

# Historic Building Architects, LLC

312 West State Street, Trenton, New Jersey 08618 tel 609 393 3999 fax 609 393 4333 www.hba-llc.com

September 22, 2011

Michael D. Johnson  
Maine Historic Preservation Commission  
55 Capitol Street  
65 State House Station  
Augusta, ME 04333-0065

Re: Burnt Coat Light Station, Swan's Island, ME

Dear Mike:

I am following up on our correspondence in April regarding the Burnt Coat Light Station. I had an opportunity this summer to visit the Light Station and complete a number of investigation survey items, which we had discussed and have attached our recommendations:

1. Accessibility Study: We have prepared a set of drawings showing our recommendations for barrier free access to the Light Station and its environs. I believe the recommendations are self-explanatory and would ask that you please review them and get back to me with any questions or comments.

2. Light Station Tower Assessment: We were asked to assess the condition of the Light Station Tower comparing the current conditions to our survey in 2006 and have provided a series of annotated photographs. The hope is that this will help the Friends of Swan's Island Lighthouse (FOSIL) to enroll the support needed for the Tower restoration, which is clearly becoming increasingly urgent.

3. Interior Second Floor Conditions at Light Keeper's House: We have provided guidelines on the scope of repair work to be completed, which is scheduled for the summer of 2012. We have provided our recommendations and we would like you to review them, and with your approval, the FOSIL can begin the process of contracting for this work.

4. Piazza Balustrade: We have provided some schematic ideas for a new balustrade railing at the Piazza area. As you know, there is little documentation of historically what was in this location. Moreover, we were not able to observe any silhouettes of existing railings, however, we used historic documentation that Fran Chetwynd had gathered, as well as our knowledge base of light stations to provide the proposed railings and staircase railings to the existing concrete steps. We would note that the work on the Piazza is integrated with the barrier free access issues and the structural stabilization and reinforcement of the Piazza floor, all of which need to be completed as one project. This is a schematic drawing, not for construction but is intended to provide a visual understanding what the railing might look like.

Please do not hesitate to call me if you have any questions, and thank you for allowing us to present this information to you.

Sincerely,



Annabelle Radcliffe-Trenner, AIA, RIBA, LEED AP

Cc: Fran Chetwynd (w/enclosure)

