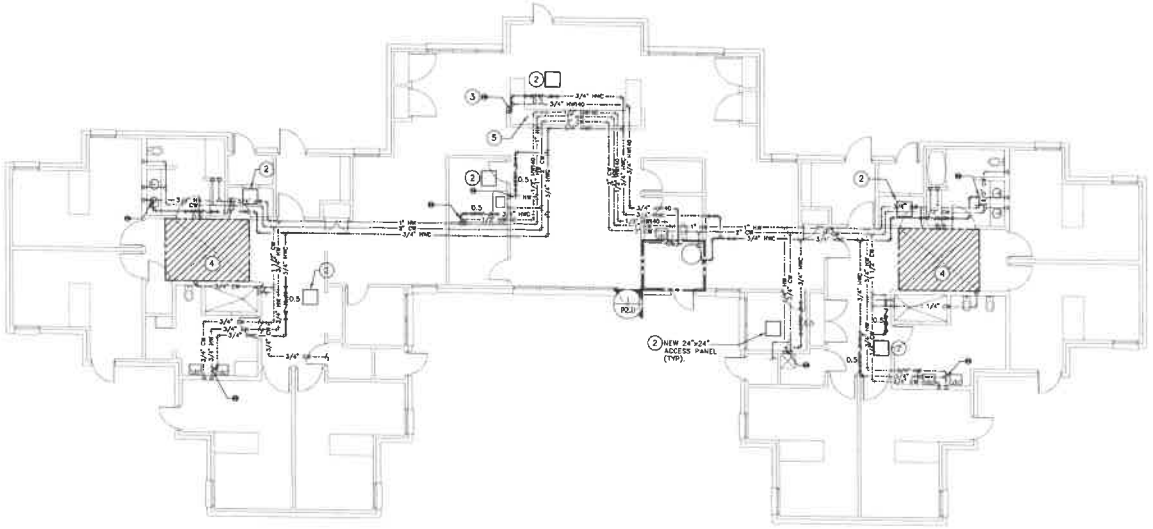
SHEET
P1B

Bld. 301

Pine



1 COTTAGE STYLE "A" PLUMBING DEMO PLAN



2 COTTAGE STYLE "A" PLUMBING PLAN

KEYED NOTES (ENTIRE SHEET):

1. DEMO EXISTING HOT WATER PIPING, HOT WATER RECIRCULATION PIPING, MIXING VALVE, RECIRCULATION PUMP, AND ACCESSORIES IN THIS AREA. CONTRACTOR TO DEMO DOMESTIC WATER PIPING BACK TO WATER SERVICE ENTRANCE FOR MODIFICATION. FIRE PROTECTION SERVICE TO REMAIN.
2. INSTALL NEW 24"x24" 1-HOUR FIRE RATED ACCESS PANEL IN CEILING. COORDINATE LOCATION WITH ROOF TRUSS LOCATIONS AND VALVE LOCATIONS. ACCESS PANEL TO BE EQUAL TO J. BOUSTRIES FD SERIES. INSTALL PER MANUFACTURERS REQUIREMENTS.
3. CONNECT DEDICATED HW140 LINE TO DISHWASHER
4. SKYLIGHT. DO NOT ROUTE PIPING IN THIS AREA
5. DEMO EXISTING MIXING VALVE ASSEMBLY BENEATH SINK. RECONNECT SINK TO DOMESTIC HOT WATER LINE.

GENERAL NOTES (ENTIRE SHEET):

1. ROUTE ALL PIPING IN ATTIC SPACE.
2. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL GENERAL CONSTRUCTION DEMO & PATCHING.
3. HOT WATER PIPING DEAD LEG LENGTH SHALL NOT EXCEED 6'-0".
4. DEMO ALL EXISTING HWC PIPING IN ATTIC. PIPING TO BE REPLACED.
5. REFER TO DRAWING P2.0 FOR THE FOLLOWING DETAILS:
   - WATER METER AND MIXING VALVE

CONTRACTOR TO CREATE BALANCING REPORT FOR ALL PLUMBING FIXTURES. REPORT SHALL LIST THE FOLLOWING INFORMATION:

- DATE & TIME OF TEST
- PLUMBING FIXTURE TESTED
- HOT WATER TEMPERATURE

HOT WATER TEMPERATURE SHALL REMAIN BETWEEN 100 DEGREES AND 109.9 DEGREES AT ALL TIMES. IF SYSTEM EXPS BELOW THIS RANGE, CONTRACTOR SHALL RE-BALANCE ENTIRE PLUMBING SYSTEM WITHIN THE BUILDING

DATE	REVISION	BY

		DATE
DESIGNED	ENC	4.29.13
DRAWN	CAD	4.29.13
CHECKED	ENC	4.29.13
LAST UPDATE:		

bluestone engineering
2715 Northpark Drive
Ankeny, Iowa 50023
515.727.4700
FAX 515.727.4777

PROJECT NO.
112-089

DEPARTMENT OF ADMINISTRATIVE SERVICES
HOOVER STATE OFFICE BUILDING
1305 EAST WALNUT ST., DES MOINES, IOWA 50319

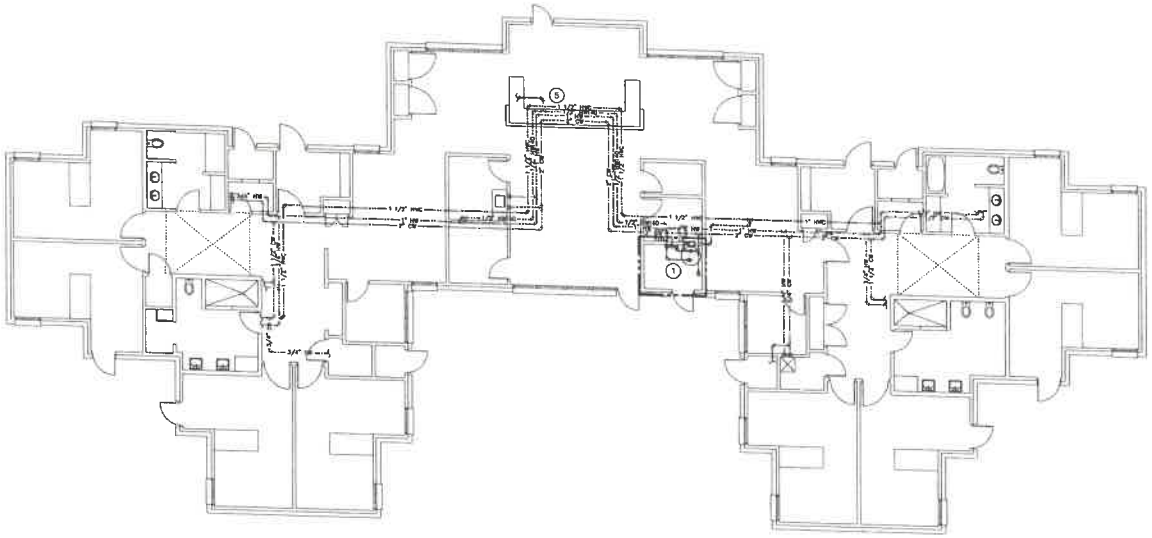
D.A.S. WOODWARD MECHANICAL UPGRADES
1251 334TH STREET
WOODWARD, IOWA 50276

UNIT STYLE A PLUMBING PLANS

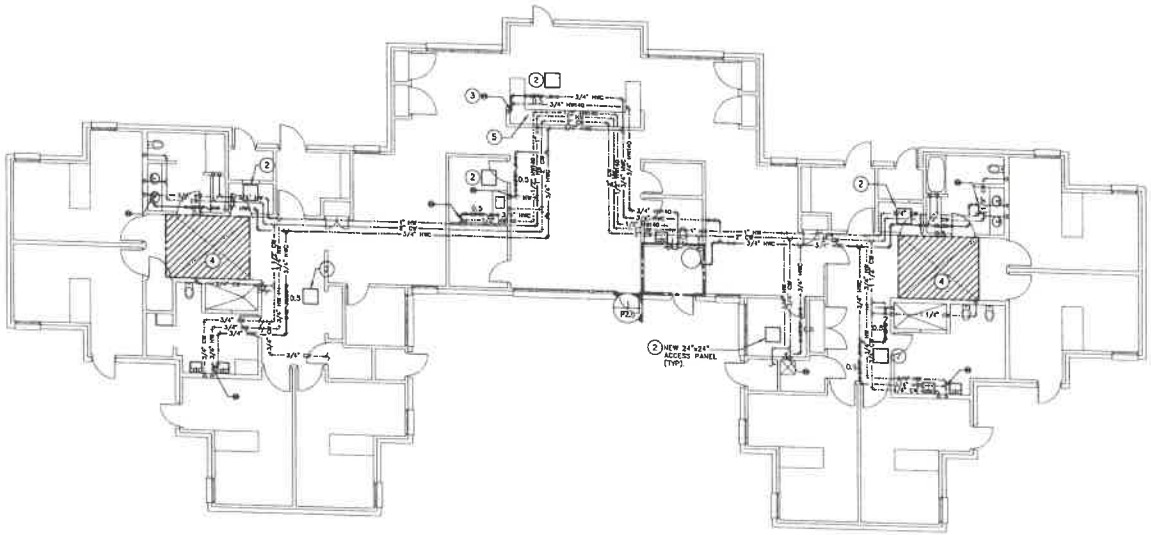
SHEET
P1A

Bld. 302

Pine



1 COTTAGE STYLE "A" PLUMBING DEMO PLAN



2 COTTAGE STYLE "A" PLUMBING PLAN

KEYED NOTES (ENTIRE SHEET):

1. DEMO EXISTING HOT WATER PIPING, HOT WATER RECIRCULATION PIPING, MIXING VALVE, RECIRCULATION PUMP, AND ACCESSORIES IN THIS AREA. CONTRACTOR TO DEMO DOMESTIC WATER PIPING BACK TO WATER SERVICE ENTRANCE FOR MODIFICATION. FIRE PROTECTION SERVICE TO REMAIN.
2. INSTALL NEW 24"x24" 1-HOUR FIRE RATED ACCESS PANEL IN CEILING. COORDINATE LOCATION WITH ROOF TRUSS LOCATIONS AND VALVE LOCATIONS. ACCESS PANEL TO BE EQUAL TO J. INDUSTRIES TO SERIES. INSTALL PER MANUFACTURERS REQUIREMENTS.
3. CONNECT DEDICATED HWH40 LINE TO DISHWASHER.
4. SKYLIGHT. DO NOT ROUTE PIPING IN THIS AREA.
5. DEMO EXISTING MIXING VALVE ASSEMBLY BENEATH SINK. RECONNECT SINK TO DOMESTIC HOT WATER LINE.

GENERAL NOTES (ENTIRE SHEET):

1. ROUTE ALL PIPING IN ATTIC SPACE.
2. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL GENERAL CONSTRUCTION DEMO & PATCHING.
3. HOT WATER PIPING DEAD LEG LENGTH SHALL NOT EXCEED 8'-0".
4. DEMO ALL EXISTING HWC PIPING IN ATTIC. PIPING TO BE REPLACED.
5. REFER TO DRAWING P3.0 FOR THE FOLLOWING DETAILS:
   - WATER METER AND MIXING VALVE

CONTRACTOR TO CREATE BALANCING REPORT FOR ALL PLUMBING FIXTURES. REPORT SHALL LIST THE FOLLOWING INFORMATION:

- DATE & TIME OF TEST
- PLUMBING FIXTURE TESTED
- HOT WATER TEMPERATURE

HOT WATER TEMPERATURE SHALL REMAIN BETWEEN 100 DEGREES AND 109.9 DEGREES AT ALL TIMES. IF SYSTEM DIPS BELOW THIS RANGE, CONTRACTOR SHALL RE-BALANCE ENTIRE PLUMBING SYSTEM WITHIN THE BUILDING.

BY	DATE
DESIGNED: ENG	4.29.13
DRAWN: CAD	4.29.13
CHECKED: ENG	4.29.13
LAST UPDATE:	4.29.13

DATE | REVISION

bluestone

PROJECT NO.
112-089

DEPARTMENT OF ADMINISTRATIVE SERVICES
ECOWOB STATE OFFICE BUILDING
1305 EAST WALNUT ST., DES MOINES, IOWA 50319

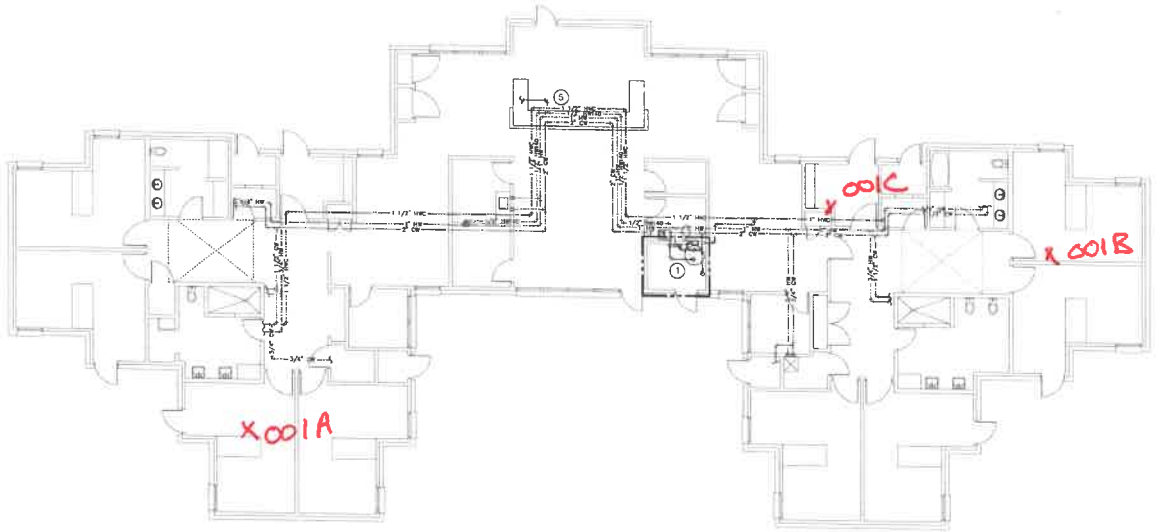
D.A.S. WOODWARD MECHANICAL UPGRADES
1251 334TH STREET
WOODWARD, IOWA 50276

UNIT STYLE A PLUMBING PLANS

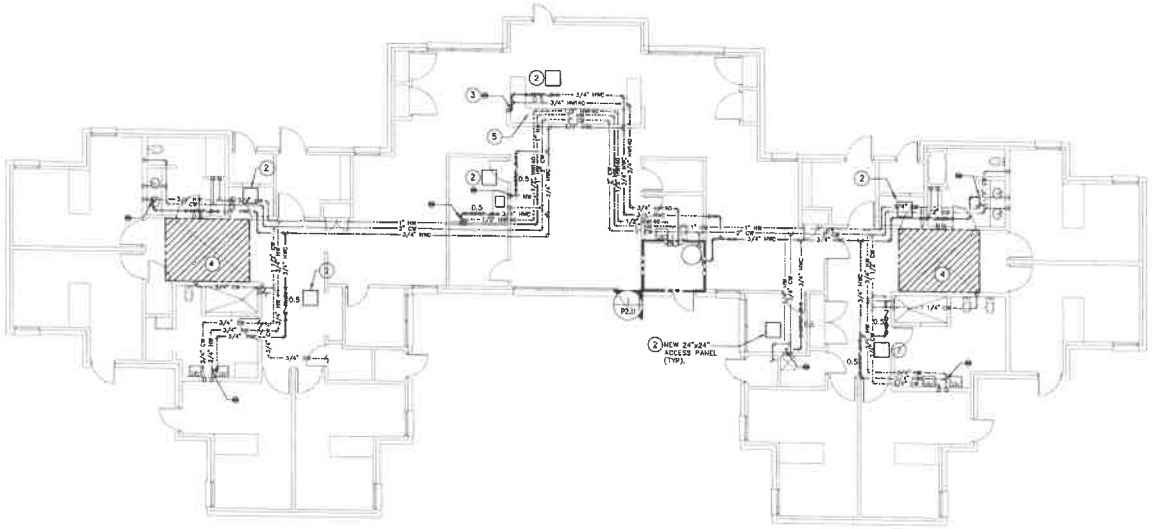
SHEET
P1A

Bld. 303

Pine



1 COTTAGE STYLE "A" PLUMBING DEMO PLAN



2 COTTAGE STYLE "A" PLUMBING PLAN

KEYED NOTES (ENTIRE SHEET):

1. DEMO EXISTING HOT WATER PIPING, HOT WATER RECIRCULATION PIPING, MIXING VALVE, RECIRCULATION PUMP, AND ACCESSORIES IN THIS AREA. CONTRACTOR TO DEMO DOMESTIC WATER PIPING BACK TO WATER SERVICE ENTRANCE FOR MODIFICATION. FIRE PROTECTION SERVICE TO REMAIN.
2. INSTALL NEW 24"x24" 1-HOUR FIRE RATED ACCESS PANEL IN CEILING. COORDINATE LOCATION WITH ROOF TRUSS LOCATIONS AND VALVE LOCATIONS. ACCESS PANEL TO BE EQUAL TO J. INDUSTRIES TO SERIES. INSTALL PER MANUFACTURERS REQUIREMENTS.
3. CONNECT DEDICATED HW140 LINE TO DISHWASHER
4. SKYLIGHT. DO NOT ROUTE PIPING IN THIS AREA.
5. DEMO EXISTING MIXING VALVE ASSEMBLY BENEATH SINK. RECONNECT SINK TO DOMESTIC HOT WATER LINE.

