Condition Assessment Report

491 Auburn Ave. NE,
Fulton County, Atlanta, GA 30312

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HIST 8620
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SPECIAL THANKS TO

Tommy Jones of the National Park Service
for his insight and information regarding the property

Adria Focht of the National Park Service
for the documentation concerning the property

Fellow classmates and professors from Building Materials
for sharing their documentation, photographs and more

NOTES

Conducted with non-invasive procedures –
further investigation may be needed

All photos by author and taken during
9/2010 field visit unless otherwise noted

See Appendix E for a keyed figure plan

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INTRODUCTION

The Hamilton Apartments two-story quadruplex building built by Alexander Hamilton, a prominent African-American builder in Atlanta, is located at 491/493 Auburn Avenue, Northeast, Fulton County, Atlanta, Georgia, 30312. The original addresses for the apartments were 375, 375 ½, 377 and 377 ½ Auburn Avenue. A. Hamilton and Son builders, located at the time on 69 Ivy Street, Atlanta, Georgia, applied for a permit for construction on September 6, 1911, and construction took place between 1911 and 1912. The building was built as a wood balloon frame house with clapboard siding without sheathing (Fig. 1) and wood shingle roofing.

Figure 1 – Clapboard installed without sheathing, room 207, southwest (courtesy of Adam Archual)

Prior to 1997, this building was owned by Johnnie Haugabrook and, in 2003, his company, JMES Holding Inc., sold it to the National Park Service (NPS). Up until at least 1992, the building was used as an apartment.

DESCRIPTION OF PROPERTY

Site Description

The resource is located within the Martin Luther King Jr. (MLK) National Historic Site operated by the NPS (Fig. 2). The building is two houses to the west of the MLK birthplace

Figure 2 – North side Auburn Avenue streetscape, MLK District

museum and, therefore, is in a prominent location within the district. To the building's east is a home that houses the gift shop and other divisions of the MLK Museum and to the west is a parking lot and historic City of Atlanta Fire Station no. 6. Within the site boundaries are three one-story, double shotgun homes which are situated between the south side of the quadruplex and the southern boundary of the site. These shotguns are not addressed in this report.

The landscaping around the property is minimal. The exposed aggregate sidewalk along Auburn Avenue has been extended along the concrete sidewalk and asphalt driveway, on the eastern boundary of the property, in order to provide handicapped access to the museum shop. The brick containment walls, around the front pine islands, enclose two historical holly bushes. The rear of the lot is grass with some bushes growing near the masonry wall and a locust tree in the southwest corner.

Exterior Description

The predominant style of the building is Craftsman with a hip roof and four chimneys. The north elevation has concrete painted steps leading from the sidewalk to the two story porch with brick and mortar in a running bond pattern as the porch skirt. The porch extends the entire width of the elevation and consists of a wood balustrade. The porch ceilings are v-groove wood, with existing evidence of porch swings and electrical wiring, while the floors are tongue-and-groove. Some electrical and mailboxes are still viewed on this front elevation as well (Appendix A, Fig. 1.1 and Drawing 1.1).

The south elevation has a small porch on the second story with no ground access or railings other than temporary raw wood installed for safety, which is part of a bumped-out area of the floor plan. Openings boarded over with white plywood exist on the first floor of this elevation (Appendix A, Fig. 2.1 and Drawing 2.1). The east and west elevations are similar and show the perimeter brick pilasters of the foundation with concrete masonry unit (CMU) infill

Figure 3 – Brick pilasters and CMU viewed from within crawlspace, looking east

surrounding the crawlspace (Fig. 3). Vents and openings are punched in the CMU on the west and east sides of the building (Appendix A, Figs. 3.1 and 4.1, Drawings 3.1 and 4.1). The two exterior door types and the five window types on the elevations are surrounded by wood trim,

with some decorative molding (Appendix C). The crawlspace is an earthen floor with brick piers and pilasters throughout. The 1 ¾" thick, 7 ½" wide floor joists above run in an east-west direction, 13 ½" on center, and have cross supports that are tongue-and-groove hardwood flooring. The stained flooring from the first floor can be seen above the joists.

Between 2008 and 2010, the NPS did a stabilization on this property. The historical clapboard siding was covered with asbestos siding with a raised wood pattern and traditional waved edge, which reduced the reveal around casement openings. The clapboard siding can still be seen on the south elevation in rooms 105 and 205 (Fig. 4). The wood corner boards installed

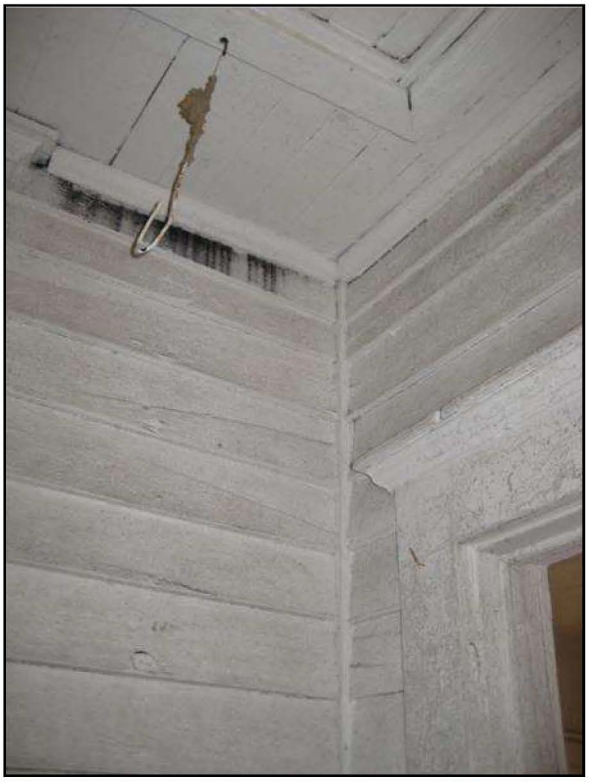


Figure 4 – Historic clapboard shown in room 205, northwest

during this stabilization were replaced at a later date with small metal ones. The NPS also repaired or installed canopy screens for all exterior windows and demolished, repaired, or shored framing for large portions of the west and south sides of the building, as well as some on the east and north side (Fig. 5). Installation of a new roofing structure with composition shingles, repair of the porch, and 4" x 4" structural framing support on the west side of the crawlspace were all

part of this renovation. Finally, a paint analysis was conducted and the entire exterior was painted as part of the renovation.