Enclosure: HBA Drawings A1.1-A1.4, A2.1-A2.2, and A3.1



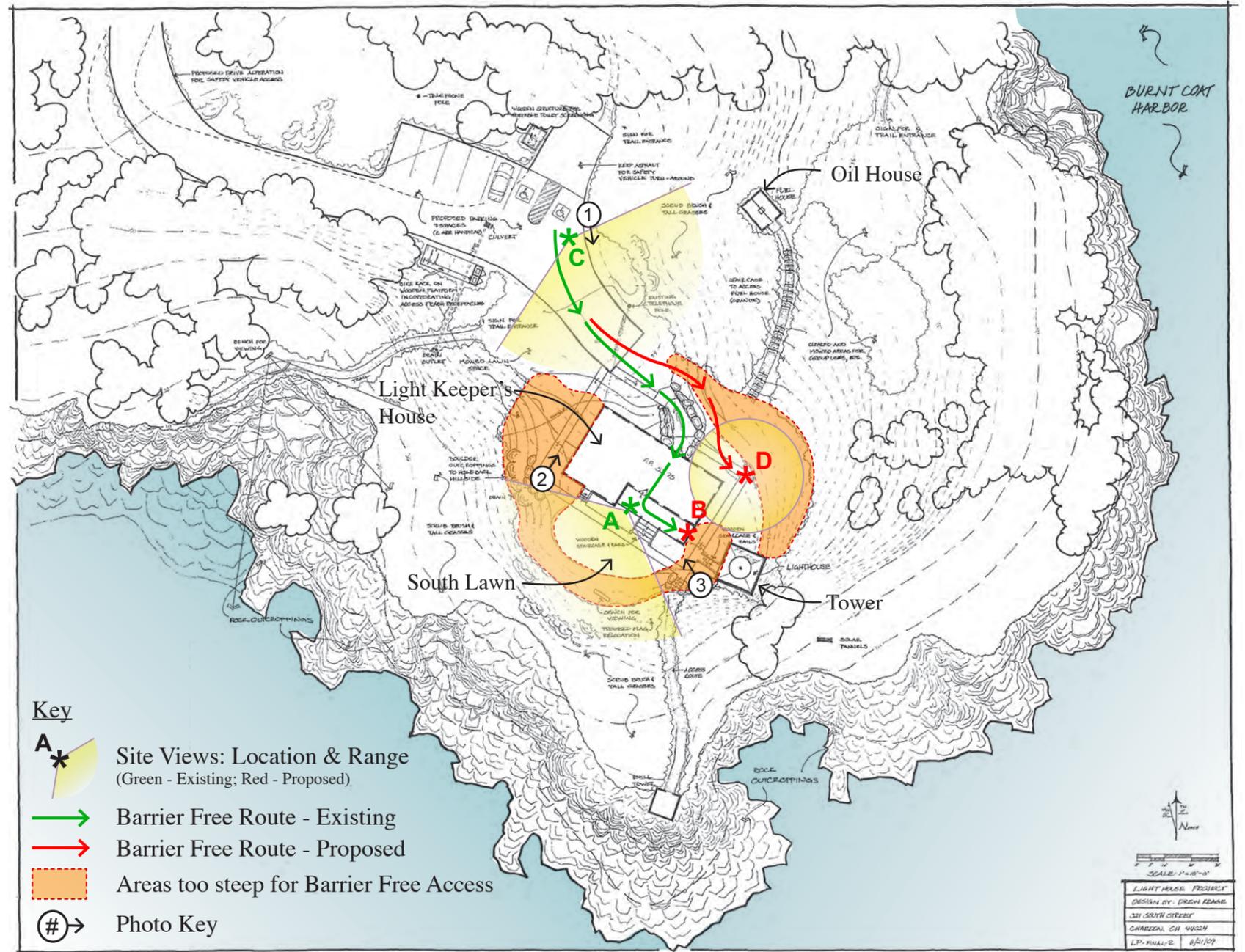
**Introduction**

Historic Building Architects, LLC. has reviewed barrier-free accessibility to the Burnt Coat Light Station Property during a site visit by Annabelle Radcliffe-Trenner, RIBA, AIA on August 12<sup>th</sup> 2011. Annabelle walked the site to review accessibility both on the exterior and the interior of the Light Keeper's House to determine how to provide the best possible views of this historic Light. In addition, Annabelle Radcliffe-Trenner wanted to respond to the email memorandum of April 28<sup>th</sup> 2011 from Mike Johnson of the Maine Historical Commission regarding appropriate barrier-free access to the Light Station, which is listed on the National Register of Historic Places.

**Existing Topography of the Site**

The Light Station is accessed down an extremely steep road, which is not barrier-free accessible except by car. At the base of the access road is an existing level blacktop parking area where one space will be allocated for barrier-free parking. From the parking area on the north-west side of the building, a new sloped accessible path has been constructed to provide barrier-free access to an entrance on the north elevation of the Light Keeper's House. This path was in the process of being completed at the time of the site visit and there was an opportunity for wheelchair access to be tested by a member of the community. Some adjustments need to be made to provide a level access at the entrance with a maximum 1/4" grade change, and this is being worked on (See A 1.3).

The two gable ends of the Light Keeper's House provide exterior access to the front (south) elevation, which is the view seen from the water. The grade change on the west side of the building is over 5' and already represents a difficult and challenging sloped path for pedestrians but is not, in our opinion, feasible for barrier-free access. This 5'-0" grade change would require at a minimum a 60' ramp at a 1 in 12 slope with railings plus several 5' deep landings, resulting in a ramp that could extend over 80' long. Several alternate accessible options for viewing the site have been suggested on A 1.2.



Top, Left: New barrier free access path into the Light Keeper's House.

Top, Right: Site Plan, showing inaccessible areas due to steep slopes in grade, barrier free access routes (existing and proposed), and panoramic site views.

Bottom: Steep grade, at west end of Light Keeper's House.

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Barrier Free Access at  
Swan's Island Light Station

Date:  
9/19/2011

Drawn by:  
MS

A 1.1

**Existing View A**

This view is taken from the Piazza, which faces south. Barrier-free access needs to be provided through the Light Keeper's House with two widened doors, one at the north entrance and one on the south side of the building onto the Piazza. Two new doors were installed in these locations in 2010, but may not be in compliance with the *Secretary of the Interior's Guidelines*. Though the widening of the opening from 32" to 36" was necessary to provide barrier-free access, solid wood, 6-panel doors were used to replace the historic 4-panel doors. Due to the grade change between the interior floor & the Piazza deck, we are recommending that the Piazza's narrow board wood floor be temporarily removed, the framing underneath repaired and/or replaced where deteriorated, and the Piazza floor reinstalled slightly raised (1 1/2") to accommodate direct egress out from the Light Keeper's House onto the Piazza. This will also assist in providing five equally sized, 7" risers from the Piazza to the south lawn for ambulatory visitors. We also recommend installing a balustrade in keeping with historic evidence. See Drawing A 1.4.



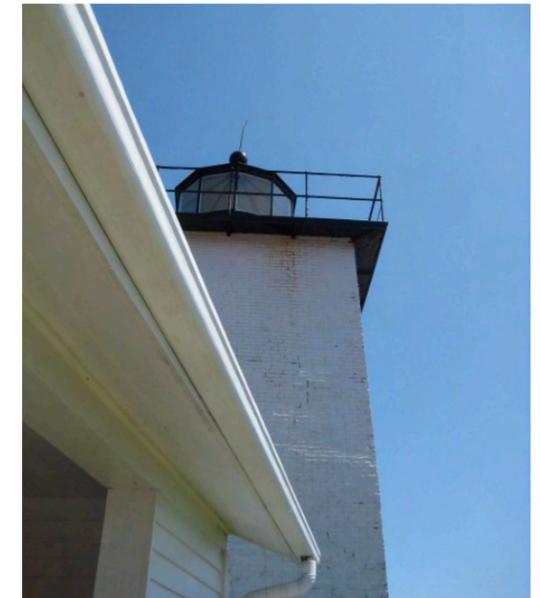
View of the South Lawn and Atlantic Ocean from View A on the Piazza

**Proposed View B**

In addition to providing a view south from the Piazza, we also recommend considering recreating the door opening on the east gable, which originally provided a covered 'lean-to' shed connection to the Tower entrance. This door could be opened in summer and allow barrier-free visitors to view close up the Tower from the Piazza. The shed connection was removed in the 1950s, and we do not recommend reinstalling it because closing off this east side of the building would significantly hinder circulation around the building due to the already steep slope on the west end of the Light Keeper's House. Barrier-free access into the tower is not feasible due to the narrow opening in the thick masonry wall and the interior configuration of the stairs within the tower.



