


July 9, 2003

Cemetery Preservation Consultants  
2317 Linden Ave.  
South Plainfield NJ 07080

Dear Mark and Dr. Veit:

As I mentioned in my e-mail, here is a hard copy of the Willow Grove Fence Specifications. If there are any problems or additions, please contact me at [kelbrenn@eden.rutgers.edu](mailto:kelbrenn@eden.rutgers.edu) or call the office at (732) 745-5056. Hope your summer is going well.

Sincerely,



Kelly Brennan

# DRAFT

## FENCE REPAIR AND RESTORATION

### GENERAL

The Willow Grove Cemetery actually consists of three distinct cemeteries known as the Presbyterian Cemetery, Central Cemetery and Willow Grove Cemetery.

Along the northern border of the cemeteries is a cast iron fence which extends along Morris Street for the entire length of the cemetery. On closer observation, it is obvious that there are two distinct fence styles. The Presbyterian Cemetery and Central Cemetery each have the same style of cast iron fencing while the Willow Grove Cemetery has a slightly different style.

It is imperative that the Contractor examine the fence prior to bidding this project.

The cemetery is on the National Register of Historic Places.

### PRESBYTERIAN CEMETERY/CENTRAL CEMETERY FENCE

It is believed that the Presbyterian Cemetery/Central Cemetery fence was installed sometime after 1868. Its design characteristics are common with cast iron cemetery fencing from the third quarter of the 19th Century. (Refer to Drawing # \_\_\_\_\_ and Photo \_\_\_\_\_) Each section of fence is attached to a fence post. The fence posts are set into a concrete base or footing buried in the ground.

A scroll like iron buttress located at each side of the fence post further anchors it to the concrete base and provides lateral support. The top portion of the fence post is decorated with a flame like finial (Figure 4). This motif is a common design element for cemetery and death iconography. Figures 5 & 6 show an equivalent cemetery fence with a more exaggerated flame. Where each rail from the fence section meets the fence post a metal tongue with a hole attaches the fence section to the fence post. A bolt is used to attach each section.

### Fence Condition

The Presbyterian and Central Cemetery fence appears to be in poor condition. In one area the fence has completely detached itself from its base causing the fence to move forward. Typically, damage includes missing elements including top rail, pickets and bottom rails. Other damage includes twisting of fence and cracked pieces. Much of the bottom rail of the fence is buried. The condition of the buried sections of fence is unknown. Deterioration of the buried elements can be expected.

The iron bolts which anchor each fence section to the fence posts are severely deteriorated. A number of the metal tongues that hold the fence sections in place are also damaged. Because they are not adequately anchored to the fence posts many of the fence sections have become loose. In some cases the bolts have deteriorated and inappropriate repairs have taken place including metal wire which has also deteriorated. The decorative elements on the fence posts have survived with the exception of one, which has major damage to its decorative finial. At some locations the scroll like buttress which anchor the fence post to the ground are missing.

### **Repair and Restoration**

Many of the fence sections have loosened from the fence posts and are no longer sufficiently anchored. These sections should be more adequately anchored to the fence posts with non-ferrous materials. To repair or restore the fence, it may be easier to dismantle, restore and reinstall the fence. In order to set the fence at proper grade in relation to the existing sidewalk, most, if not all, of the fence must be excavated and reset vertically. Each fence section would have to be cleaned, repaired and repainted. The fence should be reinstalled in concrete bases with the bottom rail raised above the ground. Fence pickets, posts and picket tops if damaged beyond repair or missing shall be reproduced in cast iron to match the original.

### **Gates**

There are two gates into this section of the cemetery. The first gate has two brick piers forming the gate posts. The piers are approximately 6 feet in height by 1.5 feet square.

Each pier is capped with a cement coping block with re-enforcing rods. The brick piers appear to be modern 20th century replacements of older gateposts. The gate opening between the two piers measures 12 feet 5 inches from post to post. The gates comprise two swing style gates anchored to each gatepost. The iron gates also appear to be modern 20th century replacements. Although the gate opening at this section of the cemetery is modern, its location suggest an original gate opening. No pathway exists anymore at this opening but it does open at a section where a linear path separating rows of family burial plots did exist.

The second gate opening also has two brick piers forming the gate posts. The size of the piers is approximately 5ft-6 inches in height by 1.5 feet square.

Each pier is capped with a cement coping block with re-enforcing rods. The brick piers appear to be modern 20th century replacements of older gateposts. The gate opening between the two piers measures 10 feet 6 inches from post to post. The gate comprises two swing style gates anchored to each gatepost. The iron gates also appear to be modern 20th century replacements. The gate opening to this section of the cemetery is modern although its location suggest an original gate opening. Currently a paved pathway exists that separates the Presbyterian Cemetery from the Central

Cemetery Association. This opening is currently used for pedestrian and on occasion, vehicular traffic.

Caps will have to be reconstructed.

## WILLOW GROVE CEMETERY

It is believed that the Willow Grove fence was constructed around the early 1850's. Each section of fence measures 5'-8" long and 3'-4" high. Each section consists of a top row of 7 iron spike shaped picket and a bottom row just off centered from the top with 7 iron spike shaped pickets. An overlapping joint attaches each section to a fence post. The fence post finials are almost identical to the pickets on the fence sections, with exception that they are slightly larger. Each fence post is set in a cement block or footing that is buried in the ground. Two iron scroll-like buttresses also help further anchor the fence to the ground and provide lateral support.

### Fence Condition

The fence that borders the Willow Grove Cemetery is in better condition than the Presbyterian/Central Cemetery fence. The fence sections exhibit a variety of damage. For the most part, the major damage consists of missing pickets from the top and bottom rows. Furthermore, a section of fence is completely missing. Minor damage includes missing tips to the fence picket spikes. Other damage includes a bent and cracked fence section. The finials for the fence posts are in good condition with the exception of one which is missing. However a number of the iron scroll buttress exhibit damage. Five are missing altogether.

### Repairs and Restoration

Major missing elements of the fence, such as pickets, etc., should be replicated and welded on site. Re-grading of the ground or removal and vertical relocation of the fence appears obvious. Furthermore, the fence should be treated and repainted.

### Gates

The gate opening for Willow Grove Cemetery swings freely. However the iron that ties the gate into the gatepost has become loose at the bottom. The gateposts also exhibit damage. One post has shifted causing the bricks at the lower level to loosen and crack. The cement coping caps are also missing. A white accretion typical of efflorescence is also evident. The historic gate is in a state of preservation. All of its decorative features are intact and in good condition. Structural work may be required, at least to the extent that the gates are secure and can move freely.



New fencing for areas as shown on Plans shall be similar to the Willow Grove fence. New fence shall be cast iron fence of the size and type (with same details) as the fence adjacent and along the Willow Grove Cemetery. Every effort shall be made to duplicate this fence including posts, rails, picket tops, etc.

## WILLOW GROVE CEMETERY

FENCE RESTORATION

FENCE REPLACEMENT

## PRESBYTERIAN / CENTRAL CEMETERY FENCE

DISMANTLE EXISTING FENCE, CLEAN, REPAIR, PAINT.

REINSTALL FENCE SO BOTTOM RAIL DOES NOT TOUCH GROUND - 200 L.F.

## WILLOW GROVE FENCE

RE-GRADE AREA AROUND FENCE. (SO BOTTOM RAIL DOES NOT

TOUCH GROUND, REPLACE MISSING BUSHINGS, WELD LOOSE PARTS,

STRAIGHTEN BENT SECTIONS, REPAINT - 304 L.F.

