
**HAZARDOUS MATERIAL SURVEY REPORT
FOR
KEKAHA KAI STATE PARK
IMPROVEMENT PROJECT
KONA, HAWAI'I**

**MNA PROJECT 1522_2
STATE PROJECT NO. H-87C836D**

JUNE 5, 2013



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CONTRIBUTORS

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EXECUTIVE SUMMARY

In January 2013, Myounghee Noh & Associates, L.L.C. (MNA), was retained by Okahara and Associates, Inc., to conduct a hazardous material survey of the public structures located at the Hawaii Department of Land and Natural Resources (DNLR) Kekaha Kai State Park Mahaiula Lagoon, Kaelemakula Houses Complex (Magoon House Area), and the Kua Lagoon Areas, Kona, Hawaii. This hazardous material survey included the vaulted Men’s and Women’s Restrooms and railings at the Mahaiula Lagoon Area, Houses 1 through 4 at the Kaelemakula Houses Complex (Magoon House Area), and the Comfort Station at the Kua Lagoon Area.

The purpose of the survey was to identify the existence (if any), extent, and condition of hazardous materials present in and on the structures which may be expected to be disturbed during the planned improvement project.

MNA conducted the survey on March 11, 2013. This survey identified 68 suspect building materials. Based on the sampling and analysis of 33 asbestos samples, 118 lead samples, four arsenic samples, and a visual inspection of any present and accessible light ballasts, fluorescent light tubes, high-intensity discharge bulbs, and light switches, MNA provides the following summary:

	Asbestos	Arsenic	LCP	LBP	Assumed LCP ¹	PCB	Mercury
Mahaiula Lagoon Area							
Men’s Restroom					☐		
Walkway							
Women’s Restroom					☐		
Kaelemakula Housing Area							
House 1	☐		☐	☐			
House 2			☐	☐			
House 3			☐	☐			
House 4			☐	☐			
Kua Lagoon Area							
Comfort Station							

¹A sufficient volume of material could not be obtained due to factory applied paint. HM 4 and 8 are assumed LCP.

Abbreviations and Acronyms

HM – Homogeneous Material
 LBP – Lead-Based Paint

LCP – Lead-Containing Paint
 PCB – Polychlorinated Biphenyls

Based on the sampling and analysis of suspect bulk materials and paints, special hazard control measures are warranted for work involving asbestos-containing materials, lead-containing paint, and lead-based paint. These control measures are briefly described in Section 6 Recommendations for Renovation and Construction Work. General dust and runoff controls are also warranted.

The contractor shall verify the location and volumes of hazardous materials and determine the appropriate dust, hazard, and runoff control measures based on the area and material to be disturbed. Estimated quantities of hazardous materials provided in this report are visual estimates only during and for the survey and should not be used for bidding purposes.

1.0 INTRODUCTION

Myounghee Noh & Associates, L.L.C. (MNA), under contract with Okahara and Associates, Inc., conducted a hazardous material survey of the public structures located at the Hawaii Department of Land and Natural Resources (DNLR) Kekaha Kai State Park, Kona, Hawaii. This hazardous material survey included the vaulted Men's and Women's Restrooms and railings along the walkway at the Mahaiula Lagoon Area, Houses 1 through 4 at the Kaelemakula Houses Complex (Magoon House Area), and the Comfort Station at the Kua Lagoon Area. Figure 1 presents a general vicinity map of subject property.

The purpose of the survey was to identify the existence (if any), extent, and condition of hazardous materials present in and on the structures which may be expected to be disturbed during the planned improvement project. The following hazardous materials were included in this survey:

- Hazardous building materials suspected of containing asbestos, lead, or arsenic
- Suspect polychlorinated biphenyls (PCB)-containing light ballasts
- Electrical components, including fluorescent light tubes, light switches, and high-intensity discharge (HID) bulbs suspected of containing mercury



Mahaiula Lagoon Area,
March, 2013



Kaelemakula Housing Area
March, 2013



Kua Lagoon Area
March, 2013

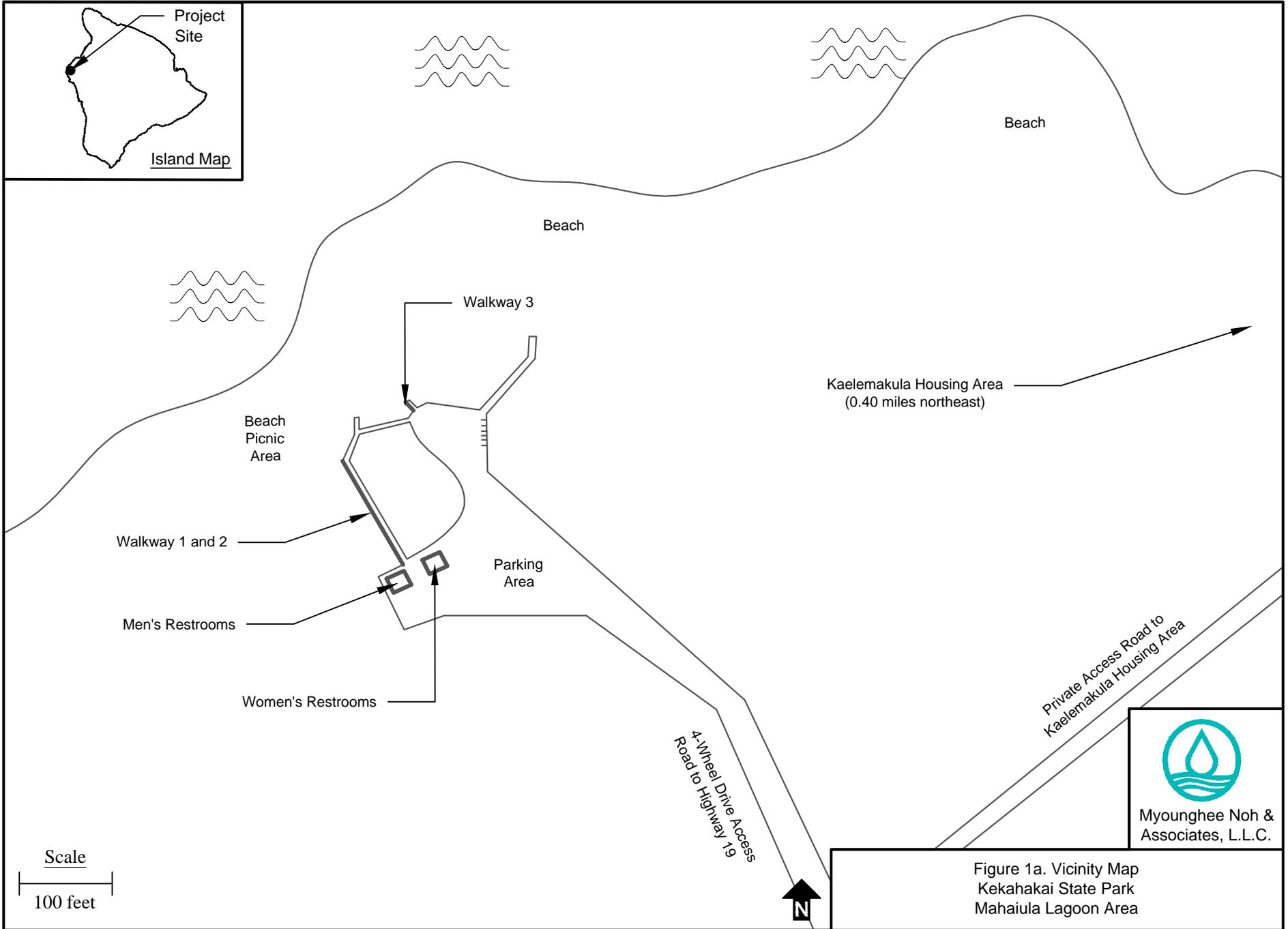
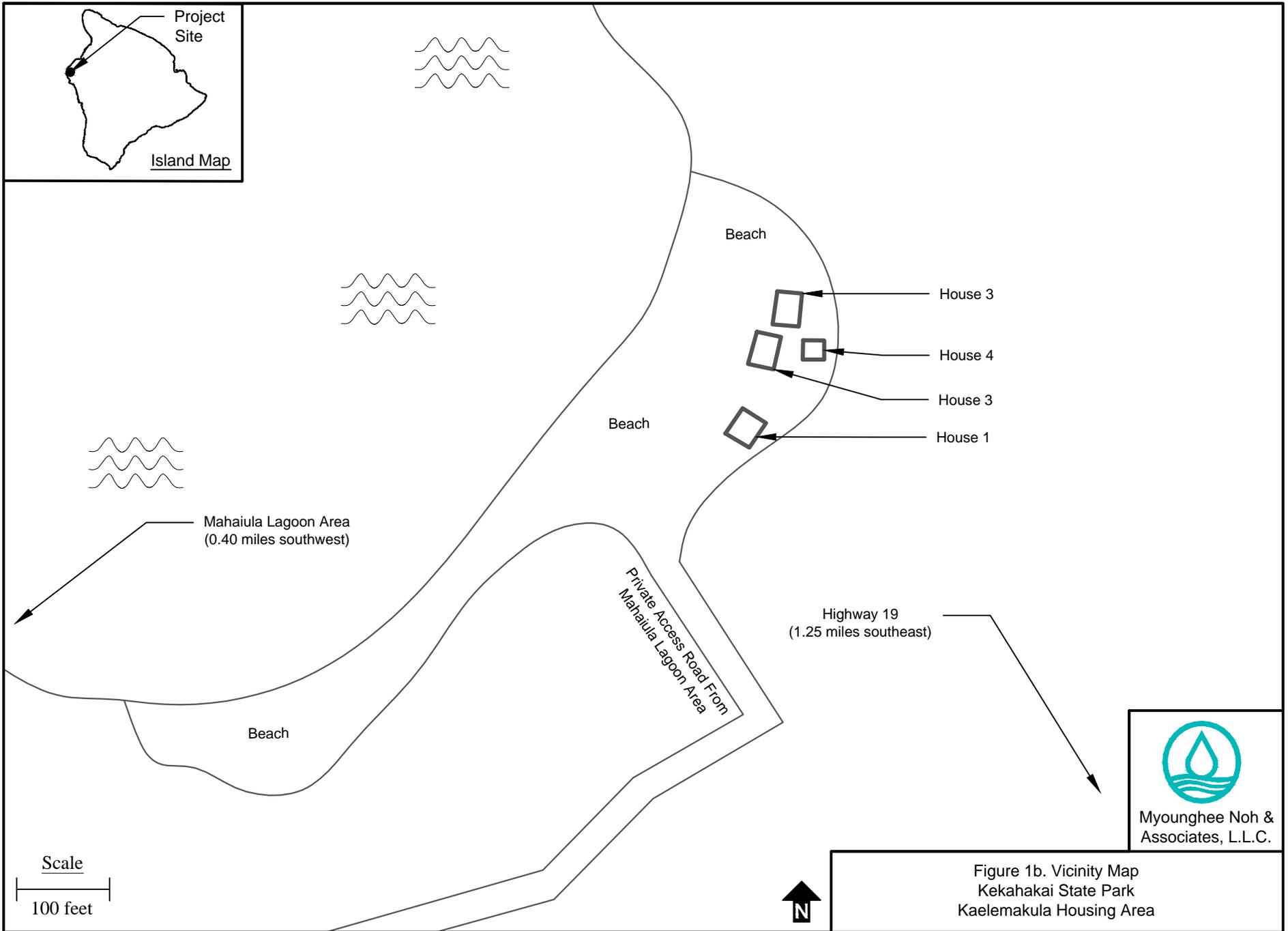
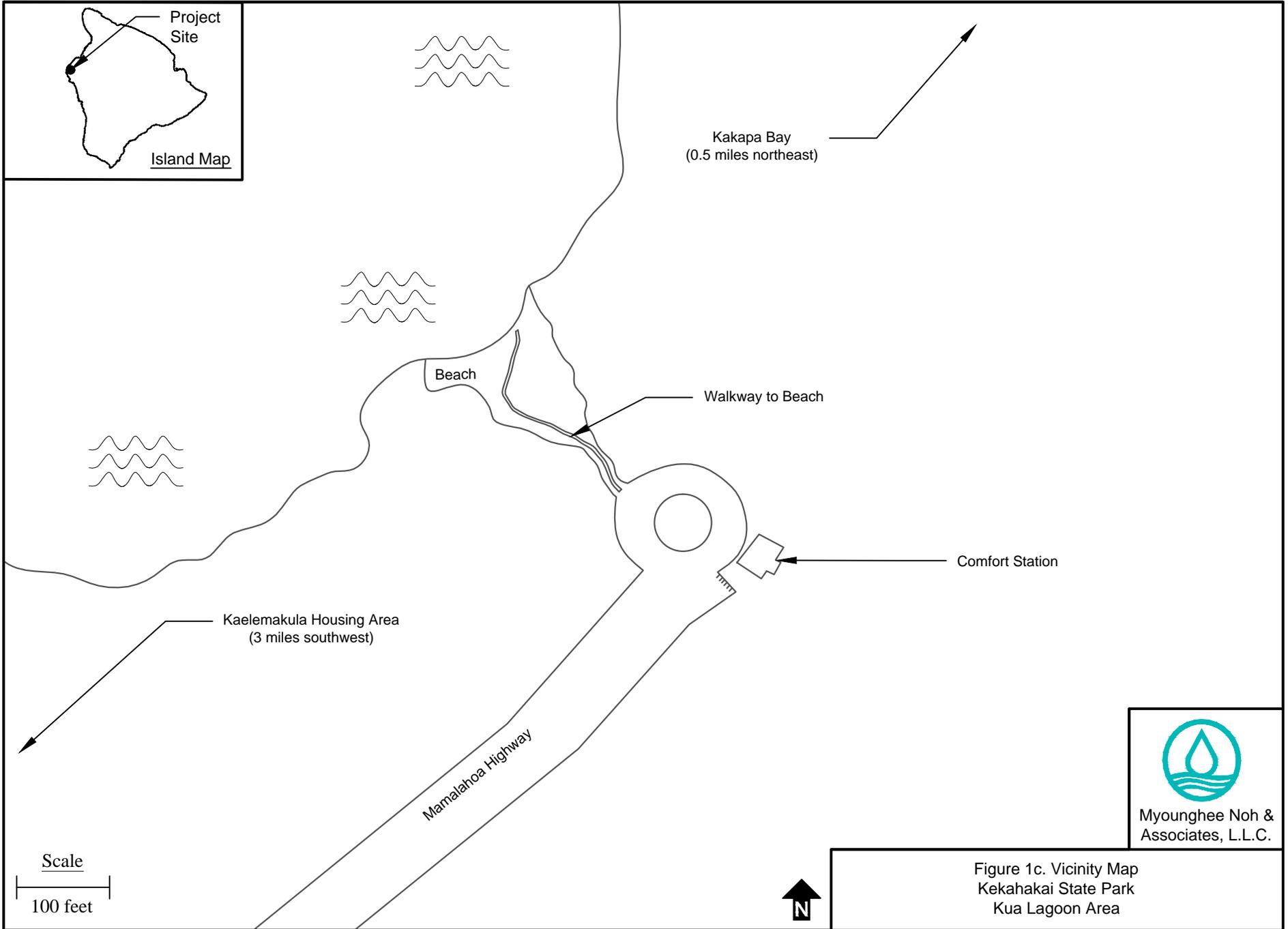


Figure 1a. Vicinity Map
Kekahakai State Park
Mahaiula Lagoon Area





2.0 SAMPLING AND SURVEY METHODS

2.1 Hazardous Materials Survey

On March 11, 2013, State of Hawaii-certified building inspectors, Phillip Cabanila and Danny Falanug, conducted the survey. The inspectors performed a visual inspection of the vaulted Men's and Women's Restrooms and railings at the Mahaiula Lagoon Area, Houses 1 through 4 at the Kaelemakula Houses Complex (Magoon House Area), and the Comfort Station at the Kua Lagoon Area. The inspectors further identified homogeneous materials suspected of containing asbestos, lead, or arsenic, within the renovation project scope, and collected samples of these materials. The inspector certifications are presented in Appendix A.

2.2 Identifying Homogeneous Materials

The survey identified building materials with the same appearance, color, and substrate as homogeneous materials. Interior and exterior homogeneous materials are considered unique per structure. Building materials with the same characteristics (appearance, color, and substrate) as an identified homogeneous material should be considered to possess the same hazardous characteristics, unless specifically identified as a different material in the report. As an example, if yellow paint on wood is identified as lead-based paint (LBP), then all similar yellow paint on wood in the structure should be treated as LBP. Table 1 provides an overview of sampling and a summary of hazardous materials identified.

2.3 Building Material Sampling

Bulk and paint samples were collected using a decontaminated chisel, razor, or hammer in a manner that minimized airborne dust. The inspectors collected triplicate samples for asbestos and duplicate samples for lead and arsenic. Samples were placed in plastic bags, labeled with a unique identification number, and recorded on a chain-of-custody. For each sample, the date, sample appearance, analyte, and sample location were recorded on a field data form. All asbestos and arsenic samples were transported under chain-of-custody to LA Testing in South Pasadena, California. LA Testing, South Pasadena, utilized their Garden Grove, CA, facility for the analysis of materials suspected of containing arsenic. Lead samples were transported under

chain-of-custody to LA Testing, South Pasadena, and White Laboratories, LLC, in Honolulu, Hawaii.

Table 1. Summary of Sampling and Results

Project Area	Samples Submitted/ Inspected	Identified Material Locations	Identified Hazardous Materials
Asbestos in bulk and paint			
Mahaiula Lagoon Area	<i>Men's Restroom</i> – 12 <i>Women's Restroom</i> – 12 <i>Walkway</i> – None	<i>Men's Restroom</i> – Floors, roof, walls <i>Women's Restroom</i> – Floors, roof, walls <i>Walkway</i> – NA	<i>Men's Restroom</i> – None <i>Women's Restroom</i> – None <i>Walkway</i> – NA
Kaelemakule House Complex	<i>House 1</i> – 9 <i>House 2</i> – None <i>House 3</i> – None <i>House 4</i> – None	<i>House 1</i> – Floors, windows <i>House 2</i> – NA <i>House 3</i> – NA <i>House 4</i> – NA	<i>House 1</i> – Window glazing, 3% ACM. <i>House 2</i> – NA <i>House 3</i> – NA <i>House 4</i> – NA
Kua Lagoon Area	<i>Comfort Station</i> – None	<i>Comfort Station</i> – NA	<i>Comfort Station</i> – NA
Lead in paint			
Mahaiula Lagoon Area	<i>Men's Restroom</i> – 10 <i>Women's Restroom</i> – 10 <i>Walkway</i> – 2	<i>Men's Restroom</i> – Awnings, ceilings, columns, door frames, ledge, trim, vents, walls, window frames. <i>Women's Restroom</i> – Awnings, ceilings, columns, door frames, ledge, trim, vents, walls, window frames. <i>Walkway</i> – Railings	<i>Men's Restroom</i> – 1 assumed LCP <i>Women's Restroom</i> – 1 assumed LCP <i>Walkway</i> – None
Kaelemakule House Complex	<i>House 1</i> – 18 <i>House 2</i> – 22 <i>House 3</i> – 24 <i>House 4</i> – 14	<i>House 1</i> – Awnings, beams, ceilings, columns, floors, purlins, railings, trusses, walls, and window frames. <i>House 2</i> – Awnings, beams, ceilings, columns, door frames, floors, purlins, trusses, walls, and window frames. <i>House 3</i> – Awnings, beams, ceilings, columns, door, door frames, floors, gate, porch, purlins, stairs, trusses, walls, and window frames. <i>House 4</i> – Awnings, beams, ceilings, columns, floors, pipes, purlins, sink, sink supports, trusses, walls.	<i>House 1</i> – 6 LCP, 220 – 1,400 mg/kg; 2 LBP, 13,000 mg/kg. <i>House 2</i> – 6 LCP, 230 – 1,700 mg/kg; 3 LBP, 6,100 – 39,000 mg/kg. <i>House 3</i> – 8 LCP – 100 – 4,500 mg/kg; 4 LBP – 5,900 – 99,000 mg/kg. <i>House 4</i> – 6 LCP – 100 – 4,700 mg/kg; 1 LBP – 13,000 mg/kg.
Kua Lagoon Area	<i>Comfort Station</i> – 14	<i>Comfort Station</i> – Beams, brackets, clips, columns, conduit, doors, door frames, trim, vents, walls,	<i>Comfort Station</i> – None
PCB light ballasts			

Project Area	Samples Submitted/ Inspected	Identified Material Locations	Identified Hazardous Materials
Mahaiula Lagoon Area	<i>Men's Restroom – 0 Women's Restroom – 0 Walkway – 0</i>	<i>Men's Restroom – None Women's Restroom – None Walkway – None</i>	<i>Men's Restroom – None Women's Restroom – None Walkway – None</i>
Kaelemakule House Complex	<i>House 1 – 0 House 2 – 0 House 3 – 0 House 4 – 0</i>	<i>House 1 – None House 2 – None House 3 – None House 4 – None</i>	<i>House 1 – None House 2 – None House 3 – None House 4 – None</i>
Kua Lagoon Area	<i>Comfort Station – 0</i>	<i>Comfort Station – None</i>	<i>Comfort Station – None</i>
Mercury light tubes			
Mahaiula Lagoon Area	<i>Men's Restroom – 0 Women's Restroom – 0 Walkway – 0</i>	<i>Men's Restroom – None Women's Restroom – None Walkway – None</i>	<i>Men's Restroom – None Women's Restroom – None Walkway – None</i>
Kaelemakule House Complex	<i>House 1 – 0 House 2 – 0 House 3 – 0 House 4 – 0</i>	<i>House 1 – None House 2 – None House 3 – None House 4 – None</i>	<i>House 1 – None House 2 – None House 3 – None House 4 – None</i>
Kua Lagoon Area	<i>Comfort Station – 0</i>	<i>Comfort Station – None</i>	<i>Comfort Station – None</i>
Mercury light switches			
Mahaiula Lagoon Area	<i>Men's Restroom – 0 Women's Restroom – 0 Walkway – 0</i>	<i>Men's Restroom – None Women's Restroom – None Walkway – None</i>	<i>Men's Restroom – None Women's Restroom – None Walkway – None</i>
Kaelemakule House Complex	<i>House 1 – 0 House 2 – 0 House 3 – 0 House 4 – 0</i>	<i>House 1 – None House 2 – None House 3 – None House 4 – None</i>	<i>House 1 – None House 2 – None House 3 – None House 4 – None</i>
Kua Lagoon Area	<i>Comfort Station – 0</i>	<i>Comfort Station – None</i>	<i>Comfort Station – None</i>

¹ A sufficient volume could not be obtained due to factory baked-on paint. HMs 4 and 8 are assumed to be LCP.

Acronyms and Abbreviations

ACM – Asbestos-Containing Material

HID – High Intensity Discharge

LBP – Lead-Based Paint

LCP – Lead-Containing Paint

mg/kg – milligrams per kilogram (equivalent to parts per million)

PCB – Polychlorinated Biphenyls

2.4 Suspect PCB-Containing Ballast Inspection

Fluorescent light ballasts in the building are typically inventoried and inspected for the presence of PCB. Fluorescent light fixtures suspected of containing PCB were not present within the project area.

2.5 Mercury-Containing Light Tubes and Switches Inspection

Suspect mercury-containing light tubes or switches were not present within the project area. No HID bulbs were identified during the survey.

3.0 LABORATORY INFORMATION

LA Testing, South Pasadena, analyzed the samples as follows:

- Asbestos samples by polarized light microscopy using the Environmental Protection Agency (EPA) Method 600/R-93/116.
- Lead sample by flame atomic absorption spectroscopy using the EPA Method 7420.

White Laboratories, LLC, Honolulu, analyzed the lead samples by flame atomic absorption spectroscopy using the EPA Method 7420.

LA Testing, Garden Grove, analyzed the arsenic samples by inductively coupled plasma (ICP) using the EPA Method 6010B.

LA Testing, South Pasadena, is certified by:

- National Voluntary Laboratory Accreditation Program (NVLAP), certification 200232-0.
- State of Hawaii Department of Health (HDOH), certification L-01-034.
- American Industrial Hygienist Association (AIHA) Environmental Lead Laboratory Accreditation Program (ELLAP), certification 102814.

White Laboratories, LLC, Honolulu is certified by AIHA Laboratory Accreditation Program (LAP), certification #102845. LA Testing, Garden Grove, is certified by AIHA LAP, certification #101650.

4.0 ASBESTOS RESULTS

Materials determined to contain greater than, or equal to, 1% asbestos are considered regulated ACM under the National Emission Standards for Hazardous Air Pollutants (NESHAP) as specified in 40 Code of Federal Regulations (CFR) Part 61 Subpart M. The U.S. Occupational Safety and Health Administration (OSHA) Asbestos General Industry and Construction Standards also define ACM as 1% asbestos or more by volume under 29 CFR 1910.1001 and 29

CFR 1926.1101, respectively; however, OSHA requires asbestos hazard control at any detectable levels of fibers.

Eleven homogeneous materials suspected of containing asbestos were identified and sampled, generating 33 samples for the analysis of asbestos content.