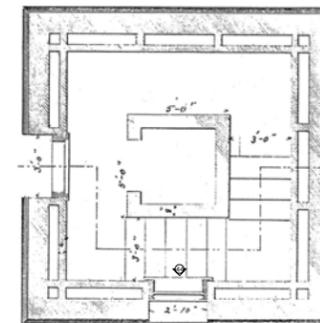
Above: New Viewport (door) at Piazza east end would replicate the door to the covered connection (since removed) to the Tower.



View of Tower from proposed View B

**Existing View C (from parking)**

There are already good views from the barrier-free parking lot looking east at the Light Keeper's House, Tower and Oil House:



Left: Plan of Tower, showing tight interior stair layout that makes barrier-free access infeasible.

Reconstructing the connector to the Tower would eliminate the safest exterior access to the South Lawn.

**Proposed Platform at View D**



We recommend creating a new viewing area on the east side of the Light Keeper's House with a wood viewing platform to allow visitors a view of the Tower and the east gable of the Light Keeper's House, as well as views into Burnt Coat Harbor and out to sea between the Tower and Light Keeper's House; rebuilding the connection mentioned in "Proposed View B" would eliminate this view and diminish the potential of this location. This location provides an opportunity to better understand the relationship of the Light Keeper's House and the Tower to the geography of the surrounding area. Unfortunately, the grade between the Light Keeper's House and the Tower is extremely steep, dropping approximately 4 feet over a short distance and making it almost impossible to provide a ramped path that would not significantly detract from the view and character of the Light Station as seen from Burnt Coat Harbor and by ambulatory visitors. The exposed rock surfaces indicate that much of the Tower's and the Light Keeper's House's foundations are built on stone, which would be very difficult to remove for a regraded, barrier-free access. This work would need to be completed after the restoration of the Tower has been completed.

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Barrier Free Access at  
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| Date:<br>9/19/2011 | Drawn by:<br>MS | A 1.2 |
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**North Door (D104-A) - Main Entrance**



Originally a window opening ca. 1890 and converted to a door in the 1900s, the Main Entrance Door (D104-A), was replaced with a 6-panel solid wood door in 2010. Remaining historic evidence (Door D102-A) indicates that 4-panel doors were typically used on the first floor of the Light Keeper's House. Though a 4-panel door would have been more appropriate, we do not feel that the 6-panel door detracts from the historic character of the building

given the record of earlier alterations. We defer to MHC to provide an opinion on whether the new door should be replaced. A solid bronze lever handle that will not be pitted by weathering is recommended to operate the door. The frame was severely deteriorated and replaced in 2006, and the door opening widened to provide barrier-free access. An accessible door needs to be at least 2'-8" in width, preferably 3'-0". The existing aluminum threshold, which is not in keeping with the period of significance, is also not barrier-free accessible because of the level change between the threshold and the exterior path. HBA recommends resolving this by installing a new hardwood threshold with a shallow slope for barrier-free access; the threshold should be painted or stained and molded to the exterior stone below. Flashing needs to be installed behind the stone to ensure that the sill plate is properly protected.



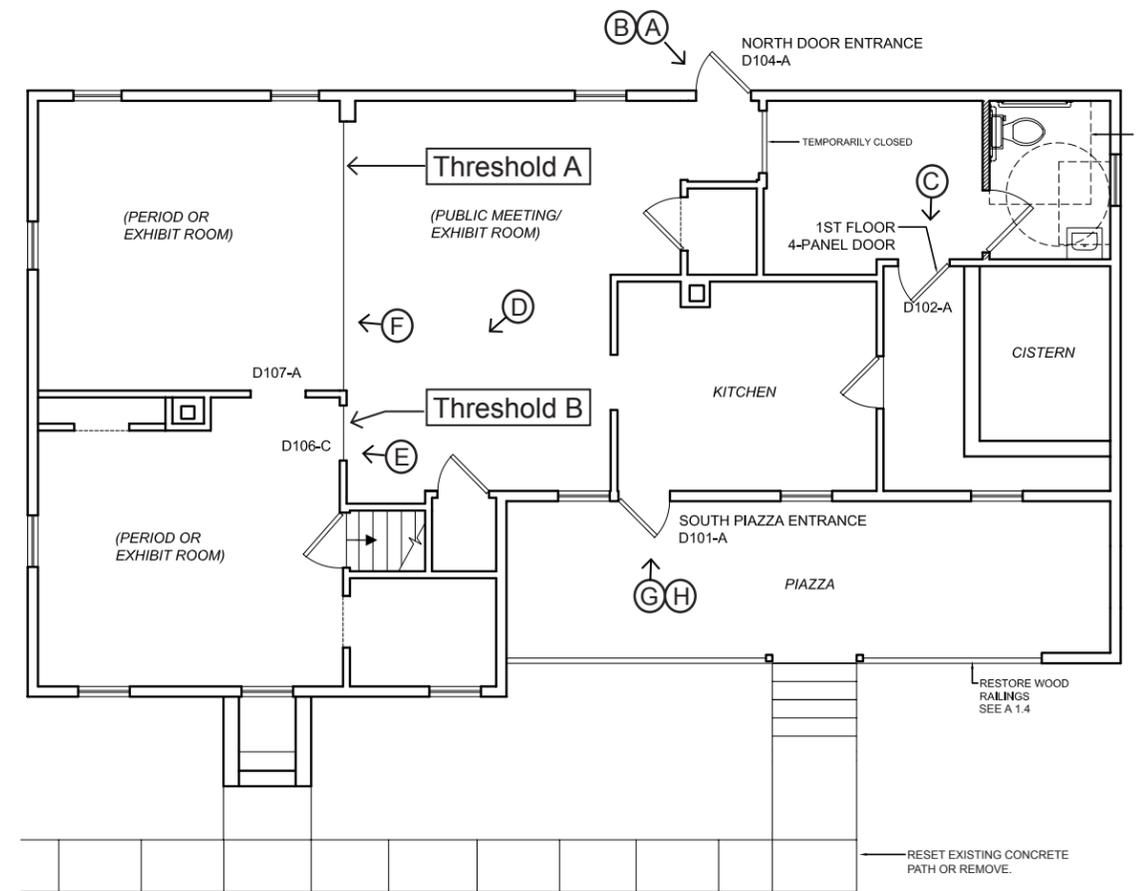
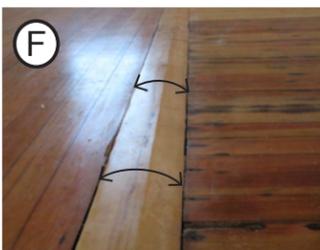
*Existing Interior Door D102-A is an example of an early 4-paneled solid wood door with molded trim at recesses.*