Figure 5 – Example of repairs by NPS in room 207, west wall (courtesy of Holly Schwarzmann)

Interior Description

The floor plan of the quadruplex consists of two apartments on each floor (Appendix B). The east and west apartments on each floor are virtually mirror images of each other, and each contains four rooms, some with closets and a bathroom, access to the front porch, and a small back porch type area. The typical ceiling height is nine feet. The casement openings, including six door styles and five window styles, the trim, including fireplaces, and the lighting can be seen in Appendix C along with locations, descriptions, and photographs.

The flooring for the majority of the rooms is stained tongue-and-groove 3 ½" wide, ¾" thick wood of an unknown species, probably pine, installed in a north-south orientation (Fig. 6). Room 201 has vinyl in a floral pattern over the wood floor (Fig. 7) and room 108 has

Figure 6 – Detail of typical tongue-and-groove wood, room 202

two different types of tongue-and-groove hardwood. A few rooms, such as 101, 109, 201, 207 and 209 have furring strips around the perimeter of the room (Fig. 8), which suggests carpet may have been installed at one point. The majority of the rooms have had a portion of the tongue-

Figure 7 – Detail of vinyl in room 201

Figure 8 – Detail of furring strip in room 101

and-groove hardwood replaced with 4' x 8' plywood sheeting. Smaller rooms, such as 105 and 106 are completely plywood floors, while rooms 200 and 213 have tongue-and-grove hardwood with 7" rise/11" run wood stairs which are 42" wide, leading from the second floor to the front porch.

The majority of the walls on the first floor and a few rooms on the second floor, such as 208 and 209, are painted drywall installed over the older plaster on wood lath. The majority of the walls on the second floor are painted plaster on wood lath. This two-layer plaster includes one layer of scratch/brown coat and one layer of finish coat. Wallpaper covers parts of the drywall in rooms 110 and 112 (Figs. 9 and 10). Most rooms on both floors also have exposed

Figure 9 – Detail of wallpaper in room 110
(courtesy Justin Hutchcraft)

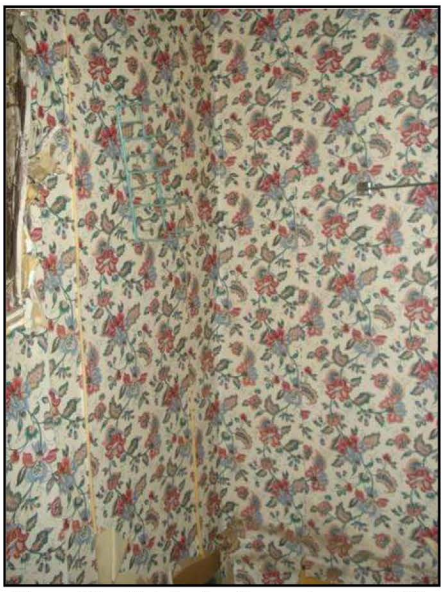


Figure 10 – Detail of wallpaper in room 112
(courtesy Holly Schwarzmann)

framing, such as rooms 110, 111 and 207. Rooms 200 and 213 have bead board installed horizontally on the west and east walls along with plaster. Rooms 105, 205 and 211 have the historical clapboard siding as part of the wall material, suggesting that these rooms were enclosed at a later date.

The ceilings on the first floor are mainly stippled drywall installed over the two-layer plaster and wood lath. Exposed framing exists in some areas, such as rooms 111 and 112. The second floor is mainly plaster over wood lath ceilings. A few rooms have non-stippled drywall over the plaster, such as 208, 209 and 211. Room 205 has attic access in the wood ceiling and rooms, such as 207 and 210, have virtually no ceiling at all, simply exposed beams.

Coal-burning fireplaces are located in some rooms, such as rooms 107 and 209. On the first floor, some fireplaces appear to have been covered with drywall, as in rooms 102, 104 and 108. The fireplaces in rooms 107, 202 and 208 have glazed tile surrounds and hearths, while the fireplace in room 201 appears to have only a replacement tile hearth (Fig. 11). Rooms 101, 203,

Figure 11 – Fireplace in room 201, south wall

207 and 209 have concrete hearths. The mantels for each of these fireplaces are of painted oak and vary slightly within each room (Appendix C, Trim Schedule). Fireplaces were replaced with gas heating units, as evidenced by the gas outlets located near the fireplace areas in the majority of the rooms, such as 107, 203 and 207.

A few unique qualities of particular rooms should be mentioned. Rooms 104, 110, 204 and 210 were used as kitchens as evidenced by the water, gas, and exhaust lines and ghosting where cabinets were probably hung (Figs. 12 and 13). Rooms 106, 112, 206 and 212 were

Figure 12 – Room 204 appliance lines, northwest wall

Figure 13 – Room 204 ghosting from cabinets, southeast wall

bathrooms as water lines, and in some cases towel bars, are evident. Phone jacks and electrical outlets are seen throughout the building, such as in rooms 109 and 202, and room 103 displays evidence of a security system.

Systems Description

The mechanical system water piping is a mix of galvanized steel and PVC. All bathtubs, toilets and sinks have been removed by NPS. No HVAC ductwork exists since this building utilized floor-standing gas heaters mentioned previously. These heaters were most likely

exhausted through the fireplace flue, although no evidence of this exists. No fire protection devices are installed in the building and the second means of egress from the second floor back porch has been removed. Electricity was supplied throughout the building using a two-wire, armored BX system (Appendix C, Lighting Schedule).

ASSESSMENT AND RECOMMENDATIONS

The majority of the conditions throughout this building are the result of extensive water damage, as evidenced by mold and crumbling plaster in most rooms. Since NPS did an extensive stabilization of the exterior, it appears that the source of water penetration has been alleviated. Focus can now be placed on repairing the interior issues which NPS has begun with the framing and foundation renovations.

Site Assessment

- Loose bricks around exterior pine islands (Fig. 14)

Figure 14 - Detail of loose brick, north

- Crumbling driveway
- Bricks and other materials on west side of property

Site Recommendation

It is recommended that loose bricks be repointed, the driveway be repaired or repaved, and loose materials be cleared in order to remove safety hazards, especially if the building will be for public use.

