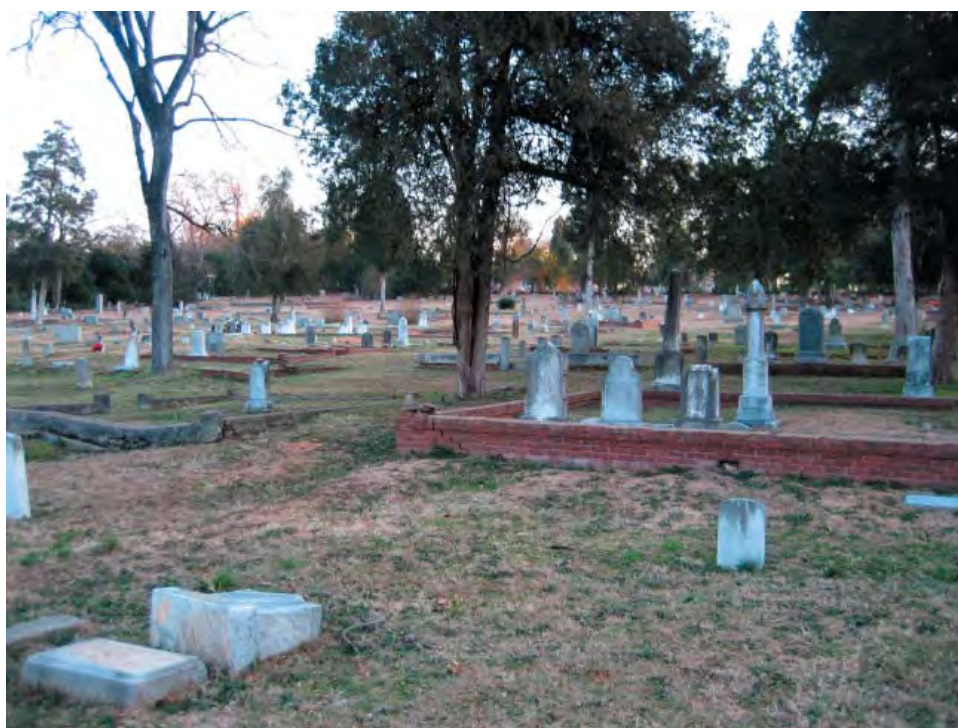




RANDOLPH CEMETERY
(1872)

COLUMBIA, SC

PHASE III CONSERVATION REPORT



OCTOBER 7, 2011

PREPARED FOR:

COMMITTEE FOR THE RESTORATION AND BEAUTIFICATION OF RANDOLPH CEMETERY

PARTIALLY FUNDED BY:

A GRANT FROM THE RICHLAND COUNTY CONSERVATION COMMISSION

TABLE OF CONTENTS

Introduction	1
0001.01 - Simon Miller and Ariadna Miller	2
0470 - Corrie E. Flow	6
0490 - Anna Hickson	10
0500 - Milton Hobsn	14
0501 - R. C. Driscoll	18
0505.04 - William Bryant Winthrop	22
0509 - Millie Goudlock	26
0511 - Lula Woodson	30
0514 - Unknown	34
0537 - Wyatte McMaster and Rachel Rhoda Jackson	40
0558 - Rev. Sarah H. Smith	45
0565 - Robert Eugene Brown (2 markers)	49
0644.01 - Octavia and Cyrus J. Butler	55
0794 - Samuel Young	58
0903 - Henry Means	61
0913.04 - Isaac H. Aiken	64
0969 - Fannie Hart	68
0974 - Jane M. Garner	72
0980/1 - Elder C. W. Dunlap	76
0986 - Ellen P. Inghrem	81
0990 - Rev. Jesse D. Lykes	84
1005 - Perry Kennedy	88
1013/16 - Girlie Nesbit	93
1014 - Caroline Louisa Cooper	98
1015 - Ernest Quarles Garnes	102
Maintenance Recommendations	106
Appendix A: Materials	107

INTRODUCTION

Randolph Cemetery is located in northwest Columbia, SC. The 5-acre property sits east of Broad River as it joins Saluda River, just north of the confluence of U.S. 76 and I-126, and immediately west of Elmwood Cemetery. Named for Benjamin Franklin Randolph, a Reconstruction-era African-American senator who was assassinated in 1868, the Cemetery became a burial ground for prominent African-Americans in the community from 1872 throughout much of the twentieth century. Its significance was recognized in 1995 with its listing on the National Register of Historic Places.

The Committee for the Restoration and Beautification of Randolph Cemetery (CRBRC) undertook the administration of and became Trustees of the Cemetery in 1984. In 2005, several professionals representing local organizations involved in preservation formed the Downtown Columbia Cemetery Task Force (DCCTF). As part of its initial agenda, the Task Force has worked closely with the CRBRC to preserve Randolph Cemetery and promote the Cemetery as a cultural heritage resource. Through the use of grants, a survey of the Cemetery was completed by New South Associates in 2007. With this documentation, conservation of the Cemetery could begin. The CRBRC retained Kreilick Conservation, LLC for the third phase of conservation. This project was funded in part by a grant from the Richland County Conservation Commission.

Kreilick Conservation completed the conservation treatment of 26 markers. Their team included Dara Friedberg (Conservator and Project Manager), John Klinkose (Conservator), Ezekial Schladen (Conservator), Patricia Davenport (Conservation Technician), Jeffrey Moore (Conservation Technician), and Jessy Abney (Conservation Technician). All work was completed during the weeks of September 19th and 26th.

Conservation philosophy for the project was based on a combination of client expectations and Secretary of the Interior's Standards for the Treatment of Historic Properties, as well as Guidelines for the Practice of the American Institute for Conservation (AIC). This report includes a description of all treatments implemented to conserve the markers in Randolph Cemetery, thorough photodocumentation of all project phases, marker diagrams and recommendations for future maintenance.

0001.01 ~ REV. SIMON MILLER AND ARIADNA MILLER



Figure 1: 0001.01, Simon and Ariadna Miller marker, before treatment



Figure 2: 0001.01, Simon and Ariadna Miller marker, after treatment

CONDITION

The marker for Simon Miller and Ariadna Miller is located in the southwest quadrant of the cemetery, at the side of the looped road. The marker is a roundtop tablet measuring 47-inches in height, 21-inches in width, and 2-inches in depth; the base measures approximately 12-inches in height, 26³/₈-inches in width, and 11⁷/₈-inches in depth. The marker was treated in the first phase of work at the Cemetery during which the broken tablet was repaired and pinned to its base. The broken tablet's time lying on the ground had resulted in bowed marble which exerts pressure on the base. In the year that followed, the ground appears to have shifted slightly and the base settled at an angle leaving it and the tablet un-level and off-balance.

TREATMENT

The marker was carefully excavated and laid on a padded surface to relieve pressure on the base and bowed tablet. A foundation of Sakrete Crack Resistant Concrete was poured approximately twice the width and depth of the base and approximately 6-inches deep. Two alloy 316 stainless steel threaded rods, 1/2-inch in diameter and 8-inches long, were embedded in the new foundation. Corresponding holes were drilled into the bottom of the marble base. (Refer to Diagram 1 for pin locations). Once set, the marker was set on its new foundation and pins. It was further secured in place with Premium Pre-Mixed Mortar Mix & Go from Virginia Lime Works.

While preparing the area for the new foundation, a marble footstone with the initials S. M. was discovered. The marble was cleaned using a solution of water and Vulpex Liquid Soap. The solution was applied to the pre-wet surface and scrubbed using nylon bristle brushes. The surface was then thoroughly rinsed with clean water to remove all traces of the detergent. The footstone was set in a more appropriate location facing the marker.



Figure 3: 0001.01, tilted base before treatment



Figure 4: 0001.01, removing marker



Figure 5: 0001.01, footstone discovered



Figure 6: 0001.01, new foundation



Figure 7: 0001.01, reinstalling marker on new foundation



Figure 8: 0001.01, after treatment

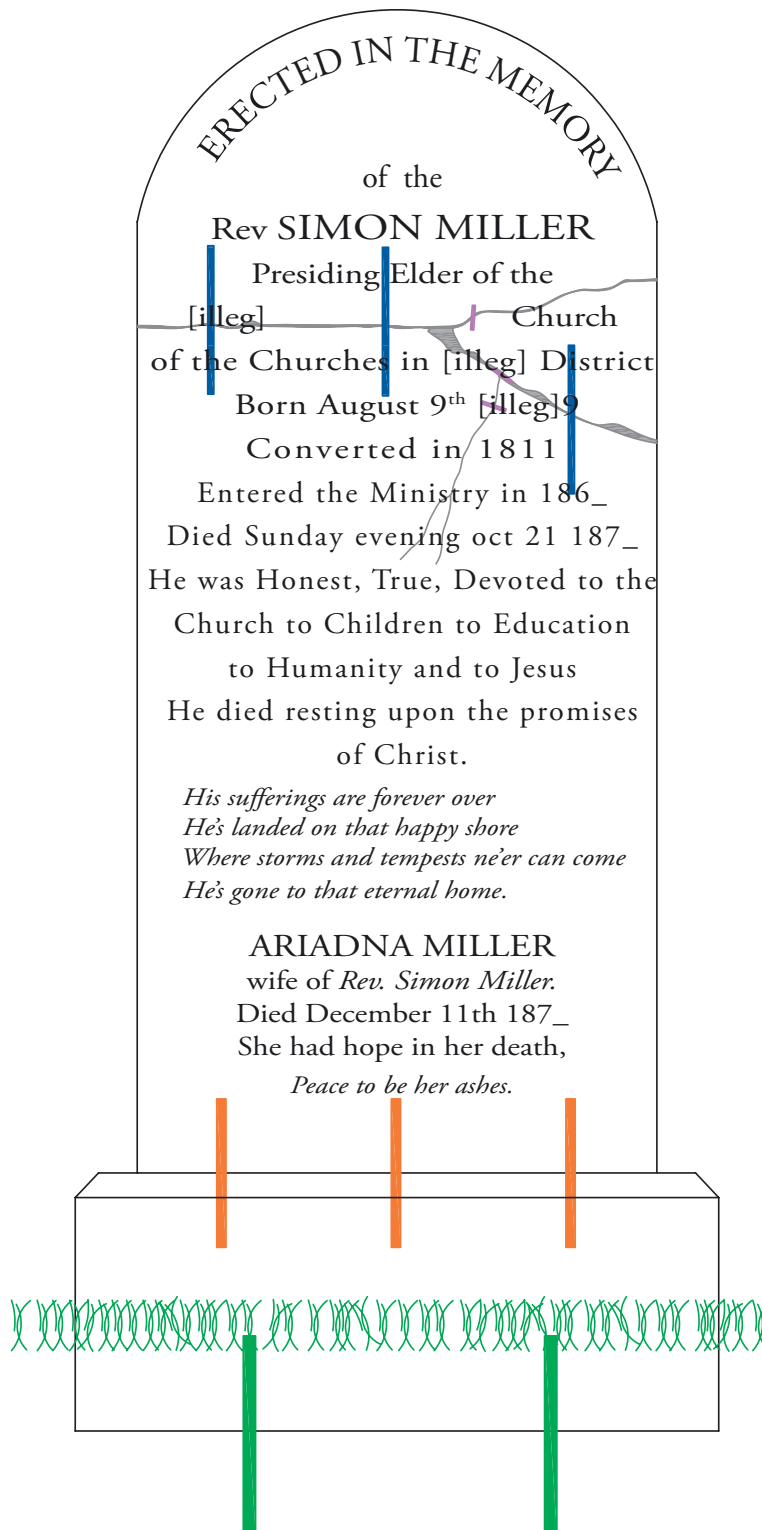


Diagram 1: 0001.01, Simon and Ariadna Miller

— $\frac{1}{8}$ -inch threaded rod
 — $\frac{1}{4}$ -inch threaded rod
 — $\frac{3}{8}$ -inch threaded rod
— $\frac{1}{2}$ -inch threaded rod

0470 ~ CORRIE FLOW



Figure 9: 0470, Corrie E. Flow marker, before treatment



Figure 10: 0470, Corrie E. Flow marker, after treatment

CONDITION

The marker for Corrie Flow is in the northeast quadrant of the cemetery. The base measures 12-inches in height, 18³/₈-inches in width, and 8¹/₈-inches in depth; the roundtop headstone measures 21¹/₈- inches in height, 14-inches in width, and 3-inches in depth. The headstone was still attached to its base, however the base was no longer level.

TREATMENT

The marker was excavated and cleaned. Dirt and biological growth were removed from the marker by washing the marble. A solution of water and Vulpex Liquid Soap was prepared using approximately ½-ounce of soap to 1-gallon of water. The solution was applied to the pre-wet surface and scrubbed using nylon bristle brushes. The surface was then thoroughly rinsed with clean water to remove all traces of the detergent. To address additional biological growth, the marble was cleaned with D/2 Biological Solution. The biocide was applied to the dry marble at full strength. The solution was scrubbed periodically for approximately 5 minutes before thoroughly rinsing with clean water to remove all traces of the biocide.

As the area was prepared to reset the marker, glass and shell artifacts were discovered. These were documented and set back into the ground. The marker hole was filled with approximately 2-inches of gravel and sand, to promote drainage, and leveled. Microcracks within the marker were addressed by grouting to limit water infiltration. After wetting the cracks, the grout, Jahn Masonry Repair M30 Micro Injection Grout, was inserted into the voids using a syringe. The joint between the tablet and base was pointed using Jahn Repair Mortar.



Figure 11: 0470, before treatment



Figure 12: 0470, hole prepared



Figure 13: 0470, artifacts discovered



Figure 14: 0470, cleaning marker



Figure 15: 0470, after treatment

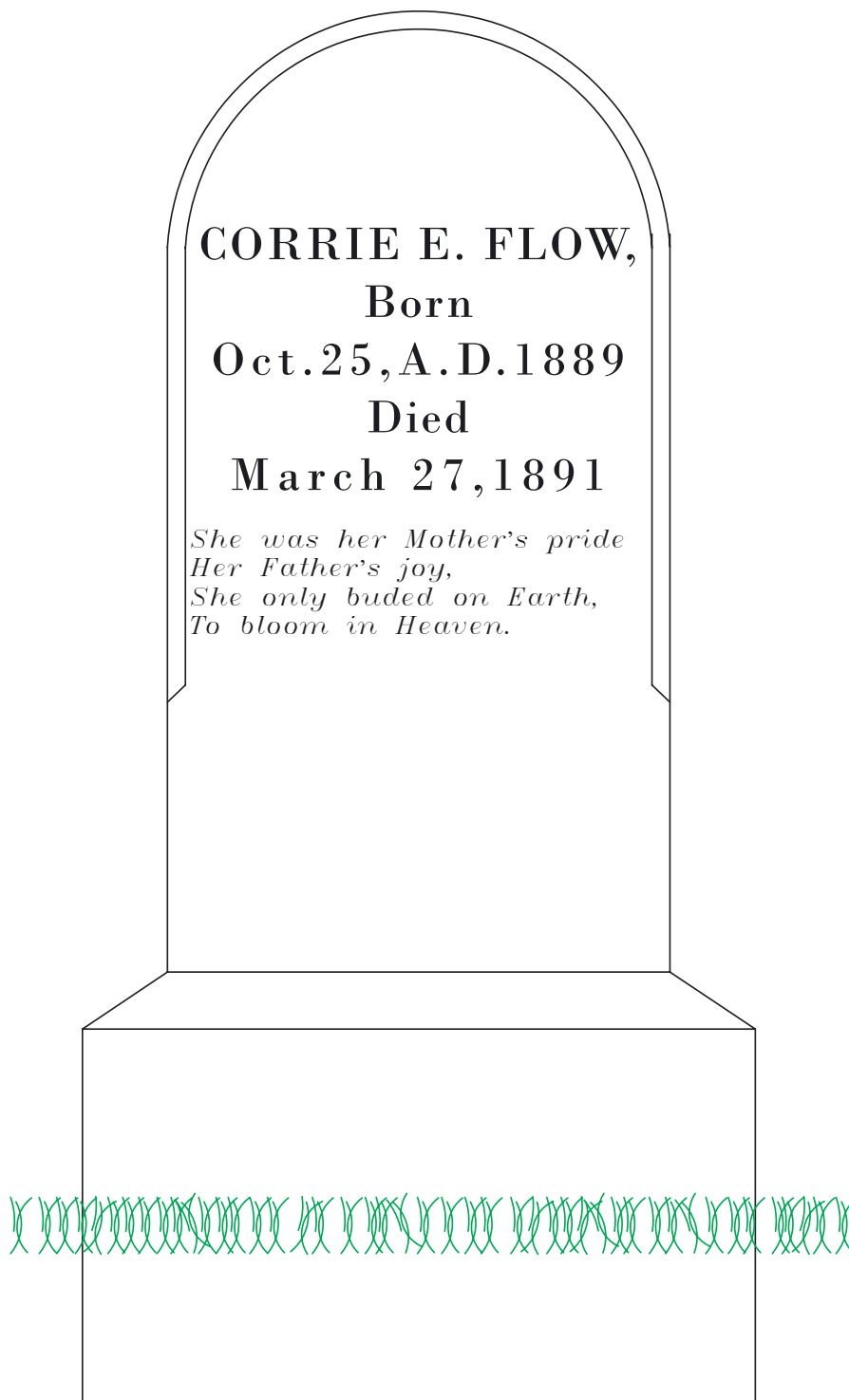


Diagram 2: 0470, Corrie E. Flow

0490 ~ ANNA HICKSON



Figure 16: 0490, Anna Hickson marker, before treatment



Figure 17: 0490, Anna Hickson marker, after treatment

CONDITION

The marker for Anna Hickson is in the southeast quadrant of the cemetery at the side of the looped road. The marble marker consists of three parts; the base measures 9¾-inches in height, and 18-inches in width and depth; the plinth measures 5½-inches in height, and 12-inches in width and depth, and the pillar measures 31½-inches in height and 8-inches in width and depth. An inscription adorns two sides of the plinth. The marble, presumably an urn, which had topped the pillar had broken off at some point and was missing. The marker was heavily soiled and blackened with biological growth. While the pillar continued to stand on the plinth, it was no longer attached. Three pieces of terra cotta rested against the base of the marker, however it does not appear that these pieces are actually part of the monument.

TREATMENT

Dirt and biological growth were removed from the marker by washing the marble. A solution of water and Vulpex Liquid Soap was prepared using approximately ½-ounce of soap to 1-gallon of water. The solution was applied to the pre-wet surface and scrubbed using nylon bristle brushes. The surface was then thoroughly rinsed with clean water to remove all traces of detergent. The extensive biological growth necessitated multiple applications of D/2 Biological Solution. The biocide was applied to dry marble at full strength. The marble was periodically scrubbed for approximately 5 minutes before thoroughly rinsing with clean water to remove all traces of biocide.

The pillar was removed in order to better connect it to the plinth. Two divets on the bottom of the pillar were found which corresponded to two on top of the plinth. These areas were filled with mortar which would have aided in the pillar's attachment. The mortar was carefully chipped away and the area was cleaned. To make the pillar more stable on the plinth, the pillar was attached with an alloy 316 stainless steel threaded rod. The conservator drilled a hole in the center of the plinth and pillar and secured the pin, ½-inch in diameter and 7-inches long, with SikaDur® 31 Epoxy. (Refer to Diagram 3 for the pin location). The joint was pointed using Jahn Repair Mortar.