One ACM was identified during the survey. Approximately 100 linear feet of white glazing in poor condition on glass windows in House 1, Kealemakule Housing Area, contained a measurable level of asbestos, 3% chrysotile. No ACM were identified in the Mahaiula Lagoon Area or the Kua Lagoon Area. The asbestos findings are summarized in Table 3. Suspect ACM descriptions and identifiers are provided in Appendix B. Sample and hazardous material location drawings are provided in Appendix C. Photographs of suspect materials are presented in Appendix D. Laboratory analytical reports, chain-of-custody, and field data forms are provided in Appendix E.

5.0 LEAD RESULTS

The U.S. Department of Housing and Urban Development (HUD) and the EPA define paint containing 5,000 milligrams per kilogram (mg/kg), or 0.5% by weight, or more of lead to be LBP. OSHA considers paint containing any measurable concentration of lead to be LCP. When lead is detected in a multi-layer sample, it is assumed that all layers represented by the sample contain lead at the same concentration.

Fifty-nine paints suspected of containing lead were identified and sampled, generating 118 paint samples from the structures in the project area. Thirty-eight LCP were identified through paint chip sampling, with sample results ranging from 100 mg/kg to 99,000 mg/kg. Ten of those LCP were identified as lead-based paint (LBP), exceeding 5,000, the threshold for LBP. Two paints (HM 4 and 8) in the Men's and Women's Restrooms are assumed to be LCP; due to the factory baked-on paint, sufficient sample volumes could not be obtained for analysis.

Table 2 Lead-Containing Paint Identification

Area	Building	Room	LCP
Mahaiula Lagoon Area	Men's Restrooms	Exterior	One assumed LCP (black paint on metal vents)
		Men's Restroom 1 & 2	None
	Women's Restrooms	Exterior	One assumed LCP (black paint on metal vents)
		Women's Restroom 1 & 2	None
	Walkway	Exterior	None
	Kaelemakule Area	House 1	Exterior
Room 1, Room 2			1 LCP, green paint on concrete floor, 650 – 1,400 mg/kg. <u>1 LBP, off-white paint on metal ceilings, 13,000 – 14,000 mg/kg.</u>
House 2		Exterior	3 LCP, red paint on metal beams, columns, purlins, railing, trusses, and walls; red paint on metal awnings, gutters, and roof; green paint on concrete floor, 230 – 1,700 mg/kg. <u>1 LBP, green paint on wood floor, 6,900 – 39,000 mg/kg.</u>
		Room 1, Room 2	3 LCP, light blue paint on wood and fiberboard floor; white paint on wood ceilings, 510 – 1,300 mg/kg. <u>2 LBP, brown and beige paint on wood beams, columns, door frames, purlins, trusses, walls, window frames, 6,100 – 13,000 mg/kg.</u>
House 3		Exterior	4 LCP, white paint on metal ceiling; white paint on wood beams door, door frames, porch, purlins, trusses, walls, window frames, 100 – 1,800 mg/kg. <u>2 LBP, green paint on concrete floor; red paint on wood beams, ceiling, columns, gate, stairs, walls, 5,900 – 14,000 mg/kg.</u>

Area	Building	Room	LCP
	House 4	Room 1, Room 2	4 LCP, White, red and green paint on wood beams ceilings doors, door frames, floors, purlins, walls, window frames, 290 – 4,500 mg/kg. <u>2 LBP, yellow paint on wood columns and walls; green paint on concrete floor, 13,000 – 99,000 mg/kg.</u>
		Exterior	3 LCP, red and white paint on wood beams, purlins, sink, sink supports, trusses, walls; white paint on metal awnings and pipes, 400 – 4,700 mg/kg. <u>1 LBP, red paint on metal pipes, 13,000 – 24,000 mg/kg.</u>
		Room 1, Room 2, Room 3	3 LCP, green paint on concrete floors; white paint on wood beams, columns, purlins, trusses, walls; white paint on metal ceilings and pipes, 100 – 850 mg/kg.
Kua Lagoon Area	Comfort Station	Exterior Men's and Women's Restrooms	None

Bold values indicate lead-based paint results, exceeding 5,000 mg/kg.

LBP – Lead-Based Paint

mg/kg – milligrams per kilogram (equivalent to parts per million)

LCP – Lead-Containing Paint

The lead findings are summarized in Table 3. Suspect LCP descriptions and identifiers are provided in Appendix B. Sample and hazardous material location drawings are provided in Appendix C. Photographs of suspect paints are presented in Appendix D. Laboratory analytical reports, chain-of-custody, and field data forms are provided in Appendix E

Table 3 Asbestos-Containing Material Determination Table

Area	Building	Floor	Rooms	Locations	HM ID	Material Color	Material	Substrate	Results	Condition	Estimated Quantity
Kaelemakule	House 1	1	Exterior	Floor	25	Green	Paint filler	Concrete	ND	Poor	200 sq. ft.
Kaelemakule	House 1	1	Room 1, Room 2	Floor	28	Green	Paint filler	Concrete	ND	Poor	150 sq. ft.
Kaelemakule	House 1	1	Exterior	Windows	30	White	Glazing	Glass	ACM 3%	Poor	100 ln. ft.
Mahaiula	Men's Restrooms	Roof	Roof	Roof	9	Black	Shingles	Wood	ND	Good	150 sq. ft.
Mahaiula	Men's Restrooms	Roof	Roof	Roof	11	White	Caulking	Wood	ND	Good	50 ln. ft.
Mahaiula	Men's Restrooms	1	Restroom 1 & 2	Floors	15	Brown	Grout	1" x 1" Ceramic tile	ND ND	Good	150 sq. ft.
Mahaiula	Men's Restrooms	1	Restroom 1 & 2	Walls	16	White	Grout	4" x 4" Ceramic tile	ND	Good	50 sq. ft.
Mahaiula	Women's Restrooms	Roof	Roof	Roof	10	Black	Shingles	Wood	ND	Good	150 sq. ft.
Mahaiula	Women's Restrooms	Roof	Roof	Roof	12	White	Caulking	Wood	ND	Good	50 ln. ft.

Area	Building	Floor	Rooms	Locations	HM ID	Material Color	Material	Substrate	Results	Condition	Estimated Quantity
Mahaiula	Women's Restrooms	1	Restroom 1 & 2	Floors	19	Brown	Grout	1" x 1" Ceramic tile	ND	Good	150 sq. ft.
Mahaiula	Women's Restrooms	1	Restroom 1 & 2	Walls	20	White	Grout	4" x 4" Ceramic tile	ND	Good	50 ln. ft.

Bold values indicate results above the detection limit.

All asbestos found to be Chrysotile.

Good - Material is in an "as installed" condition. It is usable as is, may show cosmetic wear and tear or fading.

Fair - Building material is functional for its installed purpose but shows initial signs of deterioration beyond the cosmetic.

Poor - Material shows significant deterioration and may not be functional for its installed purpose. Paint is bubbling or peeling over 20% or more of surface area and no longer protects the substrate.

Acronyms and Abbreviations:

ACM – Asbestos-Containing Material

HM ID – Homogeneous Material Identifier

ln. ft. – linear feet

ND – None Detected

sq. ft. – square feet

6.0 ARSENIC RESULTS

The disturbance of arsenic-containing materials is regulated by the OSHA Inorganic Arsenic General Industry Standard under 29 CFR 1910.1018. Two fiberboard building materials suspected of containing arsenic were identified and sampled, generating four samples for the analysis of arsenic content. None of the materials contained arsenic above the laboratory reporting limit of 20 mg/kg.

Suspect arsenic-containing material descriptions and identifiers are provided in Appendix B. Sample location drawings are provided in Appendix C. Photographs of suspect arsenic-containing materials are presented in Appendix D. Laboratory analytical reports, chain-of-custody, and field data forms are provided in Appendix E.

Table 4 Lead-Containing Paint Determination

Area	Building	Floor	Rooms	Locations	HM ID	Material Color	Material	Substrate	Results (mg/kg)	Condition	Estimated Quantity
Kua Lagoon	Comfort Station	1	Exterior	Walls	63	Brown	Paint	Concrete block	<110	Good	1,200 sq. ft.
Kua Lagoon	Comfort Station	1	Exterior	Beams, slats, walls	64	Lt. brown	Paint	Wood	<110	Good	200 sq. ft.
Kua Lagoon	Comfort Station	1	Exterior	Columns	65	Brown	Paint	Concrete	<110	Good	100 sq. ft.
Kua Lagoon	Comfort Station	1	Men's & Women's Restrooms	Door, doors frames, trim	66	White	Paint	Wood	<110	Good	300 sq. ft.
Kua Lagoon	Comfort Station	1	Men's & Women's Restrooms	Brackets, clips, conduit	67	White	Paint	Metal	<110	Good	15 sq. ft.
Kua Lagoon	Comfort Station	1	Men's & Women's Restrooms	Brackets, conduit, pipes, vents	68	Brown	Paint	Metal	<110	Good	10 sq. ft.
Kua Lagoon	Comfort Station	1	Men's & Women's Restrooms	Walls	69	White	Paint	Concrete block	<110	Good	600 sq. ft.
Kaelemakule	House 1	1	Exterior	Walls	22	Red	Paint	Wood	LCP 380	Poor	1,000 sq. ft.
Kaelemakule	House 1	1	Exterior	Walls	23	Lt. green	Paint	Wood	LCP 660 - 980	Poor	1,000 sq. ft.
Kaelemakule	House 1	1	Exterior	Beams, columns, purlins, trusses, window frames	24	White	Paint	Wood	LCP 330 - 360	Poor	500 sq. ft.
Kaelemakule	House 1	1	Exterior	Floor	25	Green	Paint	Concrete	LCP 790 - 1,200	Poor	200 sq. ft.
Kaelemakule	House 1	1	Exterior	Awning	26	Off-white	Paint	Metal	LBP 13,000	Poor	200 sq. ft.
Kaelemakule	House 1	1	Exterior	Beam	31	Lt. blue	Paint	Wood	LCP 220 - 380	Poor	10 ln. ft.

Area	Building	Floor	Rooms	Locations	HM ID	Material Color	Material	Substrate	Results (mg/kg)	Condition	Estimated Quantity
Kaelemakule	House 1	1	Room 1, Room 2	Beams, framing, purlins, trusses, walls	27	White	Paint	Wood	<190 - <220	Poor	600 sq. ft.
Kaelemakule	House 1	1	Room 1, Room 2	Floor	28	Green	Filler Paint	Concrete	LCP 650 - 1,400	Poor	150 sq. ft.
Kaelemakule	House 1	1	Room 1, Room 2	Ceilings	29	Off-white	Paint	Metal	LBP 13,000 - 14,000	Poor	150 sq. ft.
Kaelemakule	House 2	1	Exterior	Beams, columns, purlins, railing, trusses, walls	32	Red	Paint	Wood	LCP 230 - 340	Poor	1,500 sq. ft.
Kaelemakule	House 2	1	Exterior	Floor	33	Green	Paint	Wood	LBP 6,900 - 39,000	Poor	200 sq. ft.
Kaelemakule	House 2	Roof	Exterior	Awning, gutter, roof	34	Red	Paint	Metal	LCP 1,500 - 1,700	Poor	2,500 sq. ft.
Kaelemakule	House 2	1	Exterior	Bench, doors, door frames, railing, window frames	35	White	Paint	Wood	<100	Poor	100 sq. ft.
Kaelemakule	House 2	1	Exterior	Floor	36	Green	Paint	Concrete	LCP 460 - 630	Poor	200 sq. ft.
Kaelemakule	House 2	1	Room 1	Floor	38	Lt. blue	Paint	Fiberboard	LCP 610 - 770	Poor	150 sq. ft.
Kaelemakule	House 2	1	Room 1, Room 2	Window frames	39	Brown	Paint	Wood	LBP 2,100 - 13,000	Poor	30 ln. ft.
Kaelemakule	House 2	1	Room 1	Ceilings	40	Off-white	Paint	Fiberboard	<100	Poor	150 sq. ft.

Area	Building	Floor	Rooms	Locations	HM ID	Material Color	Material	Substrate	Results (mg/kg)	Condition	Estimated Quantity
Kaelemakule	House 2	1	Room 2	Beams, columns, door frames, purlins, trusses, walls, window frames	41	Beige	Paint	Wood	LBP 6,100 - 6,200	Poor	200 sq. ft.
Kaelemakule	House 2	1	Room 2	Ceiling	42	White	Paint	Wood	LCP 510 - 640	Poor	150 sq. ft.
Kaelemakule	House 2	1	Room 2	Floor	43	Lt. blue	Paint	Wood	LCP 760 - 1,300	Poor	150 sq. ft.
Kaelemakule	House 3	1	Exterior	Floor	45	Green	Paint	Concrete	LBP 12,000 - 14,000	Poor	200 sq. ft.
Kaelemakule	House 3	1	Exterior	Ceiling	46	White	Paint	Metal	LCP 100 - 200	Poor	200 sq. ft.
Kaelemakule	House 3	1	Exterior	Beams, door, door frames, purlins, trusses, walls, window frames	47	White	Paint	Wood	LCP <100 - 750	Poor	150 sq. ft.
Kaelemakule	House 3	2	Exterior	Porch, purlins	52	White	Paint	Wood	LCP 1,400 - 1,800	Poor	175 sq. ft.
Kaelemakule	House 3	2	Exterior	Ceiling	53	White	Paint	Metal	LCP 290 - 470	Poor	150 sq. ft.
Kaelemakule	House 3	1	Room 1	Floor	48	Green	Paint	Concrete	LBP 13,000 - 14,000	Poor	250 sq. ft.
Kaelemakule	House 3	1	Room 1	Columns, walls	49	Yellow	Paint	Wood	LBP 84,000 - 99,000	Poor	550 sq. ft.

Area	Building	Floor	Rooms	Locations	HM ID	Material Color	Material	Substrate	Results (mg/kg)	Condition	Estimated Quantity
Kaelemakule	House 3	1	Room 1	Beams, ceiling, door, door frame, purlins, window frames	50	White	Paint	Wood	LCP 400 - 1,300	Poor	350 sq. ft.
Kaelemakule	House 3	1	Room 1	Ceiling	51	White	Paint	Metal	LCP 290 - 330	Poor	250 sq. ft.
Kaelemakule	House 3	2	Room 2	Floor	54	Red	Paint	Wood	LCP 2,800 - 4,500	Poor	100 sq. ft.
Kaelemakule	House 3	2	Room 1, Room 2	Floor, walls	55	Green	Paint	Wood	LCP 860 - 1,200	Poor	180 sq. ft.
Kaelemakule	House 4	1	Exterior	Sink supports, walls	56	Red	Paint	Wood	LCP 480 - 530	Poor	550 sq. ft.
Kaelemakule	House 4	1	Exterior	Pipes	57	Red	Paint	Metal	LBP 13,000 - 24,000	Poor	10 ln. ft.
Kaelemakule	House 4	1	Exterior	Beams, purlins, sink, trusses	58	White	Paint	Wood	LCP 400 - 490	Poor	180 sq. ft.
Kaelemakule	House 4	1	Exterior	Awning, pipes	59	White	Paint	Metal	LCP 3,300 - 4,700	Poor	15 sq. ft.
Kaelemakule	House 4	1	Room 1, Room 2, Room 3	Floors	60	Green	Paint	Concrete	LCP 100 - 120	Poor	100 sq. ft.
Kaelemakule	House 4	1	Room 1, Room 2, Room 3	Beams, columns, purlins, trusses, walls	61	White	Paint	Wood	LCP 450 - 850	Poor	125 sq. ft.
Kaelemakule	House 4	1	Room 1, Room 2, Room 3	Ceilings, pipes	62	White	Paint	Metal	LCP <100 - 100	Poor	250 sq. ft.

Area	Building	Floor	Rooms	Locations	HM ID	Material Color	Material	Substrate	Results (mg/kg)	Condition	Estimated Quantity
Mahaiula Lagoon	Men's Restrooms	1	Exterior	Awning, ceiling, columns, door frames, trim, wall, window frames	1	White	Paint	Wood	<100	Good	400 sq. ft.
Mahaiula Lagoon	Men's Restrooms	1	Exterior	Doors, trim, walls	2	Red	Paint	Wood	<100 - <130	Good	600 sq. ft.
Mahaiula Lagoon	Men's Restrooms	1	Exterior	Ledge	3	Red	Paint	Concrete	<450 - <960	Good	150 sq. ft.
Mahaiula Lagoon	Men's Restrooms	1	Exterior	Vents	4	Black	Paint	Metal	LCP¹	Good	15 sq. ft.
Mahaiula Lagoon	Men's Restrooms	1	Men's Restroom 1 & 2	Walls	13	Off-white	Paint	Concrete block	<100	Good	300 sq. ft.
Mahaiula Lagoon	Men's Restrooms	1	Men's Restroom 1 & 2	Ceiling, doors, doors frames	14	Off-white	Paint	Wood	<200 - <390	Good	150 sq. ft.
Mahaiula Lagoon	Walkways	1	Exterior	Railings	21	Green	Paint	Metal	<100 - <130	Good	2,500 Ln. ft.
Mahaiula Lagoon	Women's Restrooms	1	Exterior	Awning, ceiling, columns, door frames, trim, wall, window frames	5	White	Paint	Wood	<200 - <240	Good	400 sq. ft.
Mahaiula Lagoon	Women's Restrooms	1	Exterior	Doors, trim, walls	6	Red	Paint	Wood	<100	Good	600 sq. ft.
Mahaiula Lagoon	Women's Restrooms	1	Exterior	Ledge	7	Red	Paint	Concrete	<100	Good	150 sq. ft.
Mahaiula Lagoon	Women's Restrooms	1	Exterior	Vents	8	Black	Paint	Metal	LCP¹	Good	15 sq. ft.

Area	Building	Floor	Rooms	Locations	HM ID	Material Color	Material	Substrate	Results (mg/kg)	Condition	Estimated Quantity
Mahaiula Lagoon	Women's Restrooms	1	Women's Restroom 1 & 2	Walls	17	Off-white	Paint	Concrete block	<100	Good	300 sq. ft.
Mahaiula Lagoon	Women's Restrooms	1	Women's Restroom 1 & 2	Ceiling, doors, doors frames	18	Off-white	Paint	Wood	<100 - <190	Good	150 sq. ft.

Bold values indicate results above the detection limit.

¹A sufficient volume could not be obtained due to factory baked-on paint. This paint is assumed LCP.

Good - Material is in an "as installed" condition. It is usable as is, may show cosmetic wear and tear or fading.

Fair - Building material is functional for its installed purpose but shows initial signs of deterioration beyond the cosmetic.

Poor - Material shows significant deterioration and may not be functional for its installed purpose. Paint is bubbling or peeling over 20% or more of surface area and no longer protects the substrate.

Abbreviations and Acronyms:

HM ID – Homogeneous Material Identifier

LBP – Lead-Based Paint

LCP – Lead-Containing Paint

Mg/kg – milligrams per kilogram, or parts per million

sq. ft. – square feet

7.0 SUSPECT PCB-CONTAINING BALLAST RESULTS

No fluorescent light fixtures suspected of containing PCB were present within the project area. If any unforeseen light fixtures are discovered within the project area, the ballasts should be assumed PCB-containing until the “No-PCBs” label is verified on each ballast.

8.0 MERCURY RESULTS

No suspect mercury-containing light tubes or switches were observed within the project area. No HID bulbs were identified during the survey.

9.0 SUMMARY OF SURVEY RESULTS

In January 2013, MNA was retained by Okahara and Associates, Inc., to conduct a hazardous material survey of the Hawaii DNLR Kekaha Kai State Park Mahaiula Lagoon Area, Kaelemakula Houses Complex (Magoon House Area), and the Kua Lagoon Area, Kona, Hawaii. This hazardous material survey included the vaulted Men’s and Women’s Restrooms and railings at the Mahaiula Lagoon Area, Houses 1 through 4 at the Kaelemakula Houses Complex (Magoon House Area), and the Comfort Station at the Kua Lagoon Area.

The purpose of the survey was to identify the existence (if any), extent, and condition of hazardous materials present in and on the structures which may be expected to be disturbed during the planned improvement project.

MNA conducted the survey on March 11, 2013. This survey identified 68 suspect building materials. Based on the sampling and analysis of 33 asbestos samples, 118 lead samples, four arsenic samples, and a visual inspection of any present and accessible light ballasts, fluorescent light tubes, high-intensity discharge bulbs, and light switches, MNA provides the following summary:

	Asbestos	Arsenic	LCP	LBP	Assumed LCP	PCB	Mercury
Mahaiula Lagoon Area							
Men’s Restroom					☐ ¹		
Walkway							
Women’s Restroom					☐ ¹		

Kaelemakula Housing Area							
House 1	☐		☐	☐			
House 2			☐	☐			
House 3			☐	☐			
House 4			☐	☐			
Kua Lagoon Area							
Comfort Station							

¹A sufficient volume of material could not be obtained due to factory applied paint. HM 4 and 8 are assumed LCP.

Abbreviations and Acronyms

HM – Homogeneous Material
 LBP – Lead-Based Paint

LCP – Lead-Containing Paint
 PCB – Polychlorinated Biphenyls

Based on the sampling and analysis of suspect bulk materials and paints, special hazard control measures are warranted for work involving ACM, LCP and LBP. These control measures are briefly described in Section 10 Recommendations for Renovation and Construction Work. General dust and runoff controls are also warranted.

The contractor shall verify the location and volumes of hazardous materials and determine the appropriate dust, hazard, and runoff control measures based on the area and material to be disturbed.

10.0 RECOMMENDATIONS FOR RENOVATION AND CONSTRUCTION WORK

OSHA requires that only properly trained employees perform construction work and demolition that disturbs hazardous materials. The following recommendations address OSHA and other applicable federal requirements. These recommendations provide guidance for the management of hazardous building materials and control of occupational and environmental hazards associated with operations, maintenance, renovation, or demolition. These recommendations are based on information gathered during the hazardous materials survey. These recommendations are not intended to constitute a formal work plan but are intended to provide a starting point for the development of a work plan.

10.1 Asbestos-Containing Material

Employees involved in renovation or demolition activities that disturb ACM must conduct work in accordance with 29 CFR 1926.1101, the OSHA Asbestos Construction Standard. Work practices that would trigger these requirements include, but are not limited to, repair,

maintenance, or renovation of structures containing asbestos, as well as removal or encapsulation of materials containing asbestos. For each project, the contractor shall determine the appropriate safety measures based on the area to be disturbed, the type, volume, and condition of ACM. Applicable work practice guidelines involving the disturbance of ACM are summarized, but are not limited to:

- Employees must utilize appropriate engineering controls and personal protective equipment (PPE). This PPE includes disposable coveralls, gloves, eye protection, steel-toed boots, a hard hat, and a National Institute for Occupational Safety and Health (NIOSH)-approved appropriate respirator.
- Employers shall provide and require the use of appropriate PPE for any employee exposed to airborne concentrations of asbestos that exceed OSHA regulatory limits, or for which a required negative exposure assessment is not produced (29 CFR 1926.1101[i][1]).
- Employees must utilize respiratory protection until the initial exposure monitoring assessment documents safe working levels of airborne asbestos (29 CFR 1926.1101[f] and [h]). Additional periodic exposure monitoring may be required.
- An initial exposure monitoring assessment should be carried out when workers are disturbing ACM to ensure that they are not exposed to airborne asbestos concentrations greater than the Permissible Exposure Limit (PEL) of 0.1 fibers per cubic centimeter (f/cc) of air as an 8-hour time-weighted average (TWA), and the Excursion Limit of 1.0 f/cc as averaged over a 30 minute sampling period.
- The work site must be maintained as a controlled regulated area and supervised by a competent person.
- Employees must implement stringent dust control procedures to minimize asbestos in any airborne dust.
- Employees must clean the work area thoroughly using wet methods and a high-efficiency particulate air (HEPA) vacuum. Dry sweeping or air blowing of ACM debris and dust must be avoided.
- Wastes and dust containing ACM must be collected separately from other construction debris. Employees should conduct prompt clean up and disposal of asbestos wastes and debris in leak-tight containers.

- Asbestos-containing waste must be packaged, labeled, stored, and disposed of in accordance with applicable regulations.
- Visually inspect the work area to ensure that all ACM debris and dust has been properly removed.
- Conduct clearance in accordance with contract specifications.

10.2 Lead-Containing Paints

Employees involved in renovation or demolition activities that disturb LCP and LBP must conduct work in accordance with 29 CFR 1926.62, the OSHA Lead Construction Standard. Work practices that would trigger these requirements include, but are not limited to, sanding, blasting, welding, cutting, scraping, or demolition. For each project, the contractor shall determine the appropriate safety measures based on the area to be disturbed, the lead concentration, and the paint condition. Applicable work practice guidelines involving the disturbance of LCP or LBP are summarized, but are not limited to:

- Employees must utilize appropriate engineering controls and personal protective equipment (PPE). The PPE includes disposable coveralls, gloves, eye protection, steel-toed boots, a hard hat, and a NIOSH approved appropriate respirator.
- Employees must utilize respiratory protection until the initial air monitoring assessment documents safe working levels of airborne lead (29 CFR 1926.62[d][1] and [2][i][A]).
- An exposure assessment should be carried out when employees are disturbing LCP or LBP to ensure that they are not exposed to airborne lead concentrations greater than the permissible exposure limit (PEL) of 50 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) averaged over an 8-hour period. Additional periodic exposure monitoring may be required if the lead OSHA Action Level of $30 \mu\text{g}/\text{m}^3$ averaged over an 8-hour period is exceeded.
- Employees must implement stringent dust control procedures to minimize lead concentrations in any airborne dust.
- Employees must clean the work area thoroughly using wet methods and a High Efficiency Particulate Air (HEPA) vacuum. Dry sweeping or air blowing of lead debris and dust must be avoided.

