HISTORIC PRESERVATION COMMISSION

AGENDA
of the
CITY OF WILDWOOD'S
HISTORIC PRESERVATION COMMISSION
Wildwood City Hall – Community Room
16860 Main Street - Wildwood, Missouri
Thursday, January 26, 2017 - 7:00PM

I. Welcome And Roll Call

II. Opening Remarks And Chair Comments

III. Approval Of Minutes Of The Historic Preservation Commission Meeting Held On 11/22/2016

Documents:

ITEM III. DRAFT_HPC MINS_11-22-16.PDF

IV. New Business

a. Ready For Action – One (1) Item

1. Celebrate Wildwood Event - 2017

Documents:

ITEM IV.A.I. CELEBRATE WILDWOOD_POIMAP.PDF

b. Not Ready For Action – One (1) Item

1. H.R. 1-16 Ryan L. And Katherine C. Dingley, 16002 Surfview Court, Wildwood, Missouri, 63040

A request to place a single-family dwelling, which is located at 2550 Eatherton Road (Locator Number 24V530032), known as *The Cottage in Wildwood*, c. 1918, per St. Louis County Tax Records and City of Wildwood's Historic Building Inventory [Survey 2014-15, Page 50 of 298], on the City's Historic Register. This tract of land is zoned C-2 Shopping District. The property owners submitted an application to place this building onto the City's Historic Register with the intent of its reuse as a retail business/restaurant, with possible waivers to and/or incentives for such, which can only be considered by the City Council, if historic preservation goals are met. **(Ward Eight)** ***Public Hearing was held on 11/22/2016.***

V. Old Business

a. Ready For Action – No Items

b. Not Ready For Action – Three (3) Items

1. An Offer From Mary Guise To Sell To The City Of Wildwood The Original Logs From The Heege-Boxwood Log Cabin. (Wards - All)

2. Services From Rosener Nursery & Landscaping, Inc. For Design And Fabrication Of A New Sign For Kohn Park [Originally Presented For The Centaur Historic Marker Sign Post]. (Ward One)

3. Discussion On Archiving Documents From The City's Incorporation That Are Currently Being Stored At Old Pond School And City Hall. (Wards - All)

VI. Review Of Proposed Zoning/Plats/Site Development Plans/Demolition Requests - No Items

VII. Projects-Initiatives-Efforts Updates

- **Celebrate Wildwood 2017**
- **Historic Marker Program**
- **Historic Preservation Training & Workshops for 2017**
- **CLG Annual Report**
- **City Projects' Updates**

1. **Al Foster Memorial Trailhead**
2. **Belleview Farms**
3. **Manchester Road Streetscape Project – Phase 3**

- **Essen Log Cabin**
- **Pond Inn**
- **Cemetery Update**

Documents:

ITEM VII. PROJECTS-INITIATIVES-EFFORTS UPDATES REPORT.PDF
ITEM VII.A. GROVER HISTORIC MARKER PLAN SHEET.PDF
ITEM VII.B. HPC TRAINING INFORMATION.PDF
ITEM VII.C. BELLEVIEW FARMS.PDF
ITEM VII.D. POND INN.PDF

VIII. Executive Session – One (1) Item For Consideration

a. Closed Session Pursuant To RSMO 610.021(2) 1994/Lease, Purchase, Or Sale Of Real Estate

IX. Closing Remarks And Adjournment

Note: The Historic Preservation Commission will consider and act upon these matters listed above and any such others as may be presented at the meeting and determined appropriate for discussion at that time. The City of Wildwood will provide reasonable accommodations for persons attending public meetings. Requests for reasonable accommodations should be made by contacting Laura Rechtin, Deputy City Clerk at 636-458-0440 or email at laura@cityofwildwood.com at least 48 hours prior to the start of the meeting.

CITY OF WILDWOOD
RECORD OF PROCEEDINGS

MEETING OF THE HISTORIC PRESERVATION COMMISSION
CITY HALL – COMMUNITY ROOM
16860 MAIN STREET
WILDWOOD, MISSOURI 63040
November 22, 2016

I. Welcome and Roll Call

Meeting: Tuesday, 11/22/16, 6:43 p.m., City Hall, Community Room.
Attending: Acting Chair Barth, Commissioner Rosener, Commissioner Jeter, Alternate Thompson, Commissioner Wojciechowski [arrived after roll call at 6:57], Council Member Liaison Cullinane, Council Member Liaison DeHart, and Planning and Zoning Commission Liaison Gragnani
Absent: Commissioner Sahm and Commissioner Long
Staff: Director of Planning Joe Vujnich and Senior Planner Terri Gaston

II. Opening Remarks and Chair Comments

Acting Chair Barth welcomed everyone in attendance to tonight's meeting and thanked those members that also attended the Historic Markers ceremonies for Fox Creek and Centaur [Barth, Rosener, Jetter, Thompson, Cullinane, Gragnani, Vujnich, and Gaston]. The Commission also thanked staff members for accommodating dinner, between the ceremonies and the regular session, this evening.

A motion made by Commissioner Rosener, seconded by Commissioner Jetter, to amend the agenda and proceed with Item VI.a.i 19305 Jaeger Farms Drive Demolition Request, as the first item of discussion. The motion passed unanimously and the agenda was modified accordingly [4-0].

III. Review of Proposed Zoning/Plats/Site Development Plans/Demolition Requests

a. Ready for Action – One (1) Item

i. 19305 Jaeger Farms Drive (Locator Number 23Y440043), owned by Richard and Rebecca Vestal, c/o Kevin Miller, Work Horse Construction Group. The single-family dwelling contains the original log-cabin home and was constructed in 1880, according to St. Louis County Real Estate Records. A Zoning Authorization for the dwelling's demolition was submitted to the Department of Planning on November 15, 2016. (Ward One)

The Commission discussed the timeframe in which to hold a site visit to this property to consider the demolition request. The date was set for December 15, 2016, at 3:30 p.m.

b. Not Ready for Action – No Items

The Commission took a short break at 6:57pm, then reconvened the meeting at 7:02.

IV. New Business

a. Ready for Action – One (1) Item

i. Public Hearing – H.R. 1-16 Ryan L. and Katherine C. Dingley, 16002 Surfview Court, Wildwood, Missouri, 63040 - A request to place a single-family dwelling, which is located at 2550 Eatherton Road (Locator Number 24V530032), known as *The Cottage in Wildwood*, c. 1918, per St. Louis County Tax Records and City of Wildwood's Historic Building Inventory [Survey 2014-15, Page 50 of 298], on the City's Historic Register. This tract of land is zoned C-2 Shopping District. The property owners submitted an application to place this building onto the City's Historic Register with the intent of its reuse as a retail business/restaurant, with possible waivers to and/or incentives for such, which can only be considered by the City Council, if historic preservation goals are met. (Ward Eight)

Chair Barth called the Public Hearing to order and provided the Commission and audience an outline of procedures for such, then Senior Gaston read the request into the record. Director Vujnich noted the pre-conference held in October briefed the Commission on the petitioners' request for placing the dwelling, known as 'The Cottage in Wildwood,' circa. 1918, on the City's Historic Registry. The petitioners wish to repurpose the existing historic home into a retail/restaurant business; tonight's hearing was held for the benefit of the public to comment on such request, which would be followed by the Department's Information Report to the Commission at a future meeting. Senior Planner Gaston presented a Powerpoint slideshow, which described pictures taken of the surrounding area and the subject dwelling and accessory structures.

The petitioners, Ryan and Kathy Dingley, who have lived in Wildwood for the past six (6) years, believe this historical area in the Town Center provides a wonderful opportunity for their proposed wine shop/tapas bar. The emphasis would be on providing specialty wines, with a small menu and outdoor seating. The existing deck would be replaced with a large patio and extensive landscaping. It was their intent to keep the building as authentic as possible, retaining the bungalow style, and maintaining the characteristics of the area's

other businesses in historic structures, such as The Porch and Imogene's Tea Room.

The Commission congratulated the petitioners for their initiative in seeking the City's Historic Register first, proceeding with rezoning [i.e. C-2 to C-8] consideration thereafter. Other discussion items included maintaining historical accuracy of the bungalow style during renovations, careful selection of materials [i.e. stone and hardiboard are preferred over vinyl], incentives of being listed on the register [i.e. waivers to roadway improvements and/or parking requirements]. The latter of these was commented upon by Mr. Jim Schmidt, 2448 Eatherton Road, noting this roadway is rather narrow, but heavily utilized by the area's businesses, which draw many patrons and results in parking issues. Director Vujnich responded by ensuring pedestrian improvements would be made along the west side of right-of-way, given the existing pavement is situated more towards the eastern edge of it. Parking would be closely examined and dependent upon rezoning requirements.

There being no other public comments, Chair Barth closed the hearing at 7:47 p.m.

b. Not Ready for Action – No Items

V. Old Business

a. Ready for Action – One (1) Item

i. Discussion on archiving documents from the City's incorporation that are currently being stored at Old Pond School and City Hall. (Wards - All)

Senior Planner Gaston referred to the information, provided as part of the Commission's packet, complied on document imaging services, which resulted in identifying twenty-one (21) companies located in the St. Louis Metro Area. However, after contact with each, only eight (8) of them do actual document handling and scanning, while the others consisted of storage facilities, shredding/disposal of documents, software for 'DIY' scanning, and one legal firm regarding interpretation of documents.

Of the eight (8) companies researched, only two (2) were able to provide a quote: Xact Data Discovery and Data Dash Inc., the latter having a representative present at tonight's meeting to brief the Commission on the provided quote and answer any questions they may have regarding such. Ms. Gaston introduced Jennifer Thomas, Senior Account Executive for DDI.

Ms. Thomas noted DDI has been in the business of technology solutions since 1991, providing top-quality service. Their document imaging follows a double-check standard for quality, clarity, and a high level of handling controls. DDI can provide different mechanisms for uploading and storage of documents [i.e. CD, DVD, hard-drive], as well as set-up of a general repository for accessibility.

Discussion among the Commission, including Pat Koslowski, followed with regard to determining what should be scanned, such as pulling out only Wildwood historical data from publications versus scanning the entire publication and the time involved in preparing and indexing the documents for scanning, while eliminating the duplicate information. Ms. Koslowski provided staff a follow-up email to the Department, requesting no action at this time [*copy attached*].

b. Not Ready for Action – Two (2) Items

i. An offer from Mary Guise to sell to the City of Wildwood the original logs from the Heege-Boxwood Log Cabin. (Wards - All)

ii. Services from Rosener Nursery & Landscaping, Inc. for design and fabrication of a new sign for Kohn Park *[originally presented for the Centaur Historic Marker sign post]*. (Ward One)

VI. Approval of Meeting Minutes from the Historic Preservation Commission.

A motion was made by Commissioner Rosener, seconded by Commissioner Jetter, to approve the Commission's regular monthly meeting minutes for October 27, 2016, as prepared by staff. Acting Chair Barth declared the motion approved, after an affirmative and unanimous voice vote [5-0].

VII. Projects-Initiatives-Efforts Updates

- **Celebrate Wildwood 2017**
- **Historic Marker Program**
- **Historic Preservation Training & Workshops**
- **City Projects' Updates**
  - **Al Foster Memorial Trailhead Project**
  - **Belleview Farms - Master Plan**
  - **Connector Trail along Meramec River**
- **CLG Report – first draft review**
- **Other**

Director Vujnich noted the spreadsheet on event feedback regarding the **Celebrate Wildwood Event** was completed and provided as part of this project update. Also included is a summary of the Points of Interest from 2014-2016, as well as a draft outline of new locations for 2017. This list consists primarily of public schools [elementary (4), middle (3), senior and college levels (2)], the Wildwood Family YMCA, and Rock Bethel Church – the latter of which was established during the timeframe for Chapter 2 of the Wildwood History Book and the focus for the 2017 event [1776 – Revolutionary War to 1865 – Civil War]. Again, it was noted that work sessions could be eliminated by simply holding regular meetings a ½-hour earlier for discussion regarding the event. It was proposed to begin the earlier meeting timeframe after the New Year, dependent upon the number of agenda items.

The unveiling ceremonies for the Fox Creek and Centaur **Historic Markers** were held earlier today and well-attended by most of the Commission. The Director will arrange a meeting with Tom and Lisa Kelpe, after the holidays, for location considerations for the Kelpe Historic Marker. Easement documents for Grover and Melrose signs are underway by the City Attorney and staff, while the Orrville Marker is still being considered as part of the bridge replacement project.

Historic Preservation Training & Workshops: As a reminder, the State's Annual Historic Preservation Conference, typically held annually in October, was moved to May 2017, due to scheduling issues with the City of Hannibal, Missouri. Again, Director Vujnich would welcome the entire Commission attending it as a group. The annual 2017 Missouri Certified Local Governments (CLG) Forum, held in Jefferson City, will be on April 7th.

Another draft of the annual **CLG Report** was provided to the Commission, this time in the re-formatted layout for the 2015-16 version, which also includes four (4) new sections not previously requested by SHPO. Senior Planner Gaston requested the Commissioners' reviews of the highlighted sections, pertinent to their individual backgrounds and activities, providing the Department any changes no later than December 22nd to meet the submittal deadline on December 30th.

Director Vujnich provided detailed updates, per his report dated 11/22/2016 [*reference page 2*]. In summary: **Al Foster Memorial Trailhead** - majority of project completed, with the restroom facility being installed January/February 2017; **Belleview Farms** - Planning and Parks Committee will be requesting lease extension for Phase 1 improvements; the **Manchester Road Streetscape Project – Phase 3** – design and engineering for this last section is complete and easements and/or dedication requests to abutting property owners are underway by staff.

Director Vujnich talked with Phillip Karst regarding the last considerations to be made for the donation of the **Essen Log Cabin**, which include contractor selection for re-assembly, site selection for it re-assembly, and deciding its future use, once completed.

The City was made aware of the **Pond Inn** sale to RL Jones Properties. While no plans have been submitted to the City, any re-use of this property would require sanitary connection to MSD and Commission consideration to building changes.

The appraisal for the **Wild Horse Creek Road Historic Cemetery** was under contract, as of mid-October, with a nominal scope-of-work change for further research by Jeff Noyes of the August Group Inc.

Old Slave Cemetery Site appears to have not been affected by the December 2015 flood event.

VIII. Closing Remarks and Adjournment

There will be no regular monthly meeting of the Commission for December; however, as discussed earlier during tonight's meeting, the Commission will hold a site visit at 19305 Jaeger Farms Drive, regarding the demolition request, on December 15, 2016, at 3:30 p.m.

The next regular monthly meeting of the Commission would be held on Thursday, January 26, 2017.

Dr. Gragnani noted the Wildwood Car Club would hold it last Car Cruise of 2016 on December 3rd, meeting at Big Chief Roadhouse Grill, on Manchester Road, aka *Historic Route 66!*

Director Vujnich wished all a Happy Thanksgiving and hoped everyone enjoys the holiday season!

A motion was made by Commissioner Rosener, seconded by Alternate Thompson, to adjourn the meeting. The meeting adjourned at 9:18 p.m. with a unanimous voice vote [5-0].

Terri Gaston

From: Don Kozlowski <dkozandpat@aol.com>
Sent: Tuesday, December 06, 2016 6:12 PM
To: Joe Vujnich
Cc: Terri Gaston
Subject: Incorporation History Project

Hi, Joe and Teri,
Just a brief heads up to let you know that this project is definitely not ready to begin. The City should put on hold any consideration of hiring anyone at this time. The "sorting" has really just begun. I would estimate that it will be next year before any action on your part will be necessary.
Sue and I may come by some day next week just to look at what is there. I'll let you know as soon as I do when that might be.
Thanks,
Pat Kozlowski

WILDWOOD HISTORIC COMMUNITIES & POINTS OF INTEREST SUMMARY

2014 List: Introduction of the Historic Communities & the Historic Marker Program

- Centaur
- Fox Creek
- Glencoe
- Grover
- Hollow
- Kelpe
- Melrose
- Monarch
- Orrivlle
- Pond
- Westland Acres

2015 List of POI:

1. Babler State Park
2. Big Chief Roadhouse
3. Community Park
4. Equine Assisted Therapy [E.A.T.]
5. Greensfelder Co. Park
6. Hidden Valley Ski
7. LaSalle Institute
8. Metro West FPD HQ
9. Rockwoods Range
10. Rockwoods Reservation
11. Stovall's Grove
12. Walbash, Frisco, & Pacific RR
13. Wildwood Historical Society
14. The Wyman Center/Camp Wyman

Original 2016 List of POI:

a. Marianist Retreat
b. Bluffview Park
c. Elementary Schools: Fairway, Green Pines, Babler, and Pond
d. Middle Schools: Wildwood, Rockwood Valley, LaSalle Springs
e. Lafayette High School
f. Old Pond School & Park – Rt. 66
g. St. Louis Community College
h. YMCA
i. Pond Athletic Association
j. Anniversary Park
k. Glencoe City Park
l. Al Foster Memorial Trail
m. Rock Hollow Trail [Zombie Road]
n. Bethel Rock Church
o. Bethel Church – Rt. 66
p. City Hall [16962 Manchester (now Imogene's); 183 Plaza; 16860 Main Street] - Rt. 66

[POI's removed from list]

Revised 2016 List of POI:

15) Al Foster Memorial Trail
16) Anniversary Park
17) Bethel Church – on Route 66! *[Rock Bethel Church, removed, to be highlighted next year]*
18) Bluff View Park & Trail
19) Glencoe City Park
20) Marianist Retreat Center
21) Old Pond School & Park – on Route 66!
22) Pond Athletic Association
23) Rock Hollow Trail
24) Wildwood Municipal Building
25) Wildwood's *Original City Hall* – Imogene's Tea Room – on Route 66!

WILDWOOD HISTORIC COMMUNITIES & POINTS OF INTEREST SUMMARY

2017 List of POI [*10-15?*]:

26) Elementary Schools:
    a. Fairway
    b. Green Pines
    c. Babler
    d. Pond
27) Middle Schools:
    a. Wildwood
    b. Rockwood Valley
    c. LaSalle Springs
28) Lafayette Senior High School
29) St. Louis Community College
30) YMCA
31) Bethel Rock Church [*original location established in 1858; congregation then moved into Franklin Co. prior to Civil War, & the surviving church building was dedicated in 1875 ...*]
32) _____
33) _____
34) _____
35) _____

ROCKWOOD R-6 SCHOOL DISTRICT'S WILDWOOD AREA ELEMENTARY SCHOOLS

SOURCE: http://www.rsdmo.org

- **BABLER** - Serves 563 students, with a 17:1 student/teacher ratio. This National School of Character is located at **1955 Shepard Road, Wildwood, MO 63038, #: (636) 733-1175,** on more than 16 acres. http://www.rsdmo.org/babler
- **FAIRWAY** - Serves 485 students, with a 16:1 student/teacher ratio, and Wildwood's newest school, which was built in 2004. It is located at **480 Old Fairway Drive, Wildwood, MO 63040, #: (636) 733-4175,** on 17 acres. http://www.rsdmo.org/fairway
- **GREEN PINES** - Serves 398 students, with a 17:1 student/teacher ratio. This Blue Ribbon School of Excellence is located at **16543 Green Pines Drive, Wildwood, MO 63011, #: (636) 733-4150,** on approximately 12 acres. http://www.rsdmo.org/greenpines
- **POND** - Serves 352 students, with a 15:1 student/teacher ratio. This Blue Ribbon School of Excellence is located at **17146 Manchester Road, Wildwood, MO 63040, #: (636) 733-3225,** on approximately 16 acres. http://www.rsdmo.org/pond

ROCKWOOD R-6 SCHOOL DISTRICT'S WILDWOOD AREA MIDDLE SCHOOLS:

- **ROCKWOOD VALLEY** - Serves 720 students, with a 15:1 student/teacher ratio. This school is both a Blue Ribbon School of Excellence and a Missouri Gold Star School, located at **1220 Babler Park Drive, Wildwood, MO 63038, #: (636) 733-4270,** and situated on more than 68 acres! http://www.rsdmo.org/rvalley
- **LASALLE SPRINGS** - Serves 899 students, with a 17:1 student/teacher ratio. Listed as a Blue Ribbon School of Excellence, it is located at **3300 Highway 109, Wildwood, MO 63038, #: (636) 733-4200,** on approximately 28 acres. http://www.rsdmo.org/lasalle
- **WILDWOOD** - Serves 701 students, with a 16:1 student/teacher ratio. Rated as a Top Performing Middle School, it is situated upon 30 acres located at **17401 Manchester Road, Wildwood, MO 63038, #: (636) 733-4230.** http://www.rsdmo.org/wildwood

ROCKWOOD R-6 SCHOOL DISTRICT'S WILDWOOD AREA HIGH SCHOOL

- **LAFAYETTE** - Serves 1,924 students, with an 18:1 student/teacher ratio. Listed as a Top Ten Renaissance School for 15 years, it is located at **17050 Clayton Road, Wildwood, MO 63011, #: (636) 733-4100,** on more than 51 acres! http://www.rsdmo.org/babler