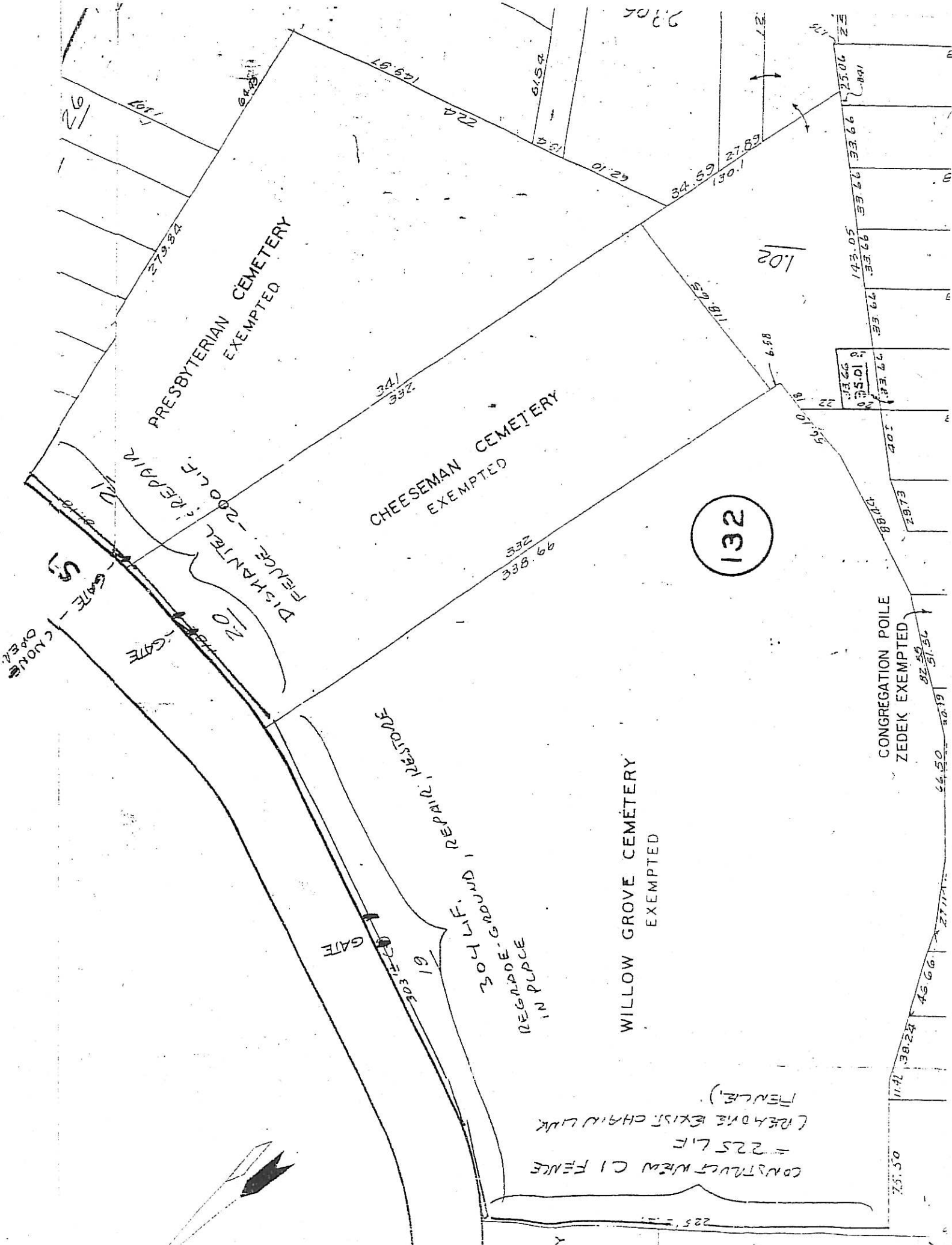
## GATES

REVIEW STRUCTURAL INTEGRITY. RECONNECT GATES TO PERS (WHERE)

NECESSARY. - GATES TO BE OPERATIONAL 3 GATES

## NEW FENCE

CONSTRUCT NEW CAST IRON FENCE - ~~14~~ 225 L.F. 225 L.F.



PRESBYTERIAN CEMETERY  
EXEMPTED

CHEESEMAN CEMETERY  
EXEMPTED

WILLOW GROVE CEMETERY  
EXEMPTED

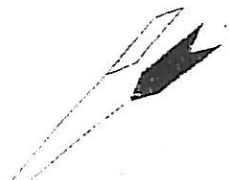
CONGREGATION POILE  
ZEDEK EXEMPTED

132

DISINFECT FENCE - 200 L.F.  
NO TRAFFIC  
GATE  
GATE  
GATE  
CHAINS OVER

30 FT L.F. GRASSY, REPAIR, RESTORE  
REGRADE - GRASSY, REPAIR, RESTORE  
IN PLACE

CONSTRUCT NEW C1 FENCE  
= 225 L.F.  
(REMOVE EXIST. CHAIN LINK FENCE.)



1001  
1002  
1003

129.97  
279.84  
129.97

22A  
22B  
22C

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62.10  
62.10

27.82  
130.1  
130.1

85.9  
118.5  
118.5

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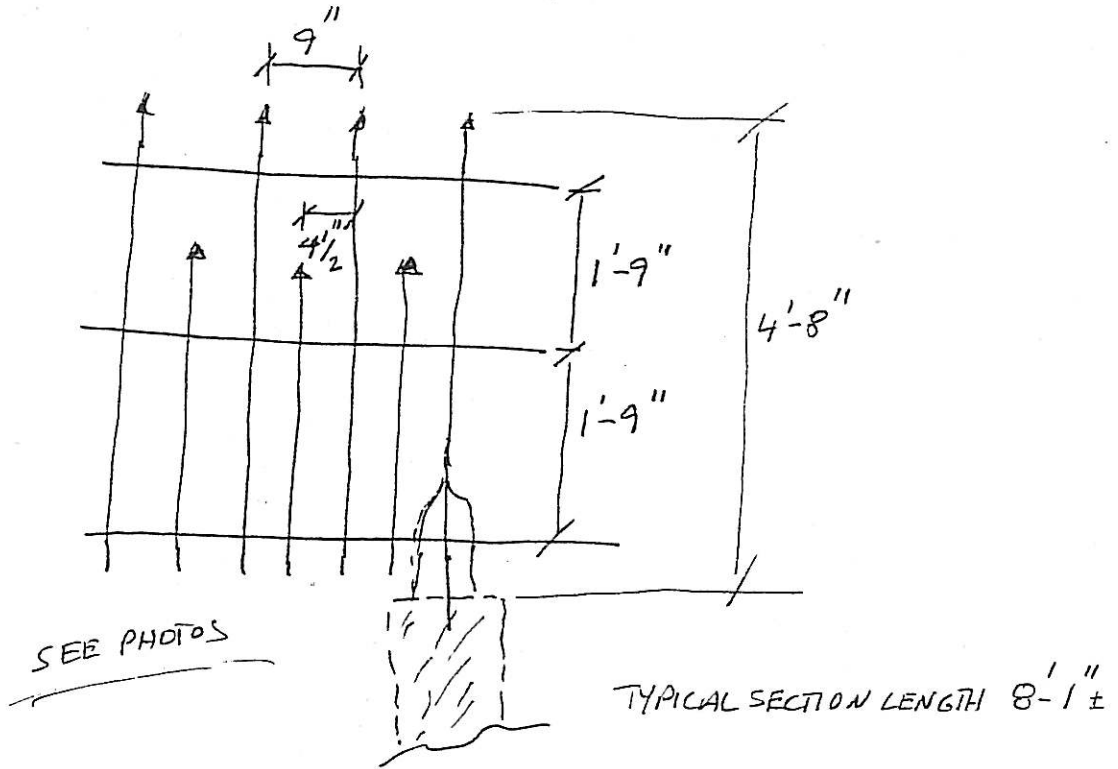
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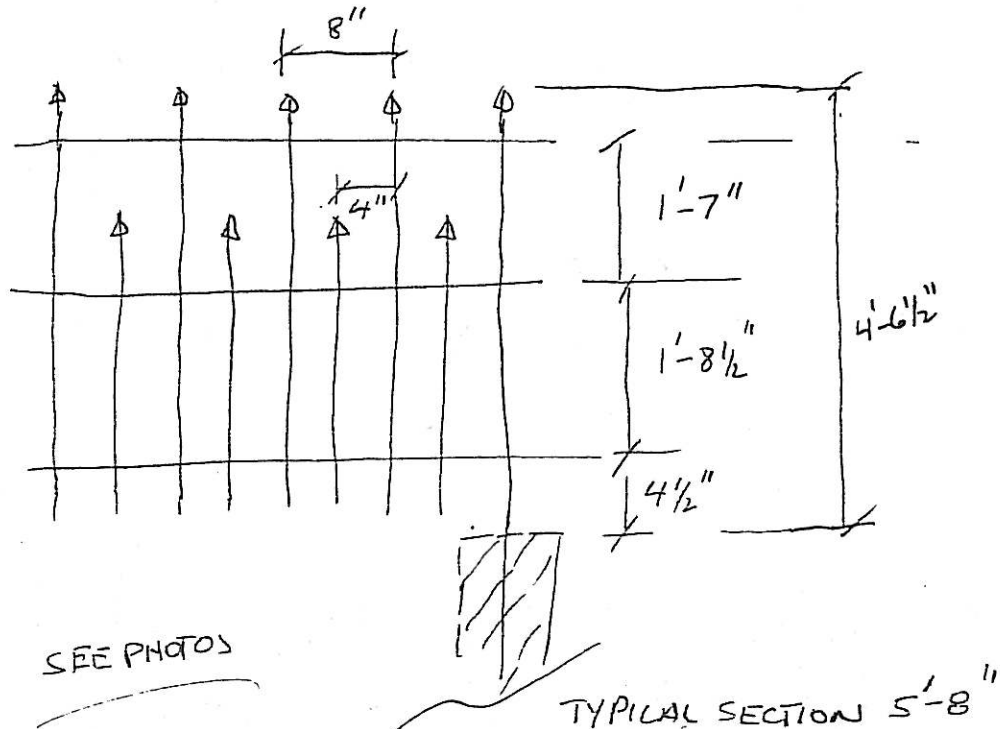
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FENCE @ PRESBYTERIAN'S CENTRAL CEMETERY



FENCE @ WILLOW GROVE CEMETERY



Ms Kelly Brennan  
City of New Brunswick  
Department of Engineering, 2<sup>nd</sup> floor  
Attention: Mr. Tom Weingarten  
Civic Square  
25 Kirkpatrick Street  
New Brunswick, NJ, 08901

July 13, 2003

Dear Kelly:

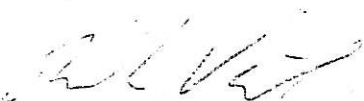
Mark and I have had the opportunity to review the Willow Grove Fence Specifications that you sent to us last week. Our comments are fairly minor and we hope hopeful. We have broken them down by page and paragraph.