- Lead-containing debris should be segregated from other wastes, collected, and containerized. Wastes should be fully characterized, including a determination of the waste as hazardous or non-hazardous. Lead-containing wastes should be disposed of in accordance with applicable requirements.
- Visually inspect the work area to ensure all lead-containing debris and dust has been properly removed.
- Conduct clearance in accordance with contract specifications.

10.3 Arsenic-containing materials

Based on sampling and analysis of four samples, no arsenic-containing materials were found during this survey. Therefore, no special control measures are warranted for the disturbance of fiberboard materials.

10.4 PCB-Containing Ballasts

Based on visual inventory of the project area, no PCB-containing ballasts were identified, therefore no control measures are warranted.

10.5 Mercury-Containing Light Tubes, Switches, and High-Intensity Discharge Bulbs

Based on visual inventory of the project area, no mercury-containing lighting components were identified, therefore no control measures are warranted.

11.0 LIMITATIONS

Every reasonable effort was made to identify suspect building materials during the survey. However, this does not imply a guarantee that all suspect building materials were identified by this assessment because certain building materials and/or surfaces may be hidden by walls, flooring, partitions, or other building components. If suspect materials previously unknown become uncovered, additional survey work may be required prior to the planned improvement project.

Estimated quantities of hazardous materials provided in this report are visual estimates only during and for the survey and should not be used for bidding purposes. Contractors are required to verify the location and quantities.

APPENDIX A

INSPECTOR CERTIFICATIONS

Phillip Cabanila

Danny Falanug



State of Hawai'i Asbestos Certification

Training Course Exp. Dates

W	n/a	MP	05/15/13
CS	08/06/13	PD	n/a
INS	10/25/13	PM	11/21/13

Cabanila

Phillip F.

Myounghee Noh & Associates, LLC

HIASB-3285

State Exp. Date: 11/01/2013

W= Worker
CS= Cont/Sup
INS= Inspector
PD= Project Designer
MP= Mgmt. Planner
PM= Project Monitor

State of Hawai'i
Lead Based Paint Activities Certification

Expiration Dates:

Inspector- 09/09/2013
Supervisor- n/a
Risk Assessor- n/a
Project Designer- n/a
Worker- n/a

Cabanila
Phillip

Certification # - PB-0470





State of Hawai'i Asbestos Certification

Training Course Exp. Dates

W	n/a	MP	n/a
CS	n/a	PD	n/a
INS	05/23/13	PM	n/a

Falanug

Danny

Myounghee Noh & Associates, L.L.C.

HIASB-3526

State Exp. Date: 05/25/2013

W= Worker

CS= Cont./Sup.

INS= Inspector

PD= Project Designer

MP= Mgmt. Planner

PM= Project Monitor

APPENDIX B

**HOMOGENEOUS MATERIALS IDENTIFIED
AND SAMPLE TYPES COLLECTED**

Homogeneous Materials Identified and Sample Types Collected

HM ID	Area	Building	Floor	Rooms	Locations	Material Color	Material	Substrate	Asb	Pb	Ars	Results
1	Mahaiula Lagoon	Men's Restrooms	1	Exterior	Awning, ceiling, columns, door frames, trim, wall, window frames	White	Paint	Wood		X		<100 mg/kg
2	Mahaiula Lagoon	Men's Restrooms	1	Exterior	Doors, trim, walls	Red	Paint	Wood		X		<100 - <130 mg/kg
3	Mahaiula Lagoon	Men's Restrooms	1	Exterior	Ledge	Red	Paint	Concrete		X		<450 - <960 mg/kg
4	Mahaiula Lagoon	Men's Restrooms	1	Exterior	Vents	Black	Paint	Metal		X		LCP ¹
5	Mahaiula Lagoon	Women's Restrooms	1	Exterior	Awning, ceiling, columns, door frames, trim, wall, window frames	White	Paint	Wood		X		<200 - <240 mg/kg

Homogeneous Materials Identified and Sample Types Collected

HM ID	Area	Building	Floor	Rooms	Locations	Material Color	Material	Substrate	Asb	Pb	Ars	Results
6	Mahaiula Lagoon	Women's Restrooms	1	Exterior	Doors, trim, walls	Red	Paint	Wood		X		<100 mg/kg
7	Mahaiula Lagoon	Women's Restrooms	1	Exterior	Ledge	Red	Paint	Concrete		X		<100 mg/kg
8	Mahaiula Lagoon	Women's Restrooms	1	Exterior	Vents	Black	Paint	Metal		X		LCP¹
9	Mahaiula Lagoon	Men's Restrooms	Roof	Roof	Roof	Black	Shingles	Wood	X			ND
10	Mahaiula Lagoon	Women's Restrooms	Roof	Roof	Roof	Black	Shingles	Wood	X			ND
11	Mahaiula Lagoon	Men's Restrooms	Roof	Roof	Roof	White	Caulking	Wood	X			ND

Homogeneous Materials Identified and Sample Types Collected

HM ID	Area	Building	Floor	Rooms	Locations	Material Color	Material	Substrate	Asb	Pb	Ars	Results
12	Mahaiula Lagoon	Women's Restrooms	Roof	Roof	Roof	White	Caulking	Wood	X			ND
13	Mahaiula Lagoon	Men's Restrooms	1	Men's Restroom 1, Men's Restroom 2	Walls	Off-white	Paint	Concrete block		X		<100 mg/kg
14	Mahaiula Lagoon	Men's Restrooms	1	Men's Restroom 1, Men's Restroom 2	Ceiling, doors, door frames	Off-white	Paint	Wood		X		<200 - <390 mg/kg
15	Mahaiula Lagoon	Men's Restrooms	1	Men's Restroom 1, Men's Restroom 2	Floors	Brown	Grout	1" x 1" Ceramic tile	X			ND ND
16	Mahaiula Lagoon	Men's Restrooms	1	Men's Restroom 1, Men's Restroom 2	Walls	White	Grout	4" x 4" Ceramic tile	X			ND
17	Mahaiula Lagoon	Women's Restrooms	1	Women's Restroom 1, Women's Restroom 2	Walls	Off-white	Paint	Concrete block		X		<100 mg/kg

Homogeneous Materials Identified and Sample Types Collected

HM ID	Area	Building	Floor	Rooms	Locations	Material Color	Material	Substrate	Asb	Pb	Ars	Results
18	Mahaiula Lagoon	Women's Restrooms	1	Women's Restroom 1, Women's	Ceiling, doors, door frames	Off-white	Paint	Wood		X		<100 - <190 mg/kg
19	Mahaiula Lagoon	Women's Restrooms	1	Women's Restroom 1, Women's	Floors	Brown	Grout	1" x 1" Ceramic tile	X			ND
20	Mahaiula Lagoon	Women's Restrooms	1	Women's Restroom 1, Women's Restroom 2	Walls	White	Grout	4" x 4" Ceramic tile	X			ND
21	Mahaiula Lagoon	Walkways	1	Exterior	Railings	Green	Paint	Metal		X		<100 - <130 mg/kg
22	Kaelemakula Housing	House 1	1	Exterior	Walls	Red	Paint	Wood		X		LCP 380 mg/kg
23	Kaelemakula Housing	House 1	1	Exterior	Walls	Lt. green	Paint	Wood		X		LCP 660 - 980 mg/kg

Homogeneous Materials Identified and Sample Types Collected

HM ID	Area	Building	Floor	Rooms	Locations	Material Color	Material	Substrate	Asb	Pb	Ars	Results
24	Kaelemakula Housing	House 1	1	Exterior	Beams, columns, purlins, trusses, window frames	White	Paint	Wood		X		LCP 330 - 360 mg/kg
25	Kaelemakula Housing	House 1	1	Exterior	Floor	Green	Paint	Concrete	X	X		ND LCP 790 - 1,200 mg/kg
26	Kaelemakula Housing	House 1	1	Exterior	Awning	Off-white	Paint	Metal		X		LBP 13,000 mg/kg
27	Kaelemakula Housing	House 1	1	Room 1, Room 2	Beams, framing, purlins, trusses, walls	White	Paint	Wood		X		<190 - <220 mg/kg
28	Kaelemakula Housing	House 1	1	Room 1, Room 2	Floor	Green	Filler Paint	Concrete	X	X		ND LCP 650 - 1,400 mg/kg
29	Kaelemakula Housing	House 1	1	Room 1, Room 2	Ceilings	Off-white	Paint	Metal		X		LBP 13,000 - 14,000 mg/kg

Homogeneous Materials Identified and Sample Types Collected

HM ID	Area	Building	Floor	Rooms	Locations	Material Color	Material	Substrate	Asb	Pb	Ars	Results
30	Kaelemakula Housing	House 1	1	Exterior	Windows	White	Glazing	Glass	X			ACM 3%
31	Kaelemakula Housing	House 1	1	Exterior	Beam	Lt. blue	Paint	Wood		X		LCP 220 - 380 mg/kg
32	Kaelemakula Housing	House 2	1	Exterior	Beams, columns, purlins, railing, trusses, walls	Red	Paint	Wood		X		LCP 230 - 340 mg/kg
33	Kaelemakula Housing	House 2	1	Exterior	Floor	Green	Paint	Wood		X		LBP 6,900 - 39,000 mg/kg
34	Kaelemakula Housing	House 2	Roof	Exterior	Awning, gutter, roof	Red	Paint	Metal		X		LCP 1,500 - 1,700 mg/kg

Homogeneous Materials Identified and Sample Types Collected

HM ID	Area	Building	Floor	Rooms	Locations	Material Color	Material	Substrate	Asb	Pb	Ars	Results
35	Kaelemakula Housing	House 2	1	Exterior	Bench, doors, door frames, railing, window	White	Paint	Wood		X		<100 mg/kg
36	Kaelemakula Housing	House 2	1	Exterior	Floor	Green	Paint	Concrete		X		LCP 460 - 630 mg/kg
38	Kaelemakula Housing	House 2	1	Room 1	Floor	Lt. blue	Paint	Fiberboard		X	X	LCP 610 - 770 mg/kg <10 mg/kg
39	Kaelemakula Housing	House 2	1	Room 1, Room 2	Window frames	Brown	Paint	Wood		X		LBP 2,100 - 13,000 mg/kg
40	Kaelemakula Housing	House 2	1	Room 1	Ceilings	Off-white	Paint	Fiberboard		X	X	<100 mg/kg <10 mg/kg
41	Kaelemakula Housing	House 2	1	Room 2	Beams, columns, door frames, purlins, trusses, walls, window frames	Beige	Paint	Wood		X		LBP 6,100 - 6,200 mg/kg
42	Kaelemakula Housing	House 2	1	Room 2	Ceiling	White	Paint	Wood		X		LCP 510 - 640 mg/kg

Homogeneous Materials Identified and Sample Types Collected

HM ID	Area	Building	Floor	Rooms	Locations	Material Color	Material	Substrate	Asb	Pb	Ars	Results
43	Kaelemakula Housing	House 2	1	Room 2	Floor	Lt. blue	Paint	Wood		X		LCP 760 - 1,300 mg/kg
44	Kaelemakula Housing	House 3	1	Exterior	Beams, ceiling, columns, gate, stairs, walls	Red	Paint	Wood		X		LBP 5,900 - 6,800 mg/kg
45	Kaelemakula Housing	House 3	1	Exterior	Floor	Green	Paint	Concrete		X		LBP 12,000 - 14,000 mg/kg
46	Kaelemakula Housing	House 3	1	Exterior	Ceiling	White	Paint	Metal		X		LCP 100 - 200 mg/kg
47	Kaelemakula Housing	House 3	1	Exterior	Beams, door, door frames, purlins, trusses, walls, window frames	White	Paint	Wood		X		LCP <100 - 750 mg/kg
48	Kaelemakula Housing	House 3	1	Room 1	Floor	Green	Paint	Concrete		X		LBP 13,000 - 14,000 mg/kg
49	Kaelemakula Housing	House 3	1	Room 1	Columns, walls	Yellow	Paint	Wood		X		LBP 84,000 - 99,000 mg/kg

Homogeneous Materials Identified and Sample Types Collected

HM ID	Area	Building	Floor	Rooms	Locations	Material Color	Material	Substrate	Asb	Pb	Ars	Results
50	Kaelemakula Housing	House 3	1	Room 1	Beams, ceiling, door, door frame, purlins, window frames	White	Paint	Wood		X		LCP 400 - 1,300 mg/kg
51	Kaelemakula Housing	House 3	1	Room 1	Ceiling	White	Paint	Metal		X		LCP 290 - 330 mg/kg
52	Kaelemakula Housing	House 3	2	Exterior	Porch, purlins	White	Paint	Wood		X		LCP 1,400 - 1,800 mg/kg
53	Kaelemakula Housing	House 3	2	Exterior	Ceiling	White	Paint	Metal		X		LCP 290 - 470 mg/kg
54	Kaelemakula Housing	House 3	2	Room 2	Floor	Red	Paint	Wood		X		LCP 2,800 - 4,500 mg/kg
55	Kaelemakula Housing	House 3	2	Room 1, Room 2	Floor, walls	Green	Paint	Wood		X		LCP 860 - 1,200 mg/kg
56	Kaelemakula Housing	House 4	1	Exterior	Sink supports, walls	Red	Paint	Wood		X		LCP 480 - 530 mg/kg
57	Kaelemakula Housing	House 4	1	Exterior	Pipes	Red	Paint	Metal		X		LBP 13,000 - 24,000 mg/kg
58	Kaelemakula Housing	House 4	1	Exterior	Beams, purlins, sink, trusses	White	Paint	Wood		X		LCP 400 - 490 mg/kg
59	Kaelemakula Housing	House 4	1	Exterior	Awning, pipes	White	Paint	Metal		X		LCP 3,300 - 4,700 mg/kg

Homogeneous Materials Identified and Sample Types Collected

HM ID	Area	Building	Floor	Rooms	Locations	Material Color	Material	Substrate	Asb	Pb	Ars	Results
60	Kaelemakula Housing	House 4	1	Room 1, Room 2, Room 3	Floors	Green	Paint	Concrete		X		LCP 100 - 120 mg/kg
61	Kaelemakula Housing	House 4	1	Room 1, Room 2, Room 3	Beams, columns, purlins, trusses, walls	White	Paint	Wood		X		LCP 450 - 850 mg/kg
62	Kaelemakula Housing	House 4	1	Room 1, Room 2, Room 3	Ceilings, pipes	White	Paint	Metal		X		LCP <100 - 100 mg/kg
63	Kua Lagoon	Comfort Station	1	Exterior	Walls	Brown	Paint	Concrete block		X		<110 mg/kg
64	Kua Lagoon	Comfort Station	1	Exterior	Beams, slats, walls	Lt. brown	Paint	Wood		X		<110 mg/kg
65	Kua Lagoon	Comfort Station	1	Exterior	Columns	Brown	Paint	Concrete		X		<110 mg/kg
66	Kua Lagoon	Comfort Station	1	Men's Restroom, Women's Restroom	Door, doors frames, trim	White	Paint	Wood		X		<110 mg/kg

Homogeneous Materials Identified and Sample Types Collected

HM ID	Area	Building	Floor	Rooms	Locations	Material Color	Material	Substrate	Asb	Pb	Ars	Results
67	Kua Lagoon	Comfort Station	1	Men's Restroom, Women's Restroom	Brackets, clips, conduit	White	Paint	Metal		X		<110 mg/kg
68	Kua Lagoon	Comfort Station	1	Men's Restroom, Women's Restroom	Brackets, conduit, pipes, vents	Brown	Paint	Metal		X		<110 mg/kg
69	Kua Lagoon	Comfort Station	1	Men's Restroom, Women's Restroom	Walls	White	Paint	Concrete block		X		<110 mg/kg

Bold values indicate results above the detection limit.

¹ A sufficient volume could not be obtained due to factory baked-on paint. This paint is assumed to be LCP.

Abbreviations and Acronyms

Asb - Asbestos

Ars - Arsenic

HM ID - Homogeneous Material Identifier

LBP - Lead-Based Paint

LCP - Lead-Containing Paint

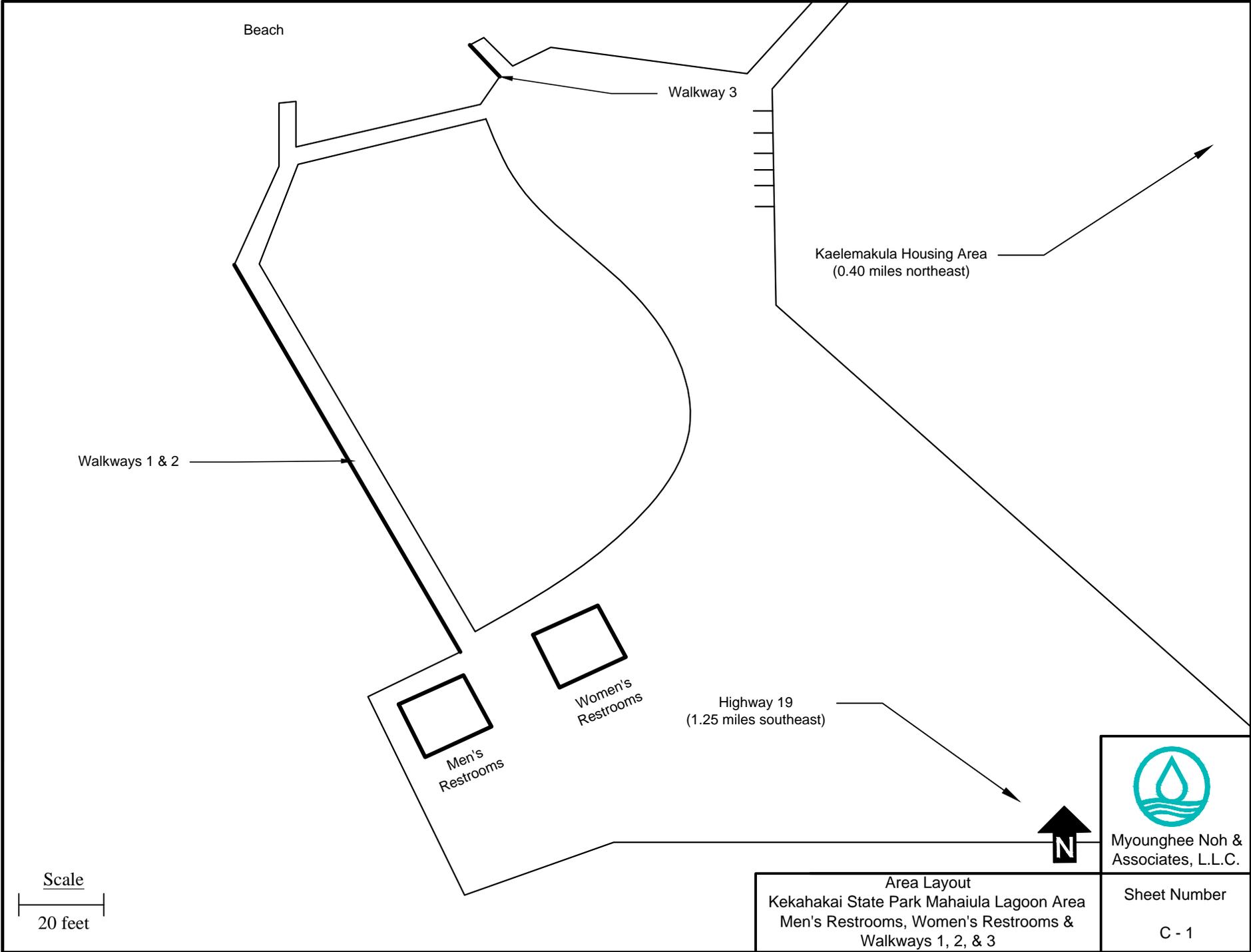
mg/kg - milligrams per kilogram, or parts per million

ND - Not Detected

Pb - Lead

APPENDIX C

SAMPLE AND HAZARDOUS MATERIAL LOCATION DRAWINGS



Beach

Walkway 3

Kaelemakula Housing Area
(0.40 miles northeast)

Walkways 1 & 2

Men's
Restrooms

Women's
Restrooms

Highway 19
(1.25 miles southeast)



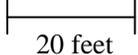
Myounghee Noh &
Associates, L.L.C.

Area Layout
Kekahakai State Park Mahaiula Lagoon Area
Men's Restrooms, Women's Restrooms &
Walkways 1, 2, & 3

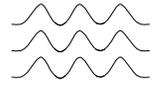
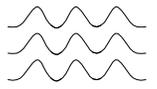
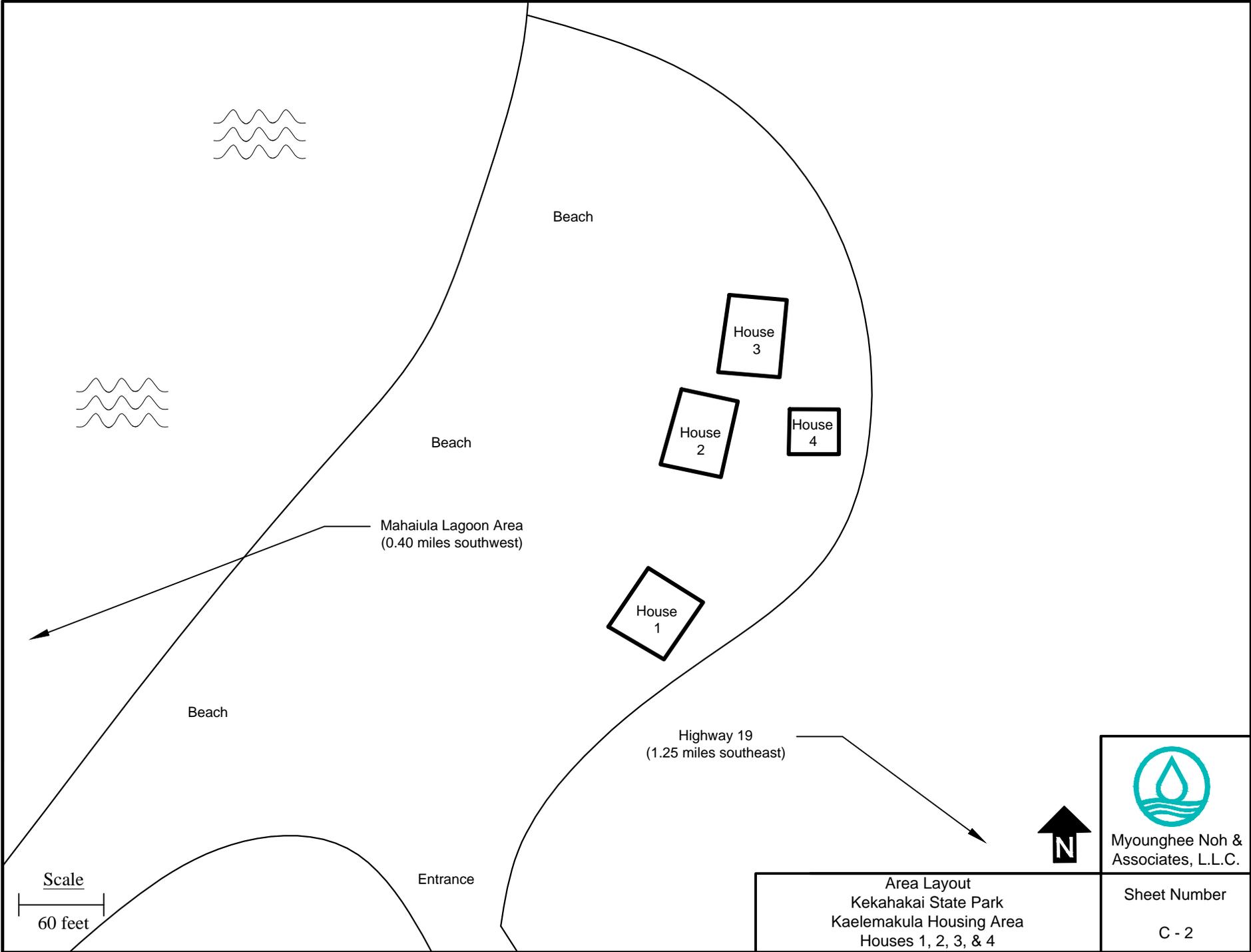
Sheet Number

C - 1

Scale



20 feet



Beach

Beach

Beach

Mahaiula Lagoon Area
(0.40 miles southwest)

Highway 19
(1.25 miles southeast)