*The first floor of the Light Keeper's House is largely accessible. However, there is a sloped threshold from the Public Meeting Room into the Parlor at Door D106-C (Threshold B); this threshold needs to be replaced with an accessible wood threshold.*



*The door stop needs to be removed to provide 32" wide clearance for barrier-free access. Threshold A (photograph F) needs to be sanded down to create a smooth sloped transition.*

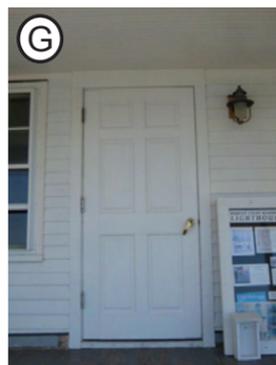


**Existing South Exterior**

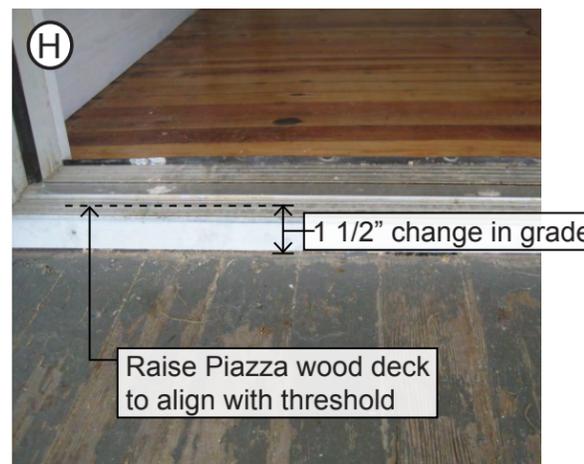
The existing concrete path is extremely uneven and unstable and we recommend addressing this in the near future, especially now that the entrance path has been created, which encourages ambulatory visitors to access the steep west side of the Light Keeper's House. Historically, wood decking was used to access this side of the house, as seen in the historic image to the right.



**Piazza Entrance Door (D101-A)**



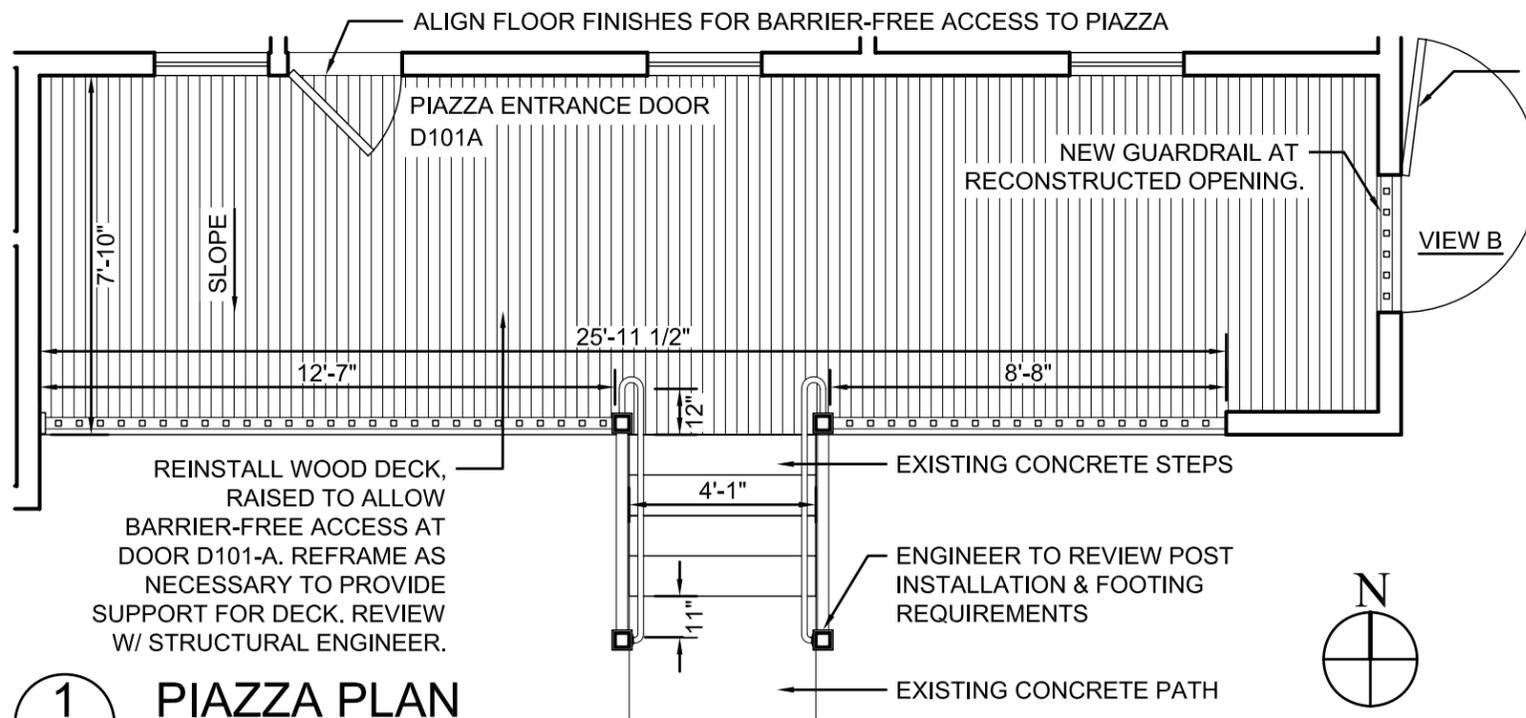
This door was replaced in 2010 with a 6-panel solid wood door. The previous door in this location, as noted in Section 5, page 3 of the Preservation Plan was a 6-panel door with 3 glazing units in the top panel. The door frame and threshold were all in poor condition, and it is suspected that the door was not the original to this opening. Similar to D104-A, we believe the 6-panel solid wood door does not detract from the architectural significance of the building since no evidence can be found that the original was a 4-panel door. MHC should provide an opinion on whether this door should be replaced with a 4-panel door similar to the Door D102-A. The hardware should be replaced, as described above for D104-A. The threshold is aluminum (photograph H) and does not provide barrier-free access because of the existing level change of 1 1/2". The floor deck of the Piazza needs to be temporarily removed to provide access for framing repairs below. At that time, we recommend raising the Piazza wood floor and installing a painted or stained wood threshold to allow for barrier-free access. See Drawing A 1.4.