On page one, in the first section, after you note that the cemetery is on the National Register of Historic Places you might mention that it should be treated in accordance with the Secretary of the Interior's Guidelines.

Are the specifications for use by potential contractors or are they being drafted for the HPO? It is our impression that this project would be reviewable by the HPO under the State Register Act. In our professional opinion we believe that specifications which outline the restoration of existing elements of the fence while accurately replicating those that are missing should be looked on favorably by the Historic Preservation Office. The specifications are quite clear and nicely drafted.

A handful of typos were noted on the text. If we can be of any further assistance please let us know.

Best,



Richard Veit, Ph.D., and Mark Nonestied

Cemetery Preservation Consultants, LLC  
2317 Linden Ave.  
South Plainfield, NJ 07080

*Cemetery Preservation Consultants, LLC.*

Cemeterypreservation@yahoo.com

**Richard Veit Ph.D.**  
2317 Linden Ave  
South Plainfield, NJ  
07080

908.822.8747

**Mark Nonestied**  
26 Maple Street  
E. Brunswick, NJ  
08816

732.432.7588



July 8, 2002

Attn: Mr. Tom Weingarten  
City of New Brunswick  
Engineering Department  
Kirkpatrick Street  
New Brunswick, NJ, 08901

Dear Mr. Weingarten,

As per our contract please find enclosed a report on the iron fencing in conjunction with the restoration of Willow Grove Cemetery. I hope the report meets your satisfaction. The iron fence was documented for its current physical condition and historical background. Suggestions have also been included to help with its restoration. Feel free to contact us if you have any questions or if we can be of any assistance. We look forward to hearing from you.

Sincerely,

Mark Nonestied

Richard Veit, Ph.D.

## **Abstract**

The City of New Brunswick, New Jersey has proposed to carry out a restoration of Willow Grove Cemetery. The Cemetery is located within the block bounded by George Street to the east, Morris Street to the north, Welton Street to the south and Livingston Avenue to the west. The burial ground consists of three separate sections: Willow Grove Cemetery, Central Cemetery Association, and a Presbyterian burial ground. All three sites are listed on the State and National Register of Historic Places as a contributing element of the Livingston Avenue Historic District. The City of New Brunswick has contracted with Cemetery Preservation Consultants to assess the iron fencing that borders the cemetery on Morris Street.

## **Historic Background**

Willow Grove Cemetery is an early example of a garden cemetery. Garden cemeteries are products of the rural cemetery movement, which first became popular during the mid-nineteenth century. These cemeteries, unlike earlier church and community burying grounds, did not grow piecemeal but were laid out by architects and landscape designers. Often they incorporated elaborate plantings, rolling terrain, and winding paths. Although generally associated with cities, they were seen as providing a respite from the hustle and bustle of urban life, while at the same time being more sanitary than overcrowded burial grounds.

The first garden cemetery in the United States was Mount Auburn Cemetery in Cambridge, Massachusetts, established in 1831. New Jersey's first garden cemetery was Mount Pleasant in Newark incorporated in 1848. The Willow Grove Cemetery Association was founded in 1850 and incorporated in 1851, making it an early example of the garden cemetery movement in New Jersey. With the majority of graves dating from the mid 19th century to the early 1900s the cemetery reads like a who's who of Victorian New Brunswick. Some of the more notable graves include several Civil War Veterans, an unidentified World War I soldier, and several Japanese students, including Taro Kusakabe who died from Tuberculosis in 1870. The cemetery also contains several late 18th and early 19th century gravemarkers from a Presbyterian congregation. Included in this section are rare slate markers from the mid 1700s most likely made in the New England states and transported to New Brunswick.

Cast iron fencing can be found in many 19<sup>th</sup> and early 20<sup>th</sup> century cemeteries. Fencing was an important design element to either enclose family burial plots or to delineate the cemetery property itself. With the industrialization of the country a number of factories emerged producing fencing in a variety of styles and designs. Much of this fencing could be purchased through company catalogues and was even obtainable through larger mail order catalogues such as Sears and Roebuck (Figure 1).



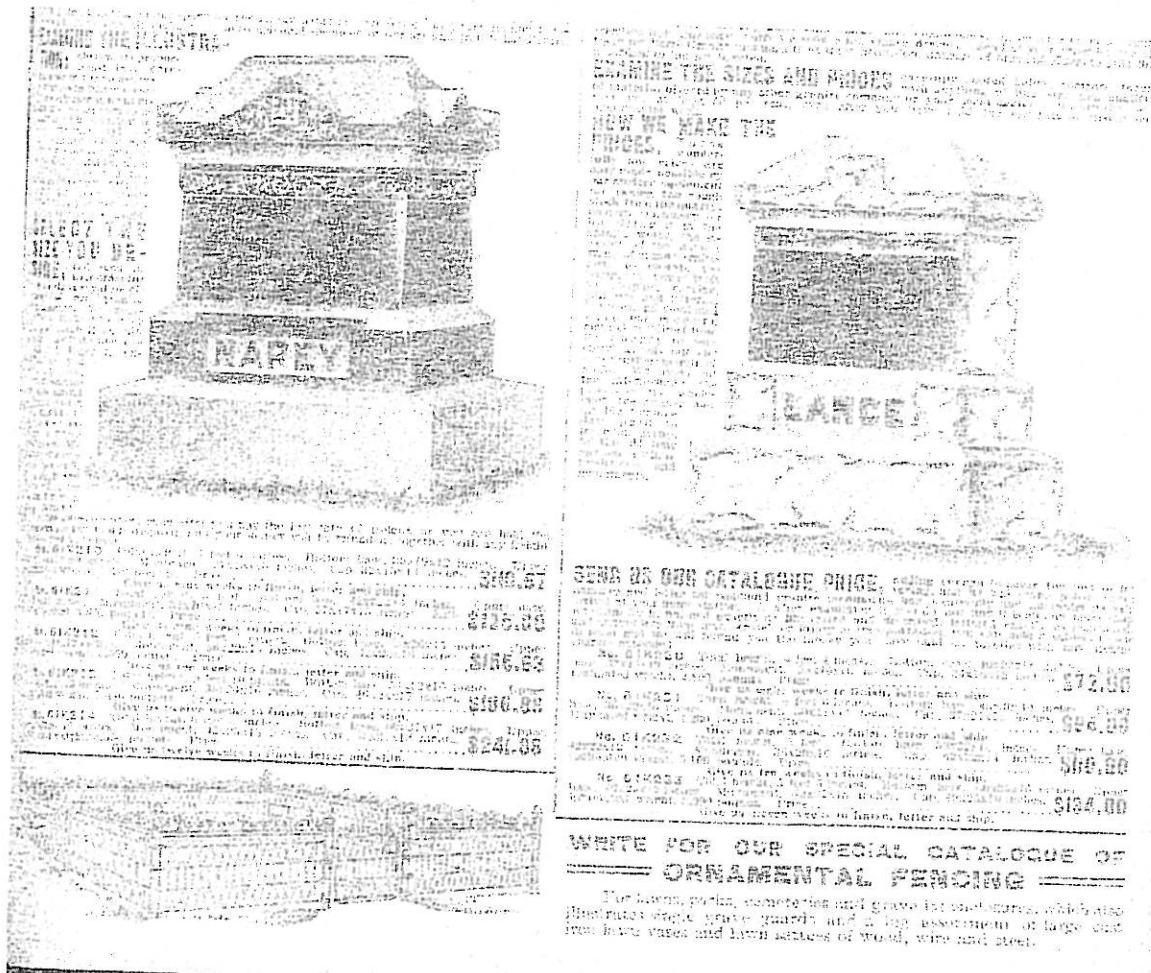


Figure 1: Sears & Roebuck Catalog, 1908 showing gravemarkers and ornamental fencing.

Unfortunately, over time much of the cast iron fencing in cemeteries has been removed. Sections of fencing that enclosed family burial plots were often removed to allow access of heavy gasoline powered mowers. During the First and Second World War cast iron fencing was scrapped for the war effort. Those that survive today have become targets for thieves and antique collectors.

The fencing that forms the north border of Willowgrove Cemetery is an example of mass produced fencing available in the mid to late 19<sup>th</sup> century. Historically, more of this fencing may have existed. According to records held by the City of New Brunswick's Engineering Department, in 1927, in an effort to bolster the cemetery bank account, some of the original cast iron fencing was scrapped. What is left today is a rare survivor of 19<sup>th</sup> century fencing.

Les Metalliers Campenois  
Metal Work Contractors  
118 Second Avenue  
Paterson, New Jersey 07514  
973.279.3573

W.T. Welding  
2034 Briggs Road  
Mt. Laurel, New Jersey 08054

Inclusion on this list does not imply that the firms are qualified specialists in historic preservation work, nor does it serve as an endorsement or recommendation. Before selecting a contractor, please consider a number of different contractors, and review their past projects and professional qualifications carefully.