Exterior Assessment

- Brick piers lacking mortar
- Moss growing on brick skirt around porch
- Crumbling concrete foundation on southern addition
- Spider webs and wasp nests evident
- Chipped asbestos siding throughout (Fig. 15)
- Nail holes and nails throughout (Fig. 16)

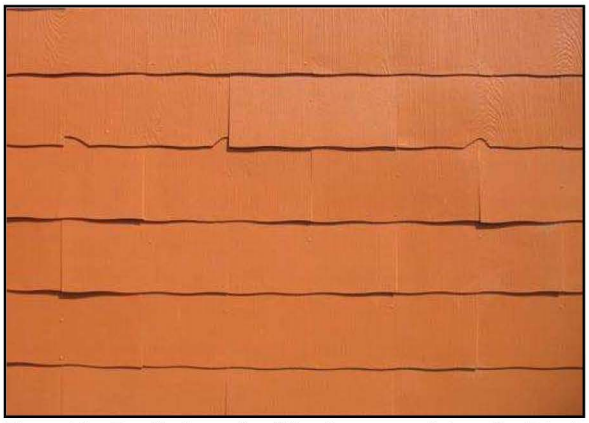


Figure 15 – Detail of exterior siding (courtesy of Angelica Dion)

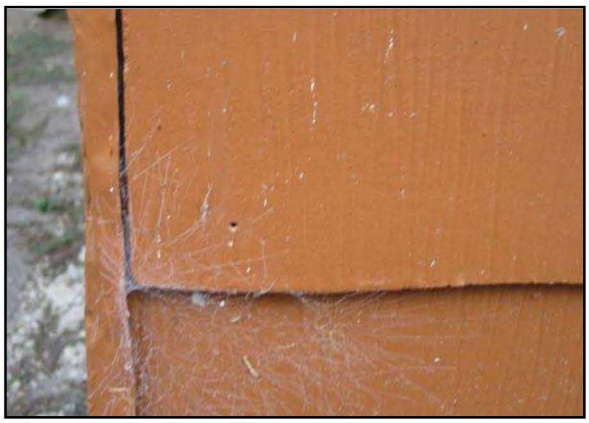


Figure 16 – Detail of nail holes, southeast corner

- Unprepared painted surfaces throughout, especially front porch
- Rear porch missing railing system and means of egress from room 211
- Debris in crawlspace
- Bathroom space, room 206, open to exterior
- Missing water drainage system

Exterior Recommendation

It is recommended that brick piers and pilasters lacking mortar be repointed, moss be removed by the gentlest means possible, the concrete foundation be reinforced, and the insect issues be cleaned. The chipped asbestos siding, nail holes and unprepared surfaces do not pose an immediate threat, but should be assessed regularly (Appendix D). A balustrade and means of egress need to be installed on the back porch before the building can serve any purpose. Debris in the crawlspace should be photographed, tagged, and stored in order to decrease hazards. If

room 206 is to be used as a bathroom in the building's new use, then room 205 needs to be enclosed. To avoid future water damage, gutters, downspouts and the like should be installed.

Interior Assessment

- Debris throughout entire first floor and rooms of second floor, such as room 202
- Casement openings
    - Mismatched casement openings and hardware in rooms 109, 201 and others
    - Decayed casement openings throughout
    - Insufficient hardware
- Flooring
    - Hole in southeast corner of room 103 (Fig. 17)

Figure 17 – Room 103 hole to crawlspace, southeast (courtesy of Mera Cardenas)

    - Mismatched flooring, such as in rooms 108, 109 and 209
    - Damaged hardwood throughout

    - Furring strips with exposed tacks in rooms 101, 201 and 207 and others

- Walls and Ceilings
    - Peeling plaster, such as in rooms 201 and 207 (Fig. 18)

Figure 18 – Peeling plaster in room 203, southwest

    - Damage particularly around perimeter walls and ceilings (Figs. 19 and 20)

Figure 19 – Detail of minimal ceiling damage, room 201, southwest

Figure 20 – Detail of extensive damage, room 110, southwest (courtesy of Justin Hutchcraft)

    - Improper plaster repair in room 108 and others
    - Mold throughout

    - Peeling paint throughout

- Fireplaces and Trim
    - Non-historic trim, such as in rooms 101 and 108

- Damaged surrounds and hearths in room 207 and others
- Decayed or missing trim throughout, such as in room 203 (Fig. 21)

Figure 21 – Non-existent baseboard in room 203, east wall

- Peeling paint throughout
- Mismatched trim, such as in room 202

- Lighting
  - Loose and exposed wiring
  - Non-historic or non-existent decorative lighting
- Specialty Areas
  - Exposed pipes, exhaust, and gas in rooms 112, 104, 206, 210 and others
  - Missing porcelain pieces in bathroom areas, such as room 212
  - Non-historic closet in room 201 (Fig. 22)

Figure 22 – Non-historic closet in room 201, southeast

Interior Recommendation

It is recommended that debris be disposed of while the architectural salvage material be photographed, tagged, and stored in a secure location for re-use in the building or elsewhere. All non-historic or non-existing doors should be replaced to match the six-panel, craftsman-style door. The three-light over three-panel door should remain in room 211 to the exterior and a similar door should be installed in room 204 to the exterior. Existing historic hardware should be cleaned and repaired, while the newly installed doors should have in-kind hardware installed. The 6/2 windows in 109 and 110 should be replaced to match the existing 2/2 windows, with a similar design replacing the 4/4 window in room 205. All casement opening hardware should be checked for security and all openings should be cleaned, repaired or replaced, and repainted.

Recommendations also include repairing the hole in the floor in room 103. All plywood sheeting and the second type of hardwood flooring in room 108 should be replaced with in-kind hardwood flooring. All hardwood should be cleaned, repaired, and refinished where needed, removing furring strips. Areas intended to be used as wet spaces, such as room 112 or 206, should have impervious flooring installed, such as tile or laminate. Damaged walls and ceilings, whether minimal or expansive, need metal lath and plaster or plastered drywall installed. Rooms in which the walls and ceiling are sound need to be replastered, such as in room 201. Corrective plastering should take place under the window in room 108 (Fig. 23) and other areas that may

Figure 23 – Improper plaster repair, room 108, west wall (courtesy Rosemary Davis)

need it so that the trim reveals are similar throughout the house. Insulation should be installed, accounting for ventilation and vapor barriers, before any repairs are made so that optimal system performance is achieved.