GENERAL NOTES (ENTIRE SHEET):

1. ROUTE ALL PIPING IN ATTIC SPACE.
2. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL GENERAL CONSTRUCTION DEMO & PATCHING.
3. HOT WATER PIPING DEAD LEG LENGTH SHALL NOT EXCEED 6'-0".
4. DEMO ALL EXISTING HWC PIPING IN ATTIC. PIPING TO BE REPLACED.
5. REFER TO DRAWING P2.0 FOR THE FOLLOWING DETAILS:
   - WATER METER AND MIXING VALVE

CONTRACTOR TO CREATE BALANCING REPORT FOR ALL PLUMBING FIXTURES. REPORT SHALL LIST THE FOLLOWING INFORMATION:

- DATE & TIME OF TEST
- PLUMBING FIXTURE TESTED
- HOT WATER TEMPERATURE

HOT WATER TEMPERATURE SHALL REMAIN BETWEEN 100 DEGREES AND 108.8 DEGREES AT ALL TIMES. IF SYSTEM DIPS BELOW THIS RANGE, CONTRACTOR SHALL RE-BALANCE ENTIRE PLUMBING SYSTEM WITHIN THE BUILDING

REVISION	DATE

	BY	DATE
DESIGNED	ENG	4.29.13
DRAWN	CAD	4.29.13
CHECKED	PMC	4.29.13
LAST UPDATE		4.29.13

bluestone
151 First Ave. S.E. Suite 201
Cedar Rapids, IA 52401
319.727.6170
FAX 319.247.6777

PROJECT NO.
112-089

DEPARTMENT OF ADMINISTRATIVE SERVICES
HOOVER STATE OFFICE BUILDING
1305 EAST WALNUT ST., DES MOINES, IOWA 50319

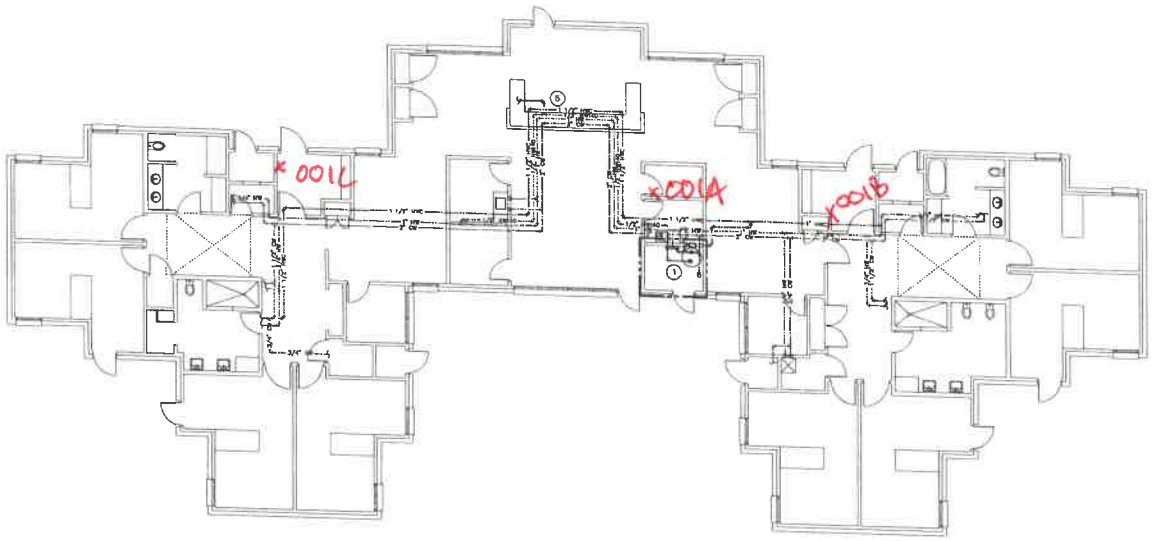
D.A.S. WOODWARD MECHANICAL UPGRADES
1251 334TH STREET
WOODWARD, IOWA 50276

UNIT STYLE A PLUMBING PLANS

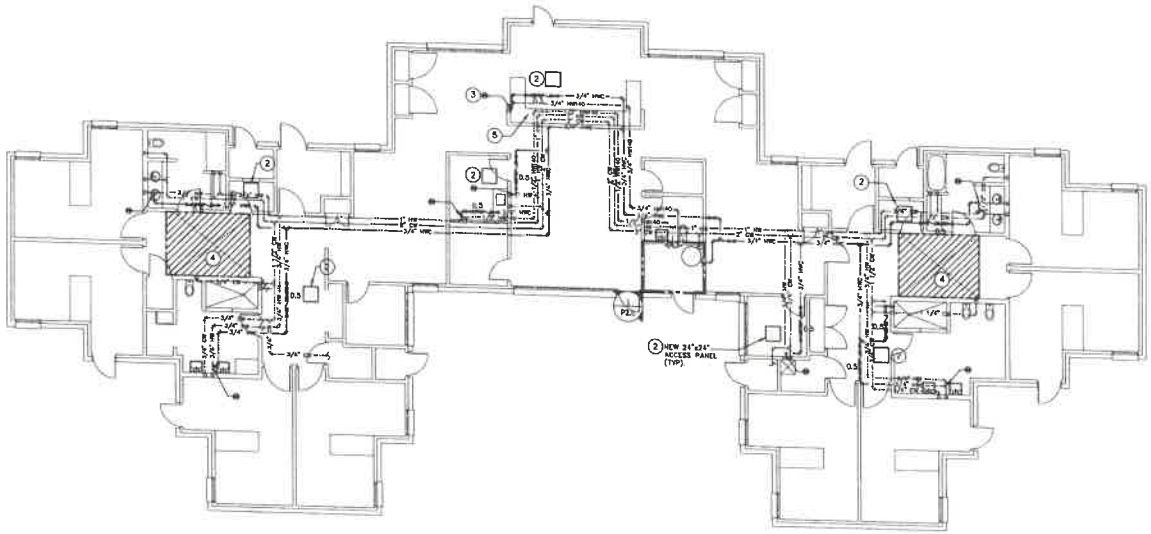
SHEET
P1A

Bld. 304

Pine



1 COTTAGE STYLE "A" PLUMBING DEMO PLAN



2 COTTAGE STYLE "A" PLUMBING PLAN

KEYED NOTES (ENTIRE SHEET):

1. DEMO EXISTING HOT WATER PIPING, HOT WATER RECIRCULATION PIPING, MIXING VALVE, RECIRCULATION PUMP, AND ACCESSORIES IN THIS AREA. CONTRACTOR TO DEMO DOMESTIC WATER PIPING BACK TO WATER SERVICE ENTRANCE FOR MODIFICATION. FIRE PROTECTION SERVICE TO REMAIN.
2. INSTALL NEW 24"x24" 1-HOUR FIRE RATED ACCESS PANEL IN CEILING. COORDINATE LOCATION WITH ROOF TRUSS LOCATIONS AND VALVE LOCATIONS. ACCESS PANEL TO BE EQUAL TO J. INDUSTRIES TO SERIES. INSTALL PER MANUFACTURERS REQUIREMENTS.
3. CONNECT DEDICATED HW140 LINE TO DISHWASHER.
4. SKYLIGHT. DO NOT ROUTE PIPING IN THIS AREA.
5. DEMO EXISTING MIXING VALVE ASSEMBLY BENEATH SINK RECONNECT SINK TO DOMESTIC HOT WATER LINE

GENERAL NOTES (ENTIRE SHEET):

1. ROUTE ALL PIPING IN ATTIC SPACE.
2. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL GENERAL CONSTRUCTION DEMO & PATCHING.
3. HOT WATER PIPING DEAD LEG LENGTH SHALL NOT EXCEED 6'-0".
4. DEMO ALL EXISTING HWC PIPING IN ATTIC. PIPING TO BE REPLACED.
5. REFER TO DRAWING P2.0 FOR THE FOLLOWING DETAILS:
   - WATER METER AND MIXING VALVE

CONTRACTOR TO CREATE BALANCING REPORT FOR ALL PLUMBING FIXTURES. REPORT SHALL LIST THE FOLLOWING INFORMATION:

- DATE & TIME OF TEST
- PLUMBING FIXTURE TESTED
- HOT WATER TEMPERATURE

HOT WATER TEMPERATURE SHALL REMAIN BETWEEN 100 DEGREES AND 108.8 DEGREES AT ALL TIMES. IF SYSTEM DIPS BELOW THIS RANGE, CONTRACTOR SHALL RE-BALANCE ENTIRE PLUMBING SYSTEM WITHIN THE BUILDING.

DATE	REVISION	DESIGNED:	BY	DATE
		DRAWN:	CAD	4.29.13
		CHECKED:	DMC	4.29.13
		LAST UPDATE:		4.29.13

bluestone engineering
815 Washington Ave. Suite 201
Ames, IA 50010
515.337.4760
FAX 515.812.0777

PROJECT NO.
112-089

DEPARTMENT OF ADMINISTRATIVE SERVICES
HOOVER STATE OFFICE BUILDING
1305 EAST WALNUT ST., DES MOINES, IOWA 50319

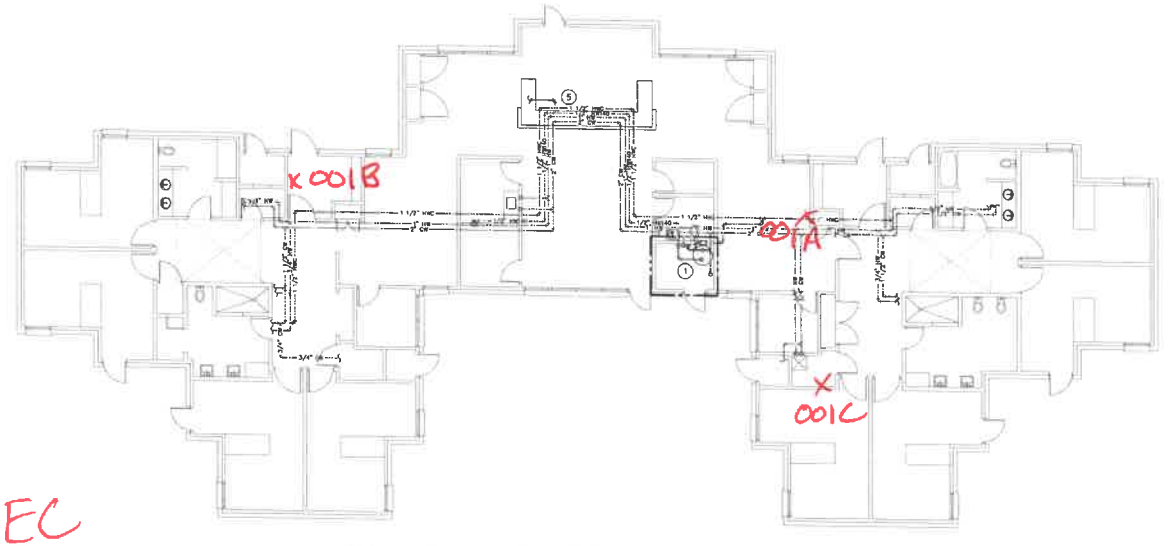
D.A.S. WOODWARD MECHANICAL UPGRADES
1251 334TH STREET
WOODWARD, IOWA 50276

UNIT STYLE A PLUMBING PLANS

SHEET
P1A

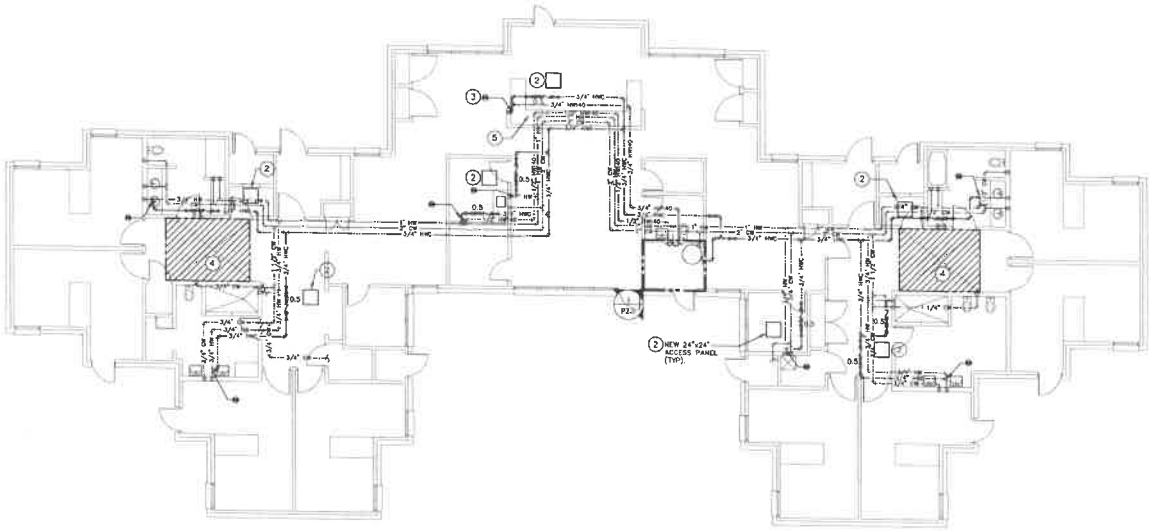
Bld. 103 EC

Cedar St



1 COTTAGE STYLE "A" PLUMBING DEMO PLAN

1/8"=1'-0"



2 COTTAGE STYLE "A" PLUMBING PLAN

1/8"=1'-0"

KEYED NOTES (ENTIRE SHEET):

1. DEMO EXISTING HOT WATER PIPING, HOT WATER RECIRCULATION PIPING, MIXING VALVE, RECIRCULATION PUMP, AND ACCESSORIES IN THIS AREA. CONTRACTOR TO DEMO DOMESTIC WATER PIPING BACK TO WATER SERVICE ENTRANCE FOR MODIFICATION. FIRE PROTECTION SERVICE TO REMAIN.
2. INSTALL NEW 24"x24" 1-HOUR FIRE RATED ACCESS PANEL IN CEILING. COORDINATE LOCATION WITH ROOF TRUSS LOCATIONS AND VALVE LOCATIONS. ACCESS PANEL TO BE EQUAL TO J. INDUSTRIES FD SERIES. INSTALL PER MANUFACTURER'S REQUIREMENTS.
3. CONNECT DEDICATED HWR40 LINE TO DISHWASHER.
4. SKYLIGHT. DO NOT ROUTE PIPING IN THIS AREA.
5. DEMO EXISTING MIXING VALVE ASSEMBLY BENEATH SINK. RECONNECT SINK TO DOMESTIC HOT WATER LINE.

GENERAL NOTES (ENTIRE SHEET):

1. ROUTE ALL PIPING IN ATTIC SPACE.
2. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL GENERAL CONSTRUCTION DEMO & PATCHING.
3. HOT WATER PIPING DEAD LEG LENGTH SHALL NOT EXCEED 8'-0".
4. DEMO ALL EXISTING HWC PIPING IN ATTIC. PIPING TO BE REPLACED.
5. REFER TO DRAWING P2.0 FOR THE FOLLOWING DETAILS:
   - WATER METER AND MIXING VALVE

CONTRACTOR TO CREATE BALANCING REPORT FOR ALL PLUMBING FIXTURES. REPORT SHALL LIST THE FOLLOWING INFORMATION:

- DATE & TIME OF TEST
- PLUMBING FIXTURE TESTED
- HOT WATER TEMPERATURE

HOT WATER TEMPERATURE SHALL REMAIN BETWEEN 100 DEGREES AND 108.9 DEGREES AT ALL TIMES. IF SYSTEM DIPS BELOW THIS RANGE, CONTRACTOR SHALL RE-BALANCE ENTIRE PLUMBING SYSTEM WITHIN THE BUILDING.

DATE	REVISION	BY	DATE
		DESIGNED	ENC 4.29.13
		DRAWN	CAD 4.29.13
		CHECKED	ENC 4.29.13
		LAST UPDATE	4.29.13

bluestone
511 Nebraska
Des Moines, IA 50313
515.721.0700
FAX 515.727.0777

PROJECT NO.
112-089

DEPARTMENT OF ADMINISTRATIVE SERVICES
HOOVER STATE OFFICE BUILDING
1305 EAST WALNUT ST., DES MOINES, IOWA 50319

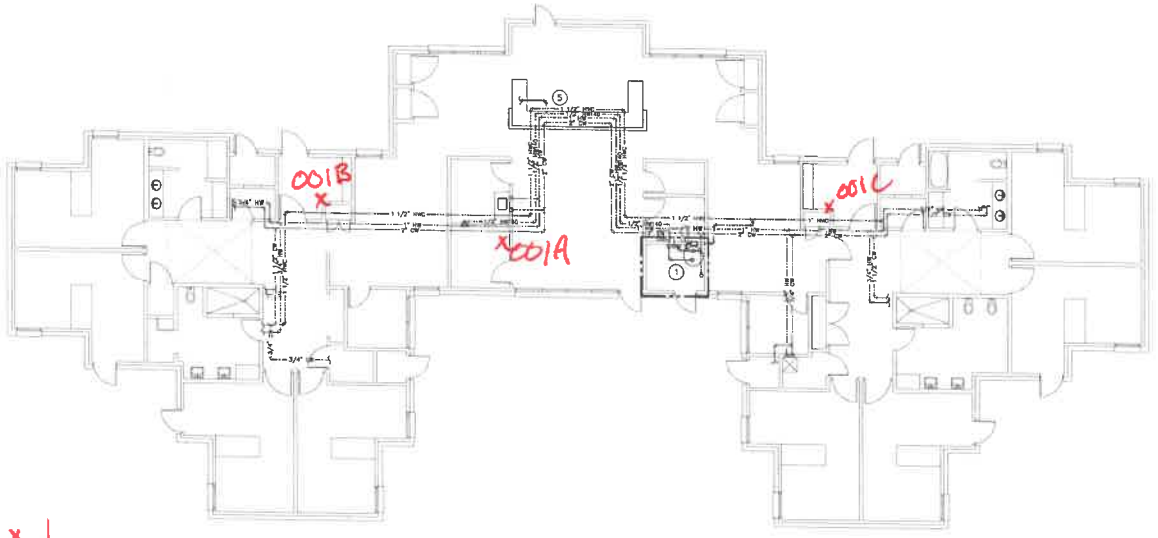
D.A.S. WOODWARD MECHANICAL UPGRADES
1251 334TH STREET
WOODWARD, IOWA 50276

UNIT STYLE A PLUMBING PLANS

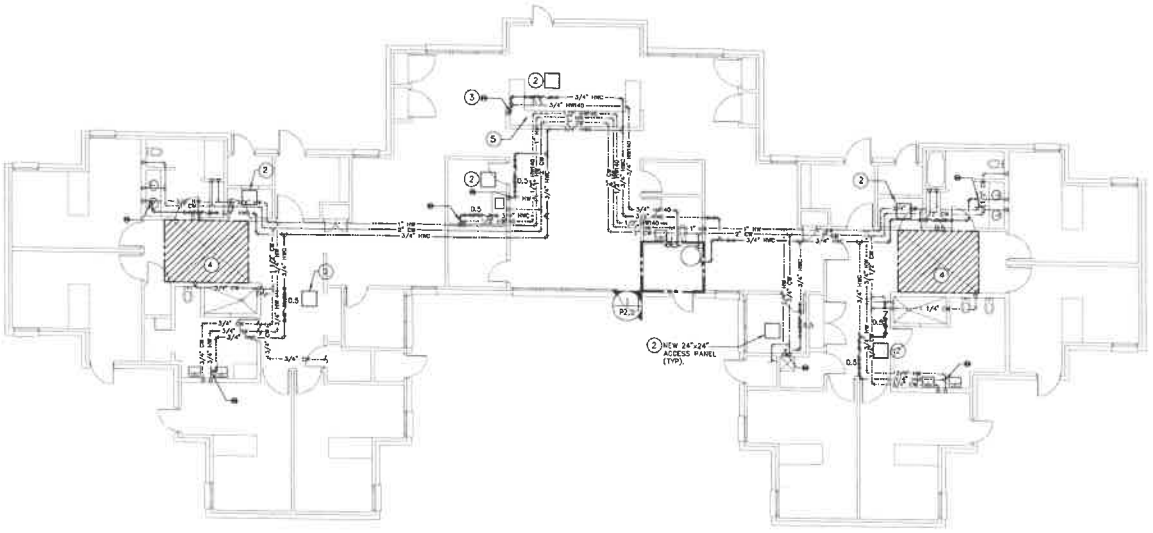
SHEET
P1A

Bld. 201 N

Cedar St.