## Methodology

The iron fencing forms the north border for the Presbyterian Cemetery, Central Cemetery Association and Willow Grove cemetery as they abut against Morris Street. Two distinct fence styles exist and will be handled separately. The Presbyterian Cemetery and Central Cemetery Association each have the same style of cast iron fencing. Willow Grove Cemetery has a different style of cast iron fencing. For ease in understanding the report each fence will be handled separately.

Each fence was measured separately and each had a specific datum from where the measurements started. The Presbyterian/Central Cemetery fence was measured from a datum at the northeast corner (close to George Street) to the start of the Willow Grove Cemetery fence. The Willow Grove Cemetery fence was measured at a datum starting from the end of the Presbyterian/Central Cemetery Fence and running the length to the New Brunswick Free Public Library property (Figure 2).

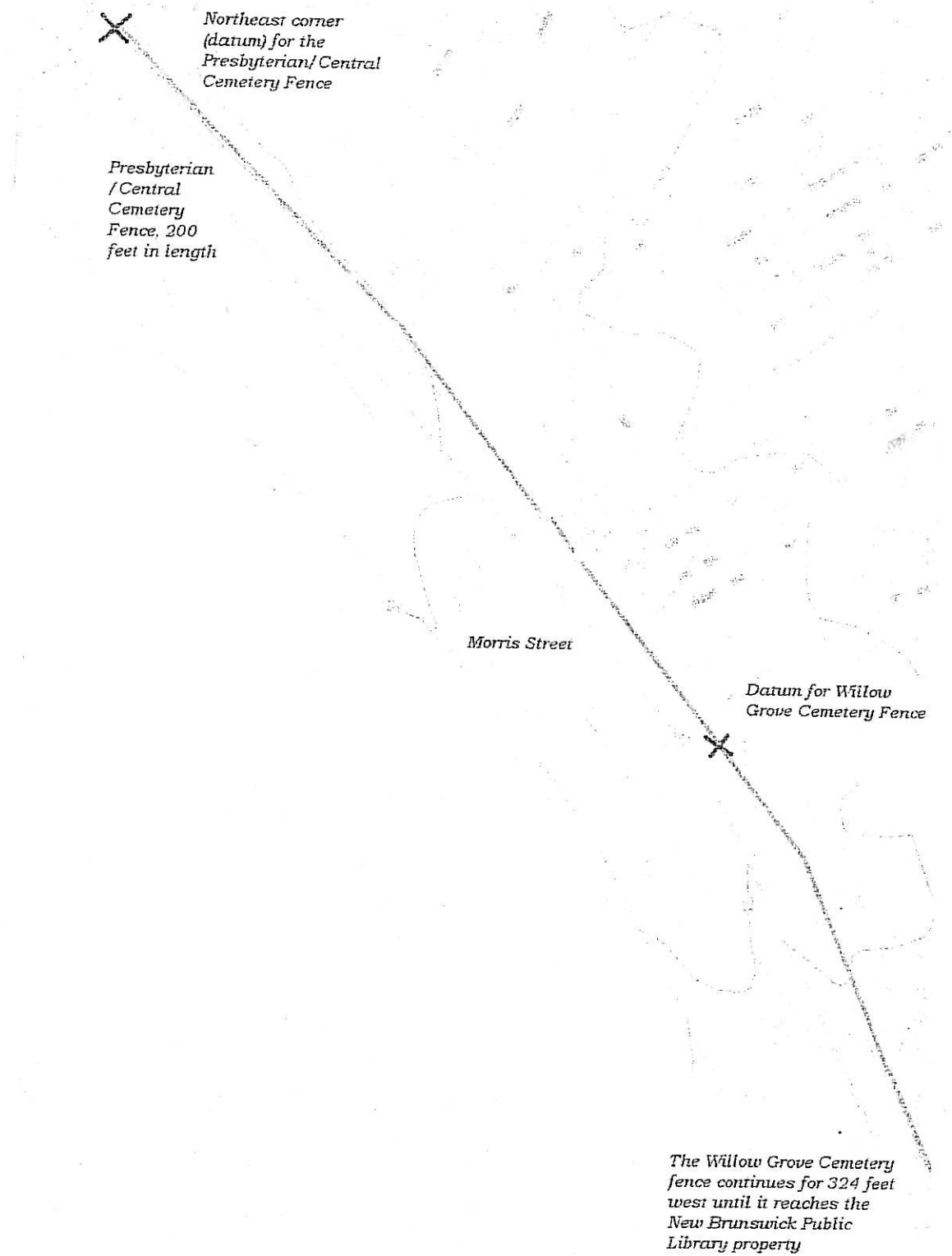


Figure 2: Map showing the location of fencing for the Presbyterian/Central Cemetery and Willow Grove Cemetery, New Brunswick, NJ.

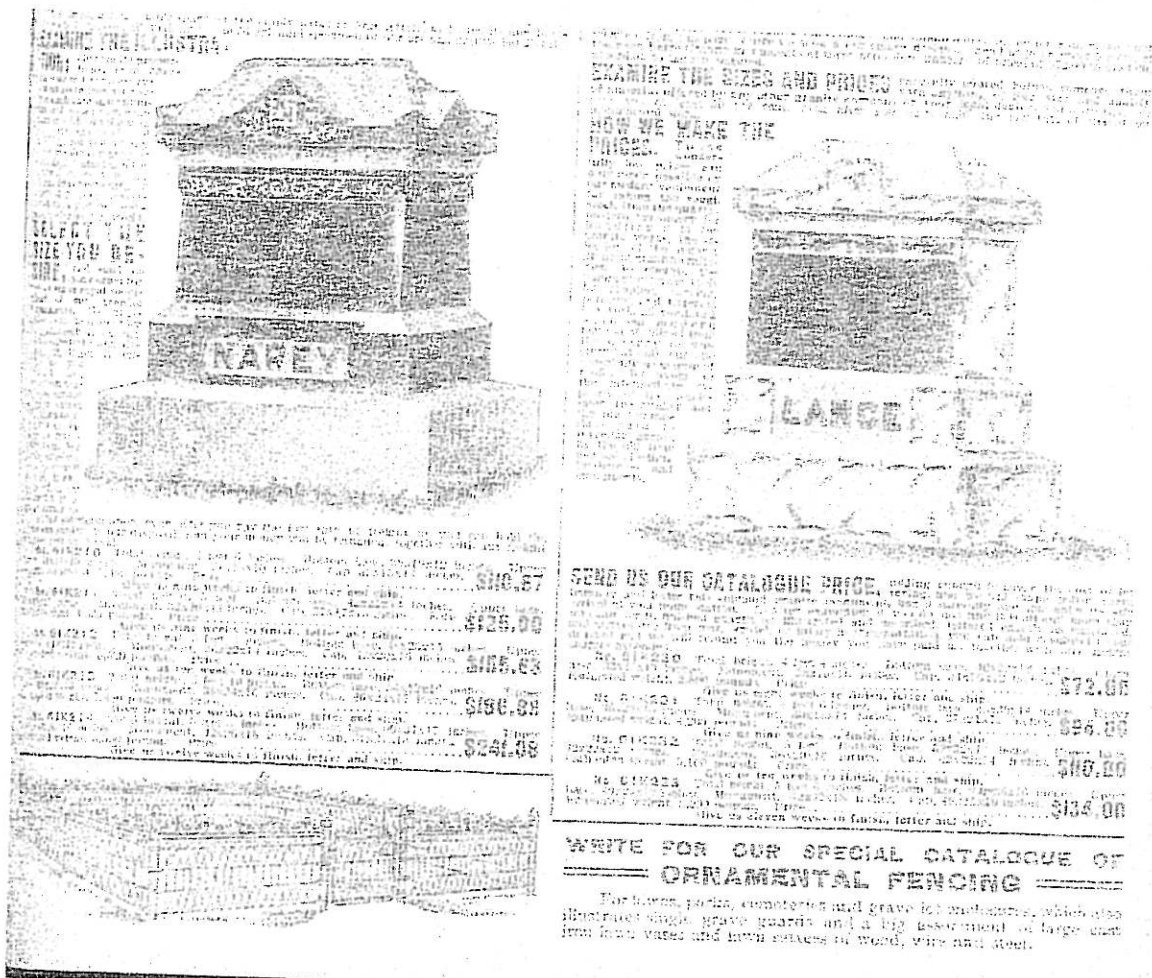


Figure 1: Sears & Roebuck Catalog, 1908 showing gravemarkers and ornamental fencing.

Unfortunately, over time much of the cast iron fencing in cemeteries has been removed. Sections of fencing that enclosed family burial plots were often removed to allow access of heavy gasoline powered mowers. During the First and Second World War cast iron fencing was scrapped for the war effort. Those that survive today have become targets for thieves and antique collectors.

The fencing that forms the north border of Willowgrove Cemetery is an example of mass produced fencing available in the mid to late 19<sup>th</sup> century. Historically, more of this fencing may have existed. According to records held by the City of New Brunswick's Engineering Department, in 1927, in an effort to bolster the cemetery bank account, some of the original cast iron fencing was scrapped. What is left today is a rare survivor of 19<sup>th</sup> century fencing.