Entrance

House 3

House 2

House 4

House 1

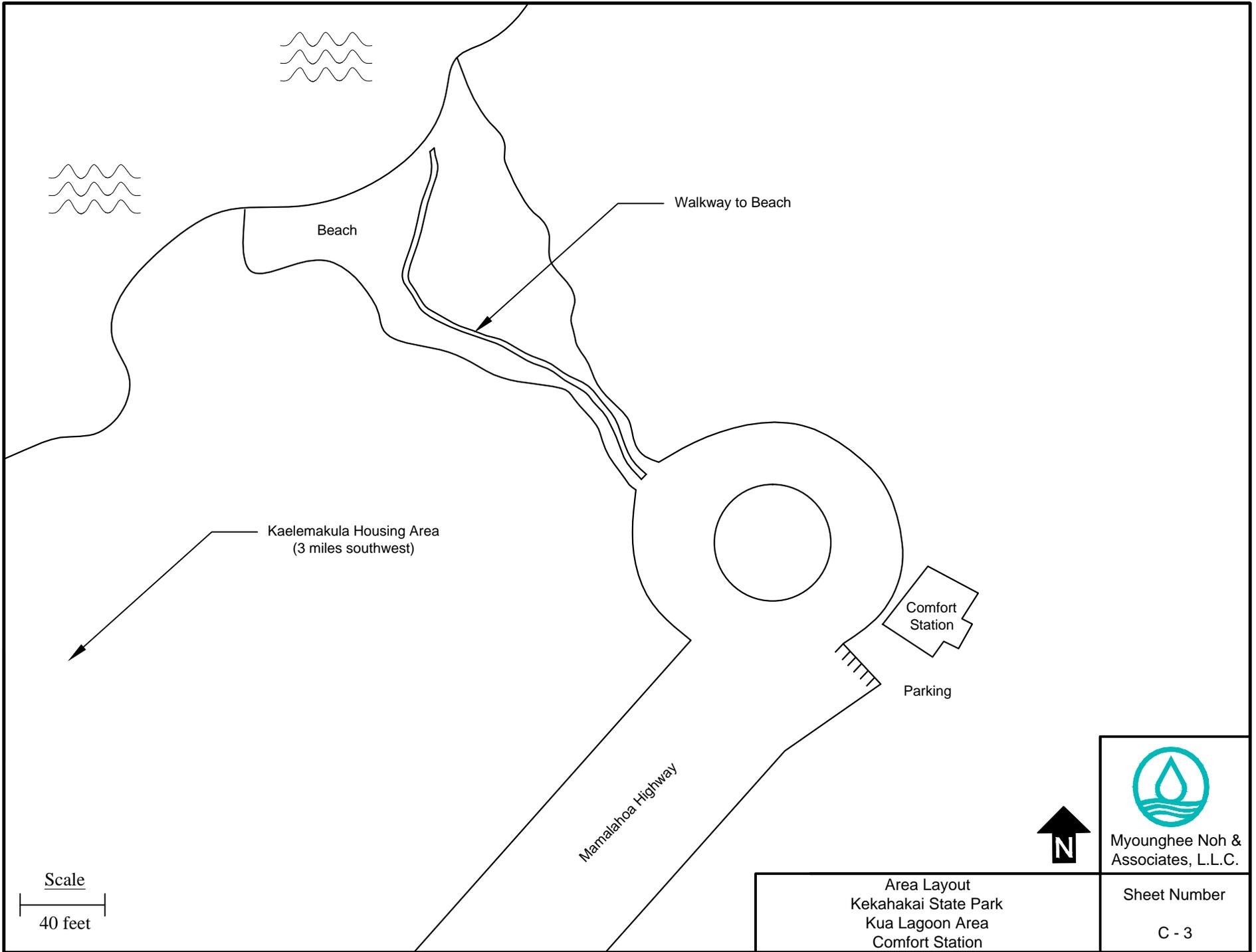
Scale
60 feet



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Area Layout
Kekahakai State Park
Kaelemakula Housing Area
Houses 1, 2, 3, & 4

Sheet Number
C - 2



Beach

Walkway to Beach

Kaelemakula Housing Area
(3 miles southwest)

Comfort
Station

Parking

Mamalahoa Highway

Scale

40 feet

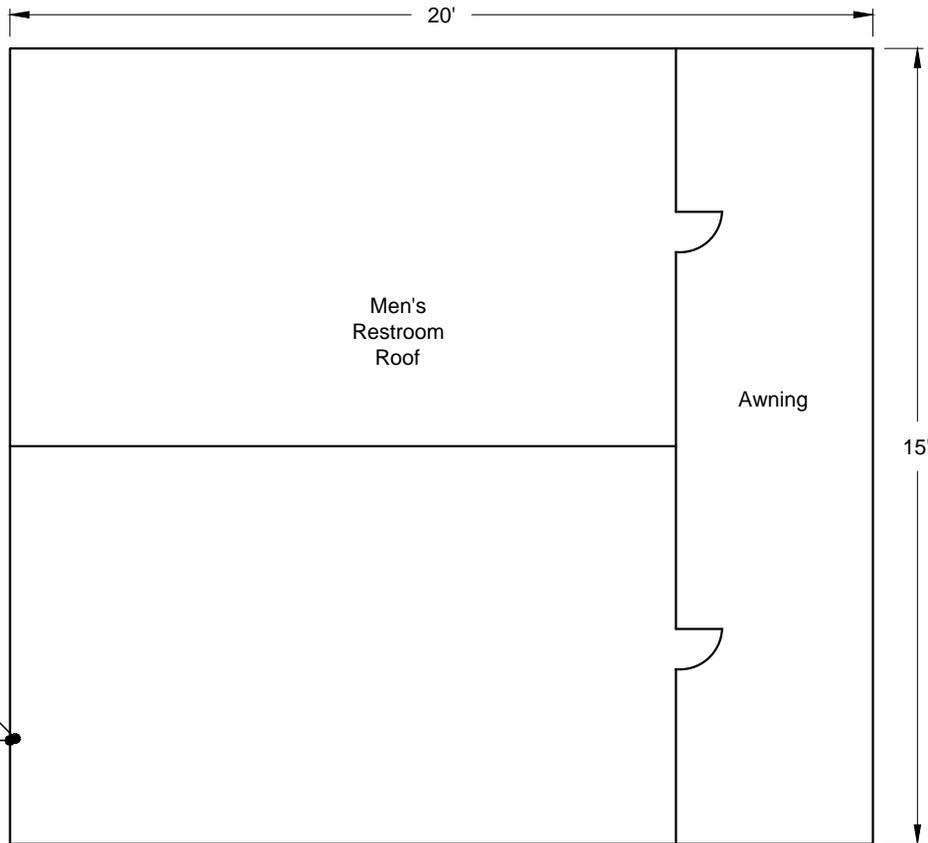


Myounghee Noh &
Associates, L.L.C.

Area Layout
Kekahakai State Park
Kua Lagoon Area
Comfort Station

Sheet Number

C - 3



1522K-A3A: ND
 1522K-A3B: ND
 1522K-A3C: ND
 HM ID: 11 (Roof)

1522K-A1A: ND
 1522K-A1B: ND
 1522K-A1C: ND
 HM ID: 9 (Roof)

Legend and Notes

HM ID - Homogeneous Material Identifier

ND - Not Detected



Myounghee Noh &
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Asbestos Sample Locations
 Kekahakai State Park
 Mahaiula Lagoon Area
 Men's Restrooms Exterior and Roof

Sheet Number

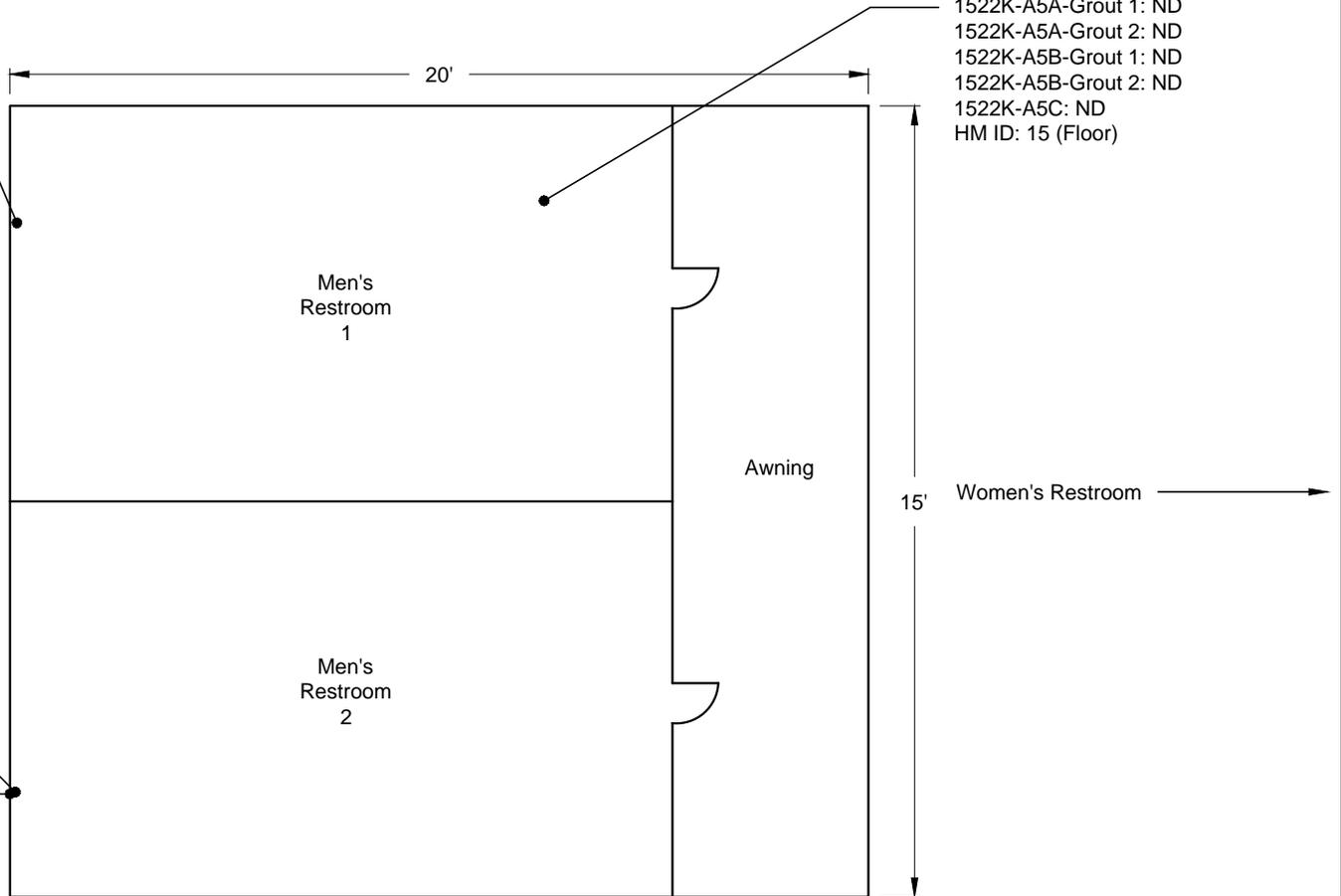
C - 4

1522K-A6A: ND
 1522K-A6B-Ceramic tile: ND
 1522K-A6B-Grout: ND
 1522K-A6C: ND
 HM ID: 16 (Wall)

1522K-A5A-Grout 1: ND
 1522K-A5A-Grout 2: ND
 1522K-A5B-Grout 1: ND
 1522K-A5B-Grout 2: ND
 1522K-A5C: ND
 HM ID: 15 (Floor)

1522K-A3A: ND
 1522K-A3B: ND
 1522K-A3C: ND
 HM ID: 11 (Roof)

1522K-A1A: ND
 1522K-A1B: ND
 1522K-A1C: ND
 HM ID: 9 (Roof)



Legend and Notes

HM ID - Homogeneous Material Identifier

ND - Not Detected

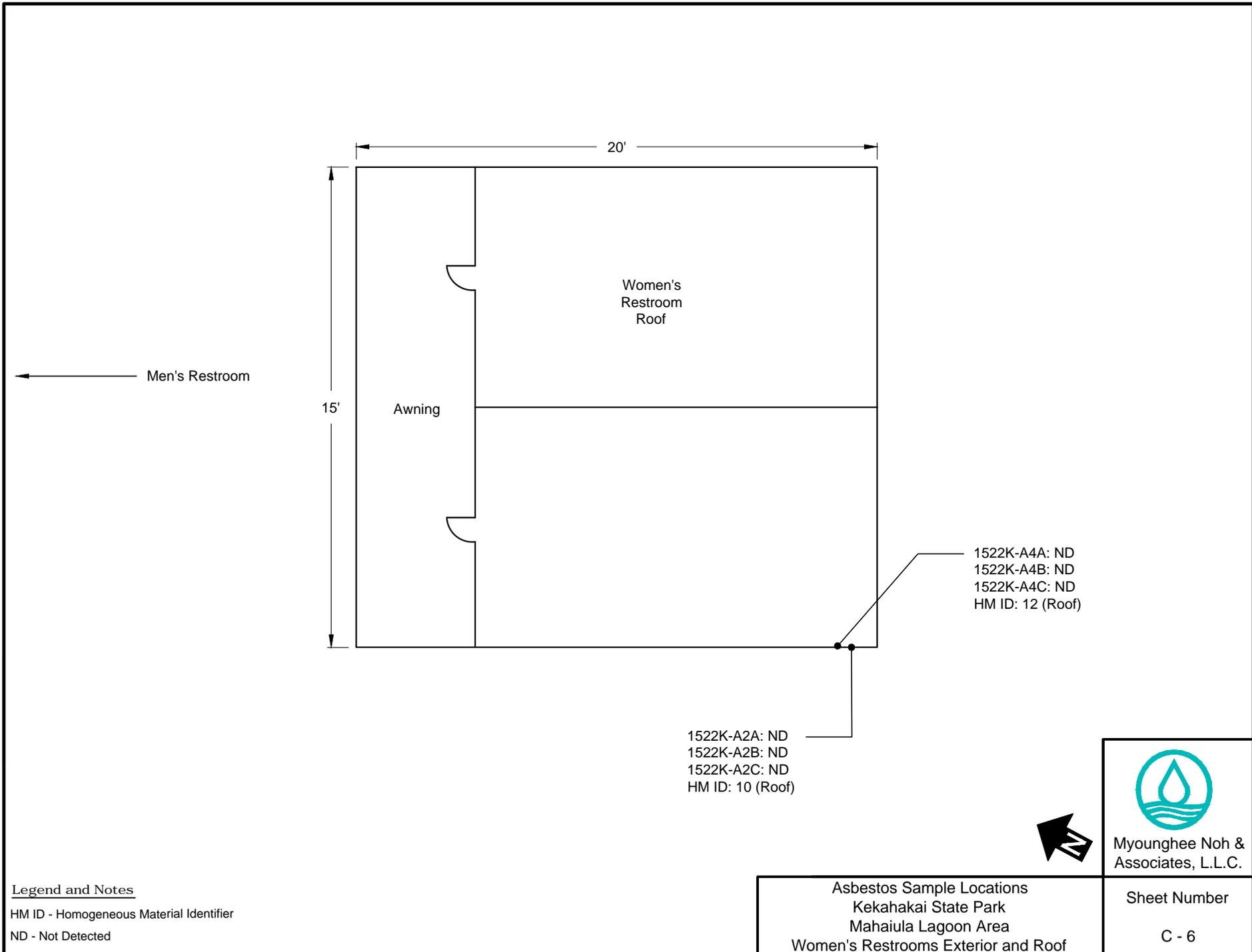


Myounghee Noh & Associates, L.L.C.

Asbestos Sample Locations
 Kekahakai State Park
 Mahaiula Lagoon Area
 Men's Restrooms Interior

Sheet Number

C - 5



Legend and Notes

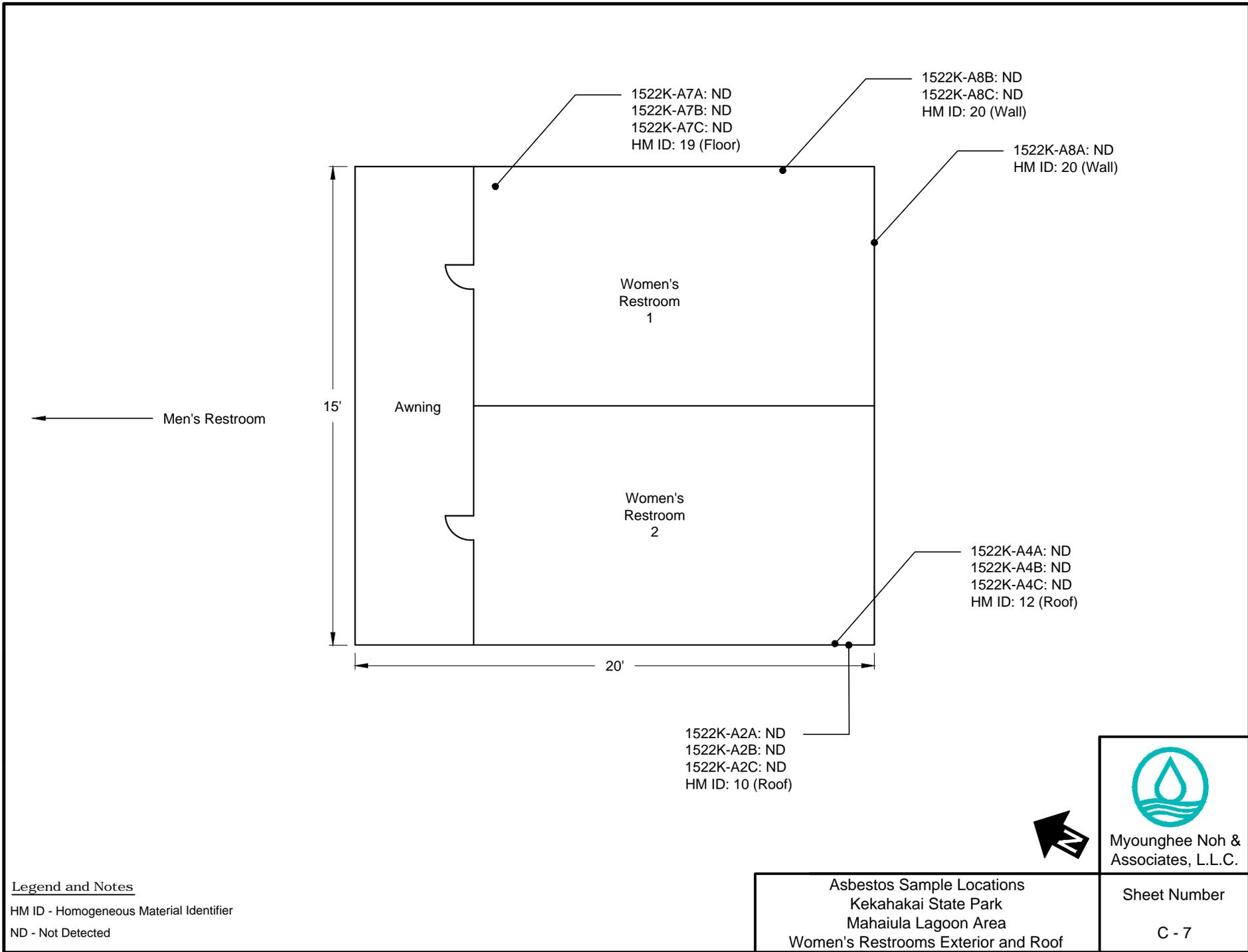
HM ID - Homogeneous Material Identifier
 ND - Not Detected

Asbestos Sample Locations
 Kekahakai State Park
 Mahaiula Lagoon Area
 Women's Restrooms Exterior and Roof

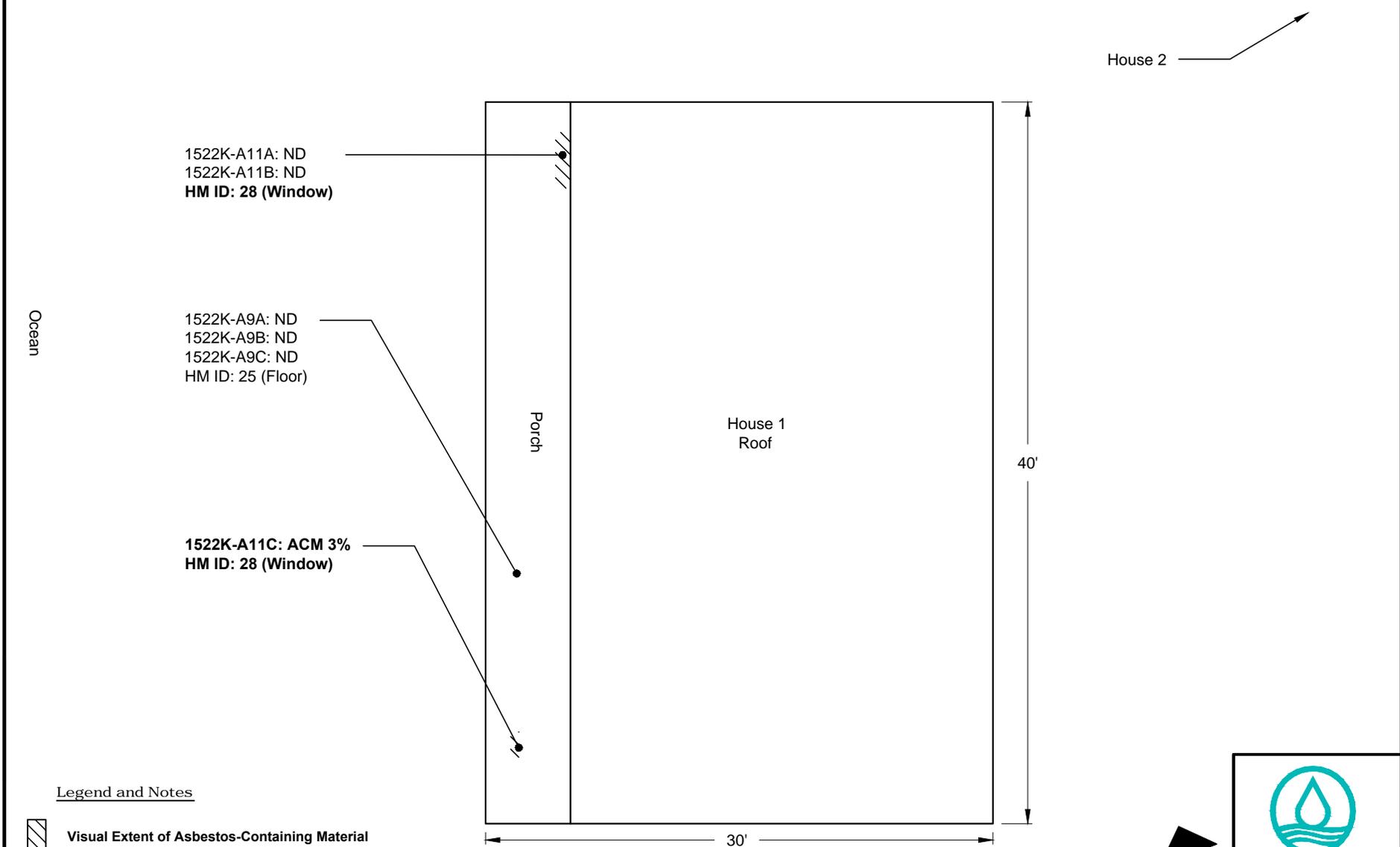


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Sheet Number
 C - 6



HM ID	Locations	Material	Color	Substrate	Results
30	Windows	Glazing	White	Glass	ACM 3%



Legend and Notes

 **Visual Extent of Asbestos-Containing Material**

Bold values indicate results above the detection limit.
 ACM - Asbestos-Containing Material
 HM ID - Homogeneous Material Identifier
 mg/kg - milligrams per kilogram (equivalent to ppm- parts per million)
 ND - None Detected