Figure 18: 0490, before treatment



Figure 19: 0490, cleaning the base



Figure 20: 0490, mortar divets in bottom of pillar



Figure 21: 0490, drilling hole for pin



Figure 22: 0490, setting the pillar



Figure 23: 0490, after treatment

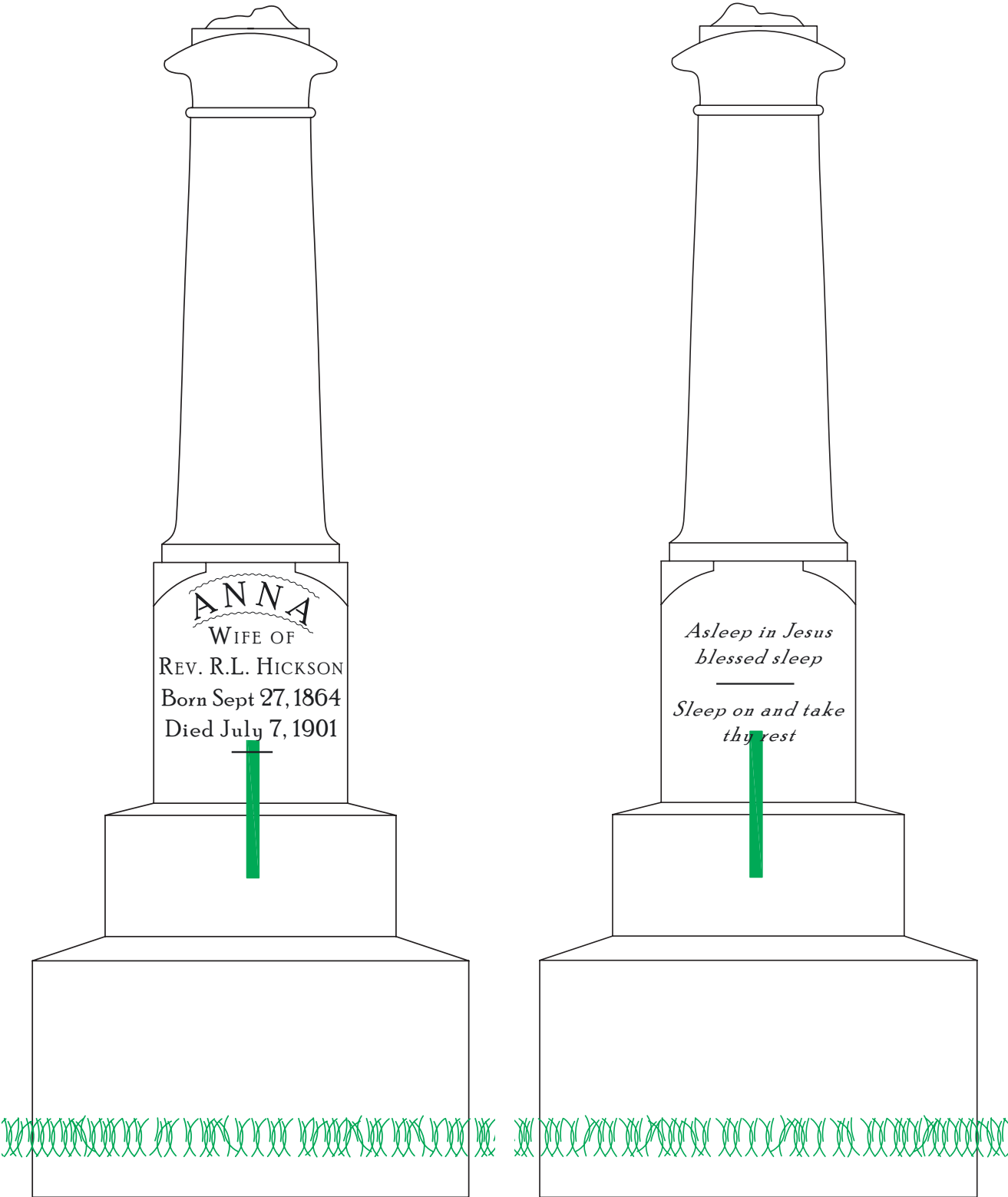


Diagram 3: 0490, Anna Hickson

1/2-inch threaded rod

0500 ~ MILTON HOBBS



Figure 24: 0500, Milton Hobbs marker, before treatment



Figure 25: 0500, Milton Hobbs marker, after treatment

CONDITION

The marker for Milton Hobbs is located in the southeast quadrant of the cemetery. The concrete marker consists of a base measuring 7 $\frac{1}{4}$ -inches in height, 17-inches in width, and 7 $\frac{3}{4}$ -inches in depth and rectangular tablet measuring 28 $\frac{3}{8}$ -inches in height, 12 $\frac{3}{4}$ -inches in width, and 3 $\frac{1}{4}$ -inches in depth. The marker had fallen forward and remained on the ground face down. The headstone remained securely attached to the base. The concrete appears to have been previously painted.

TREATMENT

Due to the condition of the marker, little treatment was necessary. The marker was erected and cleaned of dirt and biological growth. A solution of water and Vulpex Liquid Soap was prepared using approximately $\frac{1}{2}$ -ounce of soap to 1-gallon of water. The solution was applied to the pre-wet surface and scrubbed using nylon bristle brushes. The surface was then thoroughly rinsed with clean water to remove all traces of the detergent. To address additional biological growth, the concrete was cleaned with D/2 Biological Solution. The biocide was applied to the dry surface at full strength. The solution was scrubbed periodically for approximately 5 minutes before thoroughly rinsing with clean water to remove all traces of the biocide.

Microcracks within the marker were addressed by grouting to limit water infiltration. After wetting the cracks, the grout, Jahn Masonry Repair M30 Micro Injection Grout, was inserted into the voids using a syringe.

The hole in which the marker had sat was dug out and the hole was filled with approximately 2-inches of gravel and sand, to promote drainage, and leveled. The marker was set on its new foundation.



Figure 26: 0500, before treatment



Figure 27: 0500, setting marker



Figure 28: 0500, after treatment



Diagram 4: 0500, Milton Hobsn

0501 ~ R. C. DRISCOLL



Figure 29: 0501, R.C. Driscoll marker, before treatment



Figure 30: 0501, R.C. Driscoll marker, after treatment

CONDITION

The marker for R. C. Driscoll is located in the northeast quadrant of the cemetery. The marble marker consists of a base and tablet with a round flared top and adorned with scrollwork. The base measures 8-inches in height, 16-inches in width, and 8-inches in depth. The tablet measures 23¾-inches in height, 12-inches in width, and 2-inches in depth. The die in socket type marker had broken with the tablet lying face up on the ground and part of it remaining in the socket of the base. Both the base and tablet were partially buried.

TREATMENT

The base and tablet were carefully excavated and cleaned of dirt and biological growth. A solution of water and Vulpex Liquid Soap was prepared using approximately ½-ounce of soap to 1-gallon of water. The solution was applied to the pre-wet surface and scrubbed using nylon bristle brushes. The surface was then thoroughly rinsed with clean water to remove all traces of the detergent. Biological growth was removed using D/2 Biological Solution. The biocide was applied to the dry marble at full strength and agitated using nylon bristle brushes. The solution was scrubbed periodically for approximately 5 minutes before thoroughly rinsing with clean water to remove all traces of the biocide.

The excavated area was prepared by filling the hole with approximately 2-inches of gravel and sand to promote drainage and it was leveled; the base was set on its new foundation. The tablet was reattached to the base using alloy 316 stainless steel threaded rods, ¼-inch in diameter and 6-inches in length. The conservator drilled two holes into the bottom of the tablet and corresponding holes in the base. The pins were secured into the holes using SikaDur® 31 Epoxy. (Refer to Diagram 5 for pin locations). The joint between the tablet and base was pointed using Jahn Repair Mortar.

While preparing the area for the new foundation, a small marble slab was discovered. There was no engraving on the marble to indicate that it was a footstone. The marble was photographed and reburied where it had been found.



Figure 31: 0501, before treatment



Figure 32: 0501, marble slab



Figure 33: 0501, cleaning tablet



Figure 34: 0501, drilling holes



Figure 35: 0501, reattaching tablet



Figure 36: 0501, after treatment

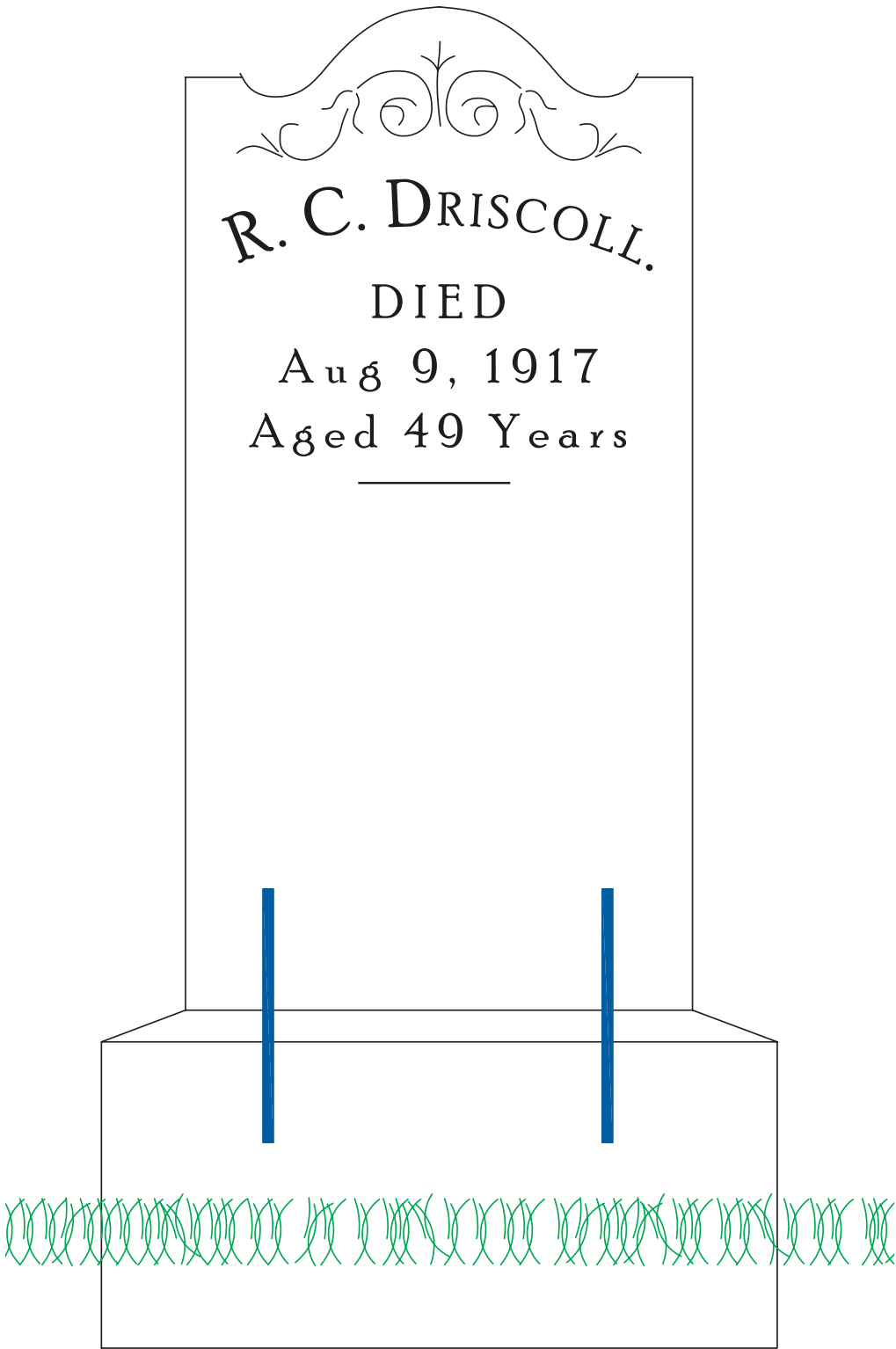



Diagram 5: 0501, R. C. Driscoll

 1/4-inch threaded rod

0505.04 ~ WILLIAM BRYANT WINTHROP



Figure 37: 0505.04, William Bryant Winthrop marker, before treatment



Figure 38: 0505.04, William Bryant Winthrop marker, after treatment

CONDITION

The marker for William Bryant Winthrop is located within a bordered area in the southeast quadrant of the cemetery. The marker is a large grained marble sub-base, base, and cross. The sub-base measures 3½-inches in height, 34-inches in width, and 10-inches in depth, the base measures 8-inches in height, 22-inches in width, and 8-inches in depth. The cross measures 30-inches in height, 16-inches in width (at the arms of the cross), and 3⅝-inches in depth. The base was no longer level. The cross had broken across its middle and the top half lay behind the marker. The bottom half was no longer attached to the base.

TREATMENT

The base was carefully excavated and all of the marble was cleaned of dirt and biological growth. A solution of water and Vulpex Liquid Soap was prepared using approximately ½-ounce of soap to 1-gallon of water. The solution was applied to the pre-wet surface and scrubbed using nylon bristle brushes. The surface was then thoroughly rinsed with clean water to remove all traces of the detergent. Biological growth was removed using D/2 Biological Solution. The biocide was applied to the dry marble at full strength and agitated using nylon bristle brushes. The solution was scrubbed periodically for approximately 5 minutes before thoroughly rinsing with clean water to remove all traces of the biocide.

Upon removal of the base, an existing level foundation was discovered. This was kept in place and cleaned. A bed of Premium Pre-Mixed Mortar Mix & Go from Virginia Lime Works was laid on the foundation and the base was set on top and leveled.

In preparing to repair the marker, the existing pin holes between the cross and base were cleaned out to be reused and a new hole was drilled midway on the vertical break on the cross. Three alloy 316 alloy stainless steel threaded rods, ⅜-inch in diameter and 6-inches long, were used connect the holes across the broken cross and reattach the cross to the base. The pins were secured into the holes using SikaDur® 31 Epoxy. Additionally, the conservator spread a thin layer of epoxy on the broken faces of the marble. (Refer to Diagram 6 for pin locations).

Once the marker was repaired and reinstalled, the area of loss was filled with Jahn Marble Repair Mortar to prevent water infiltration and create a more cohesive surface appearance. The marble was prepared by using a Dremel to create a shoulder approximately ⅛-inch in depth for the patch material to effectively key into. The area to be patched was moistened with clean water at which point the Repair Mortar was applied. A mix of colors was used to better match the marble; this consisted of Jahn M120 28356-MA-2 (light gray), Jahn M120 28355-MA-3 (buff) and Jahn M120 28357-MA-5 (dark gray). The Repair Mortar was further tinted using dry pigments and potassium silicate to blend with the surrounding stone. The joint between the cross and the base was pointed using Jahn Repair Mortar.



Figure 39: 0505.04, before treatment



Figure 40: 0505.04, drilling pin hole



Figure 41: 0505.04, marker pinned



Figure 42: 0505.04, after treatment

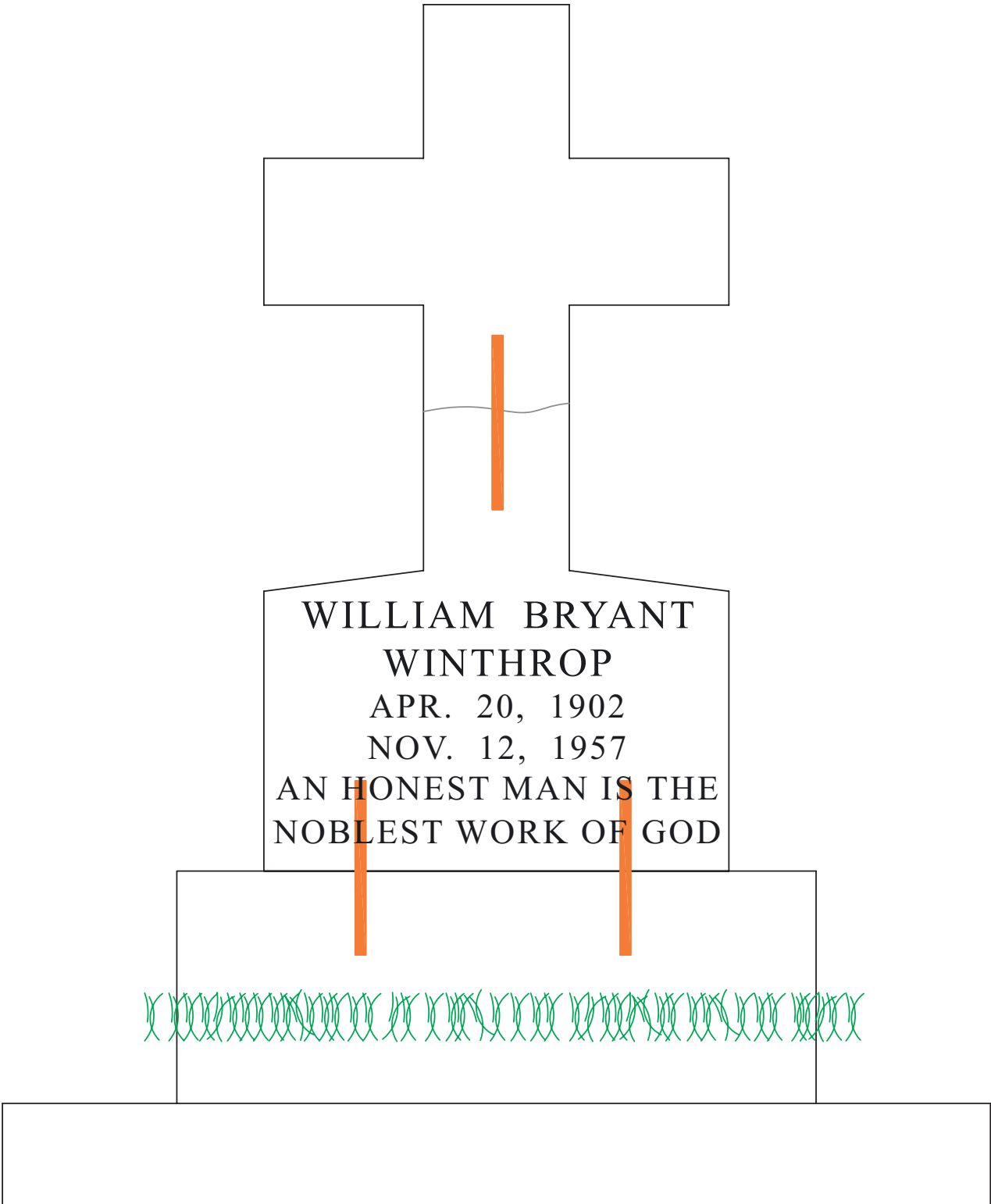



Diagram 6: 0505.04, William Bryant Winthrop

 3/8-inch threaded rod

0509 ~ MILLIE GOUDLOCK



Figure 43: 0509, Millie Goudlock marker, before treatment



Figure 44: 0509, Millie Goudlock marker, after treatment

CONDITION

The marker for Millie Goudlock is found on the hill in the southeast quadrant of the cemetery. The marble base measures 7 $\frac{1}{8}$ -inches in height, 16 $\frac{1}{8}$ -inches in width, and 8 $\frac{1}{8}$ -inches in depth, the marble roundtop headstone measures 13 $\frac{3}{4}$ -inches in height, 11-inches in width, and 3-inches in depth. A dove adorns the top of the headstone. Movement of the soil downhill had covered the marker within approximately five inches from the top. The visible portion of the marker was soiled and exhibited biological growth.

TREATMENT

After the marker was carefully excavated, it was found to still be securely attached to its base. Once free, the marker was cleaned of dirt and biological growth. A solution of water and Vulpex Liquid Soap was prepared using approximately $\frac{1}{2}$ -ounce of soap to 1-gallon of water. The solution was applied to the pre-wet surface and scrubbed using nylon bristle brushes. The surface was then thoroughly rinsed with clean water to remove all traces of the detergent. To address the biological growth, the stone received an additional cleaning using D/2 Biological Solution. The biocide was applied to the dry marble at full strength and agitated using nylon bristle brushes. The solution was scrubbed periodically for approximately 5 minutes before thoroughly rinsing with clean water to remove all traces of the biocide. The marker was reset on approximately 2-inches of level gravel and sand to promote drainage.

When excavating marker 0511, immediately east of 0509, a marble footstone was discovered. The first initial on the footstone was an "M" and while the second initial had partially eroded away, the remaining portion was curved. This indicated the likelihood that it was associated with Millie Goudlock. The marble was cleaned as described above and set immediately uphill from the marker.