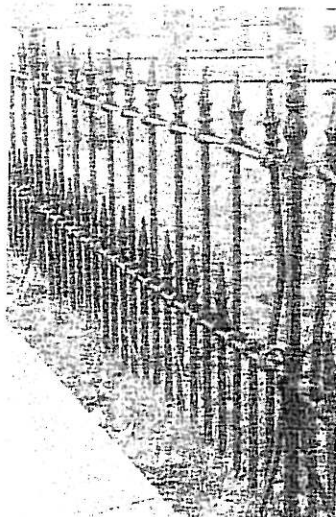
## Description

### A. Presbyterian Cemetery / Central Cemetery Association Fence

One distinct style of fencing forms the north border of both the Presbyterian Cemetery and the Central Cemetery Association. The Presbyterian Cemetery was originally located near the Raritan River. In 1836 the congregation purchased the current lot along Morris Street and moved a number of older burials into the new cemetery. Today, the Presbyterian Cemetery is the older of both the Cheeseman Cemetery and Willow Grove Cemetery. The burial ground to the immediate west of the Presbyterian Cemetery was originally called the Cheeseman Cemetery until it was incorporated in 1868 as the Central Cemetery Association. It is more likely that the cemetery fence was installed sometime after the formation of the Central Cemetery in 1868. Its design characteristics are common with cast iron cemetery fencing from the third quarter of the 19<sup>th</sup> century.

The cast iron fence forms the north border of the cemetery. Its total length from the northeast corner to the start of the Willow Grove cemetery fence is 200 feet. At the northeast corner the fence terminates at a brick pier. No fence post exists and the fence section abruptly ends here. It's possible that the brick pier replaced an earlier post.

Each section of fence measures 8 feet long and is approximately 4 feet 2 inches in height (Figure 3). Each section consists of an upper, middle and lower rail. Each rail also has two small tubular iron rails. The top rail has 10 iron spiked pickets, while the middle rail, off centered from the top, consists of 9 spiked pickets. A bottom rail, located at or near ground level, has no ornamentation. In total, 20 sections of fence exist and three half sections.



*Figure 3: Presbyterian/Central Cemetery Fence section, showing iron rails and pickets.*

Each section of fence is attached to a fence post. The fence posts are set into a concrete base buried in the ground. A scroll like iron buttress located at each side of the fence post further anchors it to the concrete base and provides lateral support. The top portion of the fence post is decorated with a flame like finial (Figure 4). This motif is a common design element for cemetery and death iconography. Figures 5 & 6 show an equivalent cemetery fence with a more exaggerated flame. Where each rail from the fence section meets the fence post a metal tongue with a hole attaches the fence section to the fence post. A bolt is used to attach each section.



**Definitions**

The following illustration will help in defining the various components of a fence.

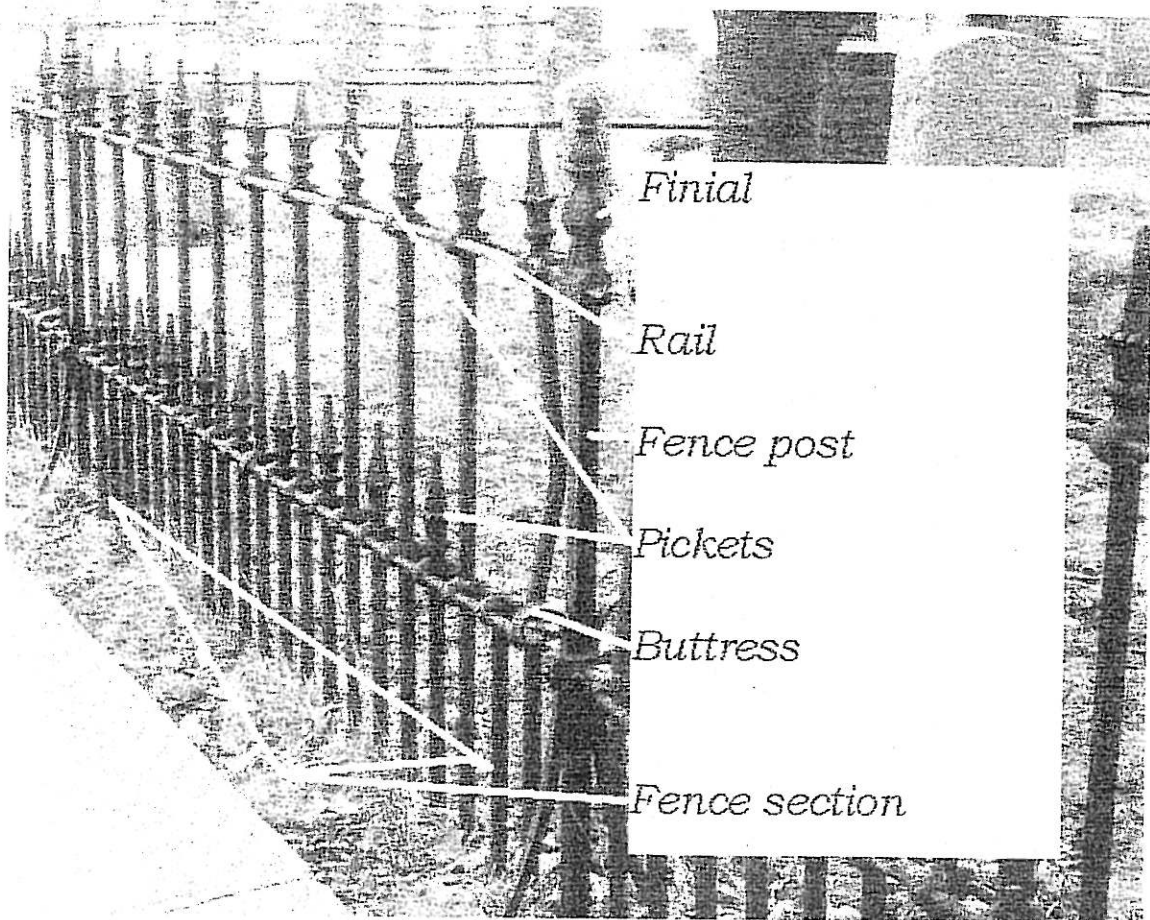
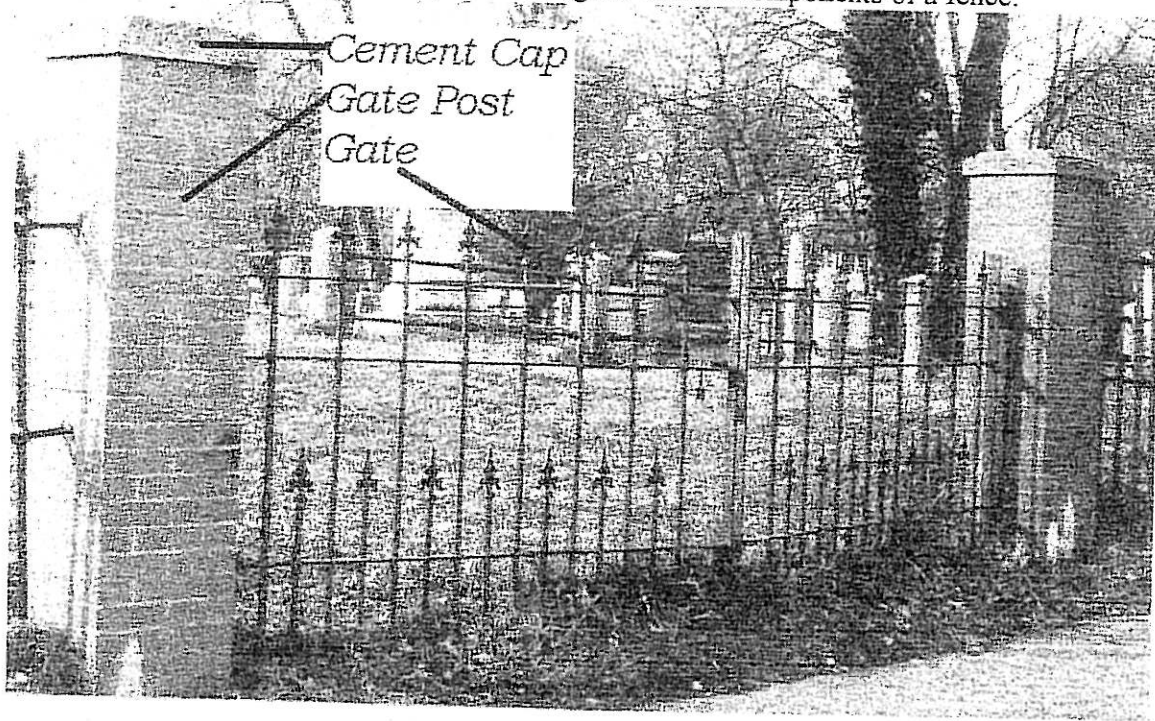






