

**JUNEAU-DOUGLAS CITY MUSEUM**  
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## Memo

October 7, 2008

page 1 of 8

To: City & Borough of Juneau, Manager's Office

Thru: Marc Matsil, Parks & Recreation Director

Sheila Fisher, Recreation Superintendent

From: Jane Lindsey, Director, Juneau-Douglas City Museum

**RE: Juneau-Douglas City Museum Marine Passenger Fee Request: Humidity and Ventilation Upgrade**

The Juneau-Douglas City Museum resides in a historic community building with National Register recognition located across the street from Alaska's Capitol. It receives its heaviest visitation during summer months (May – September) when it operates seven days a week in order to welcome and educate summer visitors about Alaska's Capital City. Average summer visitation to the Museum is 15,000-17,000, with many more visitors walking up to the corner of 4<sup>th</sup> and Main to view and take photos of the Four-story totem pole, the Capitol, and walk to the Governor's mansion. Of our summer visitation, about 3200 or 1/5 of our visitors enter the facility only to use the restrooms, and/or ask for visitor information, brochures and directions. The Museum is an important, full-functioning and well-utilized tourism partner in Juneau.

Increasingly, reception desk volunteers are informing us that summer visitors who intend to visit the Museum choose not to pay admission to enter the museum because of uncomfortably high temperatures when they walk into the facility.

The JDCM monitors its environment through four dataloggers placed in collection storage, the mining gallery, front desk, and rotated through other areas in the building. The Museum records readings that show the temperatures in the temporary gallery and at the front desk of up to 80 degrees or more in the months of March, April, May, June, July, and August.

The Museum building was originally constructed in 1950 as the Juneau City Library. The basement is a slab on grade with concrete perimeter walls, and the main floor construction utilizes a concrete slab over metal deck and joists. The facility has poured-in-place concrete walls for the main level. The partial second floor is wood-framed, and the structure, including trusses and framing, also utilizes wood. The roof material is asphalt shingles over a wood deck. In 1989, the building was upgraded to house the current museum operation. The initial renovation budget was very modest, most building systems, particularly the plumbing and heating, could not be improved at the time due to funding limitations. Additional minor upgrades occurred in 1995 and 1997, including the addition of a modest HRV ventilation system for the lower and main floor, insulation upgrades, and lighting/power upgrades.

In FY2007 (C3) RFP E07-133 Request for Proposals was issued by the CBJ Engineering Department for *Planning, Design, and Construction Administration Service for the Juneau-Douglas City Museum Remodel*. MRV Architects was awarded the RFP in early 2007 to assist the City and Borough of Juneau to analyze needs and propose improvements to the Museum. The MRV design team included LORD Cultural Resources for museum planning expertise, Murray and Associates for mechanical engineering, Alaska Cultural Resources for museum operational issues, and Gorman Engineers for electrical engineering. HMS, Inc. provided professional cost estimating. The project extended through schematic

design, with the goal of identifying building deficiencies, setting implementation priorities, and estimating upgrades costs.

Primary issues identified:

- Building overheating and lack of ventilation
- Space deficiencies for collections storage
- Space limitations for permanent exhibits and temporary gallery
- Lighting problems
- Lack of parking and limited street presence or "draw"

I would like to recommend passenger fee funds to be used for the remediation of mechanical system deficiencies at the Juneau-Douglas City Museum, particularly building overheating, lack of ventilation which records inside temperatures up to 80 degrees in the summer months and an environment which is too dry in the winter months.

### **Package 1 – HVAC Upgrade Project cost \$600,000**

The building currently has 2 small HVAC units located in the basement ceiling. The systems are substantially undersized for the building needs. This package would replace those units with a single larger fan serving the entire building, and located in the existing boiler room in space made available by the removal of the existing oil-fired boiler which was installed in the building in 1951 and is overdue for replacement.

It is proposed that the new ventilation be designed as a "displacement" system. This type of ventilation offers several advantages for the museum remodel, including floor supply for the ventilation, allowing ductwork to be more easily added to the ceiling of the basement, rather than the more inaccessible gallery ceiling spaces.