1 COTTAGE STYLE "A" PLUMBING DEMO PLAN



2 COTTAGE STYLE "A" PLUMBING PLAN

KEYED NOTES (ENTIRE SHEET):

1. DEMO EXISTING HOT WATER PIPING, HOT WATER RECIRCULATION PIPING, MIXING VALVE, RECIRCULATION PUMP, AND ACCESSORIES IN THIS AREA. CONTRACTOR TO DEMO DOMESTIC WATER PIPING BACK TO WATER SERVICE ENTRANCE FOR MODIFICATION. FIRE PROTECTION SERVICE TO REMAIN.
2. INSTALL NEW 24"x24" 1-HOUR FIRE RATED ACCESS PANEL IN CEILING. COORDINATE LOCATION WITH ROOF TRUSS LOCATIONS AND VALVE LOCATIONS. ACCESS PANEL TO BE EQUAL TO JL INDUSTRIES TO SERIES. INSTALL PER MANUFACTURERS REQUIREMENTS.
3. CONNECT DEDICATED HWHG LINE TO DISHWASHER.
4. SKYLIGHT. DO NOT ROUTE PIPING IN THIS AREA.
5. DEMO EXISTING MIXING VALVE ASSEMBLY BENEATH SINK. RECONNECT SINK TO DOMESTIC HOT WATER LINE.

GENERAL NOTES (ENTIRE SHEET):

1. ROUTE ALL PIPING IN ATTIC SPACE.
2. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL GENERAL CONSTRUCTION DEMO & PATCHING.
3. HOT WATER PIPING DEAD LEG LENGTH SHALL NOT EXCEED 5'-0".
4. DEMO ALL EXISTING HWC PIPING IN ATTIC. PIPING TO BE REPLACED.
5. REFER TO DRAWING P2.0 FOR THE FOLLOWING DETAILS.
   - WATER METER AND MIXING VALVE

CONTRACTOR TO CREATE BALANCING REPORT FOR ALL PLUMBING FIXTURES. REPORT SHALL LIST THE FOLLOWING INFORMATION:

- DATE & TIME OF TEST
- PLUMBING FIXTURE TESTED
- HOT WATER TEMPERATURE

HOT WATER TEMPERATURE SHALL REMAIN BETWEEN 100 DEGREES AND 109.9 DEGREES AT ALL TIMES. IF SYSTEM DIPS BELOW 94S RANGE, CONTRACTOR SHALL RE-BALANCE ENTIRE PLUMBING SYSTEM WITHIN THE BUILDING.

BY	DATE
DESIGNED	4.29.13
DRAWN	4.29.13
CHECKED	4.29.13
LAST UPDATE	4.29.13

REVISION DATE

bluestone engineering
319 Harbach Drive, Suite 201
Waukee, IA 50263
515.221.0188
FAX 515.727.6977

PROJECT NO. 112-089

DEPARTMENT OF ADMINISTRATIVE SERVICES
HOOVER STATE OFFICE BUILDING
1305 EAST WALNUT ST., DES MOINES, IOWA 50319

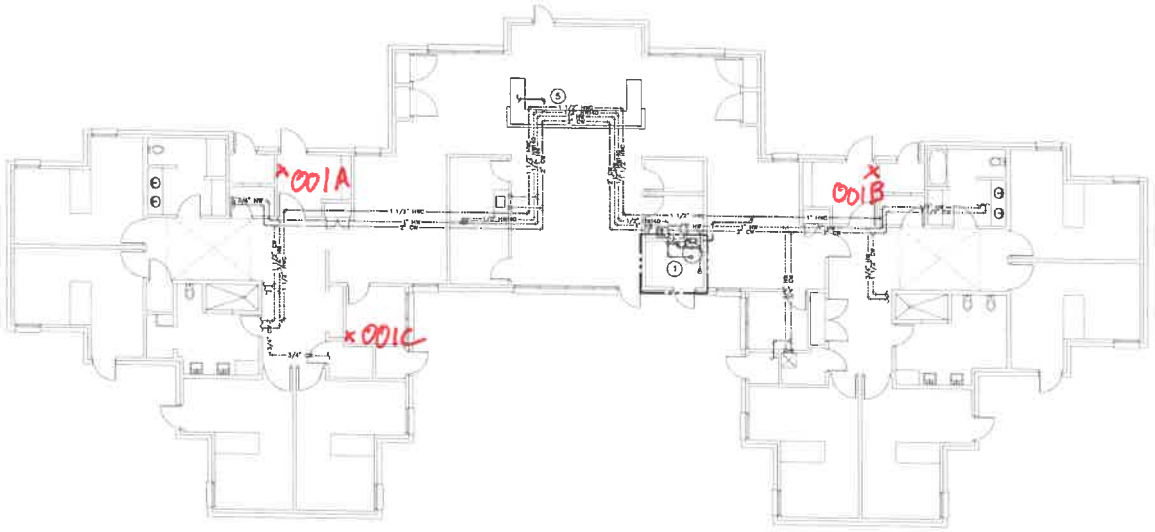
D.A.S. WOODWARD MECHANICAL UPGRADES
1251 334TH STREET
WOODWARD, IOWA 50276

UNIT STYLE A PLUMBING PLANS

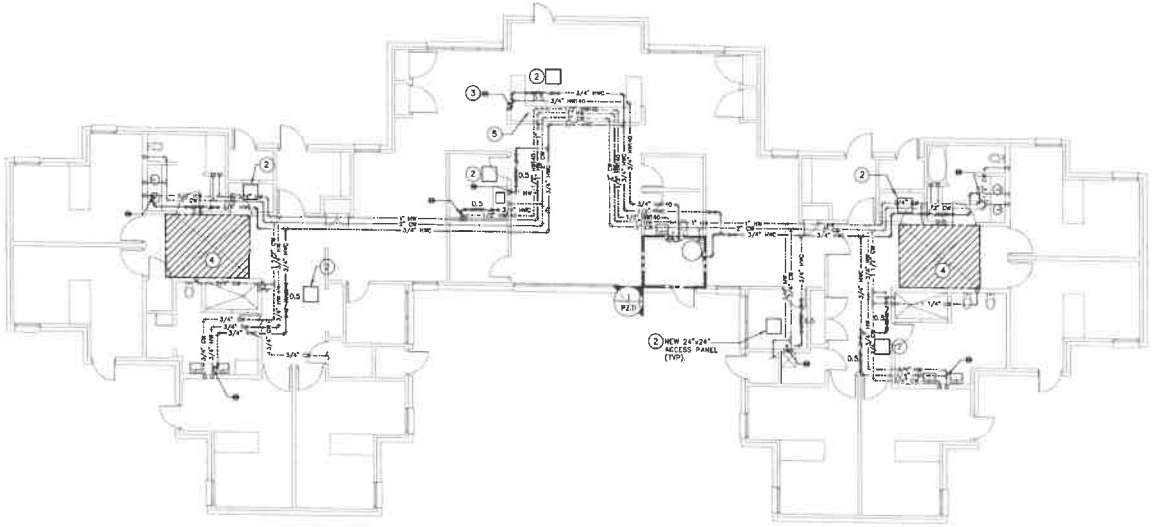
SHEET P1A

Bld. 101

Cherry Ln.



1 COTTAGE STYLE "A" PLUMBING DEMO PLAN



2 COTTAGE STYLE "A" PLUMBING PLAN

KEYED NOTES (ENTIRE SHEET):

1. DEMO EXISTING HOT WATER PIPING, HOT WATER RECIRCULATION PIPING, MIXING VALVE, RECIRCULATION PUMP, AND ACCESSORIES IN THIS AREA. CONTRACTOR TO DEMO DOMESTIC WATER PIPING BACK TO WATER SERVICE ENTRANCE FOR MODIFICATION. FIRE PROTECTION SERVICE TO REMAIN.
2. INSTALL NEW 24"x24" 1-HOUR FIRE RATED ACCESS PANEL IN CEILING. COORDINATE LOCATION WITH ROOF TRUSS LOCATIONS AND VALVE LOCATIONS. ACCESS PANEL TO BE EQUAL TO J.L. INDUSTRIES TO SERIES. INSTALL PER MANUFACTURERS REQUIREMENTS.
3. CONNECT DEDICATED HW#45 LINE TO DISHWASHER.
4. SKYLIGHT. DO NOT ROUTE PIPING IN THIS AREA.
5. DEMO EXISTING MIXING VALVE ASSEMBLY BENEATH SINK. RECONNECT SINK TO DOMESTIC HOT WATER LINE.

GENERAL NOTES (ENTIRE SHEET):

1. ROUTE ALL PIPING IN ATTIC SPACE.
2. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL GENERAL CONSTRUCTION DEMO & PATCHING.
3. HOT WATER PIPING DEAD LEG LENGTH SHALL NOT EXCEED 6'-0".
4. DEMO ALL EXISTING HWC PIPING IN ATTIC. PIPING TO BE REPLACED.
5. REFER TO DRAWING P2.0 FOR THE FOLLOWING DETAILS:
   - WATER METER AND MIXING VALVE

CONTRACTOR TO CREATE BALANCING REPORT FOR ALL PLUMBING FIXTURES. REPORT SHALL LIST THE FOLLOWING INFORMATION:

- DATE & TIME OF TEST
- PLUMBING FIXTURE TESTED
- HOT WATER TEMPERATURE

HOT WATER TEMPERATURE SHALL REMAIN BETWEEN 100 DEGREES AND 108.8 DEGREES AT ALL TIMES. IF SYSTEM DIPS BELOW THIS RANGE, CONTRACTOR SHALL RE-BALANCE ENTIRE PLUMBING SYSTEM WITHIN THE BUILDING.

DATE	REVISION

	BY	DATE
DESIGNED	PMC	4.29.13
DRAWN	CAD	4.29.13
CHECKED	EMC	4.29.13
LAST UPDATE:		4.29.13

bluestone
engineering
515 Northpark Dr.
Ankeny, IA 50023
515.963.4700
FAX 515.963.4777

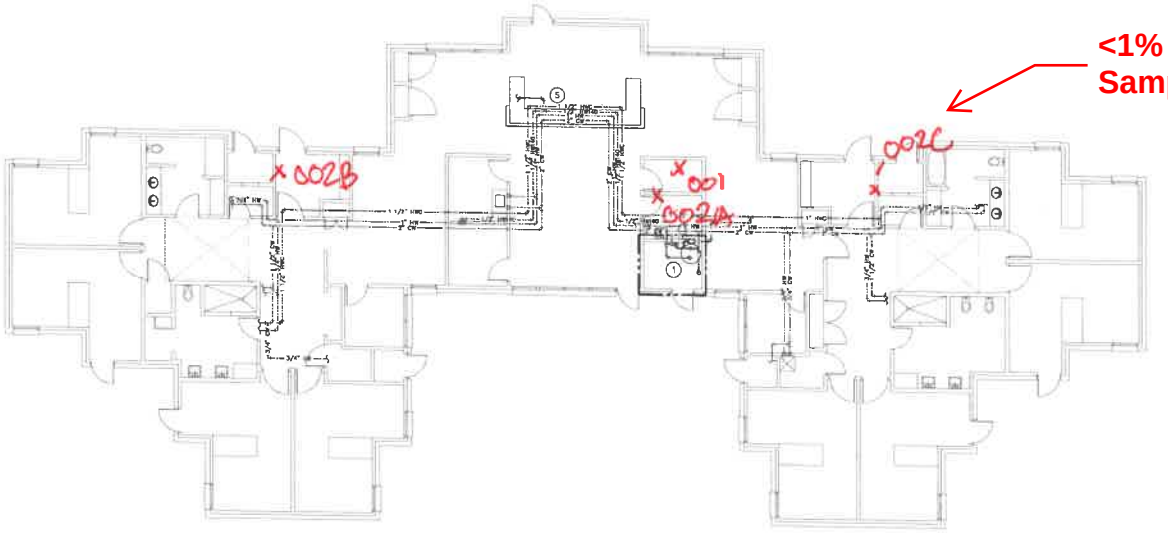
PROJECT NO.
112-089

DEPARTMENT OF ADMINISTRATIVE SERVICES
HOOVER STATE OFFICE BUILDING
1305 EAST WALNUT ST., DES MOINES, IOWA 50319

D.A.S. WOODWARD MECHANICAL UPGRADES
1251 334TH STREET
WOODWARD, IOWA 50276

UNIT STYLE A PLUMBING PLANS

SHEET
P1A

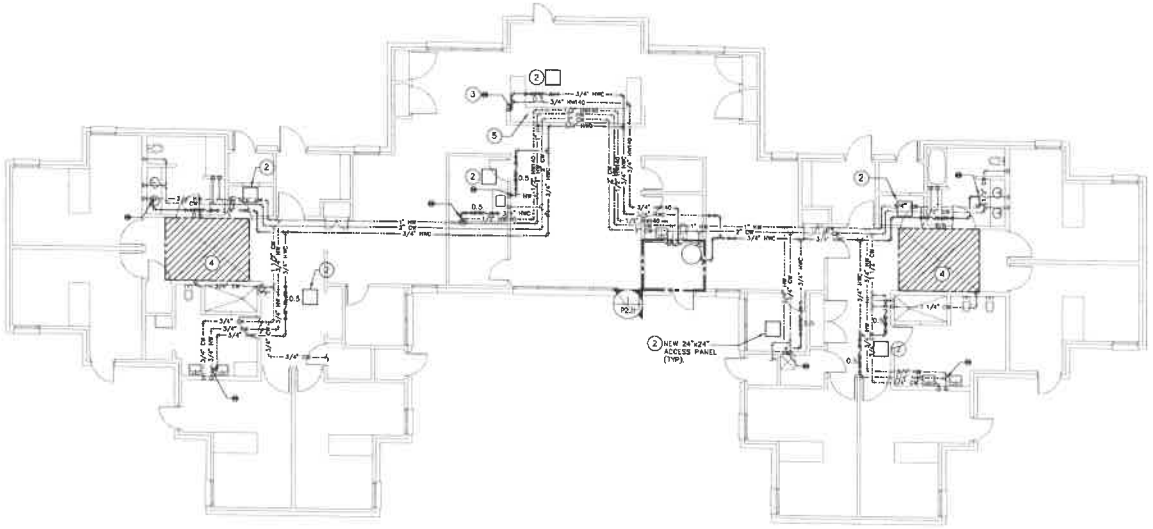


<1% Chrysotile
Sample Location

1 COTTAGE STYLE "A" PLUMBING DEMO PLAN

Bld. 103

Cherry Ln.



2 COTTAGE STYLE "A" PLUMBING PLAN

KEYED NOTES (ENTIRE SHEET):

1. DEMO EXISTING HOT WATER PIPING, HOT WATER RECIRCULATION PIPING, MIXING VALVE, RECIRCULATION PUMP, AND ACCESSORIES IN THIS AREA. CONTRACTOR TO DEMO DOMESTIC WATER PIPING BACK TO WATER SERVICE ENTRANCE FOR MODIFICATION. FIRE PROTECTION SERVICE TO REMAIN.
2. INSTALL NEW 24"x24" 1-HOUR FIRE RATED ACCESS PANEL IN CEILING. COORDINATE LOCATION WITH ROOF TRUSS LOCATIONS AND VALVE LOCATIONS. ACCESS PANEL TO BE EQUAL TO J. INDUSTRIES TO SERIES. INSTALL PER MANUFACTURERS REQUIREMENTS.
3. CONNECT DEDICATED HWT40 LINE TO DISHWASHER.
4. SKYLIGHT. DO NOT ROUTE PIPING IN THIS AREA.
5. DEMO EXISTING MIXING VALVE ASSEMBLY BENEATH SINK. RECONNECT SINK TO DOMESTIC HOT WATER LINE.

GENERAL NOTES (ENTIRE SHEET):

1. ROUTE ALL PIPING IN ATTIC SPACE.
2. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL GENERAL CONSTRUCTION DEMO & PATCHING.
3. HOT WATER PIPING DEAD LEG LENGTH SHALL NOT EXCEED 6'-0".
4. DEMO ALL EXISTING HWC RIPING IN ATTIC. PIPING TO BE REPLACED.
5. REFER TO DRAWING P2.0 FOR THE FOLLOWING DETAILS:
   - WATER METER AND MIXING VALVE

CONTRACTOR TO CREATE BALANCING REPORT FOR ALL PLUMBING FIXTURES. REPORT SHALL LIST THE FOLLOWING INFORMATION:

- DATE & TIME OF TEST
- PLUMBING FIXTURE TESTED
- HOT WATER TEMPERATURE

HOT WATER TEMPERATURE SHALL REMAIN BETWEEN 100 DEGREES AND 108.8 DEGREES AT ALL TIMES. IF SYSTEM DIPS BELOW THIS RANGE, CONTRACTOR SHALL RE-BALANCE ENTIRE PLUMBING SYSTEM WITHIN THE BUILDING.

NO.	REVISION	DATE

DESIGNED BY: DHC
DRAWN: CAD 4.29.13
CHECKED: PMC 4.29.13
LAST UPDATE: 4.29.13

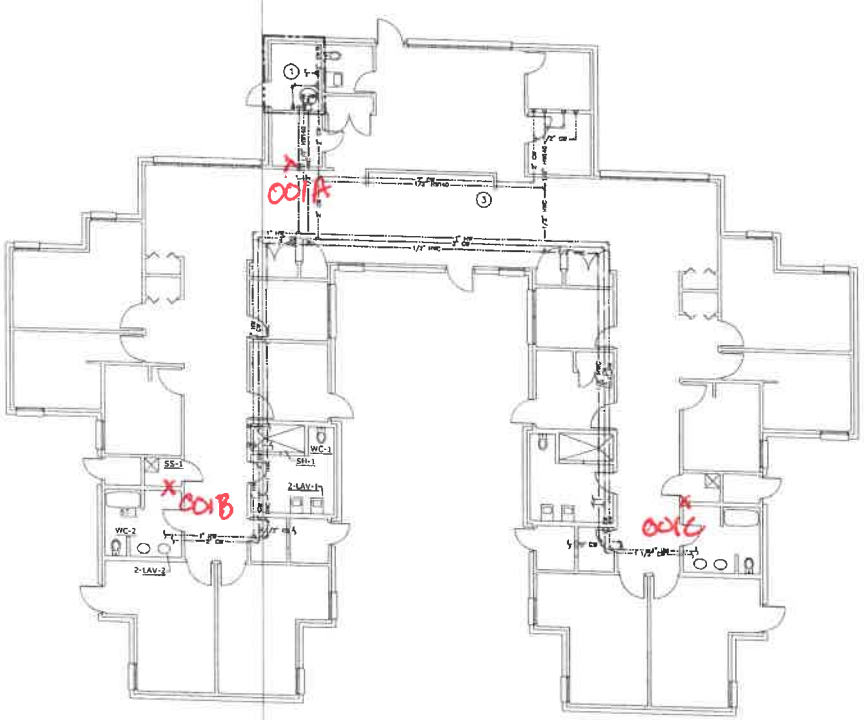
bluestone
PROJECT NO. 112-089

DEPARTMENT OF ADMINISTRATIVE SERVICES
HOOVER STATE OFFICE BUILDING
1305 EAST WALNUT ST., DES MOINES, IOWA, 50319

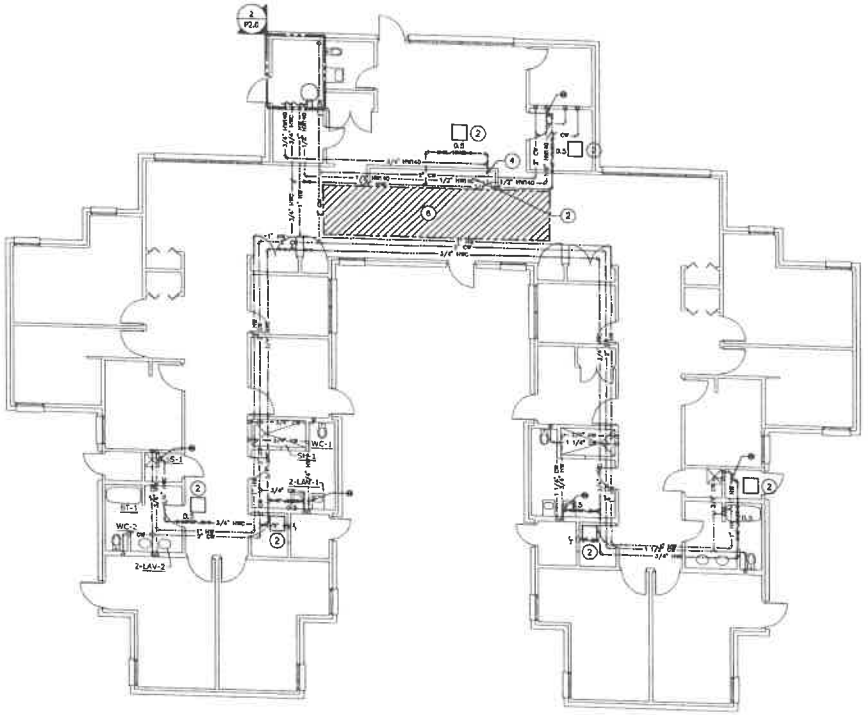
D.A.S. WOODWARD MECHANICAL UPGRADES
1251 334TH STREET
WOODWARD, IOWA, 50276

UNIT STYLE A PLUMBING PLANS

SHEET P1A



1 COTTAGE STYLE "B" PLUMBING DEMO PLAN



1 COTTAGE STYLE "B" PLUMBING PLAN

Bld. 104C

Cherry Ln.