Figure 4: Fence Post finial



Figure 5: Finial for Cemetery Fencing

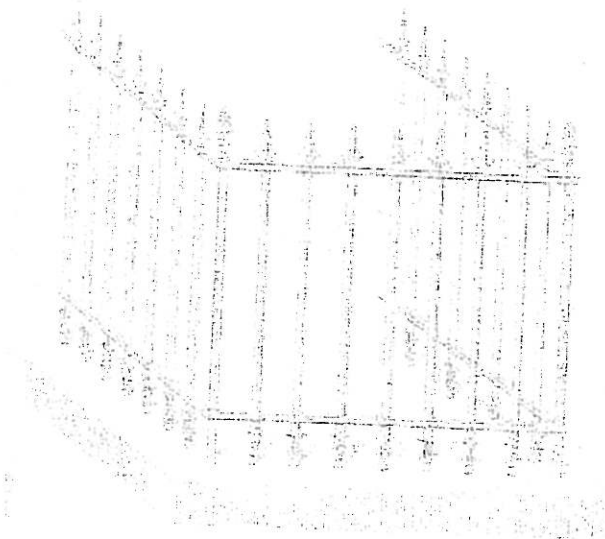
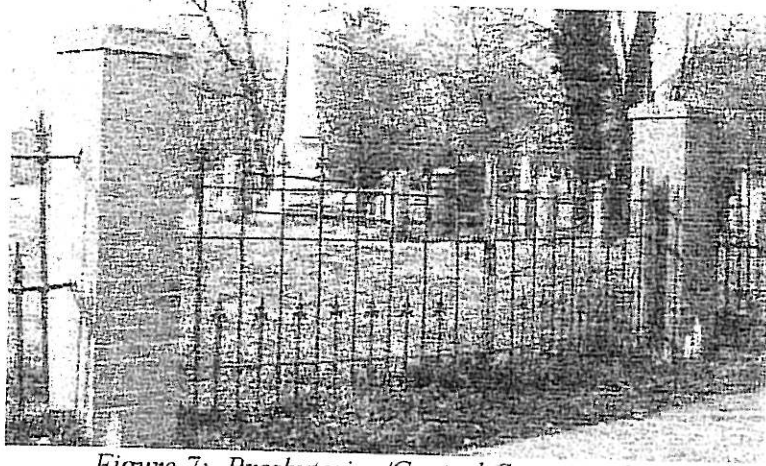


Figure 6: Cemetery fencing showing fence posts in context with fence sections.

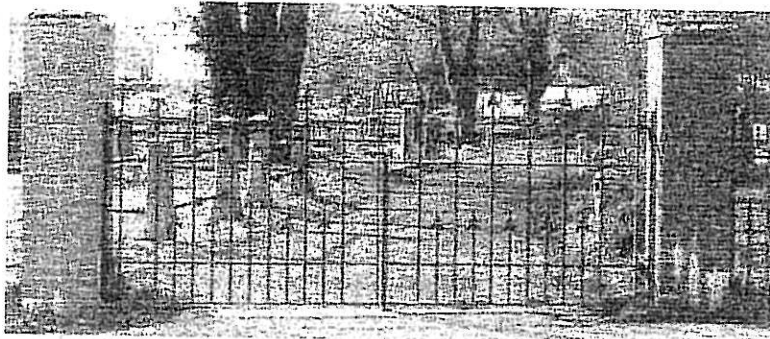
### Gates

Two gate openings exist. The first gate is located at the 68-foot mark from the northeast corner (Figure 7). Two brick piers form the gateposts. They are approx. 6 feet in height x 1.5 feet square. Each pier is capped with a cement coping block with re-enforcing rods. The brick piers appear to be modern 20<sup>th</sup> century replacements of older gateposts. The gate opening between the two piers measures 12 feet 5 inches from post to post. The gates comprise two swing style gates anchored to each gatepost. The iron gates also appear to be modern 20<sup>th</sup> century replacement. Although the gate opening at this section of the cemetery is modern its location suggests an original gate opening. No pathway exists anymore at this opening but it does open at a section were a linear path separating rows of family burial plots did exist.



*Figure 7: Presbyterian/Central Cemetery Gate*

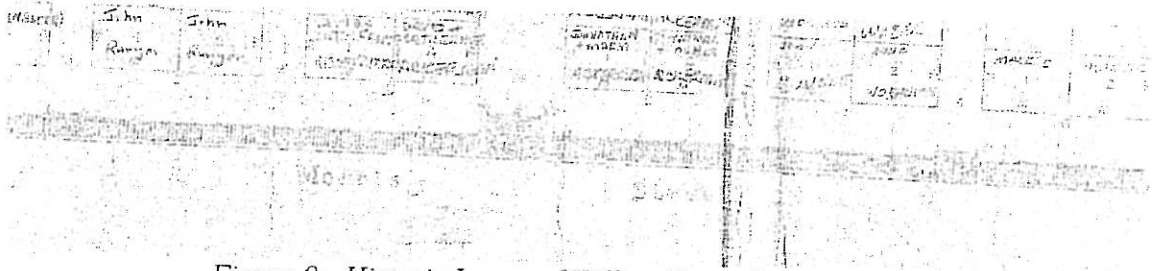
The second gate opening is located at the 137-foot mark from the northeast corner (Figure 8). Two brick piers form the gateposts. They are approx. 5 feet 6 inches in height x 1.5 feet square. Each pier is capped with a cement coping block with re-enforcing rods. The brick piers appear to be modern 20<sup>th</sup> century replacements of older gateposts. The gate opening between the two piers measures 10 feet 6 inches from post to post. The gate comprises two swing style gates anchored to each gatepost. The iron gates also appear to be modern 20<sup>th</sup> century replacements. The gate opening at this section of the cemetery is modern although its location suggests an original gate opening. Currently a paved pathway exists that separates the Presbyterian Cemetery from the Central Cemetery Association. This opening is currently used for pedestrian and on occasion vehicular traffic.



*Figure 8: Presbyterian/Central Cemetery Gate*

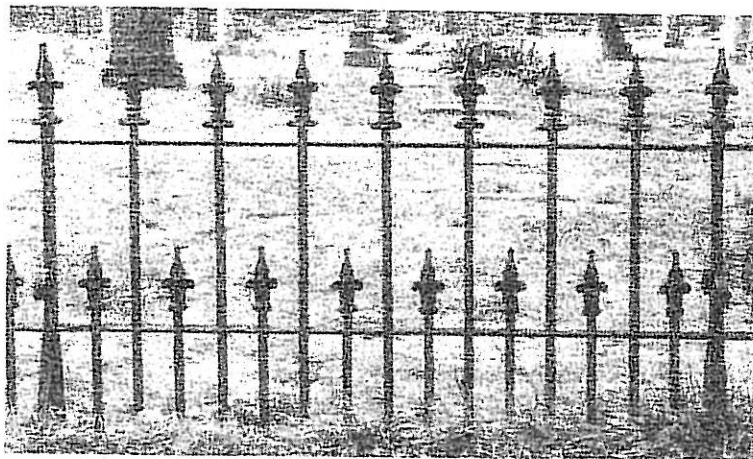
## B. Willow Grove Cemetery Fence

Willow Grove Cemetery was incorporated in 1851. A survey of the cemetery was drawn at that time. The map was recopied as a Works Progress Administration project in the 1930's. The map delineates a fence along Morris Street similar in character to the current fence (Figure 9). The fence forms the north border of Willow Grove Cemetery as it abuts Morris Street. The fence follows a straight path but curves at two locations to follow the curve of Morris street. From its start near the end of the Presbyterian/Central Cemetery fence the Willow Grove Cemetery fence curves north as it follows the path of Morris Street. The fence then runs a straight line for almost 250 feet then at the 275 foot mark it curves north until it terminates near the New Brunswick Public Library property. At the 70 foot mark the fence appears to have been repaired and patched. A possible pedestrian gate may have existed here.



*Figure 9: Historic Image of Willow Grove Cemetery Fence*

The total length from the datum of the Willow Grove Cemetery Fence to the northwest corner of the New Brunswick Public Library's property is 324 feet. In total 51 sections of fence each of which measure 5 feet 8 inches long and 3 feet 8 inches in height make up the entire Willow Grove Cemetery fence (Figure 10). Each section consists of a top row of 7-iron spike shaped pickets and a bottom row just off centered from the top with 7-iron spike shaped pickets. An overlapping joint attaches each section to a fence post.



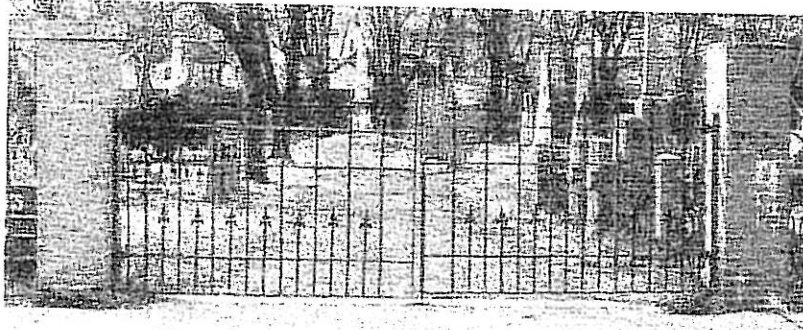
*Figure 10: Willow Grove Cemetery fence section*

The fence post finials are almost identical to the pickets on the fence sections, with the exception that they are slightly larger. Each fence post is set into a cement block that is

buried in the ground. Two iron scroll like buttresses also help further anchor the fence to the ground and provide lateral support.