ST. LOUIS COMMUNITY COLLEGE – WILDWOOD CAMPUS

2645 Generations Drive, Wildwood, MO 63040, #: (636) 422-2000

http://www.stlcc.edu/ww/

The newest Community College in the St. Louis District, built in 2007, provides more than 85,000 square feet of student facilities on more than 132 acres! It is conveniently located in the heart of Wildwood, near the Town Center Area, yet nestled among native prairie and woodlands. It was the first community college in the Midwest, and Wildwood's first building, to receive the United States Green Building Council's Leadership in Energy and Environmental Design (LEED) Certification. The LEED Rating System is the nationally accepted benchmark for the design, construction, and operation of high performance green buildings. Gold certification recognizes the District for a high level of energy efficiency, site sustainability, and enhancement to both indoor and outdoor environmental quality. The campus green features include a green roof, a lighting management system, with increased natural light throughout the building, and systems designed to ensure high indoor air quality. STLCC-Wildwood is also a TOBACCO-FREE Campus - no consumption of tobacco is allowed on any campus property; this includes the building, grounds, sidewalks and parking lots. The college is committed to maintaining a healthy living and working environment for its students, faculty, staff, and the community. It 'is a "green" campus, built with environmentally-friendly materials and architecture. It was designed to enhance occupant comfort and health, reduce operating costs, conserve natural resources, and reduce each building's impact on the environment and the community.' *Source: stlcc website*

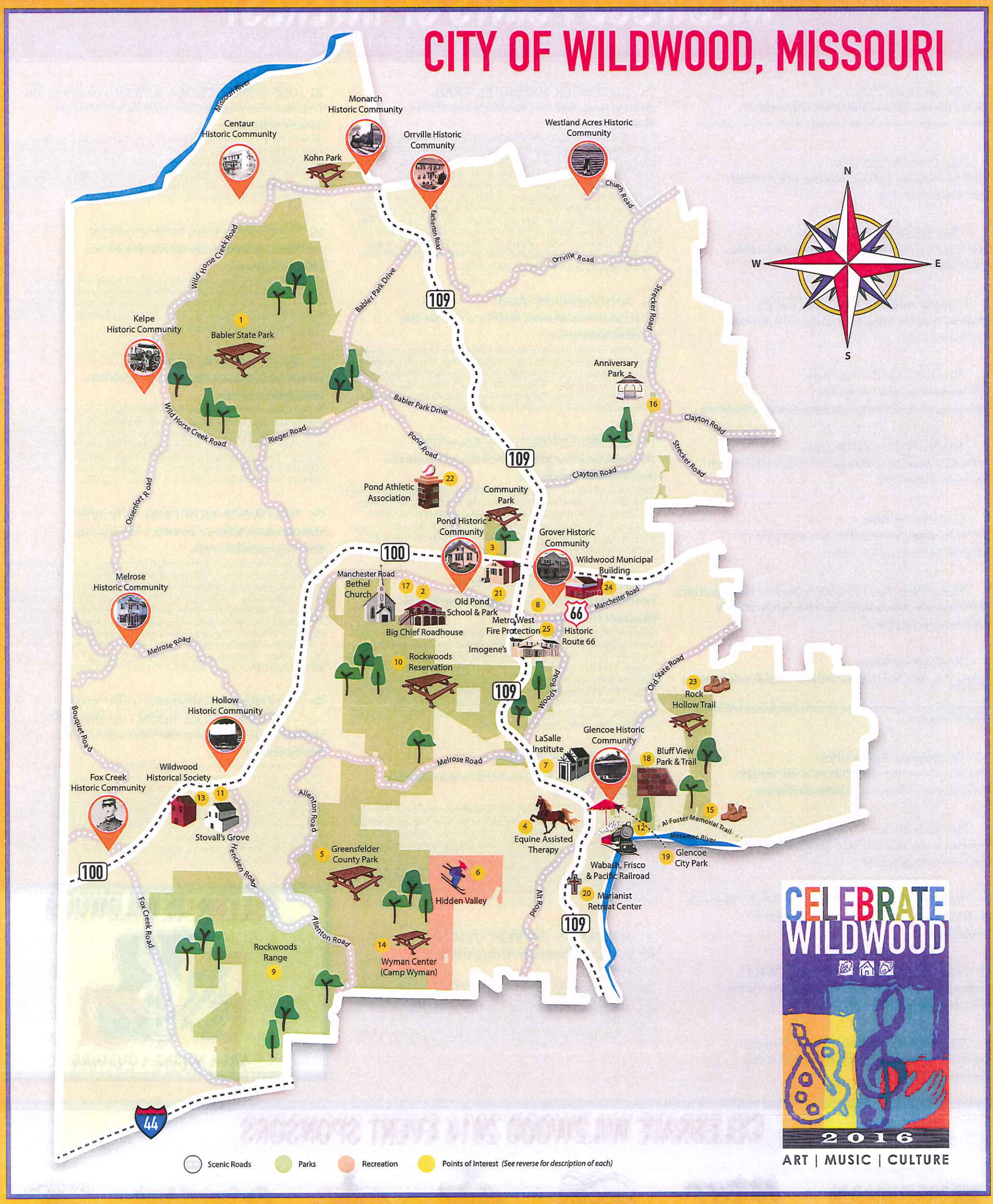
WILDWOOD FAMILY YMCA

2641 Highway 109, Wildwood, MO 63040, #: (636) 458-6636

http://www.gwrymca.org/locations/wildwood-family-ymca

This community facility, built in 2001, is situated upon a parcel of ground over nine (9) acres in size and conveniently situated by Wildwood Square, a commercial/retail center; St. Louis Community College – Wildwood Campus; and the Meadows of Wildwood, a 65-lot, senior-living neighborhood. This facility offers over 20 amenities for members' physical enjoyment, including a large, indoor swimming pool and an outdoor community garden – it is the YMCA; need more be said!?! *Source: gwrymca website*

CITY OF WILDWOOD, MISSOURI



Design by Mincoff Studio 314.628.9163

WILDWOOD HISTORIC COMMUNITIES

Centaur
Generally located on Centaur Road at the Railroad Tracks (Central Midland Railway)

Fox Creek
Generally located on Fox Creek Road, north and south of State Route 100

Glencoe
Generally located at the intersection of State Route 109 and Old State Road

Grover
Generally located along Manchester Road, between State Route 109 and Taylor Road

Hollow
Generally located at State Route 100, and Stovall Lane, by historic Stovall's Grove

Kelpe
Generally located southwest of Babler State Park, at Wildhorse Creek Road and Ossenfort Road

Melrose
Generally located at the intersection of Ossenfort Road, and Melrose Road

Monarch
Generally located at South Eatherton Road, and Centaur Road

Orrville
Generally located at Eatherton Road, north of Highway 109

Pond
Generally located at the intersection of Manchester Road, and Pond Road

Westland Acres
Generally located at Strecker Road, and Church Road

WILDWOOD POINTS OF INTEREST

[A continuation from the 14 Points of Interest identified in 2015]

1 Babler State Park
800 Guy Park Drive, Wildwood, MO 63005, #: (636) 458-3813
https://mostateparks.com/park/dr-edmund-babler-memorial-state-park

2 Big Chief Roadhouse
17352 Manchester Rd, Wildwood, MO 63038, #: (636) 458-3200
http://www.bigchiefstl.com/

3 Community Park-Wildwood
2153 State Route 109, Wildwood, MO 63038, #: (636) 458-0440
www.cityofwildwood.com

4 Equine Assisted Therapy (E.A.T.)
3369 State Route 109, Wildwood, MO 63038, #: (314) 971-0605
http://eatherapy.org/

5 Greensfelder County Park
4515 Hencken Road, Wildwood, MO 63069
http://www.stlouisco.com/ParksandRecreation/ParkPages/Greensfelder

6 Hidden Valley Ski Resort
17049 Hidden Valley Drive, Wildwood, MO 63025, #: (636) 938-5373
http://hiddenvalleyski.com/

7 LaSalle Institute
2101 Rue De LaSalle, Wildwood, MO 63038, #: (636) 938-5374
http://www.lasalleretreat.org/home.html

8 Metro West Fire Protection District Headquarters
17065 Manchester Road, Wildwood, MO 63040, #: (636) 458-2100
http://www.metrowest-fire.org/

9 Rockwoods Range
Parking areas - 5035 Fox Creek Road and 4360 Fox Creek Road, Wildwood, MO 63069
http://mdc4.mdc.mo.gov/applications/moatlas/AreaSummaryPage.aspx?txtAreaID=4649

10 Rockwoods Reservation
2751 Glencoe Road, Wildwood, MO 63038, #: (636) 458-2236
http://mdc.mo.gov/regions/st-louis/rockwoods-reservation

11 Stovall's Grove
18720 Stovall Lane, Wildwood, MO 63039, #: (636) 405-3024
http://www.stovallsgrove.com/

12 Wabash, Frisco, and Pacific (WF&P) Railroad
101 Grand Avenue, Wildwood, MO 63038, #: (636) 587-3538
www.wfprr.com/

13 Wildwood Historical Society (WHS)
18750 State Route 100, Wildwood, MO 63069, #: (636) 458-2860
http://www.wildwoodhistoricalsociety.org/

14 The Wyman Center (Camp Wyman)
600 Kiwanis Drive, Wildwood, MO 63025, #: (636) 938-5245
http://wymancenter.org/

15 AL FOSTER MEMORIAL TRAIL
225 Grand Avenue, Wildwood, MO 63038, #: (636) 458-0440
www.cityofwildwood.com

This 2.5 mile trail was a joint effort between the City of Wildwood, the Missouri Department of Natural Resources, and the St. Louis County Department of Parks and Recreation in 2003. Just south of Glencoe City Park, this chat-surfaced trail runs along the banks of the Meramec River, eastward to Sherman Beach. Trail connections can be made to Hamilton-Carr Greenway directly north of the soon-to-be-improved, 1-acre Al Foster Memorial Trailhead and parking area, Bluff View Trail at mile marker 0.5, Rock Hollow Trail at mile marker 1, and Castlewood State Park via a single-track natural trail. A one-half-mile western extension, including a 194-foot pedestrian bridge over Hamilton-Carr Creek, was completed in 2011 through a partnership between Great Rivers Greenway and the City of Wildwood. Eventually, this trail will extend further south to Route 66 State Park! *Source: Wildwood website*

16 ANNIVERSARY PARK
16511 Clayton Road, Wildwood, MO 63011, #: (636) 458-0440
www.cityofwildwood.com

This 13-acre property is largely consumed by floodplain of Caulk's Creek, which meanders through the majority of it. Completed in 2006, this 1-acre neighborhood park provides a playground, large pavilion, improved restrooms, a drinking fountain, and picnic tables. Nestled in the junction of three (3) City Council Wards, it serves as a premier destination for area families and is bustling with children playing all times of the day! *Source: Wildwood website*

17 BETHEL CHURCH > on Route 66!
17500 Manchester Road, Wildwood, MO 63038, #: (636) 458-2255
http://bethelunitedmethodist.org

"Bethel" means House of God in Hebrew. In 1858, the original Rock Bethel Church was established on Wild Horse Creek Road. In March 1873, a fourteen (14) acre tract of land was purchased for a new church and cemetery on Manchester Road. In April 1875, the original, surviving church was dedicated. Bethel United Methodist Church has been, and remains, one of the centers of community in the City of Wildwood. *Source: Bethel Church website*

18 BLUFF VIEW PARK & TRAIL
1900 Old State Road, Wildwood, MO 63038, #: (636) 458-0440
www.cityofwildwood.com

Since 2014, the City of Wildwood has leased this one hundred (100) acre property from St. Louis County and has completed several improvements to allow for its use. A 2.5 mile single-track natural trail follows a switchback pattern across the property. This park is open to equestrian users, hikers, walkers, runners, bicyclists, and nature lovers and the view from the bluff provides one of the most spectacular vistas in the region. This trail will soon connect to another natural surface trail, currently under construction, which will link this property to the 245-acre Rock Hollow Area, also leased to the City, creating an overall loop of more than eleven (11) miles of fun! *Source: Wildwood website*

19 GLENCOE CITY PARK
505 Washington Avenue, Wildwood, MO 63038, #: (636) 458-0440
www.cityofwildwood.com

This park came about from a series of land acquisitions consisting of thirty-six (36) properties over the course of a decade, mainly due to frequent flooding of the Meramec River. These properties, plus the network of alleys and rights-of-way owned by the City, create its linear configuration encompassing an area of more than fifteen (15) acres. A large playground, with parking lot, a shade structure, picnic tables, restroom facilities, and beautiful landscaping, fencing, and stone piers, were installed in 2005 on a portion of the site. The Al Foster Memorial Trailhead is nestled midway between the park to the north and the river's frontage to the south. *Source: Wildwood website*

20 MARIANIST RETREAT CENTER
4000 Highway 109, Wildwood, MO 63025, #: (636) 938-5390
http://mretreat.org

This 133-acre property, located just south of the Old State Road/Highway 109 junction, was owned by the Alfred Carr Family from 1891 until 1943. The original home, known as MaryCliff, was built in 1905. It was sold to a Benevolent Society, which then sold it to the Society of Mary Province of St. Louis in 1950. Priests and brothers of the Marianist Order have served the spiritual and educational needs of over 75,000 students and adults since 1967. *Source: Marianist Retreat website*

21 OLD POND SCHOOL & PARK > on Route 66!
17123 Manchester Road, Wildwood, MO 63040, #: (636) 458-0440
www.cityofwildwood.com

Listed on the National Register of Historic Places, Old Pond School served the area's elementary students from 1914 to 1951. This 1-acre property was deeded to the City of Wildwood by Lorraine Conreaux, a descendent of the original owners, the Dreinhofer Family. It is a classic one-room schoolhouse, which was authentically restored beginning in 2002 and now serves as a community meeting place and neighborhood park. *Source: Wildwood website*

22 POND ATHLETIC ASSOCIATION
1725 Pond Road, Wildwood, MO 63038, #: (636) 458-9627
http://pondathletic.com

Incorporated in 1963, Pond Athletic Association serves over 2,000 youths each year, training them in the finer points of baseball, softball, and sportsmanship. This all-volunteer, not-for-profit organization has seven (7) well-maintained playing fields located upon twenty (20) acres, which serve enthusiasts from the entire region. *Source: Pond Athletic Association website*

23 ROCK HOLLOW TRAIL
777 Ridge Road, Wildwood, MO 63021, #: (636) 458-0440
www.cityofwildwood.com

The Rock Hollow Area encompasses twenty (20) properties, 275 acres, and is managed through a partnership between the City of Wildwood, the State of Missouri, the St. Louis County Department of Parks and Recreation, and the Great Rivers Greenway District. Beginning at its trailhead, shared with Ridge Meadow Elementary School, a 2.3-mile asphalt trail follows the former Lawler Ford Road, also known to locals as Zombie Road. The trail winds from the ridgeline to the valley, having over 150 feet in relief, and featuring thirteen (13) bridges! *Source: Wildwood website*

24 WILDWOOD MUNICIPAL BUILDING
16860 Main Street, Wildwood, MO 63040, #: (636) 458-0440
http://www.cityofwildwood.com

The third building to house City Hall, and the first to include the Wildwood Police Precinct, was built in 2013. It is the second building in Wildwood to receive LEED Certification, being awarded the Gold Level in Leadership in Energy and Environmental Design. This building is home to the Department of Planning and Parks, the Department of Public Works, the Municipal Court, and Administration, Human Resources, and IT support on the upper level, accessible from the south parking lot; while the Police Department and public meeting rooms are located on the first floor, adjacent to Main Street. In cooperation with the St. Louis Community College – Wildwood Campus, student art is on display in the Community Room of this building. *Source: Department of Planning & Parks; Wildwood website*

25 WILDWOOD'S ORIGINAL CITY HALL - IMOGENE'S TEA ROOM > on Route 66!
16962 Manchester Road, Wildwood, MO 63040, #: (636) 273-6111
http://imogenes.net

This circa-1879 building was built by Frederick Retker and was the only general store in the area for many years. Later, it housed the telephone exchange and, in 1921, under Elmer Funk's ownership, it resumed its role as a general store. The store and picnic grove to the east were important meeting places in the community for many years. It was renovated in 1980 for private offices then became Wildwood's first City Hall in 1995. A major expansion was completed in 2000, doubling the overall building's original size. After the City of Wildwood moved to a larger facility in 2010, the property was purchased by Wildwood resident Clarissa Wheeler and became Imogene's Tea Room. *Source: "Wildwood" by Jo Beck, 2009*

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Wildwood christian church

WILDWOOD

January 26, 2017

Historic Preservation Commission
City of Wildwood, Missouri
16860 Main Street
Wildwood, Missouri 63040

Re: **Updates on Projects---Initiatives---Efforts of the Historic Preservation Commission**

Commission Members:

The Department of Planning has undertaken a number of efforts relating to assignments made by the Commission and is providing updates relative to them. These updates are to ensure the direction of the Commission is met in these regards. The following updated items are provided for the Commission's consideration and discussion at tonight's meeting:

A. **Celebrate Wildwood 2017** - The major efforts for the Historic Preservation Commission relating to this event for 2017 include the following items:

1. Complete ***Chapter Two*** of the *Wildwood History Book*, which will cover the period of time from 1776 to 1865 (Revolutionary War to Civil War). The Department met with Jill Von Gruben on November 28, 2016 to discuss the Wildwood Historical Society's role in the preparation of this chapter. The Society assisted this year in the preparation of the book's first chapter.
2. Create a new theme for this year's booklet cover.
3. Develop new poster boards about preservation efforts in Wildwood, which would be displayed at the Celebrate Wildwood Event in 2017.
4. Prepare new Points of Interest for the Celebrate Wildwood Booklet, including the required mapping of them (draft attached).
5. Participate at the Celebrate Wildwood Event on Saturday, August 26, 2017, at the City/Founders Tent.

B. **Historic Marker Programs** – An update of the remaining markers for installation is as follows:

Community Name	Item Needed to Complete Installation
Kelpe	The marker is ready for installation and the Department of Planning contacted Lisa and Tom Kelpe about final placement details. The Department, given its schedule, has not been able to meet with the Kelpes to investigate locations in this community area of Wildwood.
Grover	The easement area has been defined on this private property, but the Department is seeking a nearby location in public right-of-way (*see plan sheet*).

Melrose	A plan for the use area has been developed where the marker is to be situated, which would include adding asphalt to the existing shoulder, thereby creating a pull-off area abutting the street for safe viewing.
Orrville	The evaluation of locations for the marker's placement is still underway, given concerns about safety and stormwater drainage along the edge of roadway (Eatherton Road).

C. **Historic Preservation Training –** Please see included items that are part of this month's packet.

D. **Certified Local Government Annual Report** - The report, in its new format, was submitted to the State Historic Preservation Office (SHPO) on December 30, 2016.

E. **City Project Updates** - The Department has been working on a number of projects that have ramifications relative to the Historic Preservation Commission. These projects include the following:

1. **Al Foster Memorial Trailhead**: The majority of this project is completed. However, the Department had noted in its November 2016 Update Letter to the Commission, the restroom facility, originally planned for November 2016 timeframe, would now be delayed to a January/February 2017 timeframe.
2. **Belleview Farms**: The Department is glad to note a three (3) year extension to the City's lease of this property with St. Louis County was granted by it. This additional three (3) years does allow the City to explore more options relating to the property and how to fund improvements to it and restore the buildings and structures located upon it. Unfortunately, Michael Allen's (Preservation Research Office) assessment of the existing buildings and structures was not favorable for any of them to be placed on the State or National Registries. Mr. Allen's assessment report is attached to this update letter.
3. **Manchester Road Streetscape Project - Phase 3**: This last phase of the Manchester Road Streetscape improvements has the design and engineering components completed and City staff is now seeking easements and dedications of land area for abutting property owners to accommodate the addition of bicycle lanes, on-street parking, and stormwater infrastructure, along with landscaping. Manchester Road, through this project's boundary, is the original location of Historic Route 66.

F. **Essen Log Cabin** – The Department of Planning is defining the steps to provide the Karst Family, the donors of the Essen Cabin to the City, the verifiable value for the cabin for tax purposes relating to their donation. The Department has contacted Tim Kilby for assistance in this regard. It is the hope of the Department Mr. Kilby can provide the value for these logs, which can then be provided to the Karsts for their use in this regard.

G. **Pond Inn Update** - The Department of Planning was advised at the end of 2016 the Pond Inn had been sold to RL Jones Properties. RL Jones Properties is the current owner of the Wildwood Square Commercial Property, which is located at State Route 109 and New College Avenue. Specific plans have not been discussed with the Department of Planning in regards to the use of the Pond Inn, but the new owners do want to remove the Pond Hall, given its poor condition. In fact, the City was advised the owners had already submitted the paperwork to St. Louis County for this demolition, but such cannot proceed until the City of Wildwood provides its authorization, which always begins with the Historic Preservation Commission's review and action. It is important to note the site will have to be served by public sanitary sewer, given the tract of land is now located in the jurisdiction of the

Metropolitan St. Louis Sewer District (MSD). The new owners of this historic asset may seek incentives from the Commission for its restoration and reuse.