KEYED NOTES (ENTIRE SHEET):

1. DEMO EXISTING HOT WATER PIPING, HOT WATER RECIRCULATION PIPING, MIXING VALVE, RECIRCULATION PUMP, AND ACCESSORIES IN THIS AREA. CONTRACTOR TO DEMO DOMESTIC WATER PIPING BACK TO WATER SERVICE ENTRANCE FOR MODIFICATION. FIRE PROTECTION SERVICE TO REMAIN.
2. INSTALL NEW 24"x24" 1-HOUR FIRE RATED ACCESS PANEL IN CEILING. COORDINATE LOCATION WITH ROOF TRUSS LOCATIONS AND VALVE LOCATIONS. ACCESS PANEL TO BE EQUAL TO J.L. INDUSTRIES FD SERIES. INSTALL PER MANUFACTURERS REQUIREMENTS.
3. DEMO EXISTING HWH&D PIPING TO EXISTING DISHWASHER.
4. CONNECT NEW DEDICATED HWH&D PIPING TO EXISTING DISHWASHER.
5. RECONNECT SINK TO EXISTING HOT WATER PIPING.
6. SKYLIGHT. DO NOT ROUTE PIPING IN THIS AREA.

GENERAL NOTES (ENTIRE SHEET):

1. ROUTE ALL PIPING IN ATTIC SPACE.
2. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL GENERAL CONSTRUCTION DEMO & PATCHING.
3. HOT WATER PIPING DEAD LEG LENGTH SHALL NOT EXCEED 8'-0".
4. DEMO ALL EXISTING HWC PIPING IN ATTIC. PIPING TO BE REPLACED.
5. REFER TO DRAWING P2.0 FOR THE FOLLOWING DETAILS:
   - WATER METER AND MIXING VALVE

CONTRACTOR TO CREATE BALANCING REPORT FOR ALL PLUMBING FIXTURES. REPORT SHALL LIST THE FOLLOWING INFORMATION:

- DATE & TIME OF TEST
- PLUMBING FIXTURE TESTED
- HOT WATER TEMPERATURE

HOT WATER TEMPERATURE SHALL REMAIN BETWEEN 100 DEGREES AND 108 DEGREES AT ALL TIMES. IF SYSTEM DIPS BELOW THIS RANGE, CONTRACTOR SHALL RE-BALANCE ENTIRE PLUMBING SYSTEM WITHIN THE BUILDING.

BY	DATE
DESIGNED:	DMC 4.29.13
DRAWN:	CAD 4.29.13
CHECKED:	DMC 4.29.13
LAST UPDATE:	4.29.13

REVISIONS

DATE

2113 Washington Avenue, Suite 341
Des Moines, Iowa 50314
515-727-4700
FAX 515-727-4777
bluestone

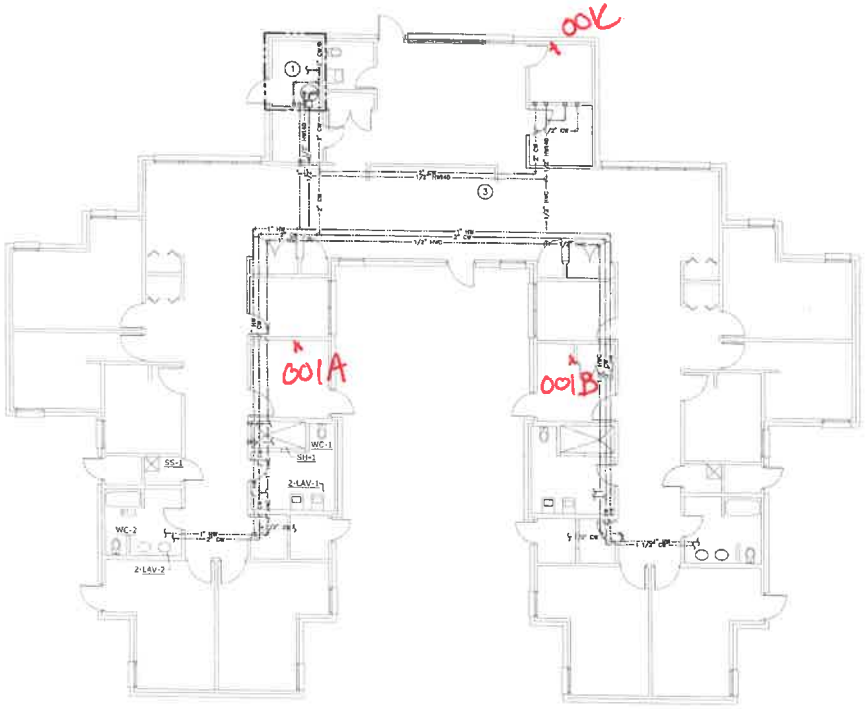
PROJECT NO.
112-089

DEPARTMENT OF ADMINISTRATIVE SERVICES
HOOVER STATE OFFICE BUILDING
1305 EAST WALNUT ST., DES MOINES, IOWA 50319

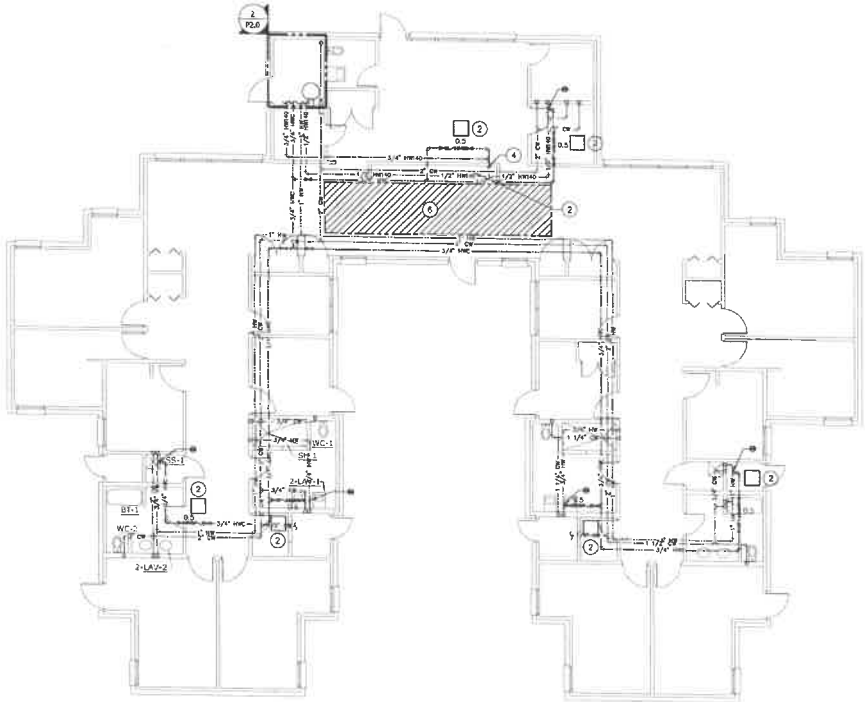
D.A.S. WOODWARD MECHANICAL UPGRADES
1251 334TH STREET
WOODWARD, IOWA 50276

UNIT STYLE B PLUMBING PLANS

SHEET
P1B



1 COTTAGE STYLE "B" PLUMBING DEMO PLAN



1 COTTAGE STYLE "B" PLUMBING PLAN

Bld. 105

Cherry Ln.

KEYED NOTES (ENTIRE SHEET):

1. DEMO EXISTING HOT WATER PIPING, HOT WATER RECIRCULATION PIPING, MIXING VALVE, RECIRCULATION PUMP, AND ACCESSORIES IN THIS AREA. CONTRACTOR TO DEMO DOMESTIC WATER PIPING BACK TO WATER SERVICE ENTRANCE FOR MODIFICATION. FIRE PROTECTION SERVICE TO REMAIN.
2. INSTALL NEW 24"x24" 1-HOUR FIRE RATED ACCESS PANEL IN CEILING. COORDINATE LOCATION WITH ROOF TRUSS LOCATIONS AND VALVE LOCATIONS. ACCESS PANEL TO BE EQUAL TO J. INDUSTRIES FD SERIES. INSTALL PER MANUFACTURERS REQUIREMENTS.
3. DEMO EXISTING HW140 PIPING TO EXISTING DISHWASHER.
4. CONNECT NEW DEDICATED HW140 PIPING TO EXISTING DISHWASHER.
5. RECONNECT SINK TO EXISTING HOT WATER PIPING.
6. SKYLIGHT. DO NOT ROUTE PIPING IN THIS AREA.

GENERAL NOTES (ENTIRE SHEET):

1. ROUTE ALL PIPING IN ATTIC SPACE.
2. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL GENERAL CONSTRUCTION DEMO & PATCHING.
3. HOT WATER PIPING DEAD LEG LENGTH SHALL NOT EXCEED 8'-0".
4. DEMO ALL EXISTING HWC PIPING IN ATTIC. PIPING TO BE REPLACED.
5. REFER TO DRAWING P2.0 FOR THE FOLLOWING DETAILS:
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DATE	BY	REVISION

DESIGNED: DMC 4.29.13
DRAWN: CAD 4.29.13
CHECKED: DMC 4.29.13
LAST UPDATE: 4.29.13

bluestone engineering
5015 Northpark Drive
Johnston, Iowa 50131
515-727-6700
FAX 515-727-6777

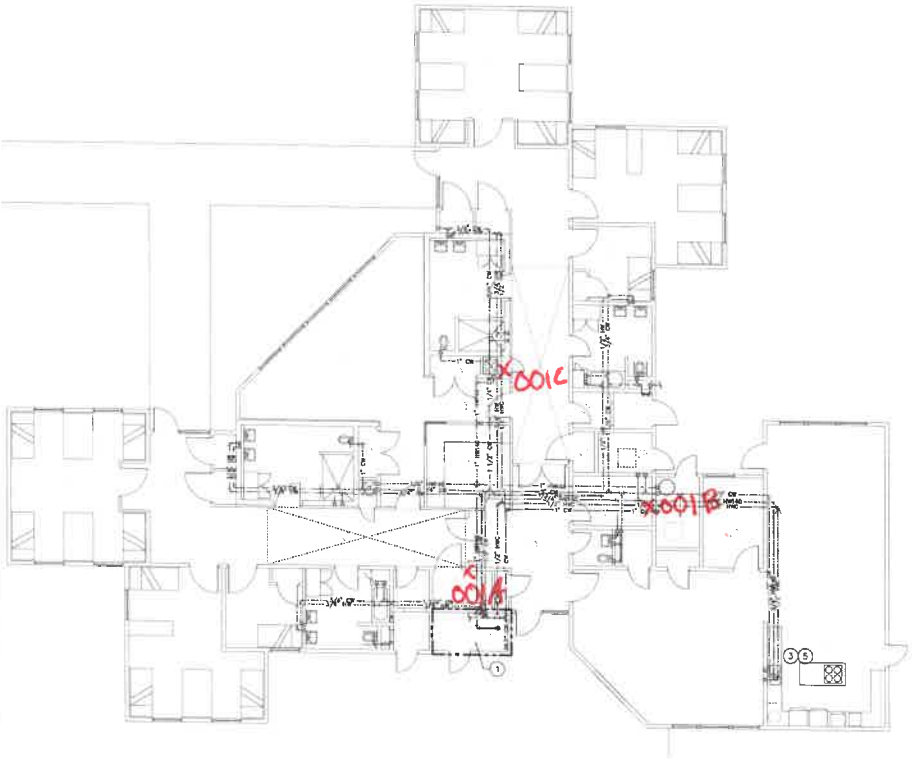
PROJECT NO. 112-089

DEPARTMENT OF ADMINISTRATIVE SERVICES
HOOVER STATE OFFICE BUILDING
1305 EAST WALNUT ST., DES MOINES, IOWA 50319

D.A.S. WOODWARD MECHANICAL UPGRADES
1251 334TH STREET
WOODWARD, IOWA 50276

UNIT STYLE B PLUMBING PLANS

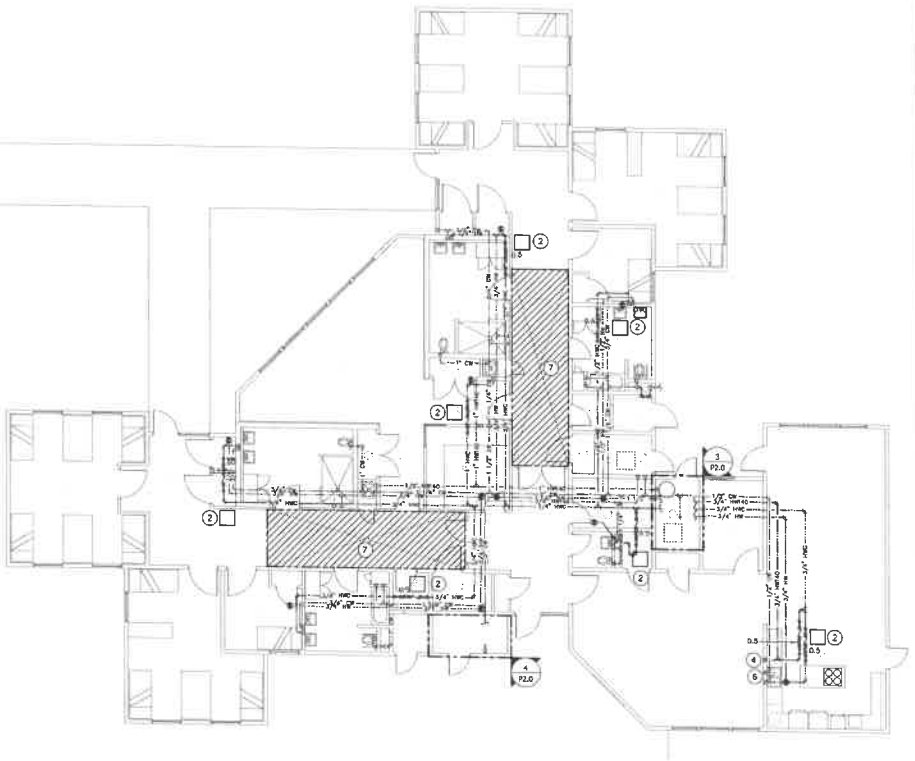
SHEET P1B



1 COTTAGE STYLE "C" PLUMBING DEMO PLAN

Bld. 107

Cherry Ln.



1 COTTAGE STYLE "C" PLUMBING PLAN

KEYED NOTES (ENTIRE SHEET):

1. DEMO EXISTING HOT WATER PIPING, HOT WATER RECIRCULATION PIPING, MIXING VALVE, RECIRCULATION PUMP, AND ACCESSORIES IN THIS AREA. CONTRACTOR TO DEMO DOMESTIC WATER PIPING BACK TO WATER SERVICE ENTRANCE FOR MODIFICATION. FIRE PROTECTION SERVICE TO REMAIN.
2. INSTALL NEW 24"x24" 1-HOUR FIRE RATED ACCESS PANEL IN CEILING. COORDINATE LOCATION WITH ROOF TRUSS LOCATIONS AND VALVE LOCATIONS. ACCESS PANEL TO BE EQUAL TO J.L. INDUSTRIES TO SERIES. INSTALL PER MANUFACTURERS REQUIREMENTS.
3. DEMO EXISTING HW140 PIPING TO EXISTING DISHWASHER.
4. CONNECT NEW DEDICATED HW140 PIPING TO EXISTING DISHWASHER.
5. DEMO EXISTING MIXING VALVE ASSEMBLY BENEATH SINK.
6. RECONNECT SINK TO EXISTING HOT WATER PIPING.
7. SKYLIGHT. DO NOT ROUTE PIPING IN THIS AREA.

GENERAL NOTES (ENTIRE SHEET):

1. ROUTE ALL PIPING IN ATTIC SPACE.
2. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL GENERAL CONSTRUCTION DEMO & PATCHING.
3. HOT WATER PIPING DEAD LEG LENGTH SHALL NOT EXCEED 8'-0".
4. DEMO ALL EXISTING HWC PIPING IN ATTIC. PIPING TO BE REPLACED.
5. REFER TO DRAWING P2.0 FOR THE FOLLOWING DETAILS:
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REVISION	DATE	BY

DESIGNED		ENC
DRAWN		CAD
CHECKED		ENC
LAST UPDATE		4.29.13

bluestone engineering
5110 Northpark Drive, Suite 101, Ankeny, IA 50021
515.222.2700
FAX 515.727.0777

PROJECT NO. 112-089

DEPARTMENT OF ADMINISTRATIVE SERVICES
HOOVER STATE OFFICE BUILDING
1305 EAST WALNUT ST., DES MOINES, IOWA 50319

D.A.S. WOODWARD MECHANICAL UPGRADES
1251 334TH STREET
WOODWARD, IOWA 50276

UNIT STYLE C PLUMBING PLANS

SHEET P1C

SHIVEHATTERY
ARCHITECTURE + ENGINEERING

November 10, 2022

Woodward Resource Center
ATTN: Mr. Rodney Carr
Facility Manager
1251 334th Street
Woodward, IA 50276

RE: Woodward Resource Center – Myers Hall – Asbestos Survey & Paint Chip Sampling

Dear Mr. Carr:

Per your request and authorization, Shive-Hattery, Inc. performed an asbestos survey and paint chip sampling for the above referenced project on October 25, 2022. It is our understanding that the building will undergo renovations that may disturb suspect asbestos-containing building materials and potential lead-based paint. It was the intent of the survey to determine what materials within the project area contain asbestos and lead.

Methods and Procedures

The review for this project was performed by personnel trained and certified under the National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations. Partial or destructive testing was not performed to reveal concealed conditions.

A sample from each suspect homogeneous area was collected from the project areas at Woodward Resource Center Myers Hall. Pertinent information such as location, color, etc. was recorded for each suspect material. The samples were then sent to an NAVLAP accredited laboratory for analysis.