Figure 45: 0509, before treatment



Figure 46: 0509, excavating marker



Figure 47: 0509, footstone discovered



Figure 48: 0509, after treatment

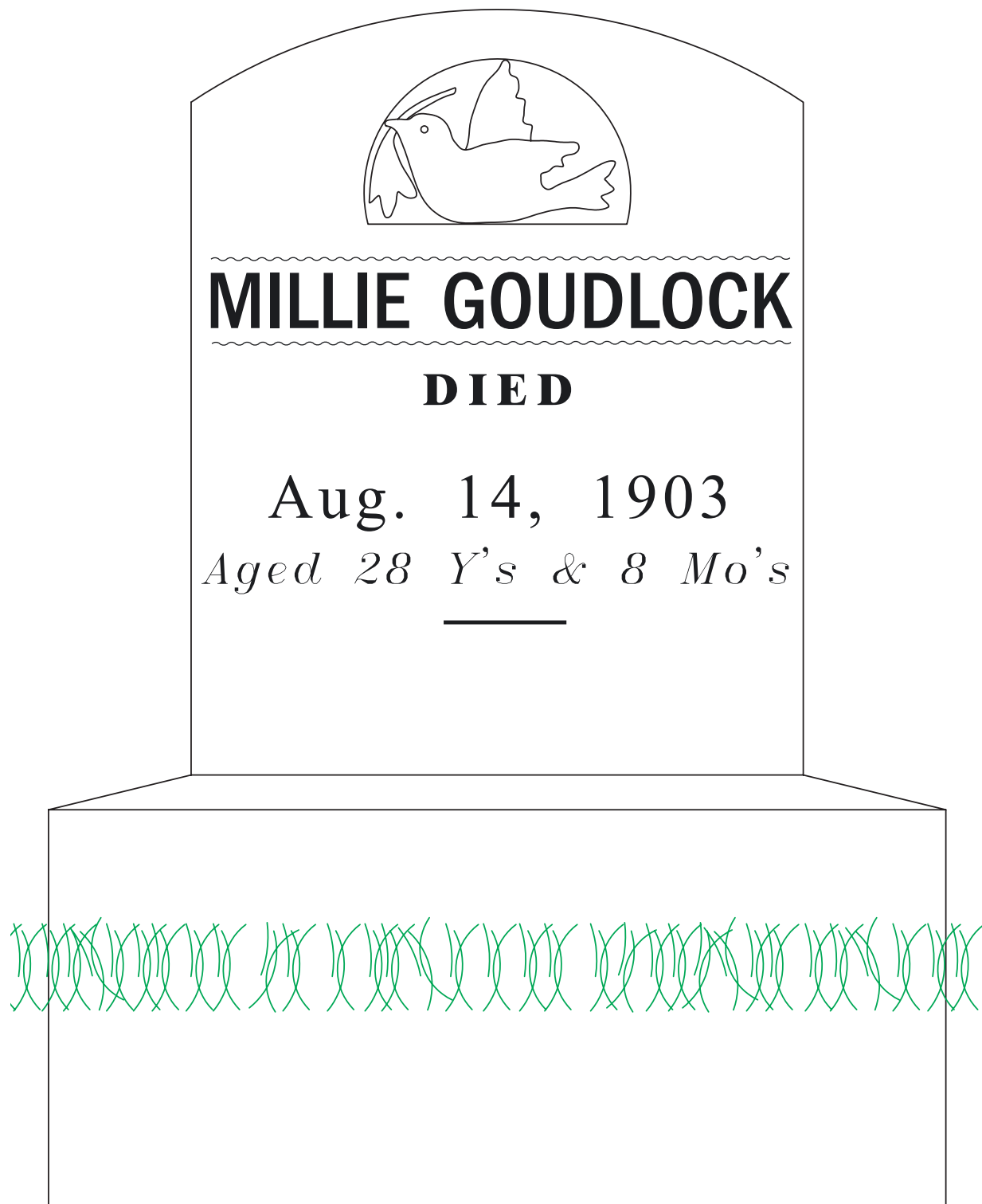


Diagram 7: 0509, Millie Goudlock marker

0511 ~ LULA WOODSON



Figure 49: 0511, Lula Woodson marker, before treatment



Figure 50: 0511, Lula Woodson marker, after treatment

CONDITION

The marker for Lula Woodson is found on the hill in the southeast quadrant of the cemetery. The marble base measures 7¼-inches in height, 16⅛-inches in width, and 8⅛-inches in depth; the marble roundtop headstone measures 13¾-inches in height, 11-inches in width, and 3⅛-inches in depth. A dove adorns the top of the headstone, above the inscription. Movement of the soil downhill covered the marker within approximately eight inches of the top. The visible portion of the marker was soiled and exhibited biological growth.

TREATMENT

After the marker was carefully excavated, it was found to still be securely attached to its base. Once free, the marker was cleaned of dirt and biological growth. A solution of water and Vulpex Liquid Soap was prepared using approximately ½-ounce of soap to 1-gallon of water. The solution was applied to the pre-wet surface and scrubbed using nylon bristle brushes. The surface was then thoroughly rinsed with clean water to remove all traces of the detergent. To address the biological growth, the stone received an additional cleaning using D/2 Biological Solution. The biocide was applied to the dry marble at full strength and agitated using nylon bristle brushes. The solution was scrubbed periodically for approximately 5 minutes before thoroughly rinsing with clean water to remove all traces of the biocide. The marker was reset on approximately 2-inches of level gravel and sand to promote drainage.



Figure 51: 0511, before treatment



Figure 52: 0511, excavating marker



Figure 53: 0511, resetting marker



Figure 54: 0511, after treatment

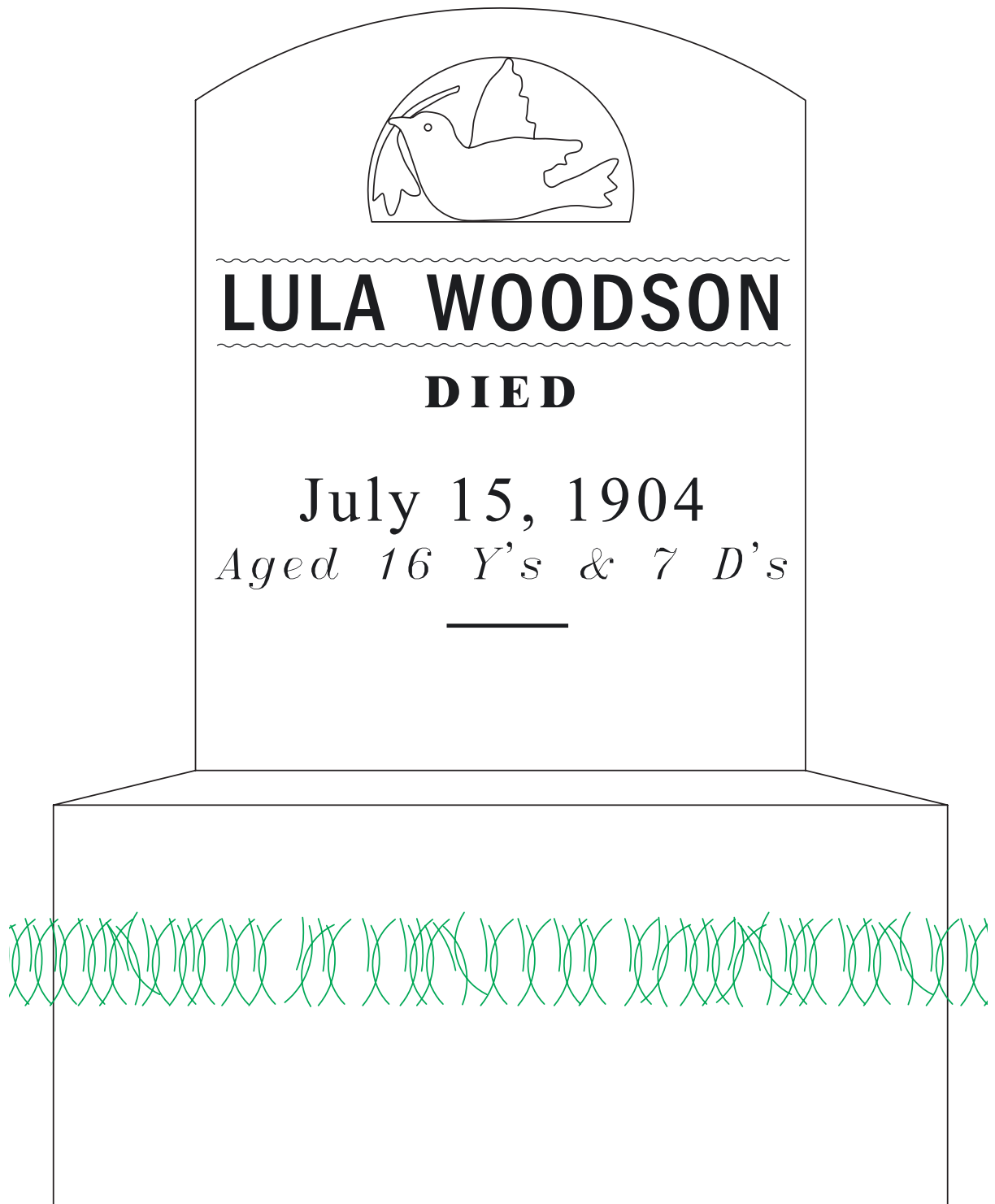


Diagram 8: 0511, Lula Woodson marker

0514 ~ UNKNOWN



Figure 55: 0514, Unknown marker, before treatment



Figure 56: 0514, Unknown marker, after treatment

CONDITION

This unknown marker is located on the hill in the southeast quadrant of the cemetery. It consists of a marble tablet headstone with a beveled edge, a concrete base, a granite sub-base, and marble bedstead. The base measures 8-inches in height, 31³/₄-inches in width, and 10⁵/₈-inches in depth, the base sits askew on the sub-base measuring 4-inches in height, 48-inches in width, and 14¹/₈-inches in depth. The headstone is broken and only the bottom half is visible; this half measures approximately 22-inches in height, 24-inches in width, and 3-inches in depth. The scalloped bedstead is 7¹/₂-inches in height, 26³/₄-inches in width, and 69³/₈-inches in length.

The base and foundation were no longer level and the headstone had broken from it and was lying face up inside the bedstead. The difference in materials, appearance of mortar along its broken edge, and pinholes existing at the top of the broken tablet indicate that the marker had been previously repaired. Ferrous pins remain in the base, headstone, and bedstead. The scalloped bedstead was broken in multiple locations and stood haphazardly along the ground. All elements were soiled and exhibited heavy biological growth.

TREATMENT

To begin treatment of the marker and attempt to find the missing portion of the headstone, it was all excavated. The existing ferrous pins were removed by either simply pulling them out or drilling into the surrounding marble to loosen them. The pins were turned over to the CRBRC. All elements were cleaned. A solution of water and Vulpex Liquid Soap was prepared using approximately 1/2-ounce of soap to 1-gallon of water. The solution was applied to the pre-wet surfaces and scrubbed using nylon bristle brushes. The surfaces were then thoroughly rinsed with clean water to remove all traces of the detergent. To address the extensive biological growth, the elements received multiple cleanings using D/2 Biological Solution. The biocide was applied to the dry marble at full strength and agitated using nylon bristle brushes. The solution was scrubbed periodically for approximately 5 minutes before thoroughly rinsing with clean water to remove all traces of the biocide. In removing the foot of the bedstead a foundation for this stone was discovered. This was cleaned and kept in place.

The marble bedstead was found to be friable necessitating consolidation. ProSoCo's Conservare® HCT was used to form a well-adhered, hydroxylated conversion layer on the carbonate mineral grains to strengthen the stone and increase its resistance to acid attack. Conservare® HCT was applied to the surface by brush to the point of saturation for a total of three applications, with a drying period of 30-minutes between each treatment. The treatment was completed with an application of ProSoCo's Conservare® HCT Finishing Rinse, also applied by brush.

A bed of gravel and sand, approximately 2-inches deep, was laid at the base location and along the bedstead. The sub-base and base were reset on this foundation and leveled. To create a more stable surface for the bedstead to be set on, a second foundation of Quikrete Crack Resistant Concrete was poured, approximately 2-inches deep.

Because the tablet had broken from the base, part of the tablet remained in the socket of the base. The tablet was reattached to the base using alloy 316 stainless steel threaded rods, 3/8-inch in diameter and 6-inches in length. The pins were secured into the existing holes using SikaDur® 31 Epoxy. Additionally, the conservator spread a thin layer of the epoxy on the broken faces. (Refer to Diagram

9 for pin locations).

Once cleaned and consolidated, each side of the marble bedstead was pinned together. The conservator drilled holes midway on the vertical of the breaks. Alloy 316 stainless steel threaded rods, 1/4-inch in diameter and 4-inches long, were used to connect the holes across the breaks. The pins were secured into the holes using SikaDur® 31 Epoxy. Additionally, the conservator spread a thin layer of the epoxy on the broken faces. (Refer to Diagram 10 for pin locations). The two sides and foot of the bedstead were then set on the bed of Premium Pre-Mixed Mortar Mix & Go from Virginia Lime Works and the foot of the bedstead was pinned to the sides in the manner previously described.

Microcracks within the marker were address by grouting to limit water infiltration. After wetting the cracks, the grout, Jahn Masonry Repair M30 Micro Injection Grout, was inserted into the voids using a syringe.

Once the marker was repaired and reinstalled, the areas of loss were filled with Jahn Marble Repair Mortar to prevent water infiltration and create a more cohesive surface appearance. The marble was prepared by using a Dremel to create a shoulder approximately 1/8-inch in depth for the patch material to effectively key into. The areas to be patched were moistened with clean water, at which point the Repair Mortar was applied. A mix of colors was used to better match the marble; this consisted of Jahn M120 28355-MA-3 (buff) and Jahn M120 S1-MA (white). The Repair Mortar was further tinted using dry pigments and potassium silicate to blend with the surrounding stone. The joint between the tablet and base was pointed with Jahn Repair Mortar; additionally, this mortar filled the open pinholes on the top of the broken tablet to prevent water infiltration.



Figure 57: 0514, before treatment



Figure 58: 0514, before treatment



Figure 59: 0514, applying consolidant



Figure 60: 0514, pouring foundation



Figure 61: 0514, pinning bedstead



Figure 62: 0514, bedstead pinned



Figure 63: 0514, after treatment



Figure 64: 0514, after treatment

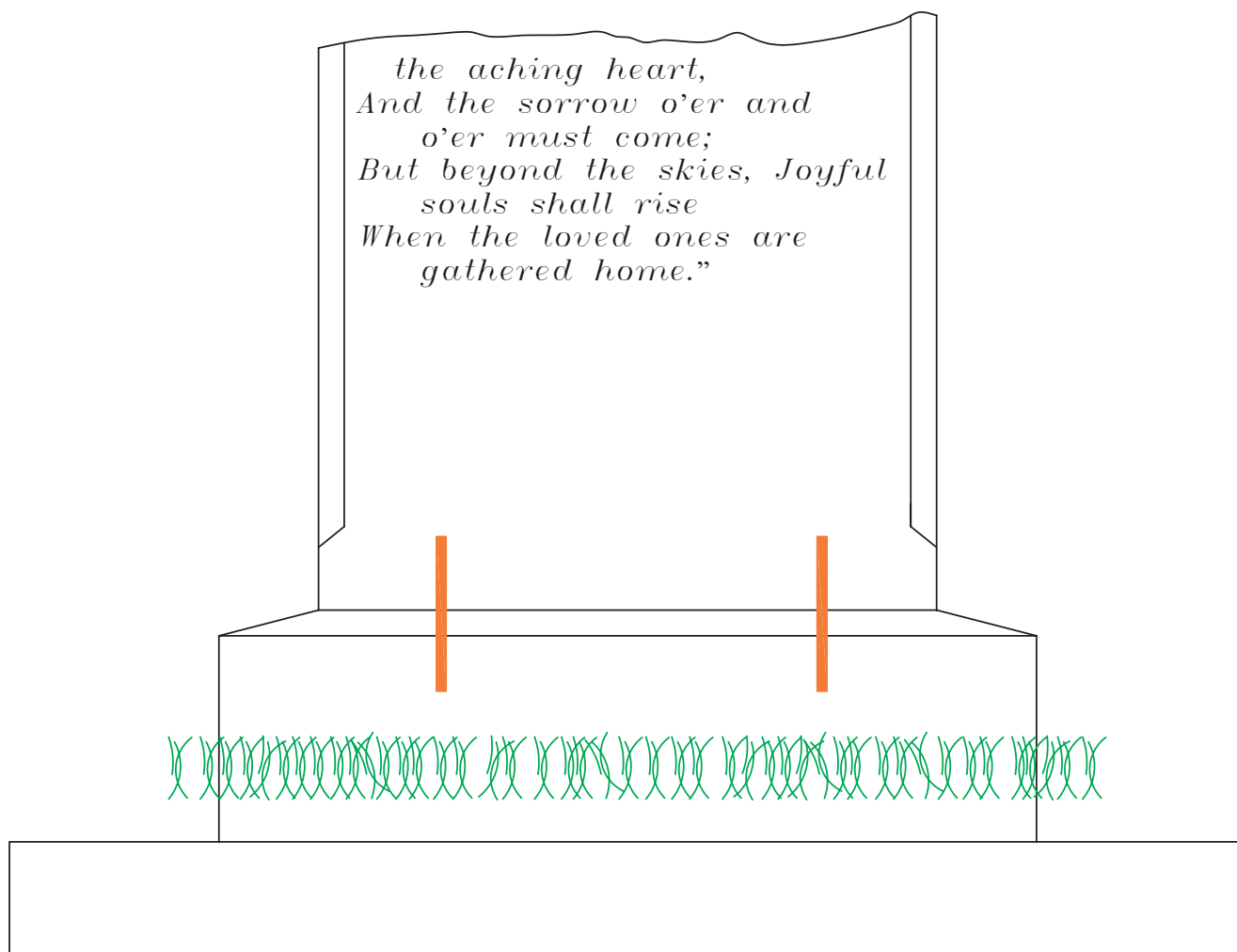


Diagram 9: 0514, Unknown marker

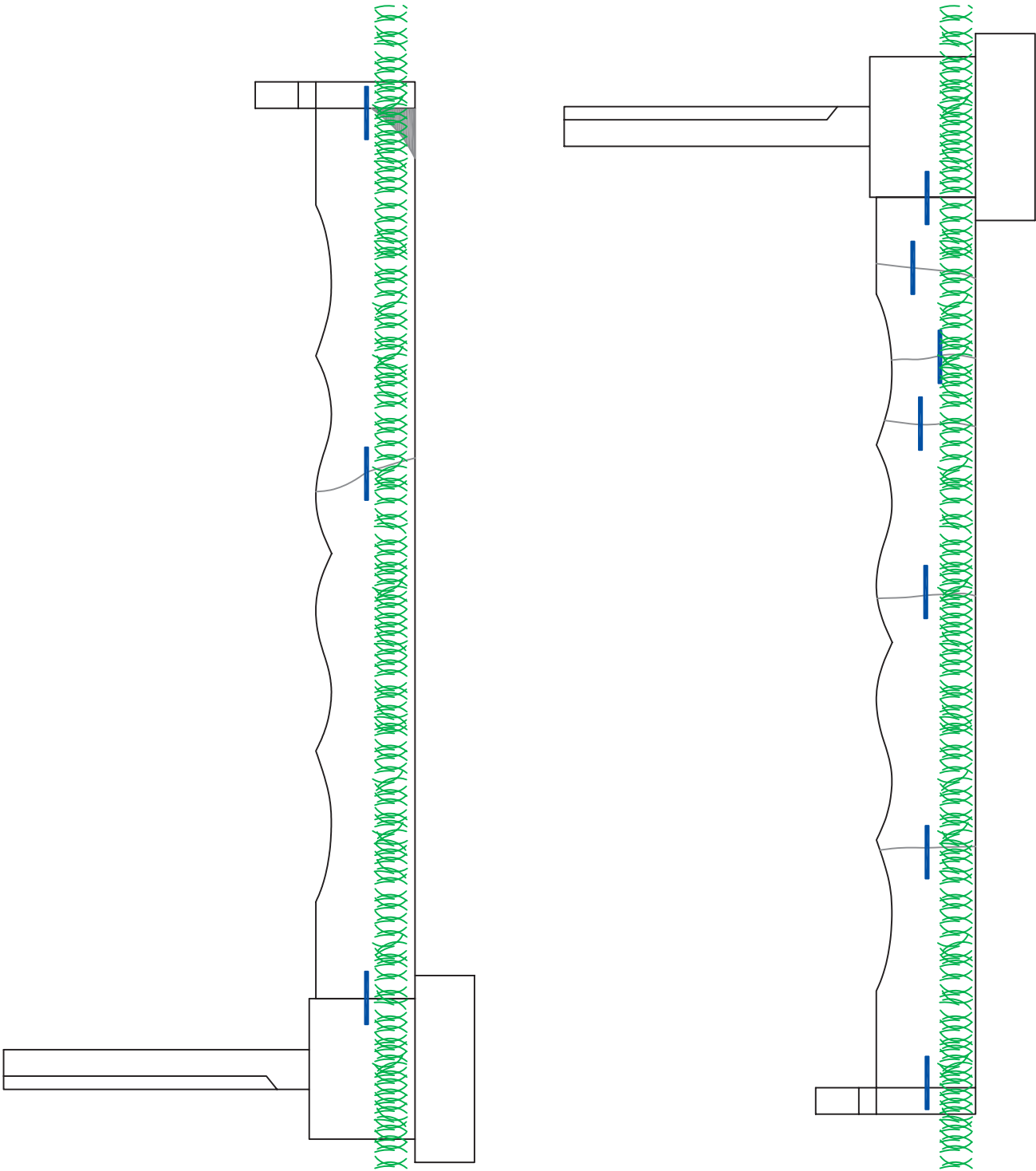



Diagram 10: 0514, Unknown marker, bedstead

 1/4-inch threaded rod

0537 ~ WYATTE McMASTER AND RACHEL RHODA JACKSON



Figure 65: 0537, Wyatt McMaster and Rachel Rhoda Jackson marker, before treatment



Figure 66: 0537, Wyatt McMaster and Rachel Rhoda Jackson marker, after treatment

CONDITION

The marker for Wyatte McMaster and Rachel Rhoda Jackson is located on the hill in the southeast quadrant of the cemetery. The marker consists of a marble sub-base, base, and tablet, as well as a marble footstone. The stepped roundtop tablet is adorned with a branch. The marble sub-base measures 2¾-inches in height, 26-inches in width, and 7¾-inches in depth; the marble base measures 10-inches in height, 24¼-inches in width, and 10-inches in depth; the tablet measures 30-inches in height, 17½-inches in width, and 2¾-inches in depth.

The tablet had fallen backward and was lying face up on the ground. At the time of the survey the base and sub-base were not visible. The marble footstone reading “W. M^c. M” was found lying beside the tablet.