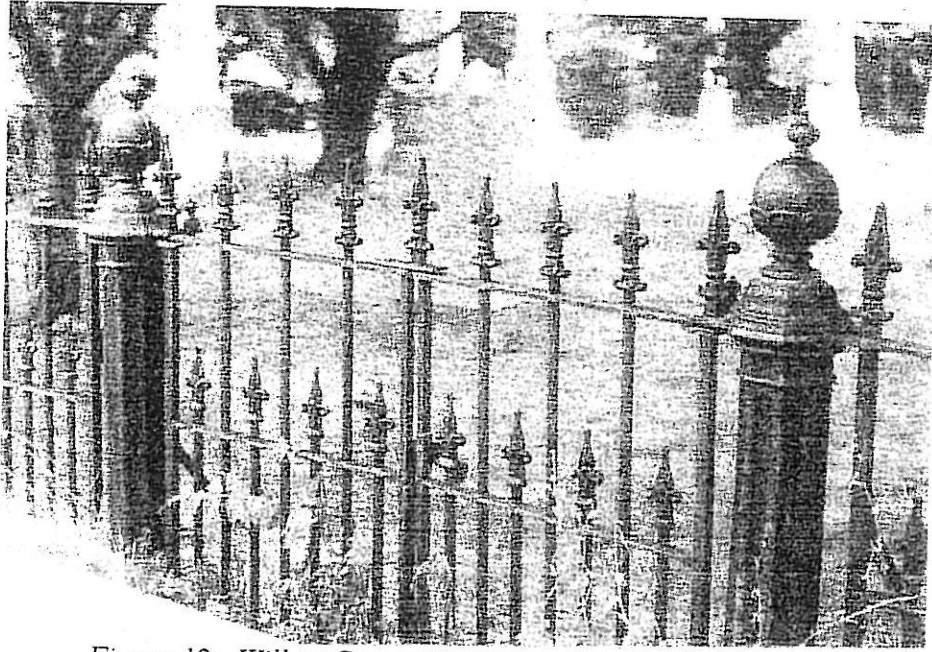
### Gates

Two gate openings exist. The first gate is located at the 143 foot mark from the datum of the Willow Grove Cemetery Fence (Figure 11). Two brick piers form the gateposts. They are approx. 5 feet 7 inches in height x 1.5 feet square. Each pier is capped with a cement coping block with re-enforcing rods. The brick piers appear to be modern 20<sup>th</sup> century replacements of older gate posts. The gate opening between the two piers measures 12 feet 6 inches from post to post. The gate comprises two swing style gates anchored to each gate post. The iron gates also appear to be modern 20<sup>th</sup> century replacement. The gate opening at this section of the cemetery appears to be modern although its location suggests an original gate opening. Currently a paved pathway exists that leads to the cemetery's board of director's monument. This opening is currently used for pedestrian and on occasion vehicular traffic.



*Figure 11: Willow Grove Cemetery gate*

The second gate opening is located at the 232 foot mark from the datum of the Willow Grove Cemetery Fence (Figure 12). The gateposts and gates appear to be original 19<sup>th</sup> century design features of the fence. Two cast iron piers form the gateposts. They are approx. 4 feet 8 inches in height. The gate opening between the two gateposts measures 4 feet 8 inches from post to post. The gate post rests on a concrete base. The post is a fluted column that is in four sections. Near the top a decorative collar keeps the four sections together. A bulbous cast iron ball caps the collar with a small finial at the top. The gates comprise two swing style gates anchored to each gate post. This opening is no longer used but its size suggests an original pedestrian entrance. No manufacturers mark could be found on the gate.



*Figure 12: Willow Grove Cemetery original pedestrian gate*

### Condition

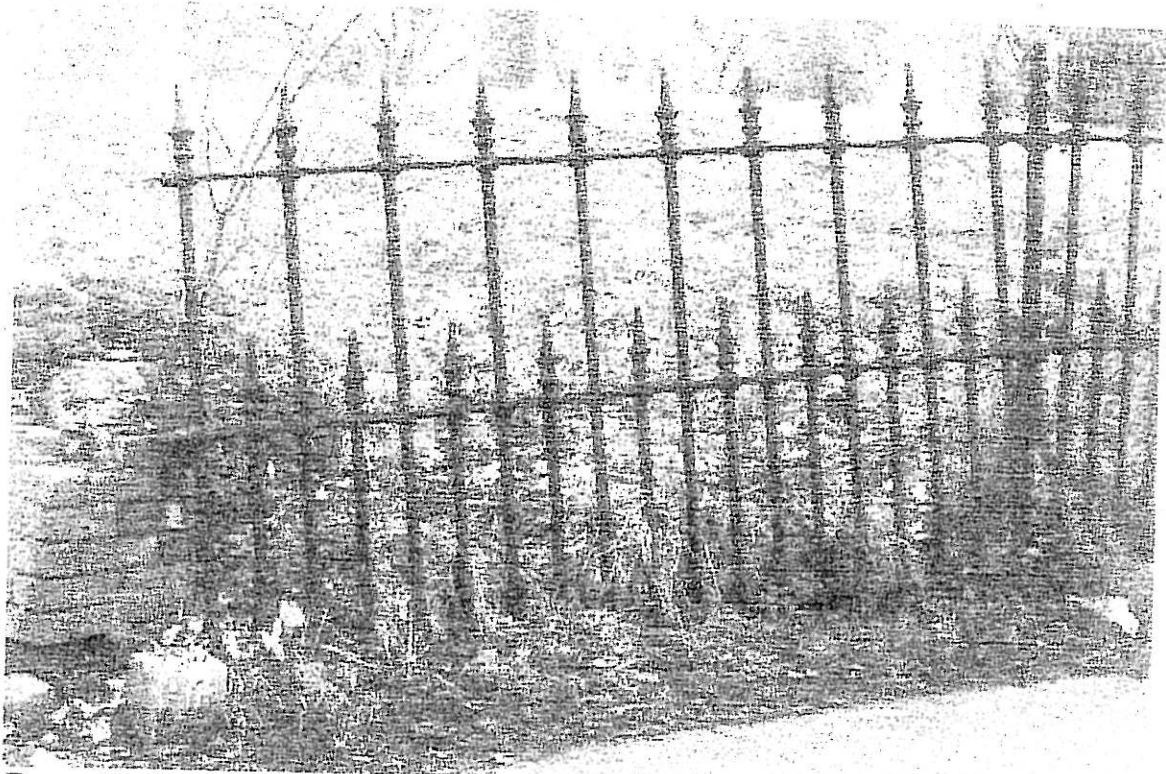
#### Presbyterian/Central Cemetery Association Fence

The cast iron fence for the Presbyterian and Central Cemetery is in poor shape. At the 95 foot mark from the northeast corner the fence post has completely detached itself from its base causing the fence to move forward about 1 ½ feet. A large tree root appears to have been the cause of this damage.

The fence sections exhibit damage. Major damage includes missing elements. A total of 10 pickets on the top rail and 8 pickets on the bottom rail are completely missing. Other major damage includes a portion of a fence section near the start of the Willowgrove Cemetery fence that is twisted and cracked. Minor damage includes three picket tips that are missing.

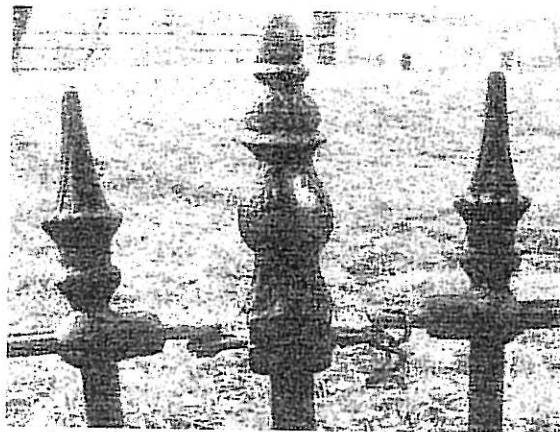
Much of the bottom rail for the entire fence is buried allowing moisture to rest against the fence. This is especially true near the northeast corner as the ground rises above the fence. The bottom portions of each fence section are completely buried and in the first section of fence, near the datum, the ground is pushing the fence forward (Figure 13).





*Figure 13: Presbyterian/Central Cemetery fence section showing buried bottom portion.*

The iron bolts which anchor each fence section to the fence posts are severely deteriorated. A number of the metal tongues that hold the fence sections in place are also damaged (Figure 14). Because they are not adequately anchored to the fence posts many of the fence sections have become loose. In some cases the bolts have deteriorated and inappropriate repairs have taken place including metal wire which has also deteriorated. The decorative elements on the fence posts have survived with the exception of one, which has major damage to its decorative finial. Each fence posts has a scroll like buttress to further anchor it to the ground. At the 95 foot mark two scroll like buttresses are missing from one fence post. In addition minor damage to one buttress can be seen at the 105 foot mark.