The scope will include:

- Removal of the existing boiler and installation of a new electrical heating system per the mechanical narrative.
- Installation of a new fan unit per the mechanical narrative. Supply ducting would be run along the basement ceiling. Exhaust ducting would be run through the attic truss space.
- Upgrade of the electrical power system per the electrical narrative, including electric baseboard heat.
- The rear stairs out the boiler room would be converted to a supply chase and storage area. This work would consist of:
  - A new exterior wall around the space (2x6 studs, insulation, hardi-plank siding.
  - A new wood-framed, insulated roof with EPDM membrane roofing.
  - Mechanical louvers for air-intake.
  - Filling in half of the stairs with sand and pouring a new concrete floor.
- The supply ducts for the main floor would be located in thickened walls along the center of the building. The existing walls would include the addition of 2x6 stud framing to a height of 24". The thickened walls would contain long architectural grills for air distribution, and would be finished with a hardwood cap. The walls above would remain unaffected. In some cases, the walls would be furred out full height where exhibit cases are installed permanently.
- The existing suspended panel ceiling in the basement will be removed and replaced. The joists and floor structure will be painted and new lights installed.

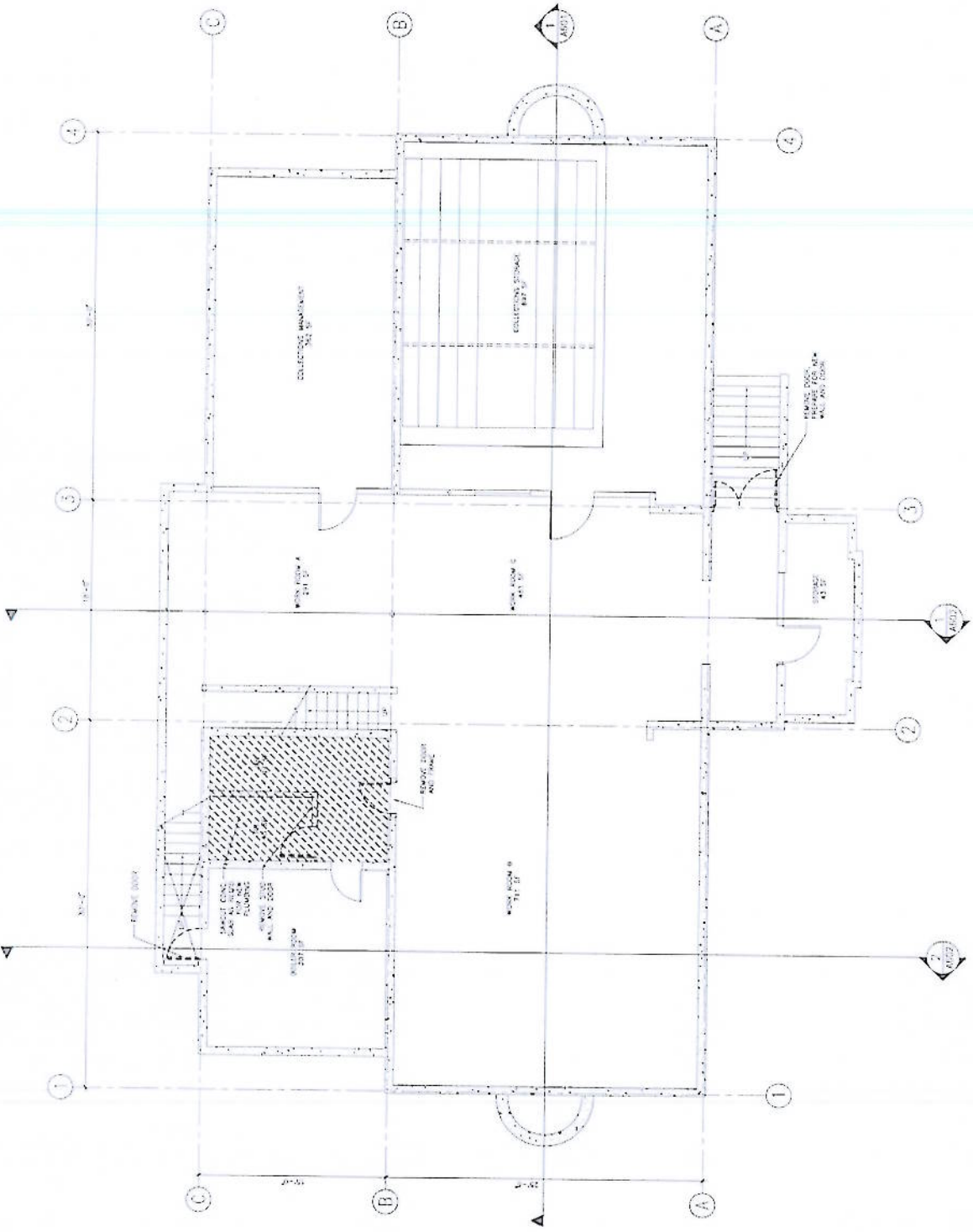
The building's need for an adequate ventilation system serves more than just visitor comfort; relative humidity is linked to temperature. Best practices in museum collection care require a relative humidity range of 30-50%, and a temperature no higher than 70 degrees. While some variation is acceptable, rapid fluctuations place stress on artifacts and cause damage. Repeated fluctuations in a short period, called cycling, generate even more stress. Through datalogger readings we are finding that our collections tend to be too dry in the winter months and our exhibits are too hot in the summer months.