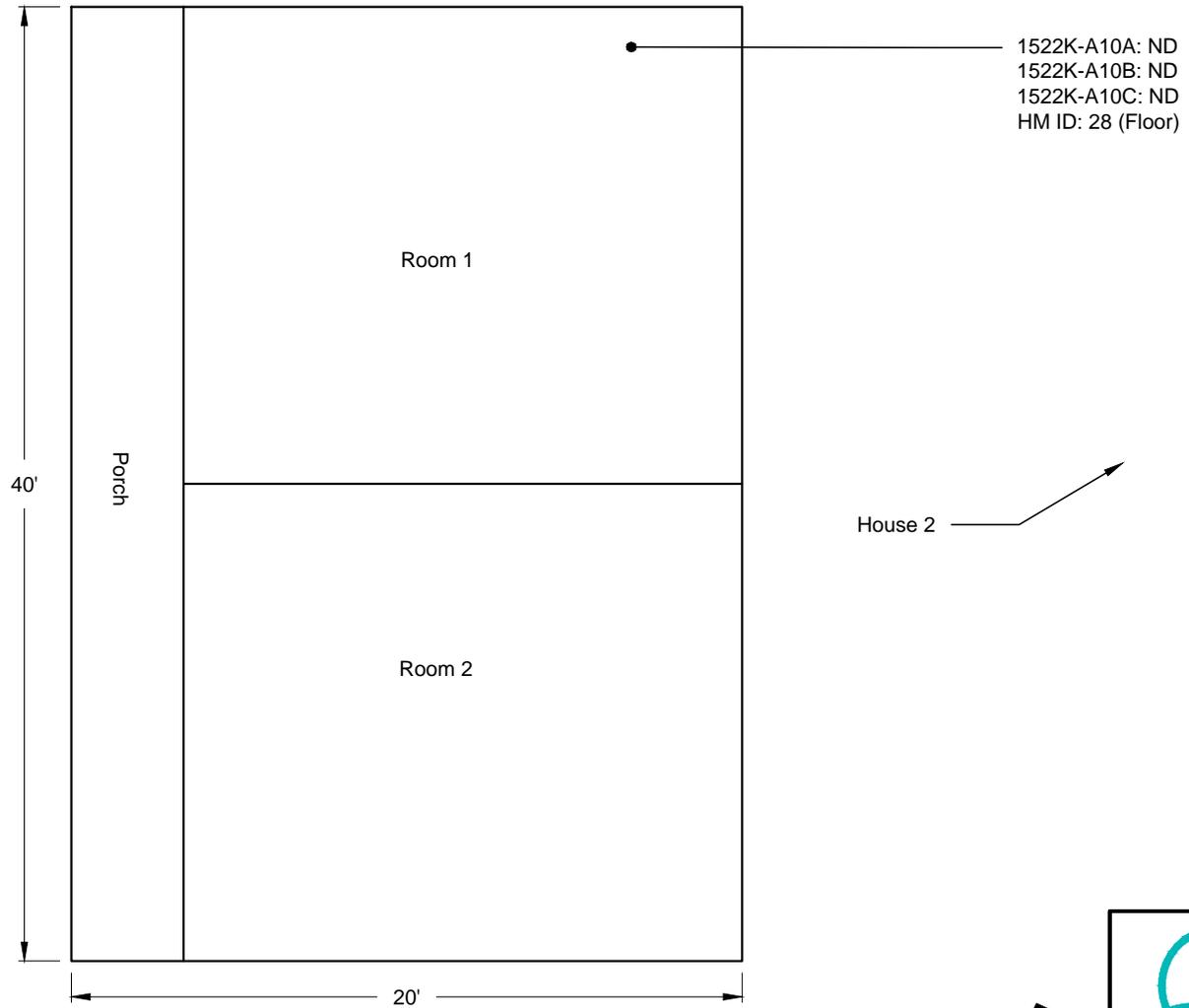



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Asbestos Sample and Hazardous
Material Locations
Kekahakai State Park
Kaelemakula Housing Area 1 Exterior and Roof

Sheet Number
C - 8

Ocean



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Legend and Notes

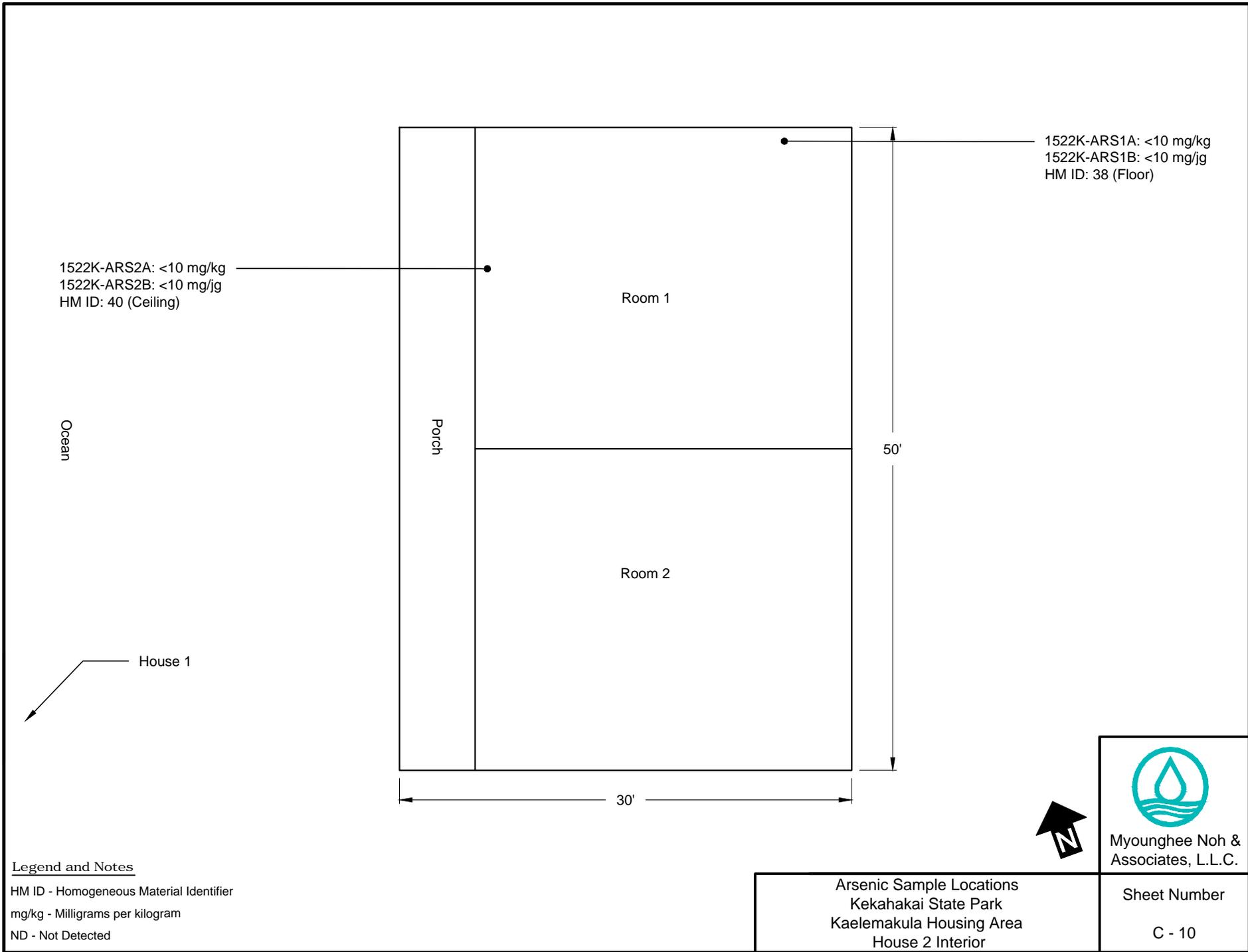
HM ID - Homogeneous Material Identifier

ND - Not Detected

Asbestos Sample Locations
Kekahakai State Park
Kaelemakula Housing Area
House 1 Interior

Sheet Number

C - 9



Legend and Notes

HM ID - Homogeneous Material Identifier
 mg/kg - Milligrams per kilogram
 ND - Not Detected

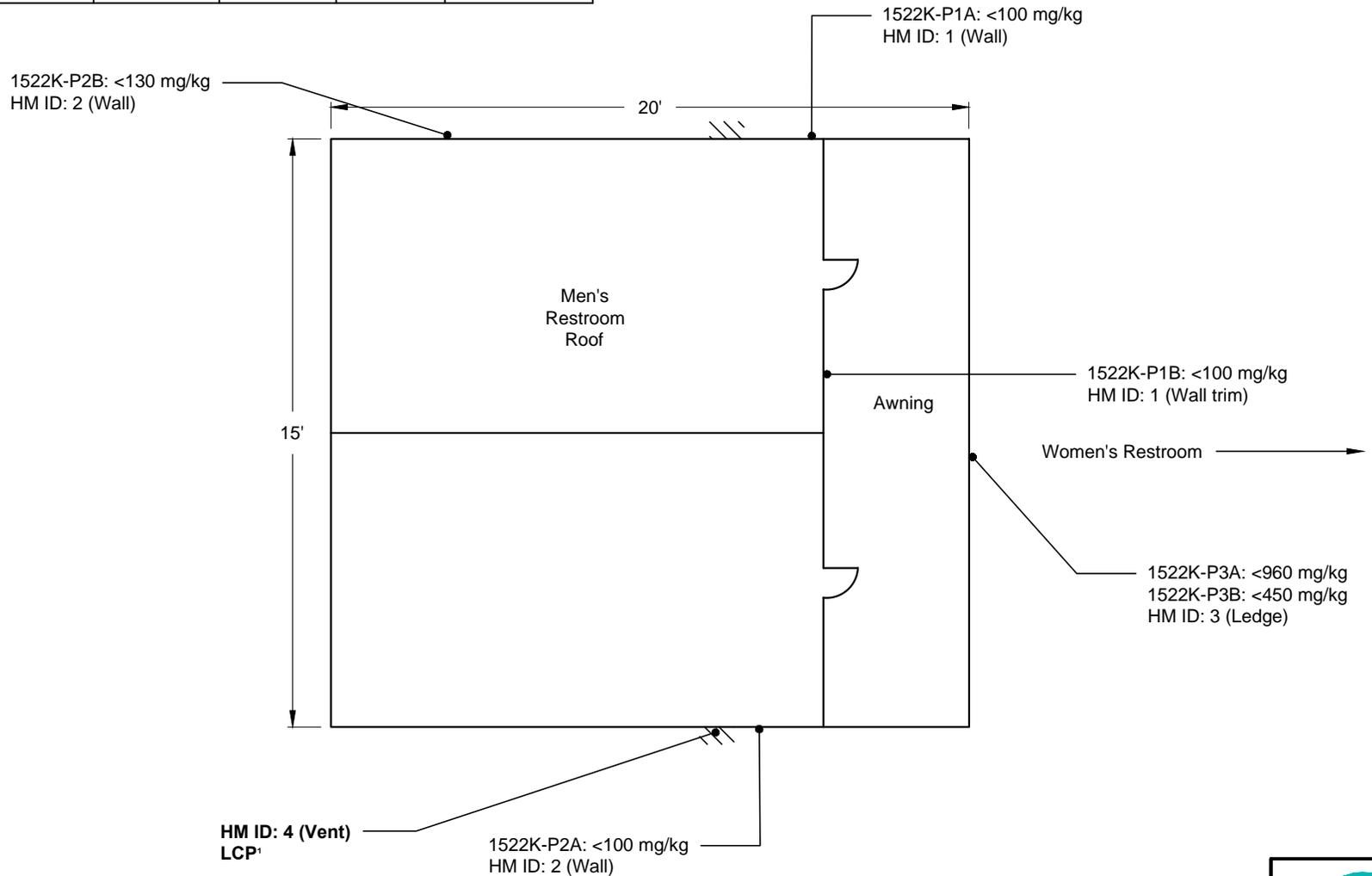


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Arsenic Sample Locations
 Kekahakai State Park
 Kaelemakula Housing Area
 House 2 Interior

Sheet Number
 C - 10

HM ID	Locations	Material	Color	Substrate	Results (mg/kg)
4	Vents	Black	Paint	Metal	LCP ¹



Legend and Notes

 Visual Extent of Lead-Containing Paint

HM ID - Homogeneous Material Identifier

LCP¹ - Not sampled because paint is factory-applied. Assume LCP.

mg/kg - milligrams per kilogram (equivalent to ppm- parts per million)



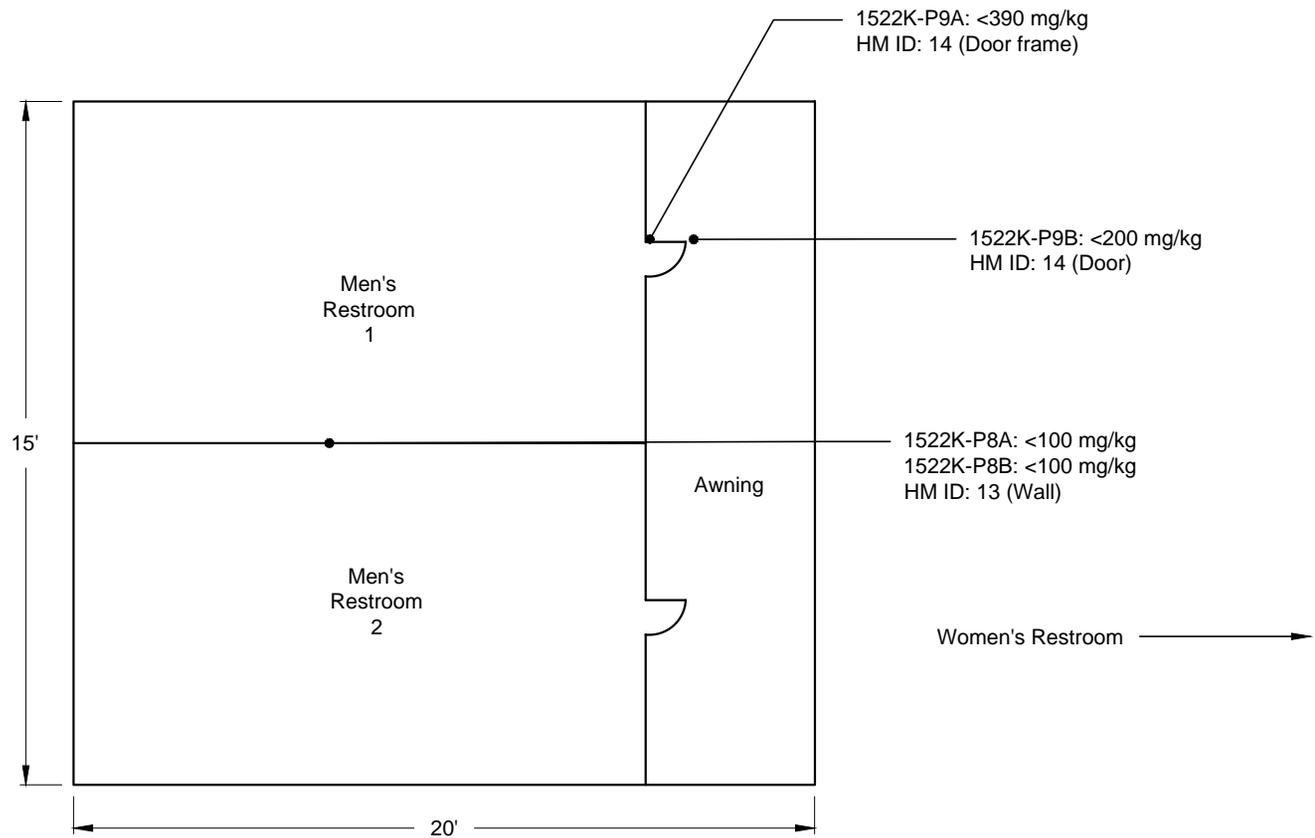
Myounghee Noh & Associates, L.L.C.



Lead Paint Sample and Hazardous
Material Locations
Kekahakai State Park Mahaiula Lagoon Area
Men's Restrooms Exterior and Roof

Sheet Number

C - 11



Legend and Notes

HM ID - Homogeneous Material Identifier

mg/kg - milligrams per kilogram (equivalent to ppm- parts per million)



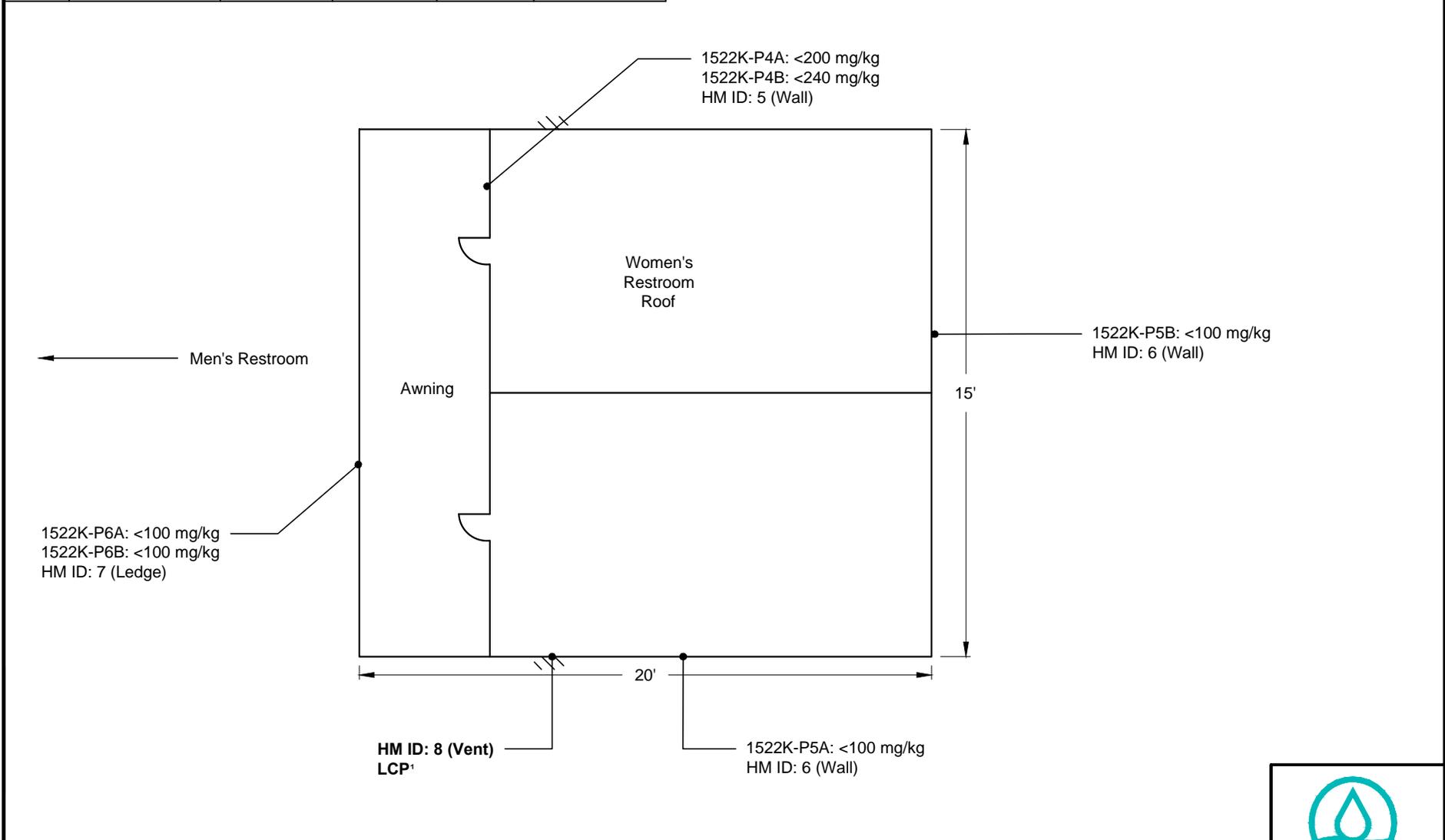
Myounghee Noh &
Associates, L.L.C.

Lead Paint Sample Locations
Kekahakai State Park
Mahaiula Lagoon Area
Men's Restrooms Interior

Sheet Number

C - 12

HM ID	Locations	Material	Color	Substrate	Results (mg/kg)
8	Vents	Black	Paint	Metal	LCP ¹



Legend and Notes

 **Visual Extent of Lead-Containing Paint**

HM ID - Homogeneous Material Identifier

LCP¹ - Not sampled because paint is factory-applied. Assume LCP.

mg/kg - milligrams per kilogram (equivalent to ppm- parts per million)

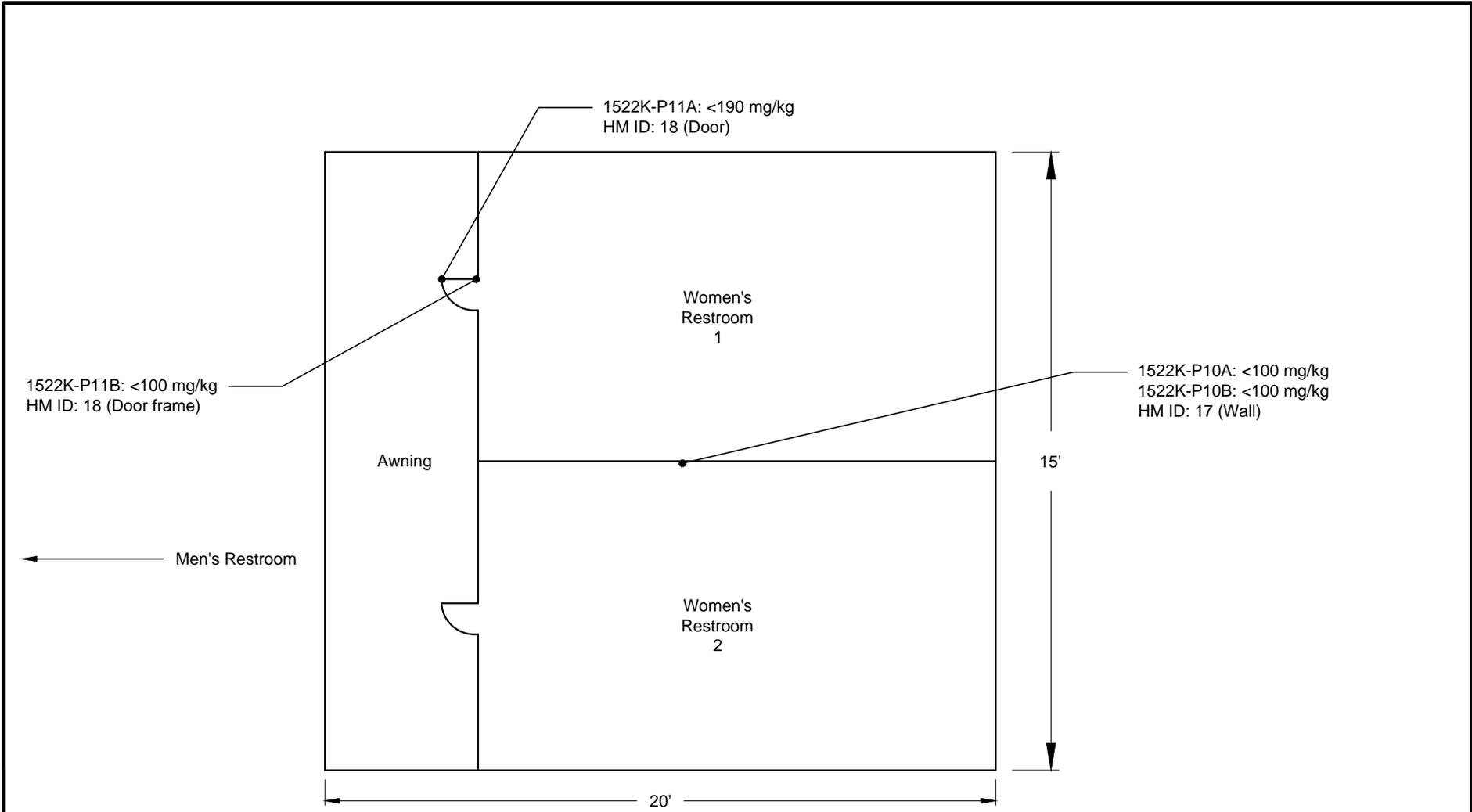


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Lead Paint Sample and Hazardous Material Locations
Kekahakai State Park Mahaiula Lagoon Area
Women's Restrooms Exterior and Roof

Sheet Number

C - 13



Legend and Notes

HM ID - Homogeneous Material Identifier
 mg/kg - milligrams per kilogram (equivalent to ppm- parts per million)

Lead Paint Sample Locations
 Kekahakai State Park
 Mahaiula Lagoon Area
 Women's Restrooms Interior

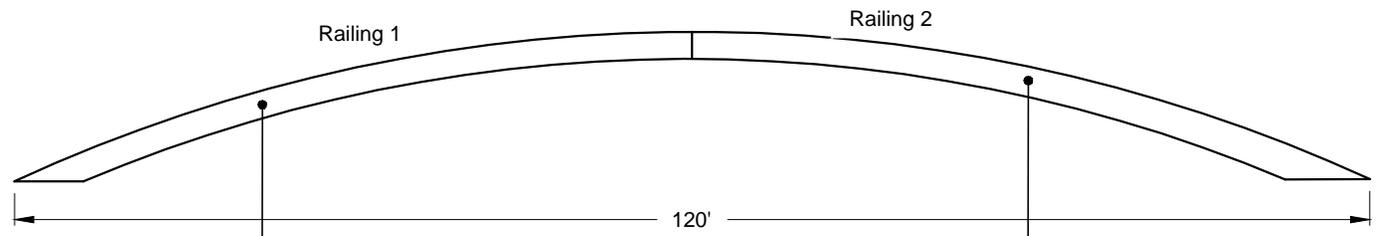


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Sheet Number
 C - 14

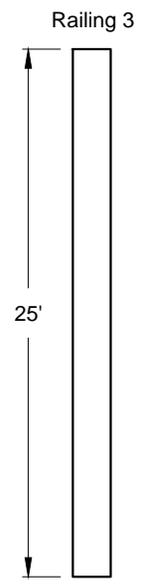
Men's Restrooms

Ocean



1522K-P12A: <100 mg/kg
HM ID: 21 (Railing)

1522K-P12A: <130 mg/kg
HM ID: 21 (Railing)