The samples were analyzed for asbestos fibers utilizing the Polarized Light Microscopy method of analysis by EMLab P&K of Phoenix, AZ. Each sample was analyzed for the six different types of fibrous asbestos forms of which a percentage, by volume, is estimated and summarized. As defined by the U.S. Environmental Protection Agency mandated NESHAP regulations, the suspect material is considered an asbestos-containing material (ACM) if the material contains more than 1.0 percent of any one or a combination of asbestos fibers.

A composite bulk paint chip sample from suspect painted substrate areas was collected from project areas at Myers Hall. The bulk sample was sent to an AIHA accredited laboratory for analysis.

The bulk sample was analyzed for lead-based paint using flame atomic absorption spectrometry (Flame AA) under NIOSH 7082 and EPA 7000B modified, by EMLab P&K of Phoenix, AZ. Flame AA provides the most economical means of determining at risk environments to lead exposure. The EPA mandated method reporting limit for lead-based paint is 39 ppm (parts per million). Paint is lead containing at 0.5% by weight or 5,000 parts per million (ppm).

Pertinent information for each bulk sample has been summarized on the sample analytical results which can be found at the end of this report.

Summary of Findings

Eighteen (18) samples were collected from 25 homogeneous areas located at Woodward Resource Center Myers Hall. Materials tested with an asbestos content greater than 1.0% are considered to be asbestos containing. The following table summarizes the sampling results by homogeneous area:

Homogeneous Area		Asbestos Content
1.	Cream Floor Tile 12”x12”	0%
2.	Yellow Mastic	0%
3.	Light Gray Floor Tile 12”x12”	0%
4.	Yellow mastic	0%
5.	Yellow Floor Tile 12”x12”	0%
6.	Yellow Mastic	0%
7.	Orange Floor Tile 12”x12”	0%
8.	Yellow Mastic	0%
9.	Blue Floor Tile 12”x12”	0%
10.	Yellow Mastic	0%
11.	Red Floor Tile 12’x12”	0%
12.	Yellow Mastic	0%
13.	Blue Ceramic Wall Tile	0%
14.	Yellow Mastic	0%
15.	Yellow Mastic a/w Black Cove Base	0%
16.	White Wall Compound w/ Multilayered Paint	0%
17.	Transparent Mastic	0%
18.	Gray Leveling Compound	0%
19.	White Compound w/ White Paint	0%
20.	Cream Tape	0%
21.	White Joint Compound	0%
22.	White Drywall w/ Brown Paper	0%
23.	Gray Wall	0%
24.	Gray Ceiling Plaster	0%
25.	White Ceiling Tile 2’x2’	0%

Lead-based Paint Analysis	Sample Results
1. Bulk Paint Chip Sample (Myers Hall)	<39 ppm

Recommendations

Thus, it appears that the proposed project will not disturb any asbestos-containing materials and asbestos abatement is not required. There was also no paint identified as lead-containing within the project area.

Please call our office if you should have any questions or comments.

Sincerely,

SHIVE-HATTERY, INC.

Grant W. Bridgford
License Number IA 22-7928 INSP
Expiration Date: February 10, 2023

And

Samuel Becker
Environmental Specialist
Lead Inspector/Risk Assessor
LEAD-INSP10002

GWB/SSB/mas

Encs.

Copy: Chad Siems, S-H

eurofins | Built Environment Testing

Report for:

Grant Bridgford
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins Aerotech Built Environment Testing, Inc.
Project: Myers Hall; 2142203390
EML ID: 3071854

Approved by:

Renee Luna-Trepczynski

Approved Signatory
Renee Luna-Trepczynski

Dates of Analysis:
Asbestos PLM: 11-03-2022

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)
NVLAP Lab Code 500031-0

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Myers Hall; 2142203390

Date of Sampling: 10-25-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Total Samples Submitted:	18
Total Samples Analyzed:	18
Total Samples with Layer Asbestos Content > 1%:	0

Location: MH.HA.001, Cream W/Specks 12"X12" VFT W/Mastic Lab ID-Version‡: 14821608-1

Sample Layers	Asbestos Content
Cream Floor Tile	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: MH.HA.002, Light Gray W/Specks 12"X12" VFT W/Mastic Lab ID-Version‡: 14821609-1

Sample Layers	Asbestos Content
Light Gray Floor Tile	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: MH.HA.003, Yellow 12"X12" VFT W/Mastic Lab ID-Version‡: 14821610-1

Sample Layers	Asbestos Content
Yellow Floor Tile	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: MH.HA.004, Orange 12"X12" VFT W/Mastic Lab ID-Version‡: 14821611-1

Sample Layers	Asbestos Content
Orange Floor Tile	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Myers Hall; 2142203390

Date of Sampling: 10-25-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Location: MH.HA.005, Blue 12"X12" VFT W/Mastic Lab ID-Version‡: 14821612-1

Sample Layers	Asbestos Content
Blue Floor Tile	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: MH.HA.006, Red 12"X12" VFT W/Mastic Lab ID-Version‡: 14821613-1

Sample Layers	Asbestos Content
Red Floor Tile	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: MH.HA.007, Ceramic Wall Tile W/Mastic Lab ID-Version‡: 14821614-1

Sample Layers	Asbestos Content
Blue Ceramic Tile	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: MH.HA.008, Yellow Mastic A/W Black Cove Base Lab ID-Version‡: 14821615-1

Sample Layers	Asbestos Content
Yellow Mastic	ND
White Compound with Multilayered Paint	ND
Sample Composite Homogeneity:	Moderate

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

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Client: Shive-Hattery
C/O: Grant Bridgford
Re: Myers Hall; 2142203390

Date of Sampling: 10-25-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Location: MH.HA.009, Gray Leveling Compound

Lab ID-Version‡: 14821616-1

Sample Layers	Asbestos Content
Transparent Mastic	ND
Gray Leveling Compound	ND
Sample Composite Homogeneity:	Moderate

Location: MH.HA.010, Sheetrock & Joint Compound

Lab ID-Version‡: 14821617-1

Sample Layers	Asbestos Content
White Compound with White Paint	ND
Cream Tape	ND
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Poor

Location: MH.HA.011A, Plaster Walls & Ceilings

Lab ID-Version‡: 14821618-1

Sample Layers	Asbestos Content
Gray Plaster	ND
Composite Non-Asbestos Content:	< 1% Hair/Wool
Sample Composite Homogeneity:	Good

Location: MH.HA.011B, Plaster Walls & Ceilings

Lab ID-Version‡: 14821619-1

Sample Layers	Asbestos Content
Gray Plaster	ND
Composite Non-Asbestos Content:	< 1% Hair/Wool
Sample Composite Homogeneity:	Good

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

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Client: Shive-Hattery
C/O: Grant Bridgford
Re: Myers Hall; 2142203390

Date of Sampling: 10-25-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Location: MH.HA.011C, Plaster Walls & Ceilings Lab ID-Version‡: 14821620-1

Sample Layers	Asbestos Content
Gray Plaster	ND
Composite Non-Asbestos Content:	< 1% Hair/Wool
Sample Composite Homogeneity:	Good

Location: MH.HA.011D, Plaster Walls & Ceilings Lab ID-Version‡: 14821621-1

Sample Layers	Asbestos Content
Gray Plaster	ND
Composite Non-Asbestos Content:	< 1% Hair/Wool
Sample Composite Homogeneity:	Good

Location: MH.HA.011E, Plaster Walls & Ceilings Lab ID-Version‡: 14821622-1

Sample Layers	Asbestos Content
Gray Plaster	ND
Composite Non-Asbestos Content:	< 1% Hair/Wool
Sample Composite Homogeneity:	Good

Location: MH.HA.011F, Plaster Walls & Ceilings Lab ID-Version‡: 14821623-1

Sample Layers	Asbestos Content
Gray Plaster	ND
Composite Non-Asbestos Content:	< 1% Hair/Wool
Sample Composite Homogeneity:	Good

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Myers Hall; 2142203390

Date of Sampling: 10-25-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Location: MH.HA.011G, Plaster Walls & Ceilings Lab ID-Version‡: 14821624-1

Sample Layers	Asbestos Content
Gray Plaster	ND
Composite Non-Asbestos Content:	< 1% Hair/Wool
Sample Composite Homogeneity:	Good

Location: MH.HA.012, 2'x2' White ACT Pinholes And Fissures Lab ID-Version‡: 14821625-1

Sample Layers	Asbestos Content
Gray Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	40% Cellulose 40% Glass Fibers
Sample Composite Homogeneity:	Good

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

CHAIN OF CUSTODY

EMLab P&K

866.888.6653 www.EMLabPK.com

Phoenix, AZ: NVLAP Lab Code 500031-0; CO-ELAP # AL-17343
Orange County, CA: NVLAP Lab Code 200577-0
San Bruno, CA: NVLAP Lab Code 200728-0; AIHA IHLAP #102856
San Diego, CA: NVLAP Lab Code 500034-0
Ft. Lauderdale, FL: NVLAP Lab C
Cherry Hill, NJ: NVLAP Lab Code
Ft. Worth, TX: NVLAP Lab Code

003071854

CONTACT INFORMATION

Company: Shive-Hattery	Address: 4125 Westown Pkwy #100, West Des Moines, IA 50266
Contact: Grant Bridgford	Special Instructions: *Point Count All Results Between 1-3% *Stop at 1st Positive Greater Than 10% *Email results to gbridgford@shive-hattery.com
Phone: 515.971.8844	

PROJECT INFORMATION

Project ID: Myers Hall
Project Desc.: 2142203390
Project Zip Code:
Sampling Date & Time: 10.25.22
PO Number:

TURN AROUND TIME CODES - (TAT)

STD - Standard (DEFAULT)
ND - Next Business Day
SD - Same Business Day Rush*
* RUSHES AVAILABLE FROM LOCATIONS LISTED ABOVE

Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.

ASBESTOS ANALYSIS

REQUESTED SERVICES (✓ Boxes)

SAMPLE ID	DESCRIPTION	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples Only)	NOTES
	See attached Form	B	STD		

PCM Air		PLM Bulk					Rock & Soil		Other Requests			
Fiber Count (NIOSH 7400)	OSHA with TWA	EPA Method 600/R-93/116	EPA Point Count (200 Point Count)	EPA Point Count (400 Point Count)	EPA Point Count (1000 Point Count)	Gravimetric Point Count	CARB 435 Method - Pre-crushed Sample	CARB 435 Method - Regular Sample (7 Bus. Days)	Non-Asbestos Fiber Ct. (NIOSH 7400) - "B" Counting Rules	Lead Analysis		
		X										

SAMPLE TYPE CODES	
A - Air	W - Wipe
B - Bulk	T - Tape
D - Dust	R- Rock
SO - Soil	O - Other

RELINQUISHED BY	DATE & TIME
	10-28-22 0800

RECEIVED BY	DATE & TIME
	10/31/22

By submitting this Chain of Custody, you agree to be bound by the terms and conditions set forth at http://www.emlab.com/s/main/serviceterms.html

SHIVEHATTER
ARCHITECTURE + ENGINEERING

003071854

PROJECT: Woodward Resource Center JOB NO. 2142203396 PAGE ___ OF ___ PAGES

SUBJECT: _____ DATE: _____ COMP BY: _____ OK'D BY: _____

Myers Hall

1. MH·HA·001 – Cream w/specks 12"x12" VFT w/ Mastic
2. MH·HA·002 – Light Gray w/ Specks 12"x12" VFT w/ Mastic
3. MH·HA·003 – Yellow 12"x12" VFT w/Mastic
4. MH·HA·004 – Orange 12"x12" VFT w/ Mastic
5. MH·HA·005 – Blue 12"x12" VFT w/Mastic
6. MH·HA·006 – Red 12"x12" VFT w/mastic
7. MH·HA·007 – Ceramic wall tile w/ Mastic
8. MH·HA·008 – Yellow Mastic a/w Black cove Base
9. MH·HA·009 – Gray Leveling Compound
10. MH·HA·010 – Sheetrock & Joint compound
11. MH·HA·011 A – Plaster Walls & ceilings
    B – " " "
    C – " " "
    D – " " "
    E – " " "
    F – " " "
    G – " " "
12. MH·HA·012 – 2'x2' White ACT Pinholes and Fissures

1/8" GRID PAD

eurofins | Built Environment Testing

Report for:

Grant Bridgford
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins EPK Built Environment Testing, LLC
Project: Myers Hall; 2142203390
EML ID: 3071858

Approved by:

Laboratory Manager
Danny Li

Dates of Analysis:
Lead - Flame AA: 11-04-2022

Service SOPs: Lead - Flame AA (EM-BC-S-8443)
AIHA-LAP, LLC accredited service, Lab ID #178697

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. Due to the nature of the analyses performed, field blank correction of results is not applied. The results relate only to the samples as received and tested. Sample size, as it relates to Wipe samples only, is supplied by the client.

Eurofins EPK Built Environment Testing, LLC ("the Company"), a member of the Eurofins Built Environment Testing group of companies, shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.
Eurofins EPK Built Environment Testing, LLC's LabServe® reporting system includes automated fail-safes to ensure that all AIHA-LAP, LLC quality requirements are met and notifications are added to reports when any quality steps remain pending.

Eurofins EPK Built Environment Testing, LLC
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(866) 888-6653 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Myers Hall; 2142203390

Date of Sampling: 10-25-2022
Date of Receipt: 10-31-2022
Date of Report: 11-04-2022

LEAD: FLAME ATOMIC ABSORPTION SPECTROMETRY

Location:	MH-ES-001: Bulk Sample Paint
Comments (see below)	A
Lab ID-Version‡:	14821160-1
Analysis Date:	11/04/2022
Sample type	Paint Chip sample
Method*	NIOSH 7082 & EPA 7000B modified
† Method Reporting Limit	39 ppm
Sample size	0.2589 grams
§Total Lead Result	< 39 ppm

Comments: A) The relative percent difference of the matrix duplicate pair was above control limits. The laboratory control sample and matrix blank were both within control limits and validated the batch.

Sample results have not been corrected for blank values.

Bulk samples are not covered under the AIHA-LAP, LLC service accreditation.

Wipe samples must meet ASTM E1792 criteria. Method Reporting Limits may not be valid for non-ASTM E1792 wipe samples.

*Sample preparation and analytical methods are based upon NIOSH 7082 and EPA 7000B.

† The Method Reporting Limit is the minimum concentration of Lead that the laboratory can confidently detect in the sample.

§ Total Lead Result has been rounded to two significant figures to reflect analytical precision.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

CHAIN OF CUSTODY

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Phoenix, AZ: 1501 West Knudsen Drive, Phoenix, AZ 85027 * **(800) 651-4802**
SSF, CA: 6000 Shoreline Ct, Ste. 205, S. San Francisco, CA 94080 * **(866) 888-6653**

LEVEL

003071858

CONTACT INFORMATION

Company:	Shive - Hattery	Address:	4125 Westown Pkwy. West Des
Contact:	Grant Bridgford	Special Instructions:	Moines, IA 50266
Phone:	515.971.8849		

PROJECT INFORMATION

Project ID:	Myers Hall		
Project Description:	2142203390		
Project Zip Code:		Sampling Date/Time:	10.25.22
PO Number:		Sampled By:	GB

TURN AROUND TIME CODES - (TAT)

STD - Standard (Default)
ND - Next Business Day
SD - Same Business Day
WH - Weekend/Holiday/ASAP

Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.

SAMPLE ID	DESCRIPTION	Sample Type (Below)	TAT (Above)	Total Volume/Area (as applicable)	NOTES (Time of day, Temp, RH, etc.)
MH-BS-001	Bulk Sample Paint	B	STD	10^2 Ft	

REQUESTED SERVICES

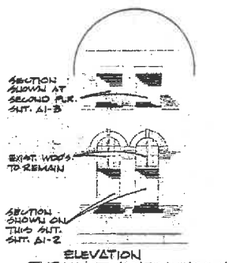
Non-Culturable		Culturable								Other Requests				
Spore Trap	Tape, Swab, Bulk	BioCassette™: Andersen, SAS, Swab, Water, Bulk, Dust, Soil, Contact Plate												
Spore Trap Analysis	Other biological particles - supplement	Direct Microscopic Exam (Qualitative)	Quantitative spore count direct exam	Dust Characterization	1-Media Surface Fungi (Genus ID + *Asp.* spp.)	Culturable Air Fungi (Genus ID + *Asp.* spp.)	Gram Stain and Counts (Culturable Air and Surface Bacteria)	*Legionella* culture	Total Coliform, *E.coli* (Presence/Absence)	QuantiTray-Sewage Screen	OTHER: (please specify test)	Asbestos in Air - PCM Airborne Fiber Count (NIOSH 7400)	Asbestos Bulk - PLM	Lead (Pb) - Flame AA	PCR (please specify test)	Allergens (please specify test)
														X		

SAMPLE TYPE CODES

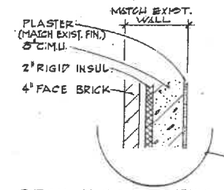
BC - BioCassette™	**CP** - Contact Plate	**T** - Tape	**O** - Other:
A1S - Andersen	**ST** - Spore Trap	**SW** - Swab	
SAS - Surface Air Sampler	**B** - Bulk	**SO** - Soil	
NP - Non-potable Water	**P** - Potable Water	**D** - Dust	

RELINQUISHED BY	DATE & TIME
	10.28.22 0800

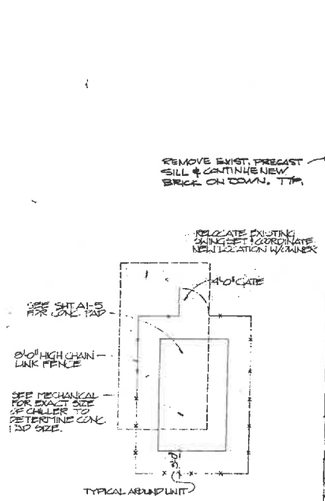
RECEIVED BY	DATE & TIME
	10/31/22

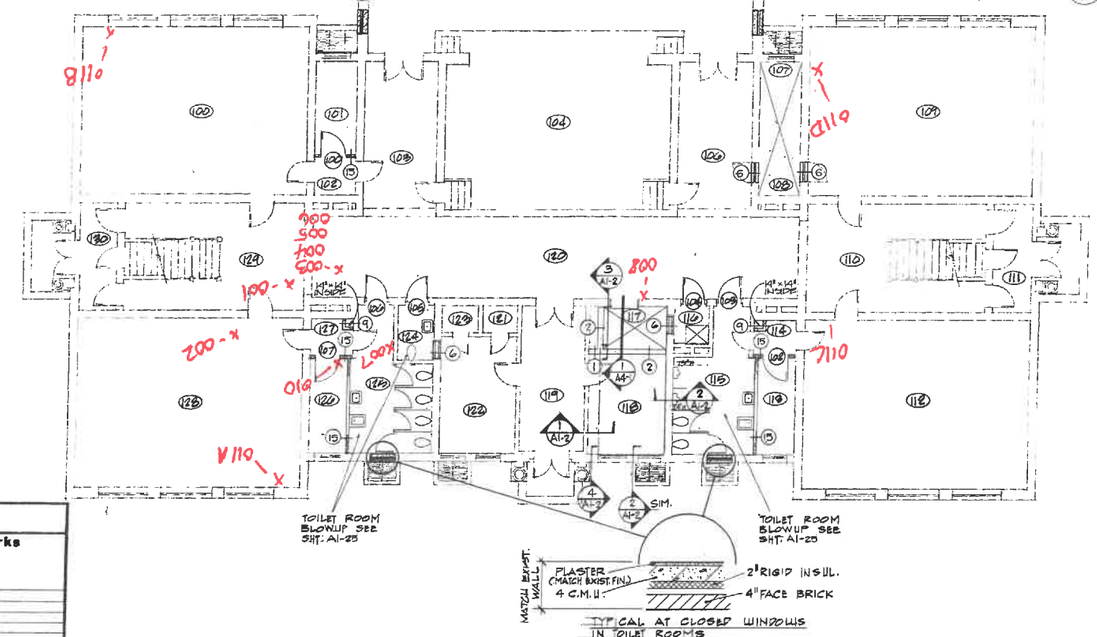


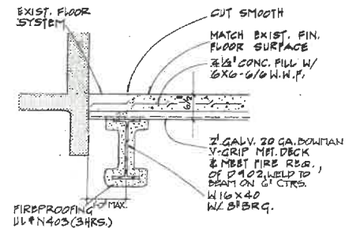
ELEVATION
TYPICAL AT CLOSED WINDOWS



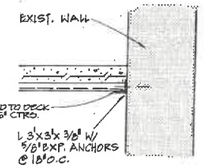
TYPICAL AT CLOSED WINDOWS







SECTION 1 A1-2
SCALE 3/4"=1'-0"