TREATMENT

The tablet was lifted from the ground and the area was prepared for the installation of a new base at which point the original, though broken, base and sub-base were discovered. All marble pieces were cleaned. A solution of water and Vulpex Liquid Soap was prepared using approximately ½-ounce of soap to 1-gallon of water. The solution was applied to the pre-wet surfaces and scrubbed using nylon bristle brushes. The surfaces were then thoroughly rinsed with clean water to remove all traces of the detergent. To address biological growth, the elements received an additional cleaning using D/2 Biological Solution. The biocide was applied to the dry marble at full strength and agitated using nylon bristle brushes. The solution was scrubbed periodically for approximately 5 minutes before thoroughly rinsing with clean water to remove all traces of the biocide.

After cleaned, the broken base was repaired by pinning with alloy 316 stainless steel threaded rods, ¼-inch in diameter and 4-inches in length. The conservator drilled holes into the base and corresponding holes in the broken pieces. The pins were secured into the holes using SikaDur® 31 Epoxy. Additionally, the conservator spread a thin layer of the epoxy on the broken faces of the marble. (Refer to Diagrams 11 and 12 for pin locations.

Following an appropriate dwell time, the sub-base was reset in the ground, now on a new foundation of approximately 2-inches of gravel and sand. The base was then set on a bed of Premium Pre-Mixed Mortar Mix & Go from Virginia Lime Works on the sub-base. To help stabilize the tablet in the socket of the base, it was pinned with two alloy 316 stainless steel threaded rods, ⅜-inch in diameter and 6-inches long. The conservator drilled two holes into the bottom of the tablet and corresponding holes in the base. The pins were secured into the holes using SikaDur® 31 Epoxy.

Once the marker was repaired and reinstalled, the areas of loss on the base were filled with Jahn Marble Repair Mortar to prevent water infiltration and create a more cohesive surface appearance. The marble was prepared by using a Dremel to create a shoulder approximately ⅛-inch in depth for the patch material to effectively key into. The areas to be patched were moistened with clean water, at which point the Repair Mortar was applied. A mix of colors was used to better match the marble; this consisted of Jahn M120 28355-MA-3 (buff) and Jahn M120 28357-MA-5 (dark gray). The Repair Mortar was further tinted with dry pigments and potassium silicate to blend with the surrounding stone. The joint between the tablet and base was pointed using Jahn Repair Mortar.



Figure 67: 0537, before treatment



Figure 68: 0537, excavated sub-base and base



Figure 69: 0537, drilling pin holes



Figure 70: 0537, installing tablet



Figure 71: 0537, tinting repair mortar



Figure 72: 0537, after treatment

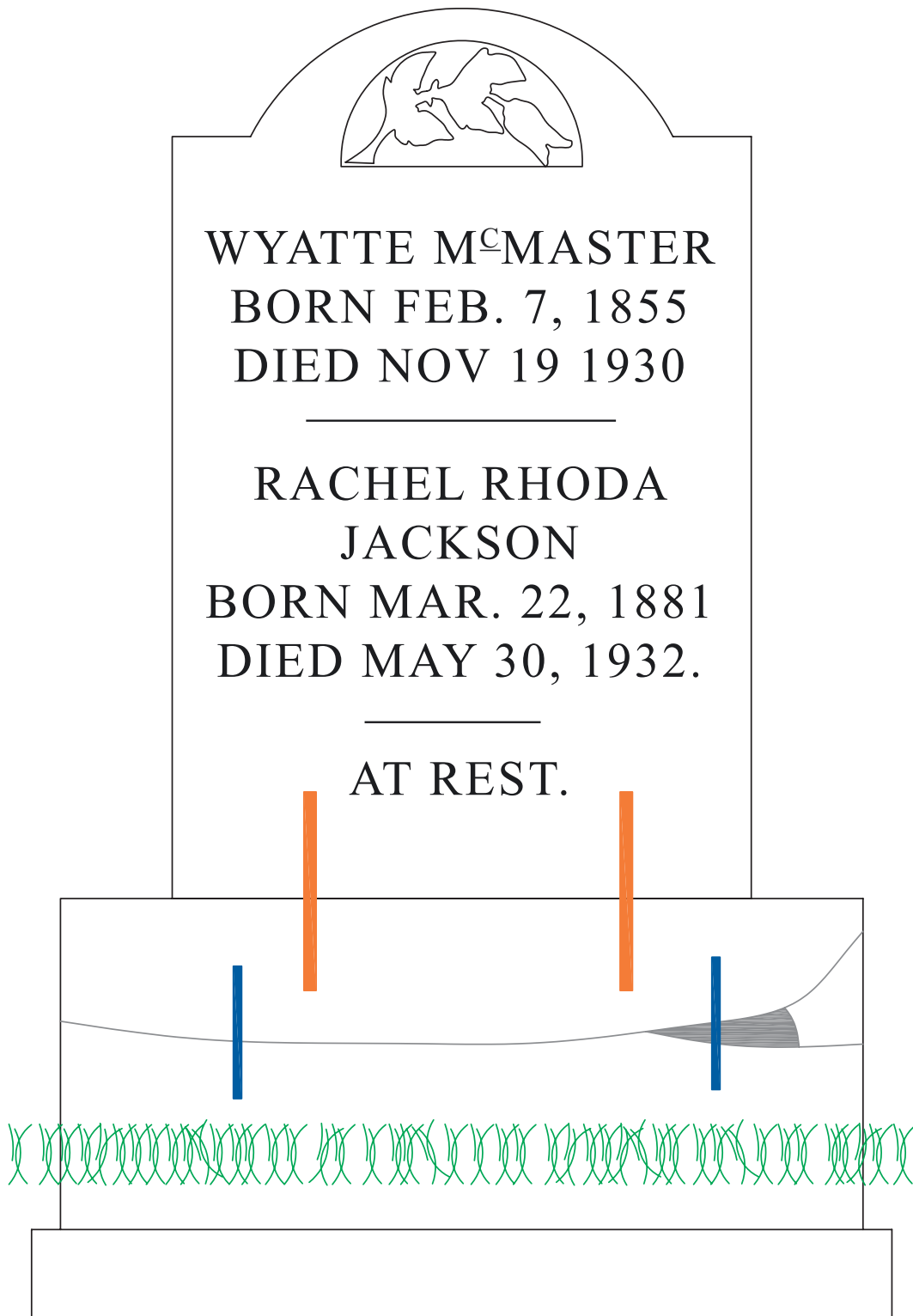


Diagram 11: 0537, Wyatt McMaster and Rachel Rhoda Jackson marker

— $\frac{1}{4}$ -inch threaded rod — $\frac{3}{8}$ -inch threaded rod

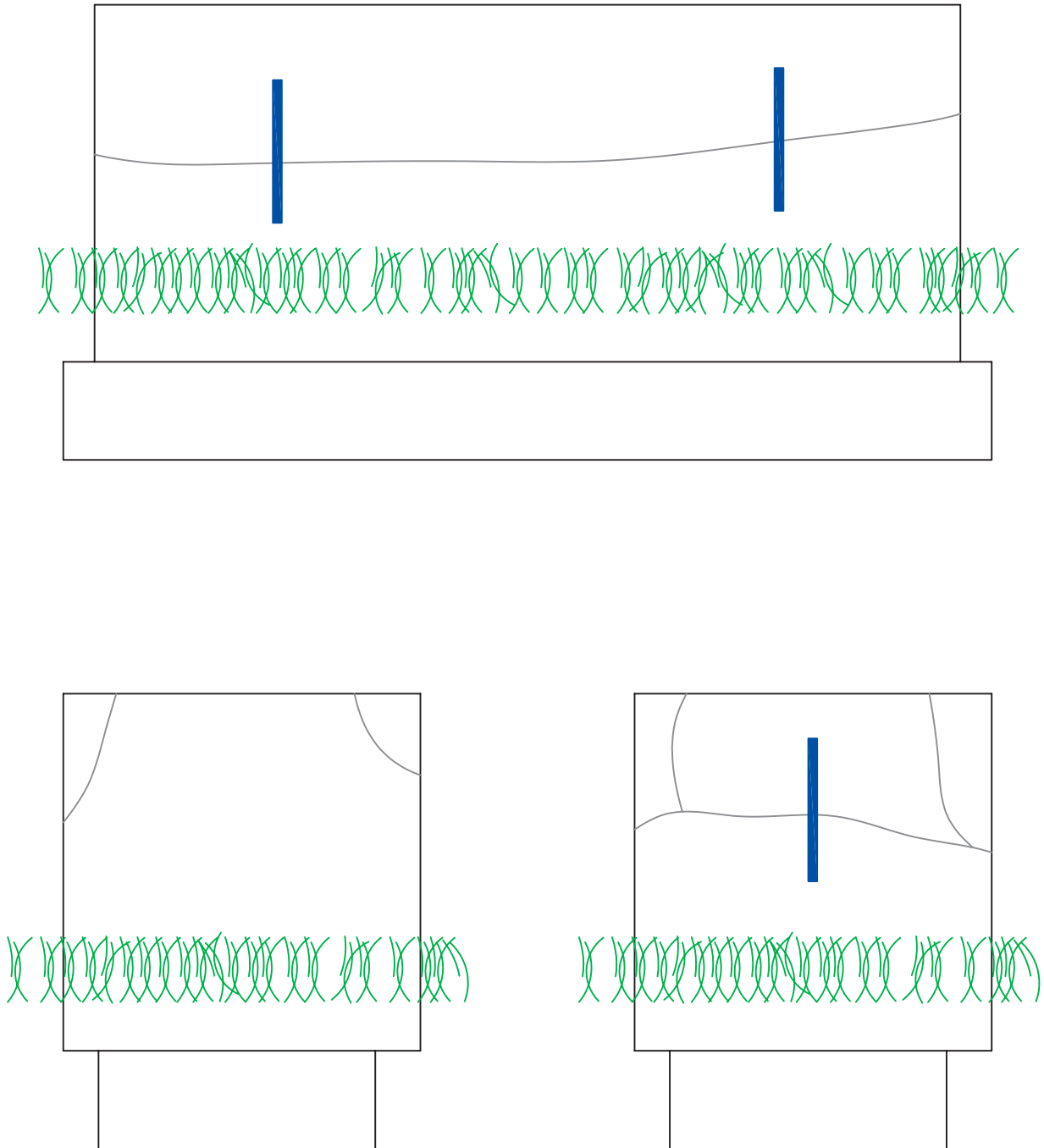



Diagram 12: 0537, Wyatt McMaster and Rachel Rhoda Jackson marker

 $\frac{1}{4}$ -inch threaded rod

0558 ~ REV. SARAH H. SMITH



Figure 73: 0558, Sarah H. Smith marker, before treatment



Figure 74: 0558, Sarah H. Smith marker, after treatment

CONDITION

The marker for Sarah H. Smith is in the northeast quadrant of the cemetery, at the side of the looped road. The marble marker is in four parts. The base measures 12-inches in height and 24⁵/₈-inches in width and depth. The plinth measures 10¹/₂-inches in height and 19-inches in width and depth. The upper block measures 20-inches in height and 13⁷/₈-inches in width and depth. The inscription adorns the plinth and upper block. The pillar measures 61-inches in height and 8³/₄-inches in width and depth. The pillar is adorned with a circle and scrollwork design and is capped by an urn. A marble bedstead stretches behind the marker.

The marker was repaired during the first phase of work at the Cemetery. Within the following year, it appears that the marker was knocked, possibly by a riding mower, and the pillar fell off. The threaded rod remains secure in the plinth and no damage occurred to the bottom of the pillar. The repaired area at the urn was damaged, though the urn was still attached.

TREATMENT

The pillar and urn were stood up and cleaned. A solution of water and Vulpex Liquid Soap was prepared using approximately 1/2-ounce of soap to 1-gallon of water. The solution was applied to the pre-wet surfaces and scrubbed using nylon bristle brushes. The surfaces were then thoroughly rinsed with clean water to remove all traces of the detergent. Mortar on the bottom of the pillar was chipped off.

Because the urn was no longer immobile on the pillar, it was secured by creating a tripod of alloy 316 stainless steel threaded rods. These pins consisted of two 1/8-inch in diameter and approximately 1 1/8-inch long standing vertically around the existing pin and one 1/4-inch in diameter and 1/2-inch long situated horizontally. The pins were simply secured into place using SikaDur® 31 Epoxy. Once set, the neck of the urn was fill with Repair Mortar to prevent water infiltration and create a more cohesive surface appearance. The area to be patched was moistened with clean water, at which point the Repair Mortar was applied. A mix of colors was used to better match the marble; this consisted of Jahn M120 28357-MA-5 (dark gray), Jahn M120 28356-MA-2 (light gray), and Jahn M120 28355-MA-3 (buff). The patch was sculpted to the appropriate surface level.

The pillar was reset on the plinth using a forklift. As the pin was still in place on the plinth, the pin was re-adhered to the pillar with SikaDur® 31 Epoxy. The joint was pointed using Jahn Repair Mortar.



Figure 75: 0558, before treatment



Figure 76: 0558, before treatment



Figure 77: 0558, mortar removed



Figure 78: 0558, after treatment

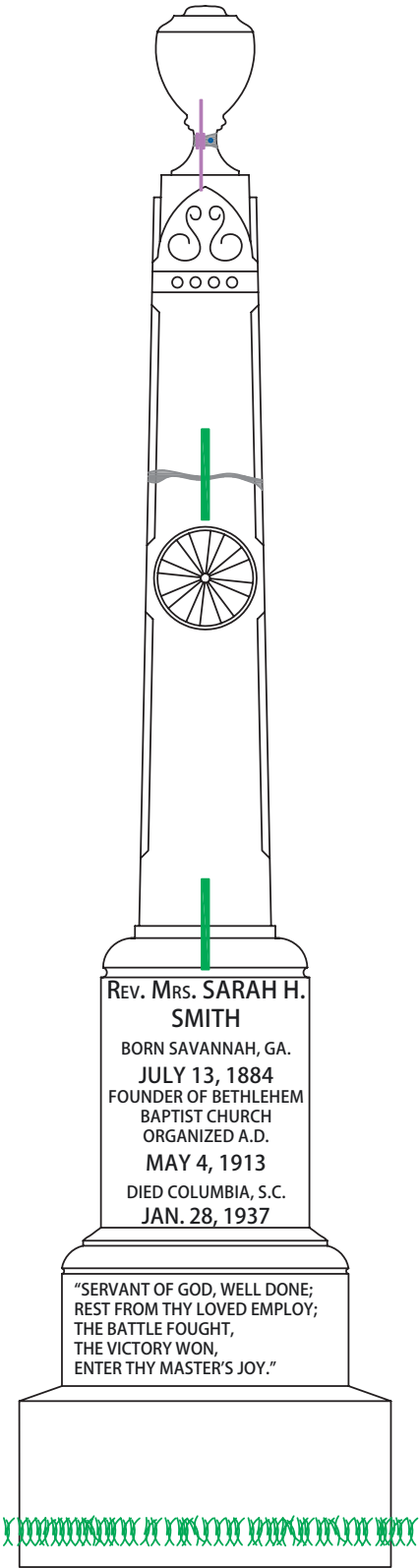


Diagram 13: 0558, Sarah H. Smith

— $\frac{1}{8}$ -inch threaded rod — $\frac{1}{4}$ -inch threaded rod — $\frac{1}{2}$ -inch threaded rod

0565 ~ ROBERT EUGENE BROWN



Figure 79: 0565, Robert Eugene Brown marker, before treatment



Figure 80: 0565, Robert Eugene Brown marker, after treatment

CONDITION

The marker for Robert Eugene Brown is located in the northeast quadrant of the cemetery. It consists of a concrete headstone, a marble headstone, and a concrete bedstead. The concrete headstone has a stepped gable and measures 45-inches in height, 24-inches in width, and 5-inches in depth. A figure is centered in a small niche in the lower half of the headstone above which is a rectangular niche. The rectangular niche is now empty though it may have at one time held a small tablet with an inscription. The concrete headstone was lying on its backside in east end of the bedstead and was broken across the upper niche. The marble headstone is a roundtop military marker measuring 42-inches in height, 13-inches in width, and 2½-inches in depth. The headstone was lying facedown in west end the bedstead. The concrete bedstead is broken across the middle on its long sides and a thinner wall on the west end had been broken into multiple pieces.

While the concrete headstone no longer has an inscription, it is likely that the two headstones are related because military markers are offered free of charge.

TREATMENT

To begin treatment of the marker it was all excavated. With removal of the military headstone, a second thinner wall to the west end of the bedstead was discovered. All elements were cleaned using a solution of water and Vulpex Liquid Soap, approximately ½-ounce of soap to 1-gallon of water. The solution was applied to the pre-wet surfaces and scrubbed using nylon bristle brushes. The surfaces were then thoroughly rinsed with clean water to remove all traces of the detergent. To address biological growth, the elements received an additional cleaning using D/2 Biological Solution. The biocide was applied to the dry concrete and marble at full strength and agitated using nylon bristle brushes. The solution was scrubbed periodically for approximately 5 minutes before thoroughly rinsing with clean water to remove all traces of the biocide.

The concrete marker was repaired by pinning the halves together. The conservator drilled holes midway on the vertical break. Two alloy 316 stainless steel threaded rods, ⅜-inch in diameter and 6-inches in length, were used to connect the holes across the breaks. The pins were secured into the holes using SikaDur® 31 Epoxy. Additionally, the conservator spread a thin layer of the epoxy on the broken faces of the marble. (Refer to Diagram 14 for pin locations).

The bedstead pieces were set onto a bed of Quikrete Crack Resistant Concrete and leveled. The broken thin west end walls were pieced back together and epoxied using SikaDur® 31 Epoxy.

The concrete foundation was extended inside the bedstead on the east end to accommodate the concrete headstone. This headstone was set on a bed of Premium Pre-Mixed Mortar Mix & Go from Virginia Lime Works. Once reinstalled, all of the cracked or broken areas of the concrete were filled with Jahn Concrete Repair Mortar to prevent water infiltration and create a more cohesive surface appearance. The areas to be patched were moistened with clean water, at which point Jahn M90 S1-CR was applied. The Repair Mortar was further tinted using dry pigments and potassium silicate to blend with the surrounding concrete. Microcracks within the concrete headstone were address by grouting to limit water infiltration. After wetting the cracks, the grout, Jahn Masonry Repair M30 Micro Injection Grout, was inserted into the voids using a syringe.

The location of the marble headstone and broken thin west end walls upon the survey indicated that the military headstone had been located just outside the bedstead. It was reinstalled at this location on a bed of approximately 2-inches of gravel and sand to promote drainage.