Women's Restrooms

Not To Scale



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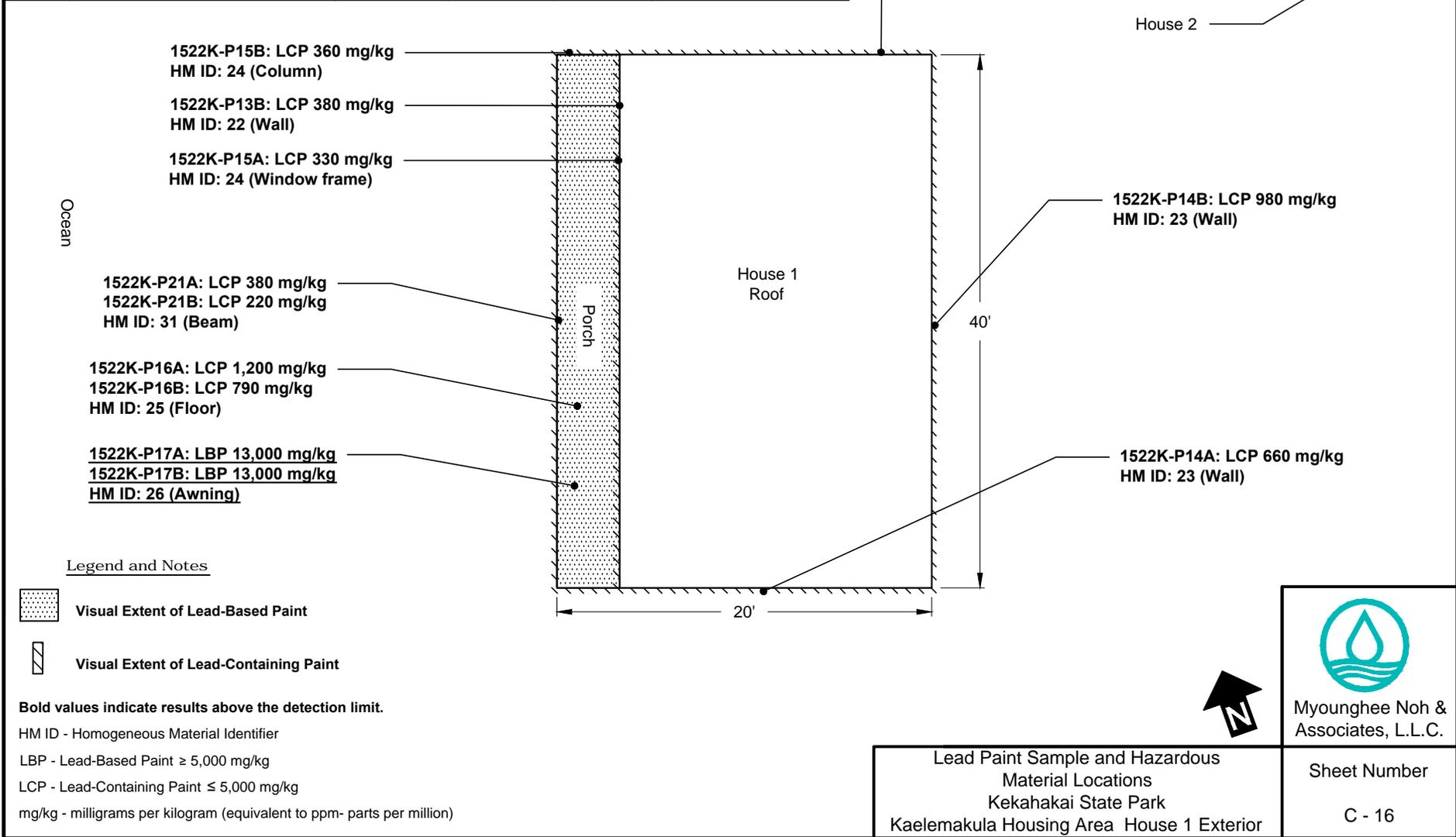
Legend and Notes

HM ID - Homogeneous Material Identifier
mg/kg - milligrams per kilogram (equivalent to ppm- parts per million)

<p>Lead Paint Sample Locations Kekahakai State Park Mahaiula Lagoon Area Walkways 1, 2, & 3</p>

<p>Sheet Number C - 15</p>

HM ID	Locations	Material	Color	Substrate	Results (mg/kg)
22	Walls	Paint	Red	Wood	LCP 380
23	Walls	Paint	Lt. green	Wood	LCP 660 - 980
24	Beams, columns, purlins, trusses, window frames	Paint	White	Wood	LCP 330 - 360
25	Floor	Paint	Green	Concrete	LCP 790 - 1,200
26	Awning	Paint	Off-white	Metal	LBP 13,000
31	Beam	Paint	Lt. blue	Wood	LCP 220 - 380



HM ID	Locations	Material	Color	Substrate	Results (mg/kg)
28	Floors	Paint	Green	Concrete	LCP 650 - 1,400
29	Ceilings	Paint	Off-white	Metal	LBP 13,000 - 14,000

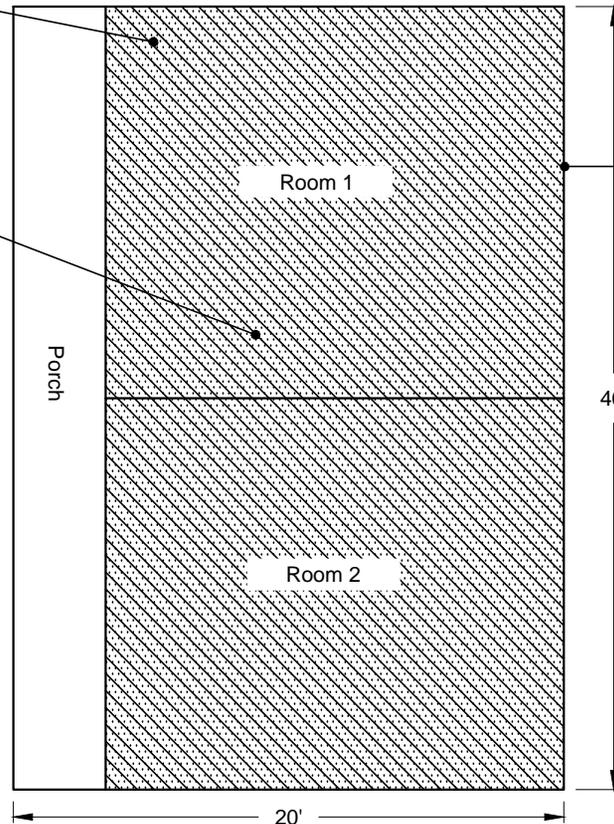
House 2

1522K-P19A: LCP 650 mg/kg
 1522K-P19B: LCP 1,400 mg/kg
 HM ID: 28 (Floor)

1522K-P20A: LBP 14,000 mg/kg
 1522K-P20B: LBP 13,000 mg/kg
 HM ID: 29 (Ceiling)

1522K-P18A: <220 mg/kg
 1522K-P18B: <190 mg/kg
 HM ID: 27 (Wall)

Ocean



Legend and Notes

Visual Extent of Lead-Based Paint

Visual Extent of Lead-Containing Paint

Bold values indicate results above the detection limit.

HM ID - Homogeneous Material Identifier

LBP - Lead-Based Paint $\geq 5,000$ mg/kg

LCP - Lead-Containing Paint $\leq 5,000$ mg/kg

mg/kg - milligrams per kilogram (equivalent to ppm- parts per million)

Lead Paint Sample and Hazardous
 Material Locations
 Kekahakai State Park
 Kaelemakula Housing Area House 1 Interior

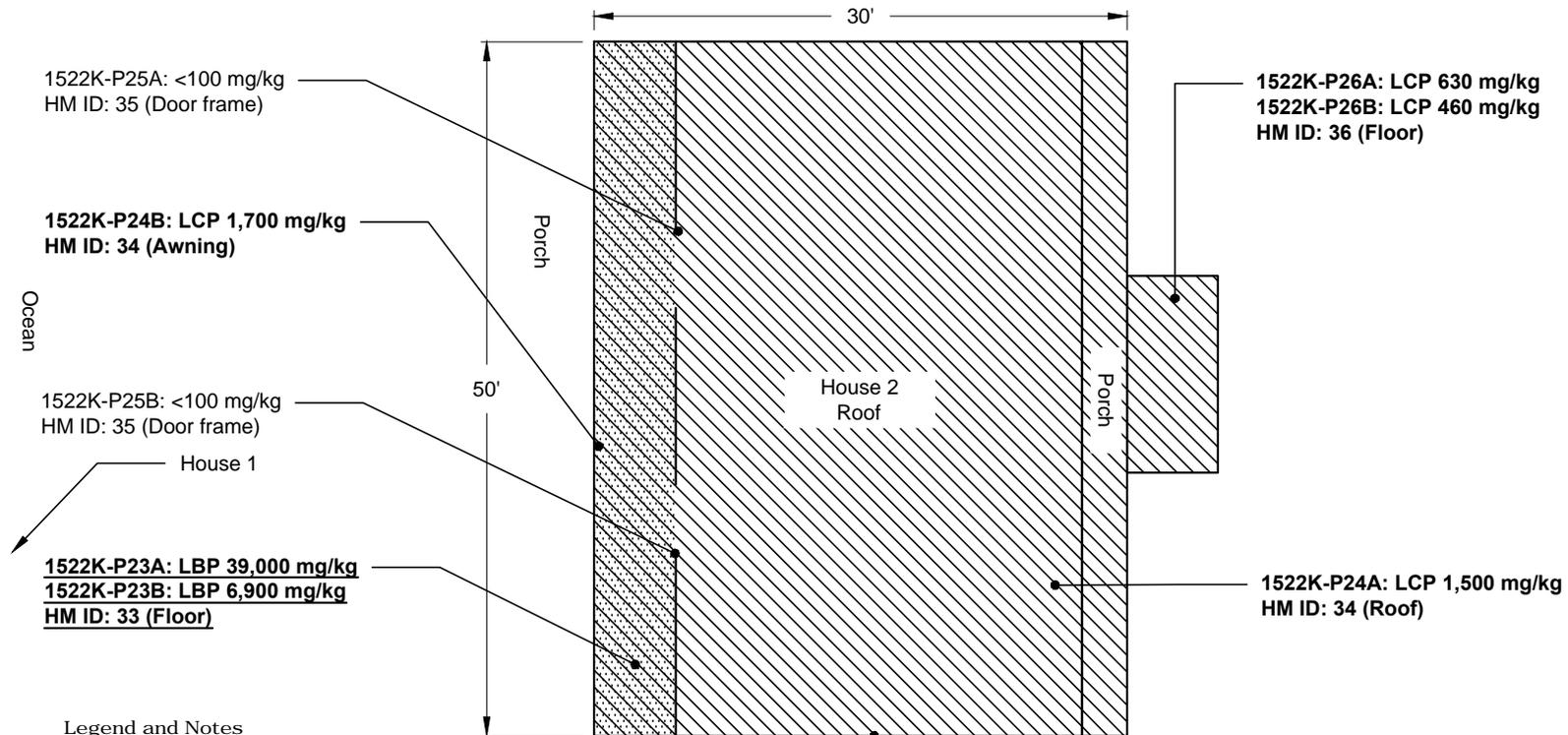


Myounghee Noh &
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Sheet Number

C - 17

HM ID	Locations	Material	Color	Substrate	Results (mg/kg)
32	Beams, columns, purlins, railing, trusses, walls	Paint	Red	Wood	LCP 230 - 340
33	Floor	Paint	Green	Wood	<u>LCP 6,900 - 39,000</u>
34	Awning, gutter, roof	Paint	Red	Metal	LCP 1,500 - 1,700
36	Floor	Paint	Green	Concrete	LCP 460 - 630



Legend and Notes

-  Visual Extent of Lead-Based Paint
-  Visual Extent of Lead-Containing Paint

Bold values indicate results above the detection limit.

HM ID - Homogeneous Material Identifier

LBP - Lead-Based Paint $\geq 5,000$ mg/kg

LCP - Lead-Containing Paint $\leq 5,000$ mg/kg

mg/kg - milligrams per kilogram (equivalent to ppm- parts per million)



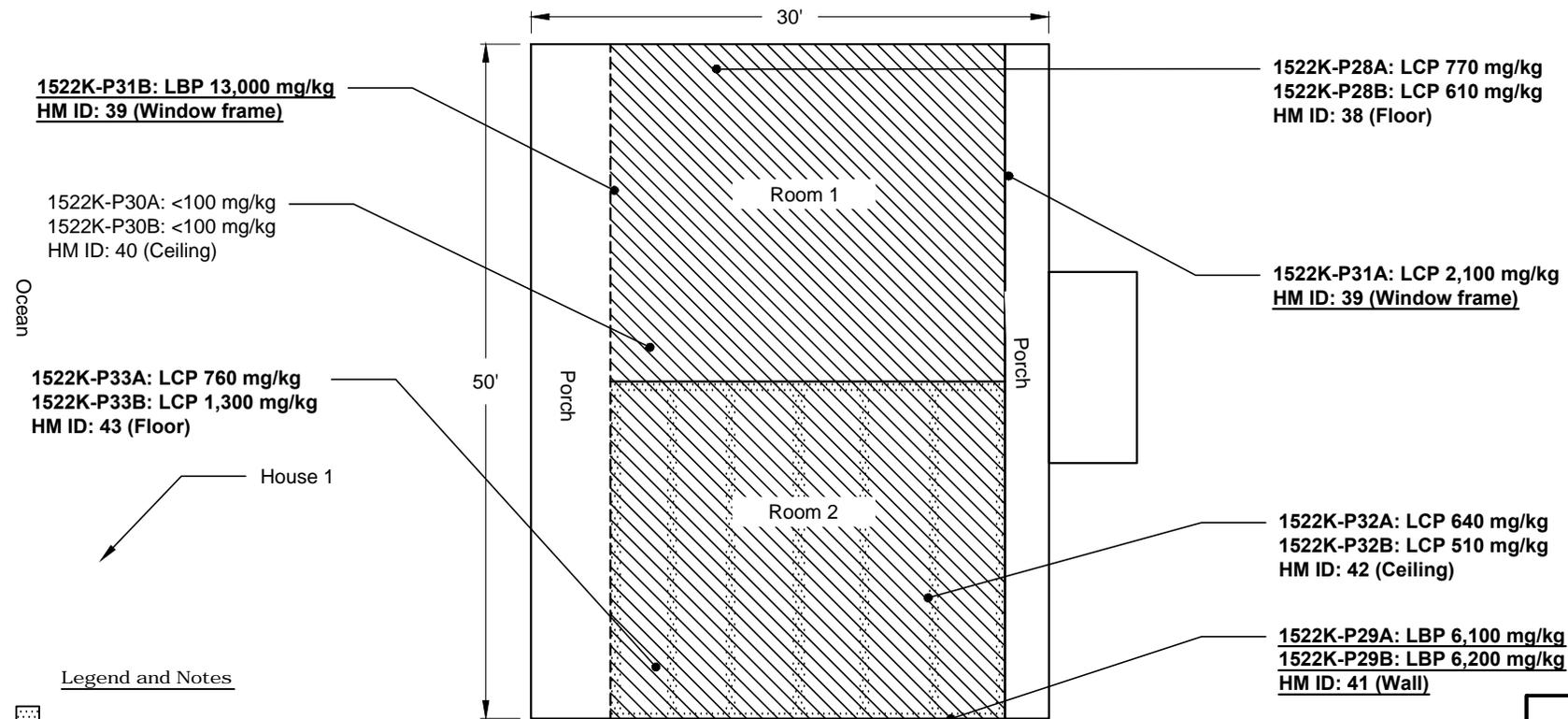
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Lead Paint Sample and Hazardous
Material Locations
Kekahakai State Park
Kaelemakula Housing Area House 2 Exterior

Sheet Number

C - 18

HM ID	Locations	Material	Color	Substrate	Results (mg/kg)
38	Floor	Paint	Lt. blue	Fiberboard	LCP 610 - 770
39	Window frames	Paint	Brpown	Wood	LBP 2,100 - 13,000
41	Beams, columns, door frames, purlines, trusses, walls, window frames	Paint	Beige	Wood	LBP 6,100 - 6,200
42	Ceiling	Paint	White	Wood	LCP 510 - 640
43	Floor	Paint	Lt. blue	Wood	LCP 760 - 1,300



Legend and Notes

 Visual Extent of Lead-Based Paint

 Visual Extent of Lead-Containing Paint

Bold values indicate results above the detection limit.

HM ID - Homogeneous Material Identifier

LBP - Lead-Based Paint $\geq 5,000$ mg/kg

LCP - Lead-Containing Paint $\leq 5,000$ mg/kg

mg/kg - milligrams per kilogram (equivalent to ppm- parts per million)



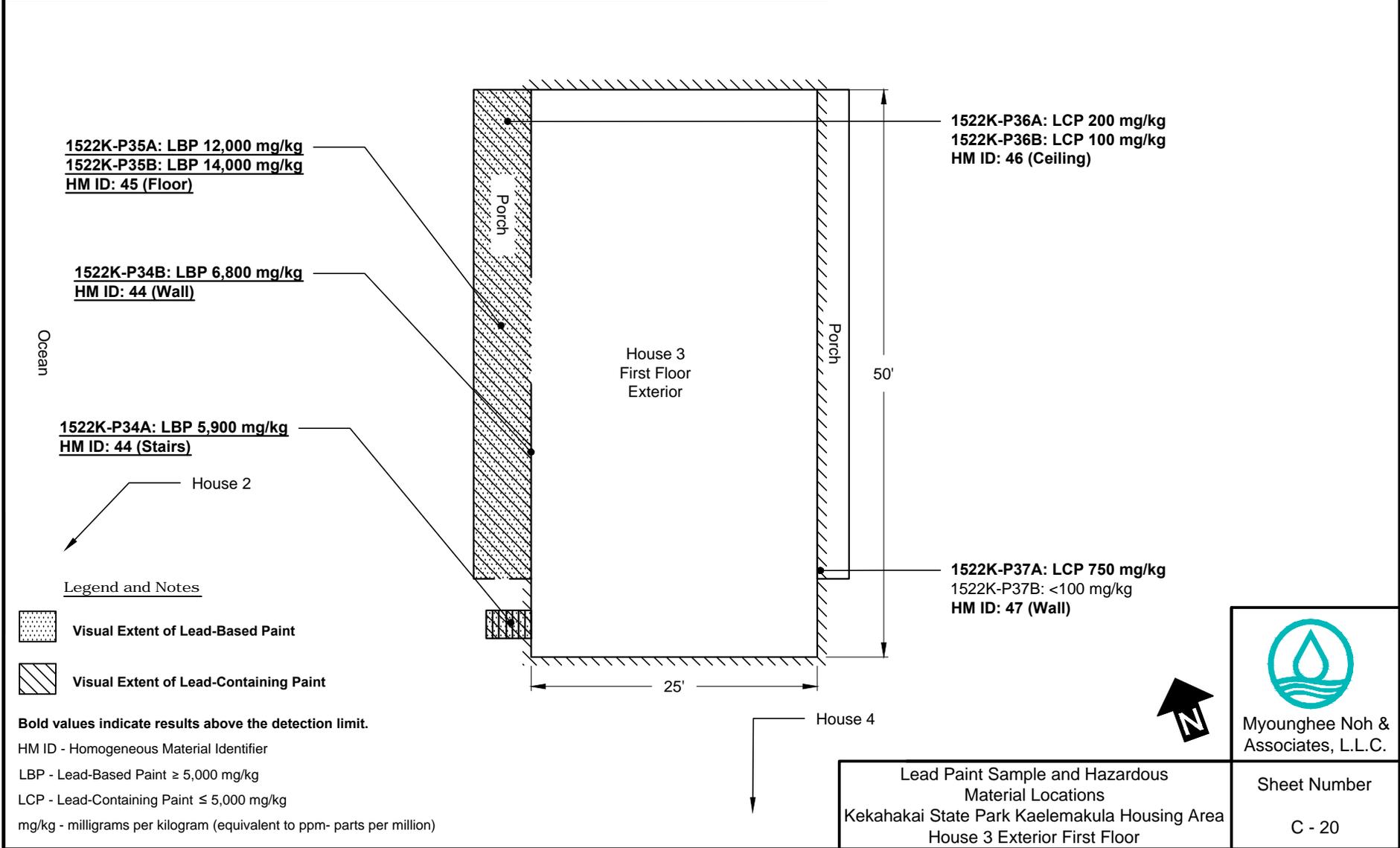
Myounghee Noh & Associates, L.L.C.

Lead Paint Sample and Hazardous
Material Locations
Kekahakai State Park
Kaelemakula Housing Area House 2 Interior

Sheet Number

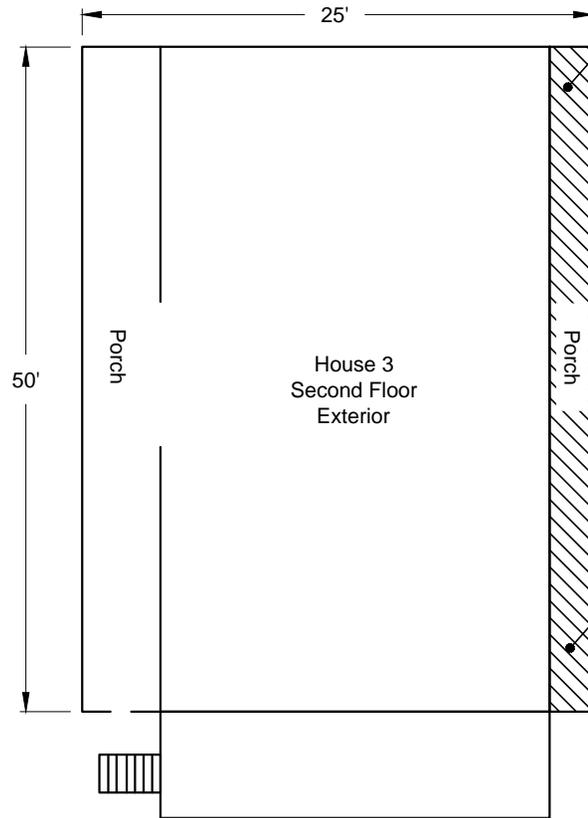
C - 19

HM ID	Locations	Material	Color	Substrate	Results (mg/kg)
44	Beams, ceiling, columns, gate, stairs, walls	Paint	Red	Wood	LBP 5,900 - 6,800
45	Floor	Paint	Green	Concrete	LBP 12,000 - 14,000
46	Ceiling	Paint	White	Metal	LCP 100 - 200
47	Beams, door, door frames, purlins, trusses, walls, window frames	Paint	White	Wood	LCP <100 - 750



HM ID	Locations	Material	Color	Substrate	Results (mg/kg)
52	Porch, purlins	Paint	White	Wood	LCP 1,400 - 1,800
53	Ceiling	Paint	White	Metal	LCP 290 - 470

Ocean



1522K-P43A: LCP 470 mg/kg
 1522K-P43B: LCP 290 mg/kg
 HM ID: 53 (Ceiling)

1522K-P42A: LCP 1,400 mg/kg
 1522K-P42B: LCP 1,800 mg/kg
 HM ID: 52 (Porch)

House 2

House 4

Legend and Notes

 **Visual Extent of Lead-Containing Paint**

Bold values indicate results above the detection limit.

HM ID - Homogeneous Material Identifier

LCP - Lead-Containing Paint ≤ 5,000 mg/kg

mg/kg - milligrams per kilogram (equivalent to ppm- parts per million)



Myounghee Noh & Associates, L.L.C.