SECTION 2 A1-2
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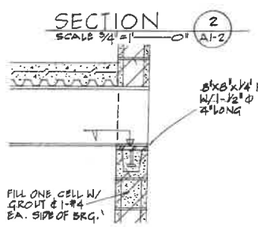
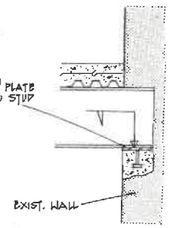


SECTION 3 A1-2
SCALE 3/4"=1'-0"



SECTION 4 A1-2
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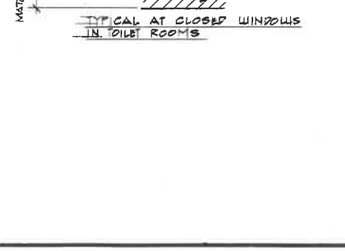


TYPICAL AT CLOSED WINDOWS IN TOILET ROOMS

DOOR SCHEDULE

bldg	door no	door size	door type	door matl	frame type	frame matl	frame head	frame jamb	frame sill	hardware	label	sign	remarks
	100	2'-0" x 7'-0" x 1¾"	B	SNGL	1	H.M.	2	2	—	GA	B		
	101	NOT USED	—	—	—	—	—	—	—	—	—		
	102	2'-0" x 7'-0" x 1¾"	B	SNGL	1	H.M.	2	2	—	GA	B		
	103		A				4	4		T	20 MIN.		
	104		A				4	4		T			
	105		A				4	4		T			
	106		A				4	4		T			
	107		B				2	2	—	GA	B		

FINISH										SCHEDULE	
		WALLS				CLG.					
FLOOR	BASE	NORTH	EAST	SOUTH	WEST	HEIGHT	FINISH	REMARKS		ROOM NAME	ROOM NUMBER
—	—	A	A	A	A	A	A	—		CLASSROOM	100
—	C	A	A	A	A	A	B	—		ELECTRICAL ROOM	101
—	—	D	D	D	D	A	B	—		COUNSEL	102
—	—	A	A	A	A	A	A	—		CORRIDOR	103
—	—	—	—	—	—	—	—	—		STAGE	104
—	—	A	A	A	A	—	—	—		AUDITORIUM	105
—	C	A	A	A	A	A	A	—		CORRIDOR	106
—	—	—	—	—	—	—	—	—		MECH. SHAFT	107
—	—	—	—	—	—	—	—	—		MECH. SHAFT	108
—	C	A	A	A	A	A	A	—		CLASSROOM	109
—	—	A	A	A	A	—	—	—		STAIR	110
—	—	A	A	A	A	A	A	—		VESTIBULE	111
—	—	A	A	A	A	A	A	—		CLASSROOM	112
—	C	A	A	A	A	A	A	—		STORAGE	113
—	—	D	D	D	D	A	B	—		COUNSEL	114
A	A	D	D	D	D	A	C	—		TOILET	115
A	A	D	D	D	D	A	C	—		JANITOR CLOSET	116
—	—	—	—	—	—	—	—	—		ELEVATOR	117
—	C	A	A	A	A	A	A	—		OFFICE	118
—	—	A	A	A	A	A	A	—		CORRIDOR	119
—	—	A	A	A	A	A	A	—		CORRIDOR	120
—	—	A	A	A	A	A	A	—		CLOSET	121
—	C	A	A	A	A	A	A	—		OFFICE	122
—	—	A	A	A	A	A	A	—		CLOSET	123
A	A	D	D	D	D	A	C	—		STAFF TOILET	124
A	A	D	D	D	D	A	C	—		TOILET	125
—	C	A	A	A	A	A	A	—		STORAGE	126
—	—	D	D	D	D	A	B	—		LOUNGE	127
B	B	A	A	A	A	A	A	—		CLASS 200	128
—	—	A	A	A	A	—	—	—		STAIR	129
—	—	A	A	A	A	A	A	—		VESTIBULE	130

CEILING	BASE
A A.I.C. 2X2 (1)	A CERAMIC TILE
B A.I.C. 2X2 (2)	B SHEET RUBBER
C GYP. BD. (PAINT)	C VINYL BASE B-REMARKS
D	D
E	E
F	F
G	G
H	H
I	I

WALLS	FLOOR
A PAINT	A CERAMIC TILE
B PAINT (TYPICAL) A-REMARKS	B SHEET RUBBER
C	C
D	D
E	E
F	F
G	G
H	H
I	I

REMARKS
A EPOXY PAINT
B NEW WALLS ONLY

0001		0201	0301	1102	1902	1602
0001		0201	0301	1102	1902	1602

KIRKHAM, MICHAEL AND ASSOCIATES
ARCHITECTS ENGINEERS PLANNERS

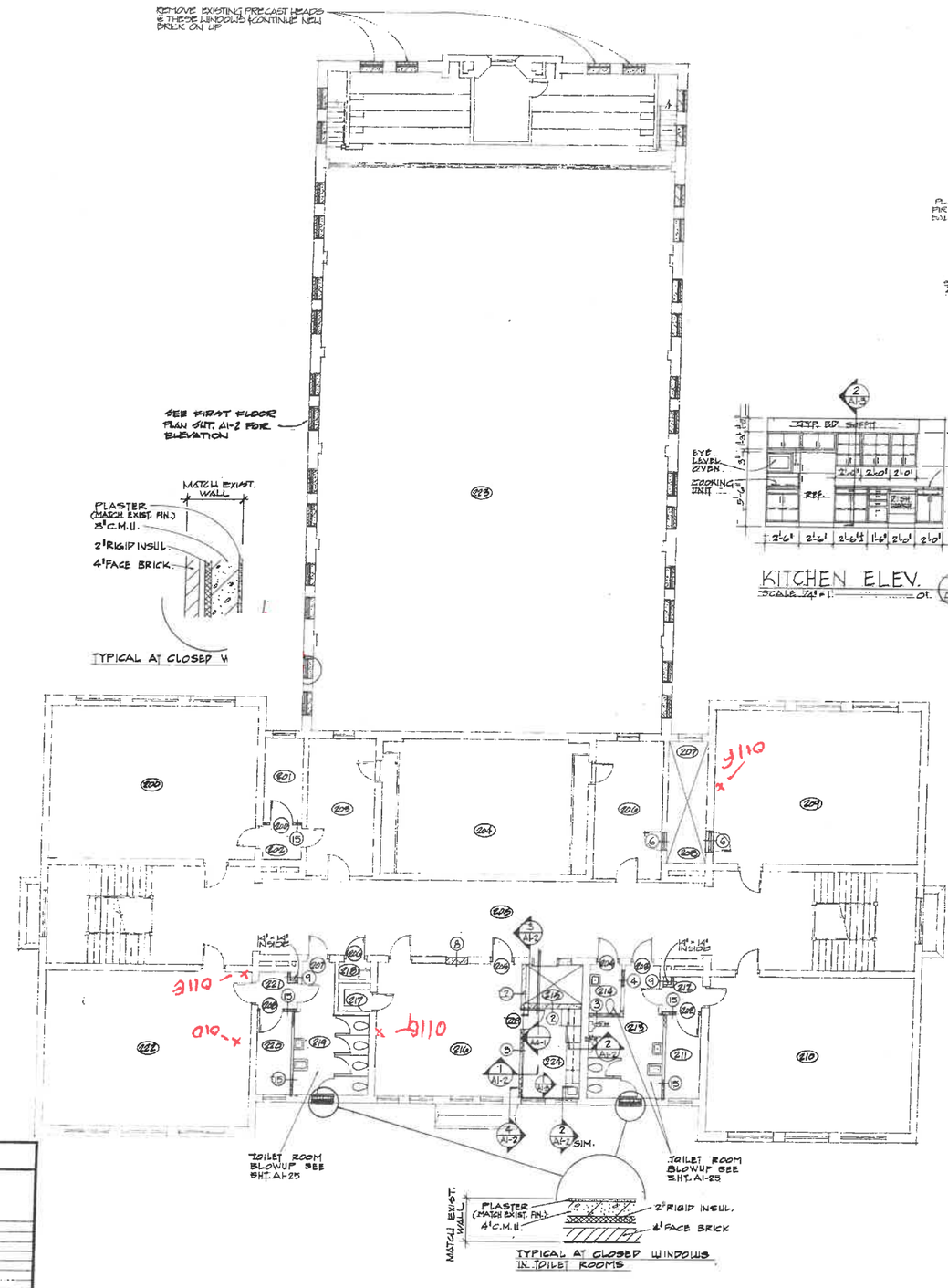
revisions

Interim Renovations for Title XIX
Woodward State Hospital-School
phase 4
Woodward, Iowa

FLOOR PLAN
SCHOOL FIRST FLOOR

date
Kirkham Michael & Associates
Des Moines, Iowa
Proj. No. 8-740234

sheet A1-2



DOOR SCHEDULE

bldg	door no	door size	door type	door mat'l	frame type	frame mat'l	frame head	frame jamb	frame sill	hardware	label	sign	remarks
	200	4'-0" x 7'-0" x 1 3/4"	B	PAINT	1	HM	2	2	1	GA	FD		
	201	NOT USED	1	1	1	1	1	1	1	GA	1		
	202	3'-0" x 7'-0" x 1 3/4"	B	GALV	1	HM	2	2	1	GA	FD		
	203		A				2	2	1	1	60 MIN		
	204		A				2	2	1	1	1		
	205		A				2	2	1	1	1		
	206		A				2	2	1	1	1		
	207		A				2	2	1	1	1		
	208		B				2	2	1	GA	1		
	209		B				2	2	1	GA	1		

FINISH											SCHEDULE	
		WALLS					CLG.					
FLOOR	BASE	NORTH	EAST	SOUTH	WEST	HEIGHT	FINISH	REMARKS			ROOM NAME	ROOM NUMBER
A	B	A	A	A	A	8'	A	–			CLASSROOM	200
–	C	A	A	A	A	8'	A	–			STORAGE	201
A	B	A	A	A	A	8'	B	–			COUNSEL	202
B	B	A	A	A	A	8'	A	–			CLASSROOM	203
–	–	A	A	A	A	–	–	–			ATTIC ATTACH	204
–	–	A	A	A	A	8'	A	–			CORRIDOR	205
B	B	A	A	A	A	8'	A	–			CLASSROOM	206
–	–	–	–	–	–	–	–	–			MECH. SHAFT	207
–	–	–	–	–	–	–	–	–			MECH. SHAFT	208
B	B	A	A	A	A	8'	A	–			CLASSROOM	209
B	B	A	A	A	A	8'	A	–			CLASSROOM	210
–	C	A	A	A	A	8'	A	–			STORAGE	211
B	B	A	A	A	A	8'	B	–			COUNSEL	212
A	A	D	D	D	D	A	C	–			TOILET	213
A	A	B	D	D	D	A	C	–			STAFF TOILET	214
–	–	–	–	–	–	–	–	–			ELEVATOR	215
B	B	A	A	A	A	A	A	–			CLASSROOM	216
–	–	A	A	A	A	8'	A	–			CLOSET	217
A	A	A	A	A	A	8'	C	–			JANITOR CLOSET	218
A	A	D	D	D	D	8'	C	–			TOILET	219
–	C	A	A	A	A	8'	A	–			STORAGE	220
B	B	A	A	A	A	8'	B	–			COUNSEL	221
–	–	A	A	A	A	8'	A	–			CLASSROOM	222
–	–	A	A	A	A	–	–	–			LARGE MOTORIUM	223
B	B	D	D	D	D	A	A	–			KITCHEN	224

CEILING	
A	A.T.C. 2 x 2 ( )
B	A.T.C. 2 x 2 ( )
C	GYP. BD. (PAINT)
D	
E	
F	
G	
H	
I	

BASE	
A	CERAMIC TILE
B	SHEET RUBBER
C	VINYL BASE (REMARKS)
D	
E	
F	
G	
H	
I	

WALLS	
A	PAINT
B	PAINT (SPECIAL) (REMARKS)
C	
D	
E	
F	
G	
H	
I	

FLOOR	
A	CERAMIC TILE
B	SHEET RUBBER
C	
D	
E	
F	
G	
H	
I	

REMARKS	
A	EPOXY PAINT
B	NEW WALLS ONLY

ARCHITECTS ENGINEERS PLANNERS
KIRKHAM, MICHAEL AND ASSOCIATES

revisions

Interim Renovations for Title XIX
Woodward State Hospital-School
phase 4 Woodward, Iowa

FLOOR PLAN
SCHOOL SECOND FLOOR

Iowa Department of Social Services
Des Moines, Iowa
B-740284

SHEET A1-3

0001		0201	0301	1103	1503	1403	
0002		0201	0301	1103	1503	1403	

SHIVEHATTERY
ARCHITECTURE + ENGINEERING

November 10, 2022

Woodward Resource Center
ATTN: Mr. Rodney Carr
Facility Manager
1251 334th Street
Woodward, IA 50276

RE: Woodward Resource Center – Westwood Building – Asbestos Survey & Paint Chip Sampling

Dear Mr. Carr:

Per your request and authorization, Shive-Hattery, Inc. performed an asbestos survey and paint chip sampling for the above referenced project on October 25, 2022. It is our understanding that the building will undergo renovations that may disturb suspect asbestos-containing building materials and potential lead-based paint. It was the intent of the survey to determine what materials within the project area contain asbestos and lead.

Methods and Procedures

The review for this project was performed by personnel trained and certified under the National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations. Partial or destructive testing was not performed to reveal concealed conditions.

A sample from each suspect homogeneous area was collected from the project areas at the Woodward Resource Center Westwood Building. Pertinent information such as location, color, etc. was recorded for each suspect material. The samples were then sent to an NAVLAP accredited laboratory for analysis.

The samples were analyzed for asbestos fibers utilizing the Polarized Light Microscopy method of analysis by EMLab P&K of Phoenix, AZ. Each sample was analyzed for the six different types of fibrous asbestos forms of which a percentage, by volume, is estimated and summarized. As defined by the U.S. Environmental Protection Agency mandated NESHAP regulations, the suspect material is considered an asbestos-containing material (ACM) if the material contains more than 1.0 percent of any one or a combination of asbestos fibers.

A composite bulk paint chip sample from suspect painted substrate areas was collected from project areas at Westwood. The bulk sample was sent to an AIHA accredited laboratory for analysis.

The bulk sample was analyzed for lead-based paint using flame atomic absorption spectrometry (Flame AA) under NIOSH 7082 and EPA 7000B modified, by EMLab P&K of Phoenix, AZ. Flame AA provides the most economical means of determining at risk environments to lead exposure. The EPA mandated method reporting limit for lead-based paint is 39 ppm (parts per million). Paint is lead containing at 0.5% by weight or 5,000 parts per million (ppm).

Pertinent information for each bulk sample has been summarized on the sample analytical results which can be found at the end of this report.

Summary of Findings

Twenty-five (25) samples were collected from 28 homogeneous areas located at Woodward Resource Center Westwood Building. Materials tested with an asbestos content greater than 1.0% are considered to be asbestos containing. The following table summarizes the sampling results by homogeneous area:

Homogeneous Area		Asbestos Content
1.	White Ceramic Tile w/ multilayered Paint	0%
2.	Dark Gray Mortar #1	0%
3.	Gray Mortar	0%
4.	Dark Gray Mortar #2	0%
5.	Gray Ceiling Tile w/ White Surface	0%
6.	Terrazzo Floor	0%
7.	White Texture w/ White Paint Wall	0%
8.	White Plaster w/ Yellow Paint Wall	0%
9.	Off-White Plaster Wall	0%
10.	White Non-fibrous Material	0%
11.	White Compound w/ Blue Paint	0%
12.	Cream Tape	0%
13.	White Joint Compound	0%
14.	White Drywall w/ Brown Paper	0%
15.	White Compound w/ Green Paint	0%
16.	White Compound w/ Multilayered Paint	0%
17.	White Skim Coat	0%
18.	Off-White Skim Coat	0%
19.	White Skim Coat w/ Yellow Paint	0%
20.	Brown Mastic	0%
21.	White Mastic	0%
22.	Dark Brown Mastic	0%
23.	Off-White Compound #1	0%
24.	Tan Mastic	0%
25.	Off-White Compound #2	0%
26.	Yellow Ceramic Tile	0%
27.	Tan Mastic	0%
28.	Brown Flooring	0%

Lead-based Paint Analysis		Sample Results
1.	Bulk Paint Chip Sample (Westwood)	49 ppm

Recommendations

Thus, it appears that the proposed project will not disturb any asbestos-containing materials and asbestos abatement is not required. There was also no paint identified as lead-containing within the project area.

Please call our office if you should have any questions or comments.

Sincerely,

SHIVE-HATTERY, INC.

Grant W. Bridgford
License Number IA 22-7928 INSP
Expiration Date: February 10, 2023

And

Samuel Becker
Environmental Specialist
Lead Inspector/Risk Assessor
LEAD-INSP10002

GWB/SSB/mas

Encs.