In an attempt to circulate air through the building, especially in the galleries, during summer months, the Museum utilizes stand-alone fans and places them throughout the galleries. At 8:00am, our custodian arrives and opens the windows in the video room, bathrooms, and upstairs offices. The back door to the Museum is opened and a fan is placed next to the door to blow cool air into the reception desk area. The

fan in the video room is positioned in front of the windows and is turned on high. The fans in the temporary gallery and the general history gallery are turned on. When we open at 9:00 am, for security and safety purposes we must close the back door. Unfortunately with this attention, we often find by 10:30am and even as early as 9:00am, the temperature reading at the reception desk is at 75 degrees. When the Museum reaches 75 degrees it becomes necessary to open one of our front doors. But opening the door does not cool the building enough to alleviate the excessive warmth. Additionally, opening our front doors compromises our exhibits by increasing dust and the possibility of insect infestation. It is also a potential security risk in the advent of an attempted theft. Unfortunately, with no workable ventilation system, when the building becomes this warm, it is slow to cool and remains warm overnight and into the next morning. If the next day is a warm day, the temperature only increases.

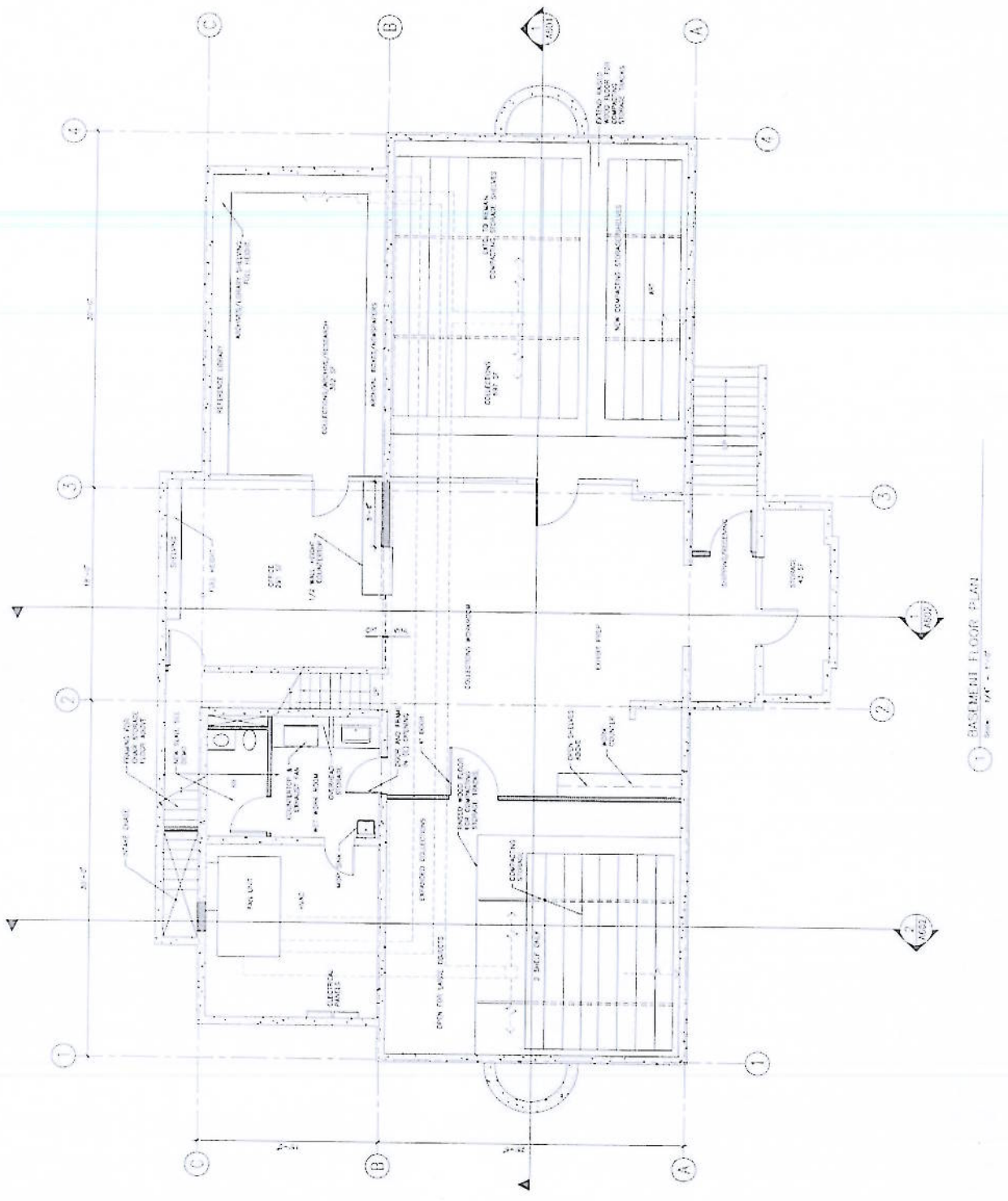
Our inability to cool the building in the summer causes an increase in temperatures that is compromising the Museum's comfort for visitors and care of exhibits and collections. Providing comfort to visitors and stabilizing the City and Borough of Juneau's historic collection is essential to responsible future operations and is imperative to the building's integrity and comfort for not only the Museum but any other future department or agencies that reside in it. Please don't hesitate to request additional information.

<p>907.566.1171          FAX 907.461.1544          MRVARCHITECTS.COM          JUNEAU, ALASKA 99801</p>	<p>MRV ARCHITECTS</p>	<p>FOR THE          CITY AND BOROUGH OF JUNEAU, ALASKA          MAY 8, 2004</p>	<p>JUNEAU-DOUGLAS CITY MUSEUM          REMODEL</p>	<p>SHEET TITLE          DEMO BASEMENT          FLOOR          PLAN</p>	<p>DATE          JULY 10, 2007</p>	<p>SCALE  <math>1/4" = 1'-0"</math></p>	<p>DESIGNER          A</p>	<p>DRAWN          B</p>	<p>CHECKED          B</p>
				<p>SHEET NO.          A101</p>					