It is recommended that missing trim be replaced in-kind, including baseboard and mantels. All decayed trim should be cleaned, repaired or replaced, and repainted. Blocking that replaced trim (Fig. 24) should be replaced with in-kind trim as shown in other areas of the building. Other mismatched trim, such as in rooms 202 and 203, should be replaced to match historic trim. Fireplace surrounds and hearths should be replaced with materials significant to

Figure 24 – Inappropriate corner blocking, room 208, west wall (courtesy Angelica Dion)

the building period, such as historic tile. Historic trim that has been removed, such as picture molding evident by ghosting marks, should be replaced with in-kind trim. All trim should be cleaned, replaced or repaired, and repainted. Loose electrical wiring should be corrected and replacement and installation of fixtures should be consistent with the historical period.

Specialty areas, such as those previously used as kitchens and baths, need to be treated dependent on their proposed use. To minimize costs, it is recommended that these rooms be used for a similar purpose. According to NPS, the bathtub in room 212 was in good condition when removed and others were in states of disrepair. If they have been stored properly, these pieces should be retained and reinstalled. The non-historic closet in room 201 should be removed.

Systems Assessment

- Non-code compliant electrical wiring (Fig. 25)

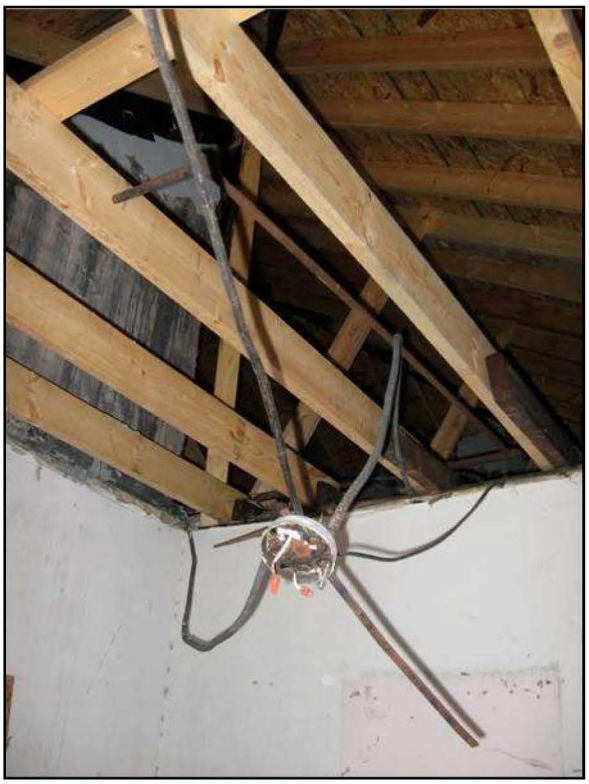


Figure 25 – Electrical wiring in room 210 (courtesy of Justin Hutchcraft)

- Deteriorated piping throughout, such as rooms 110 and 210
- Non-existent gas heaters
- Non-existent fire or carbon protection
- Non-existent or inadequate weatherproofing

Systems Recommendation

It is recommended that the electrical system be brought up to code with a three-wire, grounded system. Deteriorated piping should be repaired according to the building's proposed use. Gas heaters should be installed, if consistent with the new use of the building. Fire protection systems should be added to bring the resource up to code and weatherproofing should be updated to optimize energy performance.

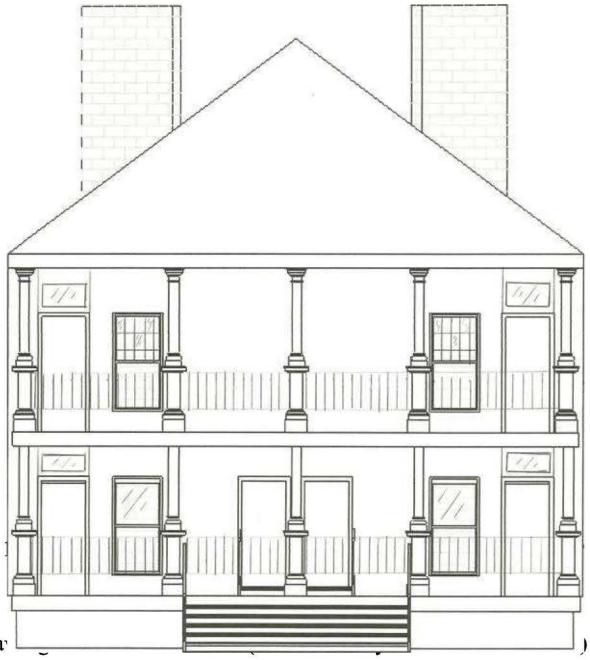
RECOMMENDATIONS FOR USE

Considering the NPS agreement to provide low-cost housing in the MLK historic district and the need to meet standards, it is recommended that these historic apartments be rehabilitated and used again as apartments. This proposal would require the minimal amount of structural and other changes and would be less expensive than another project type. Other options for use would be an event and meeting facility, but this option would require major interior and possibly structural changes, which would not meet the *Secretary of Interiors Standards*. Ultimately, the NPS should assess the buildings under its control in the MLK district and determine the best possible use for this historic building.

MAINTENANCE PLAN

A maintenance plan is essential to the preservation of 491/493 Auburn Avenue. A suggested maintenance list, including corrective and planned maintenance and periodical assessments, can be found in Appendix D. Without a designated use determined for the building, this plan is only suggestive. Once the maintenance plan is determined, a maintenance log should be created and used by all personnel involved with the resource.