Copy: Chad Siems, S-H

eurofins | Built Environment Testing

Report for:

Grant Bridgford
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins Aerotech Built Environment Testing, Inc.
Project: Westwood; 2142203390
EML ID: 3071784

Approved by:

Renee Luna-Trepczynski

Approved Signatory
Renee Luna-Trepczynski

Dates of Analysis:
Asbestos PLM: 11-03-2022

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)
NVLAP Lab Code 500031-0

Eurofins Aerotech Built Environment Testing, Inc.
1501 West Knudsen Drive, Phoenix, AZ 85027
(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Westwood; 2142203390

Date of Sampling: 10-25-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Total Samples Submitted:	25
Total Samples Analyzed:	25
Total Samples with Layer Asbestos Content > 1%:	0

Location: 1, WW-HA-001- White 4"X4" Cement Wall Tile

Lab ID-Version‡: 14821935-1

Sample Layers	Asbestos Content
White Ceramic Tile with Multilayered Paint	ND
Dark Gray Mortar #1	ND
Gray Mortar	ND
Dark Gray Mortar #2	ND
Sample Composite Homogeneity:	Poor

Location: 2, WW-HA-002-White 3'X2' ACT w/ Pinholes and Fissures

Lab ID-Version‡: 14821936-1

Sample Layers	Asbestos Content
Gray Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	35% Cellulose 35% Glass Fibers
Sample Composite Homogeneity:	Good

Location: 3, WW-HA-003- Terrazo Floor with Orange Specks

Lab ID-Version‡: 14821937-1

Sample Layers	Asbestos Content
Multicolored Flooring	ND
Sample Composite Homogeneity:	Good

Location: 4A, WW-HA-004A-White Plaster Walls with Texture

Lab ID-Version‡: 14821938-1

Sample Layers	Asbestos Content
White Texture with White Paint	ND
White Plaster with Yellow Paint	ND
Sample Composite Homogeneity:	Moderate

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

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Client: Shive-Hattery
C/O: Grant Bridgford
Re: Westwood; 2142203390

Date of Sampling: 10-25-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Location: 4B, WW-HA-004B-White Plaster Walls with Texture Lab ID-Version‡: 14821939-1

Sample Layers	Asbestos Content
White Plaster with Yellow Paint	ND
Off-White Plaster	ND
White Non-Fibrous Material	ND
Sample Composite Homogeneity:	Poor

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
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Client: Shive-Hattery
C/O: Grant Bridgford
Re: Westwood; 2142203390

Date of Sampling: 10-25-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Location: 4C, WW-HA-004C-White Plaster Walls with Texture Lab ID-Version‡: 14821940-1

Sample Layers	Asbestos Content
White Plaster with Yellow Paint	ND
Off-White Plaster	ND
White Non-Fibrous Material	ND
Sample Composite Homogeneity:	Poor

Location: 4D, WW-HA-004D-White Plaster Walls with Texture Lab ID-Version‡: 14821941-1

Sample Layers	Asbestos Content
White Plaster with Yellow Paint	ND
Off-White Plaster	ND
White Non-Fibrous Material	ND
Sample Composite Homogeneity:	Poor

Location: 4E, WW-HA-004E-White Plaster Walls with Texture Lab ID-Version‡: 14821942-1

Sample Layers	Asbestos Content
White Plaster with Yellow Paint	ND
Off-White Plaster	ND
White Non-Fibrous Material	ND
Sample Composite Homogeneity:	Poor

Location: 4F, WW-HA-004F-White Plaster Walls with Texture Lab ID-Version‡: 14821943-1

Sample Layers	Asbestos Content
White Plaster with Yellow Paint	ND
Off-White Plaster	ND
White Non-Fibrous Material	ND
Sample Composite Homogeneity:	Poor

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(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Westwood; 2142203390

Date of Sampling: 10-25-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Location: 4G, WW-HA-004G-White Plaster Walls with Texture Lab ID-Version‡: 14821944-1

Sample Layers	Asbestos Content
White Plaster with Yellow Paint	ND
Off-White Plaster	ND
White Non-Fibrous Material	ND
Sample Composite Homogeneity:	Poor

Location: 5A, WW-HA-005A- Sheetrock and Joint Compound Lab ID-Version‡: 14821945-1

Sample Layers	Asbestos Content
White Compound with Blue Paint	ND
Cream Tape	ND
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Poor

Location: 5B, WW-HA-005B- Sheetrock and Joint Compound Lab ID-Version‡: 14821946-1

Sample Layers	Asbestos Content
White Compound with Green Paint	ND
White Compound with Multilayered Paint	ND
Cream Tape	ND
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Poor

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
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Client: Shive-Hattery
C/O: Grant Bridgford
Re: Westwood; 2142203390

Date of Sampling: 10-25-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Location: 5C, WW-HA-005C- Sheetrock and Joint Compound Lab ID-Version‡: 14821947-1

Sample Layers	Asbestos Content
White Compound with Green Paint	ND
White Compound with Multilayered Paint	ND
Cream Tape	ND
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Poor

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Client: Shive-Hattery
C/O: Grant Bridgford
Re: Westwood; 2142203390

Date of Sampling: 10-25-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Location: 5D, WW-HA-005D- Sheetrock and Joint Compound

Lab ID-Version‡: 14821948-1

Sample Layers	Asbestos Content
White Compound with Green Paint	ND
White Compound with Multilayered Paint	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Poor

Location: 5E, WW-HA-005E- Sheetrock and Joint Compound

Lab ID-Version‡: 14821949-1

Sample Layers	Asbestos Content
White Compound with Green Paint	ND
White Compound with Multilayered Paint	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Poor

Location: 6A, WW-HA-006A-Plaster Ceilings with Texture

Lab ID-Version‡: 14821950-1

Sample Layers	Asbestos Content
White Skim Coat	ND
Off-White Base Coat	ND
Sample Composite Homogeneity:	Moderate

Location: 6B, WW-HA-006B-Plaster Ceilings with Texture

Lab ID-Version‡: 14821951-1

Sample Layers	Asbestos Content
White Skim Coat with Yellow Paint	ND
Off-White Base Coat	ND
White Non-Fibrous Material	ND
Sample Composite Homogeneity:	Poor

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
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(800) 651-4802 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Westwood; 2142203390

Date of Sampling: 10-25-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Location: 6C, WW-HA-006C-Plaster Ceilings with Texture Lab ID-Version‡: 14821952-1

Sample Layers	Asbestos Content
White Skim Coat	ND
Off-White Base Coat	ND
Sample Composite Homogeneity:	Moderate

Location: 6D, WW-HA-006D-Plaster Ceilings with Texture Lab ID-Version‡: 14821953-1

Sample Layers	Asbestos Content
White Skim Coat	ND
Off-White Base Coat	ND
Sample Composite Homogeneity:	Moderate

Location: 6E, WW-HA-006E-Plaster Ceilings with Texture Lab ID-Version‡: 14821954-1

Sample Layers	Asbestos Content
White Skim Coat	ND
Off-White Base Coat	ND
Sample Composite Homogeneity:	Moderate

Location: 6F, WW-HA-006F-Plaster Ceilings with Texture Lab ID-Version‡: 14821955-1

Sample Layers	Asbestos Content
White Skim Coat	ND
Off-White Base Coat	ND
Sample Composite Homogeneity:	Moderate

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
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Client: Shive-Hattery
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Re: Westwood; 2142203390

Date of Sampling: 10-25-2022
Date of Receipt: 10-31-2022
Date of Report: 11-03-2022

ASBESTOS PLM REPORT

Location: 6G, WW-HA-006G-Plaster Ceilings with Texture Lab ID-Version‡: 14821956-1

Sample Layers	Asbestos Content
White Skim Coat	ND
Off-White Base Coat	ND
Sample Composite Homogeneity:	Moderate

Location: 7, WW-HA-007- Brown Cove Base Mastic Lab ID-Version‡: 14821957-1

Sample Layers	Asbestos Content
Brown Mastic	ND
White Mastic	ND
Dark Brown Mastic	ND
Off-White Compound #1	ND
Tan Mastic	ND
Off-White Compound #2	ND
Sample Composite Homogeneity:	Poor

Location: 8, WW-HA-008-Yellow Ceramic Tile Mastic Wall Base Trim Lab ID-Version‡: 14821958-1

Sample Layers	Asbestos Content
Yellow Ceramic Tile	ND
Gray Mortar	ND
Tan Mastic	ND
Sample Composite Homogeneity:	Poor

Location: 9, WW-HA-009- Brown Vinyl Flooring w/ Mastic Lab ID-Version‡: 14821959-1

Sample Layers	Asbestos Content
Brown Flooring	ND
White Mastic	ND
Sample Composite Homogeneity:	Moderate

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
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CHAIN OF CUSTODY

EMLab P&K

866.888.6653 www.EMLabPK.com

Phoenix, AZ: NVLAP Lab Code 500031-0; CO-ELAP # AL-17343
Orange County, CA: NVLAP Lab Code 200577-0
San Bruno, CA: NVLAP Lab Code 200728-0; AIHA IHLAP #102856
San Diego, CA: NVLAP Lab Code 500034-0
Ft. Lauderdale, FL: NVLAP Lab C
Cherry Hill, NJ: NVLAP Lab Code
Ft. Worth, TX: NVLAP Lab Code

003071784

CONTACT INFORMATION

Company: Shive-Hattery
Address: 4125 Westown Pkwy #100, West Des Moines, IA 50266
Contact: Grant Bridgford
Special Instructions:
*Point Count All Results Between 1-3%
*Stop at 1st Positive Greater Than 10%
*Email results to gbridgford@shive-hattery.com
Phone: 515.971.8844

PROJECT INFORMATION

Project ID: Westwood
Project Desc.: 2142203390
Project Zip Code:
Sampling Date & Time: 10.25.22
PO Number:

TURN AROUND TIME CODES - (TAT)

STD - Standard (DEFAULT)
ND - Next Business Day
SD - Same Business Day Rush*
* RUSHES AVAILABLE FROM LOCATIONS LISTED ABOVE

Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.

ASBESTOS ANALYSIS

REQUESTED SERVICES (✓ Boxes)

SAMPLE ID	DESCRIPTION	Sample Type (Below)	TAT (Above)	Total Volume (Air Samples Only)	NOTES
	See attached	B	STD		

PCM Air		PLM Bulk					Rock & Soil		Other Requests			
Fiber Count (NIOSH 7400)	OSHA with TWA	EPA Method 600/R-93/116	EPA Point Count (200 Point Count)	EPA Point Count (400 Point Count)	EPA Point Count (1000 Point Count)	Gravimetric Point Count	CARB 435 Method - Pre-crushed Sample	CARB 435 Method - Regular Sample (7 Bus. Days)	Non-Asbestos Fiber Ct. (NIOSH 7400) - "B" Counting Rules	Lead Analysis		
		X										

SAMPLE TYPE CODES

A - Air	W - Wipe
B - Bulk	T - Tape
D - Dust	R- Rock
SO - Soil	O - Other

RELINQUISHED BY	DATE & TIME
	10.28.22 0800

RECEIVED BY	DATE & TIME
	10/31/22 930

By submitting this Chain of Custody, you agree to be bound by the terms and conditions set forth at http://www.emlab.com/s/main/serviceterms.html

SHIVEHATTER
ARCHITECTURE + ENGINEERI

PROJECT: Woodward Resource Center JOB NO. 2142203390 PAGE ____ OF ____ PAGES

SUBJECT: ____ DATE: ____ COMP BY: ____ OK'D BY ____

Westwood

1. WW·HA·001 - White 4"x4" cement wall tile
2. WW·HA·002 - 2'x2' White ACT w/ Pinholes & fissures
3. WW-HA·003 - Terrazo floor w/ orange specks
4. WW·HA·004A - White Plaster walls w/ texture
   B - "
   C - "
   D - "
   E - "
   F -
   G -
5. WW·HA·005A - Sheetrock & Joint Compound
   B - "
   C - "
   D -
   E -
6. WW·HA·006A - Plaster ceilings w/ texture
   B - "
   C - "
   D -
   E -
   F -
   G -
7. WW·HA·007 - Brown Cove Base Mastic
8. WW·HA·008 - Yellow Ceramic Tile Mastic wall Base trim
9. WW·HA·009 - Brown vinyl Flooring w/ Mastic

1/8" GRID PAD

eurofins | Built Environment Testing

Report for:

Grant Bridgford
Shive-Hattery
2839 Northgate Dr.
Iowa City, IA 52245

Regarding: Eurofins EPK Built Environment Testing, LLC
Project: Westwood; 2142203390
EML ID: 3071862

Approved by:

Laboratory Manager
Danny Li

Dates of Analysis:
Lead - Flame AA: 11-07-2022

Service SOPs: Lead - Flame AA (EM-BC-S-8443)
AIHA-LAP, LLC accredited service, Lab ID #178697

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. Due to the nature of the analyses performed, field blank correction of results is not applied. The results relate only to the samples as received and tested. Sample size, as it relates to Wipe samples only, is supplied by the client.

Eurofins EPK Built Environment Testing, LLC ("the Company"), a member of the Eurofins Built Environment Testing group of companies, shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.
Eurofins EPK Built Environment Testing, LLC's LabServe® reporting system includes automated fail-safes to ensure that all AIHA-LAP, LLC quality requirements are met and notifications are added to reports when any quality steps remain pending.

Eurofins EPK Built Environment Testing, LLC
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(866) 888-6653 www.eurofinsus.com/Built

Client: Shive-Hattery
C/O: Grant Bridgford
Re: Westwood; 2142203390

Date of Sampling: 10-25-2022
Date of Receipt: 10-31-2022
Date of Report: 11-08-2022

LEAD: FLAME ATOMIC ABSORPTION SPECTROMETRY

Location:	WW-PC-001: Bulk Paint Ship Sample
Comments (see below)	None
Lab ID-Version‡:	14821157-1
Analysis Date:	11/07/2022
Sample type	Paint Chip sample
Method*	NIOSH 7082 & EPA 7000B modified
† Method Reporting Limit	0.0039%
Sample size	0.2563 grams
§Total Lead Result	0.0049%

Comments:

Sample results have not been corrected for blank values.

Bulk samples are not covered under the AIHA-LAP, LLC service accreditation.

Wipe samples must meet ASTM E1792 criteria. Method Reporting Limits may not be valid for non-ASTM E1792 wipe samples.

*Sample preparation and analytical methods are based upon NIOSH 7082 and EPA 7000B.

† The Method Reporting Limit is the minimum concentration of Lead that the laboratory can confidently detect in the sample.

§ Total Lead Result has been rounded to two significant figures to reflect analytical precision.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

CHAIN OF CUSTODY

eurofins

EMLab P&K

www.EMLabPK.com

Marlton, NJ: 3000 Lincoln Dr E, Ste. A, Marlton, NJ 08053 * **(866) 871-1984**
Phoenix, AZ: 1501 West Knudsen Drive, Phoenix, AZ 85027 * **(800) 651-4802**
SSF, CA: 6000 Shoreline Ct, Ste. 205, S. San Francisco, CA 94080 * **(866) 888-6653**

LEVEL I

003071862

CONTACT INFORMATION

Company:	Shive-Hattery	Address:	4125 Westown Pkwy, West Des Moines
Contact:	Grant Bridgford	Special Instructions:	IA 50266
Phone:	515.971.8844		email results

PROJECT INFORMATION

Project ID:	Westwood		
Project Description:	2142203390		
Project Zip Code:		Sampling Date/Time:	10.25.22
PO Number:		Sampled By:	GB

TURN AROUND TIME CODES - (TAT)

STD - Standard (Default)
ND - Next Business Day
SD - Same Business Day
WH - Weekend/Holiday/ASAP

Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.

SAMPLE ID	DESCRIPTION	Sample Type (Below)	TAT (Above)	Total Volume/Area (as applicable)	NOTES (Time of day, Temp, RH, etc.)
WW.PC.001	Bulk Paint Chip Sample	B	STD	10^2 ft	

REQUESTED SERVICES

Non-Culturable				Culturable								Other Requests				
Spore Trap		Tape, Swab, Bulk														
Spore Trap Analysis	Other biological particles - supplement	Direct Microscopic Exam (Qualitative)	Quantitative spore count direct exam	Dust Characterization	1-Media Surface Fungi (Genus ID + Asp. spp.)	Culturable Air Fungi (Genus ID + Asp. spp.)	Gram Stain and Counts (Culturable Air and Surface Bacteria)	*Legionella* culture	Total Coliform, *E.coli* (Presence/Absence)	Quant/Tray-Sewage Screen	OTHER: (please specify test)	Asbestos in Air - PCM Airborne Fiber Count (NIOSH 7400)	Asbestos Bulk - PLM	Lead (Pb) - Flame AA	PCR (please specify test)	Allergens (please specify test)
														X		

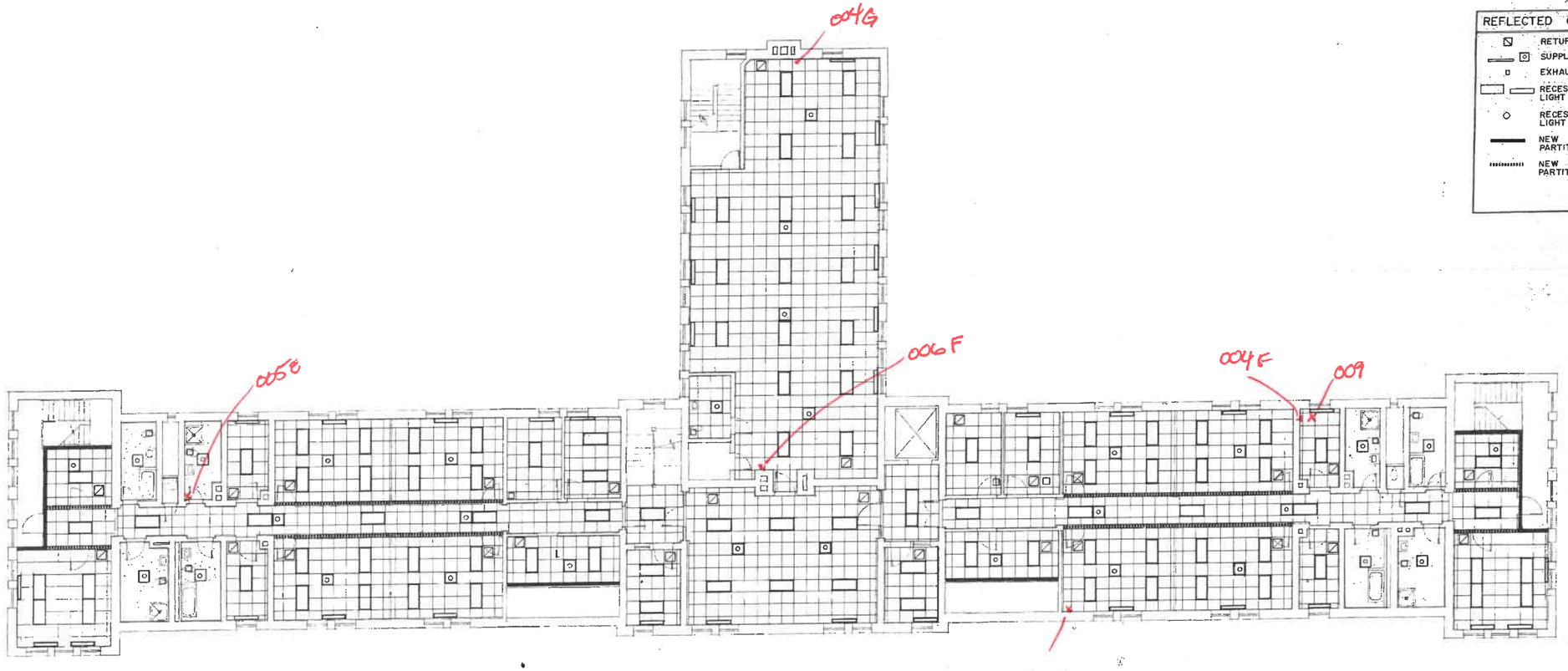
Lead (Pb) - Flame AA: Percent %

SAMPLE TYPE CODES

BC - BioCassette™	**CP** - Contact Plate	**T** - Tape	**O** - Other:
A1S - Andersen	**ST** - Spore Trap	**SW** - Swab	
SAS - Surface Air Sampler	**B** - Bulk	**SO** - Soil	
NP - Non-potable Water	**P** - Potable Water	**D** - Dust	