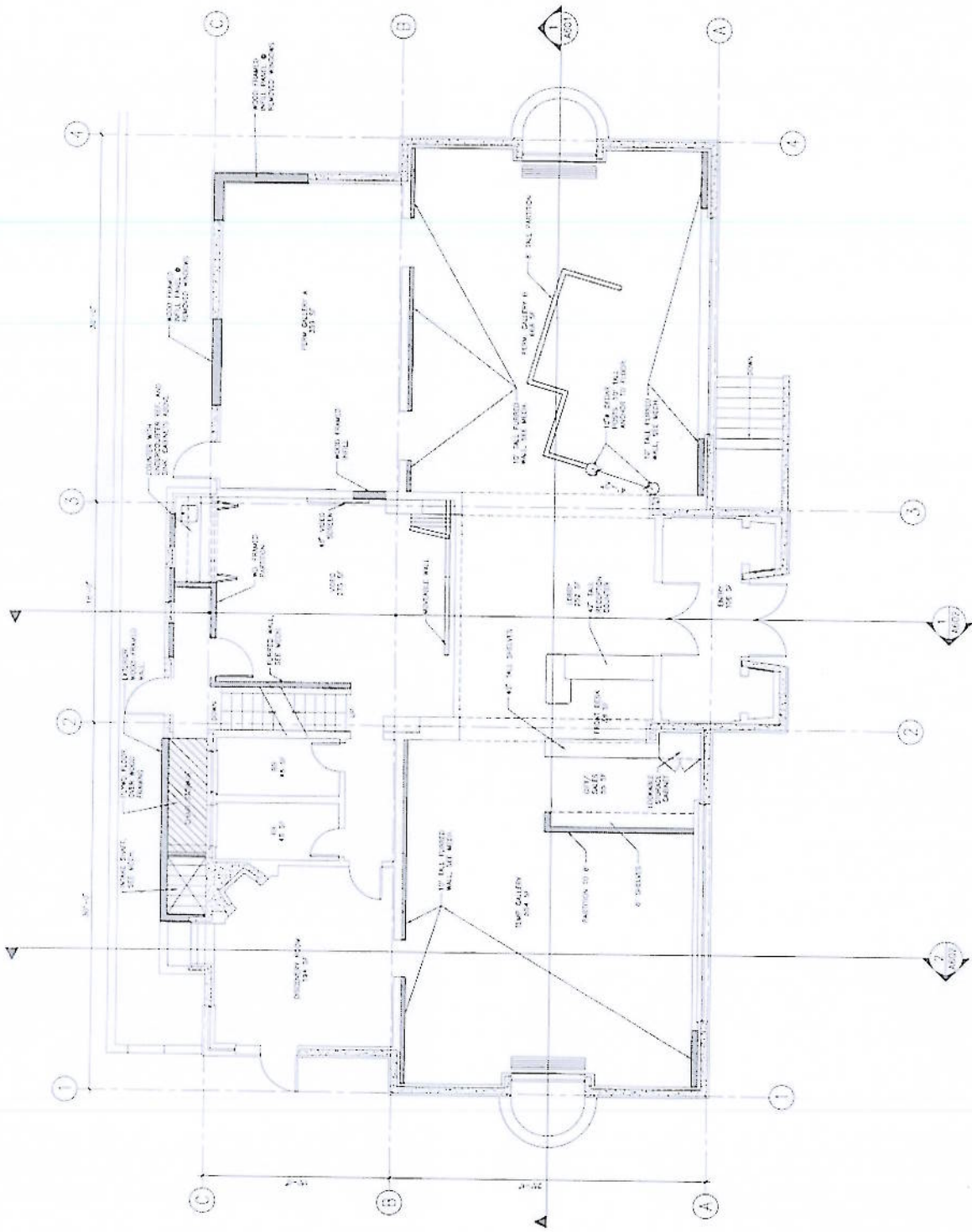
1 BASEMENT FLOOR PLAN  
 Scale: 1/4" = 1'-0"

<p>FOR THE CITY AND BOROUGH OF JUNEAU, ALASKA OFFICE # 0704</p>	<p>JUNEAU-DOUGLAS CITY MUSEUM REMODEL</p>	<p>800 CLARKE AVENUE #A JUNEAU, ALASKA 99901 907-986-1171 mrv@mrvarchitects.com</p>	<p>DATE: JULY 12, 2007 SCALE: 1/4" = 1'-0" DRAWN: A CHECKED: P SHEET NO:</p>	<p><b>A201</b></p>