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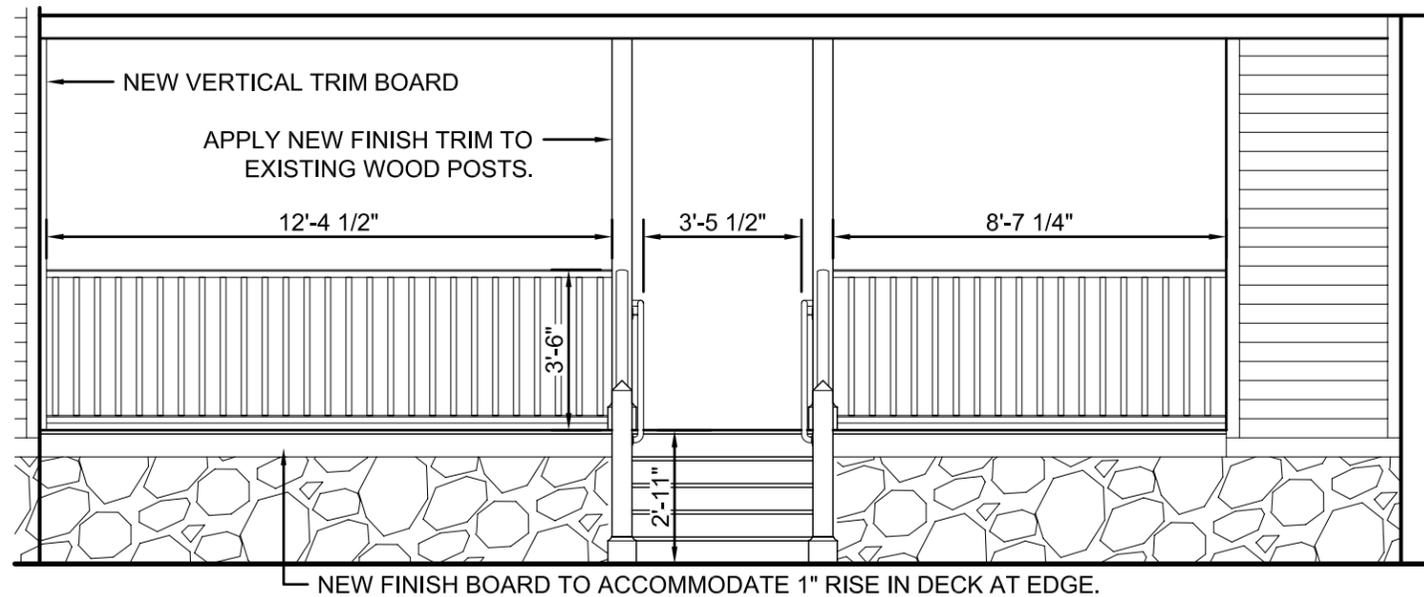
**Barrier Free Access at  
 Swan's Island Light Station**

Date: 9/19/2011 Drawn by: MS A 1.3



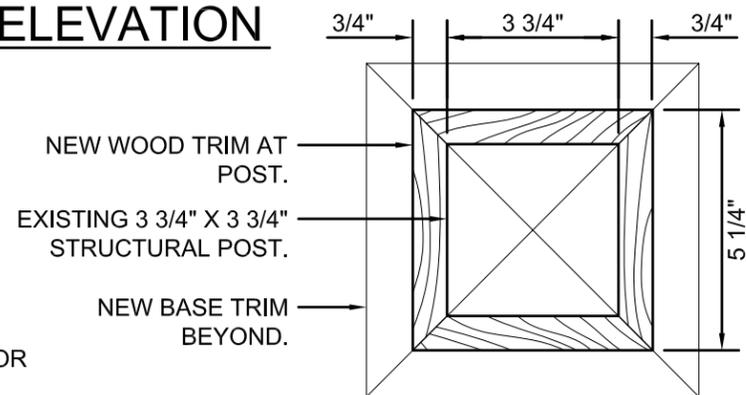
**1 PIAZZA PLAN**

A 1.4 SCALE: 1/4" = 1'-0"