H. **Historic Cemetery Property - Wild Horse Creek Road** - The property owner of this historic cemetery, where Elijah Hamilton may be interned, along with a number of other freed slaves, and the City continue their respective due diligences on its possible sale and the appraiser is working on completing the appraisal of this one (1) acre parcel of ground for review by the owner and the City. The appraiser has contacted the Department on two (2) occasions, since the November 2016 update, seeking more historical information on the property.

I. **Others – Old Slave Cemetery Site –** Item for discussion.

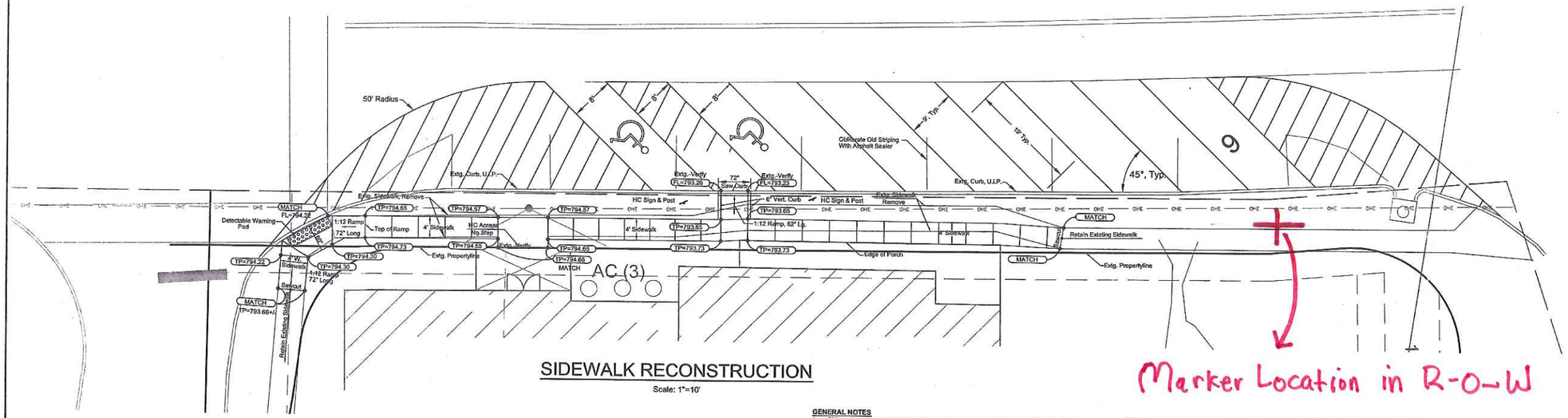
Each of these projects has been discussed or acted upon by the Commission over the course of the last two (2) years and its input improved the outcome of such by its participation. Many of these projects are completed or nearing completion, so as City residents and visitors can benefit from them.

If any of the Commission members should have comments or questions regarding this information, please feel free to contact the Department of Planning and Parks at (636) 458-0440. A presentation is planned on these matters at tonight's meeting. Thank you for your consideration of this information and discussion of the same.

Respectfully submitted,
CITY OF WILDWOOD

Joe Vujnich, Director
Department of Planning and Parks

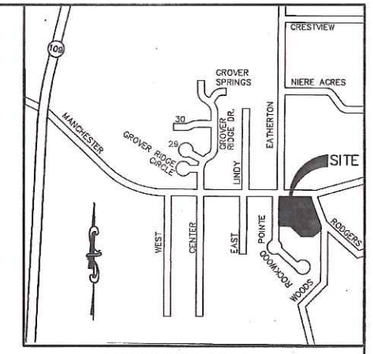
Cc: The Honorable James R. Bowlin, Mayor
The Honorable City Council of the City of Wildwood, Missouri
Ryan S. Thomas, P.E., City Administrator
John A. Young, City Attorney
Terri Gaston, Senior Planner



SIDEWALK RECONSTRUCTION

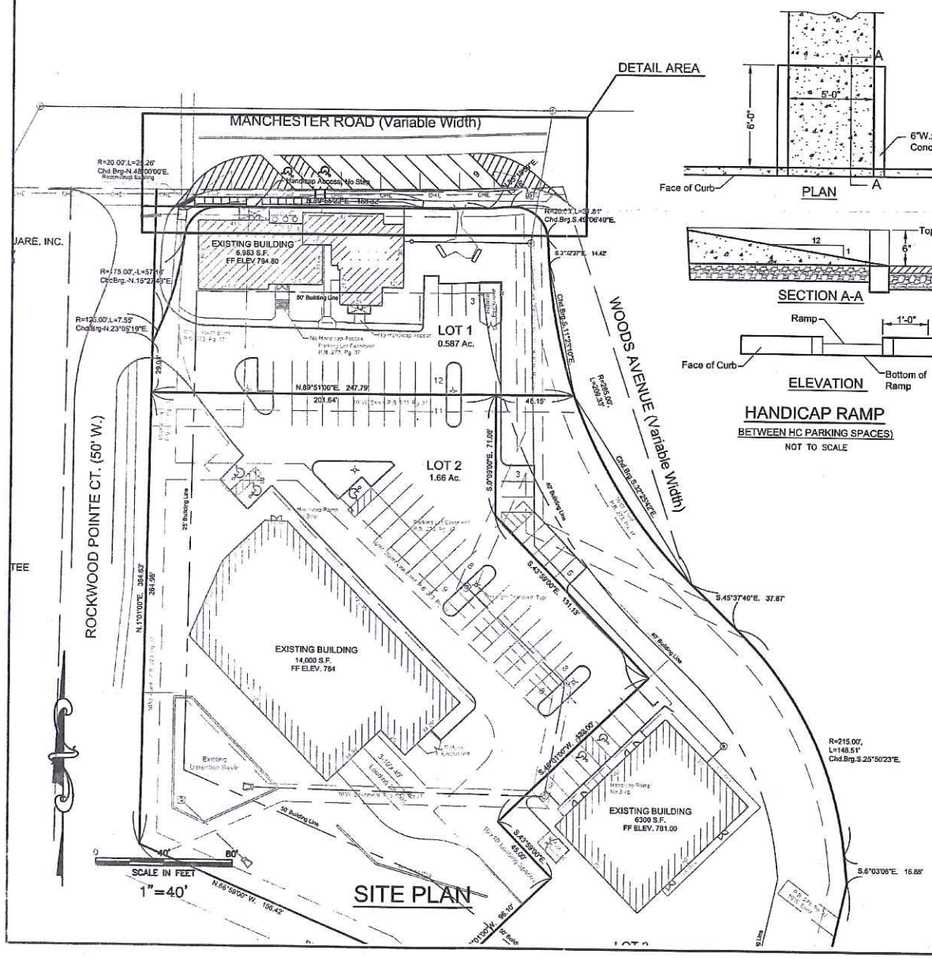
Scale: 1"=10'

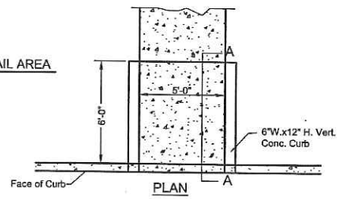
Marker Location in R-O-W

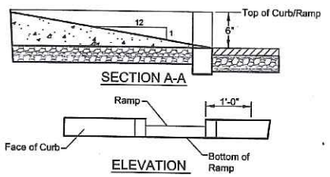


LOCATION MAP

N.T.S.



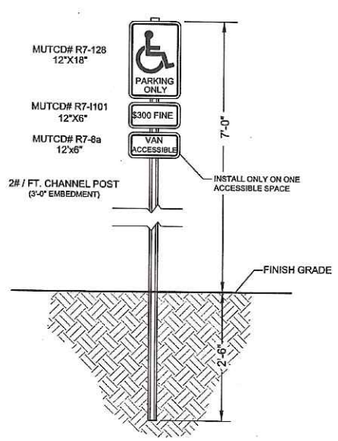




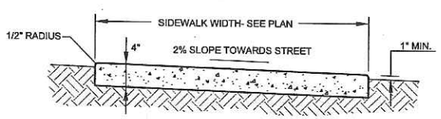
HANDICAP RAMP

BETWEEN HC PARKING SPACES)

NOT TO SCALE



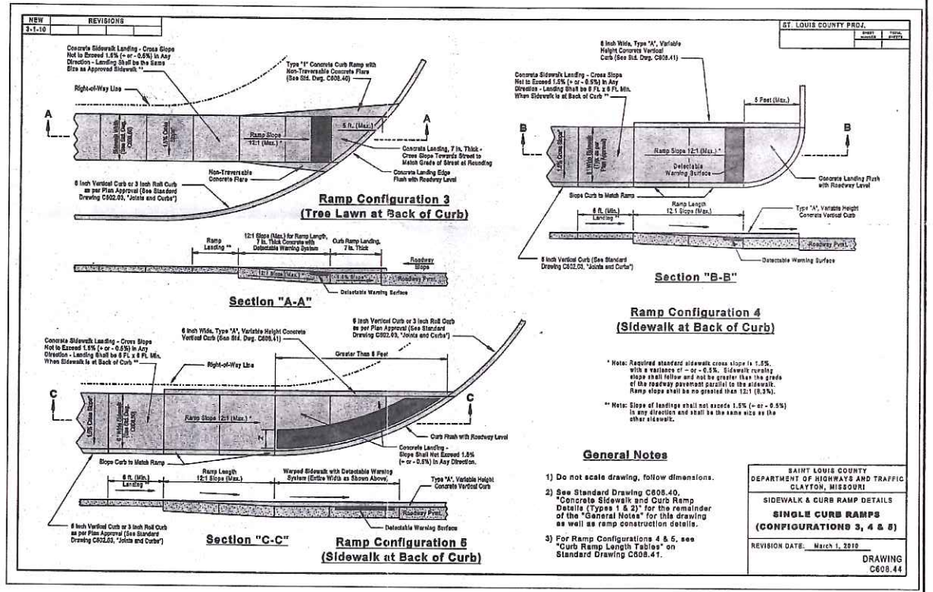
HANDICAP SIGN DETAIL



CONCRETE SIDEWALK

GENERAL NOTES

1. Sidewalk and ramps to be constructed in accordance with Standard Specifications for Road Construction as adopted by the St. Louis County Department of Highways and Traffic, latest edition.
2. Site Benchmark: Top of concrete porch at north entrance door on new portion of building located on Lot #1; Elevation 794.75
3. Existing sidewalk to be removed and disposed of offsite.
4. New construction consists of 140 lineal feet of four foot wide concrete sidewalk, three handicap ramps, two handicap signs with posts, obliteration of striping for existing parking spaces, and restriping angled parking spaces which are located on the south side of Manchester along the frontage of Lot 1.
5. Prior to start of construction, Contractor shall verify the elevations at the base of the two handicap ramps and notify Engineer of any discrepancies with plan elevations.
6. Grass and landscape areas which are disturbed by construction activities shall be restored.



THE GROVE

NORTH 1/2 OF THE NORTHWEST 1/4 OF SECTION 12
TOWNSHIP 44 NORTH, RANGE 3 EAST
CITY OF WILDWOOD, ST. LOUIS COUNTY, MISSOURI

CITY of Wildwood
JAN 17 2012
Dept. of Planning & Public

SIDEWALK PLAN

For: IMOGENES SPACES, LLC
c/o MIKE SHEAHAN COMPANY
2541 POND ROAD, P.O. BOX 70
WILDWOOD, MISSOURI 63040
TEL 636-458-1550

REV.	DATE	DESCRIPTION	BY	CHK'D
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1.				

ORDER NO. 6371
DATE 1-16-12
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1 OF 1

METRON Surveying Co.
14369 OLIVE BOULEVARD
CHESTERFIELD, MO. 63017
314-432-3400 FAX 314-469-6167

STATE OF MISSOURI
MARTY C. HENSON
NUMBER E-19451
REGISTERED PROFESSIONAL ENGINEER
Marty C. Henson, Professional Engineer, E-19451

DOWNTOWN REVITALIZATION Q & A

We have several businesses downtown but most of our buildings are vacant and some are in disrepair. Where do we start? Many communities face this very same situation. It is time to stop ignoring the situation and take action. If you keep doing what you have always done, you will get the same results. Main Street has been around for over 35 years and has helped over 2,000 communities in the United States reverse the downhill slide of downtown activity, investment and pride.

But what is this Main Street? The Main Street Approach® is a common-sense, strategy driven framework that guides community lead revitalization efforts. The Main Street Four-Point Approach® is a comprehensive model focused on the social, economic, physical and cultural assets of a community. It is a community driven, self-reliant organization focused on economic development within the context of historic preservation.

How can we get involved? Contact Missouri Main Street Connection, the state organization to assist Missouri communities in implementing downtown revitalization through a Main Street organization. Missouri Main Street Connection is offering two opportunities in February for communities to learn more about downtown revitalization for their community.

OPPORTUNITY #1

Affiliate Grant Program. This grant is for services over a two-year period to assist a community in starting a Main Street program and implementing the beginning stages of revitalization. Rely on the expertise of the organization leading the efforts on downtown revitalization in Missouri. This grant is a 60/40 grant with Missouri Main Street covering 60% of the costs.

Workshop attendance is required to apply for grant.

Affiliate Grant Workshop

- February 16, 10 am to 1 pm
- Washington, MO
- Workshop is free but an RSVP is required by calling or going on-line.

OPPORTUNITY #2

Main Street Summit. Spend two days with a representative from National Main Street learning about the extraordinary power of Main Street through examples from around the country. The great thing about Main Street is that is works in both small and large communities in rural or city environments.

Attendance by both a city representative and a business/property owner or resident is required.

Main Street Summit

- February 23-24
- Branson, MO
- Registration is free but an RSVP is required by calling 417.334.3014.

MISSOURI MAIN STREET CONNECTION

Registration or more information: MOMainStreet.org or 417-334-3014

Main Street Summit

2
NOV 2016

posted in: Uncategorized | 0

23
Feb
2017

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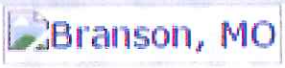
2017

Main Street Summit

Branson, MO



Main Street Summit

February 23-24, 2017

Branson, MO

For committee & board members

elated

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Missouri Main Street Showcase
November 2, 2016
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Main Street Now 2017 Conference
November 2, 2016
Similar post

AFFILIATE GRANT PROGRAM

Affiliate Grant Workshop Schedule for 2017

Who Should Attend?

Any Missouri community interested in a 60/40 Matching Grant for assistance in establishing a Main Street Organization or Downtown Revitalization Program in their historic commercial district should attend this workshop.

This grant workshop will demonstrate:

- The Main Street Philosophy of Revitalization
- How to apply for the grant and criteria
- Application materials and deadline for application

Workshop Schedule

Feb 16, Washington, MO
10am-1pm, Washington City Hall,
405 Jefferson Street

Apr 14, Jefferson City, MO
10am-1pm, Governor Office Building,
200 Madison St., Room 316.

Aug 29, Jefferson City, MO
10am-1pm, Location TBD

#5 Only 5 grant awards will be available in 2017.
There will only be 5 grants awarded in 2017 so don't let this opportunity pass you by. All potential applicants must attend one workshop.

? Lunch and Learn
There is an optional Lunch and Learn with an experienced Main Street representative sharing success stories. $13 fee to cover a box lunch.

Main Street has been the single most effective downtown revitalization program in the country.
-Donovan Rypkema, principal of PlaceEconomics

"Over the past 13 years that I have worked in our downtown district, there have been several groups that tried to revitalize our downtown but were never successful. The formula provided by MMSC provides the structure that enables a group of people to work together. Structure is the key to the success of any project and MMSC Affiliate Grant program provides just that."
~ Cindy Miller, President of Blue Springs Downtown Alive!, *a 2011 Affiliate Grant Recipient Community.*

MISSOURI MAIN STREET CONNECTION

AFFILIATE GRANT PROGRAM

Limited Seating! Only 5 grants awarded in 2017. Register Today!

Registration Form

Please register me for:

_____Feb 16 Workshop in Washington, MO
_____Apr 14 Workshop in Jefferson City, MO
_____Aug 29 Workshop in TBD

Registration is free but an RSVP is required.

Name

Organization

Address

City Zip Code

Phone E-mail Address

_____ Yes, I will attend the Lunch and Learn. My $13 payment is enclosed.

The Lunch and Learn is a great opportunity to hear about the power of Main Street from an experienced program. Hear from those who have seen the success in their community.

For questions or to RSVP, please contact Bobbie Mills by phone at 417.334.3014 or via e-mail at bmills@momainstreet.org. You may also register on-line at MOMainStreet.org.

Or mail this registration form to MMSC, PO Box 1066, Branson, MO 65615

Affiliate Grant Workshops are supported by the

MISSOURI Department of Economic Development

MISSOURI MAIN STREET CONNECTION

Terri Gaston

From: Missouri History Museum <mohistory@mvsend.com>
Sent: Thursday, December 15, 2016 10:01 AM
To: Terri Gaston
Subject: 2017 🚌 Group Tour Opportunities at MHM!

View in browser Forward to a Friend!

Missouri History Museum

GROUP OUTINGS eNewsletter

2016 Has Been a Record-Breaking Year

Thanks in large part to incredible tourism partners like you, the Missouri History Museum is on track to welcome more than 500,000 visitors this year alone. This means 2016 will be our **third consecutive year** with an annual attendance of over 400,000—a first in our 150-year history! Click here to read the recent *St. Louis Post-Dispatch* story about our blockbuster attendance.

We're excited for a new year full of fascinating exhibits and programming. Coming up, an in-depth look at the local civil rights movement and large-scale panoramic photography. And if you haven't already, be sure to visit *Route 66: Main Street Through St. Louis*—it's one of our most popular exhibits yet. **We can't wait to see you and your groups here at the Museum in 2017!**

Tami Goldman

Tami Goldman, Tourism and Group Sales Manager

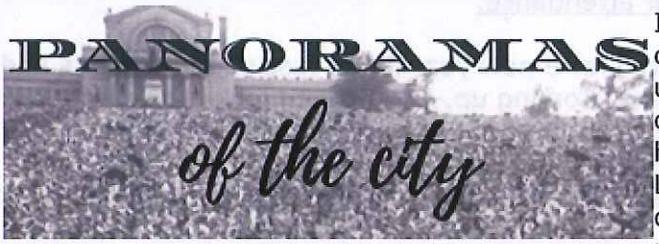
OPEN NOW THROUGH JULY 16, 2017!

Known as the Main Street of America, Route 66 has played an important role in American history and myth. But the famous road also has a story to tell about the St. Louis region and how it has changed. Join us for *Route 66: Main Street Through St. Louis* and explore the local history of this world-famous highway. Learn about the motels, custard stands, and tourist traps that could be found along the road as it passed through St. Louis. See artifacts ranging from gas pumps to roadside signs, and even "drive" Route 66 yourself! **LEARN MORE.**

OPENING MARCH 11, 2017

Examine the local civil rights movement and St. Louis's leading role in advancing the cause of racial justice. From ground-level activism to groundbreaking court rulings, St. Louis has been front and center in contesting racial inequities. *#1 in Civil Rights* uncovers a history that's compelling and complex, but that all too often has been overlooked in the telling and retelling of the larger national narrative. That narrative includes four precedent-setting Supreme Court civil rights cases that originated in St. Louis—possibly the most to ever reach the High Court from one source. **LEARN MORE.**

OPENING SEPTEMBER 2, 2017



In the first half of the 20th century, St. Louis photographers used panoramic photography to capture moments from our city's history—everything from Charles Lindbergh's homecoming celebration and baseball games to protests and disaster relief. The stunning, immersive images they created celebrate St. Louis's highs, acknowledge its lows, and document the day-to-day lives of its people. *Panoramas of the City* will use over 50 of these photographs to bring St. Louis's history to life. Through these images—several of which will be blown up so large that you'll feel like you can walk right through them—you'll be able to experience St. Louis's past in a way you never have before. **LEARN MORE.**

CUSTOMIZE YOUR GROUP EXPERIENCE!

CHOOSE ONE OR MORE OF THE FOLLOWING:

- Exhibit tours
- Private theatre performances
- Curator or historian talks
- Lunch and/or catered events
- Library and Research Center experience

Click here to book now. For more information about group options, special exhibits, or itinerary creation, email Tami Goldman.

Lindell & DeBaliviere in Forest Park
Saint Louis, Missouri 63112
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48 PRESERVATION BRIEFS

Preserving Grave Markers in Historic Cemeteries

Mary F. Striegel, Frances Gale, Jason Church, &
Debbie Dietrich-Smith

National Park Service
U.S. Department of the Interior

Technical Preservation Services

Cemeteries found across the country are not only places of burial, but they also provide a vivid record of community history. Whether large or small, well maintained or neglected, historic cemeteries are an important part of our cultural landscape. The vast richness of expression through form, decoration and materials informs our understanding of the individuals buried in historic cemeteries and their cultural significance.

While cemeteries are often considered to be perpetual, their most prominent feature—the grave markers—are not. They weather, naturally decay, often are poorly maintained and repaired and, on occasion, are vandalized (Fig. 1). Grave markers are usually noteworthy not only for their inscriptions but also for their craftsmanship. Exceptional markers are considered works of art.