Figure 81: 0565, before treatment



Figure 82: 0565, before treatment



Figure 83: 0565, before treatment



Figure 84: 0565, broken thin walls on west end



Figure 85: 0565, marker excavated



Figure 86: 0565, preparing marker for pinning



Figure 87: 0565, reinstalling bedstead



Figure 88: 0565, after treatment



Figure 89: 0565, after treatment



Figure 90: 0565, after treatment

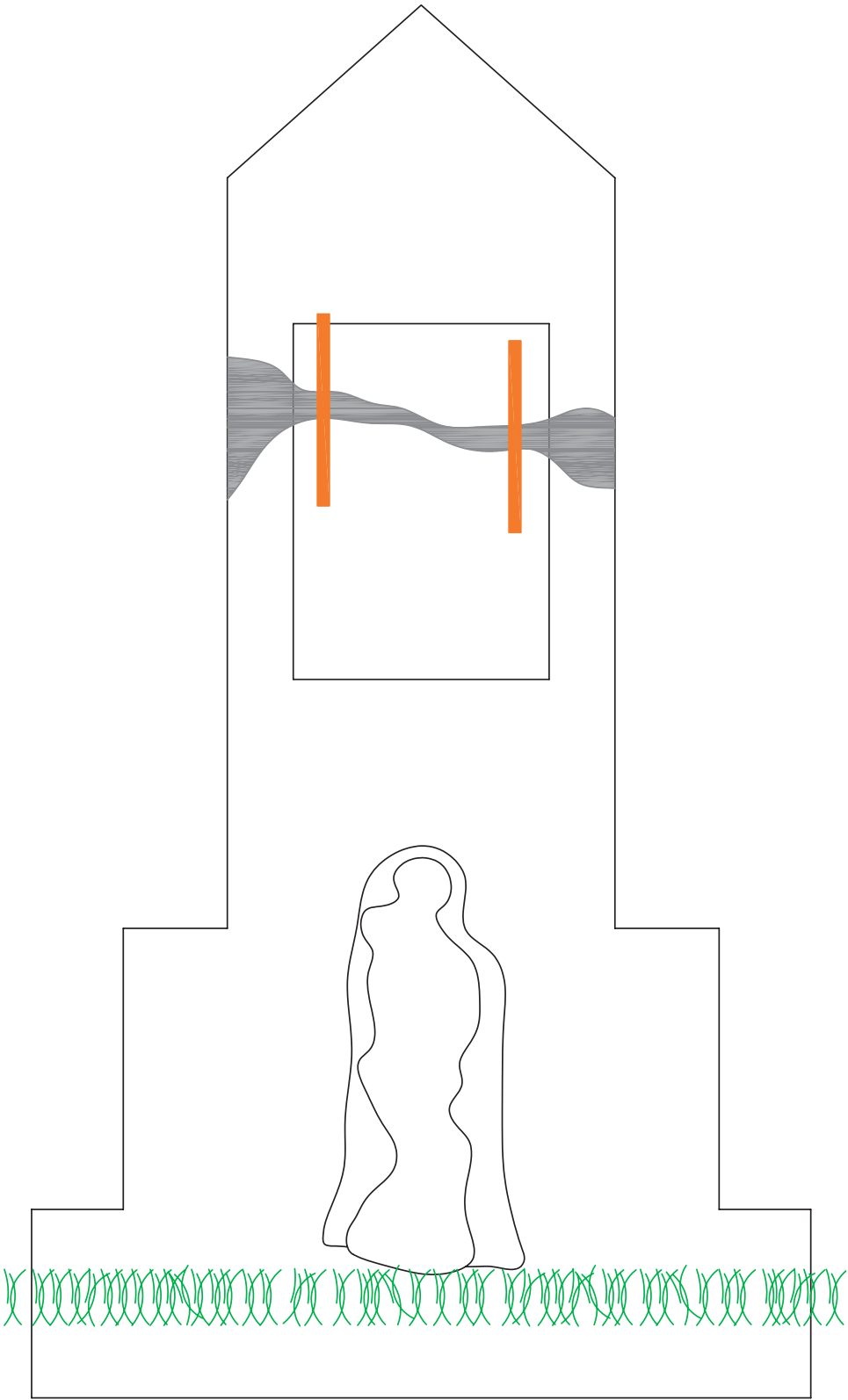



Diagram 14: 0565, Robert Eugene Brown

 $\frac{3}{8}$ -inch threaded rod

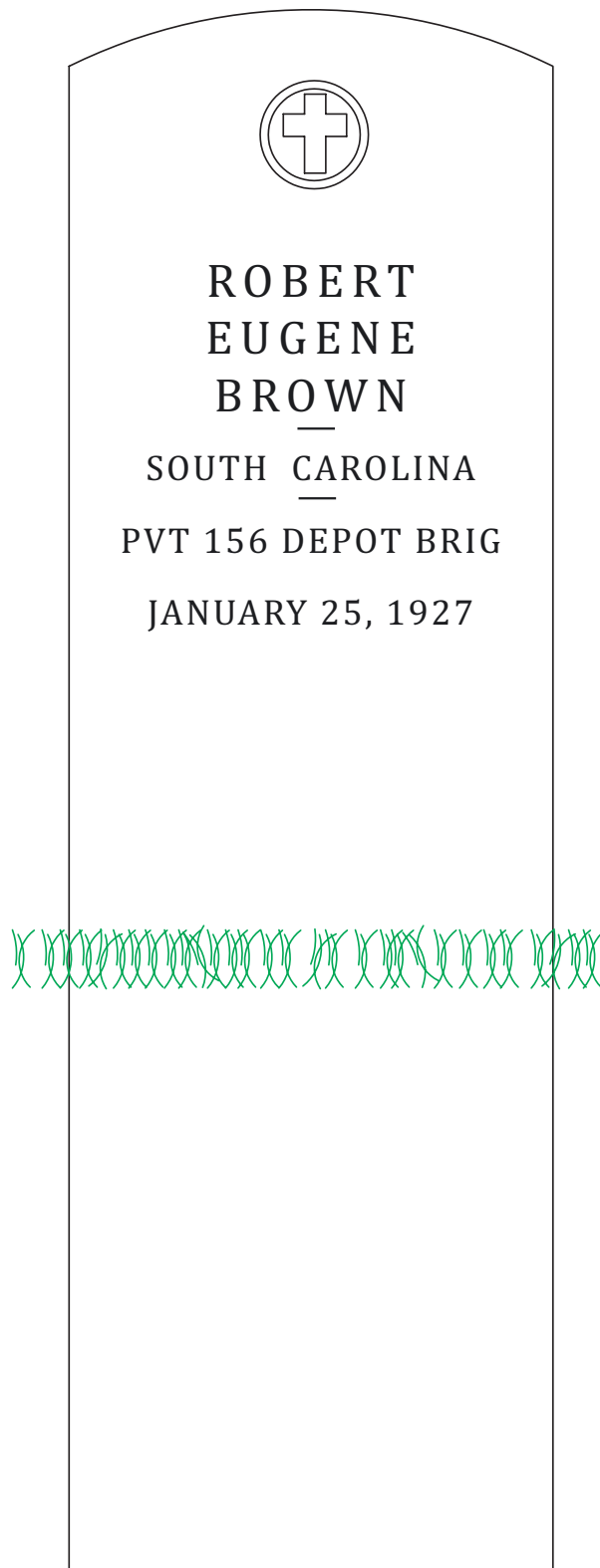


Diagram 15: 0565, Robert Eugene Brown

0644.01 ~ OCTAVIA BUTLER AND CYRUS J. BUTLER



Figure 91: 0644.01, Octavia and Cyrus J. Butler marker, before treatment



Figure 92: 0644.01, Octavia and Cyrus J. Butler marker, after treatment

CONDITION

The marker for Octavia and Cyrus J. Butler is located in the far northeast quadrant. The roundtop granite headstone is adorned with a floral design. The granite base measures approximately 13-inches in height, 48½-inches in width, and 13-inches in depth; the headstone measures 24-inches in height, 34½-inches in width, and 6-inches in depth. The headstone had fallen backwards from the base and was lying on its backside supported by a concrete boundary wall. Mortar was still visible on the base and bottom of the headstone.

TREATMENT

Because the base was no longer level, it was carefully excavated and reset on a bed of approximately 2-inches of gravel and sand to aide in drainage. The headstone was raised and reset on the base on a bed of Premium Pre-Mixed Mortar Mix & Go from Virginia Lime Works.

After an appropriate dwell time, the granite was cleaned. A solution of water and Vulpex Liquid Soap was prepared using approximately ½-ounce of soap to 1-gallon of water. The solution was applied to the pre-wet surface and scrubbed using nylon bristle brushes. The surface was then thoroughly rinsed with clean water to remove all traces of the detergent. To remove any biological growth D/2 Biological Solution was applied to the dry granite at full strength. The solution was scrubbed periodically for approximately 5 minutes before thoroughly rinsing with clean water to remove all traces of the biocide. The joint between the headstone and base was pointed with Jahn Repair Mortar.



Figure 93: 0644.01, before treatment



Figure 94: 0644.01, resetting headstone



Figure 95: 0644.01, cleaning marker



Figure 96: 0644.01, after treatment

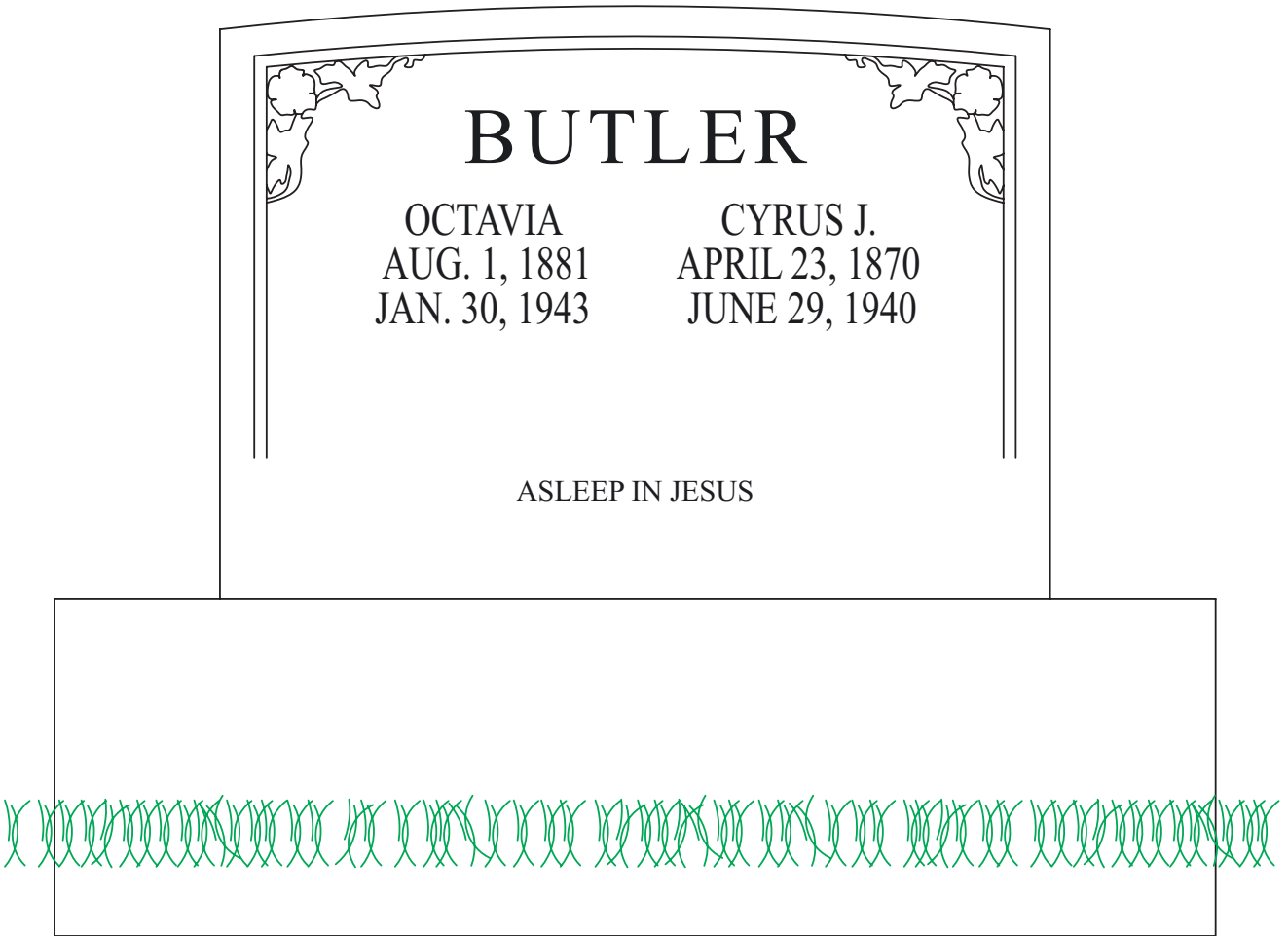


Diagram 16: 0644.01, Octavia and Cyrus J. Butler marker

0794 ~ SAMUEL YOUNG



Figure 97: 0794, Samuel Young marker, before treatment



Figure 98: 0794, Samuel Young marker, after treatment

CONDITION

The marker for Samuel Young is located in the northwest quadrant of the cemetery near the looped road. The marble roundtop military marker measures 41 $\frac{7}{8}$ -inches in height, 13 $\frac{1}{8}$ -inches in width, and 3 $\frac{7}{8}$ -inches in depth. It had fallen over and was lying facedown.

TREATMENT

The marker was carefully excavated and cleaned. A solution of water and Vulpex Liquid Soap was prepared using approximately $\frac{1}{2}$ -ounce of soap to 1-gallon of water. The solution was applied to the pre-wet surface and scrubbed using nylon bristle brushes. The surface was then thoroughly rinsed with clean water to remove all traces of the detergent. To remove any biological growth D/2 Biological Solution was applied to the dry marble at full strength. The solution was scrubbed periodically for approximately 5 minutes before thoroughly rinsing with clean water to remove all traces of the biocide. The marker was then reset on a new bed of gravel and sand, approximately 2-inch deep, and leveled.



Figure 99: 0794, before treatment



Figure 100: 0794, marker excavated



Figure 101 0794, after treatment

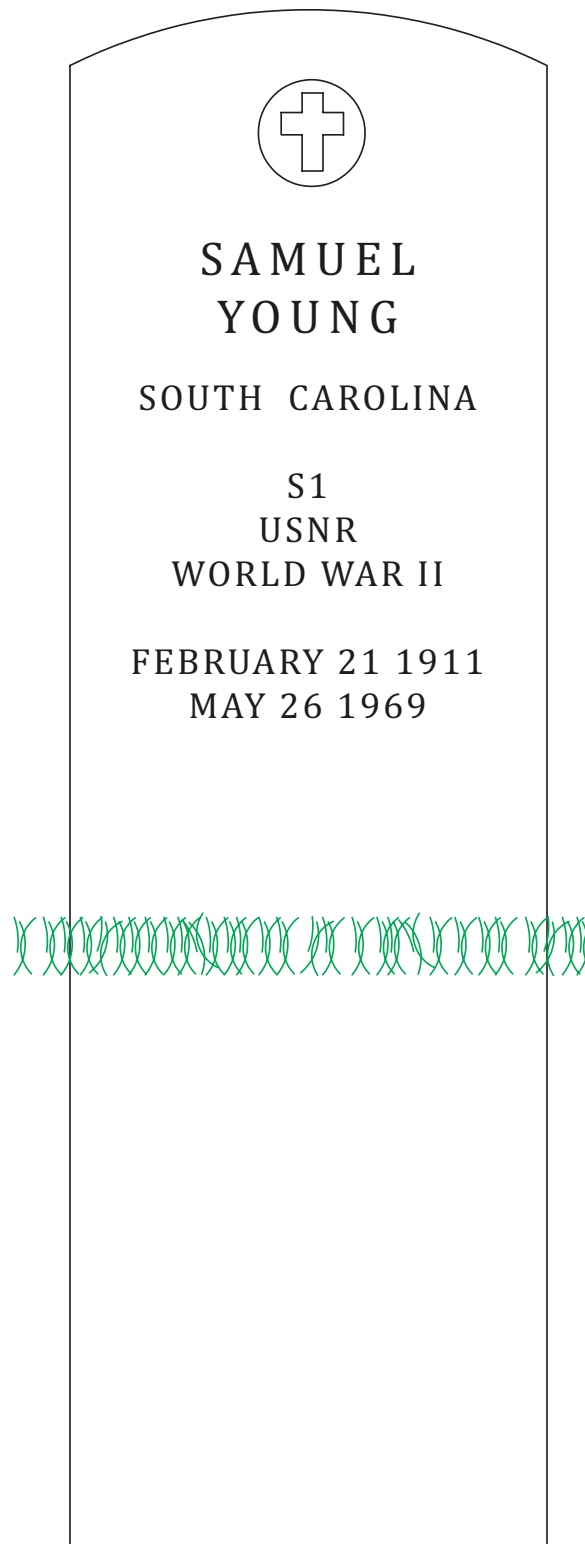


Diagram 17: 0794, Samuel Young marker

0903 ~ HENRY MEANS



Figure 102: 0903, Henry Means marker, before treatment



Figure 103: 0903, Henry Means marker, after treatment

CONDITION

The marker for Henry Means is located in the northeast quadrant of the cemetery at the side of the looped road. The marble roundtop military marker measures approximately 42-inches in height, 13-inches in width, and 4-inches in depth. The ground immediately north of the marker had settled causing the marble to lean in that direction. The marble was heavily soiled and exhibited biological growth.

TREATMENT

The marker was carefully excavated and cleaned. A solution of water and Vulpex Liquid Soap was prepared using approximately ½-ounce of soap to 1-gallon of water. The solution was applied to the pre-wet surface and scrubbed using nylon bristle brushes. The surface was then thoroughly rinsed with clean water to remove all traces of detergent. The extensive biological growth necessitated the use of D/2 Biological Solution. The biocide was applied to dry marble at full strength. The solution was periodically for approximately 5 minutes before thoroughly rinsing with clean water to remove all traces of biocide. The marker was then reset on a new bed of gravel and sand, approximately 2-inch deep, and leveled.



Figure 104: 0903, before treatment



Figure 105: 0903, digging hole for marker



Figure 106: 0903, after treatment

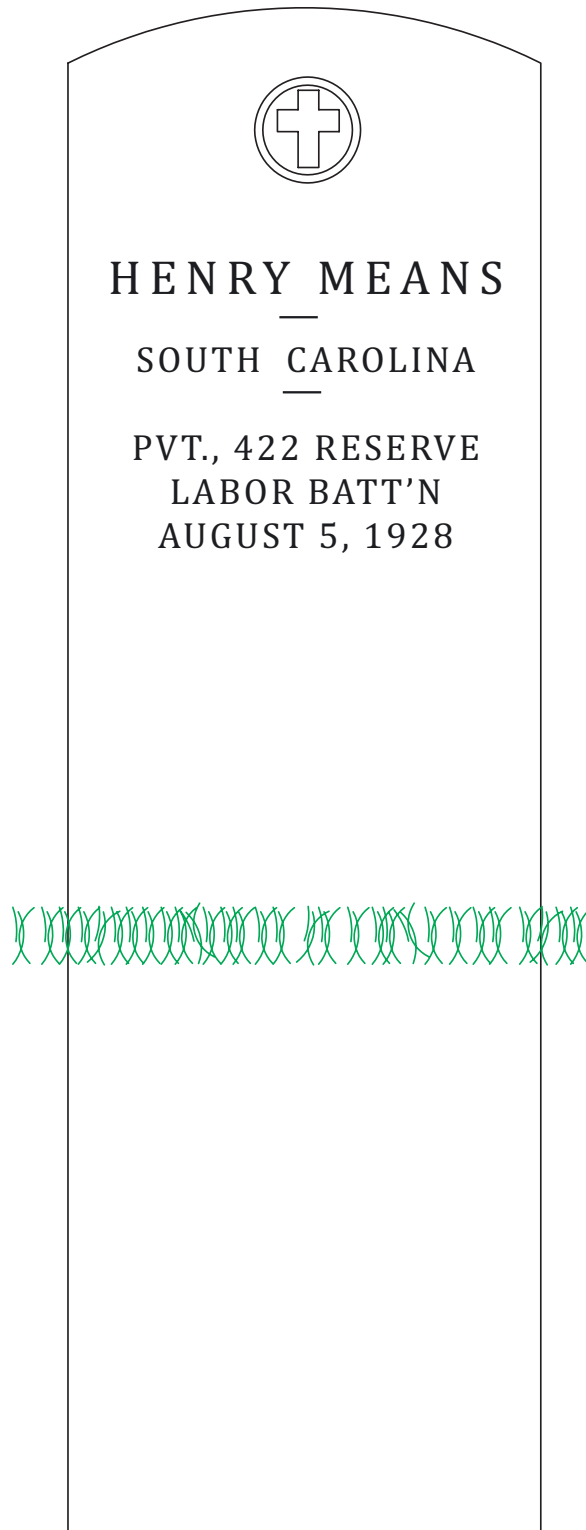


Diagram 18: 0903, Henry Means marker

0913.04 ~ ISAAC H. AIKEN



Figure 107: 0913.04, Isaac H. Aiken marker, before treatment



Figure 108: 0913.04, Isaac H. Aiken, after treatment

CONDITION

The marker for Isaac H. Aiken is located in the northwest corner of the northeast quadrant of the cemetery. The concrete headstone is adorned with a heart and floral design. In addition to the inscription, the word "BROTHER" is written across the angled top of the headstone. The base measure 7³/₄-inches in height, 18-inches in width, and 10-inches in depth; the headstone measures 16⁷/₈-inches in height, 14¹/₈-inches in width, and 5³/₄-inches in depth. The headstone sits on the un-level base however it is no longer attached. All of the concrete exhibited biological growth.

TREATMENT

The concrete was excavated and all traces of mortar were carefully chipped off. The concrete was then cleaned of dirt and biological growth. A solution of water and Vulpex Liquid Soap was prepared using approximately 1/2-ounce of soap to 1-gallon of water. The solution was applied to the pre-wet surface and scrubbed using nylon bristle brushes. The surface was then thoroughly rinsed with clean water to remove all traces of detergent. The extensive biological growth necessitated the use of D/2 Biological Solution. The biocide was applied to dry concrete at full strength. The solution was periodically for approximately 5 minutes before thoroughly rinsing with clean water to remove all traces of biocide.

The base was reset on a level bed of approximately 2-inches of gravel and sand to promote drainage. The headstone was then reattached to its base using alloy 316 stainless steel threaded rods, 3/8-inch in diameter and 6-inches in length. The conservator drilled two holes into the bottom of the tablet and corresponding holes in the base. The pins were secured into the holes using SikaDur® 31 Epoxy. (Refer to Diagram 19 for pin locations). The joint between the headstone and base was pointed using Jahn Repair Mortar.