APPENDIX A – Exterior Elevations



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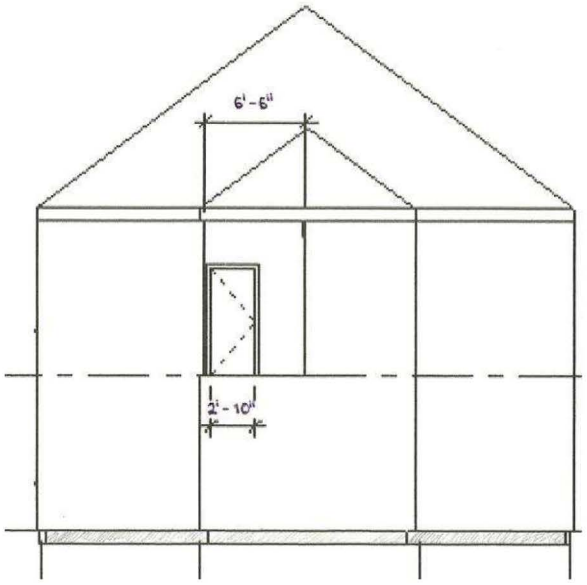


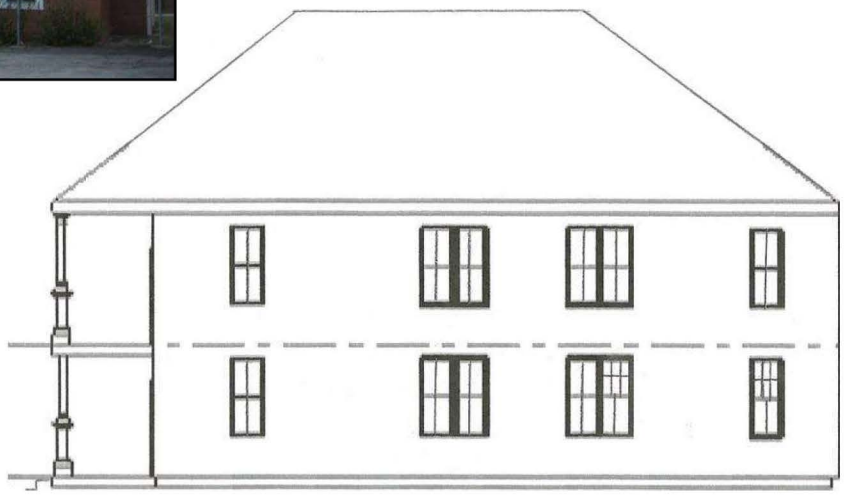
Figure 2.1 – South Elevation

Drawing 2.1 – South Elevation (NTS - courtesy of Sarah Kurtz 9/2010)

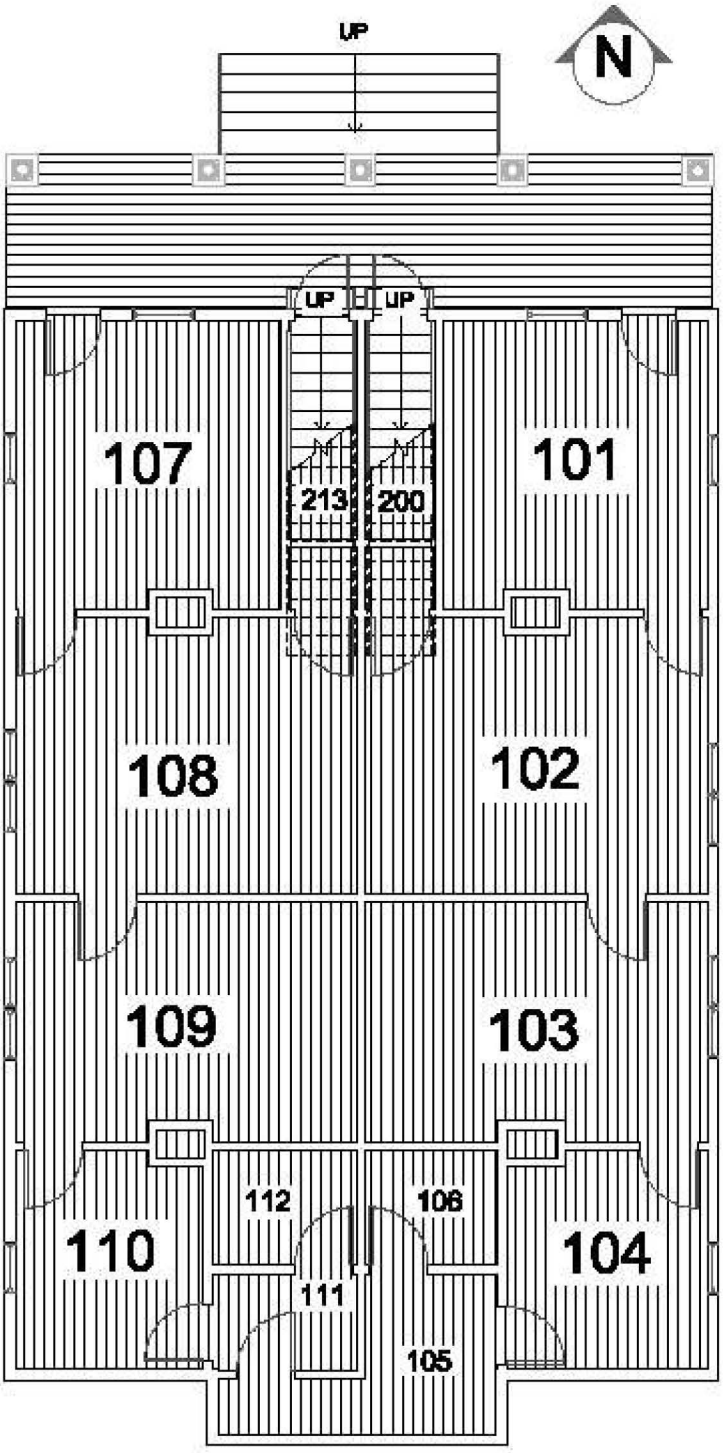
APPENDIX A – Exterior Elevations

Figure 3.1 – East Elevation

(NTS - courtesy of Sarah Kurtz 9/2010)