This Preservation Brief focuses on a single aspect of historic cemetery preservation—providing guidance for owners, property managers, administrators, in-house maintenance staff, volunteers, and others who are responsible for or are interested in preserving and protecting grave markers. Besides describing grave marker materials and the risk factors that contribute to their decay, the Brief provides guidance for assessing their conditions and discusses maintenance programs and various preservation treatments.

Figure 1. Sandstone and slate grave markers in the Ancient Burying Ground in New London, CT, display a variety of weathering conditions. Markers in the cemetery date from the mid-17th to the early 19th centuries. Photo: Jason Church.

Also identified are a number of excellent references that address materials used in all grave markers, including several other Preservation Briefs (listed in Additional Reading). This Brief highlights particular issues that should be considered with historic grave markers.

Types of Traditional Grave Markers

The great variety in the types of grave markers is a fascinating aspect of the study and appreciation of historic cemeteries. Three broad categories can be used to describe grave markers—(1) single-element, (2) multiple-element, and (3) structures. Single-element grave markers are stone, cast iron, or wood elements that are set in a vertical position or placed as a horizontal slab on the ground (Fig. 2). Early examples of this simplest type of grave markers are field stone and basic wooden or wrought iron crosses, with the name of the deceased person scratched into or engraved on the marker. Often, these rudimentary grave markers are overlooked, significantly deteriorated, or lost. Vertical stone slabs and large stone ledgers laid horizontally over the gravesite are more sophisticated examples of this type.

Multiple-element grave markers are found in a number of different forms. In the most typical form, a grave marker would consist of two stones—an upper headstone placed on top of a base stone. The upper headstone may be secured in a number of different ways to the base. In the simplest of forms, the upper stone was placed on the base, set in a bed of mortar on top of the base, or joined with pins and mortar. With a "tab-and-

Figure 2. These mid-19th century, single-element stone grave markers in the Grove Cemetery in Bath, NY, are set in a vertical position. Photo: Jason Church.

slot" grave marker, the tabbed upper stone was set in a slotted base (Fig. 3). More common today, the upper headstone is secured with a technique that uses small spacers set on the base and a setting compound. This technique or one that uses an epoxy adhesive may be found on older markers where the stones have been reset.

Figure 3. A multi-element grave marker from the early 19th century in the St. Michael's Cemetery, Pensacola, FL, consists of a vertical element with tabs (left image) into a slotted base (right image). Photo: Fran Gale.

Stacked-base grave markers use multiple bases to increase the height of the monument and provide a stable foundation for upper elements. Tall, four-sided tapered monuments, known as obelisks, are typically placed on stacked bases. Columns or upright pillars have three main parts – a base, shaft, and capital. Multiple-element grave markers may also include figurative or sculptural components. Traditionally, stacked base grave markers were set on lead shims with mortar joints or with lead ribbon along the outer edges.

Grave markers can also be engineered structures. Examples of grave marker structures include masonry arches, box tombs, table tombs, grave shelters, and mausoleums (Fig. 4). The box tomb is a rectangular structure built over the gravesite. The human remains are not located in the box itself as some believe, but

Figure 4. This sandstone table tomb, located in Cedar Grove Cemetery, New London, CT, is an engineered grave marker structure consisting of a horizontal stone tablet supported by four vertical table "legs" with and a central column,. Photo: Jason Church.

rather in the ground beneath the box structure. The table tomb is constructed of a horizontal stone tablet supported by small corner supports or columns. Grave shelters, also called grave houses, can be simple or elaborate wooden structures built over the gravesite. Mausoleums are above-ground buildings with compartments for multiple burials. Engineered structures also include hillside and underground tombs.

Guidelines for Evaluating and Registering Cemeteries and Burial Places, National Register Bulletin 41, provides a concise review of grave marker types.

Materials

Stone, brick, concrete, metal, and wood are the most common materials used for grave markers and for fences and gravesite enclosures in historic cemeteries. This section briefly describes the composition and properties of these diverse materials

Masonry materials

There is a wide variety of masonry materials used in historic cemeteries; some are naturally occurring and others man-made. Although there are notable exceptions, most masonry materials are durable, have high compressive strength, and are resistant to weathering. As grave markers, they typically represent the work of masons and stone carvers.

Stone is a naturally occurring material with a wide range of properties and is available in a variety of colors (Fig. 5). Geologists classify stone according to the way in which it was formed with the three categories being igneous, sedimentary and metamorphic rock. Stone found in cemeteries is predominantly quarried, though the use of field stones is not uncommon. The mineralogy and chemical composition of stones vary. Some are composed primarily of silicate minerals; granites, sandstones, slate, and schist are examples. Other stones contain calcium carbonate with marble and limestone in this group. Mineralogy, chemical composition, and

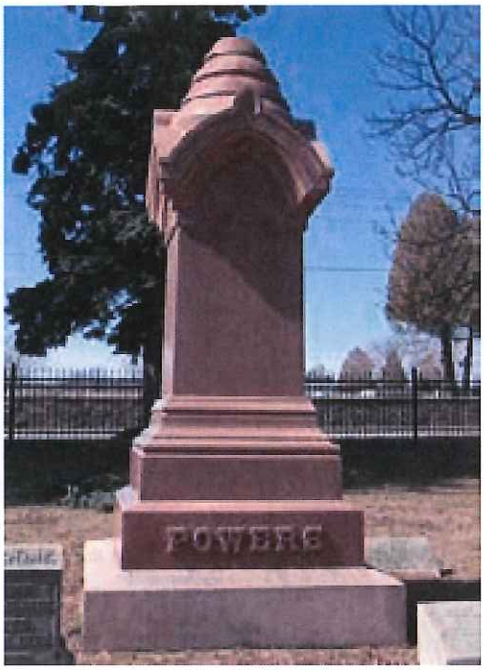

Figure 5. A variety of colors of natural stone are found in historic cemeteries, such as this pink granite marker in the Cedar Grove Cemetery, New London, CT. Photo: Jason Church.

physical structure of the stone influence weathering and the selection of materials and procedures for its cleaning and protection.

Man-made masonry materials are manufactured from naturally occurring raw materials. For example, the raw materials used to make brick include clay, sand, and shale. During firing, clay minerals and sand melt and come together forming silicates, aluminates, and metallic oxides. The resulting brick material has a hard-fired outer surface with a softer interior.

Concrete is a man-made material composed of cement, sand, gravel, and water. Most concrete produced after 1870 contains Portland cement, another manufactured product. In its plastic or wet state, concrete can be cast or poured. It hardens by hydration, a chemical-curing process. The resulting product has excellent compressive strength, but much lower tensile strength. Reinforcing concrete with steel helps compensate for this limitation.

All masonry materials are porous with an interior network of pores. The porosity of sedimentary rocks such as limestone and sandstone can be as high as 20 percent while the pore volume of granite is very low. Because moisture is a key factor in many deterioration processes, porous masonry materials are more vulnerable to weathering.

Metals

Metals are solid materials that are typically hard, malleable, fusible, ductile, and often shiny when new (Fig. 6). A metal alloy is a mixture or solid solution of two or more metals. Metals are easily worked and can be melted or fused, hammered into thin sheets, or

Figure 6. Decorative cast-iron grave markers like this late-19th century one in Oakland Cemetery in Shreveport, LA, are produced by heating the iron alloy and casting the liquid metal into a mold. Photo: Jason Church.

drawn into wires. Different metals have varying physical and mechanical properties, aesthetics, and weathering characteristics.

Ferrous metals and alloys, including cast iron, wrought iron, and steel, all contain iron. Cast iron also contains carbon and silicon and has a relatively low melting point. When heated to a liquid state, it can be molded into a variety of shapes. Wrought iron is an alloy with low carbon content. Its fibrous inclusions (called slag) are sometimes visible to the naked eye. Unlike cast iron, wrought iron is heated to the point where it becomes soft and then is hammered or "worked" into desired shapes. Most of the wrought and cast iron in historic cemeteries is ornamental rather than structural. While cast iron, steel, and wrought iron all contain iron, steel and wrought iron are more resistant to corrosion. Paint was often applied to ferrous metals to help protect them from corrosion and for decorative purposes. Metal elements were painted in a variety of colors including black, white, and green, among others.

Nonferrous metals and alloys, such as bronze, zinc, and lead, do not contain iron. Bronze contains about 85% copper, 10-15% tin, and sometimes lead. Historic bronze cemetery markers were created by casting processes that involves pouring liquid bronze into a mold. The completed casting is hollow. Bronze work may comprise a single molded component, such as a plaque, or multiple molded components welded or fitted together as with large statuary. Chemical patinas were applied to enhance color, and clear coatings for protection. Cast zinc monuments were popular from 1870 through the early 20th century. Most cast zinc is bluish-gray in color. Although cast zinc is resistant to corrosion, it is a brittle material with a tendency to "creep" or deform, especially when exposed to high outdoor temperatures.

Wood

Wood is a porous organic material composed of tubular cells in a parallel arrangement. The structure

Figure 7. As shown by this 1877 marker in Silver Terrace Cemetery, Virginia City, NV, exposure to sunlight can damage wood grave markers, making the wood more susceptible to water damage and cracking. Photo: Jason Church.

and characteristics of these cells determine the wood's appearance and influence wood properties. Wood-cell walls and cavities contain moisture. Oven drying reduces the moisture content of wood. After the drying process, the wood continues to expand and contract with changes in moisture content. The loss of water from cell walls causes wood to shrink, sometimes distorting its original shape (Fig. 7).

Hardwoods come from deciduous trees such as oak, maple, and walnut; softwoods from conifers such as pine, cedar, and fir. In general, hardwoods have higher density than softwoods, which makes them more durable materials, and are darker in color. Wood cut at different orientations affects its strength and weathering. As an organic material, wood is also particularly vulnerable to termites, carpenter ants, and other wood-destroying insects and fungi. Paints, coatings, and fungicides such as borates are used to help protect wood from various insect damage and fungal rot.

Other materials

Old cemeteries often include a wide variety of other materials not normally associated with contemporary grave markers, such as ceramics, stained glass, shells, and plastics (Fig. 8). As with masonry, metals, and wood, each has its own chemical and physical properties

Figure 8. A fired ceramic, this cameo is set in a marble grave marker, located in Elmwood Cemetery, Memphis, TN. Different materials may require different conservation approaches. Photo: Mary Striegel.

which affect durability and weathering. These materials present unique challenges and their properties must be understood before establishing appropriate maintenance and repair. Documentation of unusual materials is critical when repair is not possible.

Weathering

All grave marker materials deteriorate when they are exposed to weathering such as sunlight, wind, rain, high and low temperatures, and atmospheric pollutants (Fig. 9). If a marker is composed of several materials, each may have a different weathering rate. Some weathering processes occur very quickly, and others gradually affect the condition of materials. Weathering results in deterioration in a variety of ways. For example, when exposed to rainwater some stones lose surface material while others form harder outer crusts that may detach from the surface.

Figure 9. The limestone and sandstone grave markers in this historic cemetery have different weathering processes. On the left, the limestone shows surface loss in areas exposed to rainwater and gypsum crust formation below. The sandstone marker on the right displays uniform soiling, but surface hardening may be occurring. Photo: Fran Gale.

Granite is a durable grave marker material considered resistant to weathering. It is a compact, hard rock with low porosity, and granite deterioration can be imperceptible for many years. Slate also has low porosity, but its layered structure can result in delamination. Some stones used to make grave markers, like sandstone, limestone and marble, are softer than granite and more porous. These materials are more vulnerable to weathering with deterioration noticeable during the initial years of exposure. With slate and other stones with layered structures, weathering sometimes results in delamination, defined as the separation of layers along bedding planes. Different rates of weathering are related to the chemical composition and physical structure of the material.

Deterioration affects other grave marker materials in different ways. With brick, durability is related to its firing temperature, which influences the brick's compressive strength and absorption. Brick fired at high temperatures has a protective fire skin. The weathering of concrete also is variable, and largely depends on the materials used in its manufacture. For example, Portland cement concrete is generally more resistant to weathering than lime concrete. With wood, grave markers fashioned from heartwood (the dead inner wood) are more durable than those of sapwood (the living exterior wood), and some wood species such as cedar, Osage orange and black locust contain extractives that provide decay resistance.

The term "inherent vice" is used to describe a material with a naturally occurring problem that leads to premature deterioration (Fig. 10). An example of this problem is marble that has cracked due to natural locked-in stresses. Inherent vice also describes grave markers that are composed of incompatible materials, where decay is accelerated in one or both materials because of chemical interactions caused by their close proximity. An example is the galvanic corrosion that occurs when dissimilar metals, such as copper and iron, are in contact and exposed to moisture.

Risk Factors

There are two major categories of risk factors that can impact historic grave markers. The first comprises naturally-occurring deterioration phenomena known as the forces of nature, including weathering. The list of natural risk factors includes climate, biological issues, and natural hazards such as fire and floods. The other category includes the many degradation phenomena that are related to human activities. The results of humans and their actions include pollution, lack of maintenance, inappropriate repairs, arson, and vandalism. While some of the factors related to human activities, such as improper repair, may not be intentional, the results can be just as damaging to grave markers.

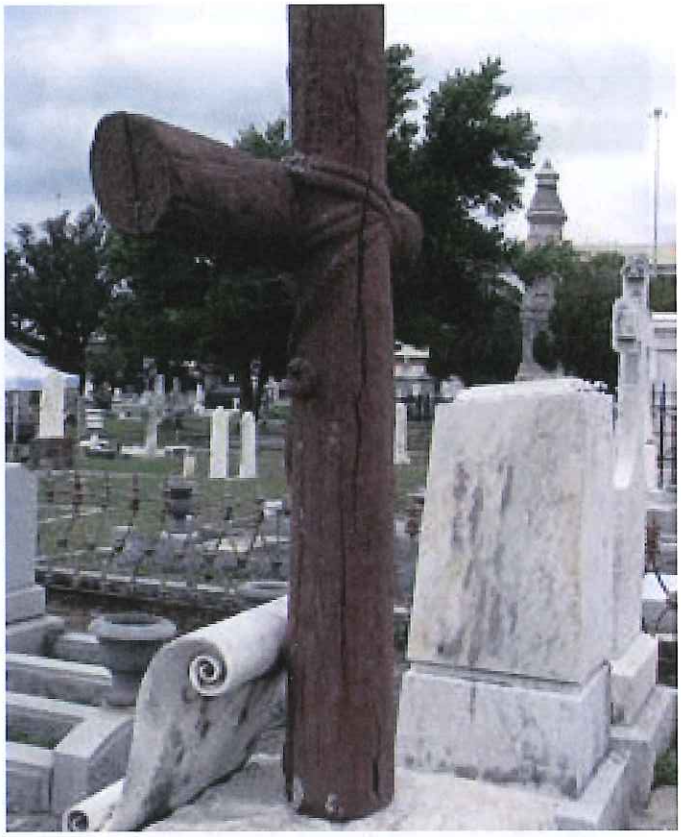

Figure 10. The sandstone cross (carved to look like wood) in this grave marker in St. Michael's Cemetery in Pensacola, FL, provides an example of inherent vice – the severe delamination affecting the sandstone has occurred along its natural bedding planes. Photo: Fran Gale.

Often, it is not possible to separate natural risk factors from those related to human activities. For example, pollution is deposited on grave markers by rain and other forms of precipitation, resulting in discoloration and often material degradation. Whether due to natural risk factors, human activities or both, "synergism" occurs when the result of two or more risk factors is greater than the sum of the individual effects. An example is the damage that occurs to salt-laden masonry materials during freeze/thaw cycles. The combined effect of these two deterioration factors is severe.

Natural Risk Factors

Climate plays an important role in weathering processes. Depending upon the climate, cemetery grave markers are exposed to rain, snow, sleet, ultraviolet (UV) light, humidity, high and low temperatures, and wind. All of these forces can damage masonry, metals, and wood. For example, with wood, the UV rays present in sunlight accelerate the weathering process.

Exposure to repeated changes in temperature can have an adverse effect on materials such as stone and other porous masonry. High temperatures deteriorate and weaken many materials while low temperatures cause materials to become brittle. In some climates there are rapid changes during spring and fall that

Figure A. Cemeteries are cultural landscapes made up of a variety of features. Grave markers are but one component of cemeteries that also include walkways, drives, fences, coping, trees, shrubs, and other vegetation. Each component adds to the understanding of the cemetery landscape. Photo: Debbie Dietrich Smith.

Vegetation Management

Carefully monitoring and managing of trees and other vegetation is an integral part of a cemetery preventive conservation program. Mature trees and ornamental shrubs can add character, shade, and seasonal color to historic cemeteries (Fig. A). However, if not properly maintained, they can damage grave markers, fencing, and other historic features. Mature trees may fall during storms and drop large limbs that topple grave markers and mangle fencing. Overgrown vegetation creates wet, shaded areas and fosters biological growth than can accelerate deterioration of stone, iron, and wood objects.

A treatment plan for cemetery vegetation should address trees, shrubs, vines, and "volunteer" growth. For the assessment and treatment of trees that pose hazards, consult an International Society of Arboriculture (ISA) certified arborist. Prune trees and shrubs adjacent to grave markers to allow air circulation and light penetration. Certified arborists and master gardeners should carry out this work or direct others in pruning trees and shrubs, as many may be historic features integral to the cultural landscape and worthy of preservation.

Regarding lawn care, historic cemeteries were not designed for today's large riding lawnmowers, yet this is the mower of choice for many cemeteries, as mowing is one of the most time-consuming and costly maintenance tasks generally undertaken. Mowing between tight spots with a large riding mower deck is destined to cause damage. Best practices include using a smaller, push mower between particularly sensitive features, and outfitting riding mower decks with protective bumpers. Low-cost options include using fire hose padding or a foam swimming 'noodle' (Fig. B). Additional damage is caused by riding over low stones or coping, especially when the blade height is set low. If rolling over these features is unavoidable, many riding mowers have a hand-control adjustment to temporarily raise and lower the blade height.

Improper use of a string-trimmer is also potentially destructive, especially when it comes into contact with soft materials such as marble, limestone, and wood. Using the lightest trim line and angling the trimmer head towards the ground will help reduce damage if the trimmer hits unintended targets. Consider hand trimming around the most significant, fragile features.

As a time-saving measure, herbicides are sometimes used around the base of features to remove unwanted grass and weeds. In most cases, use of herbicides for this purpose is not recommended, as salts within the herbicide can wick into the stone (especially soft stones) and cause spalling and deterioration. The removal of vegetation also exposes soil around the base of the grave marker, which, in a heavy rain, can cause soil splashing that may result in staining.

If fertilizer is applied, choose a natural organic fertilizer to minimize salt content for the reasons stated above. For any chemical application, be sure to rinse away residue from grave markers, etc., with water using a low pressure hose or spray bottle, to minimize continued contact.

Ongoing maintenance of cemetery vegetation is essential to conserve grave markers and fencing. Periodic inspections may warrant removing trees; trimming tree limbs, shrubs, and vines; and removing volunteer vegetation. All trees should be inspected at least every five years. Annual inspections are necessary to assess the condition of shrubs and vines, and to identify volunteer growth for removal. Mowing and trimming around the hundreds of stone, brick, iron, and wood features found in many cemeteries is a weekly or bi-weekly chore. Lawn care is the most time-consuming, and, if not done carefully, potentially destructive maintenance activity in historic cemeteries.

Figure B. A pool 'noodle' can be fitted to the deck of a lawnmower to prevent damage to grave markers. Photo: Debbie Dietrich Smith.

cause damaging cycles of expansion and contraction. Adjacent dissimilar materials may respond differently to temperature changes, resulting in distortion. High winds can carry water and abrasive particles causing abrasion and erosion, especially to soft materials. Wind may also drive rain water into masonry joints and permeable elements and materials.

Water, in liquid, solid or vapor form, plays a critical role in the deterioration process. Most grave marker materials are porous, and moisture from precipitation, ground water, or frequent landscape watering can enter the pore system. If temperatures drop below the freezing point, water in interior pores, joints and cracks freezes, and its increased volume often applies internal pressure, resulting in damage to the grave marker such as cracks or spalling.

Ferrous metals are particularly vulnerable to water-related deterioration. Iron increases in size when it corrodes, sometimes as much as 20 percent. As the corrosion process proceeds, the ferrous metal eventually weakens. When embedded within concrete or masonry materials, the corroding iron often causes cracks and spalls in the masonry.

Woody vegetation can damage grave markers in a variety of ways (Fig. 11). Trees, bushes, and vines can shade grave markers, extending the time that the markers are exposed to moisture. Tendrils and roots may burrow into mortar joints and openings, causing mechanical damage and large plants may lift up or shift markers. Even leaves and twigs, when allowed to collect on the ground near grave markers, can affect water drainage and evaporation (Fig. 12).

Microorganisms such as algae, fungi, and lichens may affect grave markers. Microorganisms hold in moisture and some produce acids. With acid-sensitive materials such as limestone and marble, the result is surface erosion. Sometimes the organisms use the material as a food source, dissolving minerals in the stone and attacking the cellular structure of wood. Wood is especially vulnerable to fungi, algae, and other microorganisms when its moisture content is above 25%.

Infestation by termites, carpenter bees and ants, and other insects can affect the appearance and structural integrity of wood. Unsightly bird droppings can also affect paint and other surface finishes.