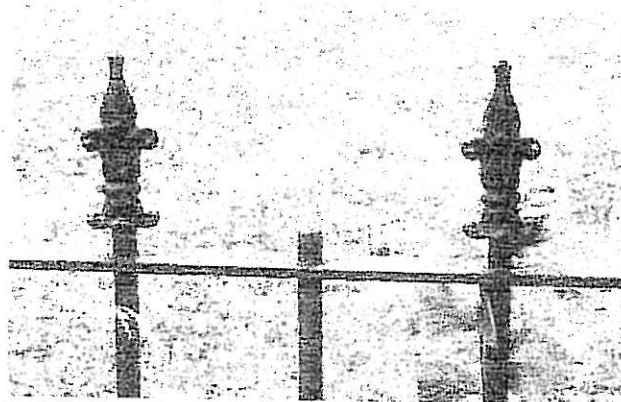
*Figure 14: Fence sections have detached from fenceposts. Poor repairs have been made and in many cases failed.*

The first gate, located at the 68 foot mark from the northeast corner, is closed and no longer used for access. The landscape prohibits the gate from swinging. Each gate post has a cement coping cap. These caps have deteriorated exposing the iron tie rods. In addition to this damage the fence sections are loosely anchored to the gate post.

The second gate opening has a damaged but functional gate. Some of the decorative elements are missing and part of the gate is bent and twisted. The cement caps have also deteriorated exposing iron tie rods.

#### Willow Grove Cemetery

The fence that forms the border for Willow Grove Cemetery is in better shape than the Presbyterian/Central Cemetery fence. The fence sections exhibit a variety of damage. In total major damage consists of 5 missing pickets from the top row and 2 missing pickets from the bottom row (Figure 15). A section of fence at the 181 foot mark is completely missing. Minor damage to the fence pickets include missing tips to the fence picket spikes. In total 25 are missing from the top row and 33 from the bottom row. Other damage includes a fence section at the 25 foot mark that is bent and cracked as if hit by a blunt object, such as an automobile.

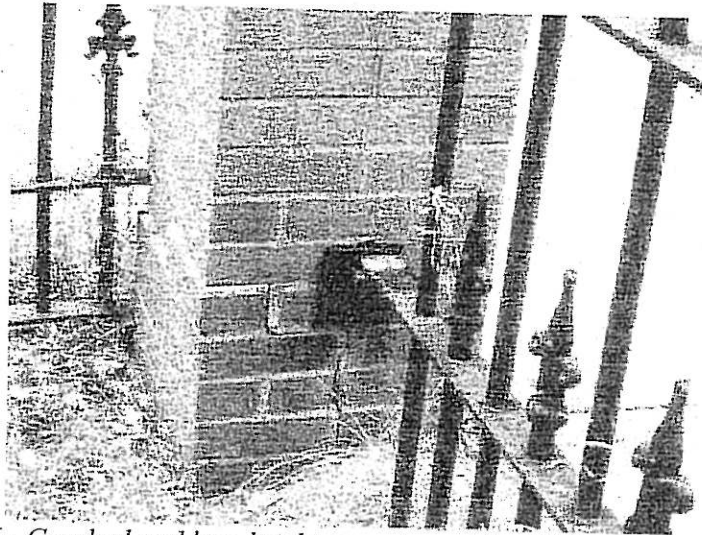


*Figure 15: Missing elements from the Willow Grove Cemetery Fence*

The finials for the fence posts are in good condition with the exception of one, which is missing. However a number of the iron scroll buttress exhibit damage. Five are missing in a row starting at the 25 foot mark. At the 125 foot mark the interior buttress is missing and at the 295 foot mark the top of one is bent.

The gate opening for Willow Grove cemetery swings freely. However the iron that ties the gate into the gatepost has become loose at the bottom. The gateposts also exhibit damage. One post has shifted causing the bricks at the lower level to loosen and crack (Figure 16). The cement coping caps are also missing. A white accretion typical of efflorescence is also evident.





*Figure 16: Cracked and loose bricks on gate post for Willow Grove Cemetery*

The historic gate is in a remarkable state of preservation. All of its decorative features are intact and in good condition.

### **Conclusions and Recommendations**

The cast iron fencing for the Presbyterian/Central Cemetery and Willow Grove Cemetery were important design elements of 19<sup>th</sup> century cemeteries. Today, this fencing has become a rare survivor that should be preserved when at all possible. Although some of the elements are in poor condition, minor restoration would help enhance the overall beauty of the cemetery and maybe more cost efficient than replacing it.

Because the City of New Brunswick has decided to carry out a larger restoration of the whole cemetery the work on the fencing should be weighed against the overall restoration and budget that the City of New Brunswick proposes. The restoration can be broken down into immediate concerns and long range restoration plans. However, because the fence is such a visual part of the cemetery the city may wish to address all the restoration concerns. At the least several immediate concerns should be addressed.

## Immediate

### Cemetery Gates

The brick gateposts at each entrance of the cemetery have deteriorated. In most cases the cement caps are loose or have deteriorated to the point that the iron tie rods are exposed. A structural engineer should check the gatepost for the main entrance into Willow Grove Cemetery. The brick pier has shifted causing bricks on the lower section to shift and crack. This condition could be exasperated, as the gate is open and closed. If a structural engineer determines that the brick pier is unsound it should be rebuilt and the fence reattached. It may be at some point in the future more advisable to replace the gates with a more appropriate design typical to what is depicted on the historic cemetery map of Willow Grove Cemetery. (Figure 17). Several companies could help to replicate this design feature.



Figure 17: Historic image of original Willow Grove Gate

### Fence Sections

Many of the fence sections in the Presbyterian/Central Cemetery have loosened from the fence posts and are no longer sufficiently anchored. These loose sections are more susceptible to theft or becoming a public hazard. The City of New Brunswick should look to have loose fence sections more adequately anchored to the fence posts with nonferrous materials. The fence section at the northeast corner is in the worst shape. The brick fence post it was attached to has deteriorated to a rubble mess leaving no support for the fence section. The post should be rebuilt and the fence reattached.

### Long Term

The Presbyterian/Central Cemetery Fence is in poorer condition than the Willow Grove Cemetery fence. It may be easier to dismantle, restore and reinstall the fence. Each fence section would have to be cleaned, repaired and repainted. The fence sections should be set so that the bottom rails do not come in contact with the ground.

The Willow Grove Cemetery fence is in better shape than the Presbyterian/Central Cemetery Fence. Major missing elements of the fence, such as the fence pickets, could be replicated and welded on site. Re-grading of the ground to uncover the bottom rail will prevent future deterioration. Once restoration work and re-grading have been finished the fence could be painted.

The following list of contractors could help the City of New Brunswick establish cost estimates and specifications for the restoration work:

**Stewart Iron Works Co.**

PO Box 2612  
Covington, KY 41012-2612  
859-431-1985

[www.stewartironworks.com](http://www.stewartironworks.com)

Manufacturing ornamental iron products since 1886. Specializing in iron fences, gates, and railings. Most orders are custom made to the customer's design and dimensions. Free estimates, design assistance, and engineering available.

**Texas Iron Fence & Gate Co.**

PO Box 839 1807 N. Bus 287  
Decatur, TX 76234  
940-627-2718  
[info@texasironfence.com](mailto:info@texasironfence.com)  
[www.texasironfence.com](http://www.texasironfence.com)

Manufacturer of antique reproduction fencing, modern fencing, gates, beds, and garden borders.

**Star Metal**

74 Bayard St.  
Brooklyn, NY 11222  
718-384-2766

Custom architectural metalwork. Specializing in traditional and contemporary ornamental blacksmithing.

**Historical Arts & Casting**

5580 W. Bagley Park Rd.  
West Jordan, UT 84088-5642  
801-280-2400  
[info@historicalarts.com](mailto:info@historicalarts.com)  
[www.historicalarts.com](http://www.historicalarts.com)

Restorers and replicators of all types of cast architectural metal ornamentation across the country for more than 20 years. Supported by extensive experience, a comprehensive library, and a computer-aided design system, they can adapt styles from any historical period.

**Hanover Iron Works**

Duka Lane  
Hanover, ME 04237  
207-364-7271

Specializing in restoration and fabrication of ironwork, fences, gates, railings, stairs, arbors, chairs, stands, hangers, and cast and wrought ironwork. Portfolio includes many examples of custom fabrication.

**Architectural Iron Co.**

PO Box 126 104 Ironwood Ct.  
Milford, PA 18337

[www.archironco.com](http://www.archironco.com)

Eighteenth- and 19th-century cast- and wrought-iron work. Castings are made in the company-owned foundry, and wrought and cast work is fabricated with historically accurate techniques. Custom castings and fabrications are available.

**Wiemann Ironworks**

2620 E. 11th St.  
Tulsa, OK 74104  
918-592-1700  
[sales@wiemanniron.com](mailto:sales@wiemanniron.com)  
[www.wiemanniron.com](http://www.wiemanniron.com)

The following list is a compilation of contractors who have provided metal and foundry services to New Jersey Historic Preservation Bond Program grant projects.

Metals - Foundry Work

Frankoski Construction Co.  
314 Dodd Street  
East Orange, New Jersey 07017  
973.414.9224

Metalan Erectors, Inc.  
P.O. Box Z-925  
Doylestown, PA 18901  
215.345.5422      Fax# 215.345.8616