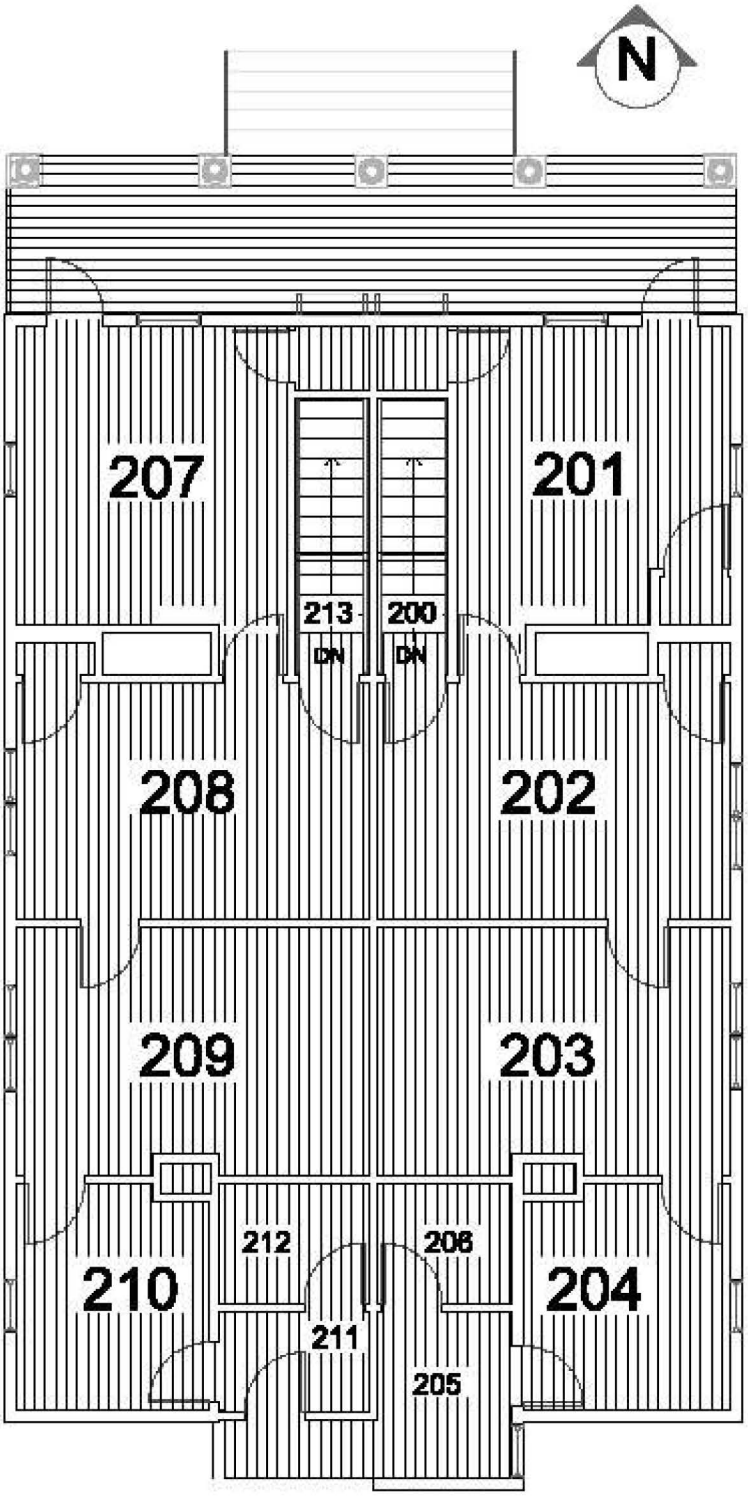


APPENDIX B – Floor Plan



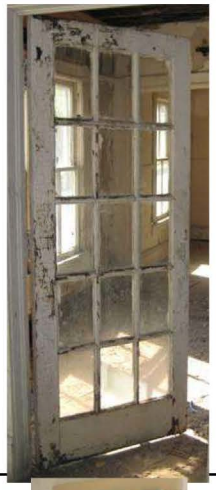
First Floor Plan (NTS - courtesy of Sarah Kurtz 9/2010, adapted by author)

APPENDIX B – Floor Plan



Second Floor Plan (NTS - courtesy of Sarah Kurtz 9/2010, adapted by author)

Casement Opening Schedule – Doors

Photo	Description	Location	Photo	Description	Location
 Courtesy of Rebecca Crawford	Flush/Flat 34” Width. 80” Height (Exterior) 81.5” Height (Interior)	101/Ext 108/Closet 200/202 201/Ext 207/Ext 208/213	 Courtesy of Rebecca Crawford	Six Panel 34” Width 81.5” Height	101/102 102/Closet 102/103 104/105 105/106 107/108 108/109 110/111 201/Closet 201/202 202/Closet 204/205 207/Closet 207/208 208/Closet 210/211 211/212
 Courtesy of Rebecca Crawford	Two Panel Screened 34” Width 80” Height (or similar)	101/Ext 107/Ext 200/Ext 208/213 213/Ext		Fifteen Lite 34” Width 81.5” Height	202/203
 Courtesy of Adam Archual	Three Lite over Three Panel 34” Width 80” Height	211/Ext		Six Panel Traditional 34” Width 81.5” Height	201/Closet

NOTE: IF ROOM NOT LISTED; NO DOOR AT LOCATION
IF ROOM NOT LISTED TO EXTERIOR; PLYWOOD

Casement Opening Schedule – Windows					
Photo	**Description**	**Location**	**Photo**	**Description**	**Location**
 Courtesy of Angelica Dion	15/1 36" Width 60" Height	101 107 201 207	 Courtesy of Angelica Dion	2/2 Double-Hung 30" Width 60" Height	101 102 (2) 103 (2) 104 107 108 (2) 109 201 202 (2) 203 (2) 204 207 208 (2) 209 (2) 210
 Courtesy of Sarah Kurtz	6/2 Double Hung 30" Width 60" Height	109 110		4/4 Double Hung	205
 Courtesy of Adam Archual	Transom 34" Width	101 101 105/106 107 201 205/206 207 211/212			

NOTE: IF ROOM NOT LISTED; NO WINDOW EXISTS IN ROOM

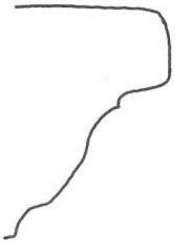
APPENDIX C – Finish Schedules

Lighting Schedule					
Photo	**Description**	**Location**	**Photo**	**Description**	**Location**
  Courtesy Mera Cardenas	Keyless (single or double bulb)	103 104 106 109 110 200 202 203 205 207 213	 Courtesy of Adam Archual	SemiFlush	201 208 209
 Courtesy of Debye Harvey	Ceiling Fan	107	 Courtesy of Justin Hutchcraft	Electrical Box	210

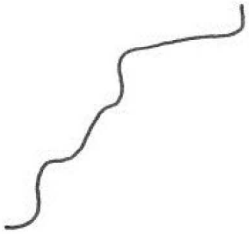
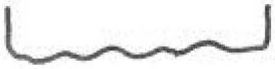
NOTE: IF ROOM NOT LISTED; LIGHTING UNKNOWN