Human Activities

Aside from vandalism and purposeful neglect, most risk factors attributable to human activity are unintentional. Sometimes damage to grave markers is the result of cleaning or repair done with the best of intentions. These unfortunate mistakes can be the result of insufficient training and funding, misuse of tools and equipment, and poor planning. With proper training and supervision, human risk factors can be lessened.

Figure 11. Woody vegetation can damage grave markers and pose a risk to visitors unless well managed and maintained. Photo: Jason Church.

Deferred maintenance usually accelerates the deterioration of grave markers and can be a safety hazard. All materials have a service life with mortar, paints, and other coatings requiring periodic upkeep to be effective. For example, unless ferrous metal has a sound protective coating, exposure to weathering can result in corrosion. Loose, misaligned or detached grave markers may lead to further damage or deterioration if not corrected in a timely manner. When nearby trees and shrubs are overgrown and invasive vegetation is present, needless risks to historic grave markers may also occur.

Inappropriate maintenance activities can be devastating. One of the most common threats stems from improper lawn care, particularly the misuse of mowing equipment and string trimmers (weed whackers). The use of large mowers or mishandling them can lead to displacement of markers. Scrapes, gouges and even breakage also can occur. Improper use of string trimmers in areas immediately adjacent to grave markers can result in

Figure 12. A cemetery professional undertakes a tree inventory in American Cemetery, Natchitoches, LA, to determine the health of trees in the cemetery. Management decisions for trimming or removal are based on the inventory. Photo: Debbie Dietrich Smith.

Avoiding 10 Common Maintenance Mistakes

1. Maintain records on conditions and treatments of historic markers

2. Seek advice from persons experienced with preserving historic markers when initiating a major maintenance or repair program.

3. Discourage visitor use of chalk, shaving cream, and other materials to highlight carvings and lettering.

4. Train grounds crews in methods to avoid damage to historic markers, including flat grave markers which can be easily damaged by machinery, fertilizers and weed killers.

5. Remove graffiti as quickly as possible, using appropriate methods, so as not to encourage further marker disfiguration and vandalism.

6. Maintain ground cover around cemetery markers to avoid surrounding dirt from splashing back and staining grave markers.

7. Never use rotary grinders to resurface or "clean" historic markers.

8. Avoid the use of coatings on masonry without proper investigation.

9. Avoid high pressure water washing to clean historic markers.

10. Repair rather than replace damaged and deteriorated grave markers. For markers encased in cement, leave any repair work to trained conservators.

scratching and even cutting into softer stone and wood. Generally, the use of chemical weed killers at the base of grave markers should be avoided, especially if there is a risk that the marker would absorb the chemicals.

Repointing masonry grave markers using Portland cement mortars that are harder than historic mortars often results in accelerated deterioration of the masonry material. Mortar should be softer than the adjacent masonry, enabling trapped moisture to migrate out, and serve as the sacrificial material when cracking occurs to relieve excessive stress. Problems also result when using impervious "protective" coatings that can trap moisture within the masonry, resulting in damage during wet/dry and freeze/thaw cycles (Fig. 13).

Figure 13. The impervious coating used to "protect" this sandstone grave marker trapped moisture within the stone, eventually resulting in deterioration and surface loss. Photo: Fran Gale.

Figure 14. High-pressure water washing can damage grave markers. The photograph shows "wand marks" on the headstones produced by inappropriate pressure washing. Photo: Jason Church.

Harsh cleaning products and techniques can have a detrimental effect on grave markers. Acidic cleaners such as muriatic acid can dissolve minerals in many masonry materials and can attack metals. Alkaline cleaners, such as bleach, are notorious for leaving residual salts that are deposited on the surface (a process called efflorescence). Both acidic and alkaline cleaning can result in staining, especially if rinsing is inadequate. Using high-pressure water, above 500 to 1,000 psi, can needlessly damage materials as well, increasing their vulnerability to weathering (Fig. 14). If the marker is fragile, even low pressure water can be damaging. Techniques to avoid include aggregate blasting with sand or other harsh media and the use of power tools with abrasive wire or NyloxTM brushes.

Pollution

Grave markers can be both visually and materially affected by pollution. Most readily apparent is the discoloration that takes place when airborne pollutants are deposited on markers. Depending on the exposure, how water is shed, and the marker material and intricacies, discoloration on markers will usually appear uneven and in streaks.

While the visual effect of pollution is often discoloration, less apparent is the potential damage caused by pollution to the grave marker materials themselves. Most rain is slightly acidic, and its pH (a measurement of acidity) becomes more acidic when pollutant gases, such as sulfur dioxide and nitrous oxides, are present. Acid rain damages materials containing calcium carbonate, such as limestone and marble, resulting in surface loss or erosion. When erosion is severe, the grave marker inscription, carvings and sculptural elements may become discernable. Recarving the inscription is not recommended. Instead, a small stand-alone interpretative sign could be placed nearby.

Acid rain also damages bronze grave markers. Pollutant gases alter the composition of exposed bronze, often producing water-soluble minerals. These minerals are washed away during subsequent rains, resulting in surface erosion. If the bronze element is positioned on a masonry pedestal or plinth, the minerals are deposited on the masonry below. These effects of acid rain are disfiguring to the bronze element and associated masonry.

Condition Assessments

Condition assessments help identify potential safety hazards, required preservation work, and any additional conservation that is needed for stabilization and protection of grave markers. Assessments also provide important baseline information about deterioration affecting grave markers. The collected information is helpful in determining and prioritizing maintenance tasks, identifying unstable conditions that pose an immediate threat, and for developing a plan for any needed repair or conservation work. Assessments should be recurring, preferably every spring. Condition assessments also help determine the extent and severity of damage following a disaster.

Depending upon the size of the cemetery and funding available, the initial assessment may be carried out by a team consisting of cemetery staff, a materials conservator, and, where necessary, an architect or structural engineer for cases involving large monuments and mausoleums (Figs. 15a and 15b). For smaller cemeteries without large monuments and mausoleums, and where funding is problematic, volunteers can be trained to prepare a condition assessment under the guidance of an experienced individual.

The first step in any condition assessment is to gather background information, including cemetery records and documents, historical photographs, records of previous repair and maintenance work, and current practices. The next step is to conduct an on-site survey. Following the survey, recommended maintenance procedures should be provided. If the team or individual conducting the survey is experienced in repairing historic grave markers, their assessment should include information about appropriate materials and techniques for restoration and stabilization.

Survey forms facilitate both recording of field conditions and needed maintenance or repair work. Most forms include sections for marker type (headstone, obelisk, etc.), construction materials, orientation, dimensions, soil type, and grave marker deterioration. There are a number of excellent examples of survey forms available for download, including the National Park Service Condition Survey Form at www.ncptt.nps.gov However, because each cemetery is unique, it may be necessary to modify an existing form.

A tool kit for the condition assessment may include binoculars, digital camera, magnifying glass, measuring tape, clipboard, carpenter's rule, level, magnet, and flashlight. For large monuments, a ladder or aerial lift may be required. Photographs of each marker, including overall shots and close-up details, are an essential part of the documentation process. Photo logs are helpful for

Figure 15a. Condition surveys are undertaken to document current conditions, determine safety issues, and plan both emergency stabilization and future treatment plans. There are a variety of survey forms available that can be tailored to the specific cemetery. Photo: Mary Striegel.

Figure 15b. Photographs are used to document the condition of the grave marker as part of a condition assessment. Photo: Fran Gale.

recording the date, direction, and photographer. Digital photographs should be captured in a standardized size and format (.tif, .jpg, .raw).

Defining conditions can be challenging, especially for cemetery staff and volunteers who are new to the process. There are a number of illustrated glossaries that can assist with determining accurate terminology for describing conditions. The ICOMOS Illustrated Glossary on Stone Deterioration Patterns http://www.international.icomos.org/ and the NACE International Resource Center Corrosion 101 http://nace.org/ are excellent resources.

Where deterioration is apparent, the assessment should address questions such as:

- What are the physical characteristics of the defects? Has deterioration obscured ornamental work or made the inscription difficult to read?
- What is the extent of the affected area? Are all areas of the marker affected by deterioration or is there a pattern?
- Do the conditions appear to be stable or getting worse.
- Are the defects affecting other materials or impacting the safety of visitors?
- Is deterioration contributing to loss or theft?
- Is further investigation required?

Maintenance

The old axiom that an ounce of prevention is worth a pound of cure certainly applies to the preservation of historic cemeteries. Maintenance is essential to the long-term preservation of historic grave markers. The principal components of a maintenance program include regular inspections, cyclical and prioritized maintenance work, and annual reports and budgeting. An important first step is the development of a support team, including staff, conservators, engineers, skilled masons, and other professionals. In most cases, the cemetery manager should initiate this process.

The cemetery manager can use the information from the condition assessment report to develop a maintenance plan with a list of cyclical maintenance work. Many tasks can be carried out by in-house staff. For example, maintenance cleaning of metal and stonework can often be accomplished by rinsing with a garden hose. Applications of wax coatings can be used to protect bronze elements. Trained staff can undertake these tasks. Teaching graffiti removal techniques to cemetery staff may also be necessary if vandalism is an on-going problem. Staff should have access to written procedures that include lists of appropriate materials and forms for recording the work completed.

Figure 16. A professional mason works to insert a new piece of stone. Often referred to as a "dutchman", this repair technique requires replacing the deteriorated stone section with a new finished piece of the same size and material. Photo: Jason Church.

Some work is best done by specialists (Fig. 16). For example, unless there is a trained mason on staff, replacing deteriorated or missing mortar will require a skilled masonry contractor. Services of a conservator or trained cemetery specialist should be used for removing severe soiling and staining from grave markers and for carrying out adhesive repair work such as selectively replacing a piece of stone when a marker is damaged by mechanical equipment. Care should be taken to clearly define the scope of work when hiring a contractor. It is useful to reference guidelines and preservation standards, such as those provided by the Secretary of the Interior or the American Institute for Conservation, whenever possible.

Treatments

In historic cemeteries, preservation treatments are used to preserve grave markers and protect them from future deterioration. Tasks such as cleaning, where appropriate, painting, or lime washing may be undertaken both as an initial treatment and on a cyclical basis as part of the maintenance program for the site. Other treatments, including repointing, patching and filling, and resetting, should be undertaken on an as-needed basis.

It is important to note that the Secretary of the Interior's Standards for Treatment of Historic Properties provide concepts and guidelines for maintaining, repairing, and replacing historic materials. The Standards promote best practices that will help to protect grave markers in historic cemeteries and other irreplaceable cultural resources. If replacement is required, the new material should match the old in composition, design, color, and texture. With chemical and physical treatments, the Standards recommend using the gentlest means possible.

Cleaning

Cleaning is carried out to remove soiling, staining, and contamination from grave markers (Fig. 17). Cleaning improves the visual appearance of the marker and sometimes reveals existing problems such as erosion and cracks. For various protective treatments, cleaning may be a necessary step in surface preparation. Although cleaning often is desirable and beneficial, the use of improper materials and techniques can cause great damage; when cleaning historic grave markers is undertaken, one should keep in mind the principle, "first do no harm."

To avoid a heavy build-up of soiling that might require aggressive cleaning procedures, regularly scheduled cleaning should be carried out by cemetery staff. The frequency of cleaning depends on a number of factors, including climate, location and vegetation. Before cleaning, an on-site inspection should be conducted to identify monument materials, including those not designated for cleaning since they may inadvertently come in contact with cleaning products and could be harmed. Temporary protective measure may be needed to safeguard nearby grave markers. Identifying the types of soiling present, including pollutants and contaminants, is important in deciding what cleaning procedures to use.

For some monuments, existing conditions may preclude cleaning. Even gentle cleaning may not be recommended for conditions such as severe erosion, advanced deterioration, or fragile areas. Additionally, open joints, unstable repairs, and large cracks may require alternate cleaning procedures.

General maintenance may involve low-pressure water washing. In most cases, surface soiling can be removed with a garden hose using municipal water or domestic water supply from a well. To avoid risks due to freezing, air temperature above 40° F is recommended for the time of treatment and subsequent 24 hours. To help remove stubborn soiling and dirt, soft, natural bristle scrub brushes are best. Avoid metal bristle brushes or firm nylon brushes and wrap metal elements with masking tape to avoid scratching grave markers.

Figure 17. Volunteers can undertake cleaning of grave markers once they have received initial training. Cleaning methods may include wetting the stone, using a mild chemical cleaner, gently agitating the surface with a soft bristle brush, and thoroughly rinsing the marker with clean water. Photo: Jason Church.

Selecting A Conservator or Preservation Professional

A conservator or preservation professional can provide valuable assistance in preserving historic cemeteries by documenting and surveying cemetery conditions, assisting with work plans and prioritizing work, and recommending specific maintenance and repair procedures. More commonly, they recommend more specialized preservation treatments for historic markers and carry out the actual work.

Specialized skills are required for undertaking certain treatments on historic grave markers or where markers are highly significant or are in more advanced states of disrepair. When contracting for grave marker conservation, it is important to interview conservators who have worked in cemeteries. They should be experienced with the historic materials and nature of the conditions where the work is to be undertaken. Prior to selecting a conservator, details about their previous work and training should be obtained and confirmed. Most conservators will provide sample reports and photographs of previous work.

The American Institute for Conservation of Historic and Artistic Works (AIC) offers information about selecting a conservator and what to expect once you have contracted with a conservator. Searching the "Find a Conservator" database provides a list of local and regional AIC members who have attained Professional Associate or Fellow status in the organization. More information can be found on the AIC website at http://www.conservation-us.org/

A conservator will inspect grave markers before designing appropriate treatments and submit a written plan for their proposed conservation work that includes materials to be used, a cost estimate, and a schedule for the project. As part of the contract, the conservator should be required to submit a written completion report that clearly describes their treatment of the marker/s and includes maintenance and care recommendations.

Soaking and/or spraying water in a fine mist are effective methods to remove natural growth. Water also has a "swelling action" for some soiling, making it easier to remove with gentle scrubbing. With cyclic spraying, a fine mist of water is directed at the targeted area for a short time (e.g., 20 minutes or less), followed by a short "off" period. This on/off process is repeated several times. Because high-pressure water can abrade the surface, this treatment is not recommended for masonry monuments.

For stains that are not water soluble or where organic solvents are ineffective, it is sometimes necessary to use chemical cleaning. Chemical cleaners include acids, alkalis, detergents and organic solvents. Each has advantages and disadvantages. Acids dissolve the interface between the stain and substrate while alkalis allow for longer dwell periods but must be neutralized. Some detergents are near-neutral in pH (neither acidic nor alkaline) and easier to rinse.

Before selecting or using a chemical cleaning agent, the manufacturer's Safety Data Sheet (SDS), available with the product and online, should be reviewed. The SDS provides information about the product's composition, including identified hazards, proper handling and storage, disposal, and required personal protective equipment. Once a chemical cleaning product has been selected, the manufacturer's instructions should be followed. Before undertaking large-scale cleaning, it is always advisable to undertake small-scale tests (approximately 6" x 6"areas in discrete locations), and then waiting several days before assessing the results.

Chemical cleaning is used to remove metallic stains and other contaminants such as old coatings and graffiti. For severe staining, poultice cleaning is useful as it extends contact time with the cleaner. A poultice is a mixture of clay or other inert material, such as paper pulp, and a cleaning agent. The mixture is applied to the surface and allowed an extended dwell period. The chemical cleaner dissolves the stain and the clay draws the stain out to the surface. When using a poultice, it should be applied just beyond the stained area and covered with polyethylene. The best practice is to leave the treatment on the surface for 24 hours and then remove the polyethylene cover and allow the poultice to continue drying. Once the poultice is dry, the mixture is then collected and the surface is thoroughly rinsed. For some stubborn stains, the application may need to be repeated.

Chemical cleaning also may be required if biological growth (algae, fungi and lichen) is severe. A study conducted by the National Park Service provides guidelines for cleaning government-issued marble headstones and recommends biocidal cleaners that contain quaternary ammonium compounds. Like all cleaning methods, chemical cleaning can accelerate deterioration. Adverse effects include efflorescence, stains, and etching.

Graffiti Removal

Markers with graffiti tend to be targets for further vandalism (Fig. 18). Timely removal helps deter future vandalism and improves the marker's appearance.

If the graffiti is water soluble, it can be removed using water and a soft cloth or towel. Rinsing the cloth frequently helps to avoid smearing graffiti on unaffected areas. If the graffiti is not water soluble, organic solvents or commercial graffiti removal products suitable for the grave marker material are recommended. Products should be tested prior to use. General cleaning of the entire marker is a good follow-up for a more even appearance. For deep-seated graffiti, poultice cleaning (previously described) may be required to extract staining materials.

Figure 18. Graffiti is carefully removed using a low-pressure dry-ice misting instrument. Photo: Jason Church.

Repointing

Missing and deteriorated mortar in old cemetery grave markers is a common condition, and the mortar should be replaced to prevent water intrusion and potential damage (Fig. 19). Several questions should be considered when selecting materials for repointing. Most importantly, what is the masonry substrate that

Figure 19. Masonry markers like this box tomb may require the repointing of mortar joints. It is important to use a mortar that is softer than the historic brick. In this case a conservator uses a lime putty-based mortar to repoint. Photo: Jason Church.

requires repointing? What mortar mix is suitable for the historic masonry? How quickly will mortar need to cure? Soft mortars contain traditional lime putty or modern hydrated lime. Harder mortars contain natural or Portland cement. If necessary, mortars can be tinted with alkali-stable pigments to match historic mortar colors. The selection of the mortar to be used is critically important to the success of the project. An inappropriate mortar can result in unattractive work and accelerate the deterioration of the historic grave marker. Always avoid the use of bathtub caulk and silicone sealants for repointing mortar joints.

Prior to repointing, any loose and deteriorated mortar needs to be removed from the joint, preferably using hand tools. Following joint preparation, the mortar materials (lime, cement, and sand) are mixed, and then water added to form a stiff paste. The repointing mortar is applied using a tuck pointing trowel, typically with a narrow 1/8"- 1/2" flat blade. Mortar is compacted into the joint, and then excess mortar is removed and the original joint profile replicated. Good repointing requires skill. Generally, a mason or person with masonry training should repoint mortar joints.

Resetting

Resetting is recommended for grave markers when their foundations are unstable or out of plumb (Figs. 20a through 20c). This often complex activity involves lifting the grave marker, leveling its foundation, and returning the marker to its original upright position. Workers can be injured and the grave marker damaged if resetting is not carried out properly and safely.

Inexperienced staff or volunteers should not attempt resetting without training from a conservator, engineer, or other preservation professional. When dealing with fragile or significant grave markers, or those with large

Figure 20a. This slate grave marker in the Ancient Burying Ground in Hartford, CT, is a ground-support stone. Resetting requires digging a hole that will hold the base of the stone and then compacting the soil at the bottom of the hole by hand. Photo: Fran Gale.

Figure 20b. To facilitate drainage, crushed stone, gravel, and sharp sand line the hole and are hand-tamped around the stone after placement. Photo: Fran Gale.

Figure 20c. The reset ground-supported grave marker should be level and plumb. Photo: Fran Gale.

Safety

Encouraging the public to visit and explore public burial grounds and cemeteries increases awareness of the value of these sacred sites. If visitation is promoted, owners and property managers must be responsible for ensuring that their sites are safe for staff and visitors. This responsibility includes monitoring the condition of grave markers.

Historic cemeteries can be hazardous workplaces for staff members, consultants, contractors, and volunteers. Awareness of potential hazards in a historic cemetery and careful planning are essential to avoiding injury. Maintain an appropriate first aid kit on site for minor injuries and have an emergency plan in place that includes contact information for medical assistance.

Creating a safe work environment in historic cemeteries requires appropriate planning for each project, starting with personal protective equipment. Suitable clothing and personal protective equipment should be fundamental safety requirements. Supportive shoes such as steel toe work boots or sturdy lace-up shoes help protect ankles and feet from injury, just as good work gloves help protect hands from cuts, scrapes, and splinters. Whether using a chipper, drill and other power tools or equipment, safety glasses or goggles are essential. A back brace often is recommended for heavier lifting tasks. Do not work alone or, if you must, tell someone where you are and when you expect to return.

During hot weather, heat stress is a present risk. Besides knowing the signs of heat stress, preventive measures should be taken by each worker:

- Wear light, loose-fitting, breathable clothing and a broad-brimmed hat.
- Use sunscreen, reapplying as needed.
- Take frequent breaks in the shade.
- Make sure fresh water is available and drink to stay hydrated.
- Eat small meals before and during work.
- Avoid caffeine, alcohol, and large amounts of sugar.

Trip and falling hazards include uneven ground, holes, open graves, toppled grave markers, fallen tree limbs, and other debris (Fig. C). Sitting, climbing, or standing on a grave marker should be avoided since the additional weight may cause

Figure C. Gophers and other burrowing animals produce uneven ground and holes that are trip and falling hazards to visitors and staff of historic cemeteries. Photo: Jason Church.

deteriorated and structurally unstable monuments to break or collapse with serious injury potentially occurring to the worker and damage to the marker. To help prevent injuries that can result from unstable grave markers, it is important to routinely identify and flag severely damaged and unstable grave markers for corrective work and to rope off any marker considered to be in immediate danger of collapse. Prior to beginning work, the immediate area around the job site should be rechecked for safety hazards.