Figure 109: 0913.04, before treatment



Figure 110: 0913.04, removing mortar



Figure 111: 0913.04, preparing marker for pinning



Figure 112: 0913.04, reattaching headstone



Figure 113: 0913.04, after treatment

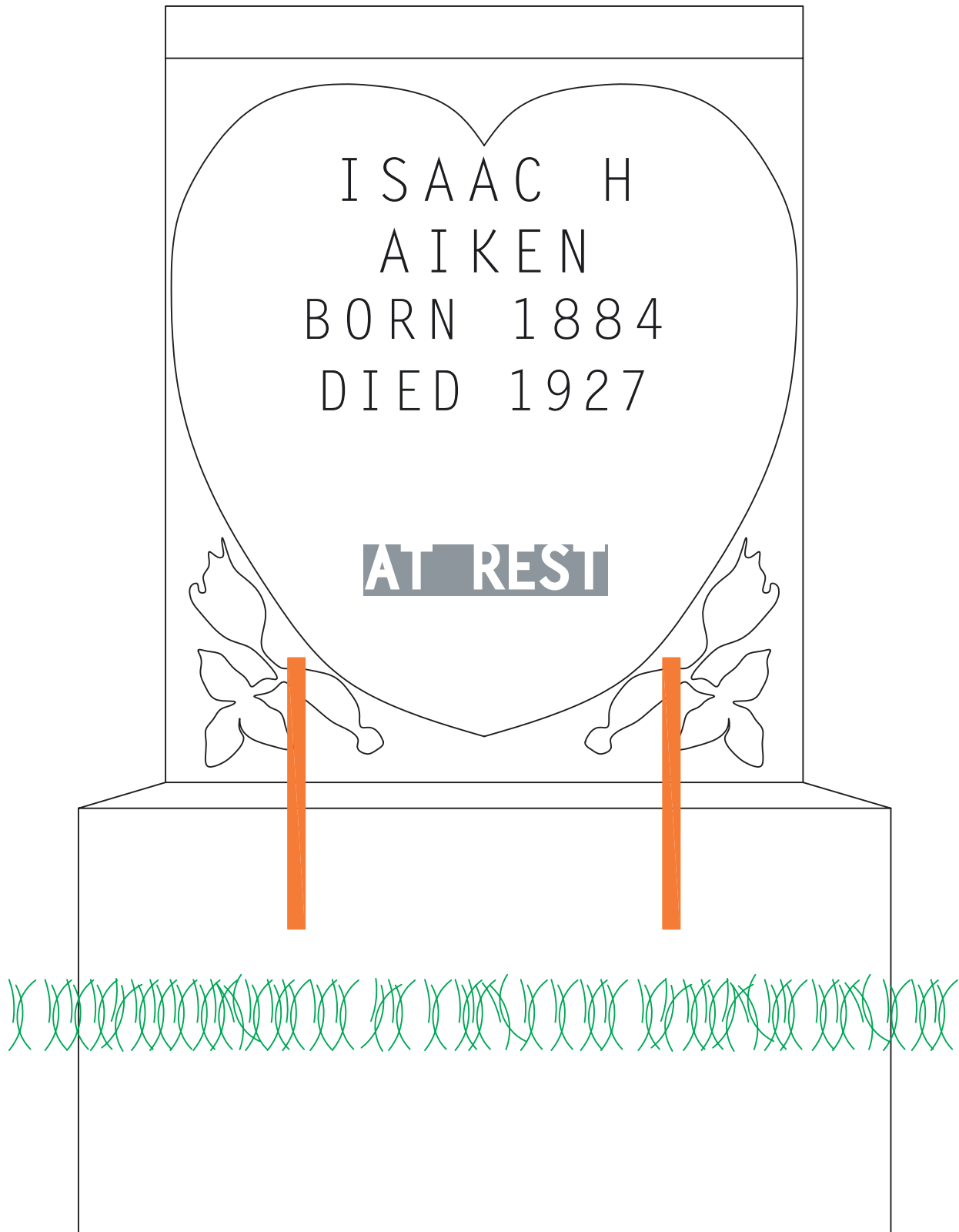



Diagram 19: 0913.04, Isaac H. Aiken marker

 $\frac{3}{8}$ -inch threaded rod

0969 ~ FANNIE HART



Figure 114: 0969, Fannie Hart marker, before treatment



Figure 115: 0969, Fannie Hart marker, after treatment

CONDITION

The marker for Fannie Hart is located in the northeast quadrant of the cemetery. The marble roundtop tablet measures 30³/₄-inches in height, 13³/₄-inches in width, and 2-inches in depth. It had fallen forward and was lying facedown. No base was visible in the area.

TREATMENT

The marble was cleaned of dirt and biological growth. A solution of water and Vulpex Liquid Soap was prepared using approximately ½-ounce of soap to 1-gallon of water. The solution was applied to the pre-wet surface and scrubbed using nylon bristle brushes. The surface was then thoroughly rinsed with clean water to remove all traces of the detergent. Biological growth was removed using D/2 Biological Solution. The biocide was applied to the dry marble at full strength and agitated using nylon bristle brushes. The solution was scrubbed periodically for approximately 5 minutes before thoroughly rinsing with clean water to remove all traces of the biocide.

No base was discovered below the marble tablet. Therefore, in order to reset the marker, it received a new base. This base, measuring 9-inches in height, 21-inches in width, and 9-inches in depth, was made of Quikrete Crack Resistant Concrete. The base socket, in which the tablet would sit, measured 3-inches deep, 15-inches wide, and 3-inches thick. The base was completely buried, sitting on 2-inches of level gravel and sand to promote drainage. The socket was partially filled with Premium Pre-Mixed Natural Hydraulic Lime Mortar from Virginia Lime Works. The tablet was set into the socket at which point the remaining void was filled with the mortar.



Figure 116: 0969, before treatment



Figure 117: 0969, tablet excavated



Figure 118: 0969, new base set



Figure 119: 0969, marker installed



Figure 120: 0969, after treatment

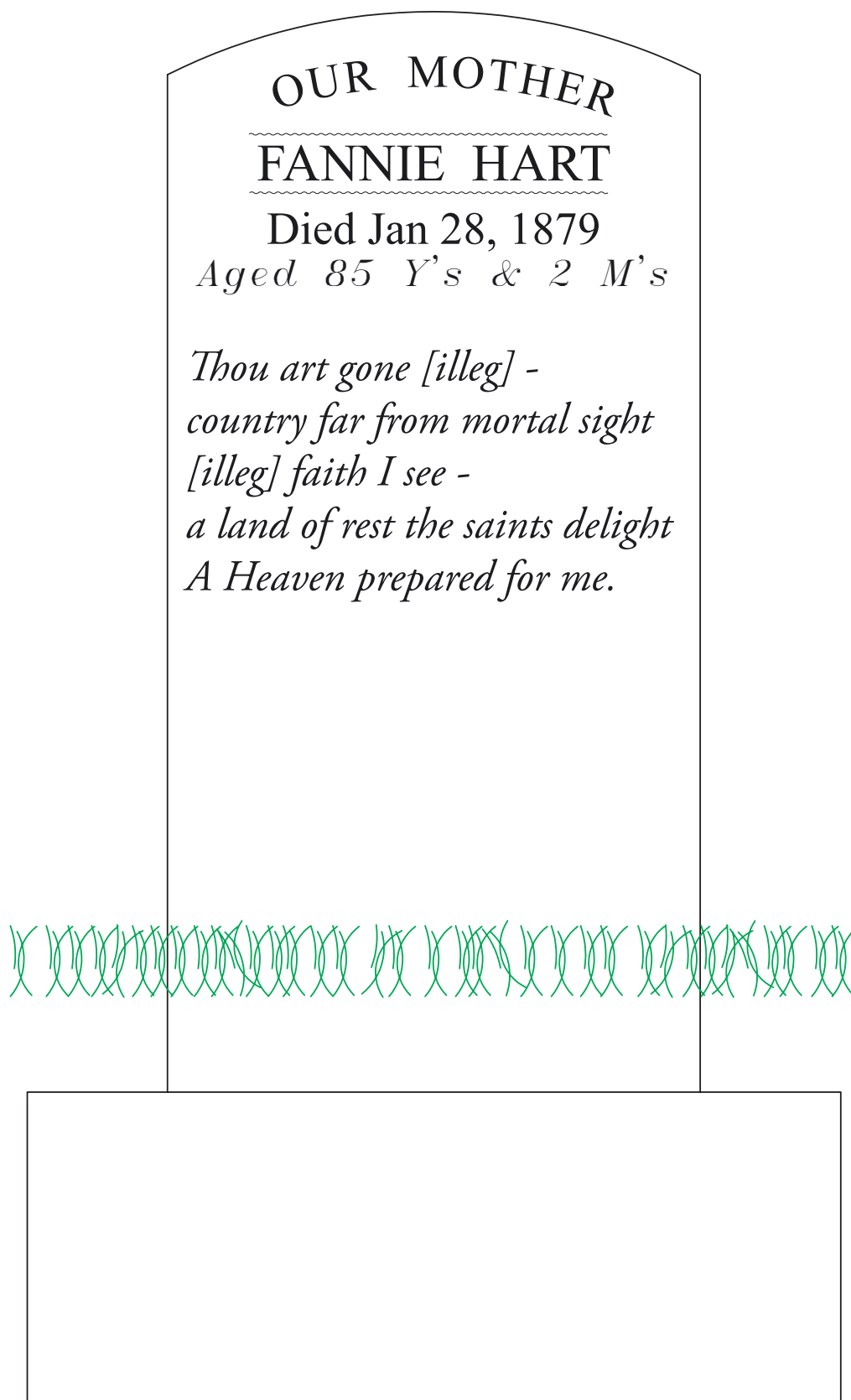


Diagram 20: 0969, Fannie Hart marker

0974 ~ JANE M. GARNER



Figure 121: 0974, Jane M. Garner marker, before treatment



Figure 122: 0974, Jane M. Garner marker, after treatment

CONDITION

The marker for Jane M. Garner is located in the northeast quadrant of the cemetery at the south side of the looped road. The marker is a marble base and marble roundtop tablet. The base measures 9-inches in height, 22½-inches in width, and 10 inches in depth; the tablet measures 33½-inches in height, 16-inches in width, and 2⅛-inches in depth. The tablet was broken in half with the upper half lying face up behind the marker and the bottom half was still attached to the base, which was no longer level.

TREATMENT

To begin treatment, the base and tablet were excavated and cleaned. A solution of water and Vulpex Liquid Soap was prepared using approximately ½-ounce of soap to 1-gallon of water. The solution was applied to the pre-wet surface and scrubbed using nylon bristle brushes. The surface was then thoroughly rinsed with clean water to remove all traces of the detergent. To address any biological growth the marker received an additional cleaning using D/2 Biological Solution. The biocide was applied to the dry marble at full strength and agitated using nylon bristle brushes. The solution was scrubbed periodically for approximately 5 minutes before thoroughly rinsing with clean water to remove all traces of the biocide.

The base was reset, now sitting on 2-inches of level gravel and sand to promote drainage. The tablet was then repaired. The conservator drilled holes midway on the vertical breaks. Two alloy 316 stainless steel threaded rods, ⅜- and ¼-inch in diameter and 6-inches long, were used to connect the holes across the break. The pins were secured into the holes using SikaDur® 31 Epoxy. Additionally, the conservator spread a thin layer of the epoxy on the broken faces of the marble. (Refer to Diagram 21 for pin locations).

Once the marker was repaired and reinstalled, the areas of loss were filled with Jahn Marble Repair Mortar to prevent water infiltration and create a more cohesive surface appearance. The marble was prepared by using a Dremel to create a shoulder approximately ⅛-inch in depth for the patch material to effectively key into. The areas to be patched were moistened with clean water, at which point the Repair Mortar was applied. A mix of colors was used to better match the marble; this consisted of Jahn M120 28355-MA-3 (buff), Jahn M120 S1-MA (white), and Jahn M120 283357-MA-5 (dark gray). The Repair Mortar was further tinted using dry pigments and potassium silicate to blend with the surrounding stone.

Microcracks within the marble were addressed by grouting to limit water infiltration. After wetting the cracks, the grout, Jahn Masonry Repair M30 Micro Injection Grout, was inserted into the voids using a syringe. The joint between the tablet and base was pointed with Jahn Repair Mortar.

While preparing the area to reset the marker, a blue and white ceramic artifact was discovered. The artifact was photographed and reburied.



Figure 123: 0974, before treatment



Figure 124: 0974, tablet with pins



Figure 125: 0974, reattaching tablet



Figure 126: 0974, artifact discovered



Figure 127: 0974, after treatment

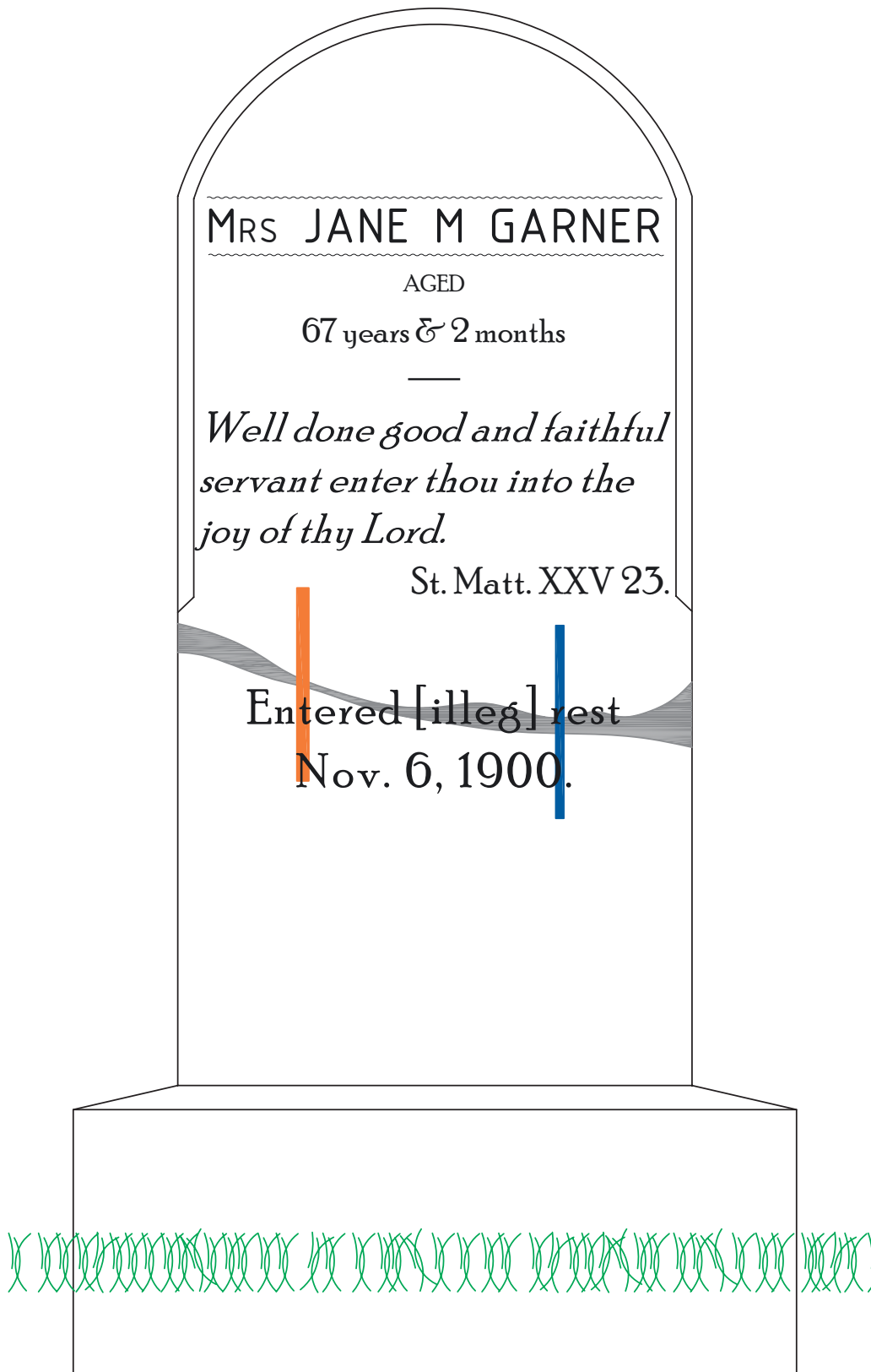


Diagram 21: 0974, Jane M. Garner marker

 $\frac{1}{4}$ -inch threaded rod  $\frac{3}{8}$ -inch threaded rod

0980/0981 ~ ELDER C.W. DUNLAP



Figure 128: 0980/0981, C.W. Dunlap marker, before treatment



Figure 129: 0980/0981, C.W. Dunlap marker, after treatment

CONDITION

The marker for Elder C.W. Dunlap is located in the northeast quadrant of the cemetery. The concrete marker consists of four parts (base, pedestal, plinth, and cross) and is adorned with flowers, a cross, and hands shaking. The inscription is on the pedestal. The base measures 7½-inches in height, 18¼-inches in width, and 17-inches in depth; the pedestal measures 22¼-inches in height, 10¼-inches in width, and 9¾-inches in depth; and the combined height of the plinth and cross is 36½-inches and the width of the plinth is 8¼-inches and its depth is 7¼-inches.

The pedestal was no longer connected to the base and plinth and cross, leaving the pedestal, plinth and cross lying on the ground and the base upside down. The marker had been previously repaired; mortar attached a broken corner of the cross and attached the cross to the plinth, though out of line. One arm of the cross was broken and there was material missing.

TREATMENT

All of the pieces were carefully excavated and cleaned of dirt and biological growth. A solution of water and Vulpex Liquid Soap was prepared using approximately ½-ounce of soap to 1-gallon of water. The solution was applied to the pre-wet surface and scrubbed using nylon bristle brushes. The surface was then thoroughly rinsed with clean water to remove all traces of the detergent. To address additional biological growth, the concrete was cleaned with D/2 Biological Solution. The biocide was applied to the dry concrete at full strength and agitated using nylon bristle brushes. The solution was scrubbed periodically for approximately 5 minutes before thoroughly rinsing with clean water to remove all traces of the biocide.

Because the cross was no longer in line with the plinth, the two were separated and all previous repair material was chipped or ground away. The arms of the cross were unstable where it had broken. In order to arrest movement in this location, two pins (alloy 316 stainless steel threaded rods, ¼-inch in diameter) were put into place. The conservator drilled one hole and cut a channel perpendicular to the break within the area of loss on the backside. A 3-inch long pin in the drilled hole and 2½-inch pin in the channel were secured with SikaDur® 31 Epoxy. Additionally, the epoxy was thinned with Acetone and it was injected into the break to fill any inner void and stabilize the stone.

The concrete base was reset on a level bed of gravel and sand, approximately 2-inches deep. The remainder of the marker was then reassembled. The conservator drilled holes in the center of base, pedestal, plinth, and cross. Three alloy 316 stainless steel threaded rods, ½-inch in diameter and 8-inches in length between the base and pedestal and ⅜-inch in diameter and 5-inches in length between the pedestal and plinth and cross, connected the sections. The pins were secured into the holes using SikaDur® 31 Epoxy. (Refer to Diagram 22 for pin locations). Microcracks within the marker were addressed by grouting to limit water infiltration. After wetting the cracks, the grout, Jahn Masonry Repair M30 Micro Injection Grout, was inserted into the voids using a syringe.

Once the marker was repaired, the areas of loss were filled with Jahn Concrete Repair Mortar to prevent water infiltration and create a more cohesive surface appearance. The concrete was prepared by creating a shoulder a minimum of ⅛-inch in depth for the patch material to effectively key into. The areas to be patched were moistened with clean water, at which point Jahn M90 S1-CR was applied. The patches were screeded to the appropriate surface level. The Repair Mortar was then tinted with

dry pigments and potassium silicate. The joints between each section were pointed with Jahn Repair Mortar.