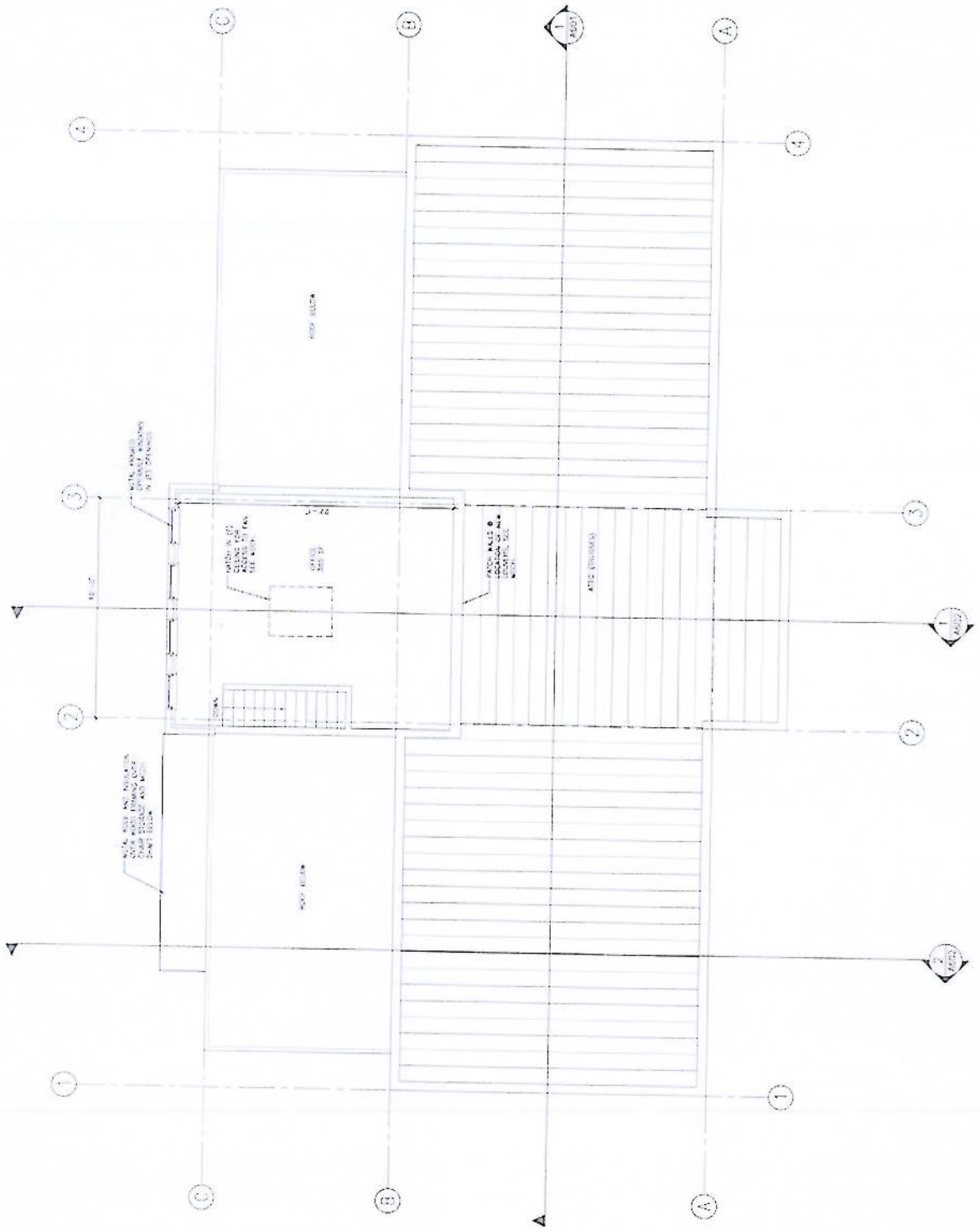
1 BASEMENT FLOOR PLAN  
SCALE: 1/4" = 1'-0"

MRV ARCHITECTS 102-586-1171 info@mrvarchitects.com 600 CLARKE AVENUE #A JUNEAU, ALASKA 99801	FOR THE CITY AND BOROUGH OF JUNEAU, ALASKA WSP # 0724	SHEET TITLE <b>NEW FIRST FLOOR PLAN</b>	DATE: JULY 20, 2007 SCALE: 1/8" = 1'-0" DRAWN: A.C. CHECKED: P.C.	<b>A202</b> SHEET NO.
	<b>JUNEAU-DOUGLAS CITY MUSEUM REMODEL</b>	1 FIRST FLOOR PLAN Scale: 1/8" = 1'-0"		



1 FIRST FLOOR PLAN  
 Scale: 1/8" = 1'-0"

<p>907.596.1121          100 CALDER AVENUE #A          JUNEAU, ALASKA 99801          MRVARCHITECTS</p>	<p>FOR THE          CITY AND BOROUGH OF JUNEAU, ALASKA          MAY # 0704</p>	<p>SHEET TITLE  <b>NEW          SECOND FLOOR          PLAN</b></p>	<p>DATE: JULY 10, 2007          SCALE: 1/4" = 1'-0"          DRAWN: A, D          CHECKED: D</p>
		<p><b>A203</b></p>	



1 SECOND FLOOR PLAN  
 Scale: 1/4" = 1'-0"