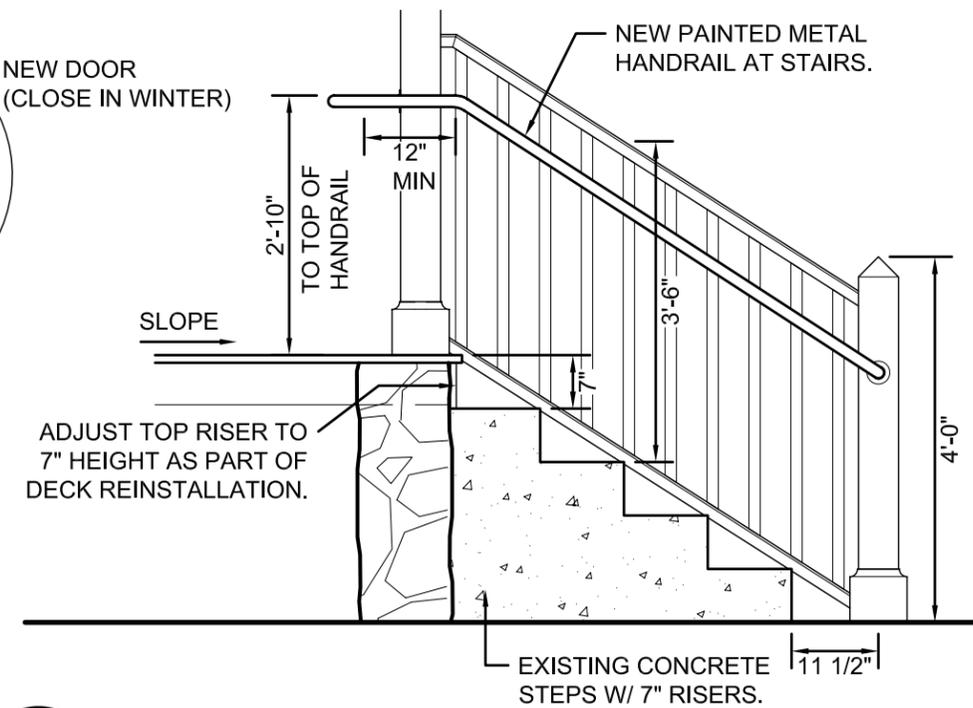
**2 PIAZZA SOUTH ELEVATION**

A 1.4 SCALE: 1/4" = 1'-0"



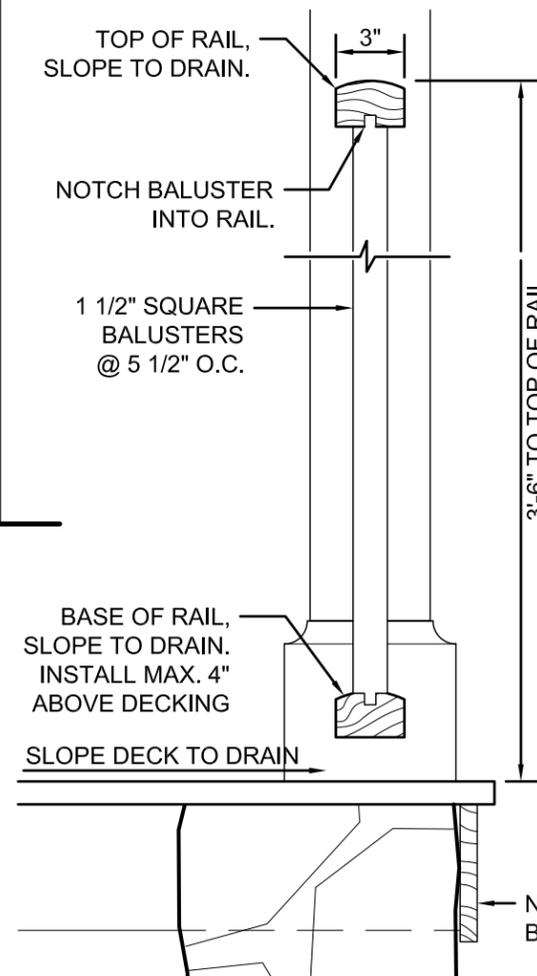
**4 POST SECTION A**

A 1.4 SCALE: 3" = 1'-0"



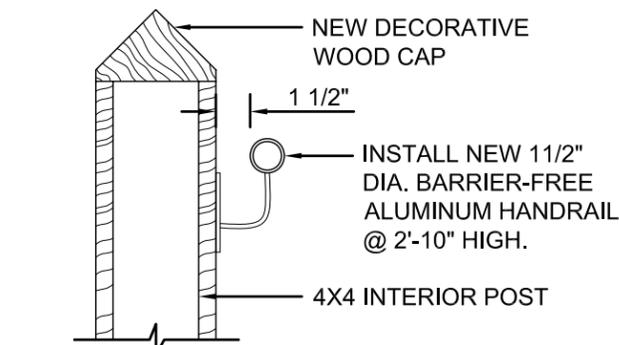
**3 STAIR SECTION**

A 1.4 SCALE: 1/2" = 1'-0"



**5 GUARDRAIL DETAIL**

A 1.4 SCALE: 1 1/2" = 1'-0"



**6 HANDRAIL DETAIL**

A 1.4 SCALE: 1 1/2" = 1'-0"



**7 BASE DETAIL**

A 1.4 SCALE: 1 1/2" = 1'-0"

- NOTES:
- REFER TO PIAZZA ENTRANCE DOOR FOR BARRIER-FREE ACCESS RECOMMENDATIONS. SEE A 1.3.
  - SCHEMATIC DESIGN ONLY. DO NOT USE FOR CONSTRUCTION.