Figure 130: 0980/0981, before treatment



Figure 131: 0980/0981, removing mortar repairs



Figure 132: 0980/0981, out of line cross



Figure 133: 0980/0981, injecting epoxy



Figure 134: 0980/0981, reassembling marker



Figure 135: 0980/0981, applying repair mortar



Figure 136: 0980/0981, after treatment

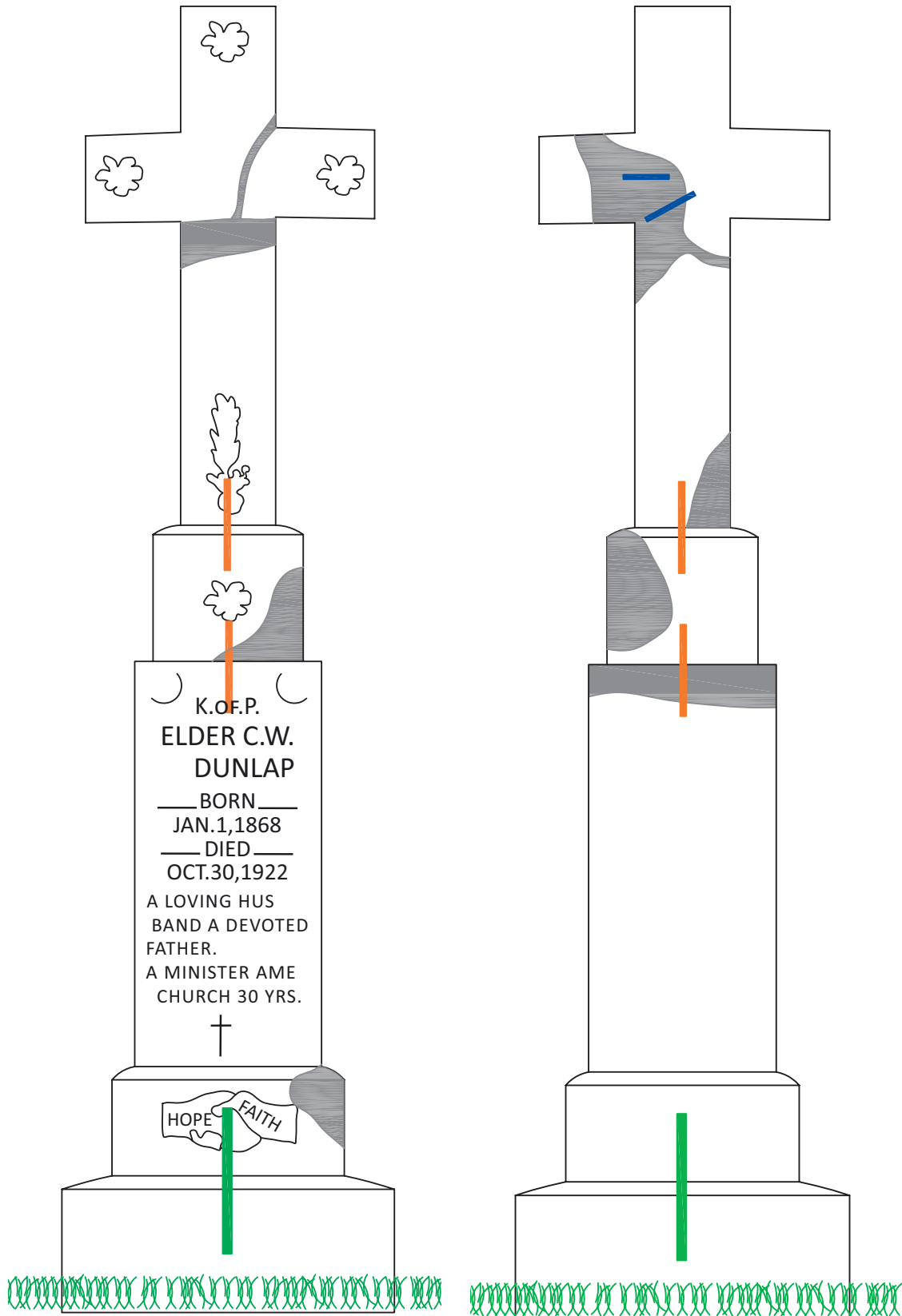


Diagram 22: 0980/0981, C.W. Dunlap marker

— $\frac{1}{4}$ -inch threaded rod
 — $\frac{3}{8}$ -inch threaded rod
 — $\frac{1}{2}$ -inch threaded rod

0986 ~ ELLEN INGHREN



Figure 137: 0986, Ellen P. Inghren marker, before treatment



Figure 138: 0986, Ellen P. Inghren marker, after treatment

CONDITION

The marker for Ellen P. Inghren is located in the northeast quadrant of the cemetery. The granite raised top style marker is irregular in shape with rusticated sides. Its approximate measurements are 25-inches in height, 18-inches in width, and 10½-inches in depth. The marker was partially lying on the ground.

TREATMENT

The marker was excavated and the remaining hole was filled with approximately 2-inches of gravel and sand and then leveled. Dirt and biological growth were removed from the marker by washing the granite. A solution of water and Vulpex Liquid Soap was prepared using approximately ½-ounce of soap to 1-gallon of water. The solution was applied to the pre-wet surface and scrubbed using nylon bristle brushes. The surface was then thoroughly rinsed with clean water to remove all traces of the detergent. To address any additional biological growth, the granite was cleaned with D/2 Biological Solution. The biocide was applied to the dry granite at full strength. The solution was scrubbed periodically for approximately 5 minutes before thoroughly rinsing with clean water to remove all traces of the biocide. The marker was then reset on its new foundation.



Figure 139: 0986, before treatment



Figure 140: 0986, marker reset



Figure 141: 0986, after treatment

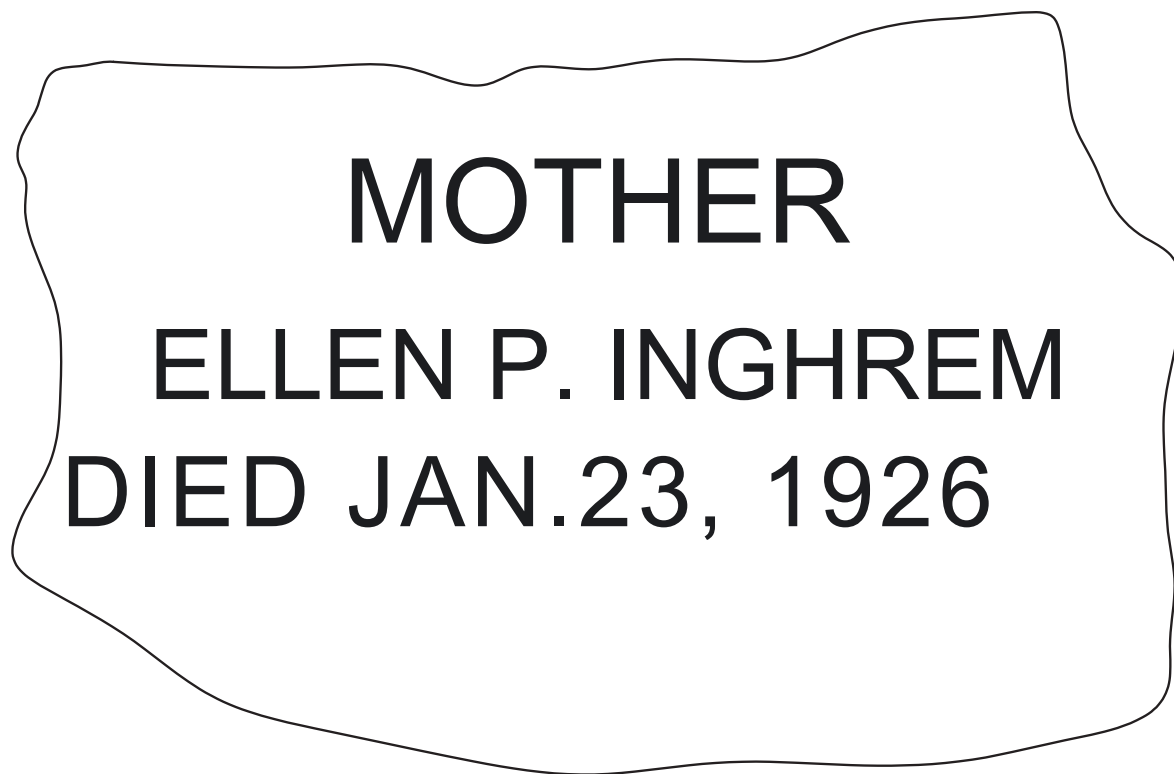


Diagram 23: 0986, Ellen P. Inghrem marker

0990 ~ REV. JESSE D. LYKES



Figure 142: 0990, Jesse D. Lykes marker, before treatment



Figure 143: 0990, Jesse D. Lykes marker, after treatment

CONDITION

The marker for Rev. Jesse Lykes is located in the northeast quadrant of the cemetery. The marker is a fine-grained marble sub-base, base and cross. The sub-base measures 3½-inches in height, 34-inches in width, and 10-inches in depth; the base measures 10¼-inches in height, 24-inches in width, and 10-inches in depth; the cross measures 32¼-inches in height, 18-inches in width (at the arms of the cross), and 3-inches in depth. The cross was broken into three pieces; the bottom section was still attached to the base and the upper sections were lying on the ground. The base was not level and all of the marble was blackened with biological growth.

TREATMENT

The sub-base and base were carefully excavated and all of the marble was cleaned of dirt and biological growth. A solution of water and Vulpex Liquid Soap was prepared using approximately ½-ounce of soap to 1-gallon of water. The solution was applied to the pre-wet surface and scrubbed using nylon bristle brushes. The surface was then thoroughly rinsed with clean water to remove all traces of the detergent. The extensive amount of biological growth necessitated the use of D/2 Biological Solution. The biocide was applied to the dry marble at full strength and agitated using nylon bristle brushes. The solution was scrubbed periodically for approximately 5 minutes before thoroughly rinsing with clean water to remove all traces of the biocide. This process was repeated as necessary.

The base was reset on a level foundation of approximately 2-inches of gravel and sand to promote drainage. The broken marble was then pinned back together. The conservator drilled holes midway on the vertical of the breaks. One alloy 316 stainless steel threaded rod, ⅜-inch in diameter and 5-inches long, was used to connect the holes across each break. The pins were secured into the holes using SikaDur® 31 Epoxy. Additionally, the conservator spread a thin layer of the epoxy on the broken faces of the marble. (Refer to Diagram 24 for pin locations).

Once the marker was repaired and reinstalled, the area of loss was filled with Jahn Marble Repair Mortar to prevent water infiltration and create a more cohesive surface appearance. The marble was prepared by using a Dremel to create a shoulder approximately ⅛-inch in depth for the patch material to effectively key into. The area to be patched was moistened with clean water at which point the Repair Mortar was applied. A mix of colors was used to better match the marble; this consisted of Jahn M120 S1-MA (white) and Jahn M120 28355-MA-3 (buff). The Repair Mortar was further tinted with dry pigments and potassium silicate to blend with the surrounding stone.

Microcracks within the marker were addressed by grouting to limit water infiltration. After wetting the cracks, the grout, Jahn Masonry Repair M30 Micro Injection Grout, was inserted into the voids using a syringe. The joint between the cross and the base was pointed using Jahn Repair Mortar.



Figure 144: 0990, before treatment



Figure 145: 0990, reassembling marker



Figure 146: 0990, after treatment

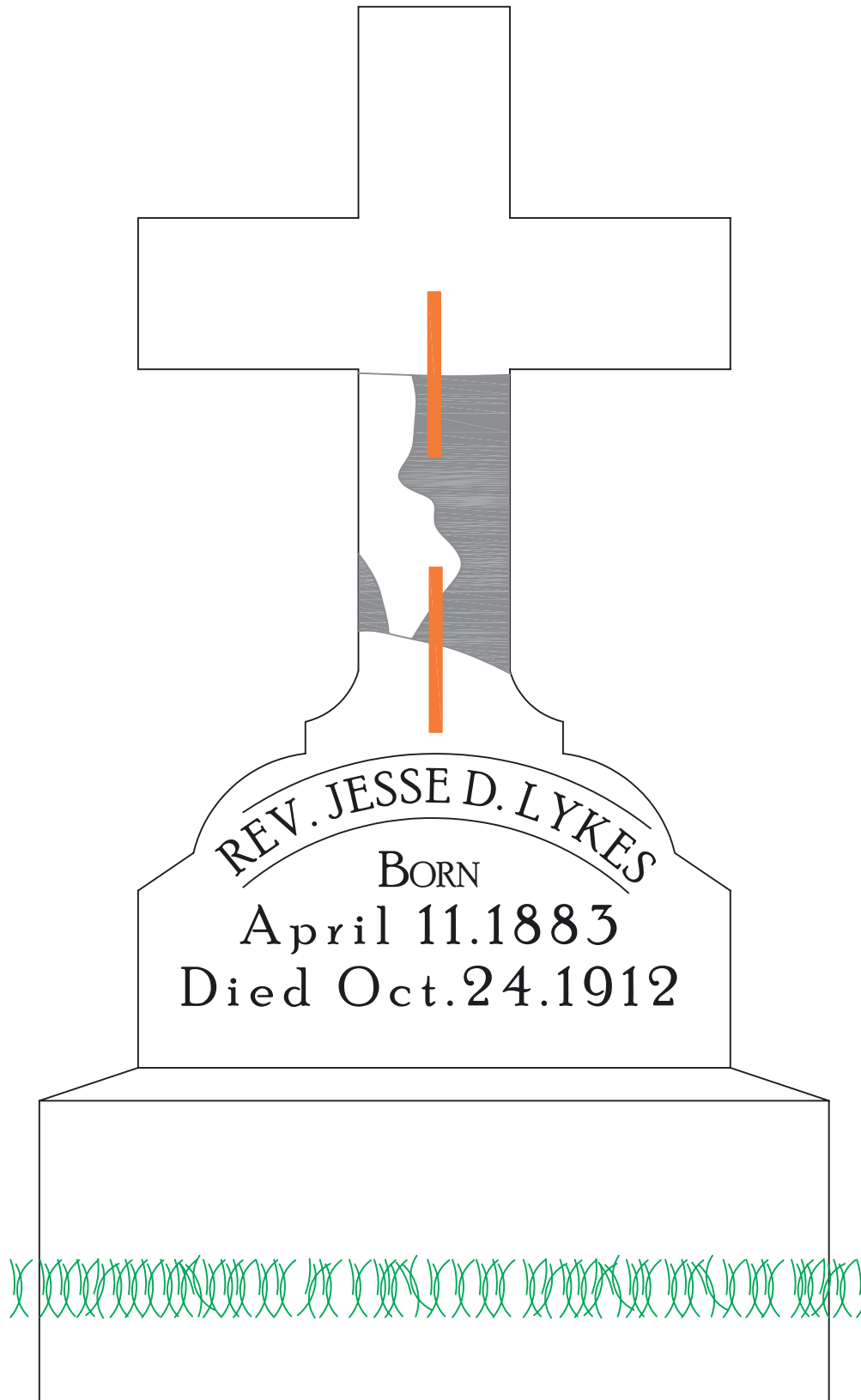


Diagram 24: 0990, Jesse D. Lykes marker

— $\frac{3}{8}$ -inch threaded rod

1005 ~ PERRY KENNEDY



Figure 147: 1005, Perry Kenedy marker, before treatment



Figure 148: 1005, Perry Kennedy marker, after treatment

CONDITION

The marker for Perry Kennedy is located in the northeast quadrant of the cemetery, at the side of the looped road. The marker consists of a marble base, marble roundtop headstone, marble footstone, and remains of a brick wall. The base measures 8-inches in height, 16 $\frac{1}{8}$ -inches in width, and 8 $\frac{1}{4}$ -inches in depth; the headstone measures 14 $\frac{1}{4}$ -inches in height, 12-inches in width, and 3 $\frac{1}{4}$ -inches in depth. The base was sitting on top of the ground and while pins are still secure in the base they are no longer attached to the headstone. The recent removal of a tree stump beside the marker has caused the marble footstone to sit askew in the ground and brick from a boundary wall to be jumbled in the remaining hole.

TREATMENT

While the base and headstone were above ground, the footstone was still in place. This marble was carefully excavated. All of the elements were then cleaned of dirt and biological growth. A solution of water and Vulpex Liquid Soap was prepared using approximately $\frac{1}{2}$ -ounce of soap to 1-gallon of water. The solution was applied to the pre-wet surface and scrubbed using nylon bristle brushes. The surface was then thoroughly rinsed with clean water to remove all traces of the detergent. Biological growth necessitated an additional cleaning using D/2 Biological Solution. The biocide was applied to the dry marble at full strength and agitated using nylon bristle brushes. The solution was scrubbed periodically for approximately 5 minutes before thoroughly rinsing with clean water to remove all traces of the biocide.

The existing wall consisted of two stretching courses atop a brick bonding foundation course. It did not appear that the brick had been mortared together. In order to rebuild the small boundary wall, the outline of the wall was marked and all of the bricks were excavated and cleaned. The ground from the marker to the road was graded to further fill in the hole remaining from the tree stump. An inadequate number of bricks were discovered to rebuild the wall in its original fashion. Therefore to avoid adding bricks not original to the site and to create a more stable wall, a slightly different design was employed. A foundation of Quikrete Crack Resistant Concrete was poured. The grade of the land at the western end necessitated a step down of the foundation and creation of an additional half course of brick at this end. Two stretching courses of brick was laid atop of the foundation and was set and pointed with Holcim Mortamix Type N Mortar, Oyster White. The new wall is approximately 94-inches long and 34-inches wide with a cross wall at the west end. The wall was cleaned as necessary to remove excess lime on the brick from the new mortar. Vana Trol®, an acidic cleaner, was diluted with clean water at a ratio of 1:6. The surface of the brick was wet with water and solution was applied and lightly agitated with nylon bristle brushes. After a dwell time of approximately 2 minutes, the brick was thoroughly rinsed with clean water.

The headstone was reattached to the base using the existing pins. The pins were secured into the holes using SikaDur® 31 Epoxy. Additionally, the conservator spread a thin layer of the epoxy on the top of the base and bottom of the headstone. (Refer to Diagram 25 for pin locations). The joint between the base and headstone was pointed using Jahn Repair Mortar. A new hole was dug for the base, filled with 2-inches of gravel and sand to promote drainage. The marker was set into the hole. The footstone was also reset in its original location.

While excavating the footstone, ceramic, glass, shell, and iron artifacts were discovered. These were photographed and reburied where they were found.



Figure 149: 1005, before treatment



Figure 150: 1005, before treatment



Figure 151: 1005, excavating the footstone



Figure 152: 1005, excavating brick



Figure 153: 1005, artifacts discovered



Figure 154: 1005, artifacts discovered



Figure 155: 1005, artifacts discovered



Figure 156: 1005, artifacts discovered



Figure 157: 1005, building new brick wall



Figure 158: 1005, footstone



Figure 159: 1005, after treatment



Figure 160: 1005, after treatment

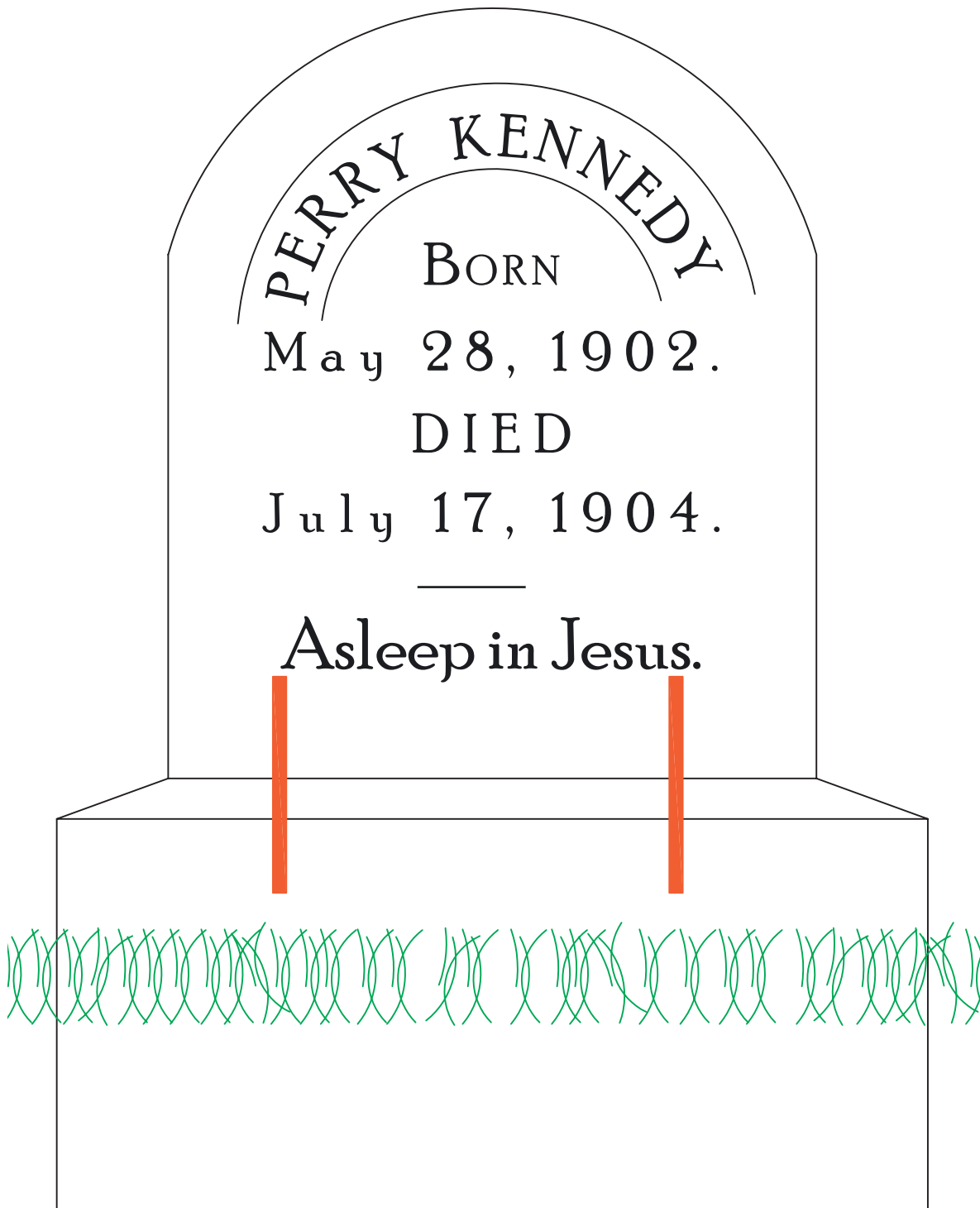


Diagram 25: 1005, Perry Kennedy marker

— historic pin

1013/1016 ~ GIRLIE NESBIT



Figure 161: 1013/1016, Girlie Nesbit marker, before treatment



Figure 162: 1013/1016, Girlie Nesbit marker, after treatment

CONDITION

The marker for Girlie Nesbit is located in the northeast quadrant of the cemetery. The marker consists of a concrete base, plinth, headstone and bedstead (original thought to be marker #1016). The headstone is adorned with a dove, a lamb, and the plinth with shaking hands. The base measures 8½-inches in height, 24-inches in width, and 13-inches in depth; the plinth measures 3¾-inches in height, 20-inches in width, and 9-inches in depth; the headstone measures 28½-inches in height, 15½-inches in width, and 4-inches in depth. At the time of the survey, the headstone was broken into three pieces and lying on its side approximately 4-feet from the mostly buried bedstead.