Snakes, wasps, and burrowing animals inhabit historic cemeteries (Fig. D). Snakes sun on warm stones and hide in holes and ledges, so it is important to be able to identify local venomous snakes. An appropriate venomous snake management plan should be in place, and

Figure D. Yellow jackets that are nesting below the projecting molding of this grave marker pose a hazard to visitors and staff because, if disturbed, they will vigorously defend their nest. Yellow jacket, paper wasp and hornet nests should be removed from grave markers by trained staff or specialists. Photo: Jason Church.

all workers should be familiar with it. Workers and volunteers should be instructed as to safety measures to be taken in regards to snakes, including proper clothing where there is an identified risk.

The imported red fire ant is an invasive pest, prevalent in the southern United States. They attack en masse, resulting in painful bites that can be potentially life threatening to people with allergic reactions. It is important to be able to identify the presence of red imported fire ants; be informed as to safety measures to take when working in areas known to be infested with them; and take steps to control them as necessary. A rescue medicine is available for those with serious allergic reactions.

Paper wasps, yellow jackets, and hornets are another concern, building nests around and on ledges and lips of box tombs, mausoleums, and other grave markers. They are very territorial around their nests and will vigorously defend them. There are non-toxic sprays that can be used in and around the work area. Nests should be safely removed.

Burrowing animals like armadillos, groundhogs, gophers, and moles disrupt the ground with their digging and tunnels and can create tripping hazards or undermine grave markers. Prairie dogs have been known to dig up bones and destroy gravesites. Sinkholes created by these animals can also be perfect places for other creatures like snakes to inhabit.

Proper work practices and lifting techniques need to be used whenever lifting or resetting grave markers. Many markers are surprisingly heavy. For example, a common upright marble headstone measuring 42" long, 13" wide, and 4" deep weighs over 200 pounds. Volunteers and workers should work in pairs, be able bodied, and have training in safe lifting techniques. Lift equipment and ergonomically correct tools should be routinely used to lift heavy markers (for most people this includes markers that weight more than 50 pounds). For smaller grave markers, a simple wooden clamp system can be constructed for a two-person lift (Figs. E1 and E2).

Figure E1. The simple wooden clamp system allows two people to safety lift a marble grave marker. Photo: Sarah Jackson.

Figure E2. The clamp system is constructed from off-the-shelf wooden boards. Photo: Sarah Jackson.

stacked bases, a specialist should be contracted for resetting.

It is important to check state and local regulations to make sure that digging around the grave marker is authorized before starting any resetting effort. Also, grave markers should be documented and cleaned before resetting. It is also a good time to measure and record the overall size of the marker and note any stone carver's marks or inscription of the company that made the marker. The company name is often found on buried portions of the base and revealed during the resetting process.

Typical materials required for resetting include a hoist, shovels, plumb lines, levels, tamping devices, wooden stakes, and boards. To improve drainage, sand and small gravel or small stones are commonly used when resetting.

Prior to resetting, it is important to establish the type of base. Most grave markers have one of three main base types: (1) ground supported, (2) slotted base, or (3) stacked base. Similar tasks are undertaken for each base type.

Ground-supported stones are a common type of historic grave marker. This type includes the traditional New England slate and brownstone markers and government-issued marble headstones. The primary goal with any ground-supported marker is to have it level and plumb. To reset the marker, a few inches or more of soil is first removed from around the stone. This is usually sufficient to enable a stone marker to be straightened.

The enlarged hole is then filled and compacted around the marker.

If a grave marker has fallen over and has been covered with soil or turf, it must first be inspected for attached concrete or other anchoring system. If this system is still attached, the grave marker may break during lifting. After removing the stone, it can be cleaned and then temporarily set on wood supports.

The hole left from removal of the marker will need to be enlarged to hold the base of the stone. Soil at the bottom of the hole should be compacted by hand, not with a power tamper. In most cemeteries, crushed stone or sharp pea-size gravel mixed with angular sand can be used to line the hole and then hand-tamped around the stone after it is placed in the hole. The gravel helps facilitate drainage and keeps the stone from settling. A bubble level can be used to ensure that the stone is plumb. Markers should not be set in concrete.

The second type of monument base is the slotted base where the upright element is secured to the base using mortise-and-tenon style construction. The upright element in the slotted base may be leaning or loose. In any case, the upright element should be removed from the base, the base leveled, then the element returned to the base. It is important to keep in mind the depth that the base was intended to be set into the ground. This may be indicated by the style of the base or the observed soil- line staining. Many bases were intended to sit flush on grade while some were set a few inches below ground.

Prior to resetting, the upright element should be disengaged from the base and carefully set aside. In most cases, the base will need to be removed to properly prepare the hole before resetting the grave marker. After doing so, four to six inches of soil should be removed from the hole and the soil then tamped by hand to make a proper bed or foundation. The foundation area can be filled with crushed stone or sharp pea-sized gravel and sand, checking to make sure that the base is plumb and level as resetting proceeds. Clean the headstone prior to resetting. Old mortar, concrete or epoxy should be removed from the slot and the bottom of the upright element using a hammer and small chisel. Once the stone elements are cleaned and the base is level and plumb, the next step is placing the upright element into the slot. A lime mortar can be used to fill any gaps in the slot. This prevents water intrusion that may cause marker movement related to freeze-thaw cycles.

A third common base type is the stacked base. This style includes at least one element placed on a base or a series of bases of varying sizes. Resetting a stacked-base grave marker usually requires special skills and lifting equipment. Depending upon the complexity of the marker, a conservator, experienced masonry contractor, or preservation professional with engineering skills is usually needed.

The sections of a stacked-base grave marker often are pinned together for support. If deteriorated, the pins should be replaced. Using a hammer and chisel, a conservator or person experienced in working with historic grave markers should remove any corroded iron, copper, or bronze pins, as well as the old mortar or adhesive adhered to each section. Replacement pins should be stainless steel all-thread, and sized slightly shorter and smaller than the existing hole. The replacement pins then can be set with epoxy, lime mortar, or packed in lead. Once the pins are in place, the sections of the stacked base can be individually reset using traditional or contemporary materials. These include lead, shims, mortars, and setting compounds. Finally, each gap or seam between sections should be pointed with a setting compound or appropriate mortar to prevent water intrusion.

Filling and Patching

Hairline masonry cracks may be the result of natural weathering and require no immediate treatment except to be photographed and recorded. However, larger cracks often merit further attention. Repairing masonry cracks involves several steps and typically a skilled hand (Fig. 21). The repair begins with the removal of loose material and cleaning. Materials that are used for crack repair include grouts for small cracks and epoxy for large cracks affecting the structural integrity of the monument. Gravity or pressure injection is used to apply grout or epoxy. Crack repair can be messy, so careful planning and experience are helpful. If the crack is active, a change in size of the crack will be noted over time. Active cracks require further investigation to ascertain the cause of the changes, such as differential settlement, and to correct, if possible, the cause prior to repairing the crack.

Figure 21. Cracks in a stone marker should be filled to keep water and debris out and prevent the crack from becoming larger. A patching mortar is designed to be used, in this case, with historic marble. Photo: Mary Striegel.

Repairing masonry markers with severely damaged or missing pieces requires a skilled mason or conservator. The materials used for patching are similar to those used for repointing mortar joints. With patching, it is critical that the physical and mechanical properties of the patching material be appropriate for the masonry material. Work includes designing a durable patch compatible with the substrate. Proper curing is especially critical for large patches and often involves procedures to protect the patch from premature drying. Repairs to stucco-covered surface should be carried out by a skilled plasterer using a stucco mix that is compatible with the original material.

Repairing delaminated slate and brownstone grave markers also requires a skilled mason or conservator. With this condition, there are openings along bedding planes which expose the stone grave marker to moisture intrusion. Treatments are design to eliminate or reduce moisture intrusion that would accelerate deterioration. The selection of appropriate repair materials and procedures depends on the severity of the condition. Traditionally, delaminated slate or brownstone grave markers were "capped" with a strip of lead or other metal. Today, this repair technique is seldom used, in part because the drilling procedure used to attach the cap can be damaging, if the stone is brittle. Also, there are toxicity issues associated with the use of lead. An alternative approach is to fill the openings exposed by delamination with grout or patching material that is compatible with the stone. Adhesion of the repair material to the delaminated surfaces is particularly important.

The decision whether to use patching material or undertake a dutchman repair with matching materialdepends on the grave marker material, location of the damaged area, size, and other factors. A successfully executed dutchman usually results in a repair that has long durability and maintains a similar weathering pattern to the adjacent historic material. When working with stone grave markers, repairs using dutchman techniques are best done by a skilled stone craftsman.

Detached fragments should be collected, documented and stored in a suitable facility. Reattachment of these fragments should be undertaken by a conservator or mason. This work often requires pins to reinforce the joints and patching to compensate for losses.

Protective treatments

Protective treatments for metal, stone, and wood grave markers stabilize corrosion and protect the monument from rainwater, pollutants, and other contaminants. Treatments may vary not only due to material differences, but also to specific site conditions.

Wax coatings are often used for bronze markers (Fig. 22). Wax provides a protective barrier against moisture, soiling, and graffiti. There are several steps in the wax application process. Where there is little corrosion, gentle cleaning of the marker is undertaken prior to applying the wax coating. Apply a thin layer of wax to the marker using a stencil brush or chip brush.

Figure 22. A protective coating must be maintained on metal elements. Wax or lacquer coatings help preserve the bronze patina and slow corrosion. Conservators apply a microcrystalline wax to this bust at St. Mark's Church in-the-Bowery, New York, NY. Photo: John Scott.

Mineral spirits can be added to the wax to facilitate brush application. A soft, clean cloth is used to remove excess wax and buff the surface. A second coat of wax is sometimes needed.

In most climates, iron objects require coatings to protect them from corrosion. Clear coatings are sometimes used to protect wrought iron objects. A corrosion inhibitive primer and topcoat are used for cast iron and steel objects. Direct-to-Metal (DTM) coatings combine the two. Because of their durability, acrylic enamels, urethane, and fluoropolymer coatings are preferred. Proper surface preparation is important, including the removal of surface soiling, flaking paint, and loose rust. This can be accomplished with compressed air, wire brushing, solvent rinsing, or other cleaning method. Next the surface is cleaned with a damp cloth, repeatedly rinsing the cloth as needed. While the surface needs to be thoroughly dried before painting, it is important to repaint as soon as possible since even overnight condensation deposits are not desirable.

Another approach for iron objects is using a rust converter to stabilize corrosion that involves less surface preparation. Commercially available rust converters contain tannin or phosphoric acid and react with rust to form more stable iron compounds. The surface must be painted following surface preparation with the rust converter.

Limewash is a traditional coating that brightens stucco-covered grave markers (Fig. 23). Like paint coatings, it needs to be periodically applied. Limewash is prepared with lime putty or hydrated lime and water. Curing begins following application. The lime putty or hydrated lime reacts with carbon dioxide in the air in a process called carbonation. This reaction eventually forms calcium carbonate, a stable hard coating. Limewash is a "green" coating with no volatile organic compound content and is "breathable," i.e., it allows for water vapor transmission. Although commonly white, limewash can be colored or tinted with alkali-stable pigments such as iron oxide.

Figure 23. Limewash is a breathable coating sometimes used to protect the surface of the grave marker and provide a decorative finish. Limewash is applied by brush in five to eight thin coats (with each coat about the consistency of skim milk). The surface is allowed to slowly dry between coats. Sometimes the surface is covered by damp burlap to slow the drying process. Photo: Sarah Jackson.

Before applying the limewash, the masonry surfaces should be inspected for coating residues that need to be removed and any required repair work undertaken. Stucco-covered surfaces should be repaired and allowed to fully cure before applying limewash. If the original color has been determined, the renewal coating can be formulated to match. In preparing the wash, enough water is added to lime putty or hydrated lime to produce slurry with the consistency of skim milk. A mixture of four parts water and one part lime usually works well. A Zahn or Ford cup can be found at a hardware store and used to measure the thickness of the limewash and ensure consistency with each batch. Although many traditional recipes include additives, a simple mixture of lime and water performs best. Using a power drill with a paddle attachment to stir the limewash will help ensure that the lime particles are fully suspended in the mixture. Any pigment for coloration is added during the final mixing.

The surface must be cleaned of old coating residues, soiling, and other contaminants. After dampening the surface, the limewash is applied in 5-8 thin coats, allowing each coat to dry between applications. Limewash is translucent immediately after application and then becomes opaque when dry.

Proper curing of limewash is critical to its durability. To prevent premature drying, the treated surface may need to be covered with damp burlap. Limewash must not be applied when frost or freeze conditions are predicted or in temperatures above 90° F. Ideally, limewash should be applied during spring or fall when temperatures are around 70° F, avoiding direct sunlight where possible.

Clear water repellents and consolidation treatments are sometimes considered for severely deteriorated grave markers, including unpainted wood markers and masonry. For wood markers, epoxy consolidants are used to patch and repair. For masonry materials, it is important to remember that they are porous, and water vapor and liquid water can travel through their internal network. Protective treatments must allow for water vapor transmission to prevent trapping moisture inside the marker. Although a wide variety of water repellents have been employed on masonry (wax, acrylic, epoxy resins, etc.), silane and siloxane treatments have been the most successful. These organosilicon compounds are "breathable," penetrate below the surface, and form chemical bonds with silicate minerals.

When erosion is severe, consolidation treatments (e.g., ethyl silicate) have been used to replace mineral binders lost to weathering (Fig. 24). Because these treatments are not reversible, laboratory and on-site testing are essential. Application by a conservator or other experienced preservation professional is advised.

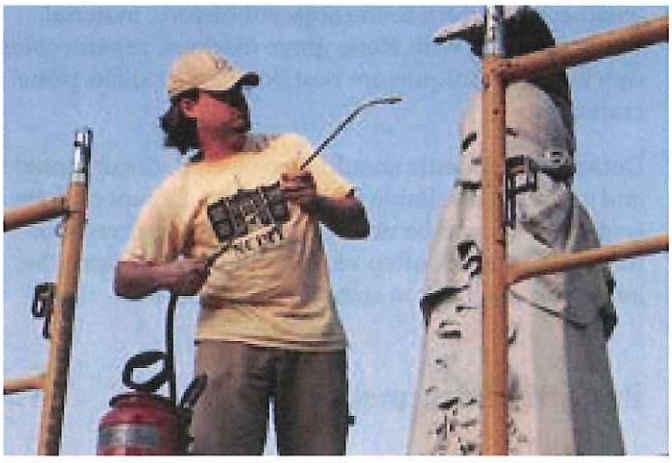

Figure 24. A severely deteriorating monument or grave marker can be treated with a stone consolidant. The treatment is usually applied using a spray system. The consolidant soaks into the stone and replaces mineral binders that hold the stone together. On-site and laboratory testing and evaluation are performed prior to using this non-reversible type of treatment. Photo: Lucas Flickinger.

Conclusion

Maintenance is the key to extending the life of historic cemetery grave markers. From ensuring that markers are not damaged by mowing equipment and excessive lawn watering, to proper cleaning and resetting, good cemetery maintenance is the key to extending the life of grave markers. Whether rescuing a long-neglected small cemetery using volunteers or operating a large active cemetery with paid staff, the cemetery's documentation, maintenance and treatment plans should include periodic inspections. Only appropriate repair materials and techniques that do not damage historic markers should be used and records should be kept on specific repair materials used on individual grave markers. A well-maintained cemetery provides an attractive setting that can be appreciated by visitors, serves as a deterrent to vandalism, and provides a respectful place for the dead. A community history recorded in stone, wood and metal markers, cemeteries are an important part of our heritage, and are deserving of preservation efforts (Fig. 25).

Figure 25. Involving the community in activities helps to develop an appreciation for the cemetery and serves to deter vandalism. Events may include children through school or scouting organizations and can help teach across the curriculum. Photo: Debbie Dietrich Smith.

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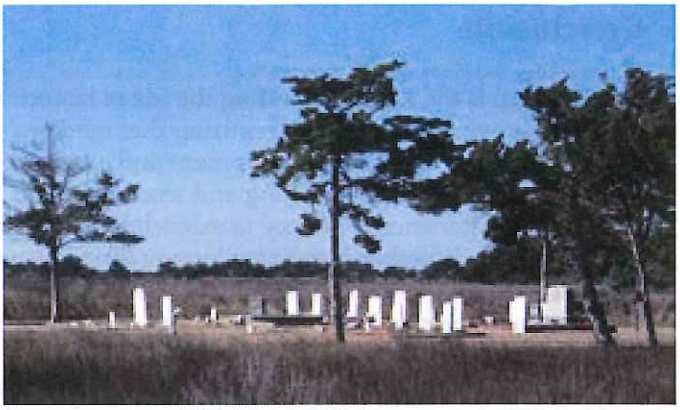

Whether large or small, well maintained or neglected, historic cemeteries are an important part of our cultural landscape. This historic cemetery at Cape Lookout National Seashore, NC, provides a record of the families who lived in Portsmouth Village during the 19th and early 20th centuries. Photo: Fran Gale.

National Register of Historic Places
Determination of Eligibility

Belleview Farm
Wildwood, Missouri

Prepared by:
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Preservation
Research
Office

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Description and Physical Evaluation of Site and Resources

Summary

Belleview Farm consists of eight (8) buildings, including three cabins, two garages, a house on a tall stone foundation, a corncrib and a barn, in conditions ranging from good to poor. The barn and corncrib and possibly the westernmost garage date from the period of the farm's significance, 1875 to 1925. The lack of evidence as to the dates of construction however prevents the site from being eligible for listing on the National Register of Historic Places.

Description of Resources

The site consists of a barn, corn crib, outhouse, 2 garages, three cabins, and a house. The gravel drive from the entrance to the property leads to an old wooden garage with a concrete block foundation, horizontal lap siding and asphalt shingle roof with a rolling metal door. To the east of the garage, on the top of the hill, are three cabins with concrete foundations, painted wood lap siding and standing seam metal roofs. To the west and south of the garage is a one story house that sits near the bank of a small creek. This house is on a tall old stone foundation (approximately one story tall) and has painted wood lap siding and a corrugated metal roof. Adjacent to the house to the west is another wooden garage with a stone foundation, vertical board walls, a wooden floor, and corrugated metal roof. Directly to the rear of this garage is an outhouse with horizontal lap siding and a metal shed roof. A wooden corn crib stands on poured concrete stilts approximately 50 yards north of the house. The corn crib has vertical board wood walls, a wood floor and a corrugated metal roof. Fifty yards to the west of the corn crib, on the other side of the small creek and in a wooded area there is an old 2-story wood barn, with a stone foundation, timber structure, vertical wood board walls, wood floors, and a corrugated metal roof. Second story doors on the north opens to a hay loft. The lower portion of the barn includes animal pens and has a dirt floor, and is accessible through sliding barn doors on the west side of the barn, as well as a center door on the long side that leads to a raised wood walkway aisle that extends across the barn.

Evaluation of Integrity:

For a potential Belleview Farm Historic District, the following findings exist for the seven aspects of integrity:

Location: The farm resources that remain have not been moved.

Setting: The setting of the farm has been compromised by the growth of vegetation in recent years where the land was more open in the past, but that does not remove this aspect altogether. The setting of the farm has been further compromised by the addition of "modern" buildings: the cabins, the second house and the new garage. The setting has also been compromised by the loss of the original farmhouse. The open fields that extend to the east of the entrance road and to the north of the main farm complex provide some of the original farm setting.

Feeling: The remaining historic buildings combined with the open fields convey some of the feeling of a farm but the main farmhouse is missing. The overgrowth and recent secondary uses of the existing buildings and construction of ancillary buildings have weakened the feeling of a late 19th/early 20th century farm.

Association: The barn, corncrib, and westernmost garage convey uses strongly associated with the historic significance of Belleview Farm. The barn was used for animals and hay storage, the corncrib was used for grain storage and the garage was used for farm equipment storage.

Materials: The remaining historic buildings convey integrity of materials, but the intrusion of the more modern buildings and the absence of the original farm house is a detriment to this aspect. The barn structure is of rough-hewn timbers supported by stone piers and sided with vertical wood boards. The corncrib structure is large timbers supported by tall concrete piers and sided with vertical boards. The garage is constructed similarly, with a stone foundation instead of concrete.

Design: The historic design of the barn and corn crib are typical of the design of farm buildings constructed in the Midwest in the last nineteenth and early twentieth centuries. The layout of the structures in relation to each other was typical for a farm of the period.

Workmanship: The corncrib and barn display the workmanship of Midwestern farm buildings constructed in the late nineteenth/early twentieth century, but as a fragment, do not adequately stand in for the workmanship of the entire farm.

Evaluation of Historic Significance

Statement of Significance

Belleview Farm was evaluated for significance under the NRHP Criteria A, B, and C using guidelines set forth in the NRHP Bulletin, "How to Apply the National Register Criteria for Evaluation."