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Schematic Drawings  
New Piazza Porch Railings

Date:  
9/19/2011

Drawn by:  
MS

A 1.4

2006

Tower Baluster



2011



Corrosion and rust jacking increased.

Tower Top Railings



Loss of metal cross-section due to corrosion making railings unsafe.

Baluster Base



Corrosion at base of post increased and could result in post and railing failure.

Bottom Rail Junction



Significantly increased corrosion at welded connection.

2006

House Platform



2011



Top of deck has significant loss of paint and increased corrosion.

Lantern Base at Platform

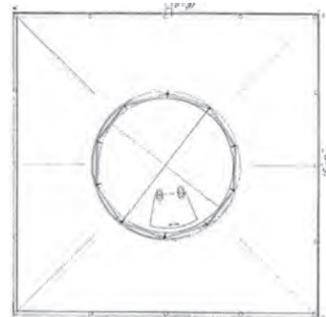


Base of lantern drum showing signs of increased corrosion.

House Platform from below



Significant increase in rust on underside of walkway deck.



Plan of Lantern

General Observations

- 1. Significant increase in corrosion.
- 2. Railings likely to have imminent failure.
- 3. Base of lantern drum allowing water ingress into Tower at ceiling.

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Tower Conditions at  
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Date:  
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Drawn by:  
MS

A 2.1

2006

Interior Tower Lantern

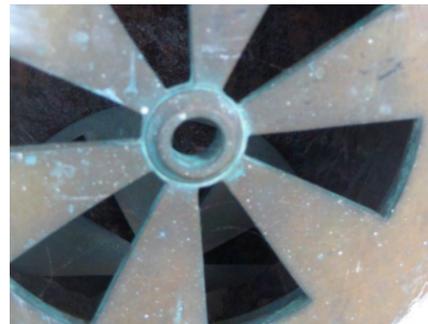


2011



Interior base of light where heavy condensation build up has significantly increased wood rot at base and corrosion of metal deck with water dripping onto the floor below.

Lantern Vent



Vents are no longer operable resulting in increased condensation causing wood rot.

Interior Lantern Glass



Severe corrosion and moisture buildup at lantern drum due to condensation.

NW Interior Corner of Tower



Masonry cracking at corners appears to be increasing as metal deck continues to corrode and cause rust jacking.

2006

Tower Brick Exterior Wall



2011



Significant increase in exterior biological growth causing paint to fail and moisture ingress.

Interior Tower Brick at Window

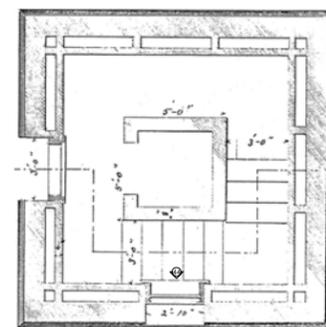


Significant increase in green biological growth due to lack of ventilation and increased moisture ingress.

Underside of Interior Staircase



Stair corrosion increased and causing masonry to continue to bulge outward due to rust jacking.



Plan of Tower

General Observations

1. Trapped moisture has resulted in increased corrosion and rust jacking.
2. Ventilation system no longer operable.
3. Masonry being compromised by rust jacking.
4. Moisture ingress due to failed exterior paint.

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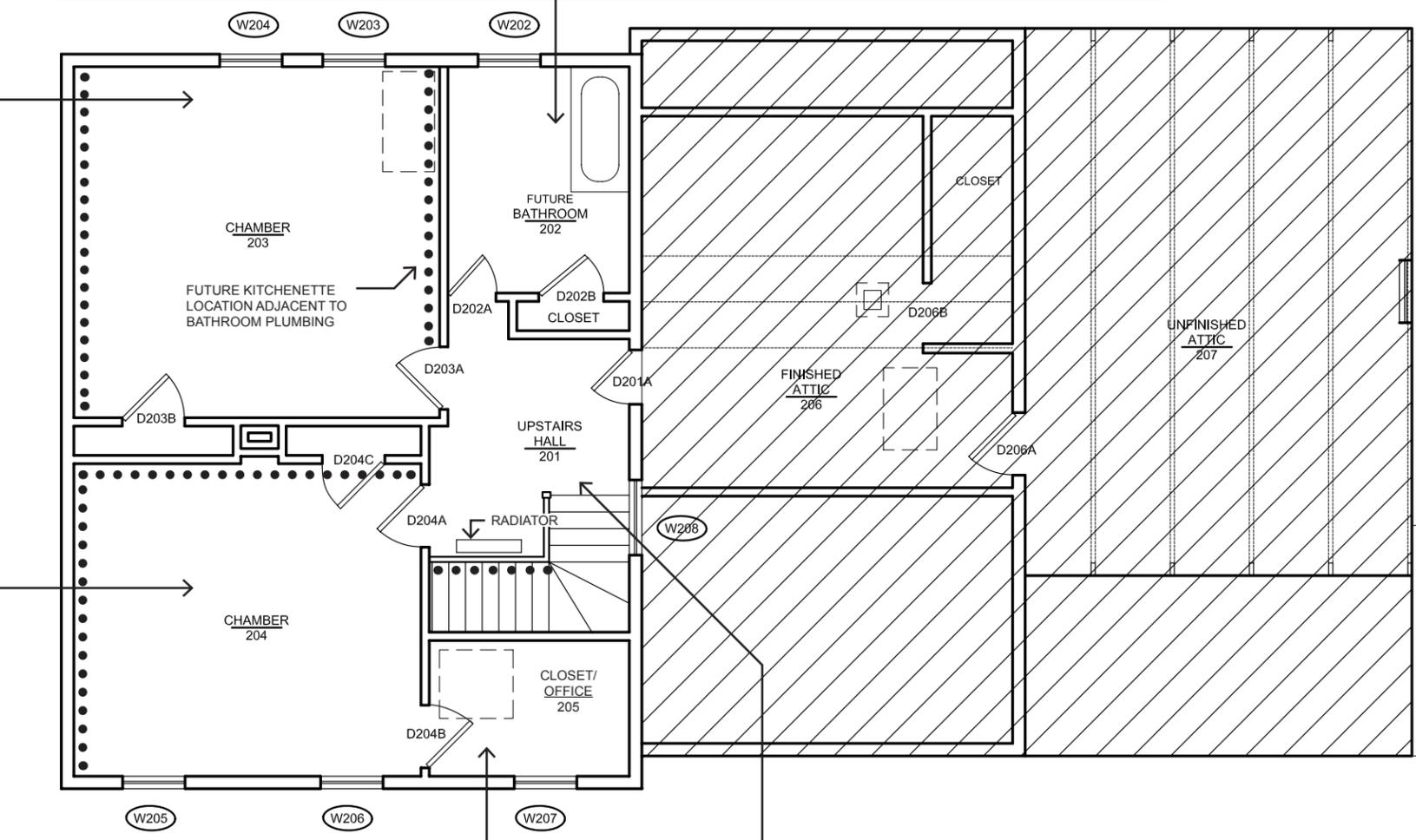
Drawn by:  
MS