APPENDIX C – Finish Schedules

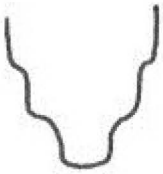
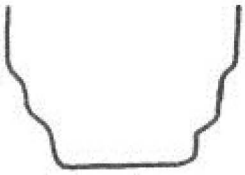
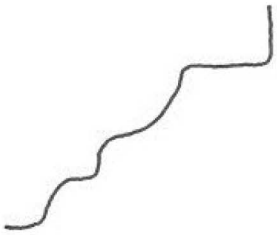
Trim Schedule

Profile	Photo	Description	Location
		Cap Molding 1.5" x 2.5"	Front Porch 105 205 211
		Header and Side Casing .5" x 5"	101 102 103 104 107 108 109 110 201 202 203 204 207 208 209 210
		Corner Block .5" x 5.5"	201 202 203 204 207 208 209 210
		Picture Molding 1" x 1.5"	201 202 203
		Cap Molding Baseboard .75" x 5"-9"	200 201 202 203 204 207 213

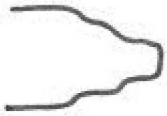
APPENDIX C – Finish Schedules

		Side Casing .5" x 5"	202 203 210
		Corbel 2.25" width	101 107 202 208
		Column Capital and Base 1" x 1.25"	101 202
		Corbel 1.5" width	203 209
		Mantle 9" x 1.25"	203 209
		Mantle Splash .5" x 1.25"	203

APPENDIX C – Finish Schedules

		15/1 Muntin .75" x .75"	101 107 201 207
		15/1 Rail .75" x 1.25"	101 107 201 207
		15/1 Stile .75" x 2"	101 107 201 207
		2/2 Muntin 1.25" x 1"	101 102 103 104 107 108 109 201 202 203 204 207 208 209 210
		Column Capital 1.25" x 1"	Front Porch
		Column Collar .75" x 1.5"	Front Porch

APPENDIX C – Finish Schedules

		Cap Molding Column Base .75" x 1.5"	Front Porch
		Door Head .75" x 3.25"	Front Porch
		4/4 Muntin .75" x .5"	205
		Door Side Casing .5" x 2"	Exterior North Elevation
		Cap Molding Door Plinth .5" x 1.75"	101 102 103 104 107 108 109 201 202 203 204 207 208 209 210
		Column Capital and Base .5" x .75"	107 208

APPENDIX C – Finish Schedules

N/A	 Courtesy of Angelica Dion	Crown Molding	207
		Picture Molding 1" x 2"	207
		Cap Molding 1.75" x 2.5"	101 102 103 104 107 108 109 110
		Banister 3" height	Front Porch

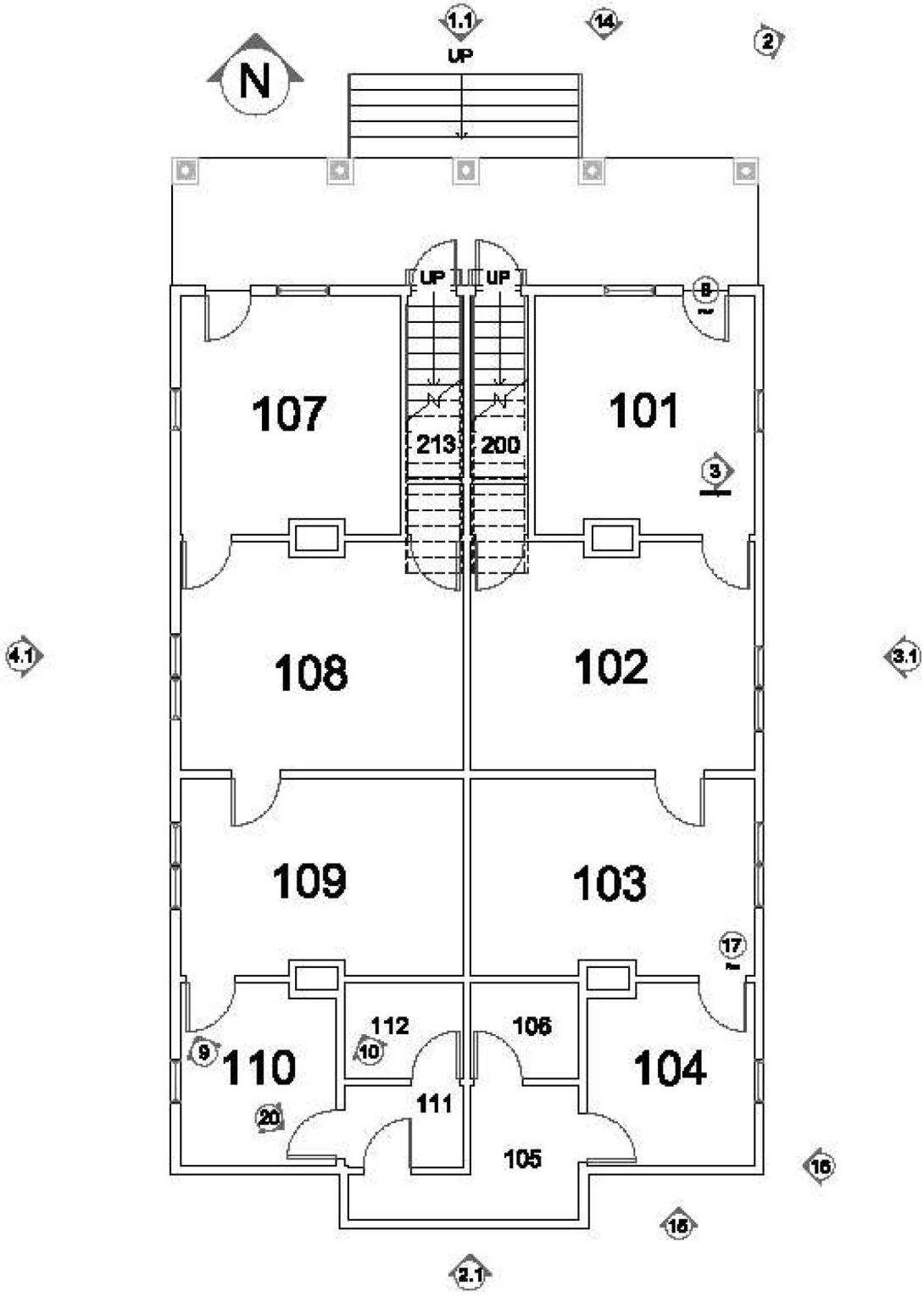
NOTE: NOT TO SCALE, MEASUREMENTS ARE APPROXIMATE
IF ROOM NOT MENTIONED; TRIM UNKNOWN