Belleview Farms is not eligible for listing due to the fact that the resources are not able to be identified as to when they were constructed. St Louis County does not have records of permits issued more than 30 years ago. No deed has been located that specifically references any of the buildings on the property other than the Mincke sawmill and the Pacific RR Depot. The only indicator of when the house was built is the plat maps of St. Louis County that were printed at intervals by local surveyors and engineers.

The preparer evaluated Belleview Farm under Criterion A in the area of agriculture. The farm is associated with the development of the area as a source of provisions to the growing city of St. Louis, both in terms of building materials and foodstuffs. Julius and George Mincke operated a sawmill in the area beginning in the 1850s and purchased the land to provide the necessary resources of hardwood trees. They sold the lumber milled at their lumberyard located at Poplar and 17th Street in the City of St. Louis. In the late 1800s the farmland supplied foodstuffs to their groceries at 2244 Gratiot in the city of St. Louis, and in Carondelet.

The preparer also evaluated Belleview Farm under Criteria B for association with Aylett Buckner, and George F. and Julius H. Mincke. Aylett Buckner purchased this land and subdivided it into the Town of St. Paul in 1854. Buckner, an attorney and member of a politically connected family from Kentucky, became the U.S. Representative from Missouri in 1873. By that time, Buckner had sold all of his interest in St. Paul to the Mincke brothers and other individuals, who in turn eventually sold their lots to the Mincke brothers. The Mincke brothers were merchants in St. Louis, operating a lumberyard and later groceries, during the period when the buildings at Belleview Farms were constructed.

Background

In 1810 this land was granted to Samuel Pruitt as Survey 1975. Pruitt in turn sold it to Archibald Harbison and in 1849 it was deeded to Green Harrison. In 1853 Green Harrison sold it to Aylett Hawes Buckner. Aylett Hawes Buckner was the nephew of Aylett Hawes, who served in the Virginia House of Delegates from 1802 to 1806, in the U.S. House of Representatives from 1811 to 1817. Buckner was the cousin of Richard Hawes, the second Confederate Governor of Kentucky, serving from 1862 to 1865, and served as the U.S. Representative from Kentucky from 1837 to 1841. Buckner's cousin Albert Gallatin Hawes was the U.S. Representative from Kentucky from The1831 to 1837. Buckner was the editor of the Salt River Journal in Pike County MO and became

Clerk of the Pike County Court in 1841. He moved to St. Louis in 1850 and was the Commissioner of Public Works from 1854 to 1855. He returned to Pike County in 1856 and became a Judge in the 3rd Judicial District in 1857. Buckner moved to St. Charles in 1862 and became interested in tobacco farming. He was a delegate to the Democratic National Convention in 1872 and served in the U.S. Congress from 1873 to 1885, as a Representative of Missouri.

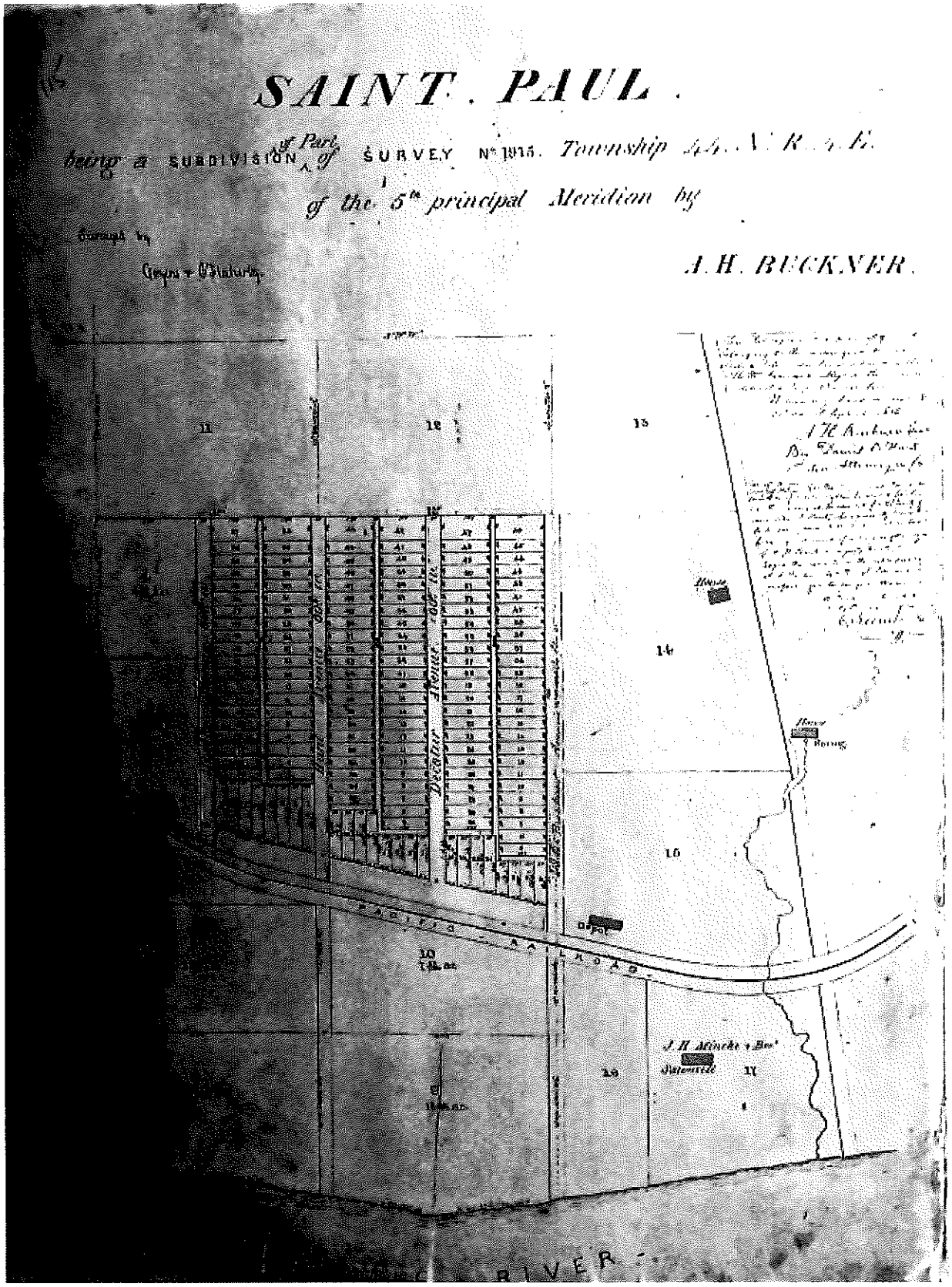
Aylett Hawes Buckner platted the Town of St. Paul in 1854 with Daniel Hunt. Several lots were sold to individuals and speculators. Soon after acquiring the property, Buckner became aware of other relatives of Malinda Harrison who had claim to the land. He entered in to an Article of Agreement with Green Harrison wherein Harrison would obtain title from these relatives in exchange for $1000 in groceries and $100 in 12 months and $900 in 2 years at 6%. On March 2, 1855 Buckner received a QCD to the property excepting the property conveyed to Mincke with a sawmill and that conveyed to the Missouri Pacific for a depot station known as St. Paul. One of the first purchasers of lots was Mary Goll. The property she acquired, 5 lots in block 1, 26 lots in block 2, all blocks 5 and 6, was held in trust by Joseph R. Tyler. She was the wife of Cephas Goll and she was permitted to have hold, use, occupy and enjoy...all profits and proceeds....for her own sole use and benefits, separate and apart from said husband and wholly free from his control or interference and was to be given to her heirs upon her death.

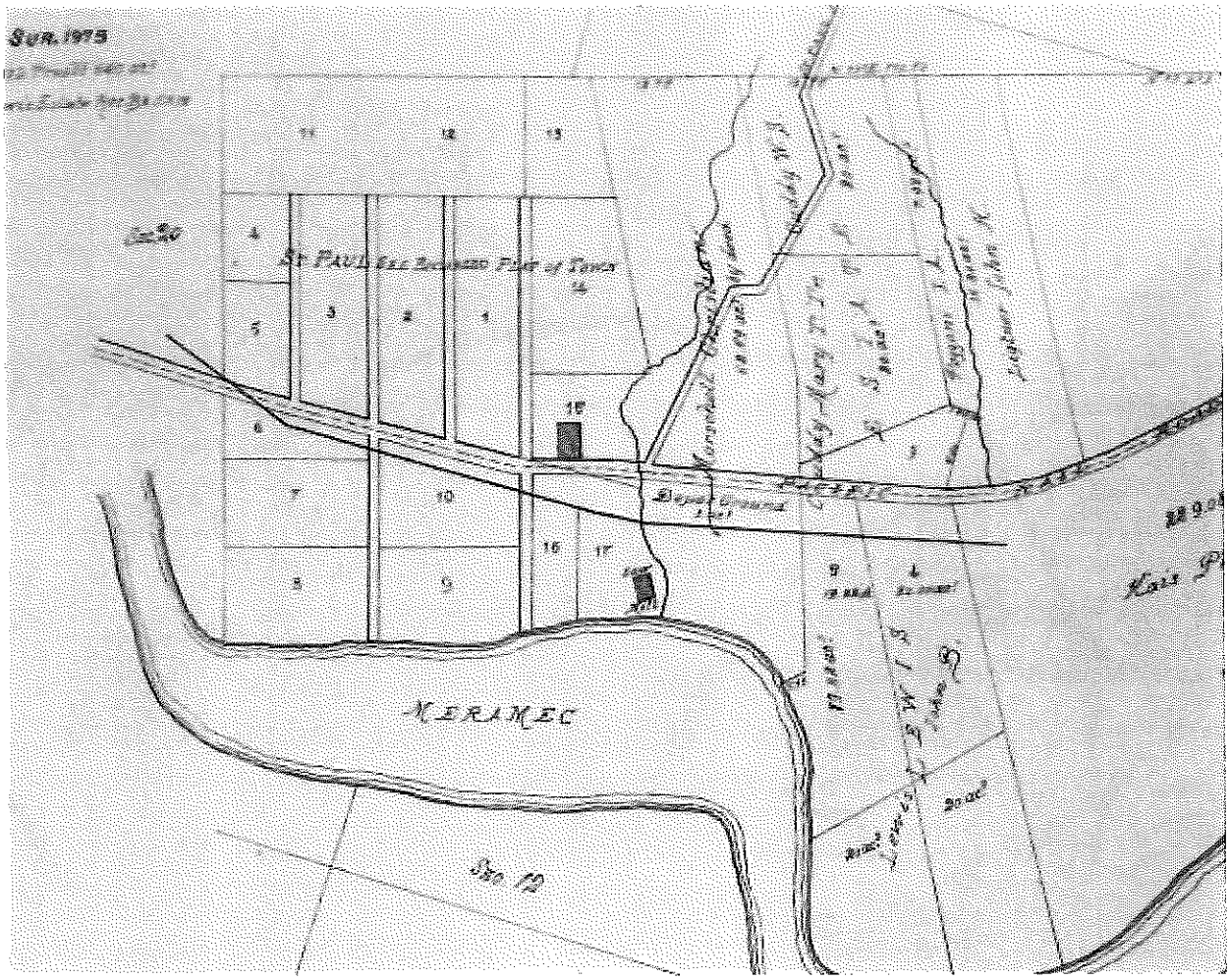
The town of St. Paul did not flourish and by 1865, George F. and John H. Mincke purchased the remaining lots. The brothers ran a lumber yard, J. H. Mincke & Brother, located between 16th and 17th and between the Missouri Pacific Railroad and Poplar in the city of St. Louis. Their sawmill was located south of the railroad near the St. Paul depot, on Block 17 of St. Paul. In 1876, according to Guzman's maps the lumber business, J. H. Mincke and Brother, owned Blocks 11, 12, 13, and 14 of St. Paul. By 1866 J. H. Mincke was listed in the St. Louis directory as residing at St. Paul Station, Pacific RR. On the plat of St. Paul there is a house located on the east side of Block 14 and it is also shown on the 1876 Guzman survey of the plat, and it can be inferred that this is the house that Julius Mincke lived in until sometime after 1876. Undoubtedly, the Mincke brothers utilized the hardwood forests of the St. Paul property to supply their lumberyard. The 1881 St. Louis directory lists George Mincke under hardwood lumber. By the late 1860s, George F. Mincke has taken over the lumber yard and continues in the business until 1890, moving the lumberyard to the south side of Rutger near Columbus in the early 1880s.

By 1870 John H. Mincke has a grocery at 2244 Gratiot. His father-in-law was a grocer. The 1870 census shows Mincke residing in Bonhomme township, Ballwin post office. Other residents at the Mincke house include George Seigel, a grocery store clerk and 3 farm workers. It is likely that these individuals worked the Mincke farm to provide produce and meat to the Mincke grocery. George Mincke operated a grocery in Carondelet in the mid-1870s as well. Both brothers continue to be involved in the lumber business until the mid-1870s. By 1880, John H. Mincke is residing at 1619 Chouteau in the city of St. Louis, next to his brother George, who resides at 1615

Chouteau. The 1878 Pitzman map of St. Louis county shows a house located on Block 15 and an adjacent building on what would be one of the southern lots of Block 1. These lots in Block 1 were owned by Julius Mincke and this structure may be the barn and the house on lot 15 is most likely the main farm house that recently was destroyed by fire.

The 1893 St. Louis County directory shows a Mary J. Mincke residing at St. Paul Road in Sherman, MO and working as a farmer. Mary Mincke is listed as a farmer at this address until the late 1890s. Henry Julius Mincke, the son of Julius H. Mincke may have moved out to the farm at St. Paul in the early 1900s. His name disappears from the city of St. Louis directories after 1900 and the 1909 St. Louis County directory shows his address as St. Paul Road in Sherman and his occupation as a farmer. By 1928, Henry Mincke has moved to Clayton and no Minckes appear in the St. Louis County directory at the St. Paul address after that time.


SAINT. PAUL.
being a SUBDIVISION of Part of SURVEY No 1915. Township 44. N. R. 4. E.
of the 5th principal Meridian by
A. H. BUCKNER.
Surveyed by
Geyers & O'Flaherty
11
12
13
14
15
16
17
Decatur Avenue
Depot
PACIFIC RAILROAD
J. H. Mincke & Bro
Statenville
RIVER