RELINQUISHED BY	DATE & TIME
	10.28.22 0800

RECEIVED BY	DATE & TIME
	10/31/22



REFLECTED CEILING LEGEND

- RETURN AIR REGISTERS
- SUPPLY AIR DIFFUSERS
- EXHAUST AIR REGISTERS
- RECESSED FLUORESCENT LIGHT FIXTURES
- RECESSED INCANDESCENT LIGHT FIXTURES
- NEW 2-HR. FIRE RATED PARTITION
- NEW 1-HR. FIRE RATED PARTITION

FINISH SCHEDULE

CLG. HEIGHT	CLG. FINISH	REMARKS	ROOM NAME	ROOM NUMBER
-	-	-	STAIR	001
-	-	-	STAIR	002
-	-	-	STAIR	003
-	-	-	STAIR	004

FINISH SCHEDULE

CLG. HEIGHT	CLG. FINISH	REMARKS	ROOM NAME	ROOM NUMBER
8	A	A	OFFICE	221
-	F	A	STORAGE	222
8	A	A	LOUNGE	223
8	A	-	CORRIDOR	224
8	A	-	STORAGE	225
-	-	-	NOT USED	226A
-	-	A	MECHANICAL	226
8	A	A	BEDROOM	227
8	A	A	BEDROOM	227A
8	A	A	COUNSEL	228
8	C	A	TOILET	229
8	D	-	STAFF TOILET	230
8	C	A	TOILET	230
8	A	A	BEDROOM	231
8	A	A	BEDROOM	231A
8	A	A	COUNSEL	232
8	C	A	TOILET	233
8	C	A	TOILET	234
8	A	FM	DAYROOM	235
8	A	-	OFFICE	236
8	A	-	CORRIDOR	237
-	F	-	CORRIDOR	238
-	F	-	CORRIDOR	207A

FINISH SCHEDULE

CLG. HEIGHT	CLG. FINISH	REMARKS	ROOM NAME	ROOM NUMBER
8	A	FM	DAY ROOM	200
8	A	-	OFFICE	201
8	C	A	TOILET	202
8	D	-	JANITOR CLOSET	203
8	C	A	TOILET	204
8	A	A	COUNSEL	205
8	A	-	CORRIDOR	206
8	A	-	CORRIDOR	206
8	C	A	TOILET	207
8	C	A	TOILET	208
8	A	A	COUNSEL	209
8	A	A	BEDROOM	209A
8	A	A	BEDROOM	210
8	A	A	COUNSEL	210
8	A	A	STORAGE	211
8	A	A	BEDROOM	212
8	A	A	BEDROOM	212A
8	A	-	STORAGE	213
-	-	-	NOT USED	213A
-	-	A	MECHANICAL	214
8	A	A	OFFICE	215
8	C	A	DAY ROOM	216
8	F	-	STORAGE	217
8	A	A	TOILET	218
8	A	FM	ACTIVITY	219
8	A	-	LOBBY	220

103 303
103 303

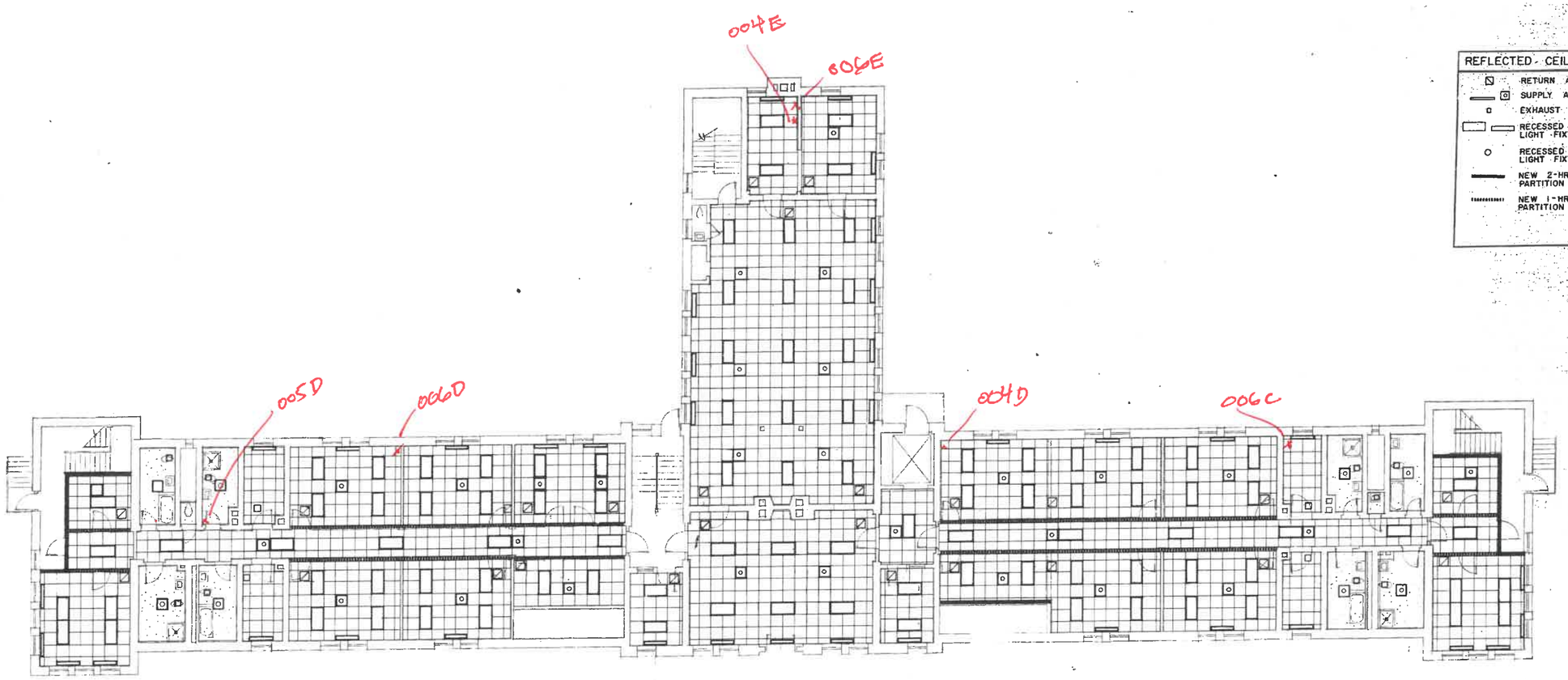
north

KIRKHAM MICHAEL AND ASSOCIATES
ARCHITECTS ENGINEERS PLANNERS

Interim Renovations for Title XIX
Woodward State Hospital-School
phase 3
Woodward, Iowa

REFLECTED CEILING PLAN
WESTWOOD SECOND FLOOR

SHEET A2-3



REFLECTED CEILING LEGEND

- RETURN AIR REGISTERS
- SUPPLY AIR DIFFUSERS
- EXHAUST AIR REGISTERS
- RECESSED FLUORESCENT LIGHT FIXTURES
- RECESSED INCANDESCENT LIGHT FIXTURES
- NEW 2-HR. FIRE RATED PARTITION
- NEW 1-HR. FIRE RATED PARTITION

FINISH SCHEDULE

CLG. HEIGHT	CLG. FINISH	REMARKS	ROOM NAME	ROOM NUMBER
9'	A	A	OFFICE	123
-	-	A	MECHANICAL	125
9'	A	A	BEDROOM	124
9'	A	A	BEDROOM	126A
9'	B	A	COUNSEL	126
9'	A	A	BEDROOM	127A
9'	C	A	TOILET	127
9'	C	A	TOILET	127
-	F	-	JANITOR CLOSET	127A
9'	A	-	CORRIDOR	128
9'	A	-	CORRIDOR	128A
9'	B	A	COUNSEL	129
9'	A	A	BEDROOM	129A
9'	C	A	TOILET	150
9'	C	A	TOILET	151
9'	A	TV	DAY ROOM	152
9'	B	-	OFFICE	153
9'	A	-	CORRIDOR	154
9'	A	-	CORRIDOR	154
9'	A	-	CORRIDOR	154
-	-	-	STAIR	51
-	A	-	STAIR	52
-	-	-	STAIR	53
-	-	-	STAIR	54
9'	A	-	STORAGE	128A
9'	A	A	BEDROOM	128B

FINISH SCHEDULE

CLG. HEIGHT	CLG. FINISH	REMARKS	ROOM NAME	ROOM NUMBER
9'	A	TV	DAYROOM	100
9'	B	-	OFFICE	101
9'	C	A	TOILET	102
9'	C	A	TOILET	103
9'	D	-	STAFF TOILET	103A
9'	B	A	COUNSEL	104
9'	A	A	BEDROOM	105
9'	A	-	CORRIDOR	106
9'	C	A	TOILET	106
9'	C	A	TOILET	107
9'	B	A	COUNSEL	108
9'	A	A	BEDROOM	109
9'	A	A	BEDROOM	109A
9'	A	A	BEDROOM	110
9'	A	A	BEDROOM	111
9'	A	-	STORAGE	112
-	-	A	MECHANICAL	113
-	F	A	CLOSET	113A
9'	A	A	OFFICE	114
9'	A	A	DAY ROOM	115
-	-	-	VEST LOBBY	116
9'	A	TV	ACTIVITY	117
-	F	A	TOILET	118
9'	D	A	KITCHEN	119
9'	A	A	STAFF SERVICE	120
9'	A	-	LOBBY	121

north

1102 1302
1102 1302

KIRKHAM, MICHAEL AND ASSOCIATES
ARCHITECTS ENGINEERS PLANNERS

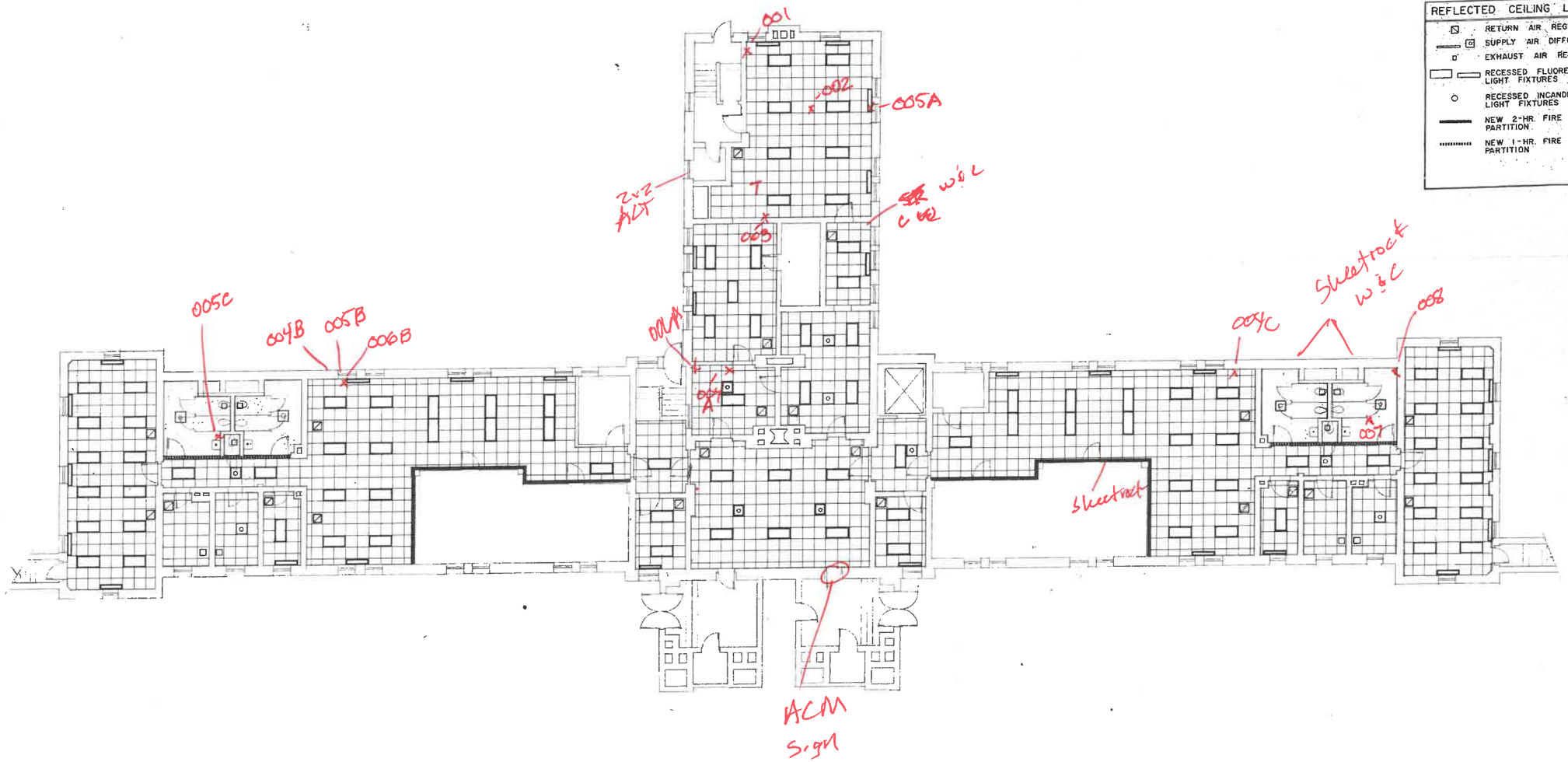
revisions

Interim Renovations for Title XIX
Woodward State Hospital-School
phase 3 Woodward, Iowa

REFLECTED CEILING PLAN
WESTWOOD FIRST FLOOR

issued 27 Sept 78
scale 1/8" = 1'-0"
drawn MM
job no. 8711094

sheet A2-2



REFLECTED CEILING LEGEND

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- NEW 1-HR. FIRE RATED PARTITION

FINISH SCHEDULE

CLG. HEIGHT	CLG. FINISH	REMARKS	ROOM NAME	ROOM NUMBER
9'-0"	A	A	CLASSROOM	B26
-	F	A	MECHANICAL	B27
9'-0"	D	A	TOILET	B27
9'-0"	D	-	TOILET	B28
9'-0"	D	-	STAFF TOILET	B29
9'-0"	A	-	CORRIDOR	B30
9'-0"	A	A	OFFICE	B31
9'-0"	A	-	STORAGE	B32
9'-0"	A	-	STORAGE	B33
9'-0"	A	A	DAY ROOM	B34
-	F	A	ELECTRICAL ROOM	B35
-	F	A	MECHANICAL CHASE	B36
-	F	A	MECHANICAL CHASE	B37
-	-	-	STAIR	B1
-	-	-	STAIR	B2

FINISH SCHEDULE

CLG. HEIGHT	CLG. FINISH	REMARKS	ROOM NAME	ROOM NUMBER
9'-0"	A	A	DAY ROOM	B04
9'-0"	D	A	TOILET	B05
9'-0"	D	A	TOILET	B06
9'-0"	D	-	STAFF TOILET	B07
9'-0"	A	-	CORRIDOR	B08
9'-0"	A	A	STORAGE	B09
9'-0"	A	A	STORAGE	B10
9'-0"	A	A	OFFICE	B38
9'-0"	A	A	CLASS ROOM	B39
-	F	A	MECHANICAL	B39A
9'-0"	A	A	OFFICE	B10
9'-0"	-	-	JANITOR CLOSET	B11
9'-0"	-	-	PORCH	B12
9'-0"	A	-	COMMON AREA	B13
9'-0"	A	-	ACTIVITY	B14
9'-0"	A	A	ACTIVITY	B15
-	F	A	EMPLOYEE TOILET	B16
9'-0"	A	A	ACTIVITY	B17
-	-	-	COOLER	B18
9'-0"	A	A	OFFICE	B19
9'-0"	A	A	BEAUTY	B20
-	-	-	PORCH	B21
-	F	-	JANITOR CLOSET	B22
9'-0"	A	A	OFFICE	B23
9'-0"	A	-	LOBBY	B24
-	F	A	MECHANICAL	B25

north

KIRKHAM, MICHAEL AND ASSOCIATES
ARCHITECTS ENGINEERS PLANNERS

Interim Renovations for Title XIX
Woodward State Hospital-School
phase 3 / Woodward, Iowa

REFLECTED CEILING PLAN
WESTWOOD BASEMENT

SHEET A2-1

Kleene, Jennifer <jennifer.kleene@iowa.gov>

Cottage 201 asbestos

1 message

Tyson L. Scheidecker <tscheidecker@shive-hattery.com> Tue, Nov 29, 2022 at 12:51 PM
To: "Rodney Carr (rcarr@dhs.state.ia.us)" <rcarr@dhs.state.ia.us>
Cc: Jennifer Kleene <jennifer.kleene@iowa.gov>, Sam Vorrie <sam.vorrie@storycon.com>, Jeff Reams <jreams@storycon.com>

Rodney,

I spoke with our hazardous material team about the asbestos in cottage 201 and have a few updates. First, the positive test was white compound on the wall behind the tile in what are calling the northeast restroom. There was nothing on the ceilings.

Secondly, since we are ceiling mounting all the new fire alarm devices, we can put notes on the drawings about the asbestos locations and note for the contractor to avoid those locations and use safe handling procedures around those areas of work, such as wetting surfaces.

We do have to consider that area positive for asbestos, regardless of if it was a false positive or not. So even if you retest it so there's not a lot to gain by retesting and not a lot to gain by testing additional areas since we have all ceiling mounted devices.

Let me know if you have any questions.

Thanks,

Tyson L. Scheidecker, P.E.

Mechanical Engineer

Shive-Hattery

4125 Westown Parkway | Suite 100 | West Des Moines, IA 50266

515.223.8104 | 515.333.4896 | 800.798.8104

WRC Decentralization
Pre Bid

February 1, 2023

STORY CONSTRUCTION

Sign-in Sheet

Name	Company	Email Address	Telephone
Jeffrey Reams	Story Construction Co.	jreams@storycon.com	515-291-8185
Sam Vorrie	Story Construction Co.	sam.vorrie@storycon.com	515-291-4483
Darren Milliken	Story Construction Co.	darren.milliken@storycon.com	515-291-5358
Elijah Ralston	Story Construction Co.	elijah.ralston@storycon.com	515-290-1135
Jennifer Kleene	DAS	jennifer.kleene@iowa.gov	515-725-0454
Rodney Carr	WRC	rcarr@dhs.state.ia.us	
Rob Jaeger	CEC	rjaeger@cecinfo.com	515-991-7655
Andy White	JCI / Simplex	Andrew.J.White@JCI.com	712-898-5024
Tyson Scheidecker	Shive-Hattery	tyson@shive-hattery.com	515-223-8104
Eric Maguire	"	EMAGUIRE@ "	"
Kevin Broxuwort	"	KBROXUWORT@ "	"
Larry Meiners	ACI Mechanical	lmeiners@acimech.com	515-232-1236
Kristia Carter	Heartland Companies	KristaC@HRTLND.US	515.244.8900
Bob Mahoney	Mahoney Fire Sprinkler	bob3@mahoneyfiresprinkler.com	402-553-1221
Dan Macaitis	Mahoney Fire		402-553-1221
Pat Astor	Siemens	Pat.Astor-1.1@siemens.com	515-661-9688
Matt Smith	Siemens	Matt@Siemens.com	515-371-3746

Jeremy Denmon	Siemens	jeremy.denmond@siemens.com	515 553 7019
Zeb Anderson	Tri-City Electric	zanderson@tricityelectric.com	563-210-9131