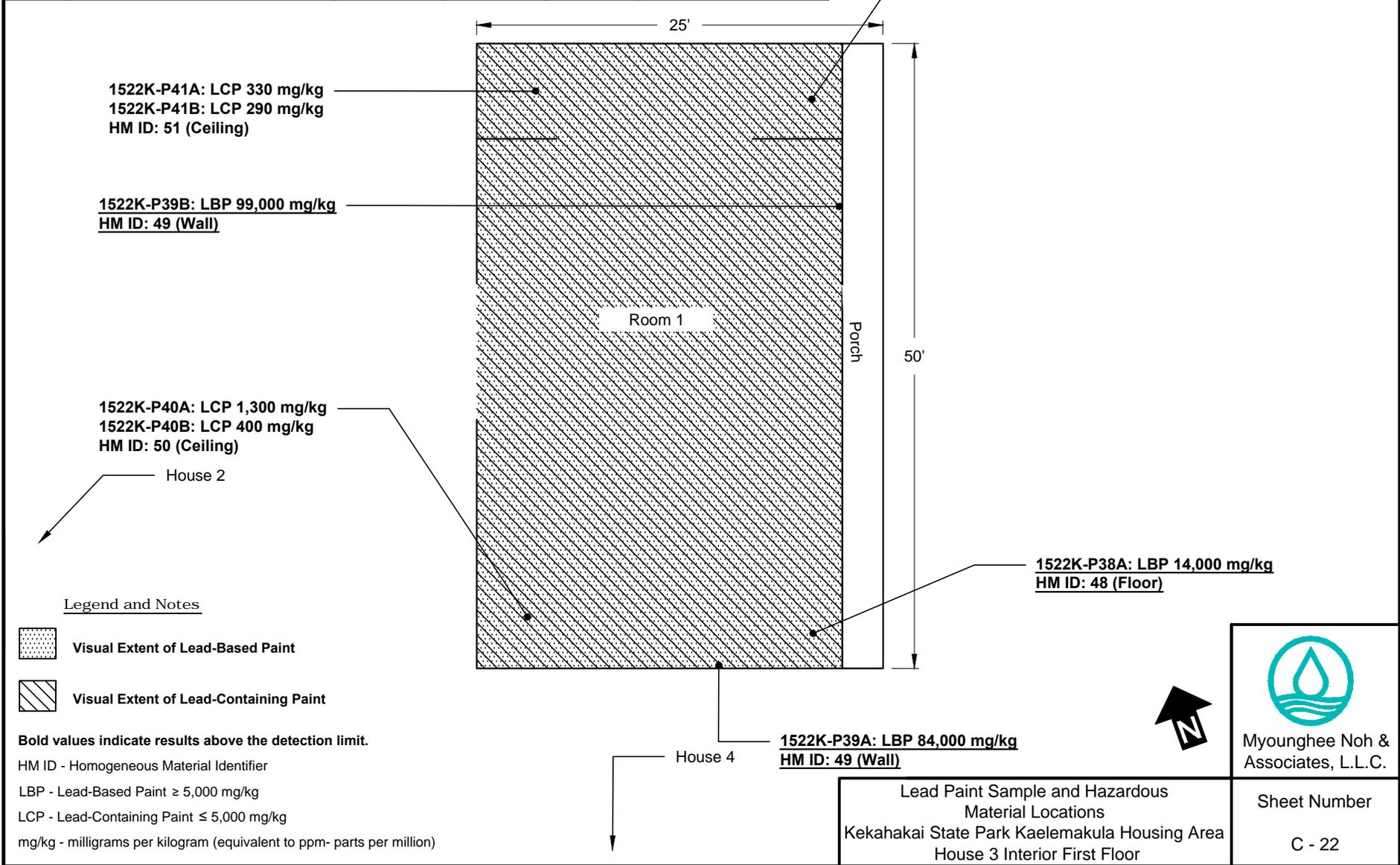


Lead Paint Sample and Hazardous Material Locations
 Kekahakai State Park Kaelemakula Housing Area
 House 3 Exterior Second Floor

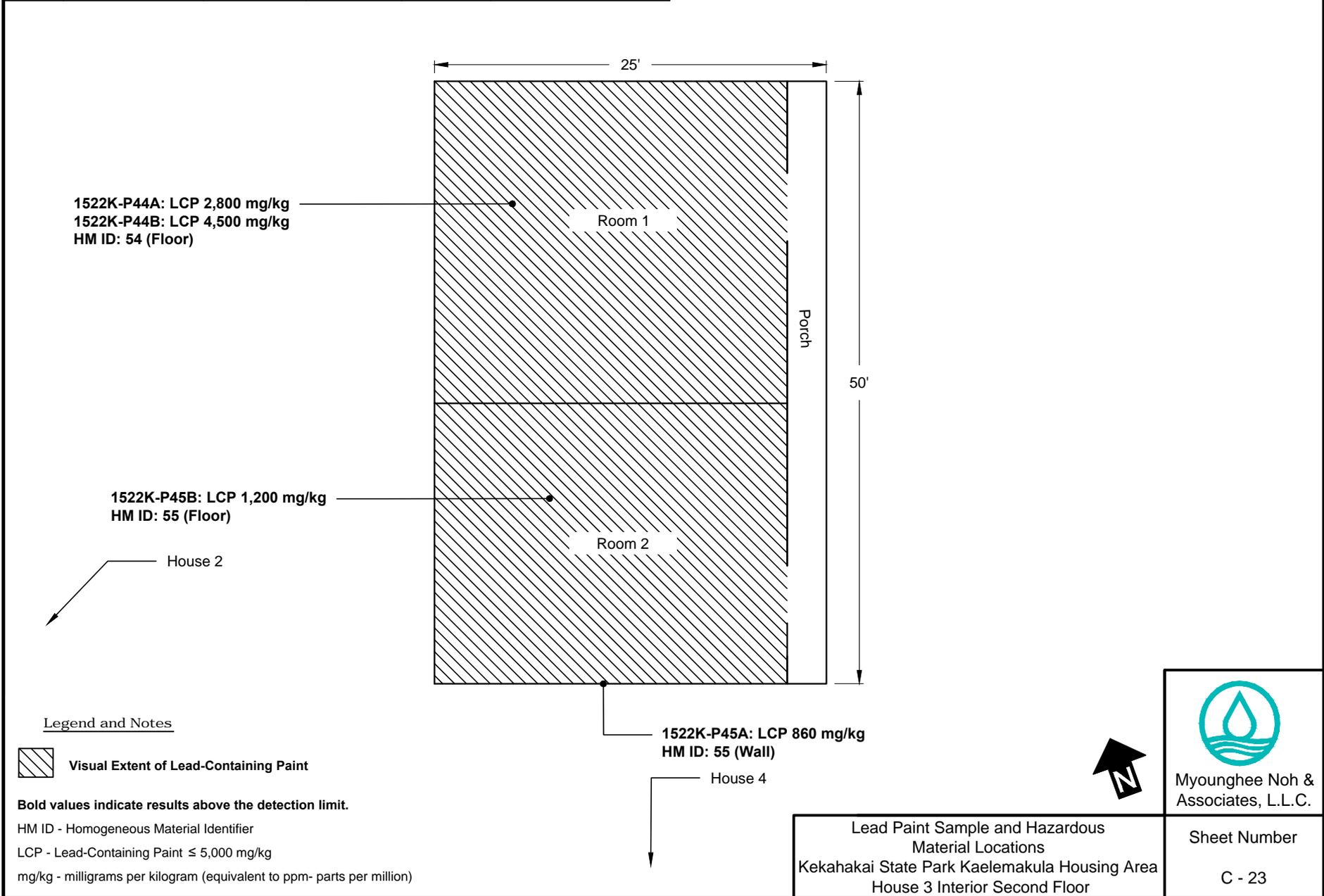
Sheet Number

C - 21

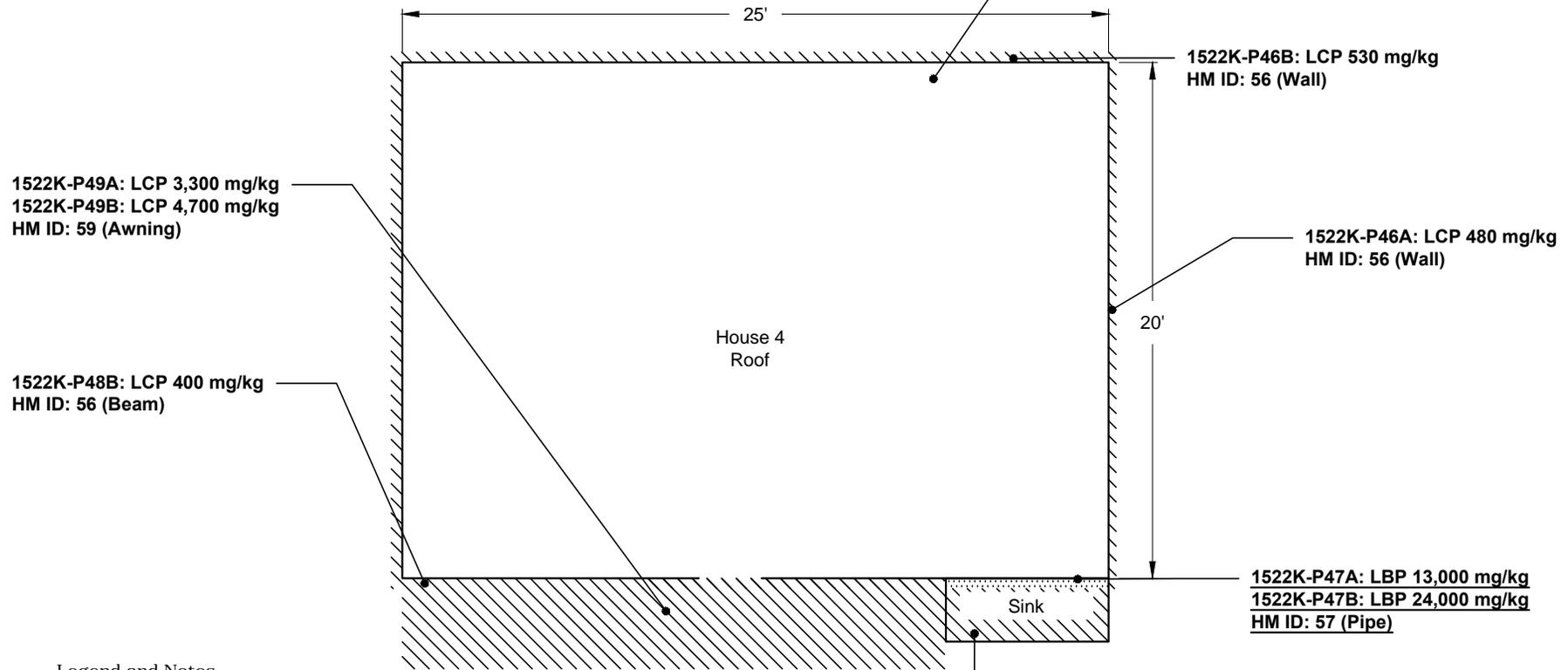
HM ID	Locations	Material	Color	Substrate	Results (mg/kg)
48	Floor	Paint	Green	Concrete	LBP 13,000 - 14,000
49	Columns, walls	Paint	Yellow	Wood	LBP 84,000 - 99,000
50	Beams, ceiling, door, door frame, purlins, window frames	Paint	White	Wood	LCP 400 - 1,300
51	Ceiling	Paint	White	Metal	LCP 290 - 330



HM ID	Locations	Material	Color	Substrate	Results (mg/kg)
54	Floor	Paint	Red	Wood	LCP 2,800 - 4,500
55	Floor, walls	Paint	Green	Wood	LCP 860 - 1,200



HM ID	Locations	Material	Color	Substrate	Results (mg/kg)
56	Sink supports, walls	Paint	Red	Wood	LCP 480 - 530
57	Pipes	Paint	Red	Metal	LBP 13,000 - 24,000
58	Beams, purlins, sink, trusses	Paint	White	Wood	LCP 400 - 490
59	Awning, pipes	Paint	White	Metal	LCP 3,300 - 4,700



Legend and Notes

 Visual Extent of Lead-Based Paint

 Visual Extent of Lead-Containing Paint

Bold values indicate results above the detection limit.

HM ID - Homogeneous Material Identifier

LBP - Lead-Based Paint $\geq 5,000$ mg/kg

LCP - Lead-Containing Paint $\leq 5,000$ mg/kg

mg/kg - milligrams per kilogram (equivalent to ppm- parts per million)



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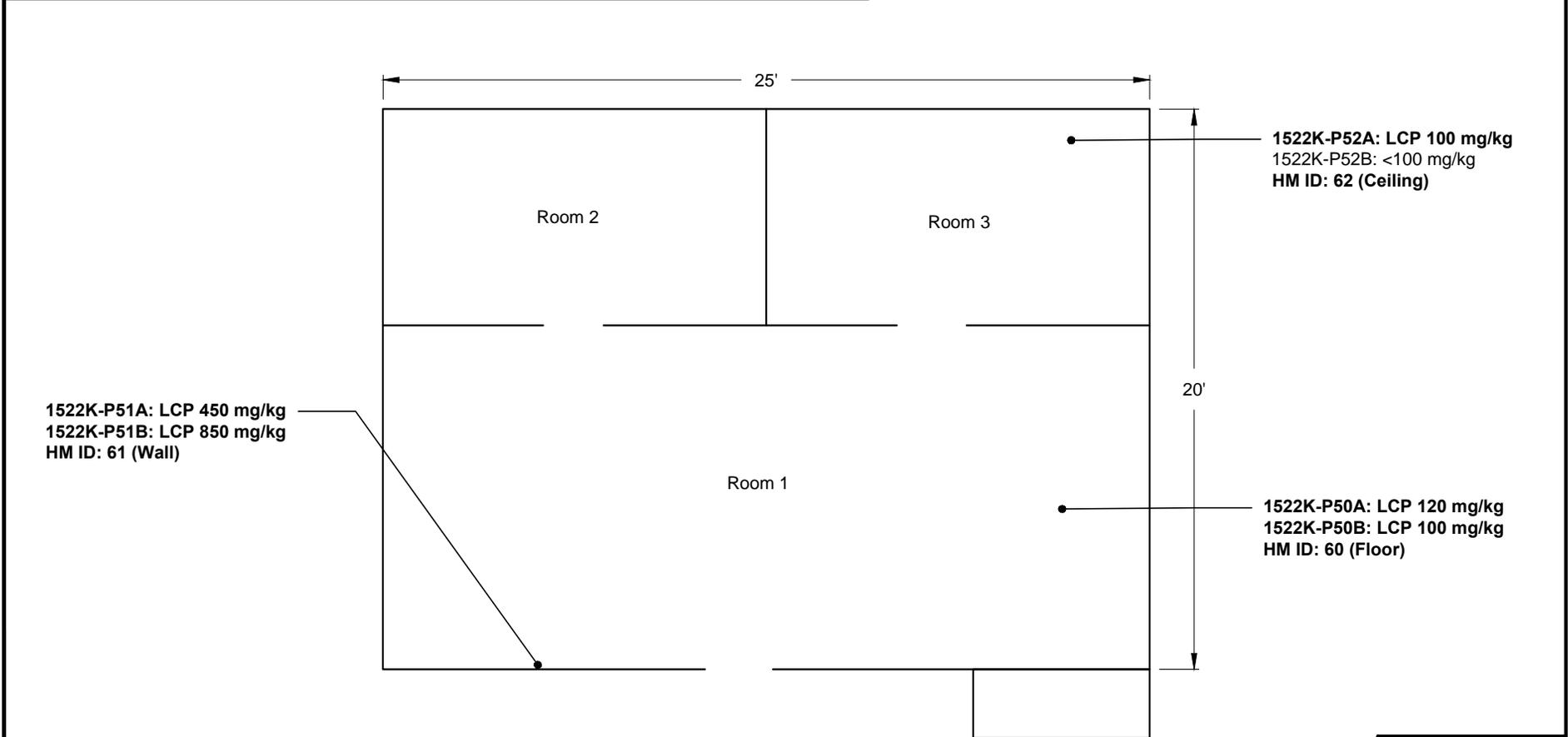


Lead Paint Sample and Hazardous
Material Locations
Kekahakai State Park Kaelemakula Housing Area
House 4 Exterior

Sheet Number

C - 24

HM ID	Locations	Material	Color	Substrate	Results (mg/kg)
60	Floors	Paint	Green	Concrete	LCP 100 - 120
61	Beams, columns, purlins, trusses, walls	Paint	White	Wood	LCP 450 - 850
62	Ceilings, pipes	Paint	White	Metal	LCP <100 - 100



Legend and Notes

 Visual Extent of Lead-Containing Paint

Bold values indicate results above the detection limit.

HM ID - Homogeneous Material Identifier
LCP - Lead-Containing Paint ≤ 5,000 mg/kg
mg/kg - milligrams per kilogram (equivalent to ppm- parts per million)



Myounghee Noh & Associates, L.L.C.



Lead Paint Sample and Hazardous Material Locations
Kekahakai State Park Kaelemakula Housing Area
House 4 Interior

Sheet Number
C - 25

Beach Access

40'

20'

Comfort Station Roof

Parking

1522K-P54A: <110 mg/kg
1522K-P54B: <110 mg/kg
HM ID: 64 (Slat)

1522K-P55A: <110 mg/kg
1522K-P55B: <110 mg/kg
HM ID: 65 (Column)

1522K-P53A: <110 mg/kg
1522K-P53B: <110 mg/kg
HM ID: 63 (Wall)



Myounghee Noh &
Associates, L.L.C.

Legend and Notes

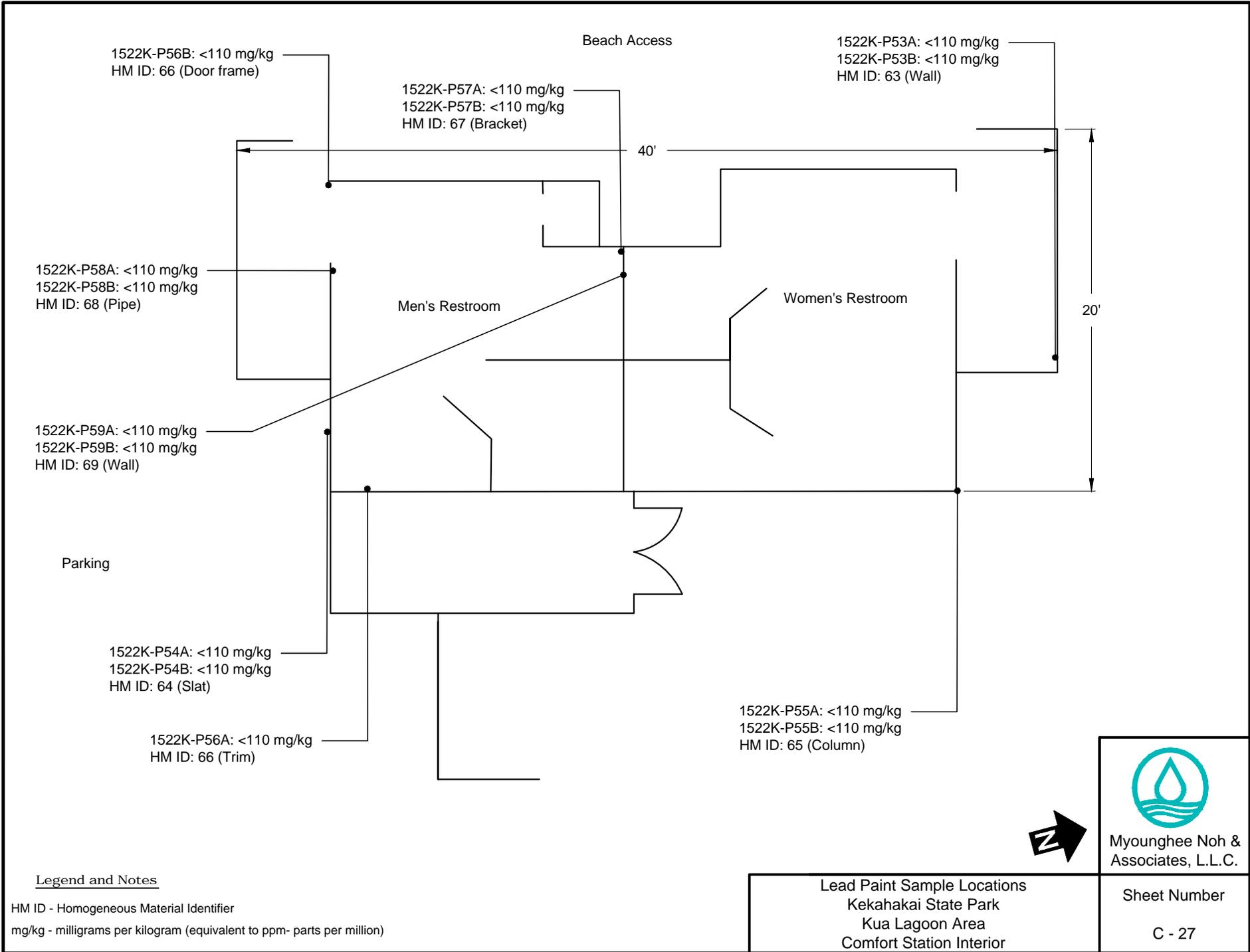
HM ID - Homogeneous Material Identifier

mg/kg - milligrams per kilogram (equivalent to ppm- parts per million)

Lead Paint Sample Locations
Kekahakai State Park
Kua Lagoon Area
Comfort Station Exterior and Roof

Sheet Number

C - 26



Myounghee Noh &
Associates, L.L.C.

Legend and Notes

HM ID - Homogeneous Material Identifier
mg/kg - milligrams per kilogram (equivalent to ppm- parts per million)

Lead Paint Sample Locations
Kekahakai State Park
Kua Lagoon Area
Comfort Station Interior

Sheet Number
C - 27

APPENDIX D

PHOTOGRAPHS



HM ID 1
Men's Restrooms
Floor 1

Exterior
White paint on wood wall.

Non-LCP
1522-P1A: <100 mg/kg
1522-P1B: <100 mg/kg



HM ID 2
Men's Restrooms
Floor 1

Exterior
Red paint on wood wall.

Non-LCP
1522-P2A: <100 mg/kg
1522-P2B: <130 mg/kg



HM ID 3
Men's Restrooms
Floor 1

Exterior
Red paint on concrete ledge.

Non-LCP
1522-P3A: <960 mg/kg
1522-P3B: <450 mg/kg



HM ID 4
Men's Restrooms
Floor 1

Exterior
Black paint on metal vent.

Material was not sampled as it is factory paint.
Assume LCP



HM ID 5
Women's Restrooms
Floor 1

Exterior
White paint on wood wall.

Non-LCP
1522-P4A: <200 mg/kg
1522-P4B: <240 mg/kg



HM ID 6
Women's Restrooms
Floor 1

Exterior
Red paint on wood wall.

Non-LCP
1522-P5A: <100 mg/kg
1522-P5B: <100 mg/kg



HM ID 7
Women's Restrooms
Floor 1
Exterior
Red paint on concrete ledge.

Non-LCP
1522-P6A: <100 mg/kg
1522-P6B: <100 mg/kg



HM ID 8
Women's Restrooms
Floor 1
Exterior
Black paint on metal vent.

Material was not sampled as it is factory paint.
Assume LCP



HM ID 9
Men's Restrooms
Roof
Roof
Black shingles on wood roof.

ACM
1522-A1A: ND
1522-A1B: ND
1522-A1C: ND



HM ID 10
Women's Restrooms
Roof

Roof
Black shingles on wood roof.

Non-ACM
1522-A2A: ND
1522-A2B: ND
1522-A2C: ND



HM ID 11
Men's Restrooms
Roof

Roof
White caulking on wood roof.

Non-ACM
1522-A3A: ND
1522-A3B: ND
1522-A3C: ND



HM ID 12
Women's Restrooms
Roof

Roof
White caulking on wood roof.

Non-ACM
1522-A4A: ND
1522-A4B: ND
1522-A4C: ND



HM ID 13
Men's Restrooms
Floor 1

Men's Restroom 1
Off-white paint on concrete block wall.

Non-LCP
1522-P8A: <100 mg/kg
1522-P8B: <100 mg/kg



HM ID 14
Men's Restrooms
Floor 1

Men's Restroom 1
Off-white paint on wood door.

Non-LCP
1522-P9A: <390 mg/kg
1522-P9B: <200 mg/kg



HM ID 15
Men's Restrooms
Floor 1

Men's Restroom 1
Brown grout on 1" x 1" ceramic tile on concrete floor.

Non-ACM
1522-A5A-Grout 1: ND
1522-A5A-Grout 2: ND
1522-A5B-Grout 1: ND
1522-A5B-Grout 2: ND
1522-A5C: ND



HM ID 16
Men's Restrooms
Floor 1

Men's Restroom 1
White grout on 4" x 4" ceramic tile wall.

Non-ACM
1522-A6A: ND
1522-A6B-Ceramic Tile: ND
1522-A6B-Grout: ND
1522-A6C: ND



HM ID 17
Women's Restrooms
Floor 1

Women's Restroom 1
Off-white paint on concrete block wall.

Non-LCP
1522-P10A: <100 mg/kg
1522-P10B: <100 mg/kg



HM ID 18
Women's Restrooms
Floor 1

Women's Restroom 2
Off-white paint on wood door frame.

Non-LCP
1522-P11A: <190 mg/kg
1522-P11B: <100 mg/kg



HM ID 19
Women's Restrooms
Floor 1

Women's Restroom 1
Brown grout on 1" x 1" ceramic tile floor.

Non-ACM
1522-A7A: ND
1522-A7B: ND
1522-A7C: ND



HM ID 20
Women's Restrooms
Floor 1

Women's Restroom 1
White grout on 4" x 4" ceramic tile wall.

Non-ACM
1522-A8A: ND
1522-A8B: ND
1522-A8C: ND



HM ID 21
Walkways
Exterior

Exterior
Green paint on metal railing.

Non-LCP
1522-P12A: <100 mg/kg
1522-P12B: <130 mg/kg



HM ID 22
House 1
Floor 1

Exterior
Red paint on wood wall.

LCP
1522-P13A: 380 mg/kg
1522-P13B: 380 mg/kg



HM ID 23
House 1
Floor 1

Exterior
Light green paint on wood wall.

LCP
1522-P14A: 660 mg/kg
1522-P14B: 980 mg/kg



HM ID 24
House 1
Floor 1

Exterior
White paint on wood purlin.

LCP
1522-P15A: 330 mg/kg
1522-P15B: 360 mg/kg



HM ID 25
House 1
Floor 1

Exterior
Green paint on concrete floor.

Non-ACM
1522-A9A: ND
1522-A9B: ND
1522-A9C: ND

LCP
1522-P16A: 1,200 mg/kg
1522-P16B: 790 mg/kg



HM ID 26
House 1
Floor 1

Exterior
Off-white paint on metal awning.

LBP
1522-P17A: 13,000 mg/kg
1522-P17B: 13,000 mg/kg



HM ID 27
House 1
Floor 1

Room 1
White paint on wood wall.

Non-LCP
1522-P18A: <220 mg/kg
1522-P18B: <190 mg/kg



HM ID 28
House 1
Floor 1

Room 1
Green paint and filler on concrete floor.