TREATMENT

While the bedstead and headstone had been surveyed in 2007 as two different markers (1013 and 1016) the similarity of the concrete grain led to the belief that they were related. The bedstead was carefully excavated and laid out, leaving an opening on the west end in which the base of the headstone fit into perfectly.

All of the concrete pieces were cleaned of dirt and biological growth. A solution of water and Vulpex Liquid Soap was prepared using approximately ½-ounce of soap to 1-gallon of water. The solution was applied to the pre-wet surface and scrubbed using nylon bristle brushes. The surface was then thoroughly rinsed with clean water to remove all traces of the detergent. Biological growth necessitated an additional cleaning using D/2 Biological Solution. The biocide was applied to the dry concrete at full strength and agitated using nylon bristle brushes. The solution was scrubbed periodically for approximately 5 minutes before thoroughly rinsing with clean water to remove all traces of the biocide.

A new hole was dug at the west end of the excavated bedstead for the base. The hole was filled with approximately 2-inches of gravel and sand and leveled. The base was set here and the broken concrete was then pinned back together. The conservator drilled holes midway on the vertical of the breaks. Alloy 316 stainless steel threaded rods were used to connect the holes across the breaks. One pin ¼-inch in diameter and 5-inches long connected the bottom of the headstone to the smaller middle section and again to the upper section. The large missing portion across the middle led to the use of a longer pin, ⅜-inch in diameter and 14-inches long, to span the opening. The pins were secured into the holes using SikaDur® 31 Epoxy. Additionally, the conservator spread a thin layer of the epoxy on the broken faces of the marble. (Refer to Diagram 26 for pin locations).

A level foundation of approximately 2-inches of gravel and sand followed by approximately 2-inches of Quikrete Crack Resistant Concrete was poured for the bedstead. The bedstead pieces were set on a bed of Premium Pre-Mixed Mortar Mix & Go from Virginia Lime Works.

Once the marker was repaired, the areas of loss were filled with Jahn Concrete Repair Mortar to prevent water infiltration and create a more cohesive surface appearance. The concrete was prepared by using a Dremel to create a shoulder a minimum of an ⅛-inch in depth for the patch material to effectively key into. The areas to be patched were moistened with clean water, at which point Jahn M90 S1-CR was applied. The patches were sculpted to the appropriate surface level. The Repair Mortar was further tinted with dry pigments and potassium silicate to blend with the surrounding concrete.



Figure 163: 1013/1016, before treatment



Figure 164: 1013/1016, bedstead before treatment



Figure 165: 1013/1016, excavated bedstead



Figure 166: 1013/1016, cleaning headstone



Figure 167: 1013/1016, reassembling headstone



Figure 168: 1013/1016, pouring foundation



Figure 169: 1013/1016, repair mortar application in process



Figure 170: 1013/1016, setting bedstead



Figure 171: 1013/1016, after treatment



Figure 172: 1013/1016, after treatment

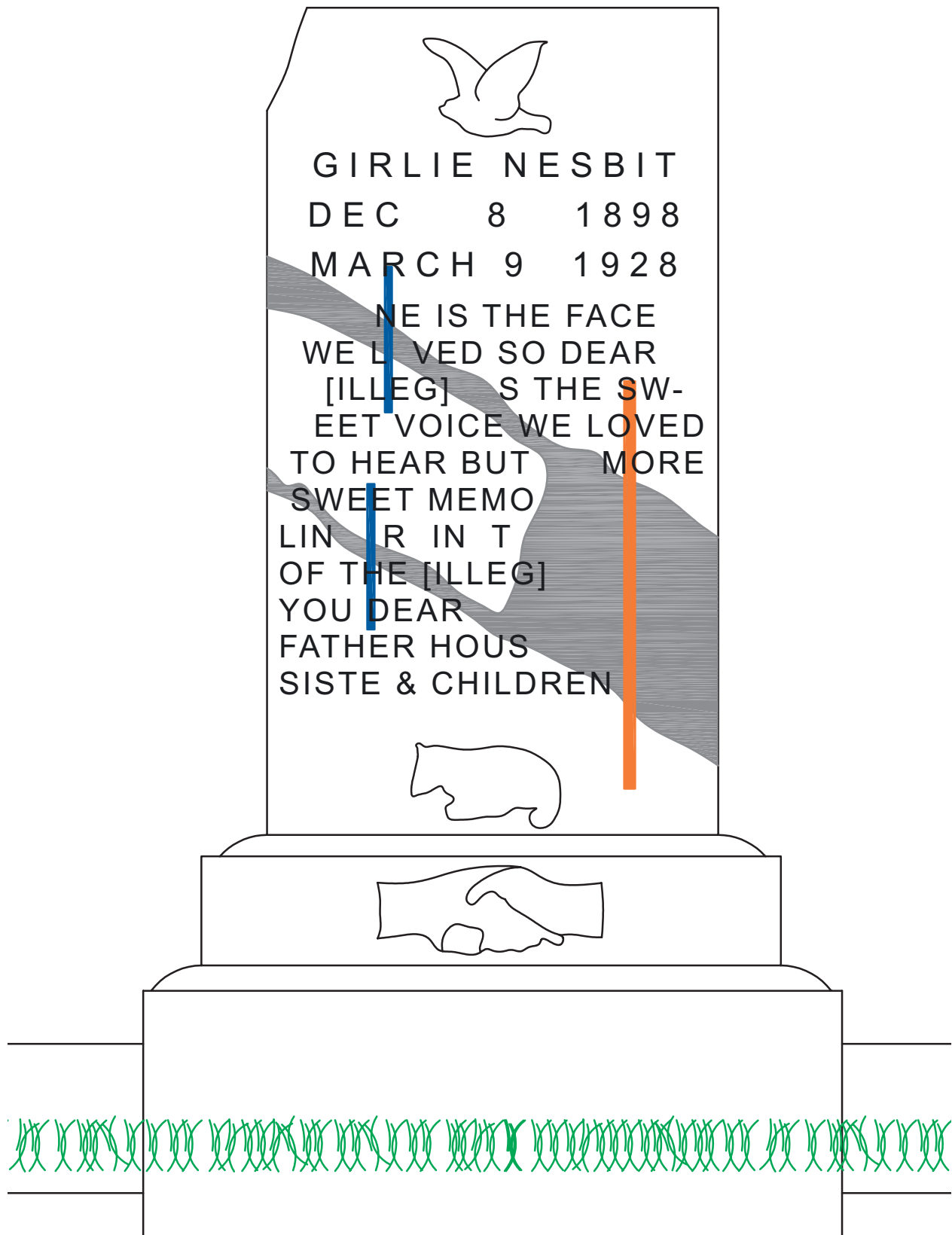


Diagram 26: 1013/1016, Girlie Nesbit marker

— 1/4-inch threaded rod — 3/8-inch threaded rod

1014 ~ CAROLINE LOUISA COOPER



Figure 173: 1014, Caroline Louisa Cooper marker, before treatment



Figure 174: 1014, Caroline Louisa Cooper marker, after treatment

CONDITION

The marker for Carolina Louisa Cooper is located in the northeast quadrant near the looped road. The marble sub-base measures approximately 2-inches in height, 32-inches in width and 10-inches in depth; the marble base measures 7-inches in height, 22 $\frac{1}{4}$ -inches in width, and 8-inches in depth; the roundtop marble tablet measures 31 $\frac{3}{8}$ -inches in height, 18-inches in width, and 2-inches in depth. The tablet was broken from the die in socket base and was also broken into three pieces. All sections of the marker were spread out along a nearby boundary wall and were partially buried.

TREATMENT

The tablet pieces and base were cleaned of dirt and biological growth. A solution of water and Vulpex Liquid Soap was prepared using approximately $\frac{1}{2}$ -ounce of soap to 1-gallon of water. The solution was applied to the pre-wet surface and scrubbed using nylon bristle brushes. The surface was then thoroughly rinsed with clean water to remove all traces of the detergent. Biological growth necessitated an additional cleaning using D/2 Biological Solution. The biocide was applied to the dry marble at full strength and agitated using nylon bristle brushes. The solution was scrubbed periodically for approximately 5 minutes before thoroughly rinsing with clean water to remove all traces of the biocide. The existing ferrous pins in the base were removed by either simply pulling them out or drilling into the surrounding marble to loosen them. The pins were turned over to the CRBRC.

Because the marker pieces were spread out along a nearby boundary wall, its historic location was unknown. A map of a ground penetrating radar survey completed in 2009 indicated that there is a burial between Markers #1013/1016 and #1015. Because the marble marker of #1014 would logically not be far from its original location, it was decided that it belonged between #1013/1016 and #1015. A new hole, in line with the other markers, was dug for the sub-base and base and it was filled with approximately 2-inches of gravel and sand and was leveled.

The broken marble was pinned back together. The conservator drilled holes midway on the vertical of the breaks. Five alloy 316 stainless steel threaded rods, $\frac{1}{4}$ -inch in diameter and 4-inches long and $\frac{3}{8}$ -inch in diameter and 6-inches long, were used to connect the holes across the breaks. The pins were secured into the holes using SikaDur® 31 Epoxy. Additionally, the conservator spread a thin layer of the epoxy on the broken faces of the marble. (Refer to Diagram 27 for pin locations).

Once the marker was repaired and reinstalled, the areas of loss were filled with Jahn Marble Repair Mortar to prevent water infiltration and create a more cohesive surface appearance. The marble was prepared by using a Dremel to create a shoulder approximately $\frac{1}{8}$ -inch in depth for the patch material to effectively key into. The areas to be patched were moistened with clean water, at which point the Repair Mortar was applied. A mix of colors was used to better match the marble; this consisted of Jahn M120 28357-MA-5 (dark gray), Jahn M120 28356-MA-2 (light gray) and Jahn M120 S1-MA (white). The patches were screeded to the appropriate surface level. The Repair Mortar was further tinted with dry pigments and potassium silicate to blend with the surrounding stone.

Microcracks within the marker were addressed by grouting to limit water infiltration. After wetting the cracks, the grout, Jahn Masonry Repair M30 Micro Injection Grout, was inserted into the voids using a syringe. The joint between the tablet and base was pointed using Jahn Repair Mortar.



Figure 175: 1014, before treatment



Figure 176: 1014, removing ferrous pins



Figure 177: 1014, drilling pin holes



Figure 178: 1014, base set in line with other markers



Figure 179: 1014, preparing tablet for repair mortar



Figure 180: 1014, after treatment

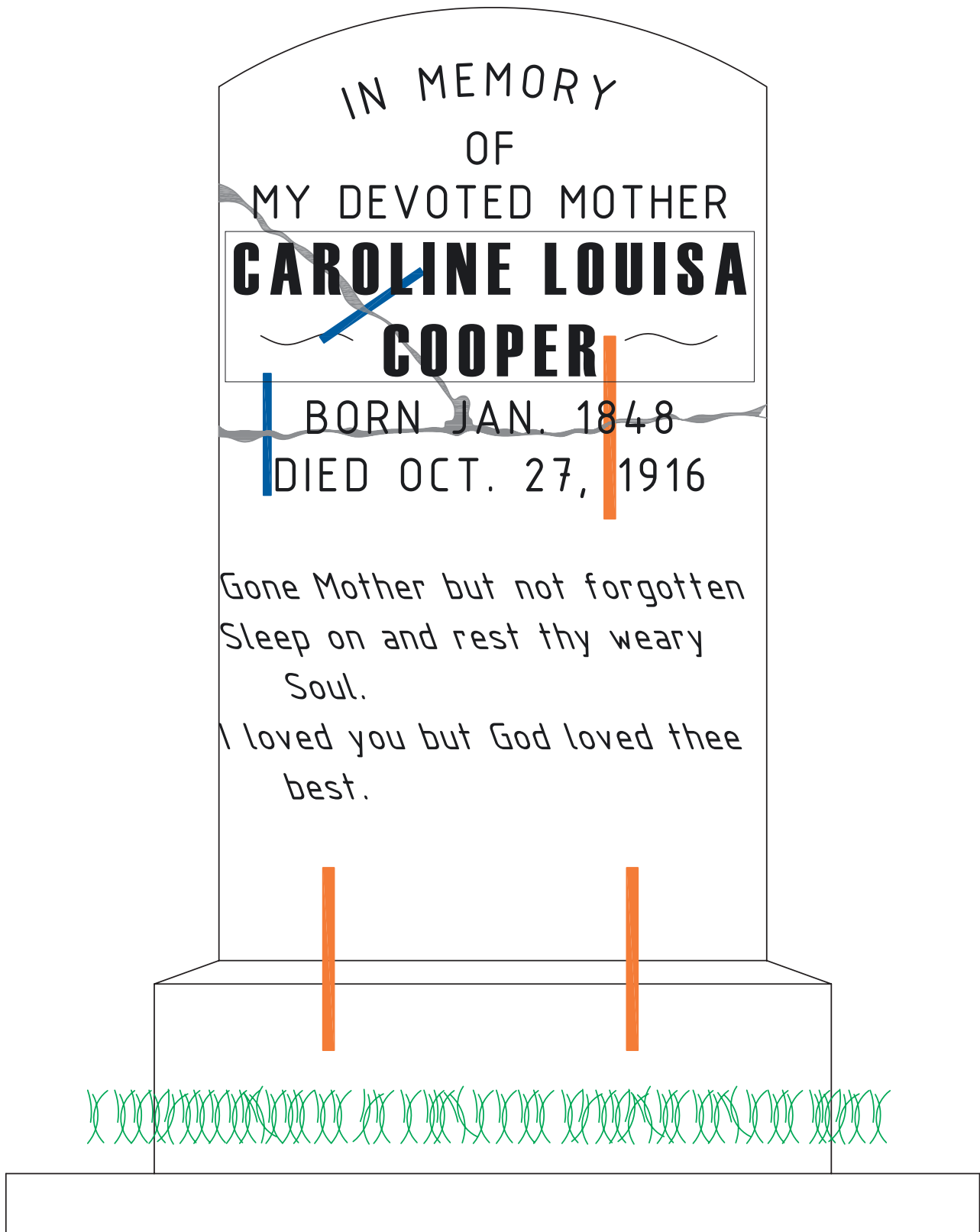


Diagram 27: 1014, Caroline Louisa Cooper marker

— 1/4-inch threaded rod — 3/8-inch threaded rod

1015 ~ ERNEST QUARLES GARNES



Figure 181: 1015, Ernest Quarles Garnes marker, before treatment



Figure 182: 1015, Ernest Quarles Garnes marker, after treatment

CONDITION

The marker for Ernest Quarles Garnes is located in the northeast quadrant of the cemetery. The granite raised top style marker is approximately 6-inches in height, 28 $\frac{7}{8}$ -inches in width, and 15 $\frac{1}{4}$ -inches in depth. The marker was slightly sunken into the ground.

TREATMENT

To raise the marker it was excavated. As this process began, it was discovered that the granite was attached to a large, broken concrete foundation. All pieces of the foundation were excavated and surface dirt was removed to ensure that there was no inscription on the surface. The pieces of the foundation and headstone were placed back onto a higher, level surface of dirt and gravel. The foundation was then reburied by 2 to 4-inches of dirt.

Once the foundation was reset, the granite headstone was cleaned of dirt and biological growth. A solution of water and Vulpex Liquid Soap was prepared using approximately $\frac{1}{2}$ -ounce of soap to 1-gallon of water. The solution was applied to the pre-wet surface and scrubbed using nylon bristle brushes. The surface was then thoroughly rinsed with clean water to remove all traces of the detergent. Any biological growth was removed with an additional cleaning using D/2 Biological Solution. The biocide was applied to the dry granite at full strength and agitated using nylon bristle brushes. The solution was scrubbed periodically for approximately 5 minutes before thoroughly rinsing with clean water to remove all traces of the biocide.



Figure 183: 1015, before treatment



Figure 184: 1015, excavating marker



Figure 185: 1015, artifacts discovered



Figure 186: 1015, artifacts discovered



Figure 187: 1015, artifacts discovered



Figure 188: 1015, concrete foundation excavated



Figure 189: 1015, concrete foundation reassembled



Figure 200: 1015, after treatment



Diagram 28: 1015, Ernest Quarles Garnes marker

MAINTENANCE RECOMMENDATIONS

To ensure the continued success of the conservation treatment over time, a regular maintenance plan should be implemented. Annually, the markers should be inspected for damage or deterioration. Photograph and note all observations.

Every 2 years, the markers should be washed using a gentle detergent (i.e. Vulpex Liquid Soap) and clean water. The markers should be pre-wet and the solution applied and agitated with nylon bristle brushes. All detergent should be thoroughly rinsed from the surfaces with low pressure, clean water. Biological growth found should be treated with a biocide (i.e. Cathedral Stone's D/2 Biological Solution).

The ground surrounding the markers should also be maintained. Any activity (i.e. weed wackers, mowing, etc.) that occurs near the markers should be done with care to avoid damage to the bases and ledgers. Any roots visible near the markers should be removed to prevent impact on the bases.

Additionally, it is recommended that the off-balance marble tablet of marker #0001.01 (Simon and Ariadna Miller) receive an external support frame.

APPENDIX A: MATERIALS

Alloy 316 Stainless Steel Threaded Rod
Distributed by McMaster-Carr
9630 Norwalk Blvd.
Santa Fe Springs, CA 90054-0960
(562) 463-4277
<http://www.mcmaster.com>

Conservare® HCT
Conservare® HCT Finishing Rinse
ProSoCo, Inc.
3741 Greenway Circle
Lawrence, KS 66046
(800) 255-4255
<http://www.prosoco.com>

D/2 Biological Solution
Manufactured by Simple Green
(562) 795-6000
<http://www.simplegreen.com>
Distributed by Cathedral Stone
7266 Park Circle Drive
Hanover, MD 21076
(800) 684-0901
<http://www.cathedralstone.com>

Holcim Mortamix Masonry Cement Type N
Holcim (US) Inc.
6211 North Ann Arbor Road
P.O. Box 122
Dundee, MI 48131
(800) 854-4656
<http://www.holcim.us>

Jahn Masonry Repair M30 Micro Injection
Grout
Jahn M90 S1-CR Concrete Repair Mortar
Jahn M120 S1-MA Marble Repair Mortar
Jahn M120 28355-MA-3 Marble Repair Mortar
Jahn M120 28356-MA-2 Marble Repair Mortar
Jahn M120 28357-MA-5 Marble Repair Mortar
Jahn M160 Granite and Bluestone Repair Mortar
Cathedral Stone
7266 Park Circle Drive
Hanover, MD 21076

(800) 684-0901
<http://www.cathedralstone.com>

Mortar Tinting Powders and Pigments Light
Buff, Dark Red, Cave Gray, Black, Brown, Red,
White

Plastic shims
Distributed by McMaster-Carr
9630 Norwalk Blvd.
Santa Fe Springs, CA 90054-0960
(562) 463-4277
<http://www.mcmaster.com>

Premium Pre-Mixed Natural Hydraulic Lime
Mortar
Virginia Lime Works
111 Highview Drive
Madison Heights, VA 24572-2712
(434) 929-8113
<http://www.virginalimeworks.com>

Quikrete Crack Resistant Concrete Mix
The QUIKRETE Companies
One Securities Centre
3490 Piedmont Road, NE
Suite 1300
Atlanta, GA 30305
(404) 634-9100
<http://www.quikrete.com>

SikaDur® 31 Epoxy
Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
(800) 933-7452
<http://www.sikaconstruction.com>

Silin AZ Fixative (potassium silicate)
Cathedral Stone
7266 Park Circle Drive
Hanover, MD 21076
(800) 684-0901
<http://www.cathedralstone.com>

Vana Trol®

Prosoco, Inc.
3741 Greenway Circle
Lawrence, KS 66046
(800) 255-4255
<http://www.prosoco.com>

Vulpex Liquid Soap

Available from TALAS
20 West 20th Street, 5th Floor
New York, NY 10011
(212) 219-0770
<http://www.talasonline.com>