A 2.2

**Future Bathroom - Room 202**  
 Floor: The red paint color on original wood boards to be used on floor. Repair existing wood floor board. Sand, prime, & paint.  
 Walls: Replace deteriorated plaster & lath with new veneer plaster over gypsum wallboard (100%).  
 Ceiling: Replace deteriorated plaster & lath with new veneer plaster over gypsum wallboard (100%); include flat & sloped ceilings.  
 Special Notes:  
 Refinish bathtub & reinstall (optional). Replace D204A with new 4-panel to match historic. Existing doorknob on D 202B good match for new replacement doors.

**Chamber - Room 203**  
 Floor: Remove vinyl flooring. Restore wood floor boards. Repair, sand, prime & paint.  
 Walls: Restore existing plaster at East & West walls. Replace remaining walls with veneer plaster on GWB.  
 Ceiling: Replace ceiling lath & plaster with new veneer plaster over GWB; include flat & sloped ceilings. Install new appropriate lighting.  
 Special Notes:  
 D203A - Replace existing door with new 4-panel to match historic (example D202B).

**Chamber - Room 204**  
 Floor: Remove contemporary vinyl floor covering. Sand & paint original wood floor boards.  
 Walls: Restore North & West wall plaster finish. Replace south & east wall plaster & lath with new veneer plaster over GWB.  
 Ceiling: Replace ceiling lath & plaster with new veneer plaster over GWB; include flat & sloped ceilings. Install new appropriate lighting.  
 Special Notes:  
 D204A - Replace existing door with new 4-panel to match historic (example D202B). Remove paint & biological growth on exposed brick chimney. Install new electric outlets in baseboard.



**Closet/Office - Room 205**  
 Floor: Strip, prime & paint existing wood flooring. Alternate: install removable floor cover without damaging existing floors.  
 Walls: Replace all plaster walls with plaster veneer over GWB.  
 Ceiling: Restore access hatch to functioning condition.  
 Special Notes:  
 Strip & paint all trim. Replace Doors D204A, D204B & D204C w/ new doors to match D201A.

**Hall - Room 201**  
 Floor: Remove plywood & restore 4" wide wood floor boards. Prime & Paint.  
 Walls: Retain samples of wall papers & exhibit. Restore 3-coat plaster wall at stair. Replace all other plaster with new veneer plaster over GWB.  
 Ceiling: Replace ceiling with veneer plaster over GWB; replace 100%.  
 Special Notes:  
 Stair Treads & Risers - Strip & paint.  
 Balusters - Lightly sand, prime, & paint.  
 Decorative Radiator - Strip, Prime & Paint (Not proposed for use; exhibit only)



- Notes:
- Floor Boards:** Once tile is removed, verify floor board finish.
  - Floor Tile:** 9x9 floor tile to be removed should be tested for hazardous materials prior to reinstall.
  - Decorative Radiators** to be restored & left in place
  - Mold Remediation:** Extensive black mold needs to be assessed by an environmental engineer.
  - Electric Outlets:** install in wood baseboard.
  - Veneer Plaster:** Install veneer plaster over GWB where noted. USG has no data on plaster performance in an unheated environment. Plaster should be monitored for signs of weathering after installation.
  - Ventilation:** Provide ventilation, especially on second floor. Insulation should be concealed in the attic to reduce heat build-up on the 2nd floor in summer.
  - Doors:** D202B & D201A should be replicated for new 2nd floor doors.
  - Plaster:** Every effort should be made to restore the existing plaster walls where noted. However if this proves extremely difficult due to plaster instability, follow Note 6.

- Shaded area not part of next phase of work.
- Restore existing plaster walls

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Finish Restoration of 2nd Floor at  
 Swan's Island Light Station

|                    |                 |       |
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| Date:<br>9/19/2011 | Drawn by:<br>MS | A 3.1 |
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