Non-ACM
1593-A10A: ND
1593-A10B: ND
1593-A10C: ND

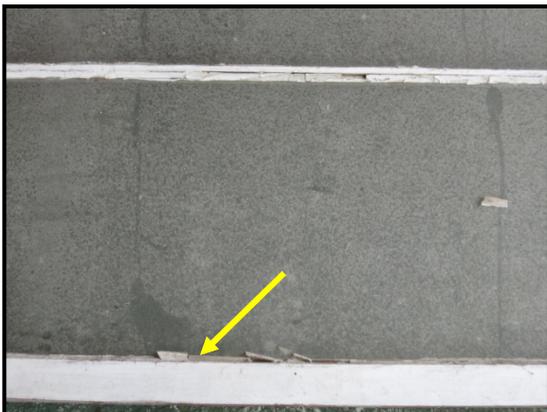
LCP
1522-P19A: 650 mg/kg
1522-P19B: 1,400 mg/kg



HM ID 29
House 1
Floor 1

Room 1
Off-white paint on metal ceiling.

LBP
1522-P20A: 14,000 mg/kg
1522-P20B: 13,000 mg/kg



HM ID 30
House 1
Floor 1

Exterior
White glazing on glass window.

ACM
1593-A11A: ND
1593-A11B: ND
1593-A11C: 3% Chrysotile



HM ID 31
House 1
Floor 1

Exterior
Light blue paint on wood beam.

LCP
1522-P21A: 380 mg/kg
1522-P21B: 220 mg/kg



HM ID 32
House 2
Floor 1

Exterior
Red paint on wood wall.

LCP
1522-P22A: 230 mg/kg
1522-P22B: 340 mg/kg



HM ID 33
House 2
Floor 1

Exterior
Green paint on wood floor.

LBP
1522-P23A: 39,000 mg/kg
1522-P23B: 6,900 mg/kg



HM ID 34
House 2
Floor 1

Exterior
Red paint on metal awning.

LCP
1522-P24A: 1,500 mg/kg
1522-P24B: 1,700 mg/kg



HM ID 35
House 2
Floor 1

Exterior
White paint on wood door.

Non-LCP
1522-P25A: <100 mg/kg
1522-P25B: <100 mg/kg



HM ID 36
House 2
Floor 1

Exterior
Green paint on concrete floor.

LCP
1522-P26A: 630 mg/kg
1522-P26B: 460 mg/kg



HM ID 38
House 2
Floor 1

Exterior
Light blue paint on fiberboard floor.

Non-Arsenic
1522-Ars1A: <10 mg/kg
1522-Ars1B: <10 mg/kg

LCP
1522-P28A: 770 mg/kg
1522-P28B: 610 mg/kg



HM ID 39
House 2
Floor 1

Room 1
Brown paint on wood window frame.

LBP
1522-P31A: 2,100 mg/kg
1522-P31B: 13,000 mg/kg



HM ID 40
House 2
Floor 1

Room 1
Off-white paint on fireboard ceiling.

Non-Arsenic
1522-Ars2A: <10 mg/kg
1522-Ars2B: <10 mg/kg

Non-LCP
1522-P30A: <100 mg/kg
1522-P30B: <100 mg/kg



HM ID 41
House 2
Floor 1

Room 2
Beige paint on wood wall.

LBP
1522-P29A: 6,100 mg/kg
1522-P29B: 6,200 mg/kg



HM ID 42
House 2
Floor 1

Room 2
White paint on wood ceiling.

LCP
1522-P32A: 640 mg/kg
1522-P32B: 510 mg/kg



HM ID 43
House 2
Floor 1

Room 2
Light blue paint on wood floor.

LCP
1522-P33A: 760 mg/kg
1522-P33B: 1,300 mg/kg



HM ID 44
House 3
Floor 1

Exterior
Red paint on wood stair.

LBP
1522-P34A: 5,900 mg/kg
1522-P34B: 6,800 mg/kg



HM ID 45
House 3
Floor 1

Exterior
Green paint on concrete floor.

LBP
1522-P35A: 12,000 mg/kg
1522-P35B: 14,000 mg/kg



HM ID 46
House 3
Floor 1

Exterior
White paint on metal ceiling.

LCP
1522-P36A: 200 mg/kg
1522-P36B: 100 mg/kg



HM ID 47
House 3
Floor 1

Exterior
White paint on wood purlin.

LCP
1522-P37A: 750 mg/kg
1522-P37B: <100 mg/kg



HM ID 48
House 3
Floor 1

Room 1
Green paint on concrete floor.

LBP
1522-P38A: 14,000 mg/kg
1522-P38B: 13,000 mg/kg



HM ID 49
House 3
Floor 1

Room 1
Yellow paint on wood wall.

LBP
1522-P39A: 84,000 mg/kg
1522-P39B: 99,000 mg/kg



HM ID 50
House 3
Floor 1

Room 1
White paint on wood door.

LCP
1522-P40A: 1,300 mg/kg
1522-P40B: 400 mg/kg



HM ID 51
House 3
Floor 1

Room 1
White paint on metal ceiling.

LCP
1522-P41A: 330 mg/kg
1522-P41B: 290 mg/kg



HM ID 52
House 3
Floor 2

Exterior
White paint on wood purlin.

LCP
1522-P42A: 1,400 mg/kg
1522-P42B: 1,800 mg/kg



HM ID 53
House 3
Floor 2

Exterior
White paint on metal ceiling.

LCP
1522-P43A: 470 mg/kg
1522-P43B: 290 mg/kg



HM ID 54
House 3
Floor 2

Room 2
Red paint on wood floor.

LCP
1522-P44A: 2,800 mg/kg
1522-P44B: 4,500 mg/kg



HM ID 55
House 3
Floor 2

Room 2
Green paint on wood wall.

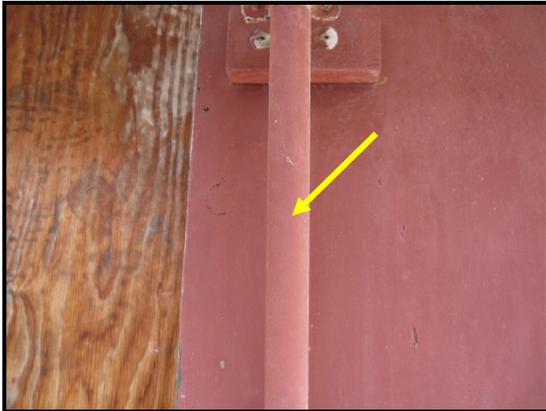
LCP
1522-P45A: 860 mg/kg
1522-P45B: 1,200 mg/kg



HM ID 56
House 4
Floor 1

Exterior
Red paint on wood wall.

LCP
1522-P46A: 480 mg/kg
1522-P46B: 530 mg/kg



HM ID 57
House 4
Floor 1

Exterior
Red paint on metal pipe.

LBP
1522-P47A: 13,000 mg/kg
1522-P47B: 24,000 mg/kg



HM ID 58
House 4
Floor 1

Exterior
White paint on wood purlin.

LCP
1522-P48A: 490 mg/kg
1522-P48B: 400 mg/kg



HM ID 59
House 4
Floor 1

Exterior
White paint on metal awning.

LCP
1522-P49A: 3,300 mg/kg
1522-P49B: 4,700 mg/kg



HM ID 60
House 4
Floor 1

Room 1
Green paint on concrete floor.

LCP
1522-P50A: 120 mg/kg
1522-P50B: 100 mg/kg



HM ID 61
House 4
Floor 1

Room 1
White paint on wood trusses.

LCP
1522-P51A: 450 mg/kg
1522-P51B: 850 mg/kg



HM ID 62
House 4
Floor 1

Room 1
White paint on metal ceiling.

LCP
1522-P52A: 100 mg/kg
1522-P52B: <100 mg/kg



HM ID 63
Comfort Station
Floor 1

Exterior
Brown paint on concrete block wall.

Non-LCP
1522-P53A: <110 mg/kg
1522-P53B: <110 mg/kg



HM ID 64
Comfort Station
Floor 1

Exterior
Light brown paint on wood slat.

Non-LCP
1522-P54A: <110 mg/kg
1522-P54B: <110 mg/kg



HM ID 65
Comfort Station
Floor 1

Exterior
Brown paint on concrete column.

Non-LCP
1522-P55A: <110 mg/kg
1522-P55B: <110 mg/kg



HM ID 66
Comfort Station
Floor 1

Men's Restroom
White paint on wood door.

Non-LCP
1522-P56A: <110 mg/kg
1522-P56B: <110 mg/kg



HM ID 67
Comfort Station
Floor 1

Exterior
White paint on metal clips.

Non-LCP
1522-P57A: <110 mg/kg
1522-P57B: <110 mg/kg



HM ID 68
Comfort Station
Floor 1

Men's Restroom
Brown paint on metal vents.

Non-LCP
1522-P58A: <110 mg/kg
1522-P58B: <110 mg/kg



HM ID 69
Comfort Station
Floor 1

Men's Restroom
White paint on concrete block wall.

Non-LCP
1522-P59A: <110 mg/kg
1522-P59B: <110 mg/kg

APPENDIX E

LABORATORY ANALYTICAL REPORTS



LA Testing

520 Mission Street, South Pasadena, CA 91030

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<http://www.latesting.com>

pasadenalab@latesting.com

LA Testing Order: 321304661

CustomerID: 32MYOU50

CustomerPO:

ProjectID:

Attn: **Phillip Myounghee Noh & Associates, LLC**
99-1046 Iwaena Street
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Aiea, HI 96701

Phone: (808) 484-9214
Fax:
Received: 03/15/13 9:30 AM
Analysis Date: 3/20/2013
Collected: 3/11/2013

Project: 21522 Kekahakai State Park IH Survey

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
1522K-A 1 A 321304661-0001	9	Gray Non-Fibrous Homogeneous	5% Glass	95% Non-fibrous (other)	None Detected
1522K-A 1 B 321304661-0002	9	Gray Non-Fibrous Homogeneous	5% Glass	95% Non-fibrous (other)	None Detected
1522K-A 1 C 321304661-0003	9	Gray Non-Fibrous Homogeneous	5% Glass	95% Non-fibrous (other)	None Detected
1522K-A 2 A 321304661-0004	10	Gray Non-Fibrous Homogeneous	5% Glass	95% Non-fibrous (other)	None Detected
1522K-A 2 B 321304661-0005	10	Gray Non-Fibrous Homogeneous	5% Glass	95% Non-fibrous (other)	None Detected
1522K-A 2 C 321304661-0006	10	Gray Non-Fibrous Homogeneous	5% Glass	95% Non-fibrous (other)	None Detected
1522K-A 3 A 321304661-0007	11	Gray/Tan Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
1522K-A 3 B 321304661-0008	11	Gray/Tan Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)

Olivia Santiago (11)

Rafik Vartanian, Ph.D (25)

Jerry Drapala Ph.D, Laboratory Manager
or other approved signatory

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Aiea, HI 96701

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Project: 21522 Kekahakai State Park IH Survey

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
1522K-A 3 C 321304661-0009	11	Gray/Tan Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
1522K-A 4 A 321304661-0010	12	Gray/Tan Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
1522K-A 4 B 321304661-0011	12	Gray/Tan Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
1522K-A 4 C 321304661-0012	12	Gray/Tan Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
1522K-A 5 A-Grout-1 321304661-0013	15	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
1522K-A 5 A-Grout-2 321304661-0013A	15	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
1522K-A 5 B-Grout-1 321304661-0014	15	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
1522K-A 5 B-Grout-2 321304661-0014A	15	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
1522K-A 5 C 321304661-0015	15	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
1522K-A 6 A 321304661-0016	16	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
1522K-A 6 B-Ceramic Tile 321304661-0017	16	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
1522K-A 6 B-Grout 321304661-0017A	16	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
1522K-A 6 C 321304661-0018	16	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
1522K-A 7 A 321304661-0019	19	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
1522K-A 7 B 321304661-0020	19	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

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			% Fibrous	% Non-Fibrous	% Type
1522K-A 7 C 321304661-0021	19	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
1522K-A 8 A 321304661-0022	20	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
1522K-A 8 B 321304661-0023	20	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
1522K-A 8 C 321304661-0024	20	White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
1522K-A 9 A 321304661-0025	25	Gray/Green Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
1522K-A 9 B 321304661-0026	25	Gray/Green Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
1522K-A 9 C 321304661-0027	25	Gray/Green Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
1522K-A 10 A 321304661-0028	28	Gray/Green Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected

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			% Fibrous	% Non-Fibrous	% Type
1522K-A 10 B 321304661-0029	28	Gray/Green Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
1522K-A 10 C 321304661-0030	28	Gray/Green Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
1522K-A 11 A 321304661-0031	30	Tan Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
1522K-A 11 B 321304661-0032	30	Tan Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
1522K-A 11 C 321304661-0033	30	Beige Non-Fibrous Heterogeneous		97% Non-fibrous (other)	3% Chrysotile

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or other approved signatory

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Samples analyzed by LA Testing South Pasadena, CA NVLAP Lab Code 200232-0, CA ELAP 2283

Initial report from 03/21/2013 10:06:35

321304661



Asbestos Testing Chain of Custody

LA Testing Order Number (Lab Use Only):

[Empty box for Order Number]

South Pasadena, CA - Los Angeles County
520 Mission Street
South Pasadena, CA 91030
PHONE: 1-800-303-0047
FAX: 323-254-9982

Company: Myounghee Noh & Associates L.L.C.		LA Testing-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different If Bill to is Different note instructions in Comments** <i>Third Party Billing requires written authorization from third party</i>	
Street: 99-1046 Iwaena St.			
City/State/Zip: Aiea, HI 96701			
Report To (Name): Akari Ithara-Philip Cabanilla		Fax: 8084844660	
Telephone: 8084849214		Email Address: akari@noh-associates.com	
Project Name/Number: phillyp			

Please Provide Results: **Purchase Order:** **State Samples Taken:** HI

Turnaround Time (TAT) Options* - Please Check

3 Hour 6 Hour 24 Hour 48 Hour 3 Day 4 Day 1 Week 2 Week

*For RUSH TAT's Please Call Ahead to Confirm Lab Hours and Availability
Materials Science and IAQ TATs are in Business Days rather than Hours (i.e. 24 Hour = End of Next Business Day)

Asbestos

PCM - Air <input type="checkbox"/> NIOSH 7400 <input type="checkbox"/> w/ 8hr. TWA TEM - Air <input type="checkbox"/> 4-4.5hr TAT (AHERA ONLY) <input type="checkbox"/> AHERA 40 CFR, Part 763 <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> EPA Level II <input type="checkbox"/> ISO 10312 TEM - Water Fibers \geq 10 μ m <input type="checkbox"/> Waste <input type="checkbox"/> Drinking All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking	PLM - Bulk <input checked="" type="checkbox"/> PLM EPA 600/R-93/116 <input type="checkbox"/> PLM EPA NOB (<1%) <input type="checkbox"/> NYS 198.1 (friable-NY) <input type="checkbox"/> NYS 198.6 (non-friable-NY) Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) Point Count w/ Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%)	TEM - Bulk <input type="checkbox"/> TEM EPA NOB <input type="checkbox"/> NYS NOB 198.4 (non-friable-NY) <input type="checkbox"/> Chatfield SOP Soil/Rock/Vermiculite <input type="checkbox"/> PLM CARB 435 - A (0.25% sensitivity) <input type="checkbox"/> PLM CARB 435 - B (0.1% sensitivity) <input type="checkbox"/> TEM CARB 435 - B (0.1% sensitivity) <input type="checkbox"/> EPA Reg. 1 Screening Protocol (Qualitative) Other:
---	---	--

Lead (Pb) Flame Atomic Absorption <input type="checkbox"/> Chips SW846-7000B or AOAC 974.02 <input type="checkbox"/> Soil SW846-7000B/7420 <input type="checkbox"/> Air NIOSH 7082 <input type="checkbox"/> Wastewater SM3111B or SW846-7000B/7420 <input type="checkbox"/> ASTM Wipe SW846-7000B/7420 <input type="checkbox"/> non ASTM Wipe SW846-7000B/7420 <input type="checkbox"/> TCLP SW846-1311/7420/SM 3111B	ICP <input type="checkbox"/> Air NIOSH 7300 Modified <input type="checkbox"/> non ASTM Wipe SW846-6010B or C <input type="checkbox"/> ASTM Wipe SW846-6010B or C <input type="checkbox"/> Soil SW846-6010 B or C <input type="checkbox"/> Waste Water SW846-6010B or C <input type="checkbox"/> TCLP SW846-6010B or C	Materials Science <input type="checkbox"/> Common Particle ID (large particles) <input type="checkbox"/> Full Particle ID (environmental dust) <input type="checkbox"/> Basic Material ID (solids) <input type="checkbox"/> Advanced Material ID <input type="checkbox"/> Physical Testing (Tensile, Compression) <input type="checkbox"/> Combustion-by-products (soot, char, etc.) <input type="checkbox"/> X-Ray Fluorescence (elem. analysis) <input type="checkbox"/> X-Ray Diffraction (Crystalline Part.) <input type="checkbox"/> MMVF's (Fibrous glass, RCF's) <input type="checkbox"/> Particle Size (sieve/microscopy/laser) <input type="checkbox"/> Combustible Dust <input type="checkbox"/> Petrographic Examination Other:
---	--	---

Graphite Furnace Atomic Absorption <input type="checkbox"/> Soil SW846-7421 <input type="checkbox"/> Wastewater EPA 200.9 <input type="checkbox"/> Air NIOSH 7105 <input type="checkbox"/> Drinking Water EPA 200.9		Other: <input type="checkbox"/>			
<p align="center">Microbiology</p> <table border="1"> <tr> <td> Wipe and Bulk Samples <input type="checkbox"/> Mold & Fungi - Direct Examination <input type="checkbox"/> Mold & Fungi Culture (Genus Only) <input type="checkbox"/> Mold & Fungi Culture (Genus & Species) <input type="checkbox"/> Bacterial Count & ID (Up to Three Types) <input type="checkbox"/> Bacterial Count & ID (Up to Five Types) <input type="checkbox"/> MRSA <input type="checkbox"/> <i>Pseudomonas aeruginosa</i> </td> <td> Air Samples <input type="checkbox"/> Mold & Fungi (Spore Trap) <input type="checkbox"/> Mold & Fungi Culture (Genus Only) <input type="checkbox"/> Mold & Fungi (Genus & Species) <input type="checkbox"/> Bacterial Culture & ID (Up to Three Types) <input type="checkbox"/> Bacterial Culture & ID (Up to Five Types) <input type="checkbox"/> Endotoxin Testing Real Time q-PCR (See Analytical Guide for Code) Code: </td> <td> <p align="center">IAQ</p> Nuisance Dust NIOSH <input type="checkbox"/> 0500 <input type="checkbox"/> 0600 Airborne Dust <input type="checkbox"/> PM10 <input type="checkbox"/> TSP Silica Analysis: <input type="checkbox"/> All Species Silica Analysis - Single Species <input type="checkbox"/> Alpha Quartz <input type="checkbox"/> Cristobalite <input type="checkbox"/> Tridymite <input type="checkbox"/> HVAC Efficiency <input type="checkbox"/> Carbon Black <input type="checkbox"/> Airborne Oil Mist Other: <input type="checkbox"/> </td> </tr> </table>			Wipe and Bulk Samples <input type="checkbox"/> Mold & Fungi - Direct Examination <input type="checkbox"/> Mold & Fungi Culture (Genus Only) <input type="checkbox"/> Mold & Fungi Culture (Genus & Species) <input type="checkbox"/> Bacterial Count & ID (Up to Three Types) <input type="checkbox"/> Bacterial Count & ID (Up to Five Types) <input type="checkbox"/> MRSA <input type="checkbox"/> <i>Pseudomonas aeruginosa</i>	Air Samples <input type="checkbox"/> Mold & Fungi (Spore Trap) <input type="checkbox"/> Mold & Fungi Culture (Genus Only) <input type="checkbox"/> Mold & Fungi (Genus & Species) <input type="checkbox"/> Bacterial Culture & ID (Up to Three Types) <input type="checkbox"/> Bacterial Culture & ID (Up to Five Types) <input type="checkbox"/> Endotoxin Testing Real Time q-PCR (See Analytical Guide for Code) Code:	<p align="center">IAQ</p> Nuisance Dust NIOSH <input type="checkbox"/> 0500 <input type="checkbox"/> 0600 Airborne Dust <input type="checkbox"/> PM10 <input type="checkbox"/> TSP Silica Analysis: <input type="checkbox"/> All Species Silica Analysis - Single Species <input type="checkbox"/> Alpha Quartz <input type="checkbox"/> Cristobalite <input type="checkbox"/> Tridymite <input type="checkbox"/> HVAC Efficiency <input type="checkbox"/> Carbon Black <input type="checkbox"/> Airborne Oil Mist Other: <input type="checkbox"/>
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Client Sample #'s 1500K - AIA → A11C	Total # of Samples: 33
Relinquished (Client): Kumbler	Date: 3/13/13
Received (Lab): [Signature]	Date: 3/15/13
	Time: 11:10
	Time: 9:30A

Comments/Special Instructions: Lta

1 of 2

321304661



Asbestos Testing Chain of Custody

LA Testing Order Number (Lab Use Only):

[Empty box for LA Testing Order Number]

South Pasadena, CA - Los Angeles County
520 Mission Street
South Pasadena, CA 91030
PHONE: 1-800-303-0047
FAX: 323-254-9982

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
1522K-A1A			
↓			
1522K-A1C			
	Stop Positive (A)		

Comments/Special Instructions:

321304661

Hazardous Homogeneous Materials and Sampling Survey Field Form: Asbestos
 Project # & Name: 21522 Kekahakai State Park IH Survey
 Location: Kekahakai State Park, Kona, Hawaii
 Inspector Initials: KE/PC Date & Time: 8/11/13

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Friable ACM		Area Sq. ft or L. ft	Hatch Color																								
									Type	M																										
9	MEN'S RR	R	Roof	Roof	Black	shingle	W	⊙ F P	Y	N	///																									
<table border="1"> <thead> <tr> <th>Sample ID</th> <th>Room Sampled</th> <th>Sample Location</th> <th>Bldg.</th> <th>PIC ID</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td>1522K-A 1 A</td> <td>Roof</td> <td>Roof</td> <td>MRR</td> <td>0013</td> <td></td> </tr> <tr> <td>1522K-A 1 B</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>1522K-A 1 C</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>													Sample ID	Room Sampled	Sample Location	Bldg.	PIC ID	Notes	1522K-A 1 A	Roof	Roof	MRR	0013		1522K-A 1 B						1522K-A 1 C					
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1522K-A 2 B																																				
1522K-A 2 C																																				
11	MEN'S RR	R	Roof	Roof	W	CAULKING W/MA	W	⊙ F P	Y	N	□																									
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Hazardous Homogeneous Materials and Sampling Survey Field Form: Asbestos
 Project # & Name: 21522 Kekahakai State Park IH Survey Location: Kekahakai State Park, Kona, Hawaii
 Inspector Initials: KC/PC Date & Time: 3/11/13

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Friable ACM Type	Area Sq. ft or L. ft	Hatch Color																								
12	WOMENS RR	R	ROOF	Roof	W	CAULKING wa	W	⊙ F P	Y N TSI S M																										
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1522K-A 4 A	RRS	RRG	MR	0012																															
1522K-A 4 B																																			
1522K-A 4 C																																			
13	men's RR	1	men's RR 1, 2	FLOOR	BROWN	grout	1x1 CFT	⊙ F P	Y N TSI S M																										
<table border="1"> <thead> <tr> <th>Sample ID</th> <th>Room Sampled</th> <th>Sample Location</th> <th>Bldg.</th> <th>PIC ID</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td>1522K-A 5 A</td> <td>WOMENS RR 1</td> <td>Floor</td> <td>MR</td> <td>DD15</td> <td>MR 1 - closer to railing</td> </tr> <tr> <td>1522K-A 5 B</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>1522K-A 5 C</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>												Sample ID	Room Sampled	Sample Location	Bldg.	PIC ID	Notes	1522K-A 5 A	WOMENS RR 1	Floor	MR	DD15	MR 1 - closer to railing	1522K-A 5 B						1522K-A 5 C					
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1522K-A 5 A	WOMENS RR 1	Floor	MR	DD15	MR 1 - closer to railing																														
1522K-A 5 B																																			
1522K-A 5 C																																			
14	men's RR	1	men's RR 1, 2	walls	W	grout	4x4 CFT	⊙ F P	Y N TSI S M																										
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321304661

Project # & Name: 21522 Kekahakai State Park IH Survey
Inspector Initials: _____
Hazardous Homogeneous Materials and Sampling Survey Field Form: Asbestos
Location: Kekahakai State Park, Kona, Hawaii
Date & Time: _____

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Friable ACM Type	Area Sq. ft or L. ft	Hatch Color	Notes																				
												PIC ID	Bldg.																			
19	WRR	1	WRR 112	FLOOR	Brown	grout	1x1 LFT	⊙ F P	Y N TSI S M																							
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25	H1	1	EXT	FLOOR	Green	P/F	CC	G F ⊙	Y N TSI S M																							
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1522K-A 9 B	↓	↓																														
1522K-A 9 C	↓	↓																														

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Hazardous Homogeneous Materials and Sampling Survey Field Form: Asbestos
 Project # & Name: 21522 Kekahakai State Park IH Survey
 Location: Kekahakai State Park, Kona, Hawaii
 Inspector Initials: VC/PC Date & Time: 3/11/13

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Friable ACM		Area Sq. ft or L. ft	Hatch Color																																																																	
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30	H1	1	Ext	Window	gray white	glazing	glass	G F P	Y	N																																																																			
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