APPENDIX D – Maintenance Plan

Maintenance Plan			
Corrective Maintenance		**Planned Maintenance**	
Exterior/Site	Urgency	Exterior/Site	Frequency
Repoint loose masonry	1	Remove evidence of insects	M
Repave driveway	3	Wash exterior surfaces thoroughly	A
Remove debris from site	2	Clean drainage system	B
Install means of egress from rear porch	1	Lawn Care (mow, weed, prune, etc.)	W
Repair concrete foundation	3	Landscaping (plant, seed, fertilize, etc.)	B
Interior		*Pest control (insects and termites)	Q
Remove debris throughout building	1	Trash removal	W
Enclose room 206	3	Cleaning (sweep, etc.)	W
Repair/replace casement openings	2	Interior	
Repair/replace casement hardware	2	Cleaning (dust, sweep, vacuum, etc.)	W
Repair floor hole in room 103	1	Wash walls, floors, etc. thoroughly	A
Repair/replace flooring	2	Replace burned out light bulbs	W
Remove furring strips	1	*Pest control (insects and termites)	Q
Repair peeling plaster/paint	2	Trash removal	W
Repair damaged walls/ceilings	1	Systems	
Repair improper plastering	3	Replace batteries (security, fire, etc)	A
Remove mold	1	*Sweep chimneys	A
Repair/replace damaged/missing trim	1	**Periodical Assessment**	
Repair fireplace hearth/surrounds	2	Exterior/Site	Frequency
Replace missing porcelain	1	Roofing system	A
Remove closet in room 201	3	Site/building drainage	B
Systems		Site (walkway, driveway, etc.)	A
*Update electrical system	1	Structure (attic, crawlspace, etc.)	A
Replace decorative lighting	3	Siding (chipping, nail holes, fungus, etc)	B
Address exposed piping	1	Unprepared painted surfaces	A
Replace gas heaters	2	*Landscaping (remove trees, etc.)	A
Add smoke/carbon detectors	1	Paint	A
Add fire protection system	1	Interior	
Insulation and weatherproofing	2	Casement openings and trim	B
		Paint	A
		*Security	A
		Systems	
		Vents, etc.	A
		*Systems (plumbing, electrical, gas, etc.)	A

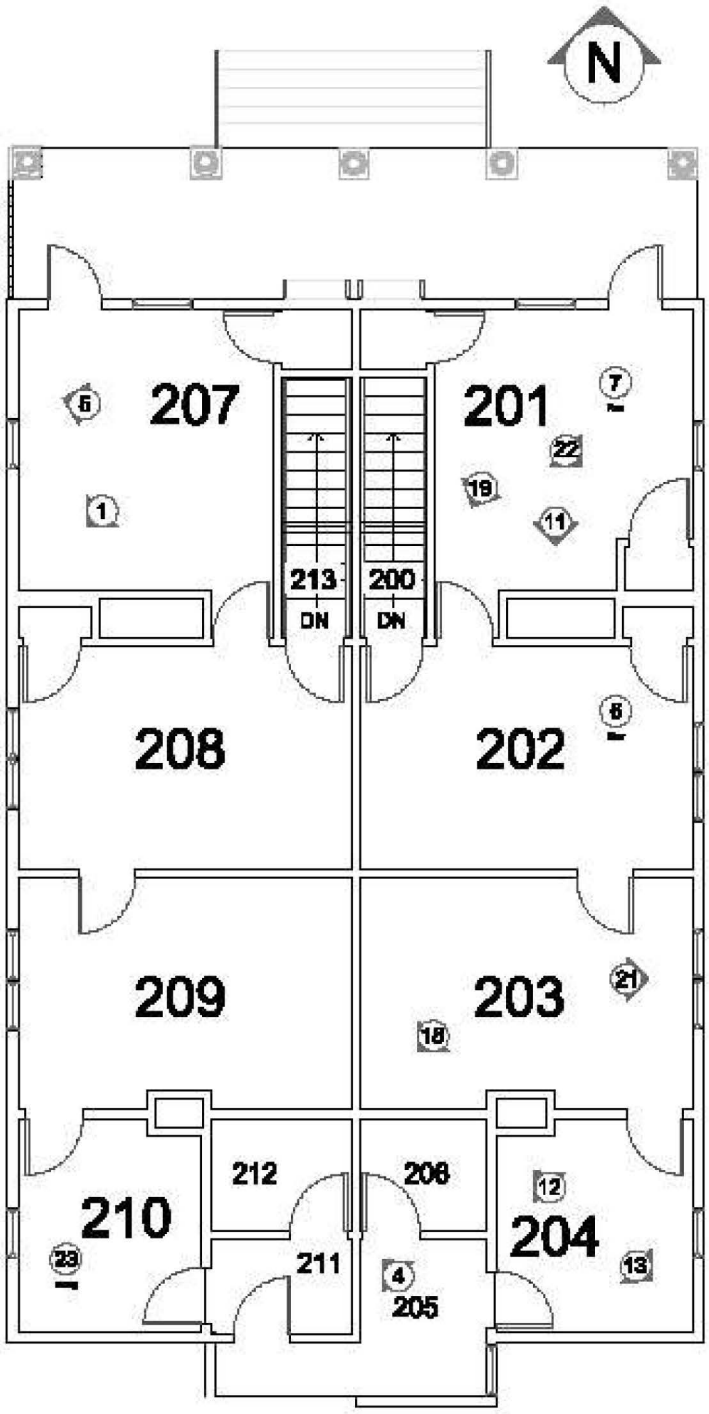
Key:		**Key:**	
1	Within 6-12 months	W	Weekly
2	Within 12-24 months	M	Monthly
3	Within 24-60 months	Q	Quarterly
		B	Bi-Annually
*	Performed by professional	A	Annually

APPENDIX E – Keyed Plan for Figures



First Floor – Figure Key (NTS - courtesy Sarah Kurtz 9/2010, adapted by author)

APPENDIX E – Keyed Plan for Figures



Second Floor – Figure Key (NTS - courtesy Sarah Kurtz 9/2010, adapted by author)