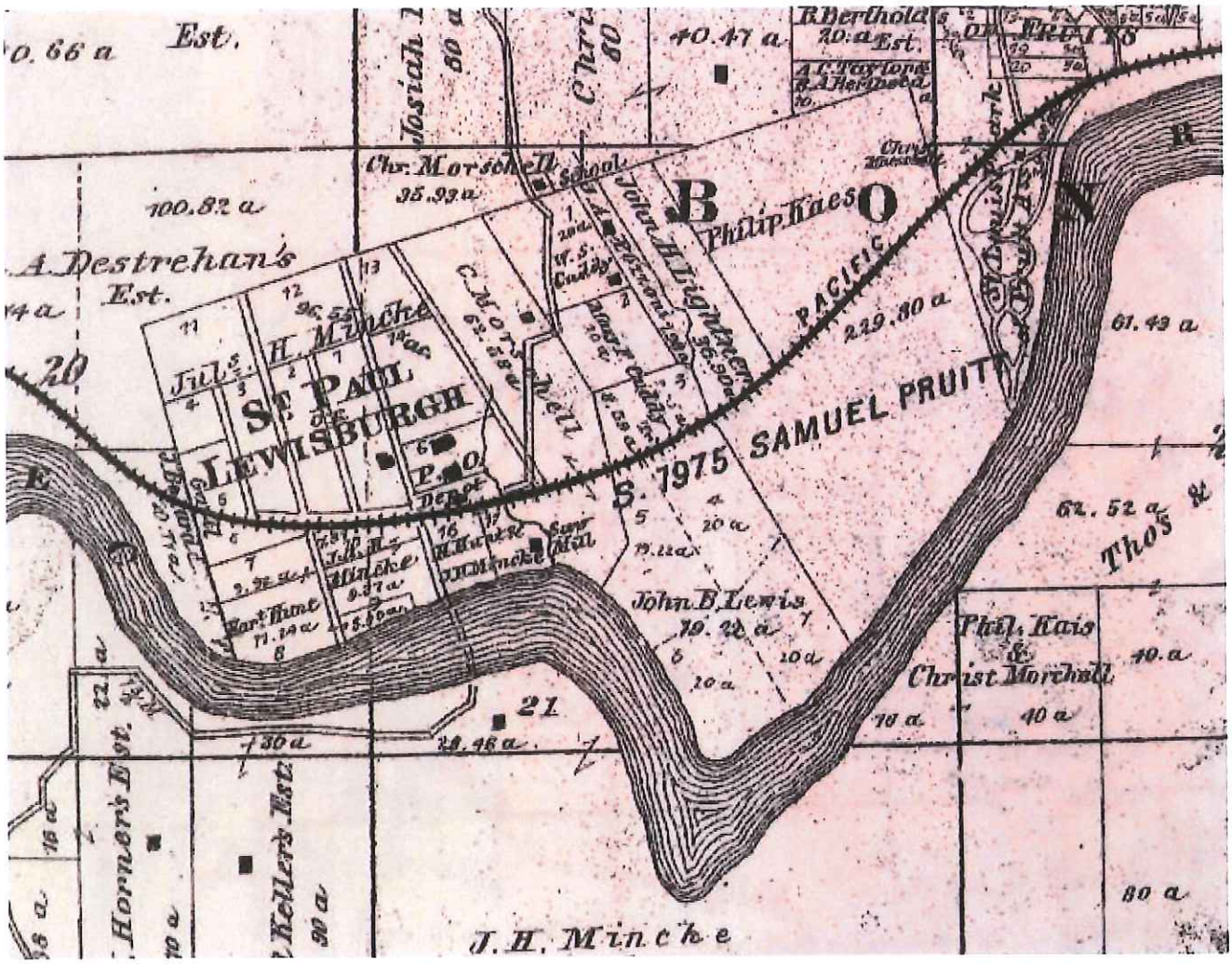


Guzman Atlas ca.1876

Guzman 1876 Block 14

Guzman 1876 Blocks 16 & 17

Guzman 1876 Block 15



Pitzman Atlas 1878

Panorama at end of drive

Panorama at entrance

House near creek

House near creek

Stone foundation of house

Garage near house

New garage and cabins

Barn and corn crib

Barn and corn crib

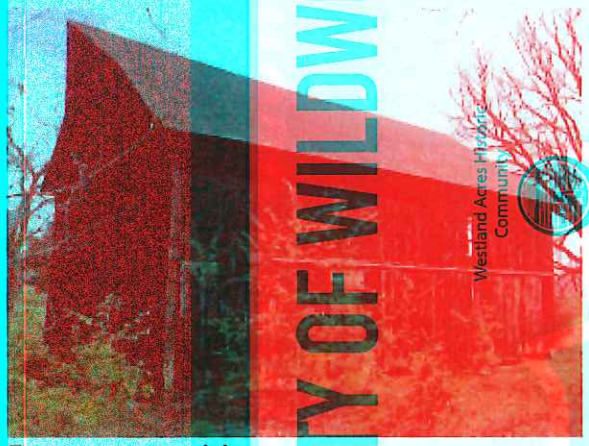
Corn crib at concrete stilt

Barn – east side

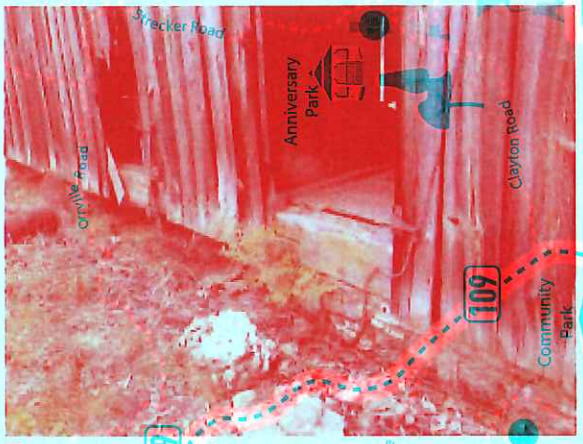
Barn – east side

Barn – south side

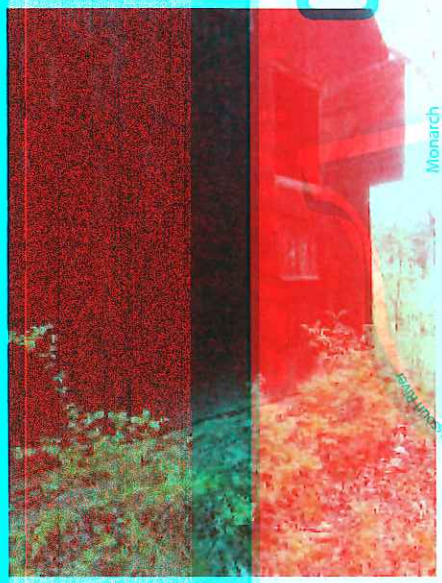
Barn -south side



Barn – west side

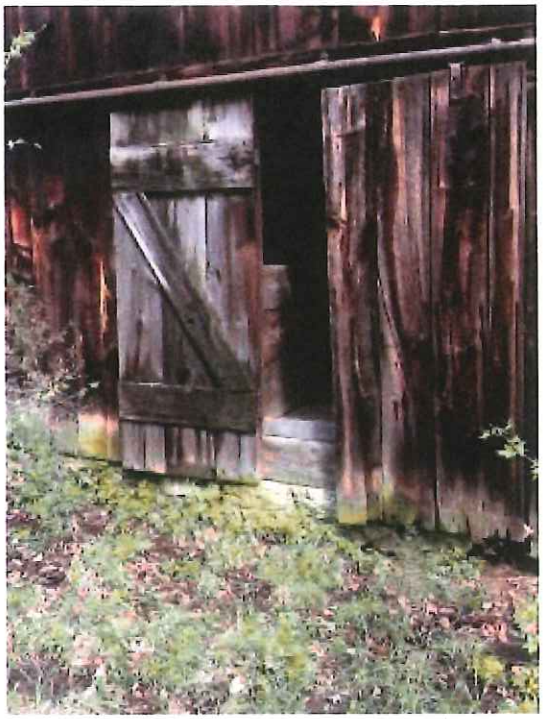


Barn – east entrance

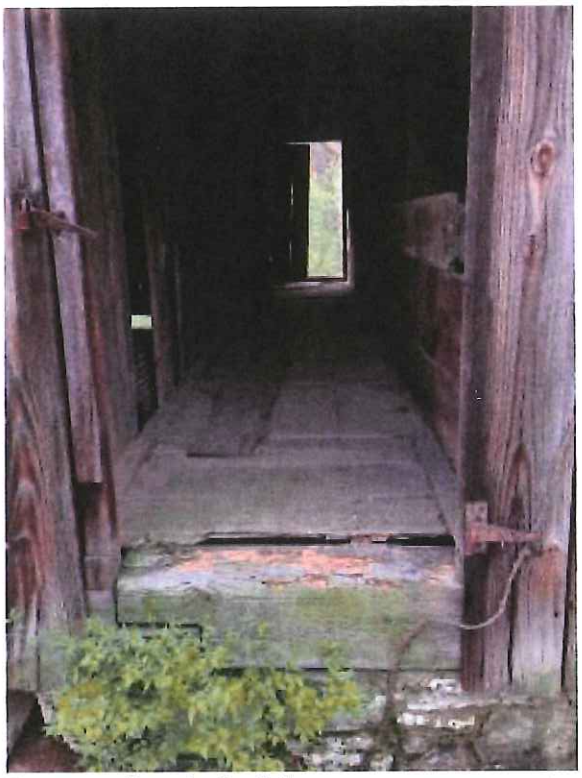


Barn – hay loft

Barn – west entrance

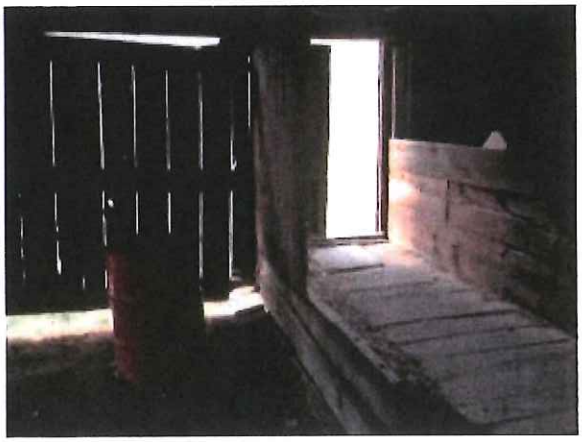


Barn – west entrance



Barn – elevated aisle

Barn – corner entrance



Barn – elevated aisle

Barn – first floor

Barn – animal pens first floor

Barn – hay loft

Barn – corner structure detail

Barn – hay loft

Terri Gaston

From: Terri Gaston
Sent: Tuesday, January 17, 2017 12:56 PM
To: 'Laura Jones'
Cc: Main; Steve Vogel (steve@cityofwildwood.com)
Subject: RE: Pond Inn - Demo Request

Laura,
The Zoning Authorization form is a triplicate, pre-numbered form that is filled out at City Hall when submitting the demo paperwork, including disconnects, which should have been processed through Wildwood first, prior to submittal to STLCo.
Given the age of the subject structure, upon submittal of the ZA for demolition, it would be considered by the City's Historic Preservation Commission before the Department of Planning could authorize the demo. I believe the process was explained via several telephone conversations.

Thank you,
Terri L. Gaston, Senior Planner
Department of Planning & Parks
CITY OF WILDWOOD
16860 Main Street | Wildwood, Missouri 63040
(636) 458-0440 x118 | (636) 458-6969 fax

From: Laura Jones [mailto:laura@rljonesproperties.com]
Sent: Tuesday, January 17, 2017 12:47 PM
To: Terri Gaston
Cc: Main; Laura Jones
Subject: Pond Inn - Demo Request

Terri,
We spoke to you in the past about the possibility of demo at the Pond Inn. We submitted everything to St. Louis County and they are requesting a letter from the City of Wildwood for Municipal Zoning Approval, as well as all the utility companies for the disconnects. Attached is what we submitted that shows the two buildings we are planning to demo. We have had a lot of very interested parties in the Pond Inn. We are excited about moving forward to get a good restaurant user in as soon as we can! Please let me know who the correct contact would be to get the approval letter.

Thanks,

Laura Jones
RL Jones Properties | 17195 New College Ave, Wildwood, MO 63040
office: (636) 287-2700
mobile: (314) 420-9334
fax: (636) 287-2703
email: laura@rljonesproperties.com
web: www.rljonesproperties.com

Saint Louis COUNTY PUBLIC WORKS

41 S. CENTRAL AVE., 6th FLOOR, CLAYTON, MO. 63105

OFFICE USE ONLY

RESIDENTIAL ( ) NO. 17DEM-00002

COMMERCIAL (X) DATE 1/5/16

APPLICATION FOR DEMOLITION PERMIT

MUNICIPALITY Wildwood FIRE DISTRICT METRO WEST ✓ LOCATOR # 23W310012 ✓

ADDRESS OF STRUCTURE: 17250 (number) Manchester Road (street) 63040 ✓ (zip)

DESCRIPTION OF STRUCTURE AND ACCESSORY STRUCTURES TO BE DEMOLISHED:

1. The Hall (bldg #3) Gross Sq.Ft. (Including Basements): 2,600
2. Shed (bldg #2) Gross Sq.Ft.: 360

Please list additional structures on separate sheet

Total Gross Sq. Ft.: 2,960

APPLICANT'S NAME RLJ Construction PHONE NO (636) 287-2700

APPLICANT'S ADDRESS 17195 New College Ave., Wildwood, MO 63040

OWNER'S NAME Lloyd & Ramona Jones PHONE NO. 314-574-9412

OWNER'S ADDRESS 17195 New College Ave., Wildwood, MO 63040

NOTE: ALL UTILITIES MUST BE PROPERLY DISCONNECTED AND SEWER CAPPED BEFORE DEMOLITION CAN START. THIS OFFICE MUST BE NOTIFIED IN WRITING BY THE APPROPRIATE UTILITIES WHEN DISCONNECTS ARE MADE.

APPLICANT'S SIGNATURE Lloyd L Jones DATE 12/21/16

*** I certify that I am the Property Owner/Agent for the owner and/or otherwise authorized to perform this work.**

FOR OFFICE USE ONLY

HEALTH APPROVAL _____

MUNICIPAL ZONING APPROVAL _____

WATER DISCONNECT _____

GAS DISCONNECT _____

ELECTRIC DISCONNECT _____

RIGHT-OF-WAY OWNER APPROVAL _____

PLUMBING PERMIT # _____

APPROVED ON: _____

DRAINLAYING PERMIT # _____

APPROVED ON: _____

ACCOUNTING ONLY

PERMIT & INSPECTION FEE $ 126—

OTHER STRUCTURES $ 47—

TOTAL DUE $ 173—

DATE PAID & CHECK #: 1/5, CK# 011014

INSPECTION ONLY

APPROVAL: _____

DOWN & CLEARED (DATE): _____

INSPECTOR: _____

APPROVED: _____

DATE: _____

THIS IS NOT A PERMIT
RECEIPT ONLY

R L J CONSTRUCTION

17195 New College Ave
Wildwood, Missouri 63040
Office 636-287-2700, Fax 636-287-2703

December 21, 2016

RE: Demo at 17250 Old Manchester Road, Wildwood, MO

To Whom it Concerns:

Pond Inn, LLC is requesting the help of RLJ Construction to request a demolition permit for two of the three buildings known as the Pond Inn located at 17250 Old Manchester Road in Wildwood, MO. The two buildings that we are requesting to demo are known as the shed (360 square foot) and the hall (2,600 square feet). Please see the attached site plan that outlines the two buildings. The original building will NOT be demolished.

Also, attached is the environmental study completed by Abate-Pro that shows there are no environmental issues with the two buildings that we plan to demo. Enclosed is a check for the demo permit. Please let us know if you need anything else.

Sincerely,

Lloyd E. Jones

Lloyd E. Jones
Owner
RLJ Construction

Saint Louis COUNTY PUBLIC WORKS

41. S. CENTRAL AVE., 6th FLOOR, CLAYTON, MO. 63105

OFFICE USE ONLY

RESIDENTIAL ( ) NO._____

COMMERCIAL ( ) DATE_____

APPLICATION FOR DEMOLITION PERMIT

MUNICIPALITY Grover/Wildwood FIRE DISTRICT METRO WEST LOCATOR # 23W310012

ADDRESS OF STRUCTURE: 17250 (number) Old Manchester Road (street) 63040 (zip)

DESCRIPTION OF STRUCTURE AND ACCESSORY STRUCTURES TO BE DEMOLISHED:

1. The Hall Gross Sq.Ft. (Including Basements): 2,600
2. Shed Gross Sq.Ft.: 360

Please list additional structures on separate sheet

Total Gross Sq. Ft.: 2,960

APPLICANT'S NAME RLJ Construction PHONE NO (636) 287-2702

APPLICANT'S ADDRESS 17195 New College Ave., Wildwood, MO 63040

OWNER'S NAME Lloyd & Ramona Jones PHONE NO. 314-574-9412

OWNER'S ADDRESS 17195 New College Ave., Wildwood, MO 63040

NOTE: ALL UTILITIES MUST BE PROPERLY DISCONNECTED AND SEWER CAPPED BEFORE DEMOLITION CAN START. THIS OFFICE MUST BE NOTIFIED IN WRITING BY THE APPROPRIATE UTILITIES WHEN DISCONNECTS ARE MADE.

APPLICANT'S SIGNATURE Lloyd E Jones DATE 12/21/16

*** I certify that I am the Property Owner/Agent for the owner and/or otherwise authorized to perform this work.**

****

FOR OFFICE USE ONLY

HEALTH APPROVAL _____

MUNICIPAL ZONING APPROVAL _____

WATER DISCONNECT _____

GAS DISCONNECT _____

ELECTRIC DISCONNECT _____

RIGHT-OF-WAY OWNER APPROVAL _____

PLUMBING PERMIT #_____

APPROVED ON: _____

DRAINLAYING PERMIT #_____

APPROVED ON: _____

ACCOUNTING ONLY

PERMIT & INSPECTION FEE $_____

OTHER STRUCTURES $_____

TOTAL DUE $_____

DATE PAID & CHECK #: _____

INSPECTION ONLY

APPROVAL: _____

DOWN & CLEARED (DATE): _____

INSPECTOR: _____

APPROVED: _____

DATE: _____

Manchester Rd
Manchester Rd
Manchester Rd
Curtis Ave
Curtis Ave
Curtis Ave
Curtis Ave

ABATE-pro, incorporated

A Commercial, Residential and Industrial Environmental Abatement Company

ASBESTOS INSPECTION SURVEY

Performed for

Andrew Sineni, RL Jones
17195 New College Ave.
Wildwood, MO 63040

Date

11/22/2016

Inspection Address

17250 Manchester Rd Building #1, 2&3
Wildwood, MO

Building Description

Present Use:	Vacant	Approx Yr Built:	1950
Former Use:	Res/ Commercial	Approx Size:	1583 sqft
Future Use:	Demolition	Condition:	Poor / Good

Building Construction

Number of Floors:	1	Wall Insulation:	Fiberglass / None
Roof Material:	Metal	Foundation:	Crawl Slab
Siding Material:	Wood	HVAC:	Forced Air / Wood
Framing:	Wood	Out Buildings:	Shed Other

Introduction

Abatepro, Inc. conducted an asbestos survey of the above referenced address. The survey was conducted by an AHERA-accredited and State of Illinois/Missouri certified asbestos inspector in general accordance with NESHAP inspection requirements. Interior/ Exterior building components were surveyed and homogeneous areas of suspect asbestos-containing materials (ACM) were visually identified and documented. Although reasonable effort was made to survey accessible suspect materials, additional suspect but un-sampled materials could be located in walls, in voids or in other concealed areas. Suspect ACM samples were collected in general accordance with the sampling protocols(3-5-7) outlined in EPA

Project Objective

We understand this asbestos survey was requested due to the planned demolition of the building. EPA regulation 40 CFR 61, Subpart M, National Emission Standards for Hazardous Air Pollutants (NESHAP), prohibits the release of asbestos fibers to the atmosphere during demolition or renovation activities. The asbestos NESHAP requires that potentially regulated asbestos-containing building materials be identified, classified and quantified prior to planned disturbances or demolition activities.

Field Activities

Survey activities began with visual observation of the interior and exterior of the Building(s) to identify homogeneous areas of suspect ACM. A homogeneous area consists of building materials that appear similar throughout in terms of color, texture and date of application. Interior assessment was conducted throughout visually accessible areas of the building(s). The exterior survey included an assessment of the exterior walls, windows and doors. The roof system was not sampled and therefore should be assumed to contain asbestos. Building materials identified as concrete, glass, fiberglass, wood, masonry, metal, foam, plastic and rubber were not considered suspect ACM.

Physical Assessment for Asbestos

A physical assessment of each homogeneous area of suspect ACM was conducted to assess the friability and condition of the materials. A friable material is defined by the EPA as a material which can be crumbled, pulverized or reduced to powder by hand pressure when dry. Friability was assessed by physically touching suspect materials.

Sample Collection

Based on results of the visual observation, bulk samples of suspect ACM were collected in general accordance with AHERA sampling protocols. Random samples of suspect materials were collected in each homogeneous area. The inspector collected bulk samples using wet methods as applicable to reduce the potential for fiber release. Samples were placed in sealable containers and labeled with unique sample numbers using an indelible marker. Bulk samples were collected from homogeneous areas of suspect ACM. A summary of suspect ACM samples collected during the survey is included below.

Sample Analysis

Bulk samples were submitted under chain of custody to a trained micropisist for analysis by polarized light microscopy with dispersion staining techniques per EPA methodology (40 CFR 763, Subpart F). The percentage of asbestos, where applicable, was determined by microscopically visual estimation.

Suspect Materials Sampled and Results

Material	*Description*	*Location*	*Est. Qty*	*Asbestos*	*Analytical*		*Sample #*
Ceiling Board	White	Building # 3	500 sq ft	No	NoneDetected		001-003
Window Glaze	White/Black Paint	Building # 3	350 in ft	No	NoneDetected		004-006
Drywall	Gray	Building # 3	1200 sqft	No	NoneDetected		007-009
Transite Siding	Gray/ White Paint	Building # 1	2800 sq ft	Cat 2 NF	Chrysotile	30%	10

Recommendation / Description

This property has 3 buildings . The main house, building # 1, appears to be a restaurant that is not currently operating and under renovation. The exterior siding is Transite shingles and was the only material that was requested to be sampled. The interior was not inspected.

Building # 2 is a simple garage / shed that is slated for demolition. The foundation is a slab and exterior is sided in a wood product. The roof is asphalt shingles. No other suspect materials were found in this building.

Building # 3 appears to be a former country restaurant that is scheduled for demolition. The flooring is wood through out. The windows are sealed with glaze. The HVAC is a wood buring furnace. The roofing is metal panels. The interior walls are drywall and the ceiling is a pressed fiber panel board in 4x8 sheets.

Regulatory

Building # 1 Should have the Transite siding removed by a Missouri licensed asbestos removal contractor if renovations will impact the siding.

Building # 2 The asphalt shingles can be demolished in place if not made friable during the demolition.

Building # 3 No asbestos was found during this inspection. Should additional unsampled materials be discovered during demolition, additional sampling may be required.

Inspector

Nicholas Feco
Missouri Asbestos Inspector
MO 5380

Google Maps

Google
Imagery ©2016 Google, Map data ©2016 Google 20 ft
Building # 1
Building # 2
Building # 3

PRECISION ANALYSIS, INC.

BULK SAMPLE ANALYSIS

Client : ABATE-pro, Inc.

Project No.: 17250 Manchester Rd., Wildwood, MO 63040

Date Received: 12-19-16

Date Reported: 12-19-16

Technique: Polarized Light Microscopy with Dispersion Staining
In accordance with EPA/600/R-93/116 Test Method

Lab No.	Sample No.	Asbestos Detected & Percentage *	Fibrous Material	Non-Fibrous Material
305163	001	None Detected	Cellulose	Binders, Paint
305164	002	None Detected	Cellulose	Binders, Paint
305165	003	None Detected	Cellulose	Binders, Paint
305166	004	None Detected		Binders, Paint
305167	005	None Detected		Binders, Paint
305168	006	None Detected		Binders, Paint
305169	007	None Detected	Cellulose	Binders, Paint
305170	008	None Detected	Cellulose	Binders, Paint
305171	009	None Detected	Cellulose	Binders
305172	010	25-30% Chrysotile	Antigorite	Binders, Paint, Aggregate

* The upper detection limit is 100 percent.
The lower detection limit is less than 1 percent.

Paul Spell
Laboratory Director

AIHA Bulk Asbestos Proficiency Analytical Testing Program ID # 101228
In Association with RTI Center for Measurements and Quality Assurance

PLM is not recommended for analysis of vinyl floor tile. Vinyl floor tile often contains milled asbestos with fiber lengths of 1 micrometer or less. Because these fibers are not detected by PLM, PLM analysis may yield a false negative result. We recommend qualitative analysis of vinyl floor tile by Transmission Electron Microscopy (TEM).

Precision Analysis assumes no responsibility for financial or health consequences for action or lack of action taken by our clients or their agents as a result of these analytical reports. Since Precision Analysis was not involved in the collection of these samples, we cannot attest to the proper collection of said samples and therefore are neither responsible nor liable for the accuracy, validity or completeness of the sample collection.

22 ORVIETO COURT FLORISSANT, MISSOURI 63031 TEL./FAX (314) 838-5052

ABATE-pro, incorporated
A Commercial, Residential and Industrial Environmental Abatement Company

Asbestos Bulk Sample Chain of Custody

Address
17250 Manchester Rd
Wildwood, MO 63040

Billing
Abatepro, Inc
PO Box 674
Edwardsville, IL 62025

Phone
618-288-8960
Fax
775-416-2089

Email
nfeco@abatepro.com

Type of Analysis
EPA PLM 600 Method

Turn around Time - Same

Sample #		Location and Type of Material	Date Sampled	Instructions
001	003	Ceiling Board Through out	12/14/2016	PLM Stop if Pos
004	006	Window Glaze- Windows	12/14/2016	PLM Stop if Pos
007	009	Drywall -Through out	12/14/2016	PLM Stop if Pos
010		Transite Siding- Main House	12/14/2016	PLM Stop if Pos
				PLM Stop if Pos
				PLM Stop if Pos
				PLM Stop if Pos
				PLM Stop if Pos
				PLM Stop if Pos

Inspector
Nicholas Feco

Released By **Date** 12-19-16

Received By

Date RECEIVED DEC 19 2016

BY:

CERTIFICATION NUMBER: 7118040816MOIR5380

THIS CERTIFIES

Nicholas M Feco

HAS COMPLETED THE CERTIFICATION REQUIREMENTS FOR

Inspector

APPROVED: **9/2/2016** TRAINING DATE **4/8/2016**

EXPIRES: **4/8/2017**

Director of Air Pollution Control Program

Expiration Date **4/8/2017** Certificate Number: 7118040816MOIR5380

Training Date: **4/8/2016**

Missouri State Certificate for Asbestos Related Occupations

Issued by Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102
Phone (573) 751-4817

Nicholas M Feco

has successfully completed the requirements for certification as a INSPECTOR. This Missouri State Certification is subject to review and the director may deny, suspend or revoke the certification per RSMo chapter 643.230.

9/2/2016
Date

Kyra L Moore
Director of Air Pollution Control Program

STC SAFETY TRAINING CENTER

2539 Vandalia Street, Collinsville, IL 62234 * Phone: 618-855-8764

Environmental and Occupational Safety & Health Training

Does hereby certify

Nicholas Feco

PO Box 674, Edwardsville, IL 62025

Has successfully completed and passed the course examination with at least 70% for re-accreditation under AHERA (Title II)

Asbestos Building Inspector Refresher

Class Date:	***April 08, 2016***
Examination Date:	***04/08/2016***
STC Certificate Number:	***STC-04082016-001496ABIR***
Certification Expiration:	***04/08/2017***

David M. Mendoza – President/Training Director
Certified Environmental Specialist
OSHA Authorized Instructor

This training course is accredited by the Illinois Department of Public Health and the Missouri Department of Natural Resources